FINAL DRAFT

DESCRIPTION OF CURRENT SITUATION WORKING COPY

General Motors Powertrain Division
Bay City Plant
Bay City, Michigan

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CONESTOGA-ROVERS & ASSOCIATES

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1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) has been retained by General Motors Corporation (GM) to conduct a Remedial Investigation/Feasibility Study (RI/FS) at the General Motors Powertrain (GMPT) Division, Bay City Plant (Site), located in Bay City, Michigan. The Site location is presented on Figure 1.1.

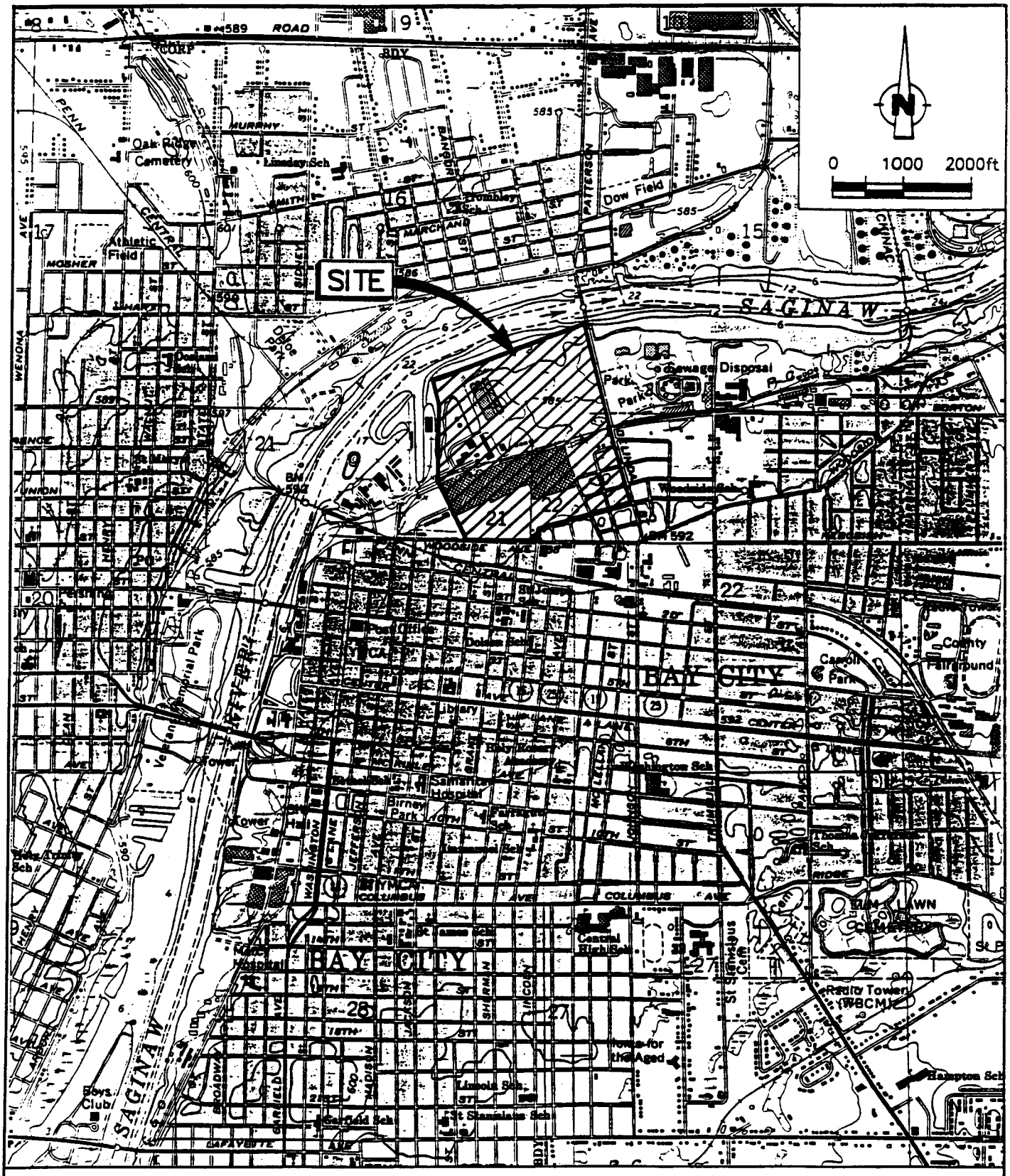
1.1 STATEMENT OF PURPOSE

The objectives of the RI/FS are as follows:

1. conduct an RI to determine the nature and extent of the release or, threatened release, if any, of contaminants from the Site; and

2. perform an FS to identify and evaluate alternatives for remedial action, if any, to prevent or mitigate the migration or the release or threatened release, if any, of contaminants from the Site.

This report, entitled "Description of Current Situation", has been prepared in order to compile and evaluate all of the information and data that are available for the Site. The information generated, presented and evaluated in this report will serve as the basis for completing a successful Remedial Investigation/Feasibility Study (RI/FS) Work Plan.



SOURCE: USGS QUADRANGLE MAPS
BAY CITY AND ESSEXVILLE, MICHIGAN,
1967 (PHOTOREVISED 1973)



CRA

figure 1.1

SITE LOCATION

GM POWERTRAIN DIVISION—BAY CITY PLANT

Bay City, Michigan

3938-24/07/91-4-0

Section 2.0 of this report presents Site background including the Site location and the historical development of the Site and adjacent land uses.

Section 3.0 presents a description of the physiography, geology, hydrogeology and hydrology of the area and also presents the results of previous investigations which can be used to define Site specific conditions.

Section 4.0 presents a summary of previous response actions which have been voluntarily undertaken by GM at the Site.

Section 5.0 describes the ongoing current operations at the Site.

Section 6.0 presents a summary of the current situations at the Site and identifies data gaps to be filled during the RI/FS process. This section also presents study areas which will be investigated during the RI/FS.

2.0 SITE BACKGROUND

This section presents a description of the physical setting of the Site, a summary of the historical development of the Site and adjacent land uses.

2.1 LOCATION

The GMPT, Bay City Plant operates a 130 acre manufacturing complex at 100 Fitzgerald Street, Bay City, Michigan. The Site is bounded on the east by Johnson Street (formerly Belinda Street), on the south by Woodside Avenue and on the west by Crotty Street, with the Saginaw River being the northern boundary. The Site plan is presented as Figure 2.1.

The Site is located on the Saginaw River, which runs roughly west to east in the vicinity of the Site. The southernmost portion of the Site consists of an area which was previously residential and is now used for employee parking. The central portion of the property contains the manufacturing plant itself, support facilities areas and the wastewater treatment plant. The northernmost portion of the Site consists of equipment storage areas, two lagoons and an undeveloped area.

General Motors began operations at the Site in approximately 1916. Since that time automotive parts, such as carburetors, oil pumps, disc brake assemblies and camshafts have been produced at the

facility. Currently the facility consists of approximately one million square feet of manufacturing space and employs a staff of approximately 1,500 people.

2.2 HISTORICAL DEVELOPMENT OF THE SITE

The historical development of the Site is described in this Section. The description is accompanied by a series of Figures which trace the development of the Site. The Figures are presented in Appendix A. Table 2.1 presents a summary of significant events in the development of the Site.

Figure 2.2 presents change in elevation contours between 1964 and 1990 for the property north of the railway. Although much of the property area existed in 1964 when it was acquired by GM, significant additional fill material has been added between 1964 and 1990. Much of this filling is expected to have occurred in the late 1960s and 1970s. The isopachs of fill thickness presented on Figure 2.2 will be used to focus data collection during the RI. Based on the isopachs presented on Figure 2.2, the estimated fill volume is 100,000 cubic yards.

2.3 ADJACENT LAND USES

Figure 2.3 presents the current adjacent land uses. A salvage yard exists west of the manufacturing complex and north of Woodside Street. This salvage yard has been present since at least 1964 according to the aerial photographs of the area.

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TABLE 2.1

**SIGNIFICANT EVENTS IN THE DEVELOPMENT OF THE SITE
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN**

Date	*Event*
1860	Salt Company opened on Site.
1862	Two deep salt wells drilled.
1866	Lumber mill constructed.
1867	First inland commercial railroad link completed. (Figure A.1 identifies the docks associated with the railway in 1874.
1869	Wooden pipe manufacturing company begins production. By 1882, the pipe manufacturing company covered 10 acres and included a creosoting facility.
1892	Bicycle plant erected at corner of Madison Avenue and Crotty Street.
1909	Bicycle plant began producing automobile components.
1916	Chevrolet Motor Company begins production in Bay City.
1918	Chevrolet Motor Company becomes division of General Motors Corporation (GM).
1928	Plant torn down and a new 187,000 square foot facility built on an expanded area.
1935	53,000 square foot addition constructed.
1929-1938	Substantial filling along Saginaw River occurred (compare Figures A.4 and A.5).
1940	GM acquired inlet slip area.
1938-1945	Additional 55,000 square feet of plant space construction.
1955	Salt and Pipe operations at the west end of the Site ceased. GM acquired area now known as the Machine Storage Area (MSA).
1957	Plant expanded by 21,000 square feet.
1961	Plant expanded by 60,000 square feet.
1963	Machinery first stored in MSA.
1964	Two plant expansions, one of 51,946 square feet and one of 83,000 square feet. By 1964, it is apparent that additional filling of the Saginaw River wetlands had occurred (compare Figures A.5 and A.6). GMC acquires remainder of property north of railway.
1965-1967	Two new additions, one of 234,000 square feet and one of 167,000 square feet.

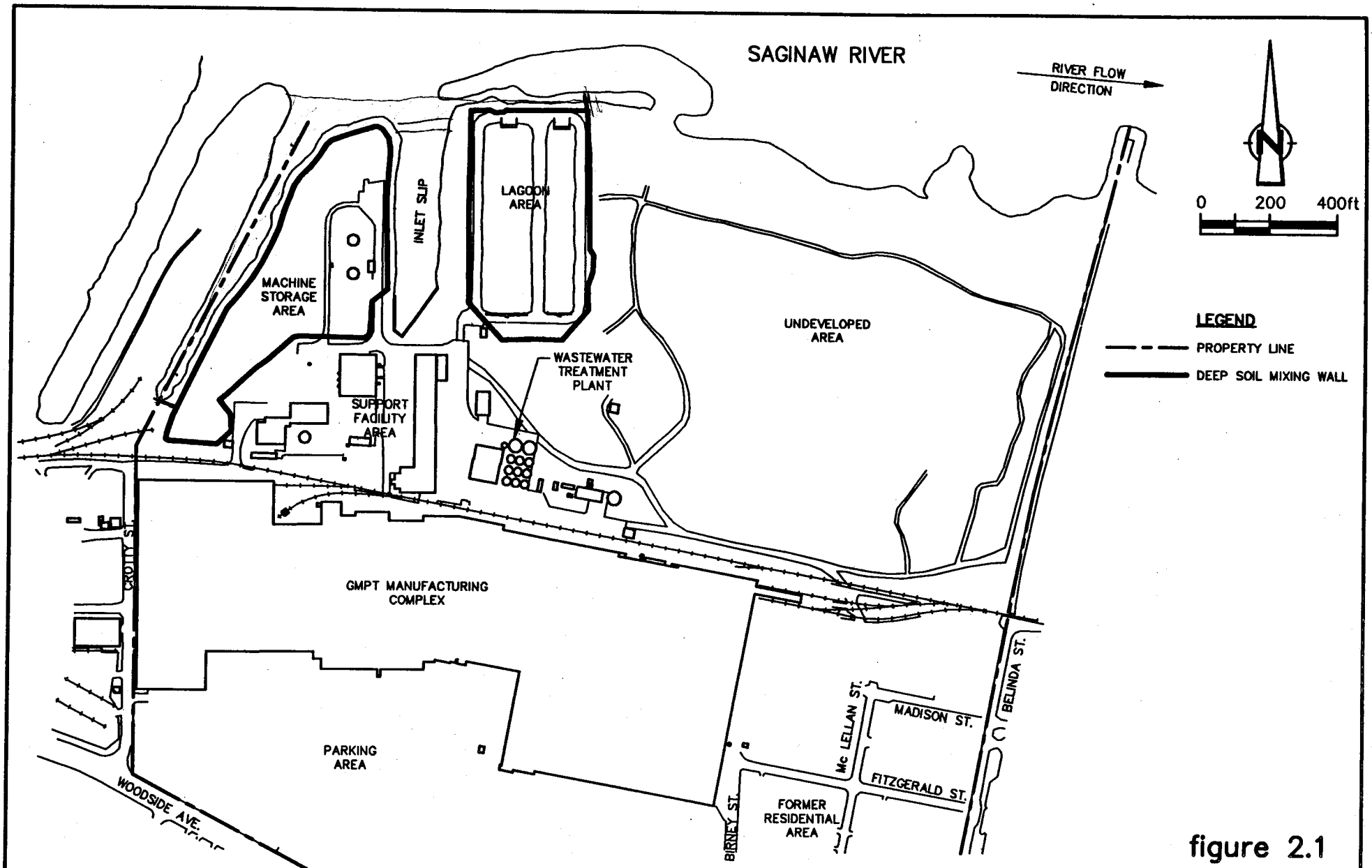
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TABLE 2.1

**SIGNIFICANT EVENTS IN THE DEVELOPMENT OF THE SITE
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN**

Date	*Event*
1966	Nickel and Copper plating solutions were stored and treated in the plating tank farm.
1968-1970	West lagoon installed to contain stormwater and non-contact cooling water.
1972	Installed water treatment facility. East Lagoon completed.
1972-1975	PCB containing hydraulic systems flushed.
1974	Oil reclaim facility began operations.
1979	East lagoon shut down after plating operations ceased.
1980s	Wood floor blocks became recognized as potentially containing PCBs.
1985	Ski jump and TSCA consent area remediated.
1986	West lagoon removed from service and east lagoon placed into service again.
1986-1990	West lagoon remediated.
1990	East lagoon shut down and west lagoon reopened.

DOMENICO-MYERS & ASSOCIATES



SOURCE: HUBBELL, ROTH & CLARKE, INC. CONSULTING ENGINEERS, JOB No. 90160, SITE PLAN, SHEET 1 OF 1.

figure 2.1

SITE PLAN

GM POWERTRAIN DIVISION–BAY CITY PLANT

Bay City, Michigan

CRA

3938-24/07/91-4-0 (P-04)

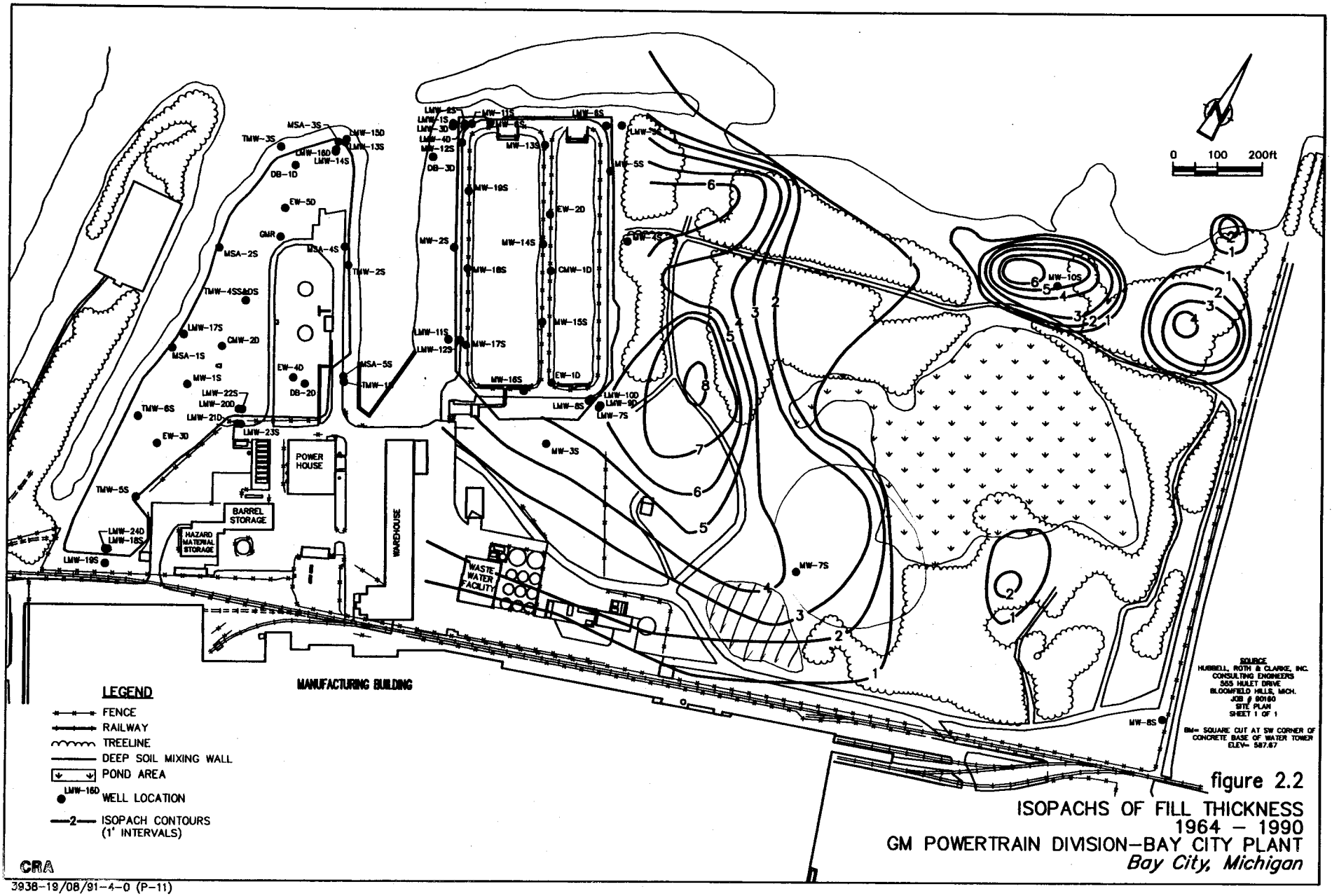


figure 2.2

ISOPACHS OF FILL THICKNESS
1964 – 1990
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

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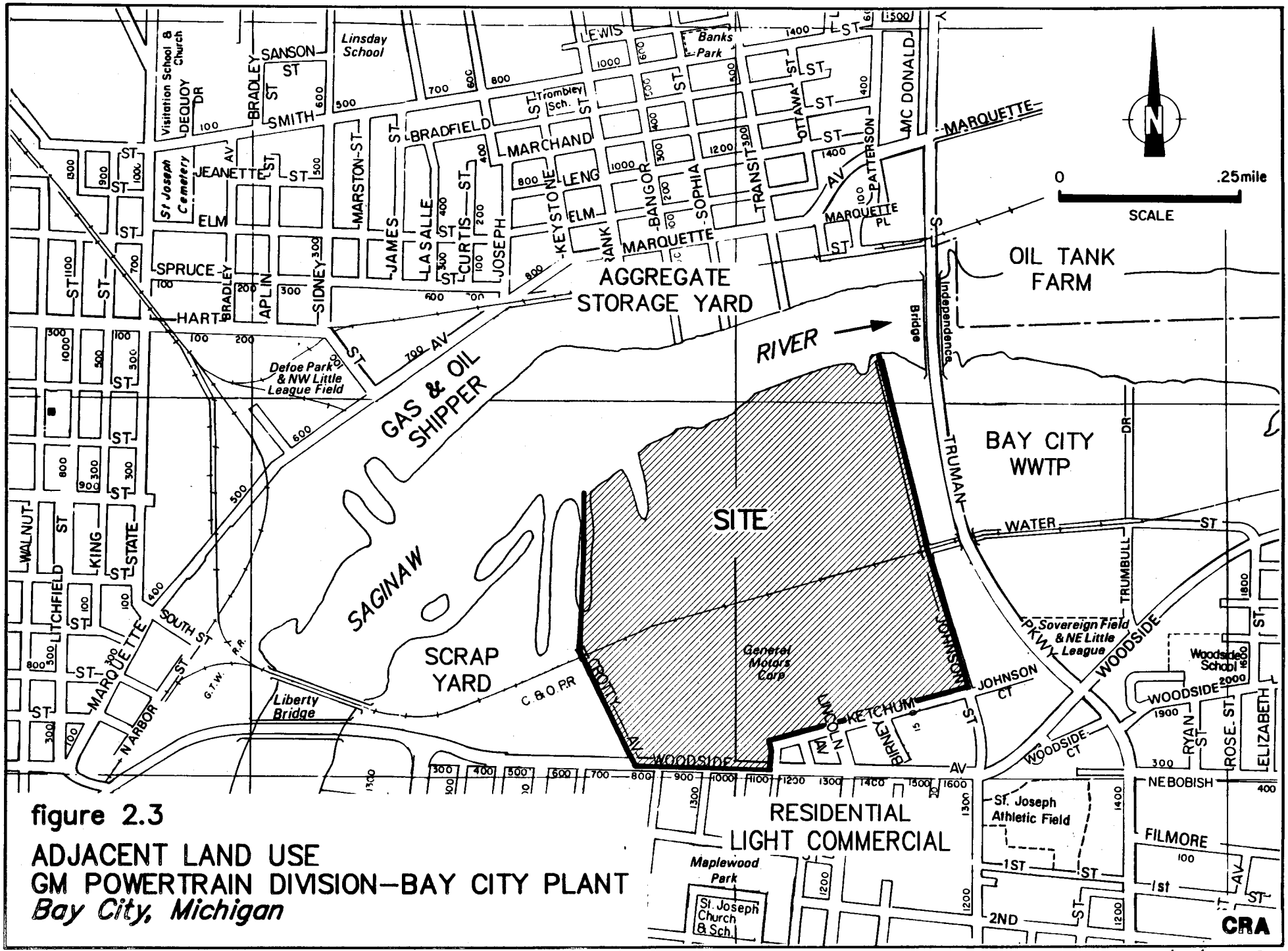


figure 2.3

ADJACENT LAND USE
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

CRA

3938–20/08/91–4–0

3.0 SITE CONDITIONS

This section presents a compilation of regional and Site specific data on the conditions at the Site. The Site data base has been compiled by reviewing reports which have been prepared for GM during the course of Site work. Table 3.1 presents a summary of reports which were reviewed by CRA in preparation of this report.

3.1 REGIONAL PHYSIOGRAPHY

The southern peninsula of Michigan was once covered by a large inland sea, whose shape has left the bedrock strata forming a bowl, with the deepest part near the center of the state. The bedrock deposits were deeply eroded by ancient rivers. The irregular surface was then buried in glacial sand, gravel and clay during the Pleistocene ice advances. The topography and overburden soils are largely the result of glacial and post-glacial deposition and erosional processes. Continental glaciers advanced into this area of Michigan at least twice, once in each of the last two glacial stages of the Illinoian (40,000 years ago) and Wisconsinan (10,000 years ago).

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 and Defiance) and a thick sequence of ground moraine (glacial

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TABLE 3.1

SUMMARY OF PREVIOUS INVESTIGATIONS
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

	Report Title	*Date*
1.	Soil and Ground Water Quality Study Chevrolet-Pontiac-Canada Group Bay City Plant General Motors Corporation, Bay City, Michigan Keck Consulting Services Incorporated	January 30, 1986
2.	Work Plan for the Phase II Sampling Investigation at the GM/CPC Bay City, Michigan Plant O.H. Materials Corporation	September 23, 1986
3.	Draft Site Data Report for GM/CPC's Bay City Plant O.H. Materials Corporation	February 9, 1987
4.	Report of Dewatering Investigation at C-P-C's West Lagoon, Bay City, Michigan O.H. Materials Corporation	April 14, 1987
5.	Report of Phase II Sampling Investigation at C-P-C'sBay City, Michigan Facility O.H. Materials Corporation	July 14, 1987
6.	Report of Design of Groundwater Level Control System Chevrolet-Pontiac-Canada Group Bay City Plant, Bay City Michigan Keck Consulting Services Incorporated	May 16, 1988
7.	Proposed Settlement Agreement Element II - Priority Ratings and Project Schedule (Proposed Consent Order) General Motors C-P-C Bay City	September 8, 1988
8.	Leakage Study at the CPC-Bay City GM Plant, Michigan Using the Self Potential Method Dr. Charles T. Young, Geophysical Consultant	December, 1988
9.	Proposed Element II PCB Cleanup Options Cost Summary December 1988 General Motors C-P-C Group	February 9, 1989
10.	PCB Remediation Technologies Feasibility and Cost Comparison Study February 1989 General Motors C-P-C Group	March 28, 1989
11.	Proposed Element II PCB Cleanup Program February 1989 General Motors C-P-C Group	March 28, 1989

DONESLOW-COVERT & ASSOCIATES

TABLE 3.1

SUMMARY OF PREVIOUS INVESTIGATIONS
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

	Report Title	*Date*
12.	Groundwater Level Control System Project Manual Keck Consulting Services Incorporated	April 6, 1989
13.	Certification Report Deep Soil Mixing Cutoff Wall General Motors Corporation Bay City, Michigan Hart Engineers/Midwest Incorporated	May 12, 1989
14.	Addendum No. 1 Certification Report Deep Soil Mixing Cutoff Wall General Motors Corporation Bay City, Michigan Hart Engineers/Midwest Incorporated	May 12, 1989.
15.	Land Use History General Motors/Chevrolet Division Bay City, Michigan Environmental Science & Engineering Incorporated	May 14, 1990.
16.	Solid Waste Management Unit Information Request General Motors Powertrain Bay City Plant	May 8, 1991

till) comprised of a heterogeneous mixture of clay, silt, sand and gravel were deposited in the area.

3.2 TOPOGRAPHY

Topographic contour plans for the years 1964, 1978 and 1990 are presented in Appendix A. The contours for 1964 and 1990 cover the entire Site north of the railroad tracks and the contours for 1978 cover the northwest portion of the Site. The 1964 and 1990 contour plans were used to develop isopachs of fill thickness placed between 1964 and 1990.

3.3 GEOLOGY

3.3.1 Regional Overburden Geology

Pleistocene glacial deposits range up to 175 feet thick in several areas around Bay City. These deposits consist of a discontinuous basal sand and gravel which is thickest in bedrock valleys (not expected to be present under the Site), a thick sequence of clay till, and a sand unit which occurs in narrow ridges at the land surface (referred to as the deep sand under the Site). Discontinuous sand layers also occur throughout the till deposits.

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3.3.2 Site Overburden Geology

The overburden stratigraphy within the vicinity of the Site has been investigated by the installation of 320 borings and wells during previous field studies. Appendix B presents a summary of borehole and well logs from previous investigations. Borehole and well locations are presented on Plan B-1. A series of cross-sections have been prepared to present the Site geology. Figure 3.1 presents the cross-section locations. The cross-sections are presented as Figures 3.2 to 3.6. The cross-sections indicate that the overburden geology of the Site consists of various layers which can be described as follows:

Shallow Sand/Fill

The surficial soils consist of sand and fill. This unit ranges from 0 to 20 feet in thickness. In the area south of the railway tracks, this unit is expected to be much thinner or non-existent.

Intermediate Confining Unit

The intermediate confining unit is located directly below the shallow sand/fill. This unit is expected to have been deposited as a slack water deposit of the Saginaw River. The confining unit consists of clay, silt, fine sand, peat and marl. In the vicinity of the MSA and the lagoon area (LA) the intermediate confining unit is expected to be continuous. The intermediate confining unit may not be continuous under the remainder of the north part of the Site and is not present south of the railway tracks.

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Deep Sand

Located directly below the intermediate clay is a sand layer. This sand layer consists of outwash sands which appear to have filled the Pleistocene river channel which cut into the underlying clay till. The deep sand is up to 40 feet thick under the north part of the Site. The deep sand is not expected to be present south of the plant where the underlying clay is located at or near the surface.

Clay Till

Located directly below the deep sand is an extensive clay till layer. On-Site boreholes indicate that this layer begins at the approximate elevation of 570 feet AMSL and extends to an elevation of 500 feet AMSL in the only boring that penetrated the clay till to the surface of the bedrock (SB13-69). This layer provides a significant confining unit which hydraulically separates the bedrock and overburden aquifer units under the Site.

3.3.3 Regional Bedrock Geology

The bedrock surface, far beneath the land surface in the Bay City area, is composed of the eroded Saginaw formation of Pennsylvanian age (270-320 million years ago). The bedrock surface is irregular, with as much as 120 feet of relief between peaks and valleys. Bedrock consists of

INVESTIGATIONS & ASSOCIATES

alternating and interconnected layers of sandstone, silt, shale, limestone and coal. Limestone and shale are the most abundant rock types in the formation. At the base of the formation is a coarse-grained quartz sandstone.

3.3.4 Site Bedrock Geology

Bedrock has been encountered in only one Site borehole (SB13-69). The bedrock was encountered at an elevation of 500 feet AMSL and consisted of sandstone.

3.4 HYDROGEOLOGY

3.4.1 Regional Hydrogeology

There are two major groundwater aquifers in this area on a regional scale. The primary source of potable water in the region is the Pleistocene sand and gravel layer immediately overlying the Saginaw bedrock formation. Sand and gravel in the buried valleys generally yields large quantities of good quality water. This unit ranges to 120 feet thick, the thickest areas being within ancient bedrock valleys, thinning to nonexistent on the ridges. Where present, this sand and gravel unit is overlain by 75 to 175 feet of glacial drift which is primarily clay and which forms a significant aquiclude. This unit is not expected to be present under the Site.

TOMASSI, HEADLEY & ASSOCIATES

The deepest of the two aquifers is located in the basal sandstone unit in the Saginaw formation. The water in this sandstone unit is generally confined by the permeable shale or silty shale which comprises the upper portion of the Saginaw formation in the area. There are lenses of sand within the Saginaw formation which supply small quantities of water to area wells but are not considered major aquifers. The flow direction for water in the basal sandstone is expected to be toward the center of the Michigan basin. Water in the Saginaw bedrock formation typically increases in dissolved solids with depth.

3.4.2 Site Hydrogeology

Plan C-1 (Appendix C) presents the locations of existing wells at the Site. A table of static groundwater elevations is presented in Appendix C.

Groundwater is encountered in the shallow sand/fill unit. In general, the depth to groundwater varies from 3 to 6 feet below ground level, depending on surface elevation and seasonal fluctuations. Available data from monitoring wells installed on the GMPT Site during previous investigations indicate variable water level elevations across the Site with no apparent trend. The unpredictable water levels may indicate the wells are installed in random unconnected fill units and/or may indicate that shallow sewer lines are influencing groundwater elevations and flow directions. A third factor to consider when evaluating groundwater flow in the shallow sand/fill unit is the deep soil mixing walls which were installed around the

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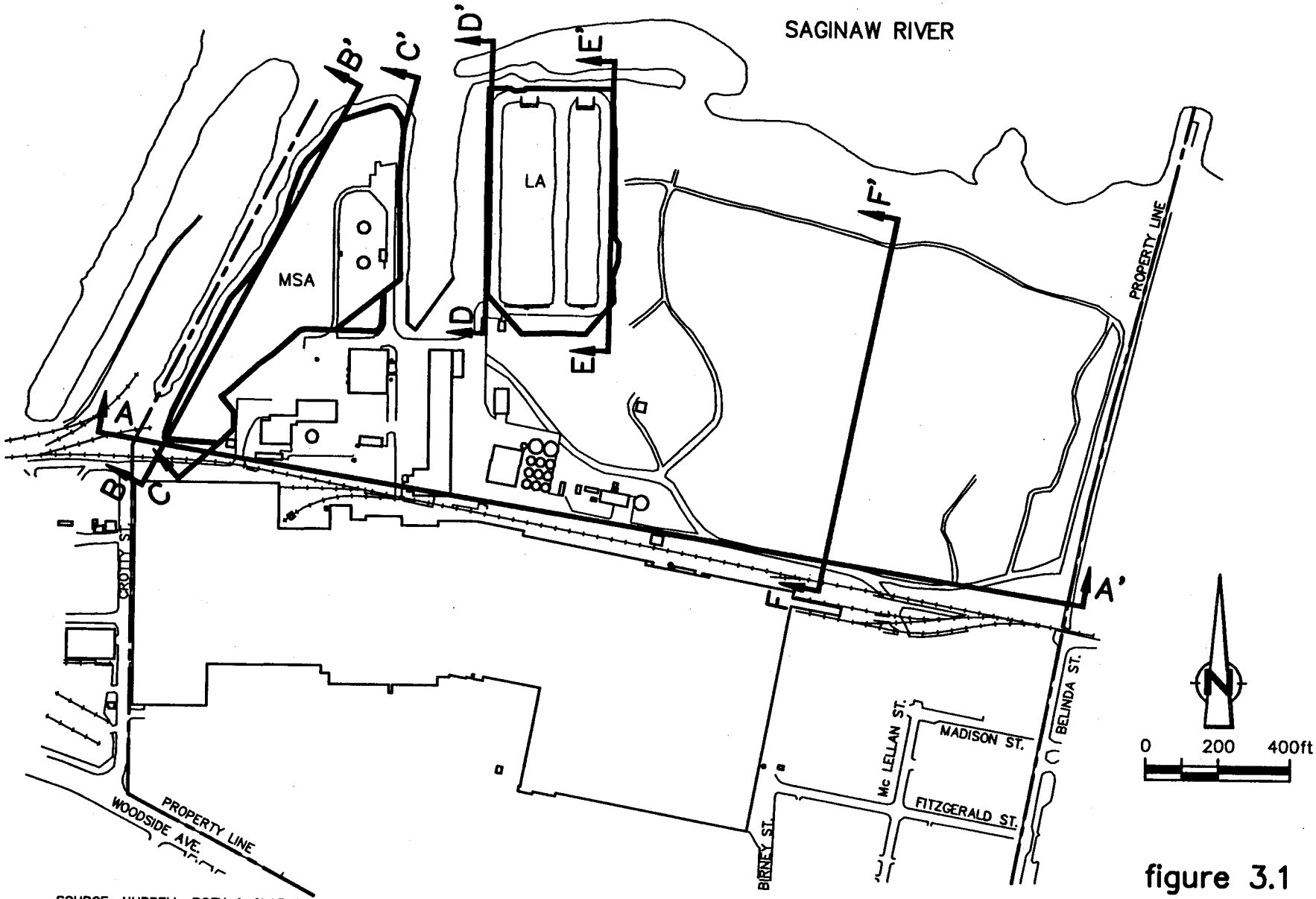
MSA and LA. Figure 3.7 presents the most recent groundwater elevation for the shallow sand/fill unit.

The deep sand layer is likely restricted to the Pleistocene river channel, and occurs between 20 and 50 feet below land surface. It consists of a continuous and uniform outwash sand unit. This sand unit is not comprised of manmade fill and is in direct connection with the Saginaw River. Monitoring wells installed into the deep sand would be expected to show a groundwater gradient toward the river and slightly downstream. In the vicinity of the LA and MSA, the deep sand groundwater contours may be influenced by deep soil mixing walls which were installed around these areas in 1987 and 1988. Figure 3.8 presents the most recent groundwater elevations for the deep sand unit. This unit is present north of the railway tracks; however, it is much thinner or absent south of the plant.

3.5 HYDROLOGY

The Site is located within the Saginaw River Basin, approximately 3 miles from the mouth of the Saginaw River. The river drains approximately 6,000 square miles of the east central portion of Michigan's Lower Peninsula, discharging into Saginaw Bay, an arm of Lake Huron. The Saginaw River ranges from 400 to 800 feet wide and 10 to 30 feet deep throughout its length, with a gradually expanding cross-sectional area in the downstream direction. Discharge ranged from a high of 54,000 to a low of 9,000 cubic feet per second, as measured from the Genesee Bridge (located 15 miles upstream of the Site) between 1943 and 1967.

HARDING ECOLOGY & ASSOCIATES



SOURCE: HUBBELL, ROTH & CLARKE, INC.
CONSULTING ENGINEERS, JOB No. 90160,
SITE PLAN, SHEET 1 OF 1.

figure 3.1

CROSS-SECTION LOCATIONS
GM POWERTRAIN DIVISION-BAY CITY PLANT
Bay City, Michigan

CRA

3938-20/08/91-4-0 (P-12)

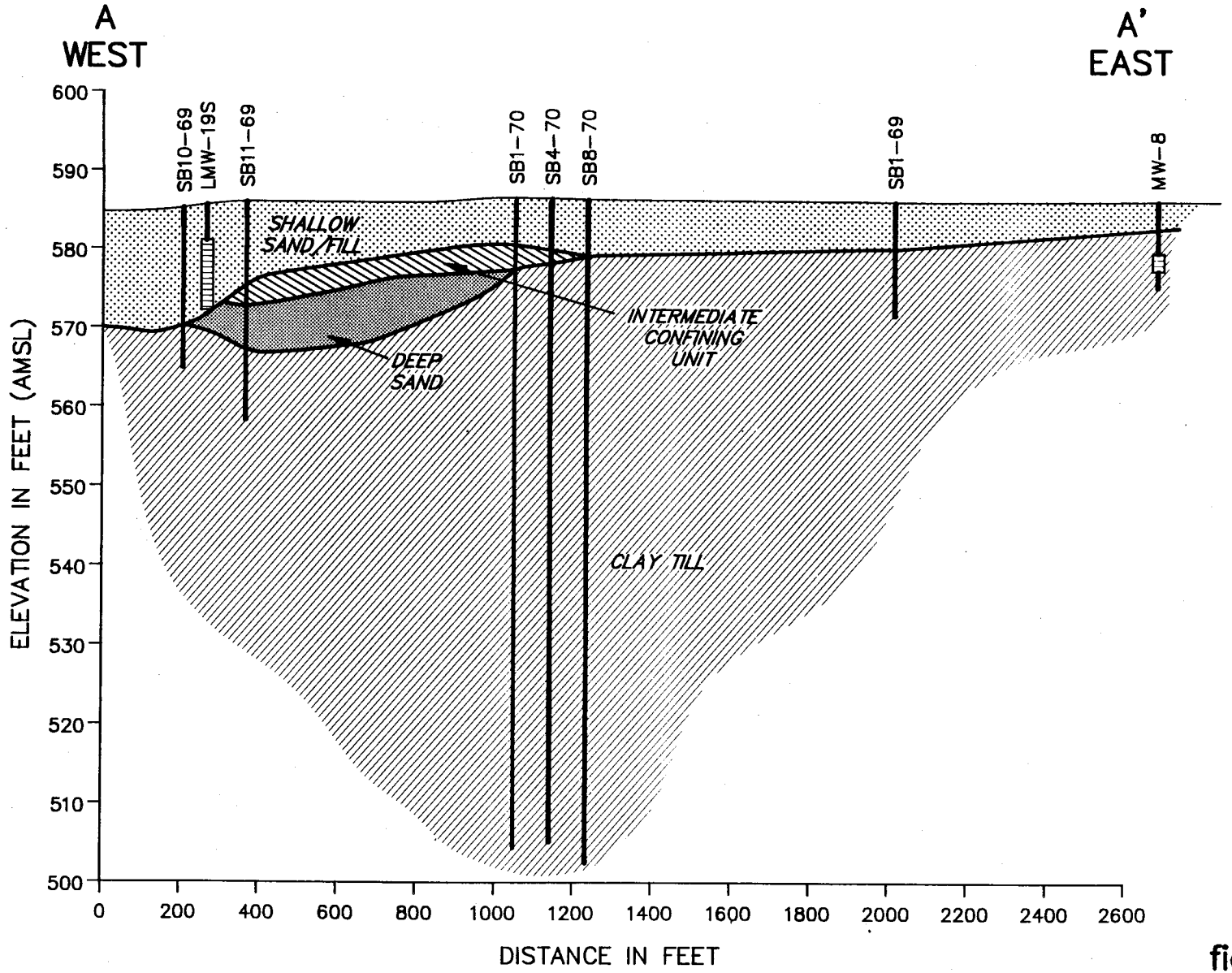


figure 3.2

SECTION A–A'
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

SCALE: HOR. 1"=400'
VER. 1"=20'

CRA

3938-14/08/91-4-0 (X-05)

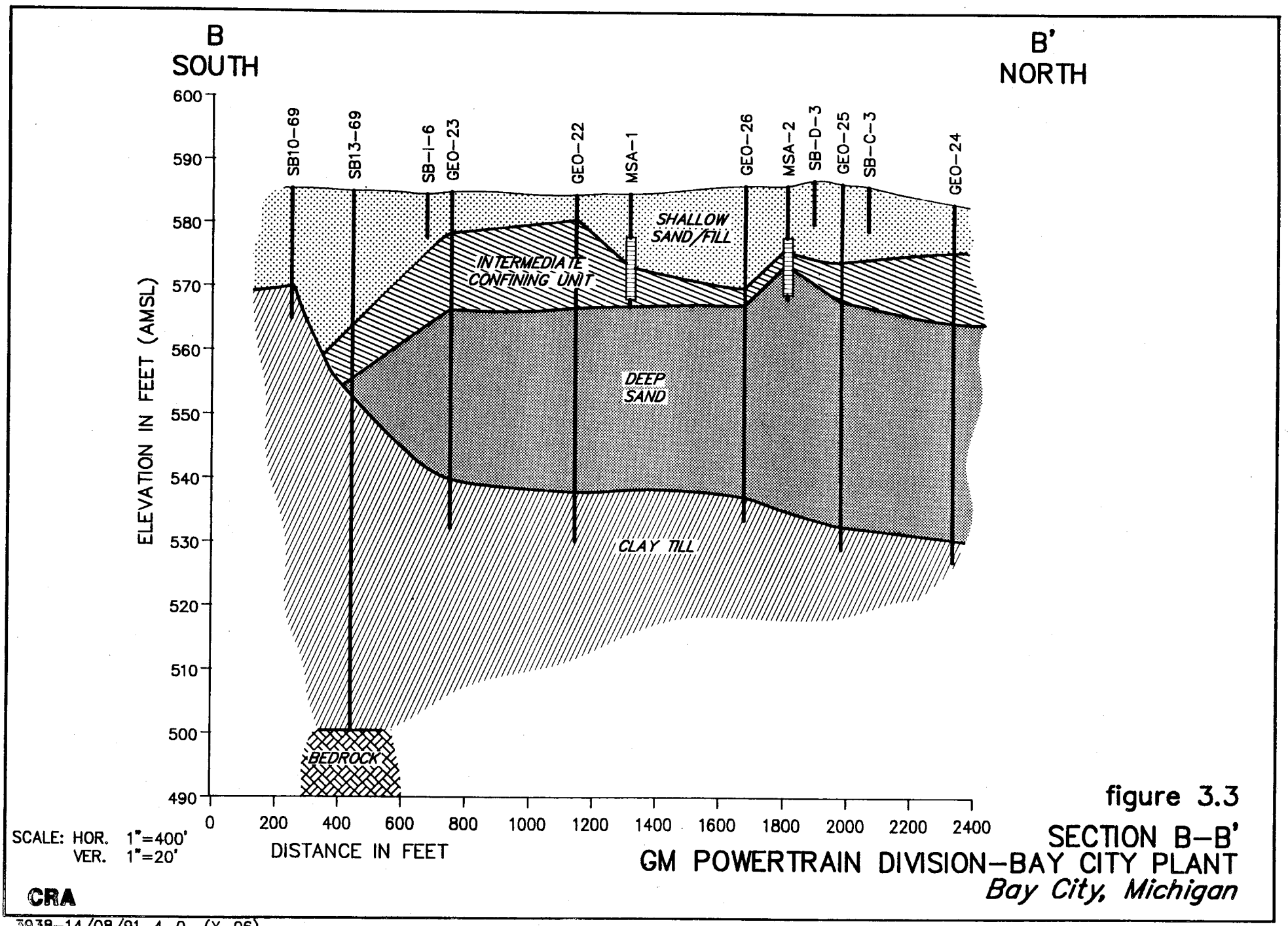


figure 3.3

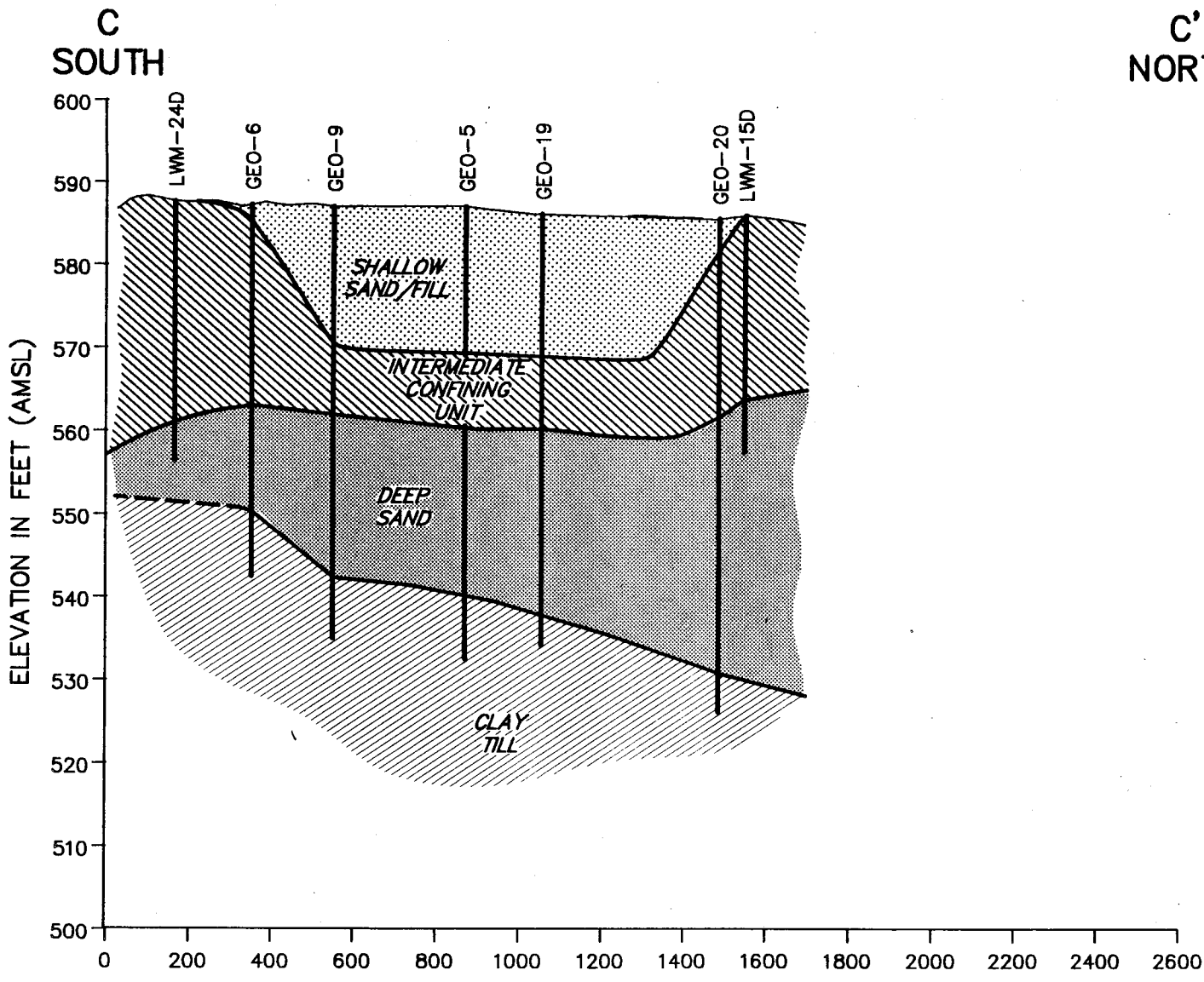
SECTION B–B'

GM POWERTRAIN DIVISION–BAY CITY PLANT

Bay City, Michigan

CRA

3938-14/08/91-4-0 (X-06)



SCALE: HOR. 1"=400'
VER. 1"=20'

figure 3.4

SECTION C–C'

GM POWERTRAIN DIVISION–BAY CITY PLANT

Bay City, Michigan

CRA

3938-14/08/91-4-0 (X-07)

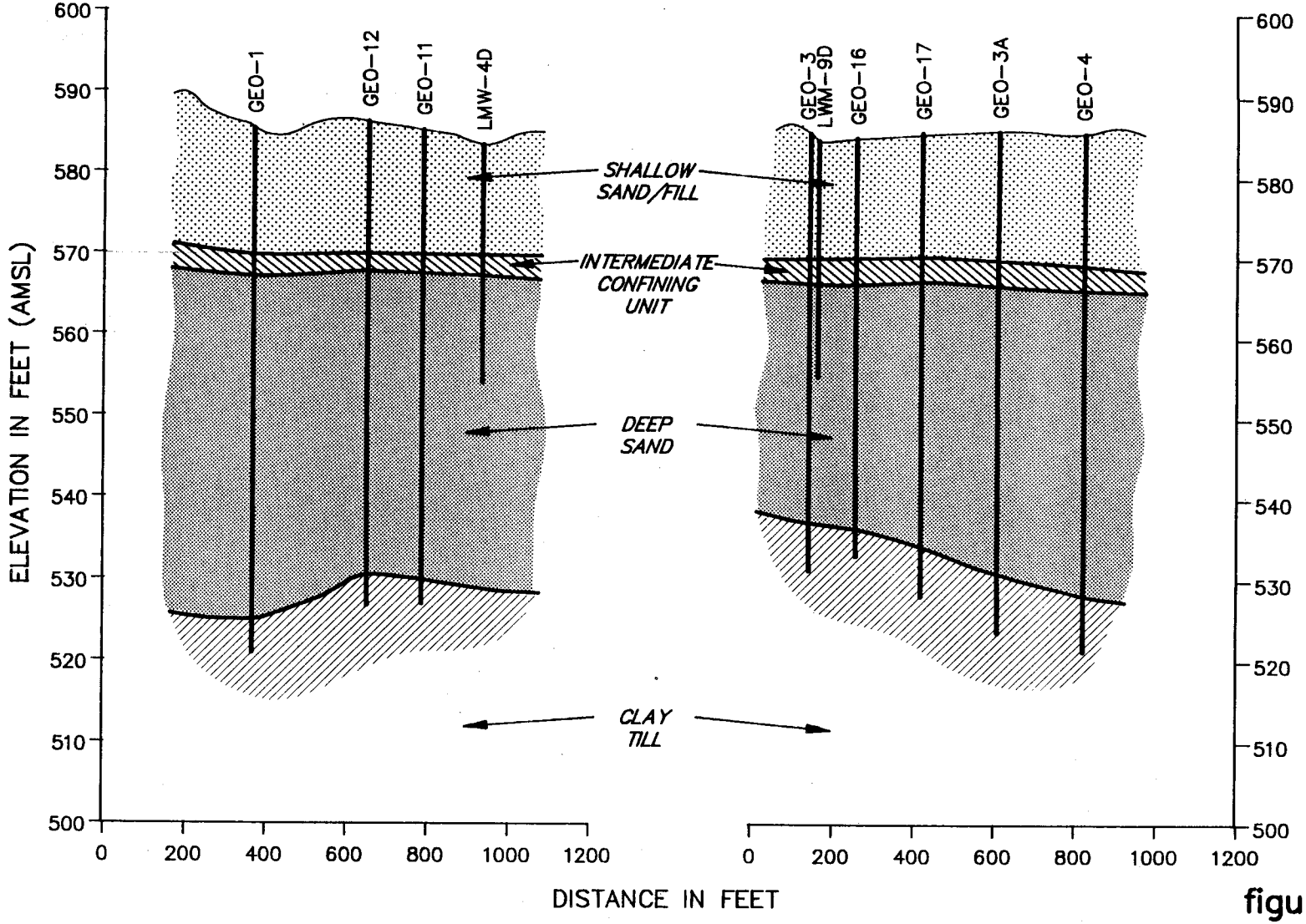


figure 3.5

SECTION D–D' & E–E'
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

SCALE: HOR. 1"=400'
VER. 1"=20'

CRA

3938-14/08/91-4-0 (X-08)

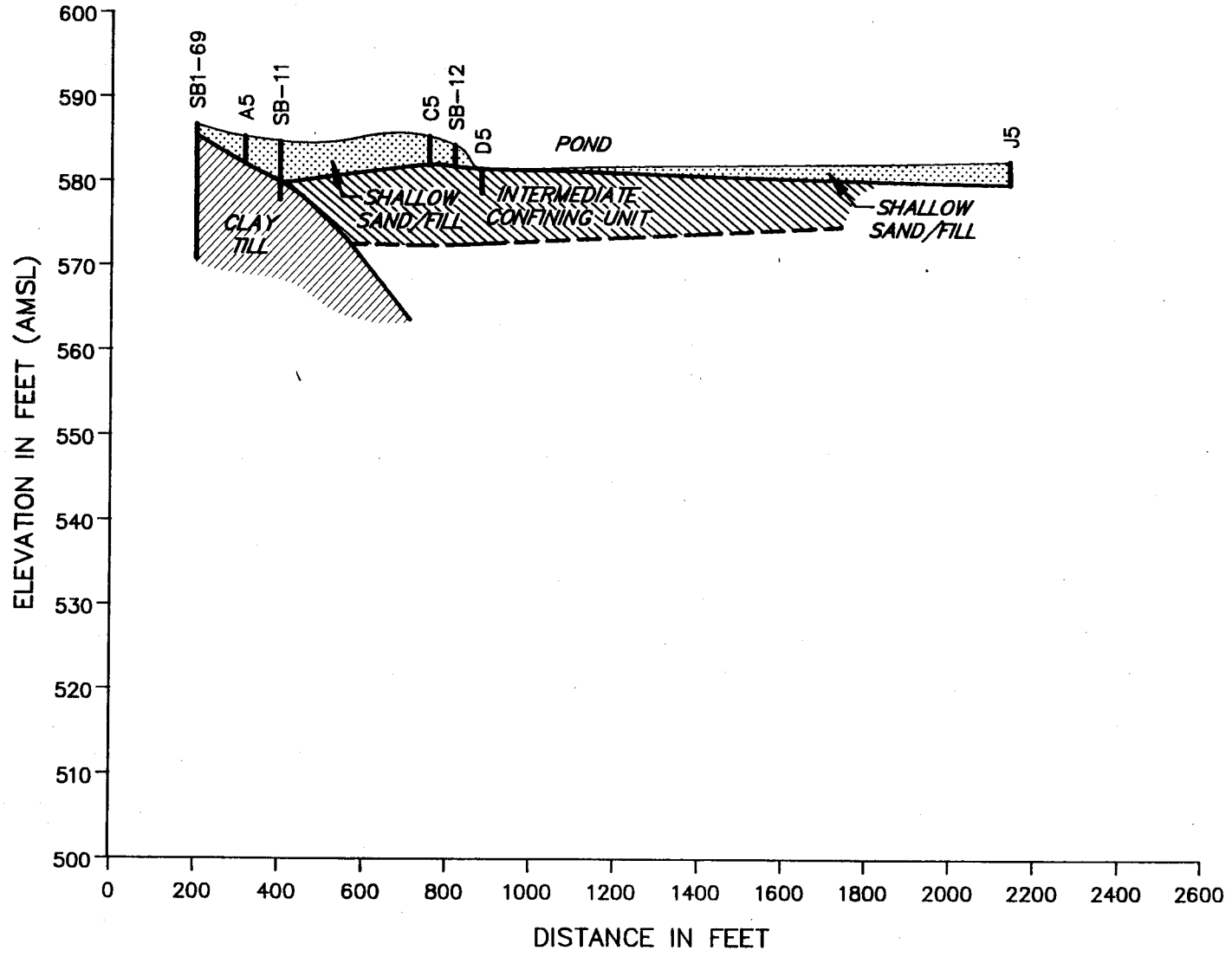


figure 3.6

SECTION F–F'
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

SCALE: HOR. 1"=400'
VER. 1"=20'

CRA

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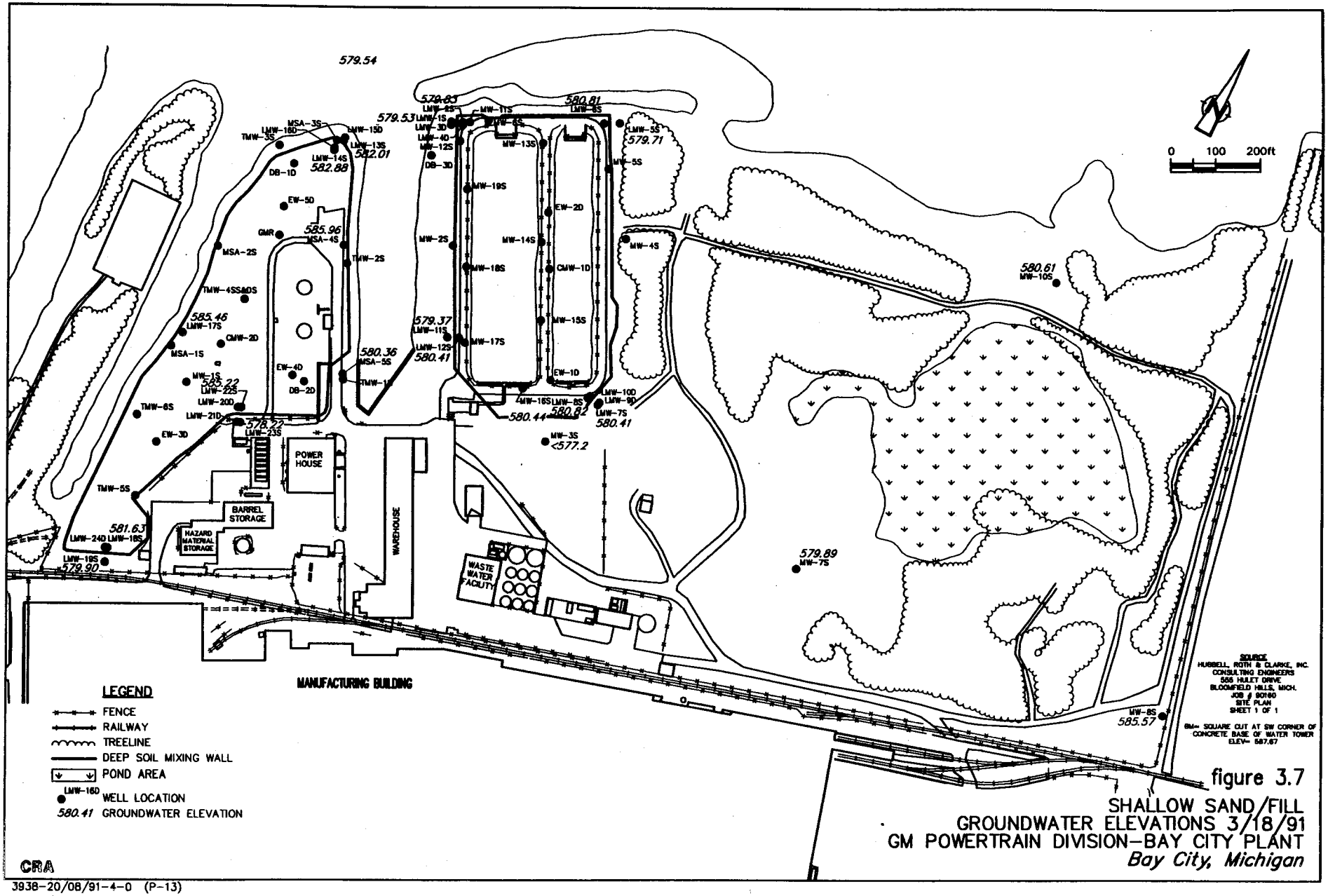


figure 3.7

SHALLOW SAND/FILL
GROUNDWATER ELEVATIONS 3/18/91
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

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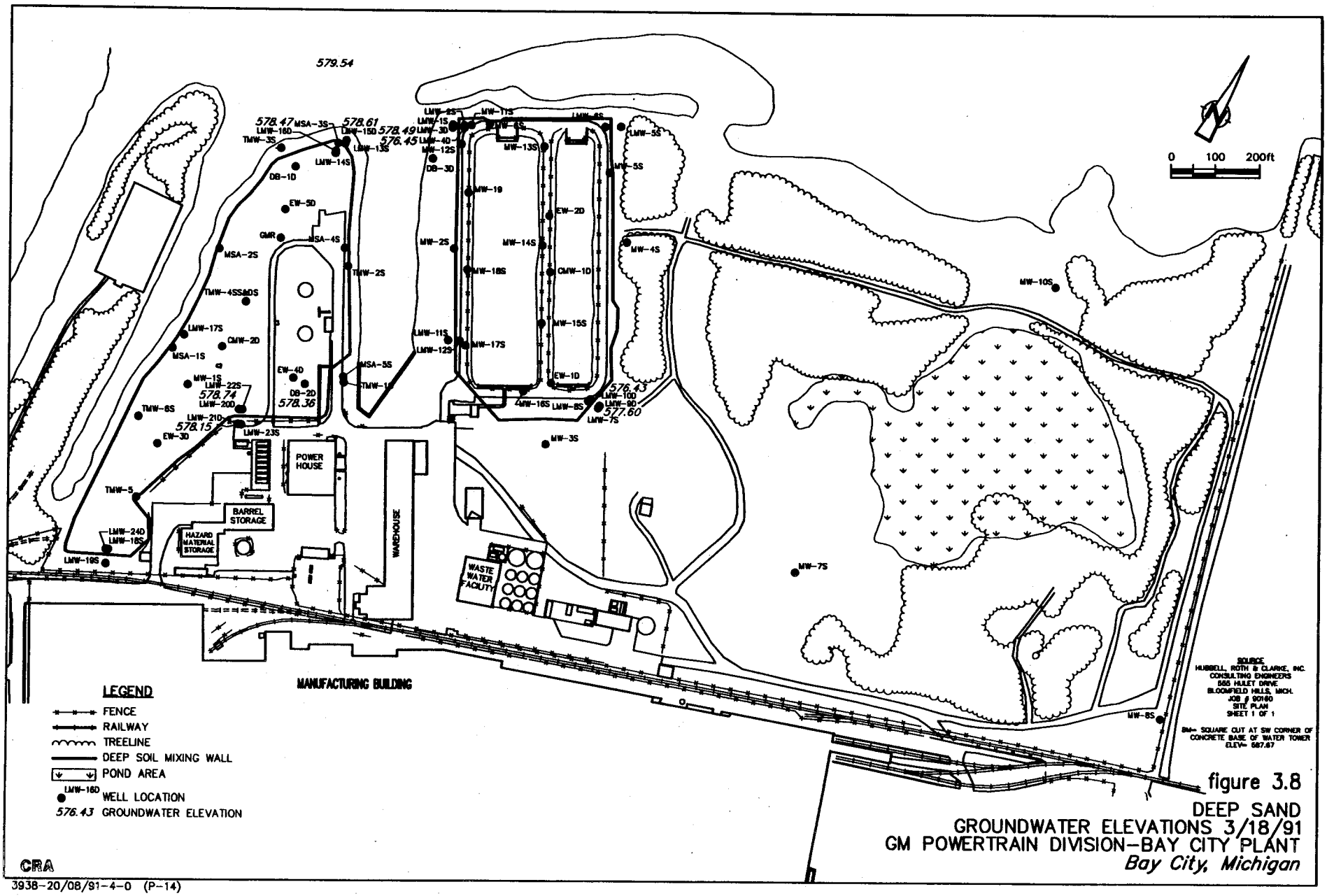


figure 3.8

DEEP SAND
GROUNDWATER ELEVATIONS 3/18/91
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

CRA

3938-20/08/91-4-0 (P-14)

3.6 ANALYTICAL RESULTS

Soil and water analysis have been performed at many locations on the Site. Compounds which have been analyzed for in the past include metals, volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). A compilation of all available historical analytical data is presented in Appendix D. CRA has not performed an independent formal QA/QC review or data validation for any of the data presented in Appendix D. Plan D-1 presents all of the sampling locations. The data has been organized into four areas as follows:

1. MSA;
2. LA; and
3. rest of Site.

These locations are identified on Plan D-1

Appendix D presents a summary of sampling analyses which have been conducted at the Site in each of the three areas. Summary tables presenting compounds detected and measurements are in Appendix D. A master list of locations, dates, and analyses performed is presented in Appendix D.

It is clear from the Appendix D summary tables that the majority of historical soil and groundwater analyses have focussed on PCBs.

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The following discussion of historical analytical results is organized by the three Site areas. The discussion of mean concentrations is based on the mean of those compounds reported above the minimum detection limit only. Non-detects and less than values have not been factored into the calculation of the mean.

3.6.1 Machine Storage Area (MSA)

3.6.1.1 Soil Data

A total of 324 soil samples have been collected in the MSA for PCB analysis. PCBs were reported above the minimum detection limit in 237 samples, with a maximum concentration of 75,000 ppm (total PCBs). The mean concentration of PCBs in soil in the MSA varies from 74 ppm for Arochlor 1260 to 2194.5 ppm for Arochlor 1242.

A total of 8 soil samples have been analyzed for VOC in the MSA. VOC reported in more than one soil sample include acetone, methylene chloride and toluene.

No soil samples from the MSA have been analyzed for metals; however, 39 samples were analyzed for cyanide. A total of 5 samples had cyanide reported above the minimum detection limit with a maximum concentration of 5.8 mg/kg and a mean concentration of 4.4 mg/kg.

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3.6.1.2 Groundwater Data

Shallow Sand/Fill

A total of 39 groundwater samples have been collected for PCB analysis from wells in the shallow sand/fill unit in the MSA. PCBs have been reported in 27 of the 39 unfiltered samples. Some of the same samples were also filtered prior to analysis. PCBs are reported in only 2 of 20 filtered samples and at much lower concentrations. PCBs adsorb to soil particles and may be present in the groundwater adsorbed to sediment. In this form, the PCBs will not readily migrate in the groundwater.

A total of 12 groundwater samples from the shallow sand/fill unit in the MSA have been analyzed for VOC. The reported VOCs are at relatively low concentrations.

A total of 14 groundwater samples from the shallow sand/fill unit in the MSA have been analyzed for metals.

The results of the analysis, when compared to the maximum contaminant level (MCL), indicate some elevated VOC concentrations, elevated metals concentrations and elevated concentrations in unfiltered PCB samples.

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Deep Sand

A total of 20 groundwater samples have been collected for PCB analysis from wells in the deep sand unit in the MSA. PCBs have been reported in 6 of the 20 unfiltered samples. Some of the same samples were also filtered prior to analysis. PCBs are reported in only 1 of 13 filtered samples and at much lower concentrations.

A total of 7 groundwater samples from the deep sand unit in the MSA have been analyzed for VOC. The reported VOCs are at relatively low concentrations.

A total of 5 groundwater samples from the deep sand unit in the MSA have been analyzed for metals.

The results of the analysis, when compared to the MCLs, indicate some elevated VOC concentrations, elevated metals concentrations and elevated concentrations in unfiltered PCB samples.

3.6.2 Lagoon Area (LA)

3.6.2.1 Soil

A total of 285 soil samples have been collected in the LA for PCB analysis. PCBs were reported above the minimum detection limit in 164 samples with a maximum concentration of 55,000 ppm (Arochlor 1242).

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The mean concentration of PCBs in soil varies from 0.27 ppm for Arochlor 1260 to 1635.3 ppm for Arochlor 1242.

A total of 4 soil samples have been analyzed for VOCs in the LA. VOCs reported in more than one sample include acetone, benzene, methylene chloride, and toluene. All of the reported VOCs are at relatively low concentrations

No soil samples from the LA have been analyzed for metals or cyanide.

3.6.2.2 Groundwater

Shallow Sand/Fill

A total of 62 groundwater samples have been collected for PCB analysis from wells in the shallow sand/fill unit in the LA. PCB have been reported in 43 of the 62 unfiltered samples. Some of the same samples were also filtered prior to analysis. PCBs are reported in only 1 of 16 filtered samples and at much lower concentrations.

A total of 14 groundwater samples from the shallow sand/fill unit in the LA have been analyzed for VOCs. The reported VOCs are at relatively low concentrations.

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A total of 27 groundwater samples from the shallow sand/fill unit in the LA have been analyzed for metals.

The results of the analysis when compared to the MCLs indicate some elevated VOC concentrations, elevated metals concentrations and elevated unfiltered PCB concentrations.

Deep Sand

A total of 2 groundwater samples have been collected for PCB analysis from wells in the deep sand unit in the MSA. PCBs have been reported in 2 of the 2 unfiltered samples. No samples were filtered.

A total of 1 groundwater sample has been analyzed for VOCs in the deep sand unit in the LA. The reported VOCs are at relatively low concentrations.

One groundwater sample has been analyzed for metals.

The results of the analysis, when compared to the MCLs, indicate some elevated VOC concentrations and elevated unfiltered PCB concentrations. Metals concentrations are below the MCLs.

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3.6.3 Other Areas of Site

3.6.3.1 Soil

A total of 305 soil samples have been collected from Other Areas of the Site for PCB analysis. PCBs were reported above the minimum detection limit in 122 samples with a maximum concentration of 4,700 ppm. The mean concentration of PCBs in soil was 64.1 ppm for total PCBs.

Metals sampling has been performed at the RCRA storage facility and will be added once verified.

3.6.3.2 Groundwater

Shallow Sand/Fill

A total of 64 groundwater samples have been collected for PCB analysis from wells in the shallow sand/fill unit in areas other than MSA or LA. PCBs have been reported in 37 of the 64 unfiltered samples. Some of the same samples were also filtered prior to analysis. PCBs are reported in only 8 of 39 filtered samples and at much lower concentrations.

A total of 18 groundwater samples have been analyzed for VOCs in areas other than the MSA or LA. The reported VOCs are at relatively low concentrations.

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A total of 22 groundwater samples have been analyzed for metals.

The results of the analysis, when compared to the MCLs, indicate some elevated VOC concentrations, elevated metals concentrations and elevated unfiltered PCB concentrations.

Deep Sand

No samples have been collected for the deep sand unit.

Other Analysis

Several analysis have been completed in Other Areas of Site. The analytical results for surface water, wipe test, and sludge sampling is summarized in Appendix D.

3.7 SEWER INVESTIGATION

In 1989 and 1990, GM undertook a major sewer investigation as part of it's sewer cleaning project which consisted of obtaining video logs of the three sewer systems (storm, sanitary and process) and documenting invert elevations and grades of the sewers at all of the accessible plant manholes.

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3.8 SAGINAW RIVER INVESTIGATION

In 1987, the sediments of the Saginaw River were sampled by MDNR. The analytical results for the sediment sampling is summarized in Appendix D. Figure 3.9 presents the sediment sample locations. One of these samples (sample number 22) was collected in the inlet slip area of the Site. The PCB concentration in sediment in the inlet slip was reported for the following intervals:

Sediment Sampling Depth (cm)	*PCB Concentration (ppm) particle >75μm*	*PCB Concentration (ppm) particle <75μm*
0-5	0.06	3.9
5-10	2.1	
10-15	2.1	4.3
15-20	2.7	
20-25	2.3	8.3
25-30	3.5	
30-35	4.9	10
35-40	2.3	

The MDNR sampling also indicates that PCBs are present both upstream and downstream of the Site in the Saginaw River. The data indicates no clear pattern of PCB distribution.

In addition, sediment and water quality sampling of the Saginaw River and the Inlet Slip was performed between July 30 and August 2, 1991. The analytical results for the sediment and water quality sample are presented in Appendix D. Figures 3.10 and 3.11 present the sample locations.

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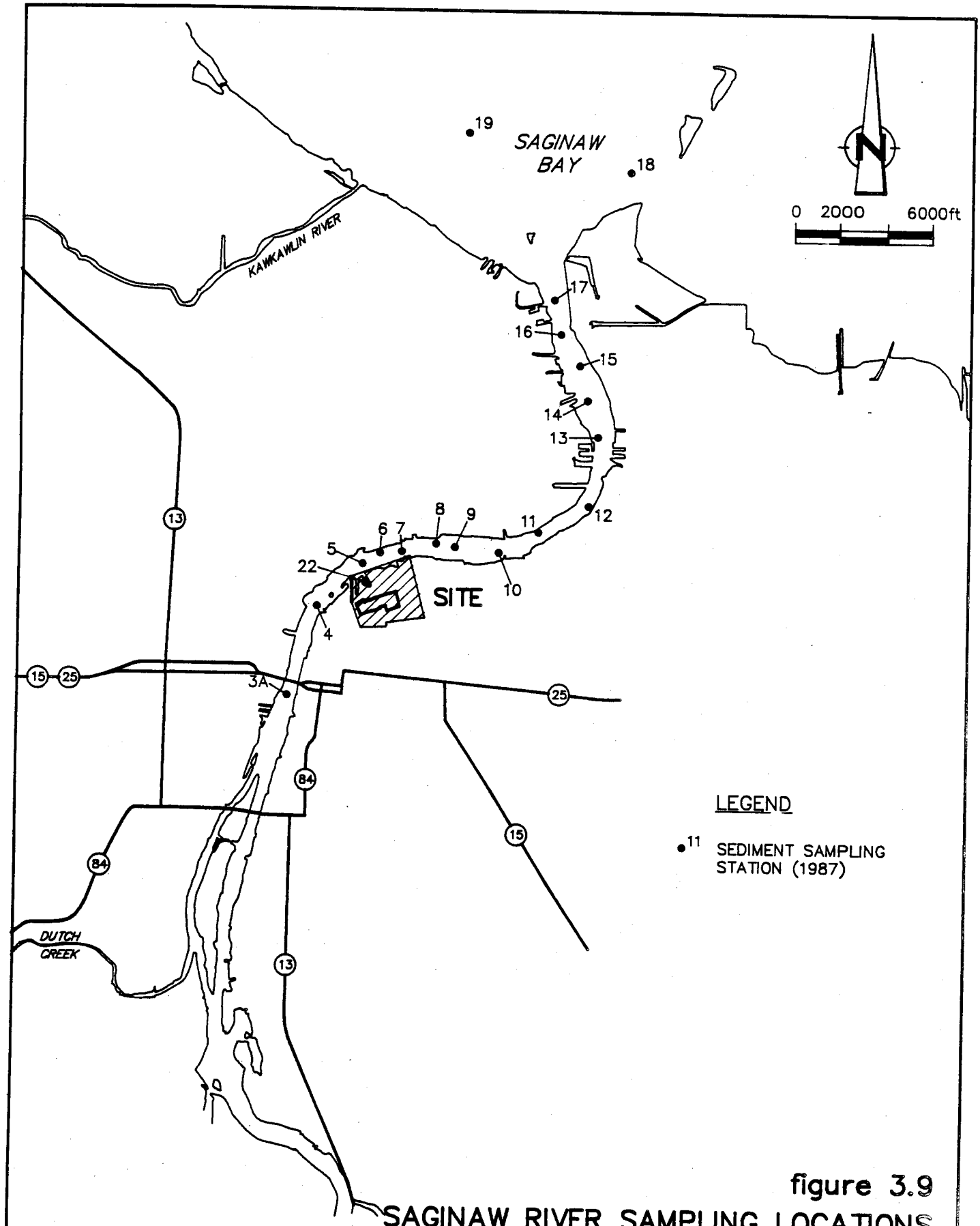


figure 3.9

SAGINAW RIVER SAMPLING LOCATIONS
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

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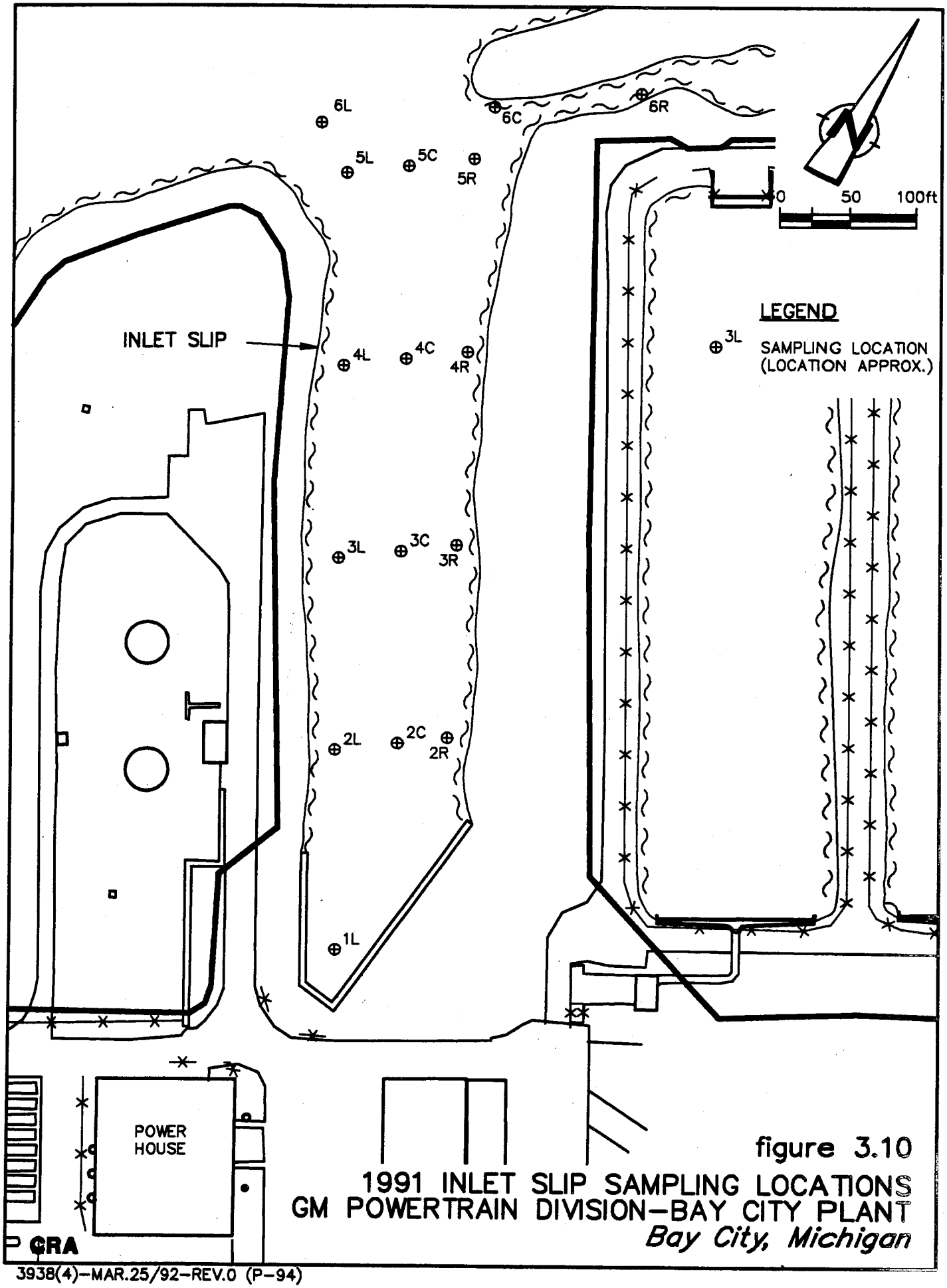


figure 3.10

1991 INLET SLIP SAMPLING LOCATIONS
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

GRA

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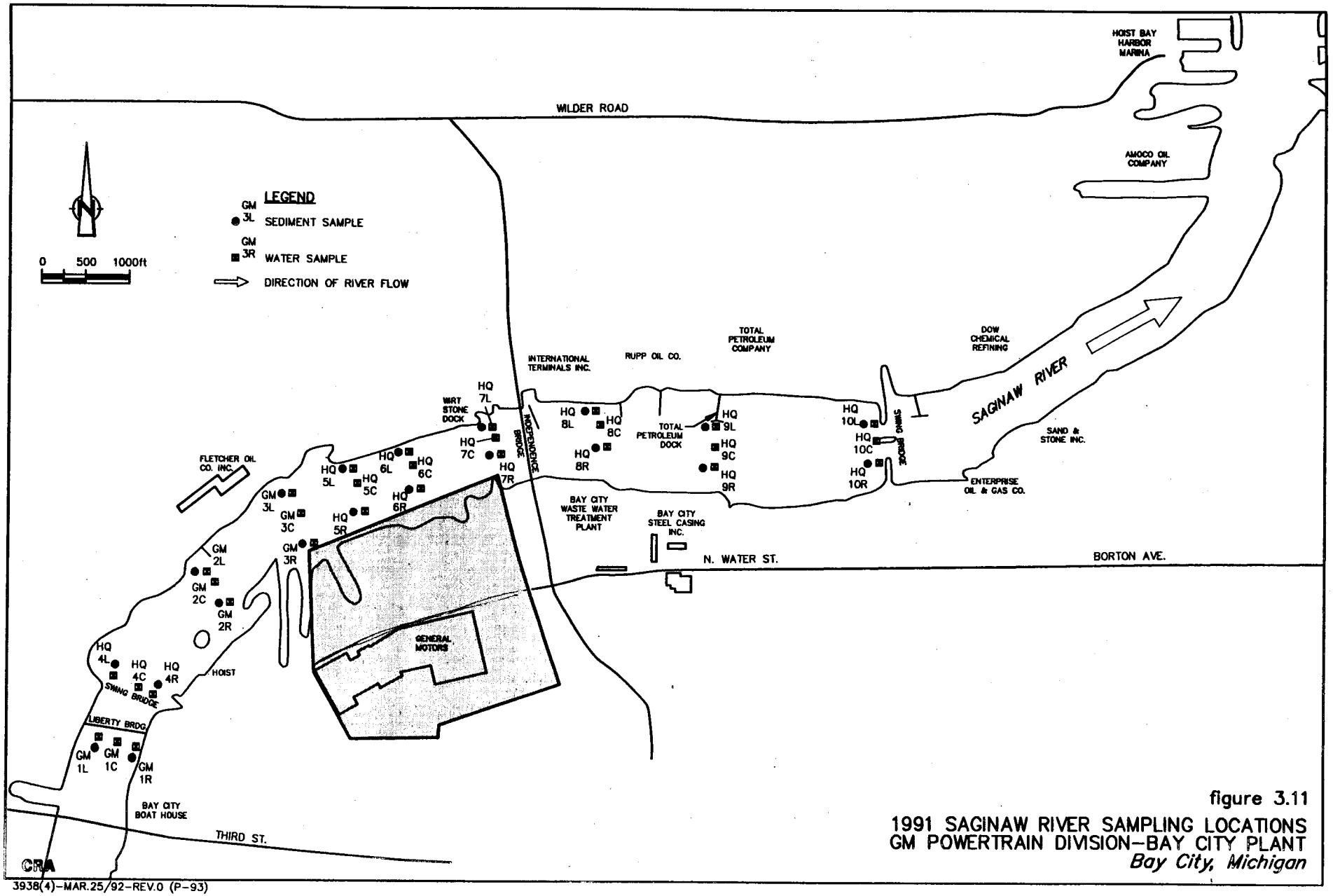


figure 3.11

1991 SAGINAW RIVER SAMPLING LOCATIONS
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

3938(4)–MAR.25/92–REV.0 (P–93)

Sediment samples from the Inlet Slip consisted of surface dredges, core samples from 0 to 10 cm and core samples from 10 to 30 cm. These samples were collected at a total of 16 sampling points for a total of 48 discrete sediment samples. Total PCB concentrations are summarized in Table 3.2.

Water quality samples also were collected at the sampling points identified on Figures 3.10 and 3.11. Total PCB concentrations for the Inlet Slip are summarized in Table 3.3. Water quality results for the Inlet Slip and the River are presented in Appendix D.

TABLE 3.2

SUMMARY OF INTAKE CHANNEL SEDIMENT DATA

	Total PCB Concentration (ppm)		
Sample Location	*Surface Dredges*	*Core 0 - 10 cm*	*Core 10 - 30 cm*
1L	2.3	3.2	<0.03
2L	1.6	13	270
2C	1.7	0.78	11
2R	2.09	2.8	12
3L	1.3	2.6	3.3
3C	2.1	0.53	0.53
3R	1.59	0.48	0.94
4L	4.1	0.92	1.28
4C	3.4	0.76	2
4R	0.21	<0.03	0.038
5L	7.2	4.5	5.9
5C	6.2	3.7	1.6
5R	6.1	7.4	6.9
6L	0.13	0.036	0.43
6C	0.1	0.34	0.65
6R	<0.03	0.076	0.12

Reference: Anatech Analytical Laboratories
1991 Saginaw River Study
Final Report
Submitted to MDNR on November 5, 1991

TABLE 3.3

SUMMARY OF INTAKE CHANNEL WATER QUALITY DATA

Sample Location	*Total PCB Concentration (µg/L)*
1L	0.39
2L	0.87
2C	0.37
2R	0.27
3L	0.31
3C	0.32
3R	0.24
4L	0.17
4C	0.21
4R	0.19
5L	0.2
5C	0.17
5R	0.14
6L	0.17
6C	0.12
6R	1.7

Reference: Anatech Analytical Laboratories
1991 Saginaw River Study
Final Report
Submitted to MDNR on November 5, 1991

HONEYWELL, JAMES & ASSOCIATES

4.0 PREVIOUS RESPONSE ACTIONS

This section describes the various response actions that have been undertaken at the Site. This section is organized by year.

Between 1972 and 1975, the plant performed two major flushes of the PCB containing hydraulic systems. In general, by 1979, PCB concentrations in such systems were below 50 ppm.

In 1979, the tanks from the plating tank farm were completely cleaned. In addition, the floor of the long term PCB storage area south of the oil reclaim building was cleaned and resealed.

Some wooden floor blocks were removed from the plant floors and stored in the southwest corner of the Machine Storage Area sometime prior to October 1983. The blocks subsequently were found to contain PCBs and were disposed of in a PCB-approved landfill. The soils below and adjacent to the former block pile were sampled and capped with a minimum of 6 inches of clay as part of a March 14, 1985 Consent Agreement with Region V USEPA. This area has been referred to as the "ski jump area".

Gonnettes of die cast pit cleanings were stored on a portion of the Machine Storage Area located west of the truck repair Building. Sampling in October 1983 and after showed PCB in the soil in this area. Contaminated soil was removed and disposed of in a PCB-approved landfill and the area was backfilled and capped with a minimum of 6 inches of clay as

part of the March 14, 1985 Consent Agreement with Region V USEPA. This area has been referred to as the "gonnette storage area".

In 1986, the oil reclaim plant had a spill of approximately 300 gallons. The oil was vacuumed, recovering 150 gallons. The remaining visible oil was shoveled up along with 2 inches of topsoil. PCBs were detected in the oil, ranging from 2 ppm to 4 ppm. The barrels were disposed of as a non-hazardous waste in 1987.

The west lagoon was remediated between 1986-1990. The contaminated sediment and soil was excavated and transferred to a PCB approved landfill. The bottom and sides of the lagoon were covered with a minimum of one foot of compacted clay and an 80-millimeter high density polyethylene (HDPE) plastic liner. During 1987, the piping and the underground tank, concrete foundation and columns, along with some soil associated with the west lagoon, were excavated and removed. The excavated area was backfilled.

In 1987 and 1988 , a Deep Soil Mixing (DSM) Cutoff wall was installed around the LA and the MSA. The DSM wall was constructed to an average depth of 50-60 feet. A pumping system was installed and operated to depress the water table. A surface water collection system and carbon water treatment system for the MSA was installed. The excavated soils generated from the construction of the DSM were handled in accordance with TSCA PCB requirements.

HONEYWELL-BOVIS & ASSOCIATES

In 1990, the wastewater treatment plant was cleaned. Included in this cleanup were all plant tanks, trenches, wet-well and piping. The process, storm and sanitary sewer systems were also cleaned and this work was completed in 1990. The sediments, solidification materials and debris were shipped to a PCB approved landfill or a PCB approved incinerator.

In 1992, the sanitary sewer between the process waste water treatment plant and the control manhole was lined with an "Insituform" liner. The manholes along this sewer line were also upgraded. Additional work has been completed to eliminate several sewer system interconnections.

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5.0 CURRENT OPERATIONS

The plant continues to produce automobile parts such as cast iron camshafts, steel camshafts, piston pins, oil pumps, aluminum bushings, channel plates, accumulators, case extensions and valves for automatic transmissions.

Wastewater generated in the plant is directed to the wastewater treatment plant prior to discharge to the sanitary sewer system. The west lagoon is currently used to contain storm water and non-contact cooling water.

Other liquid wastes, including some PCB containing wastes, are drummed at the point of generation. The wastes are then stored in a fenced, locked, paved storage area, prior to off-Site disposal at permitted RCRA or TSCA approved waste disposal facilities.

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6.0 SUMMARY

Previous data collection at the Site has focussed on the MSA, LA and undeveloped area. Previous investigations have also focussed on PCBs, with some VOC and metals data. This section identifies the data gaps that will need to be filled to complete the RI and this section also identifies study areas which will form the basis for the organization of the RI Work Plan.

6.1 STUDY AREAS

A study area approach will be used to conduct the RI/FS. The proposed study areas are presented on Plan E-1 of Appendix E. The study areas were developed by combining areas with similar historical development and/or hydrogeologic characteristics. Table 6.1 presents a description of the study areas.

6.2 DATA GAPS

Table 6.2 presents a summary of the identified data gaps at the Site. Previous data collection has focussed on PCBs and to a lesser degree on VOC and metals. No base-neutral acid (BNA) extractable analyses have been conducted for any media at the Site. It is apparent that even with the relatively large existing data base, significant additional data collection will be required during the RI/FS.

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TABLE 6.1

STUDY AREAS
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Study Area	*Description*
Machine Storage Area (MSA)	- Area contained within deep soil mixing wall - Hydrogeologic units consist of shallow sand/fill, intermediate confining unit, deep sand, clay till
Lagoon Area (LA)	- Area contained within deep soil mixing wall - Hydrogeologic units consist of shallow sand/fill, intermediate confining unit, deep sand, clay till
Perimeter Banks	- Area between deep soil mixing wall and Saginaw River adjacent to the MSA and LA - Hydrogeologic units consist of shallow sand/fill, intermediated confine unit, deep sand, clay till
Inlet Slip Area	- Surface water feature between MSA and LA
Support Facilities Area	- Hydrogeologic units consist of shallow sand/fill, intermediate confining unit, deep sand, clay till
Undeveloped Area	- Hydrogeologic units consist of shallow sand/fill, intermediate confining unit, deep sand, clay till

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TABLE 6.1

STUDY AREAS
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Study Area	*Description*
Parking and Former Residental Area	- Most of area not used for storage or plant operations
	- Small area east of plant building has been used for storage
	- Clay till at or near surface
Plant Area	- Area consists of plant and a narrow strip around the building
	- Clay till at or near surface

TABLE 6.2

SUMMARY OF IDENTIFIED DATA GAPS
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Data Component	*MSA*	*LA*	*Perimeter Banks*	*Inlet Slip*	*Support Facilities Area*	*Undeveloped Area*	*Parking and Former Residential Area*	*Plant Area*
Hydrogeologic Definition	confirmation of intermediate confining unit	confirmation of intermediate confining unit	confirmation of intermediate confining unit	no hydrogeologic definition	not well defined	extent of intermediate confining unit not defined deep sand not defined	not well defined	not defined
Shallow/sand fill groundwater flow	not well defined	not well defined	not well defined	not defined	not well defined	not well defined	not well defined	not defined
Deep sand groundwater flow	not well defined	not well defined	not well defined	not defined	not defined	not well defined	not defined	not defined
Soil/sediment chemistry	not well defined, except PCB	not well defined, except PCB	not well defined,	not well defined	not well defined	not well defined, except PCB	not defined	not defined
Groundwater quality shallow sand/fill	not well defined	not well defined	not well defined	not defined	not well defined	not well defined	not well defined	not defined
Groundwater quality deep sand	not well defined	not well defined	not well defined	not defined	not defined	not well defined	not defined	not defined
Surface water quality	–	–	–	not well defined	–	not well defined	–	–
Air	not defined	not defined	not defined	not defined	not defined	not defined	not defined	not defined

CONSULTANTS & ASSOCIATES

REFERENCES

Keck Consulting Services Incorporated.
Soil and Ground Water Quality Study, Chevrolet-Pontiac-Canada Group Bay City Plant,General Motors Corporation, Bay City, Michigan. January 30, 1986.

O.H. Materials Corporation.
Work Plan for the Phase II Sampling Investigation at the GM/CPC Bay City, Michigan Plant. September 23, 1986

O.H. Materials Corporation.
Draft Site Data Report for GM/CPC's Bay City Plant. February 9, 1987.

O.H. Materials Corporation.
Report of Dewatering Investigation at C-P-C's West Lagoon, Bay City, Michigan. April 14, 1987.

O.H. Materials Corporation.
Report of Phase II Sampling Investigation at C-P-C's Bay City, Michigan Facility. July 14, 1987.

Keck Consulting Services Incorporated.
Report of Design of Groundwater Level Control System, Chevrolet-Pontiac-Canada Group, Bay City Plant, Bay City Michigan. May 16, 1988.

General Motors C-P-C Bay City.
Proposed Settlement Agreement, Element II - Priority Ratings and Project Schedule (Proposed Consent Order). September 8, 1988.

General Motors C-P-C Group.
Proposed Element II PCB Cleanup Options Cost Summary, December 1988. February 9, 1989.

General Motors C-P-C Group.
PCB Remediation Technologies Feasibility and Cost Comparison Study, February 1989. March 28, 1989.

General Motors C-P-C Group.
Proposed Element II PCB Cleanup Program, February 1989. March 28, 1989.

Keck Consulting Services Incorporated.
Groundwater Level Control System Project Manual. April 6, 1989.

Hart Engineers/Midwest Incorporated.
Certification Report Deep Soil Mixing Cutoff Wall, General Motors Corporation, Bay City, Michigan. May 12, 1989.

Hart Engineers/Midwest Incorporated.
Addendum No. 1, Certification Report Deep Soil Mixing Cutoff Wall, General Motors Corporation, Bay City, Michigan. May 12, 1989.

Environmental Science & Engineering Incorporated.
Land Use History, General Motors/Chevrolet Division, Bay City, Michigan.
May 14, 1990.

Solid Waste Management Unit Information Request, General Motors Powertrain, Bay City Plant. May 8, 1991.

Department of Geology, Western Michigan University.
Hydrogeology Atlas of Michigan. 1981

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APPENDIX A

SITE DEVELOPMENT FIGURES

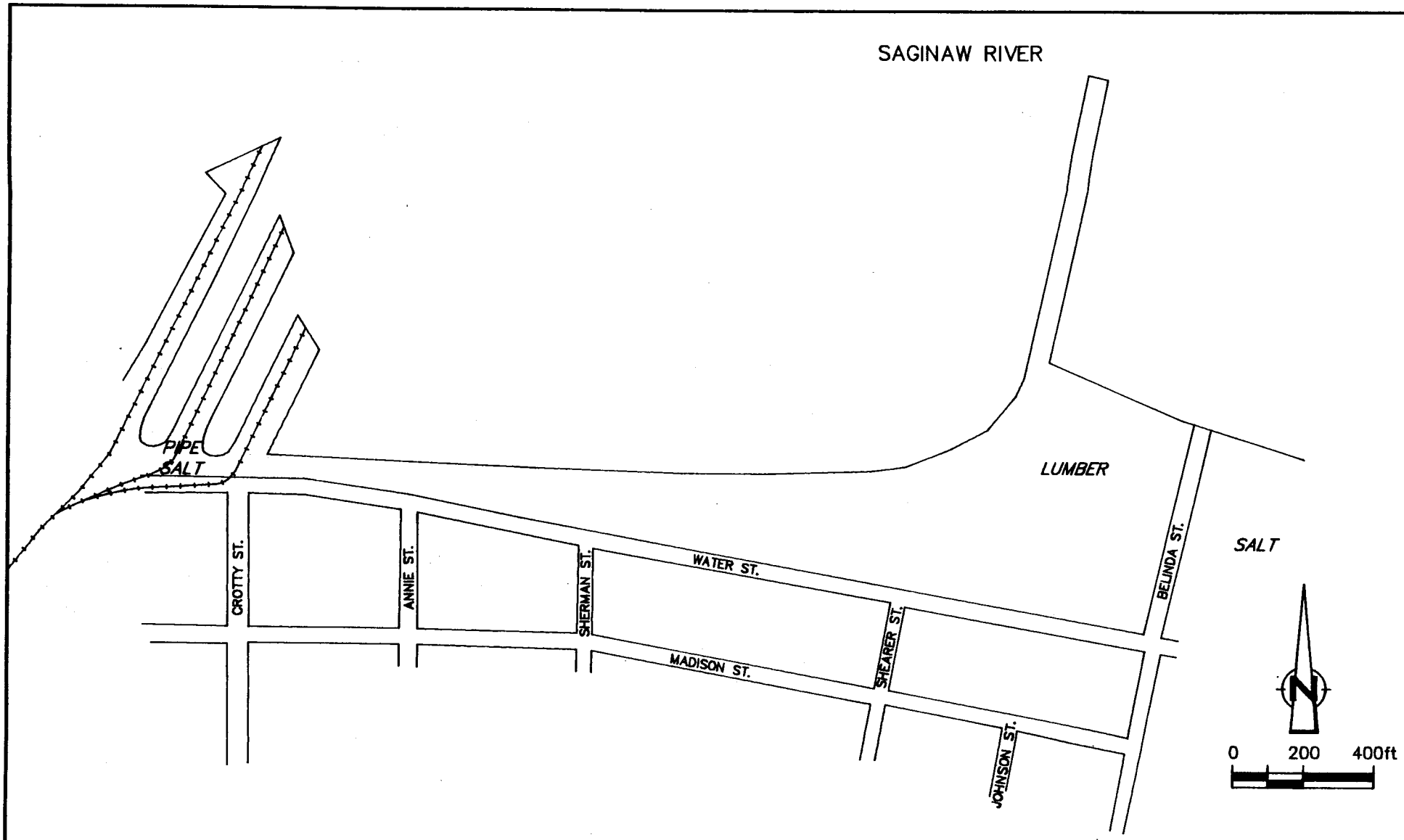


figure A.1

SITE PLAN 1874
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

SOURCE: MAP OF BAY CITY AND THE ADJOINING VILLAGES OF BANK, WENONA & SALSBURG THE CALVERT LITH. Co. DETROIT OF FILE BCHM

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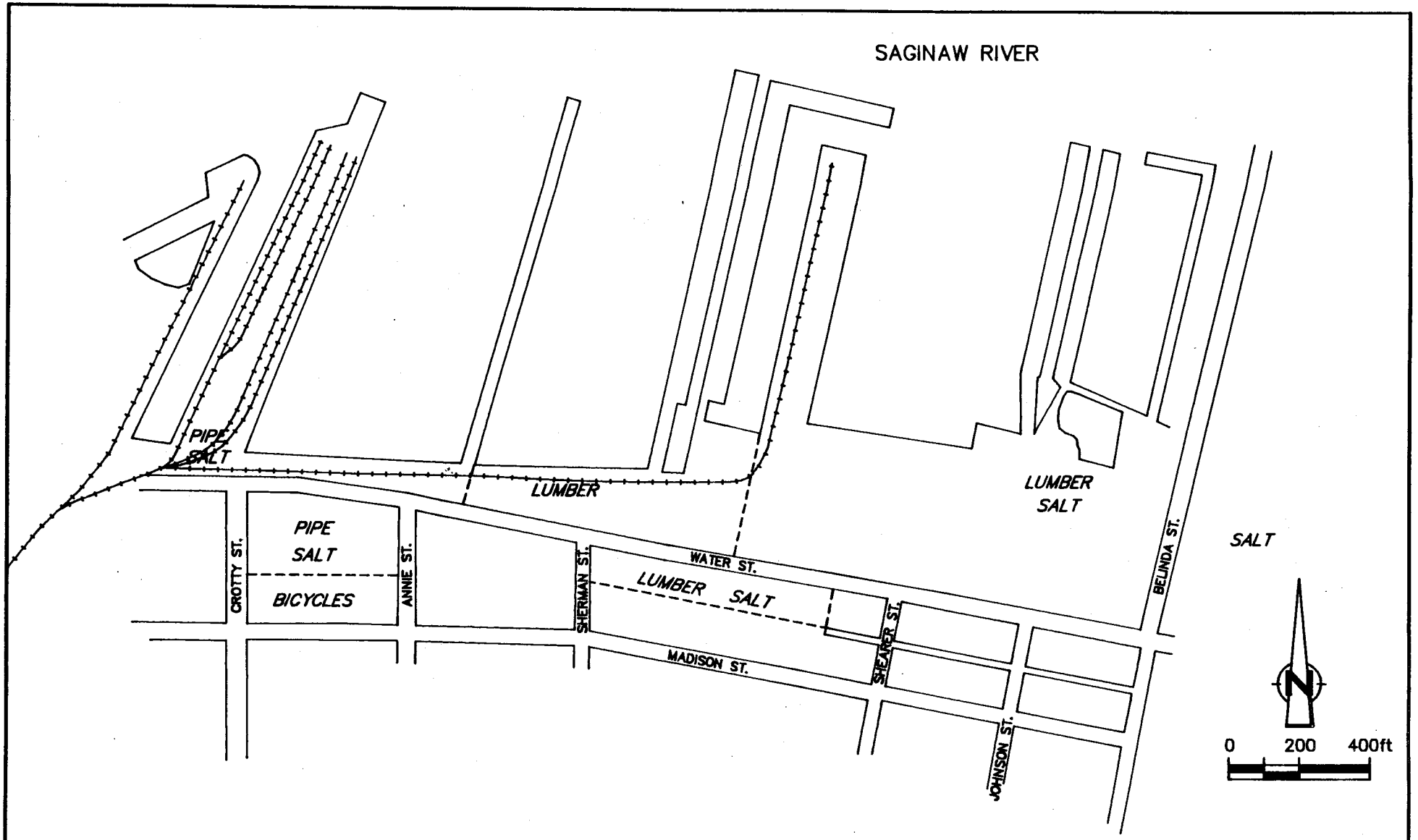


figure A.2

SITE PLAN 1896
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

SOURCE: COUNTY OF BAY, MICHIGAN
MAPS, HISTORY, ILLUSTRATIONS & STATISTICS
D.A. BULLOCK & Co., BAY CITY, MICHIGAN
ON MICROFILM BCPL

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3938–14/07/91–4–0 (P–08)

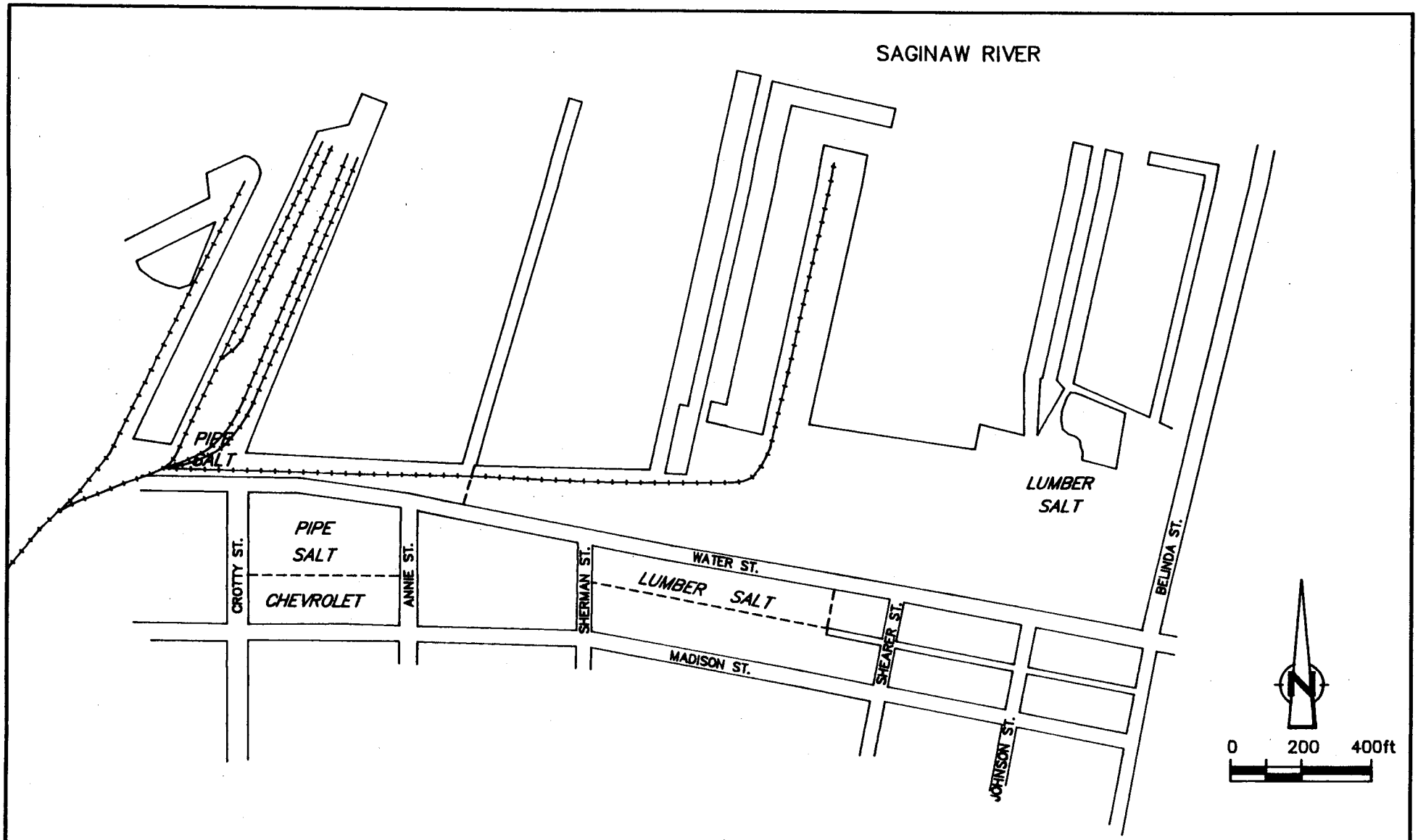


figure A.3

SOURCE: ATLAS OF BAY COUNTY

SITE PLAN 1917
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

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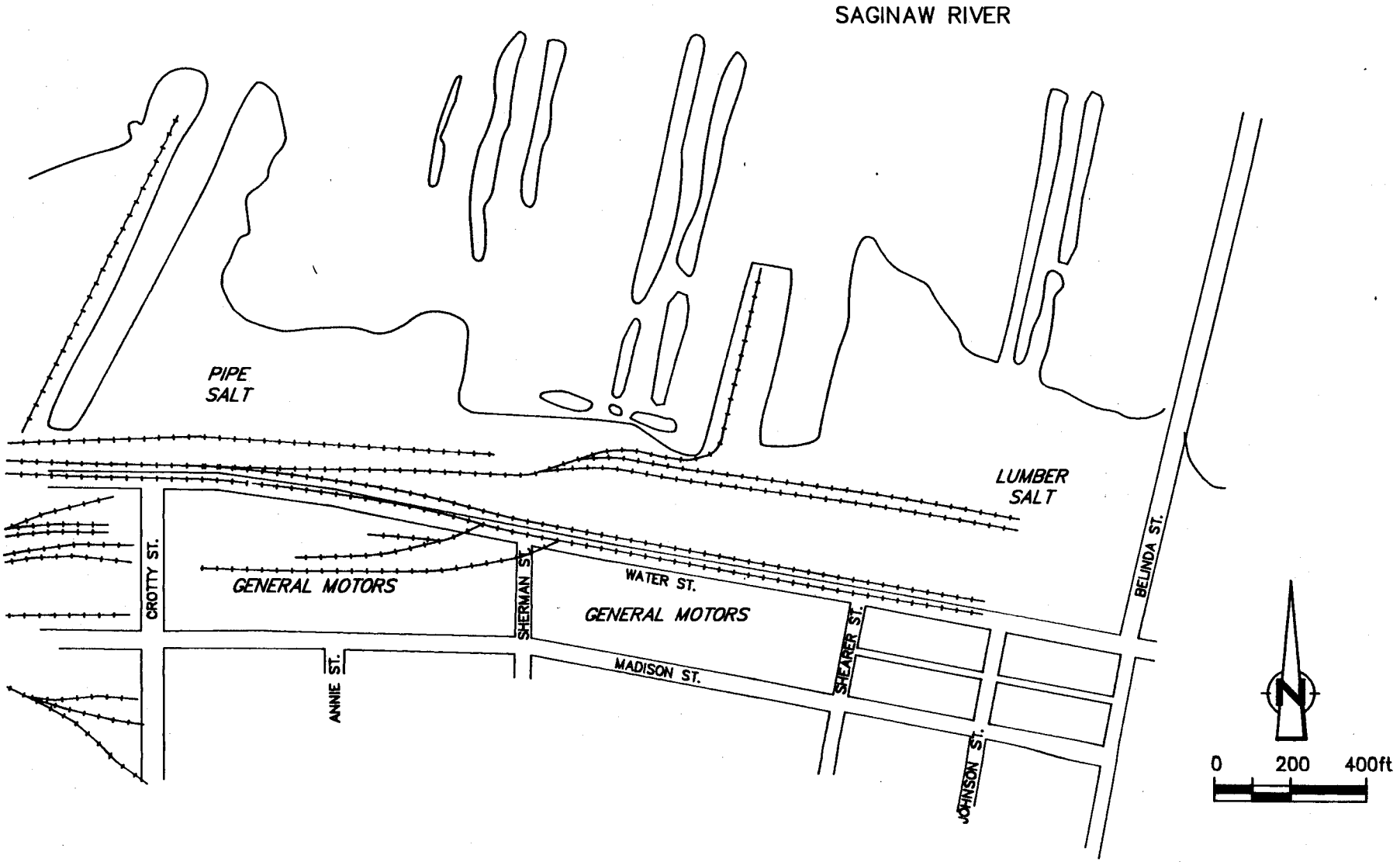


figure A.4

SITE PLAN 1929
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

SOURCE: POLK, R.L. (PUBLISHERS)
BAY CITY DIRECTORY

CRA

3938–14/07/91–4–0 (P–08)

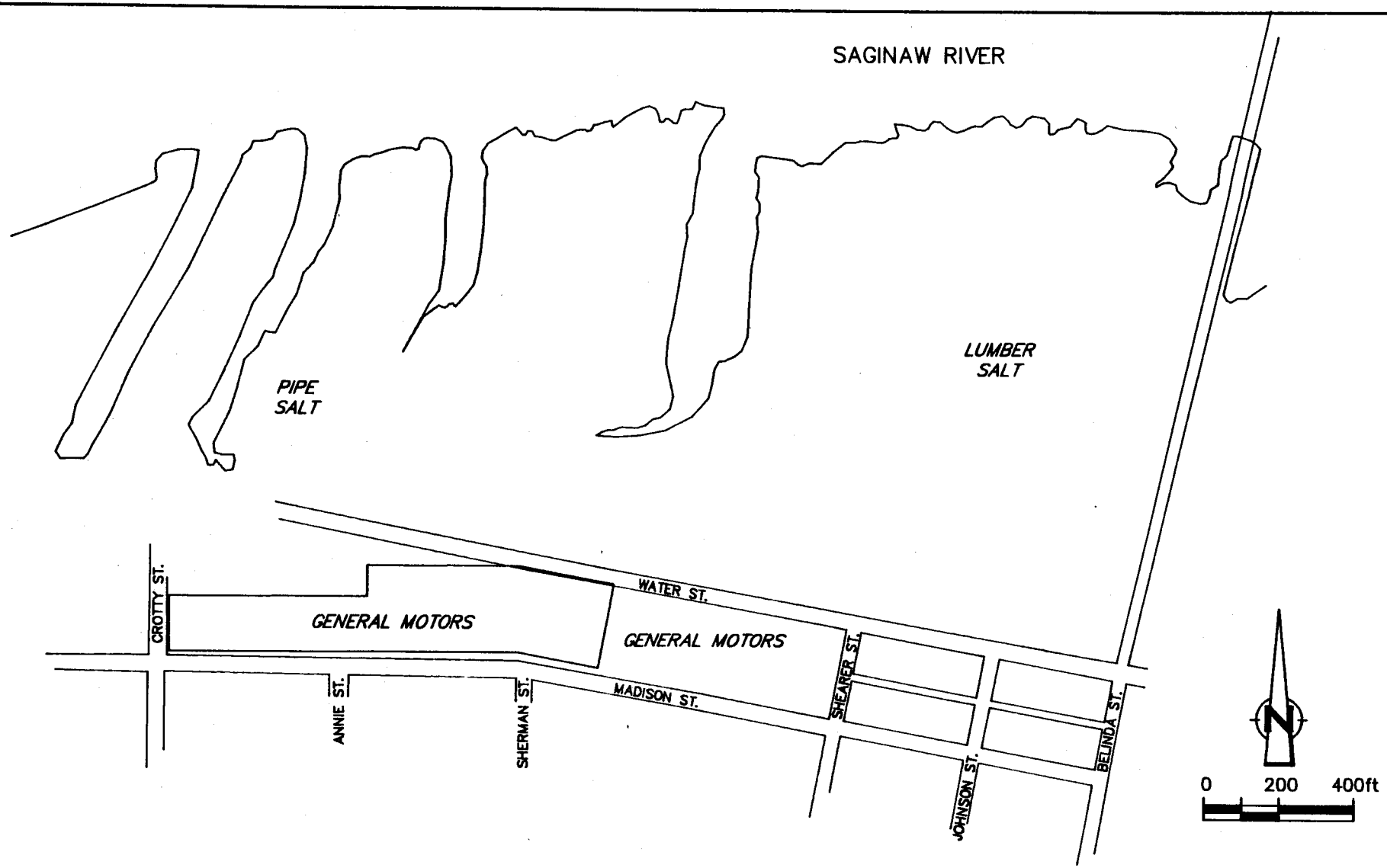


figure A.5

SOURCE: TROW AERIAL PHOTO 6-28-38
BDC-6-47

SITE PLAN 1938
GM POWERTRAIN DIVISION-BAY CITY PLANT
Bay City, Michigan

CRA

3938-14/07/91-4-0 (P-08)

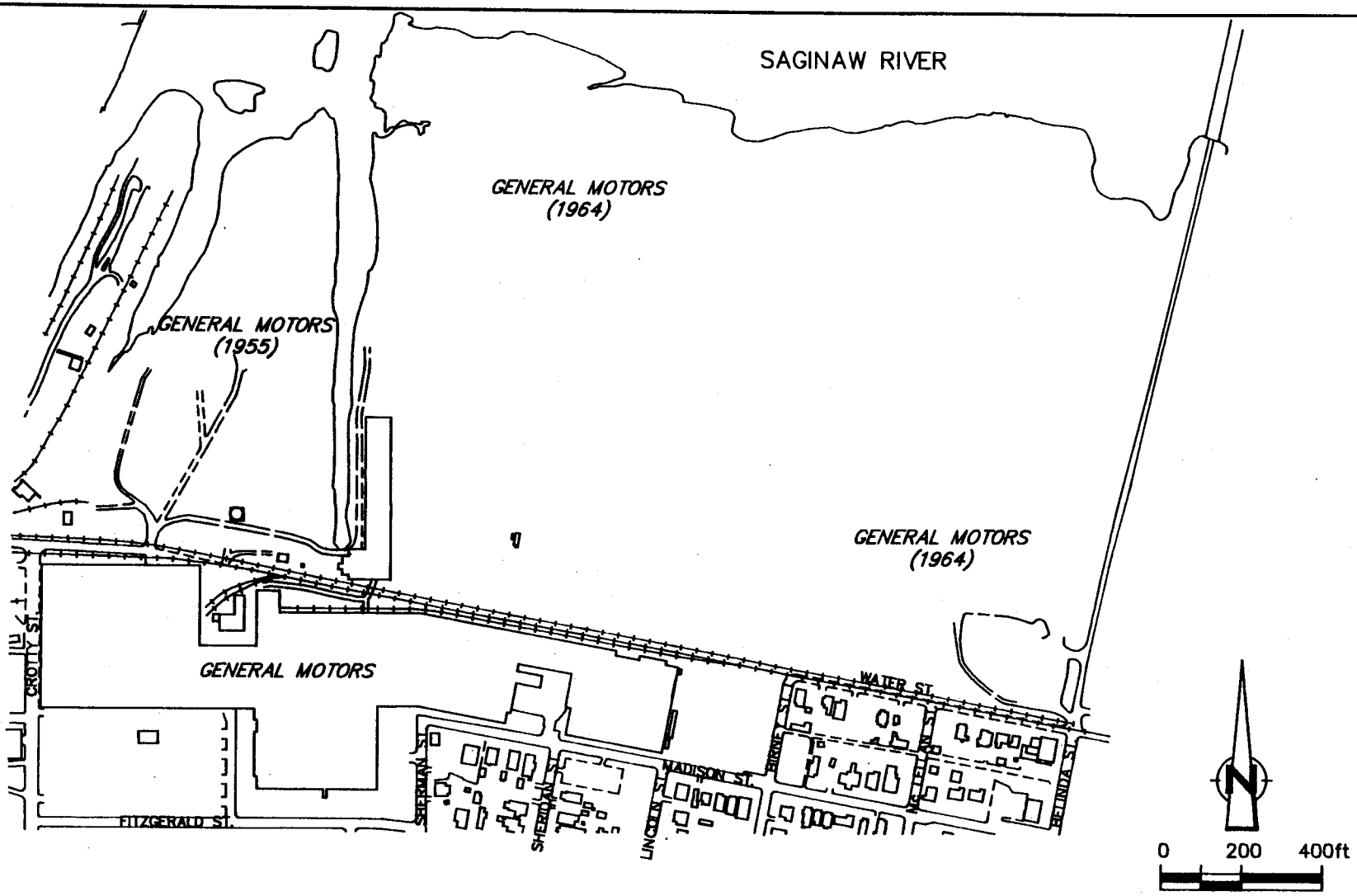


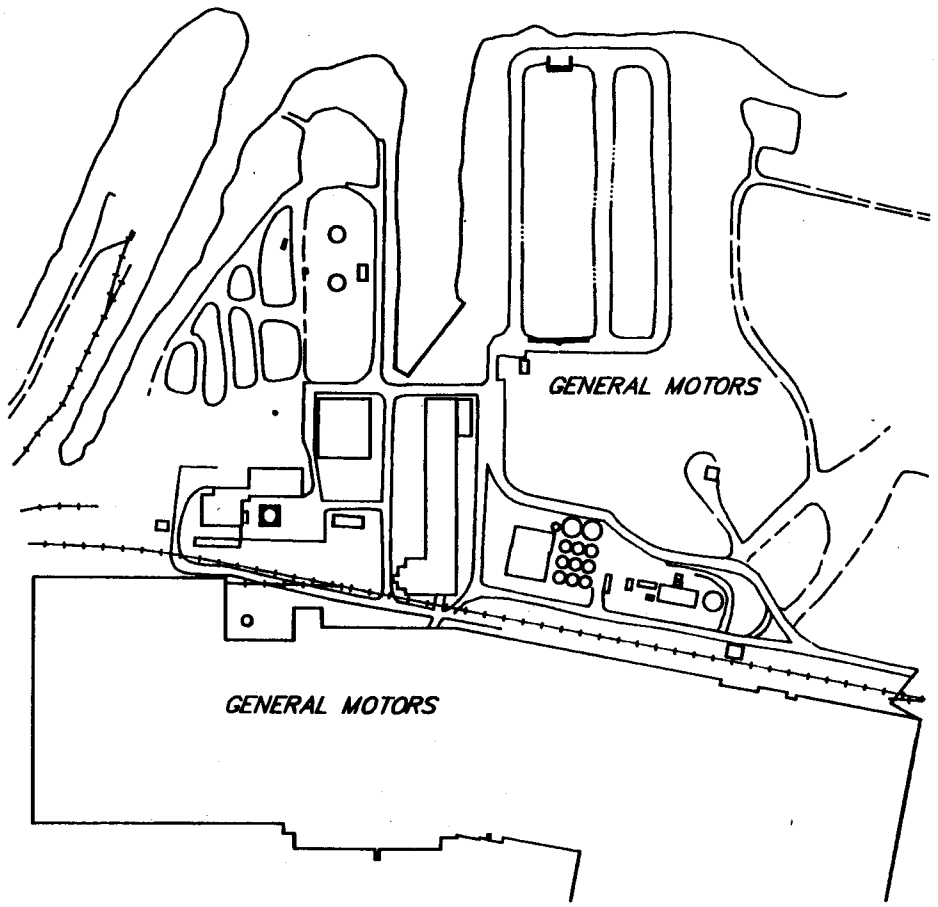
figure A.6

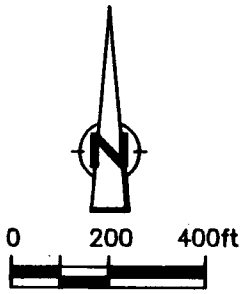
SITE PLAN 1964
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

SOURCE: ABRAMS AERIAL SURVEY CORP.
PHOTOGRAPHY APR. 1964
CHEVROLET, BAY CITY DWG. No. P.E.

CRA

3938–14/07/91–4–0 (P–08)





SOURCE: ABRAMS AERIAL SURVEY CORP.
PHOTOGRAPHY APR. 1978
TOPOGRAPHIC MAP

figure A.7

SITE PLAN 1978
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

CRA

3938–14/07/91–4–0 (P–08)

APPENDIX B

PLAN B-1 - BOREHOLE AND WELL LOCATIONS
BOREHOLE AND WELL LOG

BORE LOGS

MACHINE STORAGE AREA (MSA)

Machine Storage Area

Well No.	Boring No.	Date	Ground Surface Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Total Depth (feet BGL)	Elevation at Bottom of Screen (ft AMSL)	Screen Length (feet)	Diameter of Screen/Boring (inches)
	A	8/31/88	N/A	N/A	8	N/A	N/A	N/A
	B	8/31/88	N/A	N/A	8	N/A	N/A	N/A
	BC	8/31/88	N/A	N/A	4	N/A	N/A	N/A
	BD	8/31/88	N/A	N/A	4	N/A	N/A	N/A
	C	8/31/88	N/A	N/A	4	N/A	N/A	N/A
	D	8/31/88	N/A	N/A	8	N/A	N/A	N/A
	E	8/31/88	N/A	N/A	4	N/A	N/A	N/A
	F	8/31/88	N/A	N/A	4	N/A	N/A	N/A
	G	8/31/88	N/A	N/A	4	N/A	N/A	N/A
	H	8/31/88	N/A	N/A	4	N/A	N/A	N/A
	B11-KCS1	7/8/88	N/A	N/A	12	N/A	N/A	N/A
	B12-KCS1	7/14/88	N/A	N/A	12	N/A	N/A	N/A
	B13-KCS1	7/14/88	N/A	N/A	12	N/A	N/A	N/A
	B14-KCS1	7/14/88	N/A	N/A	12	N/A	N/A	N/A
	B15-KCS1	7/14/88	N/A	N/A	12	N/A	N/A	N/A
	B21-KCS2	7/8/88	N/A	N/A	12	N/A	N/A	N/A
	B22-KCS2	7/13/88	N/A	N/A	12	N/A	N/A	N/A
	B23-KCS2	7/13/88	N/A	N/A	12	N/A	N/A	N/A
	B24-KCS2	7/14/88	N/A	N/A	12	N/A	N/A	N/A
	B25-KCS2	7/14/88	N/A	N/A	12	N/A	N/A	N/A
	B31-KCS3	7/8/88	N/A	N/A	12	N/A	N/A	N/A
	B32-KCS3	7/13/88	N/A	N/A	12	N/A	N/A	N/A
	B33-KCS3	7/13/88	N/A	N/A	12	N/A	N/A	N/A
	B34-KCS3	7/13/88	N/A	N/A	12	N/A	N/A	N/A
	B35-KCS3	7/13/88	N/A	N/A	12	N/A	N/A	N/A
	B41-KCS4	7/8/88	N/A	N/A	12	N/A	N/A	N/A
	B42-KCS4	7/13/88	N/A	N/A	12	N/A	N/A	N/A
	B43-KCS4	7/12/88	N/A	N/A	12	N/A	N/A	N/A
	B44-KCS4	7/12/88	N/A	N/A	12	N/A	N/A	N/A
	B45-KCS4	7/12/88	N/A	N/A	12	N/A	N/A	N/A
	C11-KCS1	8/17/88	N/A	N/A	12	N/A	N/A	N/A
	C12-KCS1	8/24/88	N/A	N/A	12	N/A	N/A	N/A
	C13-KCS1	8/24/88	N/A	N/A	12	N/A	N/A	N/A
	C14-KCS1	8/25/88	N/A	N/A	12	N/A	N/A	N/A
	C15-KCS1	8/24/88	N/A	N/A	12	N/A	N/A	N/A
	C21-KCS2	8/17/88	N/A	N/A	12	N/A	N/A	N/A
	C23-KCS2	8/29/88	N/A	N/A	12	N/A	N/A	N/A
	C31-KCS3	8/17/88	N/A	N/A	12	N/A	N/A	N/A
	C32-KCS2	8/30/88	N/A	N/A	12	N/A	N/A	N/A
	C33-KCS2	8/30/88	N/A	N/A	12	N/A	N/A	N/A
	C34-KCS2	8/30/88	N/A	N/A	12	N/A	N/A	N/A
	C35-KCS2	8/30/88	N/A	N/A	12	N/A	N/A	N/A
	C41-KCS4	8/17/88	N/A	N/A	12	N/A	N/A	N/A
	C42-KCS4	8/30/88	N/A	N/A	12	N/A	N/A	N/A
	C43-KCS4	8/30/88	N/A	N/A	12	N/A	N/A	N/A
	C44-KCS4	8/30/88	N/A	N/A	12	N/A	N/A	N/A
	C45-KCS4	8/30/88	N/A	N/A	12	N/A	N/A	N/A

Machine Storage Area

Well No.	Boring No.	Date	Ground Surface Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Total Depth (feet BGL)	Elevation at Bottom of Screen (ft AMSL)	Screen Length (feet)	Diameter of Screen/Boring (inches)
	C51	9/1/88	N/A	N/A	12	N/A	N/A	N/A
	C52	9/1/88	N/A	N/A	12	N/A	N/A	N/A
	C53	9/1/88	N/A	N/A	6	N/A	N/A	N/A
	C54	9/1/88	N/A	N/A	8	N/A	N/A	N/A
	C55	9/1/88	N/A	N/A	6	N/A	N/A	N/A
	C56	9/1/88	N/A	N/A	6	N/A	N/A	N/A
CMW-2		10/27/88	587.90	N/A	35	552.90	5	2
DB-1		12/1/86	586.36	N/A	55	546.36	10	4
DB-2		12/2/86	586.55	N/A	58	546.55	10	4
EW-3		10/4/88	586.70	583.07	55	555.70	5	6
EW-3		10/4/88	586.70	583.07	55	540.70	5	6
EW-4		7/25/88	588.00	584.68	56	537.00	10	6
EW-5		9/20/88	589.50	584.02	76.5	539.50	10	6
	GEO-5	8/3/87	N/A	N/A	56	N/A	N/A	4
	GEO-6	8/3/87	N/A	N/A	46	N/A	N/A	4
	GEO-7	8/4/87	N/A	N/A	66	N/A	N/A	4
	GEO-8	8/4/87	N/A	N/A	61	N/A	N/A	4
	GEO-9	8/5/87	N/A	N/A	54	N/A	N/A	4
	GEO-19	8/11/87	N/A	N/A	53	N/A	N/A	3-1/4 ID
	GEO-20	8/11/87	N/A	N/A	61	N/A	N/A	3-1/4 ID
	GEO-21	8/12/87	N/A	N/A	54	N/A	N/A	3-1/4 ID
	GEO-22	8/12/87	N/A	N/A	56	N/A	N/A	3-1/4 ID
	GEO-23	8/13/87	N/A	N/A	54	N/A	N/A	3-1/4 ID
	GEO-24	8/13/87	N/A	N/A	58	N/A	N/A	3-1/4 ID
	GEO-25	8/14/87	N/A	N/A	59	N/A	N/A	3-1/4 ID
	GEO-26	8/14/87	N/A	N/A	54	N/A	N/A	3-1/4 ID
	GEO-27	8/17/87	N/A	N/A	28.5	N/A	N/A	3-1/4 ID
	GEO-28	8/17/87	N/A	N/A	54	N/A	N/A	3-1/4 ID
LMW-13S		12/13/88	586.70	589.35	15	571.70	10	2
LMW-14S		12/14/88	586.40	589.65	15	571.40	10	2
LMW-15D		12/13/88	586.20	588.77	30	556.20	5	2
LMW-16D	log to 15'	12/14/88	586.30	589.26	30	556.30	5	2
LMW-17S		12/15/88	586.40	589.76	15	571.40	10	2
LMW-18S		12/8/88	587.80	591.44	17	570.80	10	2
LMW-19S		12/12/88	586.60	589.19	15	571.60	10	2
LMW-20D		12/5/88	588.70	592.19	32	556.70	5	2
LMW-21D		12/7/88	587.70	591.39	31	556.70	5	2
LMW-22S		12/6/88	589.00	593.09	17	572.00	10	2
LMW-23S		12/7/88	587.60	591.31	15.5	572.10	10	2
LMW-24D		12/8/88	588.10	591.77	32	556.10	5	2
MSA-1		11/10/86	585.34	N/A	18	568.34	10	2
MSA-2		11/11/86	586.35	N/A	18	569.35	10	2
MSA-3		11/11/86	585.20	N/A	18	568.20	10	2
MSA-4		11/11/86	586.67	N/A	18	569.67	10	2
MSA-5		11/11/86	586.49	N/A	18	569.49	10	2
MW-1		9/25/85	586.40	587.65	11	575.90	2	N/A

Machine Storage Area

Well No.	Boring No.	Date	Ground Surface Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Total Depth (feet BGL)	Elevation at Bottom of Screen (ft AMSL)	Screen Length (feet)	Diameter of Screen/Boring (inches)
	RCP4	4/30/64	N/A	N/A	96	N/A	N/A	2
	SB10-69	2/00/69	N/A	N/A	20	N/A	N/A	N/A
	SB11-69	2/00/69	N/A	N/A	25	N/A	N/A	N/A
	SB12-69	2/00/69	N/A	N/A	35	N/A	N/A	N/A
	SB13-69	2/00/69	N/A	N/A	90	N/A	N/A	N/A
	SB-16	10/3/85	586.70	N/A	2	N/A	N/A	N/A
	SB-17	10/3/85	587.20	N/A	2	N/A	N/A	N/A
	SB-31	6/2/88	587.00	N/A	14	N/A	N/A	N/A
	SB-32	6/2/88	588.00	N/A	14	N/A	N/A	N/A
	SB-33	6/2/88	587.00	N/A	12	N/A	N/A	N/A
	SB-34	6/2/88	587.00	N/A	14	N/A	N/A	N/A
	SB-35	6/3/88	587.00	N/A	12	N/A	N/A	N/A
	SB-B-1	10/1/85	586.00	N/A	7	N/A	N/A	N/A
	SB-B-2	10/1/85	585.90	N/A	7	N/A	N/A	N/A
	SB-C-1	10/1/85	586.70	N/A	7	N/A	N/A	N/A
	SB-C-2	10/1/85	586.90	N/A	7	N/A	N/A	N/A
	SB-C-3	10/2/85	586.30	N/A	7	N/A	N/A	N/A
	SB-D-1	10/1/85	587.10	N/A	7	N/A	N/A	N/A
	SB-D-2	10/1/85	587.90	N/A	7	N/A	N/A	N/A
	SB-D-3	10/2/85	587.40	N/A	7	N/A	N/A	N/A
	SB-E-1	10/1/85	586.70	N/A	7	N/A	N/A	N/A
	SB-E-2	10/1/85	590.10	N/A	7	N/A	N/A	N/A
	SB-E-3	10/2/85	587.90	N/A	7	N/A	N/A	N/A
	SB-F-1	10/1/85	586.90	N/A	7	N/A	N/A	N/A
	SB-F-2	10/1/85	590.30	N/A	7	N/A	N/A	N/A
	SB-F-3	10/2/85	588.20	N/A	7	N/A	N/A	N/A
	SB-F-4	10/3/85	585.80	N/A	7	N/A	N/A	N/A
	SB-G-1	9/30/85	586.80	N/A	7	N/A	N/A	N/A
	SB-G-2	10/2/85	589.30	N/A	7	N/A	N/A	N/A
	SB-G-3	10/2/85	588.10	N/A	7	N/A	N/A	N/A
	SB-H-1	9/30/85	586.40	N/A	7	N/A	N/A	N/A
	SB-H-2	10/2/85	587.20	N/A	7	N/A	N/A	N/A
	SB-H-3	10/2/85	587.90	N/A	7	N/A	N/A	N/A
	SB-H-4	10/3/85	587.10	N/A	7	N/A	N/A	N/A
	SB-H-5	10/3/85	585.90	N/A	7	N/A	N/A	N/A
	SB-I-4	10/3/85	587.30	N/A	7	N/A	N/A	N/A
	SB-I-5	10/3/85	586.90	N/A	7	N/A	N/A	N/A
	SB-I-6	10/3/85	585.10	N/A	7	N/A	N/A	N/A
TMW-1		10/9/87	N/A	N/A	14	14 FT BGL	5	2
TMW-2		10/11/87	N/A	N/A	19	19 FT BGL	5	2
TMW-3		10/11/87	N/A	N/A	19	19 FT BGL	5	2
TMW-4d		10/11/87	N/A	N/A	8	8 FT BGL	5	2
TMW-4s		10/11/87	N/A	N/A	23	23 FT BGL	5	2
TMW-5		10/12/87	N/A	N/A	14	14 FT BGL	5	2
TMW-6		10/12/87	N/A	N/A	14	14 FT BGL	5	2

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: A
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Solid Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 8 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 7 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM research test

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		CLAY; dark brown, trace sand
1.0'-5.0'		CLAY; dark brown, strong oily odors, thin seam of yellow medium sand
5.0'-8.0'		CLAY; dark brown to black, strong oily odors

SAMPLE I.D./TYPE	SAMPLE DEPTH INTERVAL - FEET BGL
A1/GRAB	0-1
A2/SPLIT-SPOON	1-3
A3/SPLIT-SPOON	3-5
A4/SPLIT-SPOON	5-7
A5/SPLIT-SPOON	7-8

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: B
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Solid Stem Augers/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 8 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 7 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM research test

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		CLAY; dark brown, trace sand, slight oily odor
1.0'-2.0'		SANDY CLAY; dark brown, trace sand
2.0'-8.0'		CLAY; dark brown, trace sand, strong oily odors
		SAMPLE I.D./TYPE — SAMPLE DEPTH INTERVAL - FEET BGL
		B1/GRAB — 0-1
		B2U/SPLIT-SPOON — 1-2
		B2L/SPLIT-SPOON — 2-3
		B3U/SPLIT-SPOON — 3-4
		B3L/SPLIT-SPOON — 4-5
		B4U/SPLIT-SPOON — 5-6
		B4L/SPLIT-SPOON — 6-7
		B5/SPLIT-SPOON — 7-8

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: BC
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 4 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 7 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM Research test - using GMR sampling device

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark brown, oily odors
1.0'-4.0'		CLAY; dark brown, oily odors
		NO SAMPLES COLLECTED.

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: BD
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Hollow Stem Auger /D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 4 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 7 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM research test - using GMR sampling device

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark brown, oily odors
1.0'-4.0'		CLAY; dark brown, oily odors
		NO SAMPLES COLLECTED.

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Hollow Stem Augers / C-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 4 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 7 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM research test - using GMR sampling device

LOGGED BY: Hames Gell | SIGNATURE:

DEPTH	H20/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark brown, oily odors
1.0'-4.0'		CLAY; dark brown, oily odors
		SAMPLE I.D./TYPE — SAMPLE DEPTH INTERVAL - FEET BGL
		C-1/GRAB — 0-1
		C-2/GMR DEVICE — 1-4
		C-3/GMR DEVICE — 4-8

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: B
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Solid Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 8 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM research test

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark brown, oily odors
1/0'-8.0'		CLAY; dark brown, wood and metal fragments, strong oily odors

SAMPLE I.D./TYPE	SAMPLE DEPTH INTERVAL - FEET BGL
D-1/GRAB	0-1
D-2U/SPLIT-SPOON	1-2
D-2L/SPLIT-SPOON	2-3
D-3U/SPLIT-SPOON	3-4
D-3L/SPLIT-SPOON	4-5
D-4U/SPLIT-SPOON	5-6
D-4L/SPLIT-SPOON	6-7
D-5/SPLIT-SPOON	7-8

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: E
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Hollow Stem Auger /D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 4 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM Research test - using GMR sampling device

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark brown, oily odors
1.0'-4.0'		CLAY; dark brown, strong oily odors, wood fragments
		SAMPLE I.D./TYPE — SAMPLE DEPTH INTERVAL - FEET BGL
		E-1/GRAB — 0-1
		E-1/GMR SAMPLE — 1-7

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: F
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Hollow Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 4 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM Research test - using GMR sampling device

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark brown, oily odors
1.0'-4.0'		CLAY; dark brown, strong oily odors, wood fragments
		SAMPLE I.D./TYPE — SAMPLE DEPTH INTERVAL - FEET BGL
		F-1/GRAB — 0-1

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: G
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Hollow Stem Auger /D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 4 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM Research test - using GMR sampling device

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark brown, oily odors
1.0'-4.0'		CLAY; dark brown, strong oily odors, wood fragments.

SAMPLE I.D./TYPE	SAMPLE DEPTH INTERVAL - FEET BGL
G-1/GRAB	0-1
G-2/GMR SAMPLER	1-3.5
G-3/GMR SAMPLER	3.5-7

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: H
LOCATION: Bay City, Michigan	DATE DRILLED: 8/31/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 4 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted for GM Research test ~~e~~ using GMR sampling device

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark brown, oily odors
1.0'-4.0'		CLAY; dark brown, strong oily odors, wood fragments
		SAMPLE I.D./TYPE — SAMPLE DEPTH INTERVAL - FEET BGL
		H-1/GMR SAMPLER — 4-8

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B11
LOCATION: Bay City, Michigan	DATE DRILLED: July 8, 1988
DRILLING METHOD: Hollow-Stem Augers/D-25	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.73 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1Bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 4.5 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: - N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.5'		SANDY CLAY: brown, dry, trace gravel
0.5-4.5'		SANDY CLAY: dark gray to black, strong oily odor, wood debris,
		trace gravel
4.5-12'		SANDY CLAY: black, strong oily odors, wet, wood, metal, and fiberous
		debris, trace gravel
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B11-1 — 0-1.5'
		B11-2 — 1.5-3.0'
		B11-3 — 3-5'
		B11-4 — 5-6.5'
		B11-5 — 6.5-8.5'
		B11-6 — 8.5-10'
		B11-7 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC Bay City	WELL/BORING No.:	B12
LOCATION:	Bay City, Michigan	DATE DRILLED:	July 14, 1988
DRILLING METHOD:	Hollow-Stem Augers/CME-55	CASING TYPE/DIA.:	N/A
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	N/A
GROUND ELEVATION:	100.63 *	T.O.C. ELEVATION:	N/A
GROUT TYPE/QUANTITY:	Granular Bentonite/1 bag	SCREEN TYPE/LENGTH:	N/A
GROUT INTERVAL(S):	12 - 4 feet	SCREENED INTERVAL:	N/A
DEPTH TO WATER:	8 feet	GRAVEL PACK TYPE:	N/A
WATER LEVEL ELEVATION:	- N/A	GRAVEL PACK INTERVAL:	N/A
		STATIC WATER LEVEL:	N./A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		SANDY CLAY: brown, dry, trace gravel
1-2'		SANDY CLAY: dark gray, dry, trace gravel
2-6'		SANDY CLAY: black, oily odors, dry, fiberous debris, trace gravel
6-8'		WOOD AND METAL DEBRIS: black, strong oily odors, wet, interbedded
		with sandy clay, black, fiberous debris
8-12'		WOOD, METAL, AND FIBEROUS DEBRIS: black, strong oily odors, wet
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B12-1 — 0-2'
		B12-2 — 2-4'
		B12-3 — 4-6'
		B12-4 — 6-8'
		B12-5 — 8-10'
		B12-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B13
LOCATION: Bay City, Michigan	DATE DRILLED: July 14, 1988
DRILLING METHOD: Hollow Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.45 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 Bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 8 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: - N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		SANDY CLAY: brown, dry, trace gravel
1-2 '		SANDY CLAY: black, dry, trace gravel
2-6.5'		SANDY CLAY: black, oily odors, dry, fiberous debris, trace gravel
6.5-8'		SANDY CLAY: black, oily odors, moist, wood and fiberous debris,
		trace gravel
8-12'		WOOD AND METAL DEBRIS: black, oil, strong oily odors, wet,
		fiberous debris
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B13-1 — 0-2'
		B13-2 — 2-4'
		B13-3 — 4-6'
		B13-4 — 6-8'
		B13-5 — 8-10';
		B13-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC Bay City	WELL/BORING No.:	B14
LOCATION:	Bay City, Michigan	DATE DRILLED:	July 14, 1988
DRILLING METHOD:	Hollow-Stem Augers/CME-55	CASING TYPE/DIA.:	N/A
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	N/A
GROUND ELEVATION:	100.54 *	T.O.C. ELEVATION:	N/A
GROUT TYPE/QUANTITY:	Granular Bentonite/1 Bag	SCREEN TYPE/LENGTH:	N/A
GROUT INTERVAL(S):	12 - 4 feet	SCREENED INTERVAL:	N/A
DEPTH TO WATER:	7 feet	GRAVEL PACK TYPE:	N/A
WATER LEVEL ELEVATION:	- N/A	GRAVEL PACK INTERVAL:	N/A
		STATIC WATER LEVEL:	DATE:

REMARKS: Boring was continously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		SANDY CLAY: brown, dry, trace gravel
1-4'		SANDY CLAY: grayish balck, dry, trace gravel
4-7'		SANDY CLAY: black, oily odors, dry, interbedded wood an fiberous
		debris
7-12'		SILTY CLAY: black, strong oily odors, wet, interbedded wood debris
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B14-1 — 0-2'
		B14-2 — 2-4'
		B14-3 — 4-6'
		B14-4 — 6-8'
		B14-5 — 8-10'
		B14-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC Bay City	WELL/BORING No.:	B15
LOCATION:	Bay City, Michigan	DATE DRILLED:	July 14, 1988
DRILLING METHOD:	Hollow-Stem Augers/CME-55	CASING TYPE/DIA.:	N/A
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	N/A
GROUND ELEVATION:	100.39 *	T.O.C. ELEVATION:	N/A
GROUT TYPE/QUANTITY:	Granular Bentonite/1 bag	SCREEN TYPE/LENGTH:	N/A
GROUT INTERVAL(S):	12 - 4 feet	SCREENED INTERVAL:	N/A
DEPTH TO WATER:	8 feet	GRAVEL PACK TYPE:	N/A
WATER LEVEL ELEVATION:	- N/A	GRAVEL PACK INTERVAL:	N/A
		STATIC WATER LEVEL:	N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		SANDY CLAY: brown, dry, trace gravel
1-2'		SANDY CLAY: black, dry, trace gravel
2-4.2 '		SANDY CLAY: black, oily odors, dry, trace gravel
4.2-8'		SANDY CLAY: black, strong oily odors, moist, wood, metal, and fiberous debris
8-12'		WOOD AND METAL DEBRIS: black, strong oily odors, wet, fiberous debris
		Split Spoon Sample ID — Split Spoon Depth Interval-feet BGL
		B15-1 — 0-2.0'
		B15-2 — 2-4'
		B15-3 — 4-6'
		B15-4 — 6-8'
		B15-5 — 8-10'
		B15-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC Bay City	WELL/BORING No.:	B21
LOCATION:	Bay City, Michigan	DATE DRILLED:	July 8, 1988
DRILLING METHOD:	Hollow-Stem Augers/D25	CASING TYPE/DIA.:	N/A
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	N/A
GROUND ELEVATION:	100.17	T.O.C. ELEVATION:	N/A
GROUT TYPE/QUANTITY:	Granular Bentonite/1 bag	SCREEN TYPE/LENGTH:	N/A
GROUT INTERVAL(S):	12 - 4 feet	SCREENED INTERVAL:	N/A
DEPTH TO WATER:	5 feet	GRAVEL PACK TYPE:	N/A
WATER LEVEL ELEVATION:	- N/A	GRAVEL PACK INTERVAL:	N/A
		STATIC WATER LEVEL:	N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.5'		SANDY CLAY: brown, dry, trace gravel
0.5-2.5'		SANDY CLAY: dark gray to black, oily odors, damp, trace gravel
2.5-5'		SANDY CLAY: black, strong oily odors, trace gravel, wood and metal debris, damp, irregular lenses of silty clay about 0.2 feet thick.
5-12'		SANDY CLAY: black, strong oily odors, trace gravel, wood, metal, and fiberous debris, wet, irregular lenses of silty clay about 0.2 feet thick
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B21-1 — 0-2'
		B21-2 — 2-3.5'
		B21-3 — 3.5-5.5'
		B21-4 — 5.5-7'
		B21-5 — 7-9'
		B21-6 — 9-10.5'
		B21-7 — 10.5-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B22
LOCATION: Bay City, Michigan	DATE DRILLED: July 13, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.19 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 Bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 4 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: - N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		SANDY CLAY: brown, dry, trace gravel
1-2'		SANDY CLAY: grayish black, oily odors, dry, trace gravel
2-4'		SANDY CLAY: black, strong oily odors, trace gravel, wood and
		fiberous debris
4-9.5'		WOOD, METAL, AND FIBEROUS DEBRIS: black, strong oily odors,
		interbedded sandy clay, wet at 8 feet
9.5-12'		WOOD DEBRIS: black, strong oily odors, wet
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B22-1 — 0-2'
		B22-2 — 2-4'
		B22-3 — 4-6'
		B22-4 — 6-8'
		B22-5 — 8-10'
		B22-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B23
LOCATION: Bay City, Michigan	DATE DRILLED: July 13, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.15 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 4 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		SANDY CLAY: brown, dry, trace gravel
1-2'		SANDY CLAY: dark gray, oily odors, dry, trace gravel
2-4'		SANDY CLAY: black, strong oily odors, fiberous debris, broken glass, trace gravel
4-12'		WOOD AND METAL DEBRIS: black, strong oily odors, wet, interbedded sandy clay, fiberous debris
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B23-1 — 0-2'
		B23-2 — 2-4'
		B23-3 — 4-6'
		B23-4 — 6-8'
		B23-5 — 8-10'
		B23-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B24
LOCATION: Bay City, Michigan	DATE DRILLED: July 14, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.72	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 3.8 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		SANDY CLAY: brown, dry, trace gravel
1-3.8'		SANDY CLAY: black, strong oily odors , dry, fiberous debris,
		trace gravel
3.8-6'		SANDY CLAY: black, strong oily odors, wet, fiberous debris,
		trace gravel
6-12'		WOOD, METAL, AND FIBEROUS DEBRIS: black, strong oily odors,
		wet, interbedded sandy clay
		Split Spoon Sample Id — Split spoon Depth Interval-feet BGL
		B24-1 — 0-2'
		B24-2 — 2-4'
		B24-3 — 4-6'
		B24-4 — 6-8'
		B24-5 — 8-10'
		B24-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B25
LOCATION: Bay City, Michigan	DATE DRILLED: July 14, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.19 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12-4- feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 5 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY: brown, dry, trace gravel
1-2'		SANDY CLAY: black, dry, trace gravel
2-5'		SANDY CLAY: black, oily odors, dry, fiberous debris, trace gravel
5-8'		WOOD, METAL, AND FIBEROUS DEBRIS: black, strong oily odors, wet,
		interbedded sandy clay
8-12'		WOOD, METAL, AND FIBEROUS DEBRIS: black, strong oily odors, wet
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B25-1 — 0-2'
		B25-2 — 2-4'
		B25-3 — 4-6'
		B25-4 — 6-8'
		B25-5 — 8-10'
		B25-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B31
LOCATION: Bay City	DATE DRILLED: July 8, 1988
DRILLING METHOD: Hollow-Stem Augers	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.50 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 Bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 8 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.5'		SANDY CLAY: brown, dry, trace gravel
0.5-5'		SILTY CLAY: black, oily odors, moist, trace sand
5-12'		SAND: black, strong oily odors, wet below 8 feet, wood and metal debris
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B31-1 — 0-2'
		B31-2 — 2-3.5'
		B31-3 — 3.5-5.5'
		B31-4 — 5.5-7'
		B31-5 — 7-9'
		B31-6 — 9-10.5'
		B31-7 — 10.5-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B32
LOCATION: Bay City, Michigan	DATE DRILLED: July 13, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.47 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 8 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		SANDY CLAY: brown to orangish brown, dry, some silt, trace gravel
1-4'		SANDY CLAY: black, dry, wood debris
4-8'		SANDY CLAY: black, strong oily odors, moist, interbedded lenses of
		wood and metal debris less than 0.5 feet thick
8-10'		SANDY CLAY: black, strong oily odors, wet, interbedded lenses of
		wood and metal debris
10-12'		WOOD FRAGMENTS: black, strong oily odors, wet, thin clay seams
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B32-1 — 0-2'
		B32-2 — 2-4'
		B32-3 — 4-6'
		B32-4 — 6-8'
		B32-5 — 8-10'
		B32-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B33
LOCATION: Bay City, Michigan	DATE DRILLED: July 13, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.61 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 8 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAYEY SAND: brown, dry, glass, debris, trace gravel
1-2'		CLAYEY SAND: grayish black, dry, glass, trace gravel
2-4'		SANDY CLAY: black, oily odors, trace gravel
4-8'		SANDY CLAY: black, strong oily odors, trace gravel
8-12'		WOOD AND METAL DEBRIS: black, strong oily odors, wet
		Split Spoon Sample Id — Split Spoon Depth Interval-feet BGL
		B33-1 — 0-2'
		B33-2 — 2-4'
		B33-3 — 4-6'
		B33-4 — 6-8'
		B33-5 — 8-10'
		B33-6 — 10-12'

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B34
LOCATION: Bay City, Michigan	DATE DRILLED: July 13, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.48 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 8 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: - N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		CLAYEY SAND: brown, dry, trace gravel
1.0-2.0'		CLAYEY SAND: grayish black, dry, trace gravel
2.0-5.5'		SANDY CLAY: grayish black, dry, trace gravel
5.5-8.0'		WOOD DEBRIS: black, strong oily odor, wet, metal debris below 6
		feet, some sandy clay seams
8.0-12.0'		WOOD AND METAL DEBRIS: black, strong oily odor, wet, interbedded
		lenses of clay
		Split-Spoon Sample Id Split-Spoon Depth Interval-feet BGL
		B34-1 0.0-2.0
		B34-2 2.0-4.0
		B34-3 4.0-6.0
		B34-4 6.0-8.0
		B34-5 8.0-10.0
		B34-6 10.0-12.0

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B35
LOCATION: Bay City, Michigan	DATE DRILLED: July 13, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.58 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 8 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: - N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SAND: fine to coarse, brown, dry, trace gravel, trace clay
1.0-2.0'		SAND: fine to coarse, grayish black, dry, trace gravel, trace clay
2.0-4.0'		SAND: fine to coarse, dark gray, dry, little clay
4.0-8.0'		SANDY CLAY: black, strong oily odors, interbedded wood and metal debris
8.0-10.0'		SANDY CLAY: black, strong oily odors, wet, interbedded wood and metal debris
10.0-12.0'		WOOD AND METAL DEBRIS: black, strong oily odors, wet
		Split-Spoon Sample Id — Split-Spoon Depth Interval-feet BGL
		B35-1 — 0-2.0
		B35-2 — 2.0-4.0
		B35-3 — 4.0-6.0
		B35-4 — 6.0-8.0
		B35-5 — 8.0-10.0
		B35-6 — 10.0-12.0

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B41
LOCATION: Bay City, Michigan	DATE DRILLED: July 8, 1988
DRILLING METHOD: Hollow-Stem Augers/D-25	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.23 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12 - 4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 8 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: - N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: J. Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.5'		SANDY CLAY: brown, dry, trace gravel
0.5-5.0'		SILTY CLAY: black, oily odors, damp, wood and metal debris
5.0-8.0'		CLAYEY SAND: black, strong oily odors, damp, wood and metal debris
8.0-12.0'		SILTY CLAY: black, strong oily odors, wet, wood and metal debris
		Split-Spoon Sample Id — Split-Spoon Depth Interval-feet BGL
		B41-1 — 0.0-2.0
		B41-2 — 2.0-3.5
		B41-3 — 3.5-5.5
		B41-4 — 5.5-7.0
		B41-5 — 7.0-9.0
		B41-6 — 9.0-10.5
		B41-7 — 10.5-12.0

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

ROJECT: CPC Bay City	WELL/BORING No.: B42
LOCATION: Bay City, Michigan	DATE DRILLED: July 13, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.15 *	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12-4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 7 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: - N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative Elevation

LOGGED BY: J. Gell SIGNATURE:

~EPTH	H20/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY: brown, dry, trace gravel
1.0-2.0		SANDY CLAY: gray, dry, trace gravel
2.0-5.5'		SANDY CLAY: dark gray, strong oily odor, trace gravel, wood debris
5.5-12'		SANDY CLAY: black, strong oily odor, wet below 7 feet, interbedded wood and metal debris
		Split-Spoon Sample Id — Split-Spoon Depth Interval-feet BGL
		B42-1 — 0.0-2.0
		B42-2 — 2.0-4.0
		B42-3 — 4.0-6.0
		B42-4 — 6.0-8.0
		B42-5 — 8.0-10.0
		B42-6 — 10.0-12.0

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B43
LOCATION: Bay City, Michigan	DATE DRILLED: July 12, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A.
GROUND ELEVATION: 100.39	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12-4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 4 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: - N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATEN/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet *Relative elevation

LOGGED BY: Terrance M. Farrell SIGNATURE:

DEPTH	H20/SOIL SAMPLE	FORMATION DESCRIPTION
0-2.0'		CLAY: sandy, black
2.0-4.0'		SAND: dark gray, saturated at 4 feet below ground level
4.0-5.0'		CLAY: grayish brown
5.0-6.0'		WOOD FRAGMENTS: black
6.0-10.0		CLAY AND GRAVEL: wood and rubber fragments, black
10.0-12.0'		CLAY: some gravel
		Split-Spoon Sample Id — Split-Spoon Depth Interval-feet BGL
		B43-1 — 0.0-2.0
		B43-2 — 2.0-4.0
		B43-3 — 4.0-6.0
		B43-4 — 6.0-8.0
		B43-5 — 8.0-10.0
		B43-6 — 10:0-12.0

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

ROJECT: CPC Bay City	WELL/BORING No.: B44
LOCATION: Bay City, Michigan	DATE DRILLED: July 12, 1988
DRILLING METHOD: Hollow Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.22	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/a
GROUT INTERVAL(S): 12-4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 4 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet * Relative elevation

LOGGED BY: Terrance M. Farrell SIGNATURE:

EPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2.7'		SAND: gravel and clay, some wood fragments
2.7-3.3'		SAND: brown
3.3-4.0'		CLAY: sandy, brown, saturation at 4 feet below ground level
4.0-6.0'		SAND: gravel with some wood, black
6.0-8.0'		SANDY CLAYEY STYRAFOAM-LIKE MATERIAL
8.0-8.7'		WOOD FRAGMENTS: black
8.7-9.3'		CLAY: tan-gray
9.3-9.8'		SAND: tan
9.8-10'		GRAVEL
10-10.7'		WOOD FRAGMENTS: black
10.7-11.4'		CONCRETE FRAGMENTS
11.4-12'		CLAY: greenish brown with fine gravel
		Split Spoon Sample Id — Split-Spoon Depth Interval-feet BGL
		B44-1 — 0.0-2.0
		B44-2 — 2.0-4.0
		B44-3 — 4.0-6.0
		B44-4 — 6.0-8.0
		B44-5 — 8.0-10.0
		B44-6 — 10.0-12.0

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC Bay City	WELL/BORING No.: B45
LOCATION: Bay City, Michigan	DATE DRILLED: July 12, 1988
DRILLING METHOD: Hollow-Stem Augers/CME-55	CASING TYPE/DIA.: N/A
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: N/A
GROUND ELEVATION: 100.36	T.O.C. ELEVATION: N/A
GROUT TYPE/QUANTITY: Granular Bentonite/1 bag	SCREEN TYPE/LENGTH: N/A
GROUT INTERVAL(S): 12-4 feet	SCREENED INTERVAL: N/A
DEPTH TO WATER: 4 feet	GRAVEL PACK TYPE: N/A
WATER LEVEL ELEVATION: N/A	GRAVEL PACK INTERVAL: N/A
	STATIC WATER LEVEL: N/A DATE: N/A

REMARKS: Boring was continuously split-spoon sampled from the ground surface to a depth of 12 feet. * Relative elevation

LOGGED BY: Terrance M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2.5'		CLAY: sand, black
2.5-3.5'		SAND: light gray
3.5-5'		CLAY: sandy, black, saturated at 4 feet below ground level
5-8'		WOOD FRAGMENTS: black
8-8.5'		CLAY: gray
8.5-9'		SAND: gray
9-10'		WOOD FRAGMENTS: black
10-12'		CLAY: gray with some black wood fragments
		Split-Spoon Sample Id — Split-Spoon Depth Interval-feet BGL
		B45-1 — 0-2.0
		B45-2 — 2.0-4.0
		B45-3 — 4.0-6.0
		B45-4 — 6.0-8.0
		B45-5 — 8.0-10.0
		B45-6 — 10.0-12.0

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	C11
LOCATION:	Bay City, Michigan	DATE DRILLED:	8/17/88
DRILLING METHOD:	Hollow Stem Auger/D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	100.82 ft. relative elevation	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 4 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	4 to 12 feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	8 feet BGL	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0 - 8.0'		CLAY; dark grey, little sand, wood and metal fragments, slight oily odor
8.0'-8.5'		CLAYEY SAND; black, wet, strong oily odor
8.5'-12.0'		CLAY; dark grey, little sand, wood and metal fragments, strong oily odor

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C11-1	0-2
C11-2	2-4
C11-3	4-6
C11-4	6-8
C11-5	8-10
C11-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C12
LOCATION: Bay City, Michigan	DATE DRILLED: 8/24/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.82 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-12.0'		CLAY; dark brown, strong oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C12-1	0-2
C12-2	2-4
C12-3	4-6
C12-4	6-8
C12-5	8-10
C12-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C13
LOCATION: Bay City, Michigan	DATE DRILLED: 8/24/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.78 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-12.0'		CLAY; dark brown, strong oily odor, wood fragments

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C13-1	0-2
C13-2	2-4
C13-3	4-6
C13-4	6-8
C13-5	8-10
C13-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C14
LOCATION: Bay City, Michigan	DATE DRILLED: 8/25/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.62 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-12.0'		CLAY; dark brown, strong oily odor

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C14-1	0-2
C14-2	2-4
C14-3	4-6
C14-4	6-8
C14-5	8-10
C14-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C15
LOCATION: Bay City, Michigan	DATE DRILLED: 8/24/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.63 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION	
0-12.0'		CLAY; dark brown, oily odor, wood fragments	
		SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
		C15-1	0-2
		C15-2	2-4
		C15-3	4-6
		C15-4	6-8
		C15-5	8-10
		C15-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	C21
LOCATION:	Bay City, Michigan	DATE DRILLED:	8/17/88
DRILLING METHOD:	Hollow Stem Auger/D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	100.07 ft. relative elevation	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 3 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	4 to 12 feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	5.8 feet BGL	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.4'		SAND; brown, dry
0.4'-4.0'		CLAY; black, metal fragments, little sand, oily odors
4.0'-5.8'		CLAYEY SAND; dark grey, moist
5.8'-12'		CLAY; black, wood metal and fibrous debris, strong oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C21-1	0-2
C21-2	2-4
C21-3	4-6
C21-4	6-8
C21-5	8-10
C21-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C23
LOCATION: Bay City, Michigan	DATE DRILLED: 8/29/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 fet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.11 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug/ 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell	SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		SANDY CLAY; dark frown, strong oily odors
1.0'-2.0'		CLAY; dark brown, strong oily odors
2.0'-4.0'		CLAY; black, strong odors
4.0'-12.0'		SILTY CLAY; greyish brown to black, wood fragments, oily sheen, strong oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C23-1	0-2
C23-2	2-4
C23-3	4-6
C23-4	6-8
C23-5	8-10
C23-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	C31
LOCATION:	Bay City, Michigan	DATE DRILLED:	8/17/88
DRILLING METHOD:	Hollow Stem Auger /D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	100.68 ft. Relative Elevation	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 3 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	4 to 12 feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	not encountered	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring was continuously split-spoon smapled from the ground surface to the depth of the previous boring at this location

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.6'		SAND; brown, clay, dry
0.6'-2.0'		CLAY; dark greenish grey, wood fragments, little sand
2.0'-12.0'		CLAY; black, wood fragments, oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C31-1	0-2
C31-2	2-4
C31-3	4-6
C31-4	6-8
C31-5	8-10
C31-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C32
LOCATION: Bay City, Michigan	DATE DRILLED: 8/30/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.58 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the dpeht of the previous boring at this location.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H20/SOIL SAMPLE	FORMATION DESCRIPTION
0-4.0'		CLAY; brown, wood debris, strong oily odors
4.0'-6.0'		CLAY; dark brown, thin lenses of medium sand, wood and metal debris, strong oily odors
6.0'-12.0'		CLAY; dark brown, wood and metal debris, strong oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C32-1	0-2
C32-2	2-4
C32-3	4-6
C32-4	6-8
C32-5	8-10
C32-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	C33
LOCATION:	Bay City, Michigan	DATE DRILLED:	8/30/88
DRILLING METHOD:	Hollow Stem Auger/D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	100.59 ft.relative elevation	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 5 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	4 to 12 feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	not encountered	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-12.0'		CLAY; dark brown, wood and metal fragments, strong oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C33-1	0-2
C33-2	2-4
C33-3	4-6
C33-4	6-8
C33-5	8-10
C33-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C34
LOCATION: Bay City, Michigan	DATE DRILLED: 8/30/88
DRILLING METHOD: Hollow Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.61 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface

depth of the previous boring at this location.

LOGGED BY: James Gell	SIGNATURE:

DEPTH	H20/SOIL SAMPLE	FORMATION DESCRIPTION
0-12.0'		CLAY; dark brown, wood and metal fragments, some fiberous debris, strong oily odors
		SPLIT SPOON SAMPLE ID / SPLIT SPOON DEPTH INTERVAL - FEET BGL
		C34-1 0-2
		C34-2 2-4
		C34-3 4-6
		C34-4 6-8
		C34-5 8-10
		C34-6 10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C35
LOCATION: Bay City, Michigan	DATE DRILLED: 8/30/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.61 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell	SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-12.0'		CLAY; dark brown, wood and metal fragments, strong oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C35-1	0-2
C35-2	2-4
C35-3	4-6
C35-4	6-8
C35-5	8-10
C35-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	C41
LOCATION:	Bay City, Michigan	DATE DRILLED:	8/17/88
DRILLING METHOD:	Hollow Stem Auger /D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	100.52 ft. relative elevation	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 3 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	4 to 12 feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	not encountered	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-6.0'		SILTY CLAY; light grey, some sand, dry, slight oily odor
6.0'-12.0'		SILTY CLAY; light grey, some sand, moist, slight oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C41-1	0-2
C41-2	2-4
C41-3	4-6
C41-4	6-8
C41-5	8-10
C41-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	C42
LOCATION:	Bay City, Michigan	DATE DRILLED:	8/30/88
DRILLING METHOD:	Hollow Stem Auger/ D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	99.83 ft. relative elevation	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 5 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	4 to 12 feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	not encountered	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-4.0'		CLAY; brownish grey
4.0'-6.0'		CLAY; greyish brown
6.0'-12.0'		CLAY; grey
		SPLIT SPOON SAMPLE ID — SPLIT SPOON DEPTH INTERVAL - FEET BGL
		C42-1 — 0-2
		C42-2 — 2-4
		C42-3 — 4-6
		C42-4 — 6-8
		C42-5 — 8-10
		C42-6 — 10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C43
LOCATION: Bay City, Michigan	DATE DRILLED: 8/30/88
DRILLING METHOD: Hollow Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 99.99 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.0'		CLAY; grey
1.0'-2.0'		CLAY; black, strong oily odors
2.0'-3.5'		CLAY; grey to dark grey, strong oily odors
3.5'-3.6'		SAND; yellow, moist, strong oily odors
3.6'-6.0'		CLAY; grey to dark grey, strong oily odors
6.0'-12.0'		CLAY; grey
		SPLIT SPOON SAMPLE ID / SPLIT SPOON DEPTH INTERVAL - FEET BGL
		C43-1 0-2
		C43-2 2-4
		C43-3 4-6
		C43-4 6-8
		C43-5 8-10
		C43-6 10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC- Bay City	WELL/BORING No.: C44
LOCATION: Bay City, Michigan	DATE DRILLED: 8/30/88
DRILLING METHOD: Hollow Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 99.97 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-3.0'		CLAY; brownish grey
3.0'-12.0		CLAY; light grey

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C44-1	0-2
C44-2	2-4
C44-3	4-6
C44-4	6-8
C44-5	8-10
C44-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C45
LOCATION: Bay City, Michigan	DATE DRILLED: 8/30/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 100.14 ft. relative elevation	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: not encountered	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the previous boring at this location.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H20/SOIL SAMPLE	FORMATION DESCRIPTION
0-2.0'		CLAY; greyish brown
2.0'-4.0'		CLAY; grey
4.0'-6.0'		CLAY; grey, lenses of oily wood fragments, strong oily odors
6.0'-12.0'		CLAY; grey

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C45-1	0-2
C45-2	2-4
C45-3	4-6
C45-4	6-8
C45-5	8-10
C45-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	C51
LOCATION:	Bay City, Michigan	DATE DRILLED:	9/1/88
DRILLING METHOD:	Hollow Stem Auger/D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	n/a	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 5 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	1 to 12 feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	6 feet BGL	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring conducted to locate soil fixation area KCS #2.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.6'		GRAVEL; grey, some sand, concrete fragments, dry
0.6'-1.2'		SAND; brown, dry
1.2'-2.0'		CLAY; dark grey, oily odors
2.0'-12.0'		CLAY, dark grey to dark brown, trace sand, wood and metal fragments, strong oily odors
		SPLIT SPOON SAMPLE ID / SPLIT SPOON DEPTH INTERVAL - FEET BGL
		C51-1 0-2
		C51-2 2-4
		C51-3 4-6
		C51-4 6-8
		C51-5 8-10
		C51-6 10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	C52
LOCATION:	Bay City, Michigan	DATE DRILLED:	9/1/88
DRILLING METHOD:	Hollow Stem Auger / D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	n/a	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 5 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	1 to 12 feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	6 feet BGL	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring conducted to locate soil fixation area KCS #2.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.5'		GRAVEL; grey, concrete fragments, dry
0.5'-1.2'		SAND; brown, dry
1.2'-2.0'		CLAY; black, wood fragments, strong oily odor
2.0'-12.0'		CLAY; dark brown, oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C52-1	0-2
C52-2	2-4
C52-3	4-6
C52-4	6-8
C52-5	8-10
C52-6	10-12

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C53
LOCATION: Bay City, Michigan	DATE DRILLED: 9/1/88
DRILLING METHOD: Hollow Stem Auger/D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 6 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 3 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 6 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted to locate soil fixation area KCS #2.

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.5'		GRAVEL; grey, trace sand, concrete fragments, dry.
0.5'-1.2'		SAND; brown, dry
1.2'-6.0'		CLAY; black, wood fragments, strong oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C53-1	0-2
C53-2	2-4
C53-3	4-6

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C54
LOCATION: Bay City, Michigan	DATE DRILLED: 9/1/88
DRILLING METHOD: Hollow Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 8 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 4 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 8 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted to locate soil fixation area #2.

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.6'		GRAVEL; grey, trace sand, dry
0.6'-1.2'		SAND; brown, dry
1.2'-2.0'		CLAY; black, strong oily odors
2.0'-5.0'		CLAY; dark brown, wood fragments, strong oily odors
5.0'-8.0'		CLAY; dark grey to grey, trace sand, oily odors

SPLIT SPOON SAMPLE ID	SPLIT SPOON DEPTH INTERVAL - FEET BGL
C54-1	0-2
C54-2	2-4
C54-3	4-6
C54-4	6-8

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C55
LOCATION: Bay City, Michigan	DATE DRILLED: 9/1/88
DRILLING METHOD: Solid Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 6 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 6 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted to locate soil fixation area KCS #2. No Soil samples collected.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.6'		GRAVEL; grey, trace sand, concrete fragments, dry
0.6'-1.2'		SAND; brown,dry
1.2'-6.0'		CLAY; dark brown, oily odors

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: C56
LOCATION: Bay City	DATE DRILLED: 9/1/88
DRILLING METHOD: Solid Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 6 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: n/a	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 2 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 1 to 6 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring conducted to locate soil fixation area KCS #2. No soil samples collected.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.6'		GRAVEL; grey, trace sand, concrete fragments, dry
0.6'-1.2'		SAND; brown, dry
1.2'-6.0'		CLAY; dark brown, oily odors

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: CMW-2
LOCATION: Bay City, MI/ Machine Storage Area	DATE DRILLED: 10-20-88 through 10-27-88
DRILLING METHOD: Cable Tool 22-W	CASING TYPE/DIA.: 6" Black Steel-Surface 2" Stainless Steel-Well Pipe
TOTAL DEPTH DRILLED: 35 Feet BGL	TOTAL CASING: 30 Feet
GROUND ELEVATION: 587.90 Feet	T.O.C. ELEVATION:
GROUT TYPE/QUANTITY: Benseal/1 Bag (50#)	SCREEN TYPE/LENGTH: Stainless Steel/ 2" x 5' Slot: .010
GROUT INTERVAL(S): Surface Plug Around 6-Inches	SCREENED INTERVAL: 30-35 Feet BGL
DEPTH TO WATER: 6.57 Feet From Top of 2-Inch Casing	GRAVEL PACK TYPE: #50 Washed Silica Sand
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: 35 Feet to Surface
	STATIC WATER LEVEL: DATE:

REMARKS: Drilled by Chuck Vermillion and Lester Johnson.

LOGGED BY: Chuck Vermillion SIGNATURE: Charles M Vermillion

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-10		FILL: brownish-black, fine-medium, sand (glass, wood and metal
		fragments) saturation at approximately 6 feet.
10-21		CLAY: gray, with fine-medium sand, fine-medium gravel, very moist.
21-35		SAND: light gray, very fine-fine, some fine gravel, saturated.
35		Total depth drilled.

PART 1

OHM

JOB NO. 4294

BORE HOLE NO. DB - 1

PROJECT: GM/CPC Phase II	LOCATION: Bay City, MI
DRILLING CONTRACTOR: CTI	DRILLING EQUIPMENT: CME - 75
HYDROGEOLOGIST: R. Brown	DRILLER: R. Near
DATE START/TIME: 11/24/86 1250	DATE FINISH/TIME: 12/1/86 1415
SURFACE ELEVATION: 586.36	TOTAL DEPTH: 55'
WELL CASING: 4" Steel	SCREEN TYPE: 4" Stainless
LENGTH: 30'	SLOT: 10'

GROUND WATER

DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE			S.S.	
DIAMETER			2"	
HAMMER WEIGHT			140 lb	
FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0						
1	1	7 5 6	12"	Sand, med., light brown (SM)	Dry, fill 0-3"	
2	2	10 7 7	18"	Sand, med, with pebbles, some fine sand, some silt, wood fragments (SM)	Dry, slight odor	
3						
4	3	1 2 2	18"	Sand, med., black, some fine sand, silt, wood fragments (SM)	Moist	
5						
6						
7	4	1 3 5	18"	Sand, med., gray, some shell fragments, wood fragments @ 7.0' (SM)	Wet	
8						
10	5	2 4 7	18"	Sand, med., gray, some shell and wood fragments (SM)		

PART 2

OHM

PAGE 2 OF 5

JOB NO 4294

BORE HOLE NO. DB - 1

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
11						
12	6	2 0 2	18"	Sand, med.-fine, gray, some silt, roots throughout (SM)		
13						
14				Clay, silty, gray, some fine sand, shell and wood fragments (ML)	14.0-15.0'	
15	7	1 2 4	18"	Sand, med.-fine, gray, some shell fragments (SM)	15.0-15.5'	
16				Clay, silty, gray, with shell and wood fragments, some fine sand (ML)		
17	8	1 0 1	18"			
18						
19	9			Shelby Tube Sand, med.-coarse, @ bottom (SM)	DB1 - 9 18.0-20.0'	
20				Shelby Tube Sand, med.-coarse (SM)	DB1-10 20.0-21.5' No sample recovered	
21						
22						
23						
24				Sand, med.-coarse, gray (SM)	24.0-24.5'	
25	10	2 4 6	18"	Clay, silty, gray, shell fragments abundant (CL)	24.0-25.0'	
				Sand, med.-coarse, gray, some shell fragments (SM)	25.0-25.5'	
26						

PART 2

OHM

JOB NO 4294

BORE HOLE NO. DB - 1

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
26						
27						
28						
29	11	6 6 8	6"	Sand, med.-coarse, gray, few shell fragments, rounded gravel (SM)		
30						
31						
32						
33						
34	12	9 13 8	15"	Clay, silty, gray, with fine sand, some rounded pebbles (CL)	33.5-34.0'	
				Sand, med., gray, with fine sand, occasional shell fragments (SM)	34.0-35.0'	
35						
36				Clay, silty, gray (CL)		
37						
38						
39	13	12 15 15	18"	Sand, med.-coarse, gray, with gravel (SM)		
				Gravel, rounded (GM)	39.0-39.5'	
				Sand, med.-coarse, gray (SM)		
41						

PART 2

OHM

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JOB NO 4294

BORE HOLE NO. DB - 1

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
41						
42						
43						
44	14	5 16 18	18"	Sand, med.-coarse, gray Sand, coarse, small pebbles (less than ¼") (SM)	43.5-44.0'	
45						
46						
47						
48						
49	15	18 26 25	12"	Sand, med.-coarse, gray, with fine sand (SM)	Caved gravel top 6"	
50						
51						
52						
53						
54					No sample	
55						
56						

PART 2

OHM

JOB NO 4294

BORE HOLE NO. DB - 1

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV - ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
56						
57						
58					Hole caving 3-4'	
59	16	9 15 14			Caved gravel	
60						
61						
62						
63				EOB		
64						
65						

PART 1

OHM

JOB NO. 4294

BORE HOLE NO. DB-2

PROJECT: GM/CPC Phase II	LOCATION: Bay City, MI
DRILLING CONTRACTOR: CTI	DRILLING EQUIPMENT: CME-75
HYDROGEOLOGIST: R. Brown	DRILLER: R. Near
DATE START/TIME: 12-1-86 1445 / DATE FINISH/TIME: 12-2-86 1600	SURFACE ELEVATION: 586.55 / TOTAL DEPTH: 58' BLS
WELL CASING: 4" Steel / SCREEN TYPE: 4" Stainless	LENGTH: 30' / SLOT: 10

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE			S.S.	
				DIAMETER			2"	
				HAMMER WEIGHT			140 lb	
				FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0						
1	1	7 6 9	18"	Clay - Gray, red & black mottled, silty, sandy w/pebbles (CL)	dry	
2	2	3 2 3	15"	Clay - gray, red & black mottled silty, sandy w/pebbles and wood fragments (CL)	dry	
3						
4						
5	3	2 1 2	12"	Clay - sandy w/pebbles, top 3" brown moist, bottom 12" black wood fragments (ML)	moist petroleum like odor	
6						
7	4		15"	Sand - fine-med, black moist w/some silty clay, wood fragments, glass fragments, pebbles present (SM)	moist	
8						
10	5	3 3 5	4"	Sand - silty, black, wood fragments (SM)	wet, odor	

PART 2

OHM

PAGE 2 OF 5

JOB NO 4294

BORE HOLE NO. DB-2

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
11						
12	6	2 2 1	8"	Clay - silty, dark gray w/wood fragments (CL)		
13						
14						
15	7	1 1 1		Clay - silty, sandy, dark gray, shell fragments, some wood fragments (CL)		
16	8			Shelby Tube	DB2-8 15.5-17.5'	
17						
18	9			Shelby Tube	DB2-9 17.5-19.5'	
19						
20	10			Shelby Tube	DB2-10 19.5-21.5' Sand @ bottom of tube	
21						
22						
23						
24						
26						

PART 2

OHM

JOB NO 4294

BORE HOLE NO. DB-2

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
26						
27						
28						
		4				
29	11	6	18"	Sand - med-coarse, gray, some fine sand w/some rounded pebbles (SM)		
		10				
30						
31						
32						
33						
		9				
34	12	10	15"	Sand - med-coarse,gray, some fine sand	33.0-34.0'	
		11		Sand - fine-med, gray, some silty clay (SM)	34.0-34.5'	
35						
36						
37						
38						
		2		Clay - silty, gray (CL)	38.0-38.5'	
39	13	2			2" layer gray @ 38.5'	
		9		Sand - fine, gray, silty w/some clay (SM)	38.5-39.5'	
40						
41						

PART 2

OHM

PAGE 4 OF 5

JOB NO 4294

BORE HOLE NO. DB-2

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
41						
42						
43						
44	14	17 31 36	12"	Sand - med-coarse, gray, some fine sand, black thin layer (SM)	less than 1/2" @ 44.0'	
45						
46						
47						
48						
49	15	16 20 34	18"	Sand and gravel - coarse, gray (SP)		
50						
51						
52						
53						
54	16	15 24 37	18"	Clay - silty, gray (CL)	beginning @ 53.0'	
56						

PART 2

OHM

PAGE 5 OF 5

JOB NO 4294

BORE HOLE NO. DB-2

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
56						
57						
58				EOB	EOB @ 58.0'	

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: EW-3
LOCATION: Bay City, MI/ Machine Storage Area	DATE DRILLED: 9/27/88 through 10/4/88
DRILLING METHOD: Cable Tool 22-W	CASING TYPE/DIA.: 12-Inch Black Steel-Surface 6-Inch Black Steel-Well Pipe
TOTAL DEPTH DRILLED: 55 Feet BGL	TOTAL CASING: 36 Feet
GROUND ELEVATION: 586.7 Feet	T.O.C. ELEVATION: 583.07 Feet
GROUT TYPE/QUANTITY: Benseal/2 Bags (100#)	SCREEN TYPE/LENGTH: Stainless Steel/ 6" x 5' Slot: .025
GROUT INTERVAL(S): Surface Plug Around 12-Inches	SCREENED INTERVAL: 26-36 Feet/Sediment Trap 41-46 Feet/ 46-51 Feet
DEPTH TO WATER: Approximately 5 Feet BGL	GRAVEL PACK TYPE: #50 Washed Silica Sand
WATER LEVEL ELEVATION: ---	GRAVEL PACK INTERVAL: 20-34 & 39-53 Feet BGL
	STATIC WATER LEVEL: DATE:

REMARKS: Drilled by Chuck Vermillion and Lester Johnson

LOGGED BY: Chuck Vermillion SIGNATURE: Charles M Vermillion

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-9		FILL: black, fine-coarse sand, cement, wood, steel, glass,
		saturation at approximately 5 feet.
9-22		CLAY: gray with fine-medium sand, fine-medium gravel, saturated.
22-42		SAND: light gray, very fine-fine with fine gravel, saturated.
42-46		SAND: light brown, fine-medium with fine-medium gravel, saturated.
		NOTE: occasional seams of light brown clay, moist.
46-48		CLAY: light brown, some fine sand, with fine-medium gravel,
		occasional cobble.
48-50		SAND: light brown, very fine-fine with fine gravel, saturated.
50-55		CLAY: light brown, some very fine-fine sand, with fine gravel,
		moist.
55		Total depth drilled.

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: EW-4
LOCATION: Bay City, MI/ Machine Storage Area	DATE DRILLED: 6/28/88 through 7/25/88
DRILLING METHOD: Cable Tool 22-W	CASING TYPE/DIA.: 12-Inch Black Steel-Surface 6-Inch Black Steel-Well Pipe
TOTAL DEPTH DRILLED: 56 Feet BGL	TOTAL CASING: 41 Feet
GROUND ELEVATION: 588.0 Feet	T.O.C. ELEVATION: 584.68 Feet
GROUT TYPE/QUANTITY: Benseal/2 Bags (100#)	SCREEN TYPE/LENGTH: Stainless Steel/ 6" x 10' Slot: .010
GROUT INTERVAL(S): Surface Plug Around 12-Inches	SCREENED INTERVAL: 41-51 Feet/ Sediment Trap 51-56 Feet
DEPTH TO WATER: 8.22 Feet BGL	GRAVEL PACK TYPE: #50 Washed Silica Sand
WATER LEVEL ELEVATION: 579.78 Feet	GRAVEL PACK INTERVAL: 34-54 Feet BGL
	STATIC WATER LEVEL: 8.22 DATE: 12/20/88

REMARKS: Drilled by Marty Puffpaff, Chuck Vermillion and Lester Johnson.

LOGGED BY: Marty Puffpaff, Chuck Vermillion

SIGNATURE: Marty Puffpaff, Chuck Vermillion

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-17		FILL: dark brown, fine-coarse sand, fine-coarse gravel, concrete,
		glass, wood and metal fragments, dry.
17-28		CLAY: gray, very fine-medium sand, some fine gravel, saturated.
28-38		SAND: gray, very fine-medium, saturated.
38-42		CLAY: gray with fine-coarse sand, some fine-medium gravel,
		saturated.
42-48		SAND: gray, very fine-medium, trace fine gravel, saturated.
		NOTE: occasional seams of gray clay, moist.
48-55		SAND: gray, fine-coarse, with fine-coarse gravel, saturated.
55-56		CLAY: grayish-brown, with fine-coarse sand, fine-medium gravel,
		moist.
56		Total depth drilled.

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: EW-5
LOCATION: Bay City / Machine Storage Area	DATE DRILLED: 7-27-88 through 9-20-88
DRILLING METHOD: Cable Tool 22-W	CASING TYPE/DIA.: 12-Inch Black Steel-Surface 6-Inch Black Steel-Well Pipe
TOTAL DEPTH DRILLED: 76.5 Feet BGL	TOTAL CASING: 40 Feet
GROUND ELEVATION: 589.50 Feet	T.O.C. ELEVATION: 584.02 Feet
GROUT TYPE/QUANTITY: Benseal/2 Bags (100#)	SCREEN TYPE/LENGTH: Stainless Steel/ 6" x 10' Slot: .020
GROUT INTERVAL(S): Surface Plug Around 12-Inches	SCREENED INTERVAL: 40-50 Feet/Sediment Trap 50-55 Feet
DEPTH TO WATER: 7.5 Feet BGL	GRAVEL PACK TYPE: #50 Washed Silica Sand
WATER LEVEL ELEVATION: 582 Feet	GRAVEL PACK INTERVAL: 35-55 Feet BGL
	STATIC WATER LEVEL: 7.50 DATE: 12/22/88

REMARKS: Drilled by Chuck Vermillion and Lester Johnson.

LOGGED BY: Chuck Vermillion SIGNATURE: Charles M Vermillion

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.5		FILL: brownish-black, fine-coarse sand, fine-medium gravel, wood and metal fragments, dry.
1.5-2		SAND: light brown, very fine-medium, dry.
2-26		SAND: black, fine-medium, some fine-medium gravel, clay, wood and metal fragments, saturated.
26-30		SAND: light gray, fine-medium, some fine gravel, saturated.
30-45		SAND: light gray, fine-medium, little coarse sand, some fine gravel, saturated.
45-49		SAND: light gray, fine-coarse, some fine-medium gravel, saturated.
49-60		SAND: light brown, fine-coarse, some fine-medium gravel, saturated.
60-68		SAND: light brown, fine-coarse, cobbles, fine-coarse gravel, some clay seams, saturated.
68-76.5		CLAY: light brown, with fine-coarse sand, trace fine gravel, occasional cobble, moist.
76.5		Total depth drilled.

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO. GEO- 5	
PROJECT NO./NAME: CPC - GEO-CON/00064-01-00002	LOCATION: Bay City, Michigan
DRILLING CONTRACTOR/DRILLER: CTI and Associates, Inc./Harry Bledsden	
HART GEOLOGIST/OFFICE: Paul L. Kanaskie/Cherry Hill	
DRILLING EQUIPMENT/METHOD: Rotary/	SIZE/TYPE OF BIT: 4"
SAMPLING METHOD: SS, ST	START/FINISH DATE: 08/03-08/03
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE	MAT.
LENGTH	DIA.
SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	TOP OF WELL CASING
TOP & BOTTOM SCREEN	GW SURFACE
DATE	
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING: DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	g r a b			Clay, sand, medium to coarse, dark brown, crushed rock on surface	Moist		
1.5							
3.0	SS	1.5	4 6 5	Wood, clay, pebbles to 1/2", oily odor black and brown	Moist, sawdust wood chips		
4.0							
6.0	SS	.25	7 6 13 7	Wood chips and wood fragments, glass, black	Wood fill - spoon plugged		
7.0							
8.5	SS	.50	6 4 4	Wood and clay, small pebbles to 1/2", medium gray to black	Moist		
10							
15					Groundwater at 15.0 feet		
19	SS	1.75	1 1 2 3	Marl, clay, shell fragments, medium gray	Very wet		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-5

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
21				As above			
25							
27	SS	.75	7 1 1 1	Sand, medium to coarse pebbles to 3/4", grayish brown			
29							
30							
35							
40							
45					Clay aquiclude at 48.0 feet		
50							

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-5

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
51.5 ↕ 53.5	SS	175	11 16 24 34	Clay pebbles (very small), medium gray, very plastic			
54 ↕ 56	SS	175		Clay - Good sample			
				BOTTOM OF BORING = 56.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 6
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	4"
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/03-08/03
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE	MAT.
LENGTH	DIA.
SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE	TOP OF WELL CASING
TOP & BOTTOM SCREEN	GW SURFACE
DATE	
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
				Sand, clay pebbles to 1/2", light brown	Dry		
1.5	SS	1.5	5 4 6	Clay, pebbles to 1/2", light gray	Clay cap dry		
3.0							
4.0							
5	SS	1.75	3 2 2 3	Clay with pebbles to 1/2", dark brown to black	Moist		
6.0							
7.0							
8.5	SS	.50	1 2 1	Clay with pebbles to 1/2", gray plastic	Moist		
10							
15							
17	SS		1 1 2 4	Clay with pebbles to 1/2", sand (medium to coarse at 18 feet) gray to light brown	Groundwater at 17.0 feet		
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GE0-6

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
21							
25				Sand heaving at 26.0 feet			
30							
35							
40					Clay aquiclude at 39.0 feet		
41.5			8 17 25	Clay with some pebbles, gray, very plastic			
43.5							
44	ST				Could only push Shelby Tube 1.0 foot		
46				BOTTOM OF BORING = 46.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.: GEO-7

PROJECT NO./NAME: CPC - GEO-CON/00064-01-00002

LOCATION: Bay City, Michigan

DRILLING CONTRACTOR/DRILLER: CTI and Associates, Inc./Harry Bledsden

HART GEOLOGIST/OFFICE: Paul L. Kanaskie/Cherry Hill

DRILLING EQUIPMENT/METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START/FINISH DATE
Rotary/		SS, ST	08/04-08/04

WELL INSTALLED? YES ☐ NO ☒ | CASING MAT./DIA. | SCREEN: TYPE | MAT. | LENGTH | DIA. | SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS: Rain in early morning hours

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
0	g, r, a, b			Sand, fine to medium some organics, light brown	Moist		
1.0							
1.5	SS	1.5	3 4 10	Clay and sand, wood chips at 3.0 feet, medium brown	Moist		
3.0							
4.0	SS	1.5	1 1 1	Clay, some sand, trace shells, medium gray to black	Moist		
6.0							
7.0	SS	1.0	6 4 3	Sandy clay, wood chips, gray to black	Moist		
8.5							
10					Groundwater at approximately 10.0 feet		
15							
17	SS		1 1 2 2	Clay, sand some silt, dark green	Wet		
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

HART

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-7

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55					Clay aquiclude at 57.5 feet		
59 ↕ 61	SS	1.5	15 19 16 16	Clay, trace pebbles to 1/4", very stiff, very plastic			
64 ↕ 66	ST			Clay	About 18 - 20" recovery		
				BOTTOM OF BORING = 66.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO-8
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	4"
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/04-08/04
WELL INSTALLED? YES ☐ NO ☒	
CASING MAT./DIA.	
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	Took down guard rail; boring located 10.0 feet from river edge

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING: DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
0	g r a b			Sand, fine to coarse, few organics, medium brown	Moist		
1.5	SS	16"	5 7 6	Sand, fine to coarse, medium brown, clay at 2.0 feet, slightly plastic, little sand, brown	Moist		
3.0							
4.0	SS	18"	1 1 0 1	Silty sand, trace clay, medium gray sand, fine to coarse	Moist		
6.0							
7.0	SS	16"	1 0 2	Silty sand, medium to coarse, gray, silty clay at 8.0 feet, medium gray, black, large wood fragments, black	Moist Groundwater at 9.0 feet		
8.5							
10							
15							
17	SS		1 0 1 1	Clay, some silt, shell fragments, slightly plastic, medium gray			
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-8

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55					Clay aquiclude at 54.0 feet		
56.5 ↕ 58	SS	1.25	11 17 21	Clay pebbles to 1/4", light gray			
59 ↕ 61	ST	2.0		Clay	Shelby full		
				BOTTOM OF BORING = 61.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO. GEO- 9

PROJECT NO./NAME: CPC - GEO-CON/00064-01-00002

LOCATION: Bay City, Michigan

DRILLING CONTRACTOR/DRILLER: CTI and Associates, Inc./Harry Bledsden

HART GEOLOGIST/OFFICE: Paul L. Kanaskie/Cherry Hill

DRILLING EQUIPMENT/METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START/FINISH DATE
Rotary/	4"	SS, ST	08/05-08/05

WELL INSTALLED? YES ☐ NO ☒ | CASING MAT./DIA. | SCREEN: TYPE | MAT. | LENGTH | DIA. | SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS: Boring located outside of orange fence

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
0							
1.0	$g_r a_b$			Gravel fill, some organics, dark brown, black	Dry		
1.5	SS	1.25	$^{8}9_{7}$	Sand, fine to medium, little silt, light brown, black	Moist		
3.0							
4.0	SS	.25	$^{3}2_{3}4$	Sand, medium to coarse, slightly silty, gravel to 1/2", slightly clayey, light brown, black	Moist		
6.0							
7.0	SS	.25	$^{3}2_{4}$	Clayey sand, gravel to 1/2", wood chips, dark gray to black	Wet at 9.0 feet		
8.5							
10							
15							
17	SS	.50	$^{2}2_{3}4$	Clay, very plastic, very soft, dark gray			
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GE0-9

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
25							
27 ↕ 28.5	SS	.50	-	Sand, medium to coarse, light brown, very wet	Spoon settled without any blows		
30							
34 ↕ 36	SS	1.0	3 3 6 5	Sand, medium to coarse, trace clay, light brown, pebbles to 1/2"			
40							
45					Clay aquiclude at 47.0 feet		
49 ↑	SS		6 13 21	Clay, very stiff, slightly plastic, pebbles to 1/2", dark gray			

FRED C. HART ASSOCIATES, INC.

BORING NO. GE0-9

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
51				As above			
52 ↕ 54	ST			Tube full almost 2 feet			
				BOTTOM OF BORING = 54.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 19
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS
START/FINISH DATE	08/11-08/11
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS:	Backed truck through the guard rail

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING: DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0			9 (a) (b)	Sand, medium to coarse, predominantly medium, trace silt and organics, brown	Mosit		
1.5 ↕ 3.0	SS	1.5	2 3 4	Sand, predominantly medium to 2.5 feet, fill material, trace organics 2.5 - 3.0 feet, light brown, dark brown	Dry		
4.0 ↕ 6.0	SS	1.0	3 1 1 4	Silt, sand, and organics (roots), pebbles to 1/4", grayish brown	Very wet		
7.0 ↕ 8.5	SS	1.0	3 2 6	Sand, coarse, some wood chips and other organics, light brown-black	Wet		
10							
15							
17 ↕ 19	SS	1.0	1 1 1 2	Clay, very soft, very plastic, trace shells, gray			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-19

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
25							
27 ↕ 28.5	SS	1.0	1 1 3	Sand, medium to coarse, predominantly coarse, rounded, well sorted, trace wood chips, pebbles to 1/8", gray-brown			
30							
35							
40							
45							
50					Clay aquiclude at 50.0 feet		

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-19

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
51 ↕ 53	SS	1.5	9 16 24 28	Clay, very stiff, slightly plastic, trace pebbles to 1/8", gray			
				BOTTOM OF BORING = 53.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO. GEO- 20

PROJECT NO./NAME: CPC - GEO-CON/00064-01-00002

LOCATION: Bay City, Michigan

DRILLING CONTRACTOR/DRILLER: CTI and Associates, Inc./Harry Bledsden

HART GEOLOGIST/OFFICE: Paul L. Kanaskie/Cherry Hill

DRILLING EQUIPMENT/METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START/FINISH DATE
Rotary/	3-1/4" I.D.	SS, ST	08/11-08/11

WELL INSTALLED? YES ☐ NO ☒ | CASING MAT./DIA. | SCREEN: TYPE | MAT. | LENGTH | DIA. | SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS: Northeast corner of the penninsula

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	9 r a			Silty sand, fine to medium, light brown, black	Dry		
1.5							
3.0	SS	1.0	13 7 3	Sand and random fill material, pebbles to 1/4", cinders, concrete chips, light brown, black	Dry		
4.0							
6.0	SS	1.0	2 2 2 3	Clay, very silty, slightly sandy, light brown, black, wood chips, slight oily odor	Moist Groundwater at 6.5 feet		
7.0							
8.5	SS	1.0	3 2 3	Clay with silt and sand, wood chips, very wet, light brown, black			
10							
15							
17							
19	SS	1.0	1 1 1 1	Clay, slightly silty, slightly sandy, shell fragments, dark gray	Sand heaving		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-20

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
25							
27 ↕ 28.5	SS	1.0	1 2 1	Sand, predominantly coarse, slightly clayey, slightly silty, light brown, gray, trace shell fragments			
30							
35							
40							
45							
50							

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-20

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55							
59	SS	1.25	7 8 11 15	Clay, stiff, slightly plastic, pebbles to 1/4", gray	Clay aquiclude at 58.0 feet		
61				BOTTOM OF BORING = 61.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.: GEO- 21

PROJECT NO./NAME: CPC - GEO-CON/00064-01-00002

LOCATION: Bay City, Michigan

DRILLING CONTRACTOR/DRILLER: CTI and Associates, Inc./Harry Bledsden

HART GEOLOGIST/OFFICE: Paul L. Kanaskie/Cherry Hill

DRILLING EQUIPMENT/METHOD: Rotary/

SIZE/TYPE OF BIT: 3-14/" I.D.

SAMPLING METHOD: SS, ST

START/FINISH DATE: 08/12-08/12

WELL INSTALLED? YES ☐ NO ☒

CASING MAT./DIA.:

SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE

REMARKS: Western boundary of penninsula

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0			9 (r a b)	Silty sand, fine to medium, organics (roots) light brown, black	Dry		
1.5 ↕ 3.0	SS	1.0	4 5 7	Clay, slightly silty, slightly sandy, wood chips, trace pebbles to 1/8", light brown, black	Dry		
4.0 ↕ 6.0	SS	4"	1 1 1	Sand with clay, medium to coarse, dark gray	Poor recovery		
7.0					Groundwater at 7.0 feet		
↕ 8.5	SS	8"	1 5 5	Clay, slightly silty, some wood chips, slightly sandy, dark gray to black	Very wet		
10							
15							
17 ↕ 19	SS	1.0	3 2 1 3	Clay, very soft, very plastic, trace shell fragments, trace pebbles, black	Very wet		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GE0-21

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
25							
27 ↕ 28.5	SS	1.5	1 2 1	Sand, medium to coarse, trace shell fragments, light brown	Sand heaving		
30							
35							
40							
45							
50							

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-21

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
52 ↕ 54	SS	1.0	8 14 23 29	Clay, very stiff, slightly plastic, trace pebbles to 1/4", gray	Clay aquiclude at 51.0 feet Tried to obtain a Shelby, but remained in boring		
				Bottom of boring = 54.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 22
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/12-08/12
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS:	Western boundary of penninsula

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING: DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	g r a b			Silty sand, fine to medium, dark gray, black	Dry		
1.5	SS	1.25	3 4 4	Sand, medium to coarse to 2.0 feet, light brown 2.0 - 3.0 feet fill material, some organics, dark brown, black	Dry		
3.0							
4.0							
5	SS	6"	2 1 0 1	Clay, soem sand and fill material, trace organics, trace pebbles to 1/4", dark brown	Groundwater at 5.0 feet Very wet		
6.0							
7.0							
	SS		3 1 5	Sand, very silty, fine, trace clay, trace pebbles to 1/4", dark black	Wet		
8.5							
10							
15							
17							
	SS	8"	2 1 2 1	Clay, trace shell fragments, little wood chips, gray-black (marl)	Wet		
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-22

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
25							
27 ↕ 28.5	SS	12"	1 1 4	Sand, predominantly medium, medium gray, black, moist			
30							
35							
40							
42 ↕ 44	SS		9 14 20 25	Sand, predominantly coarse, shell fragments, pebbles to 1/4"			
					Clay aquiclude at 48.0 feet		
49 ↕ 50.5	SS		8 14 23	Clay, very stiff, slightly plastic, trace pebbles to 1/4", gray			

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-22

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
51.5	ST			Tube had clay in it; but hit rock and collapsed upon itself; badly deformed; drilled to 54.0 feet and tried again			
53.5							
54	ST			Tube deformed again, No Recovery			
56				BOTTOM OF BORING = 56.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 23
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/13-08/13
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	

REMARKS: Boring located on center line of sand dike

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING: DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	$g_r a_b$			Clay, slightly silty, slightly sandy, very soft, very plastic, medium brown	Dry		
1.5 ↕ 3.0	SS	8"	$5_{25}{}_{10}$	Sand, medium to coarse to 2.0 feet; 2.0 - 3.0 fet clay with trace pebbles, shells, trace organics, light brown, gray	Moist		
4.0 ↕ 6.0	SS	1.25	$6_{7}{}_{9_8}$	Fill material, wood chips, glass, slightly sandy, black	Groundwater at 6.0 feet		
7.0 ↕ 8.5	SS	1.5	2_{4_6}	Clay, trace shells, trace organics, sand lenses throughout, wood chips, black, (marl)	Moist		
10							
15							
17 ↕ 19	SS	1.5	$1_{2_{2_4}}$	Clay, trace shells (marl), sand layers, some peat, light gray, black			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-23

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
					Sand heaving at 25.0 feet		
30							
35							
40							
45					Clay aquiclude at 47.0 feet		
49	SS	1.5	10 12 21 31	Clay, very stiff, slightly plastic, trace pebbles to 1/4", gray	Good recovery		
51							
52	ST			Tube full			
54				BOTTOM OF BORING = 54.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.: GEO-24

PROJECT NO./NAME: CPC - GEO-CON/00064-01-00002

LOCATION: Bay City, Michigan

DRILLING CONTRACTOR/DRILLER: CTI and Associates, Inc./Harry Bledsden

HART GEOLOGIST/OFFICE: Paul L. Kanaskie/Cherry Hill

DRILLING EQUIPMENT/METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START/FINISH DATE
Rotary/	3-1/4" I.D.	SS, Grab	08/13-08/13

WELL INSTALLED? YES ☐ NO ☒ | CASING MAT./DIA.:

SCREEN: TYPE | MAT. | LENGTH | DIA. | SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS: Northwestern tip of the penninsula

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	$g_r a_b$			Silty sand, fine to medium, some organics, light brown, black	Dry		
1.5	SS	1.5	$6_6 4$	Fill material, concrete, bricks, trace organics, black	Moist		
3.0							
4.0	SS	6"	$1_2 2_4$	Fill material, trace glass and pebbles, black	Moist Groundwater at 6.0 feet		
6.0							
7.0	SS		$1_1 1_1$	Clay, slightly silty, trace organics, very plastic, very wet, blackish-gray	Wet		
8.5							
10							
15							
17	SS	1.0	$1_2 1_1$	Clay, slightly silty, slightly sandy, trace shells and wood fragments, gray	Wet		
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-24

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
25							
27 ↕ 28.5	SS	1.0	10 0	Sand, fine to coarse, trace shells, light gray, brown			
30							
35							
40							
45							
50							

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-24

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
56 ↕ 58	SS	10"	15 5 15 23	Clay, slightly stiff, very plastic, pebbles to 1/4"	Clay aquiclude at 54.0 feet		
				BOTTOM OF BORING = 58.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 25
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsoe
HART GEOLOGIST/OFFICE	Scott Madill/Pittsburgh
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3/4" I.D.
SAMPLING METHOD	SS
START/FINISH DATE	08/14/-08/14
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	Northwest portion of penninsula

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0				Silty sand, dark brown, some organics, medium			
1.5 – 3.0	SS	6"	5 7 7	Fill material, black-brown, fine to medium to silty clay, brown-black, trace sand	Dry		
4.0 – 6.0	SS	5"	4 5 9 0	Fill material, black, sandy-silty, fine to medium	Wet Groundwater at 6.0 feet		
7.0 – 8.5	SS	4"	1 1 2	Silty sand, black, with gravel to 3/4"	Wet		
17 – 19	SS	1.0	1 1 1 0	Silty clay with white shell fragments, dark bray (trace)	Wet		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-25

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
57 ↕ 59	SS			Clay, stiff, pebbles to 1/4", gray, light brown	Clay aquiclude at 56.0 feet		
				BOTTOM OF BORING = 59.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 26
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsoe
HART GEOLOGIST/OFFICE	Scott Madill/Pittsburgh
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3/4" I.D.
SAMPLING METHOD	SS
START/FINISH DATE	08/14-08/14
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	Northwest portion of penninsula

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0			9 r a b	Dark brown, sandy, silty, clay, fine to medium (fill)			
1.5 ↕ 3.0	SS	1.5	5 9 7	Fill, silty, sandy clay, dark brown, black, trace glass, gravel	Moist		
4.0 ↕ 6.0	SS	1.0	3 3 2 1	Fill, sandy clay, dark brown, black, trace gravel and glass	Moist Groundwater at 6.0 feet		
7.0 ↕ 8.5	SS	.33	1 0 1	Fill, black sandy clay, some glass and gravel particles	Wet		
17 ↕ 19	SS	.33	1 2 1 1	Gray silty clay, some organic material, trace white shell fragments	Wet		

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GE0-26

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
50					Clay aquiclude at 50.0 feet		
52 ↕ 54	SS	2.0	9 18 28 29	Gray clay, trace silt with trace gravel, 1/8" rounded, stiff			
				BOTTOM OF BORING = 54.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 27
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsoe
HART GEOLOGIST/OFFICE	Scott Madill/Pittsburgh
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3/4" I.D.
SAMPLING METHOD	SS
START/FINISH DATE	08/17-08/17
WELL INSTALLED? YES ☐ NO ☒	
CASING MAT./DIA.	
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	Southwestern portion; top of clay cap across guard booth (directly south)

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING: DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0			9 r a b	Light brown clay, some organics and gravel (surface) clay cap	Moist		
1.5	SS	1.0	6 7 17	Light brown silty clay, trace organics and stone fragments, clay cap	Dry		
3.0							
4.0	SS	1.5	26 36 21 9	Light brown silty clay, trace stone fragments, sandy black with cinder, metals, glass, fill	Dry Fill at 5.5 ft. Moist		
6.0							
7.0	SS	1.0	1 2 3	Brown silty clay, black peat and organics, ligth brown silty sand, trace organics	Moist		
8.5					Groundwater at 9.0 feet		
10							
15							
17	SS	2.0	1 0 0 2	Black peat and organics, gray silty clay, marl, trace white shell fragments	Wet		
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-27

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
25							
27 ↕ 28.5		1.5	20 24 33	Stiff, grayish-light brown, silty clay, trace gravel			
				BOTTOM OF BORING = 28.5 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 28
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsoe
HART GEOLOGIST/OFFICE	Scott Madill/Pittsburgh
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3/4" I.D.
SAMPLING METHOD	SS
START/FINISH DATE	08/17-08/17
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	

REMARKS: Southeast portion of penninsula; fuel tanks directly south

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING: DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0				Fill material, black sandy silt with metal, cinders, plastics	Moist		
1.5	SS	1.5	14 19 10	Black sandy silt, fill material, trace metals, cinders	Moist		
3.0							
4.0							
5		.4	4 4 4	Black sandy silt, fill material, some metals, cinders	Moist		
6.0							
7.0					Groundwater at 7.0 feet		
		8"	3 3 2	Black sand, little silt	Wet		
8.5							
10							
15							
17	SS	1.5	1 1 2	Very plastic, gray silty clay, marl, trace white shells	Wet		
18.5							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-28

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
50					Clay aquiclude at 50.0 feet		
52	SS	2.0	10_{19} 29_{34}	Gray silty clay, trace of 1/8" gavel, stiff			
54				BOTTOM OF BORING = 54.0 feet			

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: L MW-13S
LOCATION: Bay City, Michigan	DATE DRILLED: December 13, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 586.7 feet	T.O.C. ELEVATION: 589.35 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-5'		CLAY; sand, brown, concrete debris
5-15'		CLAY; sand, grayish-black, wood fragments, oily odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	L MW-14S
LOCATION:	Bay City, Michigan	DATE DRILLED:	December 14, 1988
DRILLING METHOD:	Hollow-Stem Auger	CASING TYPE/DIA.:	galvanized/2-inch
TOTAL DEPTH DRILLED:	15 feet BGL	TOTAL CASING:	7.5 feet
GROUND ELEVATION:	586.4 feet	T.O.C. ELEVATION:	589.65 feet
GROUT TYPE/QUANTITY:	dry bentonite/1 bag	SCREEN TYPE/LENGTH:	#7 slot stainless steel 10 feet
GROUT INTERVAL(S):	surface - 3 feet BGL	SCREENED INTERVAL:	5 - 15 feet BGL
DEPTH TO WATER:	6 feet BGL	GRAVEL PACK TYPE:	sand
WATER LEVEL ELEVATION:	NA	GRAVEL PACK INTERVAL:	3 - 15 feet BGL
		STATIC WATER LEVEL:	NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-5'		CLAY; sand, brown, wood fragments
5-15'		CLAY; sand, grayish-black, wood and metal fragments, oily odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	MW-15D
LOCATION:	Bay City, Michigan	DATE DRILLED:	December 13, 1988
DRILLING METHOD:	Hollow-Stem Auger	CASING TYPE/DIA.:	galvanized/2-inch
TOTAL DEPTH DRILLED:	30 feet BGL	TOTAL CASING:	27.5 feet
GROUND ELEVATION:	586.2 feet	T.O.C. ELEVATION:	588.77 feet
GROUT TYPE/QUANTITY:	slurry grout/100 gallons	SCREEN TYPE/LENGTH:	#7 slot stainless steel 10 feet
GROUT INTERVAL(S):	surface - 20 feet BGL	SCREENED INTERVAL:	25 - 30 feet BGL
DEPTH TO WATER:	8 feet BGL	GRAVEL PACK TYPE:	sand
WATER LEVEL ELEVATION:	NA	GRAVEL PACK INTERVAL:	20 - 30 feet BGL
		STATIC WATER LEVEL:	NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-5'		CLAY; sand, brown, concrete and wood fragments
5-17'		CLAY; sand, grayish-black, wood fragments, oily odor
17-23'		CLAY; silt, grayish-brown, oily odor
23-30'		SAND; clay, grayish-brown, wet

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	MW-16D
LOCATION:	Bay City, Michigan	DATE DRILLED:	December 14, 1988
DRILLING METHOD:	Hollow-Stem Auger	CASING TYPE/DIA.:	galvanized/2-inch
TOTAL DEPTH DRILLED:	30 feet BGL	TOTAL CASING:	27.5 feet
GROUND ELEVATION:	586.3 feet	T.O.C. ELEVATION:	589.26 feet
GROUT TYPE/QUANTITY:	slurry grout/100 gallons	SCREEN TYPE/LENGTH:	#7 slot stainless steel 10 feet
GROUT INTERVAL(S):	surface - 20 feet BGL	SCREENED INTERVAL:	25 - 30 feet BGL
DEPTH TO WATER:	6 feet BGL	GRAVEL PACK TYPE:	sand
WATER LEVEL ELEVATION:	NA	GRAVEL PACK INTERVAL:	20 - 30 feet BGL
		STATIC WATER LEVEL:	NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-5'		CLAY; sand, brown, wood fragments
5-15'		CLAY, sand, grayish-black, wood and metal fragments, oily odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	MW-17S
LOCATION:	Bay City, Michigan	DATE DRILLED:	December 15, 1988
DRILLING METHOD:	Hollow-Stem Auger	CASING TYPE/DIA.:	galvanized/2-inch
TOTAL DEPTH DRILLED:	15 feet BGL	TOTAL CASING:	7.5 feet
GROUND ELEVATION:	586.4 feet	T.O.C. ELEVATION:	589.76 feet
GROUT TYPE/QUANTITY:	dry bentonite/1 bag	SCREEN TYPE/LENGTH:	#7 slot stainless steel 10 feet
GROUT INTERVAL(S):	surface - 3 feet BGL	SCREENED INTERVAL:	5 - 15 feet BGL
DEPTH TO WATER:	5 feet BGL	GRAVEL PACK TYPE:	sand
WATER LEVEL ELEVATION:	NA	GRAVEL PACK INTERVAL:	3 - 15 feet BGL
		STATIC WATER LEVEL:	NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2'		CLAY; sand, brown, wood fragments
2-6'		CLAY; sand, brownish-gray, wood and metal fragments, oily odor
6-15'		CLAY; sand, dark gray, oily odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	MW-18S
LOCATION:	Bay City, Michigan	DATE DRILLED:	December 8, 1988
DRILLING METHOD:	Hollow-Stem Auger	CASING TYPE/DIA.:	galvanized/2-inch
TOTAL DEPTH DRILLED:	17 feet BGL	TOTAL CASING:	9.5 feet
GROUND ELEVATION:	587.8 feet	T.O.C. ELEVATION:	591.44 feet
GROUT TYPE/QUANTITY:	dry bentonite/2 bags	SCREEN TYPE/LENGTH:	#7 slot stainless steel 10 feet
GROUT INTERVAL(S):	surface - 5 feet BGL	SCREENED INTERVAL:	7 - 17 feet BGL
DEPTH TO WATER:	8 feet BGL	GRAVEL PACK TYPE:	sand
WATER LEVEL ELEVATION:	NA	GRAVEL PACK INTERVAL:	5 - 17 feet BGL
		STATIC WATER LEVEL:	NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, brown, moth ball odor
1-9'		CLAY; black, wood and metal fragments, moth ball odor
9-17'		CLAY; silt, black, moth ball odor in water

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-19S
LOCATION: Bay City, Michigan	DATE DRILLED: December 12, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 586.6 feet	T.O.C. ELEVATION: 589.19 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2.5'		CLAY; sand, light brown, moth ball odor
2.5-8'		CLAY; black, wood fragments, moth ball odor
8-15'		CLAY; silt, grayish-black, moth ball odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-20D
LOCATION: Bay City, Michigan	DATE DRILLED: December 5, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 32 feet BGL	TOTAL CASING: 29.5 feet
GROUND ELEVATION: 588.7 feet	T.O.C. ELEVATION: 592.19 feet
GROUT TYPE/QUANTITY: slurry grout/100 gallons	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 25 feet BGL	SCREENED INTERVAL: 27 - 32 feet BGL
DEPTH TO WATER: NA	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 25 - 32 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.5'		CLAY; sand, brown
1.5-15'		CLAY; wood and metal fragments, black, oily odor
15-25'		CLAY; black, oily odor
25-32'		SAND; clay, dark gray, wet

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: LMW-21D
LOCATION: Bay City, Michigan	DATE DRILLED: December 7, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 31 feet BGL	TOTAL CASING: 28.5 feet
GROUND ELEVATION: 587.7 feet	T.O.C. ELEVATION: 591.39 feet
GROUT TYPE/QUANTITY: slurry grout/100 gallons	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 25 feet BGL	SCREENED INTERVAL: 26 - 31 feet BGL
DEPTH TO WATER: 12 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 25 - 31 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, dark brown
1-17'		CLAY; black, wood and metal fragments, oily odor
17-25'		CLAY; silt, dark gray, oily odor
25-31'		SAND; clay, gark gray, wet

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-22S
LOCATION: Bay City, Michigan	DATE DRILLED: December 6, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 17 feet BGL	TOTAL CASING: 9.5 feet
GROUND ELEVATION: 589.0 feet	T.O.C. ELEVATION: 593.09 feet
GROUT TYPE/QUANTITY: dry bentonite/2 bags	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 5 feet BGL	SCREENED INTERVAL: 7 - 17 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 5 - 17 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1.5'		CLAY; sand, brown
1.5-3'		CLAY; dark gray, wood and metal fragments, oily odor
3-17'		CLAY; black, wood and metal fragments, oily odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: LMW-23S
LOCATION: Bay City, Michigan	DATE DRILLED: December 7, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15.5 feet BGL	TOTAL CASING: 8 feet
GROUND ELEVATION: 587.6 feet	T.O.C. ELEVATION: 591.31 feet
GROUT TYPE/QUANTITY: dry bentonite/2 bags	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 4 feet BGL	SCREENED INTERVAL: 5.5 - 15.5 feet BGL
DEPTH TO WATER: 12 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 4 - 15.5 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, dark brown
1-15.5'		CLAY; black, wood and metal fragments, oily odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: L MW-24D
LOCATION: Bay City, Michigan	DATE DRILLED: December 8, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 32 feet BGL	TOTAL CASING: 29.5 feet
GROUND ELEVATION: 588.1 feet	T.O.C. ELEVATION: 591.77 feet
GROUT TYPE/QUANTITY: bentonite slurry/100 gals	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 25 feet BGL	SCREENED INTERVAL: 27 - 32 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 25 - 32 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-9'		CLAY; black, wood fragments, strong moth ball odor
9-24'		CLAY; silty, grayish-black, strong moth ball odor
24-32'		CLAY; trace gravel, hard, dark gray

PART 1

OHM

JOB NO. 4299

BORE HOLE NO. MSA - 1

PROJECT GM/CPC Phase II	LOCATION Bay City, MI
DRILLING CONTRACTOR CTI	DRILLING EQUIPMENT CME - 75
HYDROGEOLOGIST G. Sunderland	DRILLER R. Near CTI
DATE START/TIME 11-10-86 1540	DATE FINISH/TIME 11-10-86 1730
SURFACE ELEVATION 585.34	TOTAL DEPTH 18'BLS
WELL CASING 2" Stainless steel	SCREEN TYPE 2" Stainless steel
LENGTH 10 Ft.	SLOT 10

GROUND WATER			
DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE			S.S.	
DIAMETER			2"	
HAMMER WEIGHT			140 lbs	
FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
1				Sand, clayey, very fine to med. grained, light brown, dry. Black @ 2.5' (SM)		
2	1	7 7 10	18"			
3						
4						
5	2	1 2 2	3	Sand, clayey, very fine to medium, light brown, moist (SM)		
6						
7	3	1 2 2		Sand, fine to coarse to up to 3/8" pebbles, black, oily odor, some wood chips (SW)		
8						
9	4	0 1 1		Sand, very silty, black to dark brown, oily odor (SM)		
11						

PART 2

OHM

JOB NO 4294

BORE HOLE NO. MSA - 1

PROJECT GM/CPC PHASE II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	5	0 1 1	15"	Silt, sl. sandy, olive green to gray, soft, sticky, shell fragments, no odor (ML)		
13						
14						
15	6			Silt, sl. sandy, olive green to gray, soft, sticky, with shell fragments, no odor (ML)		
16						
17	7					
				Total Depth 18.0 ft.	Well 10' of 2" SS casing 10' of 2" SS screen (10 slot) S.I.= 7'-17' Sand pack to 3' BLS Casing 3' ALS	

PART 1

OHM

JOB NO. 4294

BORE HOLE NO. MSA-2

PROJECT GM/CPC Phase II	LOCATION Bay City, MI
DRILLING CONTRACTOR CTI	DRILLING EQUIPMENT CME-75
HYDROGEOLOGIST R. Brown	DRILLER R. Near
DATE START/TIME 11-11-86 0930 / DATE FINISH/TIME	SURFACE ELEVATION 586.35 / TOTAL DEPTH 18.0' BLS
WELL CASING 2" Stainless Steel / SCREEN TYPE 2" Stainless Steel	LENGTH 10 ft. / SLOT 10

GROUND WATER

DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE			S.S.	
DIAMETER			2"	
HAMMER WEIGHT			140 lbs	
FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0						
1	1	9 8 6	18"	Sand - clayey w/some silt, dark brown to red, w/pebbles, fill (SW)		
2	2	4 5 7	5"	Sand - fine-med., dark brown-red, w/silt (SC)		
3						
4						
5	3	1 1 1	4"	Sand - fine-med, dark brown to black, w/silt some clay, wet (SC)		
6						
7	4	1 2 0	6"	Sand - fine-med, dark brown to black, w/silt, some clay, sub angular pebbles, wet (SC)		
8						
10	5	1 3 5	10"	Sand - fine-med., black, w/silt, wet (SM)		
				Clay - green (ML)	2" @ 9.5' from top metal fragments @ 10.5'	

PART 2

OHM

PAGE 2 OF 2

JOB NO 4294

BORE HOLE NO. MSA-2

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
11						
12	6	3 2 2	6"	Sand - fine-med, dark brown, w/silt, some clay, wet (SM)		
13						
14						
15	7		18"	Sand - fine-med, dark brown, w/ silt, some clay, wood chips @ 14.0-14.5' (ML)	very soft, rods sink w/own weight	
16						
17	8	1 1 1	18"	Sand - fine, silty, w/some clay, dark greenish gray, wood chips & shell fragments (ML)	White porcelain like material at 17.0'	
18				Total Depth 18.0'		
19					Well 10' of 2" ss casing 10' of 2" ss screen (10 slot) S.I. = 7'-17' Sand pack to 4' BLS Casing 3' ALS	
20						

PART 1

OHM

JOB NO. 4294

BORE HOLE NO. MSA - 3

PROJECT: GM/CPC Phase II	LOCATION: Bay City, MI
DRILLING CONTRACTOR: CTI	DRILLING EQUIPMENT: CME - 75
HYDROGEOLOGIST: R. Brown	DRILLER: R. Near
DATE START/TIME: 11/11/86 1130	DATE FINISH/TIME: 11/11/86 1330
SURFACE ELEVATION: 585.20	TOTAL DEPTH: 18'BLS
WELL CASING: 2" Stainless Steel	SCREEN TYPE: 2" Stainless Steel
LENGTH: 10'	SLOT: 10

GROUND WATER			
DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE			S.S.	
DIAMETER			2"	
HAMMER WEIGHT			140 lbs	
FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0						
	1	16 14 8	18"	Sand, med., dark brown, with pebbles, dry	0-12"	
1				Sand, fine-med., dark brown black, with silt wood fragments, shell fragments, dry (SM)	12-18"	
				Sand, med., dark brown, with silt, dry (SM)	1.5-2.0"	
2	2	2 2 2	12"	Clay, silty, green gray, moist, odor, wood fragments (ML)	2.0-3.0"	
3						
4						
	3	1 for 18"	18"	Sand, med.-fine, dark gray, with silt, some clay, pebbles (sub angular) ½" diam., shell fragments, wood fragments @ 5-5.5', odor (SM)		
5						
6						
	4	1 1 1	15"	Sand, med.-fine, dark brown-gray, with silt, shell fragments, wood fragments, throughout, some clay (SM)		
7						
8						
	5	2 1 1	15"	Sand, med.-fine, dark brown-gray, with silt, some clay, wood fragments and shell fragments (SM)		
10						

PART 2

OHM

PAGE 2 OF 2

JOB NO 4294

BORE HOLE NO. MSA 3

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
11						
12	6	1 for 12" 2 for 6"	18"	Sand, med.-fine, dark brown-gray, with silt, wood fragments throughout (however diminishing in quantity with depth) No shell fragments (SM)		
13						
14						
15	7	1 2 2	18"	Sand, med.-fine, dark brown-gray, with silt minor wood and shell fragments to 15.0' (SM)	15.0=15.5' shell fragments abundant	
16						
17	8	1 1 2	18"	Sand, fine, dark grown-gray, silty, clayey, with shell fragments (SM)		
18				Total Depth 18' BLS	Well 10' of 2" SS Casing 10' of 2" SS Screen S.I.= 7'-17'BLS Sand Pack to 2.5'BLS Casing 3' ALS	

PART 1

OHM

JOB NO. 4294

BORE HOLE NO. MSA 4

PROJECT: GM/CPC Phase II	LOCATION: Bay City, MI
DRILLING CONTRACTOR: CTI	DRILLING EQUIPMENT: CME - 75
HYDROGEOLOGIST: R. Brown	DRILLER: R. Near
DATE START/TIME: 11/11/86 1430	DATE FINISH/TIME: 11/11/86 1515
SURFACE ELEVATION: 586.67	TOTAL DEPTH: 18' BLS
WELL CASING: 2" Stainless Steel	SCREEN TYPE: 2" Stainless Steel
LENGTH: 10'	SLOT: 10

GROUND WATER			
DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE			S.S.	
DIAMETER			2"	
HAMMER WEIGHT			140 lbs	
FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0						
1	1	4 5 6	18"	Sand, med., light brown, well graded, some dark mottling, dry (SP)	0-.5' organic soil, dark brown	
				Sand, med., light brown, well grated (SP)	1.5-2.0'	
2	2	3 4 4	15"	Sand, med.-fine, dark green-black, with silt and angular pebbles (SM)	2.0-2.8'	
3				Sand, fine-med., dark green-black, moist, with silt, pebble ½" diameter, subangular (SM)	2.8-3.0'	
4						
5	3	2 for 18"	18"	Clay, silty, dark gray, black mottled, wet, odor	4.0-4.5	
				Sand, fine-med., dark gray-black, silty with clay (SM)		
6					6.5-7.0' wood fragments with shell fragments, dry	
7	4	1 1 1	18"	Sand, fine-med., dark brown-black, with, silt, some clay (SM)	7.0-8.0' shell fragments, some wood fragments	
8						
10	5	2 for 18"	6"	Sand, fine-med., dark brown-black, silty, with clay (SM)	larger wood fragments (½-1") throughout	

PART 2

OHM

JOB NO 4294

BORE HOLE NO. MSA

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
11						
12	6	1 1 2	18"	Sand, fine-med., dark gray, silty, some wood fragments throughout (SM)		
13						
14					14.0-14.5' abundant wood fragments	
15	7	1 for 18"	18"	Sand, fine-med., dark gray, silty, wood fragments, some shell fragments (SM)	14.5-15.5'	
16						
17	8	1 1 1		Sand, fine, dark gray, silty, with clay, shell fragments, some wood fragments (ML)		
18				Total Depth 18.0' BLS		
19					Well	
20					10' of 2" SS casing 10' of 2" SS screen S.I. = 7-17' BLS Sand Pack to 4' BLS Casing 3' ALS	

PART 1

OHM

JOB NO. 4294

BORE HOLE NO. MSA 5

PROJECT: GM/CPC Phase II	LOCATION: Bay City, MI
DRILLING CONTRACTOR: CTI	DRILLING EQUIPMENT: CME - 75
HYDROGEOLOGIST: R. Brown	DRILLER: R. Near
DATE START/TIME: 11/11/86 1545	DATE FINISH/TIME: 11/11/86 1700
SURFACE ELEVATION: 586.49	TOTAL DEPTH: 18' BLS
WELL CASING: 2" Stainless Steel	SCREEN TYPE: 2" Stainless Steel
LENGTH: 10'	SLOT: 10

GROUND WATER			
DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE			S.S.	
DIAMETER			2"	
HAMMER WEIGHT			140 lbs	
FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0						
1	1	8 5 6	18"	Sand, fine to medium, well graded, light to dark brown, moist (SM)	Gravelly to 9" BLS	
2	2	4 6 9	18"	Sand, fine to medium, well graded, light to dark brown, moist (SM)		
3						
4						
5	3	2 1 1	18"	Sand, fine to medium, well graded, light brown (SM)	Wet after 4.5'	
6						
7	4	5 4 4	15"	Sand, fine to medium, silty, light to dark brown (SM)		
8						
10	5	1 1 1	18"	Sand, fine to medium, silty, with wood fragments (SM)	Abundant wood fragments 9.0'-10.0'	

PART 2

OHM

JOB NO 4294

BORE HOLE NO. MSA 5

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
11						
12	6	1 1 1	18"	Sand, fine, with silty clay, dark green to black, wood chips and shell fragments (SM)	Slight odor	
13						
14						
15	7	1 2		Sand, very fine, silty, dark brown with shell fragments (SM)		
16						
17	8	1 1 2		Sand, very fine, silty, clayey, dark brown, with shell fragments (SC)		
18				Total Depth 18.0' BLS	Well 10' of 2" SS casing 10' of 2" SS screen S.I. = 7-17' BLS Sand pack to 4' BLS Casing to 3' ALS	

0053-454 CPC/Bay City — September 25, 1985

BORING NUMBER MW-1 TOTAL DEPTH 11' S.W.L. (BGL) approx. 4.74'

Sample Number	Sample Interval	Lithologic Description
MW-1 1'	0 - 1	TOPSOIL; fine-med. sand, sorted, brown, dry
MW-1 3'	2.5 - 3	SAND; fine-med., sorted, brown, dry
MW-1 5'	4.5 - 5	FILL; fine-med. sand w/bricks, saturated
	5 - 9	SILT; w/sand & small amount of gravel (considerable
		amount of junk; cans, springs, glass, wood)
MW-1 11'	10 - 11	SILT; w/sand, small amount of gravel, black, saturated
		screen set from 8.5 - 10.5 feet BGL
		sand pack installed
		cement grout
		1 well guard and lock
		Ground Elevation = 586.4 ft.
		Top of Casing Elevation = 587.65 ft.

Piezometer: ☐ Screen 924 #7 Pipe 10' Total Depth (BGL) 10.5

BORING # 4		
BLOWS	DEPTH	DESCRIPTION
	0'-0"	GROUND LEVEL
5 9 5 5	13'-0"	– FILL – CINDERS, STEEL RAGS & COAL, SOME WOOD
2 1	17'-6"	LOOSE EXTREMELY FINE GRAY SAND, TRACE OF WOOD
7	24'-6"	VERY SOFT GRAY SILT, TRACE OF SEASHELLS
8 12	33'-9"	LOOSE FINE TO MEDIUM GRAY SAND
20 40	43'-6"	FIRM FINE TO MEDIUM GRAY SAND, TRACE OF GRAVEL
62	48'-3"	COMPACT FINE TO MEDIUM GRAY SAND TRACE OF GRAVEL
66 8	53'-6"	VERY COMPACT FINE TO MEDIUM GRAY SAND SOME GRAVEL
17	55'-9"	NOTE A
12	58'-6"	NOTE B
6 5 5 6	64'-9"	MEDIUM SANDY REDDISH GRAY CLAY, LITTLE GRAVEL
4 3 17	85'-0"	SOFT SANDY REDDISH GRAY CLAY, LITTLE GRAVEL
100/4	92'-9" 95'-8"	SOFT GRAY CLAY, LITTLE SAND & GRAVEL NOTE C
	96'-0"	NOTE D

BORING STOPPED

NOTES:

–A–
LOOSE MEDIUM GRAY
SAND & GRAVEL

–B–
STIFF SANDY GRAY
CLAY, STREAKS OF
RED CLAY, LITTLE
GRAVEL

–C–
FIRM FINE TO MEDIUM
GRAY SAND, LITTLE
GRAVEL

–D–
DISENTIGRATED GRAY
SHALE

GENERAL NOTES

USED 56'–0" OF 2 1/2" CASING
W.L. @ 7'–10" 1 HOUR
AFTER COMPLETION
WITH NO CASING
IN PLACE
W.L. @ 19'–0" WITH
CASING IN PLACE
COMPLETED 4–30–64
TEST BORINGS TAKEN BY
THE RAYMOND CONCRETE PILE CO.

SOURCE:
SITE PLAN
BOILER HOUSE
CHEVROLET MOTOR DIV.–GMC
BENJAMIN, WOODHOUSE AND GUENTHER, INC.
DEARBORN MICHIGAN
DWG NO. C–1 JOB NO. 418–1A

BORING RCP4
GM POWERTRAIN DIVISION–BAY CITY PLANT
Bay City, Michigan

CRA

JOB NUMBER 0053-1454 CPC/Bay City DATE February, 1969 PAGE

BORING NUMBER SB 10-69 TOTAL DEPTH 20' S.W.L. (BGL)

Sample Number	From to Feet	Lithologic Description
	0 - 4'0"	Medium compact moist cinders and coal fill,
		medium to highly organic
	4'0" - 7'6"	Extremely soft wet sawdust and wood fill
	7'6" - 12'0"	Slightly compact wet river bottom sand, layers of
		extremely soft marl
	12'0" - 15'0"	Compact wet coarse brown sand and gravel, streaks
		of clay and peat
	15'0" - 18'0"	Stiff moist silty blue clay, sand and pebbles
	18'0" - 20'0"	Extremely stiff moist silty blue clay, sand and
		pebbles

Piezometer: ☐ Screen _____ Pipe_____ Total Depth (BGL)_____

JOB NUMBER 0053-1454 DATE February, 1969 PAGE

BORING NUMBER SB 11-69 TOTAL DEPTH 25' S.W.L. (BGL)

Sample Number	From to Feet	Lithologic Description
	0 - 1'6"	Compact moist medium brown sand fill
	1'6" - 4'0"	Medium compact moist coal and cinder fill, medium
		to highly organic
	4'0" - 10'6"	Soft wet wood and sawdust fill
	10'6" - 13'0"	Extremely soft moist river bottom blue clay
	13'0" - 19'0"	Compact wet coarse brown sand and gravel
	19'0" - 25'0"	Extremely stiff moist blue clay, sand and pebbles

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-1454 CPC/Bay City DATE February, 1969 PAGE _____

BORING NUMBER SB 12-69 TOTAL DEPTH 35' S.W.L. (BGL) _____

Sample Number	From __ to __ Feet	Lithologic Description
	0 - 1'4"	Compact moist sand, gravel, and topsoil fill
	1'4" - 3'6"	Firm moist peat, coal and topsoil fill
	3'6" - 9'0"	Soft moist swamp bottom clay and miscellaneous fill
	9'0" - 14'0"	Soft moist black oiley miscellaneous fill, river
		bottom
	14'0" - 18'0"	Extremely soft moist river bottom clay
	18'0" - 27'6"	Slightly compact wet coarse brown sand, layers of
		extremely soft marl
	27'6" - 35'0"	Compact wet coarse brown sand

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-1454 CPC/Bay City DATE February, 1969 PAGE

BORING NUMBER SB 13-69 TOTAL DEPTH 90' S.W.L. (BGL)

Sample Number	From to Feet	Lithologic Description
	0 - 1'6"	Medium compact moist black sand and gravel fill
	1'6" - 4'11"	Compact moist discolored sand fill, occasional light
		vegetation, few bricks, slightly to medium organic
	4'11" - 9'6"	Slightly compact moist sand fill, light vegetation,
		few pebbles, slightly organic
	9'6" - 14'6"	Slightly compact wet gray sand, layers of swampy
		material, high vegetation
	14'6" - 18'6"	Medium compact wet medium gray sand, occasional
		light vegetation
	18'6" - 21'7"	Compact wet medium gray sand
	21'7" - 29'6"	Soft moist swamp bottom, layers of high vegetation
	29'6" - 32'6"	Compact wet medium gray sand
	32'6" - 37'7"	Soft moist gray marl
	37'7" - 44'6"	Extremely stiff moist blue clay, sand and pebbles
	44'6" - 46'0"	Compact wet medium gray sand
	46'0" - 73'6"	Stiff moist blue clay, sand and pebbles
	73'6" - 82'6"	Firm moist silty blue clay
	82'6" - 84'6"	Extremely stiff moist blue clay, high sand and
		pebbles
	84'6" - 90'0"	Extremely compact moist cemented gray sand, layers
		of sandstone

0053-454 CPC/Bay City DATE October 3, 1985 FILE

BORING NUMBER SB-16 TOTAL DEPTH 24" S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-16 4"	0 - 4"	SAND; fine-coarse w/gravel, non sorted, brown, dry
	4 - 8"	SAND; fine, sorted, brown, moist
SB-16 12"	8 - 12"	SAND; w/fine gravel, non sorted, brown, moist
	12 - 16"	GRAVEL; fine, brown-black, moist
	16 - 20"	GRAVEL; fine, brown-black, moist
SB-16 24"	20 - 24"	SANDY SILT: fine-med., non sorted, black, moist
		split-spoon sample taken
		natural materials backfill
		Ground Elevation - 586.7 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-454 CPC/Bay City DATE October 3, 1985 PAGE

BORING NUMBER SB-17 TOTAL DEPTH 24" S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-17 4"	0 - 4"	SAND; fine-coarse w/gravel, non sorted, brown, dry
	4 - 8"	SAND; fine, sorted, brown, moist
SB-17 12"	8 - 12"	SAND; w/fine gravel, non sorted, brown, moist
	12 - 16"	GRAVEL; fine, brown-black, moist
	16 - 20"	GRAVEL; fine, brown-black, moist
SB-17 24"	20 - 24"	SAND; fine-med. w/silt, non sorted, black, moist
		split-spoon sample taken
		natural materials backfill
		Ground Elevation = 587.2 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Machine Storage Area	WELL/BORING No.: SB-31
LOCATION: Bay City, Michigan	DATE DRILLED: June 2, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 14 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite / 1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - 1 foot BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: approx. 6 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 14 feet BGL.

LOGGED BY: Terrence M. Farrell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-2		SAND; with gravel, black, slightly moist
2-6	SSS/2-4'	WOOD; black, slightly moist
	SSS/4-6'	
6-8	SSS/6-8'	non-representitive sample, saturated, very dark-colored
		water, very slight oily odor
8-10.1	SSS/8-10'	GRAVEL; with wood and sand, near black, very slight oily
	SSS/10-12'	odor; 10% recovery
10.1-11.8	SSS/10-12'	no sample retained; black water, very slight oily odor
11.8-14	SSS/10-12'	Clay; with organic material, greenish-brown, very soft,
	SSS/12-14'	very moist, odorless

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Machine Storage Area	WELL/BORING No.: SB-32
LOCATION: Bay City, Michigan	DATE DRILLED: June 2, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 14 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 588 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite / 1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - 1 foot BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: approx. 6 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 14 feet BGL.

LOGGED BY: Terrence M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; brown, dry
1-4.3	SSS/2-4'	GRAVEL; with sand and wood, black, slightly moist, slight
	SSS/4-6'	oily odor
4.3-6	SSS/4-6'	SAND; black, moist, slight oily odor
6-8	SSS/6-8'	WOOD; black, saturated, oily odor; 10% recovery
8-10	SSS/8-10'	WOOD; black, saturated, visable oil; 10% recovery
10-12	SSS/10-12'	SAND AND GRAVEL; saturated, visable oil; 10% recovery
12-12.3	SSS/12-14'	CLAY; gray, very soft, no odor
12.3-14	SSS/12-14'	CLAY; with organic material, greenish-brown, very soft, very
		moist, odorless

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Machine Storage Area	WELL/BORING No.: SB-33
LOCATION: Bay City, Michigan	DATE DRILLED: June 2, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 12 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite / 1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - 1 foot BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: approx. 6 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 12 feet BGL.

LOGGED BY: Terrence M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-2		SAND; brown, slightly moist
2-4	SSS/2-4'	WOOD; black, very slight oily odor; 20% recovery
4-5.7	SSS/4-6'	WOOD; black, very slight oily odor; 50% recovery
5.7-8	SSS/4-6'	CLAY; with organic material, greenish-brown, very slight
	SSS/6-8'	oily odor; 30% recovery
8-10	SSS/8-10'	CLAY; sandy, with organic material, brown, no odor;
		20% recovery
10-12	SSS/10-12'	CLAY; with organic material, greenish-brown, no odor;
		10% recovery

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City - Machine Storage Area	WELL/BORING No.:	SB-34
LOCATION:	Bay City, Michigan	DATE DRILLED:	June 2, 1988
DRILLING METHOD:	Hollow-Stem Auger	CASING TYPE/DIA.:	NA
TOTAL DEPTH DRILLED:	14 feet BGL	TOTAL CASING:	NA
GROUND ELEVATION:	approx. 587 feet plant datum	T.O.C. ELEVATION:	NA
GROUT TYPE/QUANTITY:	dry bentonite / 1 bag	SCREEN TYPE/LENGTH:	NA
GROUT INTERVAL(S):	5 - 1 foot BGL	SCREENED INTERVAL:	NA
DEPTH TO WATER:	approx. 6 feet BGL	GRAVEL PACK TYPE:	NA
WATER LEVEL ELEVATION:		GRAVEL PACK INTERVAL:	NA
		STATIC WATER LEVEL:	NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 14 feet BGL.

LOGGED BY: Terrence M. Farrell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-2		SAND; black, slightly moist
2-4	SSS/2-4	WOOD; brown, very slight oily odor; 20% recovery
4-5.8	SSS/4-6'	WOOD; brown, very slight oily odor; 50% recovery
5.8-6.7	SSS/4-6'	WOOD; black, saturated, oily odor
	SSS/6-8'	
6.7-7.3	SSS/6-8'	WOOD; brown, saturated, slight oily odor
7.3-8	SSS/6-8'	SAND; greenish-tan, saturated, slight oily odor
8-10	SSS/8-10'	WOOD; with sand, black, saturated, slight oily sheen;
		30% recovery
10-12.5	SSS/10-12'	WOOD; with sand, black, saturated, oily sheen
	SSS/12-14'	
12.5-14	SSS/12-14'	CLAY; with organic material, greenish-brown, no odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City - Machine Storage Area	WELL/BORING No.:	SB-35
LOCATION:	Bay City, Michigan	DATE DRILLED:	June 3, 1988
DRILLING METHOD:	Hollow-Stem Auger	CASING TYPE/DIA.:	NA
TOTAL DEPTH DRILLED:	12 feet BGL	TOTAL CASING:	NA
GROUND ELEVATION:	approx. 587 feet plant datum	T.O.C. ELEVATION:	NA
GROUT TYPE/QUANTITY:	dry bentonite / 1 bag	SCREEN TYPE/LENGTH:	NA
GROUT INTERVAL(S):	5 - 1 foot BGL	SCREENED INTERVAL:	NA
DEPTH TO WATER:	approx. 5 feet BGL	GRAVEL PACK TYPE:	NA
WATER LEVEL ELEVATION:		GRAVEL PACK INTERVAL:	NA
		STATIC WATER LEVEL:	NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 12 feet BGL.

LOGGED BY: Terrence M. Farrell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-2.5	SS/2-4'	SAND; with gravel, brown, slightly moist
2.5-4	SS/2-4'	CLAY; with wood and gravel, brownish-black, slight oily odor
4-6	SS/4-6'	SAND, CLAY AND GRAVEL; saturated at 5 feet BGL oily sheen
6-8	SS/6-8	WOOD; black saturated, oily sheen; 10% recovery
8-10	SS/8-10'	COBBLE; saturated, slight oily sheen; 10% recovery
10-12	SS/10-12'	CLAY: with organic material, greenish-brown, no odor; 10% recovery

0053-454 CPC/Bay City Date: October 1, 1985

BORING NUMBER SB-B-1 TOTAL DEPTH 7' S.W.L. (BGL) _____

Sample Number	Sample Interval	Lithologic Description
SB-B-1 1'	0 - 1	SILTY SAND; med.-coarse, dk. brown, damp
SB-B-1 3'	2.5 - 3	SILT; w/sand & gravel, dk. gray, cohesive w/wood chips
SB-B-1 5'	4.5 - 5	SANDY SILT; med.-coarse, non sorted, dk. gray,
		cohesive, wood chips
SB-B-1 7'	6.5 - 7	SAND; fine-coarse, non sorted, dk. brown, saturated,
		shell fragments
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.0 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City October 1, 1985

BORING NUMBER SB-B-2 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-B-2 1'	0 - 1	SILTY SAND; fine-med., semi sorted, brown, moist
SB-B-2 3'	2.5 - 3	FILL: sand, gravel, bricks, black, moist
SB-B-2 5'	4.5 - 5	FILL; sand, gravel, bricks, black, moist
SB-B-2 7'	6.5 - 7	SAND; med., semi sorted, dk. gray, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 585.9 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City October 1, 1985

BORING NUMBER SB-C-1 TOTAL DEPTH 7' S.W.L. (BGL) _____

Sample Number	Sample Interval	Lithologic Description
SB-C-1 1'	0 - 1	SAND; fine, very well sorted, lt. brown, dry
SB-C-1 3'	2.5 - 3	SANDY SILT; med.-coarse, non sorted, dk. gray, damp,
		cohesive
SB-C-1 5'	4.5 - 5	SANDY SILT; med.-coarse, non sorted, dk. gray, damp,
		cohesive w/wood chips
SB-C-1 7'	6.5 - 7	SANDY SILT; med.-coarse, non sorted, dk. gray, damp,
		cohesive w/wood chips
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.7 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City DATE: October 1, 1985 BY:

BORING NUMBER SB-C-2 TOTAL DEPTH: 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-C-2 1'	0 - 1	SAND; fine, well sorted, lt. gray, dry
SB-C-2 3'	2.5 - 3	SANDY SILT: med.-coarse, non sorted, gray-black, moist,
		wood chips
SB-C-2 5'	4.5 - 5	SANDY SILT: fine-med., non sorted, gray-black, satu-
		rated
SB-C-2 7'	6.5 - 7	SILTY SAND; med., semi sorted, gray-black, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.9 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

Job Number 0053-454 CPC/Bay City Date October 2, 1985

BORING NUMBER SB-C-3 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-C-3 1'	0 - 1	TOPSOIL; silt, sand, gravel, black, moist
SB-C-3 3'	2.5 - 3	top 3" consists of SAND; fine-coarse, sorted, lt.
		brown, dry; bottom 3" consists of SANDY SILT; fine-med,
		dk. gray
SB-C-3 5'	4.5 - 5	SILT; w/sand & gravel, dk. brown, saturated
SB-C-3 7'	6.5 - 7	SANDY SILT; fine-med., semi sorted, black, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.3 ft.

JOB NUMBER 0053-454 CPC/Bay City DATE October 1, 1985 LOG

BORING NUMBER SB-D-1 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-D-1 1'	0 - 1	SILTY SAND; med.-coarse, non sorted, dk. gray, moist
SB-D-1 3'	2.5 - 3	FILL; sand, clay/till, black, damp
SB-D-1 5'	4.5 - 5	FILL; sand, clay till, black, damp
SB-D-1 7'	6.5 - 7	FILL; sand, clay/till, black, damp w/gravel, sticks
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 587.1 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City DATE October 1, 1985 PAGE

BORING NUMBER SB-D-2 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-D-2 1'	0 - 1	SILTY SAND: fine-coarse, non sorted, black, dry
SB-D-2 3'	2.5 - 3	FILL; sand, silt, gravel, wood, cloth, plastic, black,
		dry
SB-D-2 5'	4.5 - 5	FILL; sand, silt, gravel, wood, cloth, plastic, black,
		dry
SB-D-2 7'	6.5 - 7	WOOD CHIPS; black, wet
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 587.9 ft.

Piezometer: ☐ Screen Pipe Total Depth (BGL)

0053-454 CPC/Bay City Date October 2, 1985 Date

BORING NUMBER SB-D-3 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-D-3 1'	0 - 1	TOPSOIL; sand, gravel, black, dry
SB-D-3 3'	2.5 - 3	SANDY SILT: trace of gravel, lt. gray, dry
SB-d-3 5'	4.5 - 5	SILTY SAND: med.-coarse w/fine gravel, black, moist
SB-D-3 7'	6.5 - 7	SILT; w/sand & gravel, black, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 587.4 ft.

JOB NUMBER 0053-454 CPC/Bay City DATE October 1, 1985 PAGE

BORING NUMBER SB-E-1 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-E-1 1'	0 - 1	SANDY SILT; med.-coarse, non sorted, gray-black, moist
SB-E-1 3'	2.5 - 3	CLAY TILL; very cohesive, trace amount of sand, gray
SB-E-1 5'	4.5 - 5	CLAY TILL; very cohesive, trace amount of sand, gray
SB-E-1 7'	6.5 - 7	CLAY TILL; very cohesive, trace amount of sand, gray
		w/wood chips
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.7 ft.

Piezometer: ☐ Screen Pipe Total Depth (BGL)

0053-454 CPC/Bay City DATE: October 1, 1985 DATE: _____

BORING NUMBER SB-E-2 TOTAL DEPTH 7' S.W.L. (BGL) _____

Sample Number	Sample Interval	Lithologic Description
SB-E-2 1'	0 - 1	TOPSOIL; sand & gravel, brown, dry
SB-E-2 3'	2.5 - 3	FILL; sand & gravel, glass, plastic, wood, black, dry
SB-E-2 5'	4.5 - 5	FILL; sand & gravel, bricks, black, dry
SB-E-2 7'	6.5 - 7	FILL; sand & gravel, bricks, black, dry w/wood chips
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 590.1 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-454 CPC/Bay City DATE October 2, 1985 LOG

BORING NUMBER SB-E-3 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-E-3 1'	0 - 1	SAND; fine-med., sorted, lt. brown, moist
SB-E-3 3'	2.5 - 3	FILL; silt, sand, gravel, cloth, wood, black, dry
SB-E-3 5'	4.5 - 5	FILL; silt, sand, gravel, cloth, wood, black, moist w/
		brick
SB-E-3 7'	6.5 - 7	FILL; silt, sand, gravel, cloth, wood, black w/brick,
		saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 587.9 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City DATE October 1, 1985

BORING NUMBER SB-F-1 TOTAL DEPTH 7' S.W.L. (BGL) _____

Sample Number	Sample Interval	Lithologic Description
SB-F-1 1'	0 - 1	SAND; fine, very well sorted, lt. brown, dry
SB-F-1 3'	2.5 - 3	SAND; fine, very well sorted, lt. brown, dry
SB-F-1 5'	4.5 - 5	SAND; fine, very well sorted, gray, saturated
SB-F-1 7'	6.5 - 7	SAND; med.-coarse, non sorted, gray, saturated, shell
		fragments
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.9 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City October 1, 1985

BORING NUMBER SB-F-2 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-F-2 1'	0 - 1	TOPSOIL; sand & gravel, black, dry
SB-F-2 3'	2.5 - 3	FILL; sand & gravel, paper, wood, black, moist
SB-F-2 5'	4.5 - 5	FILL; sand & gravel, slag, black, dry
SB-F-2 7'	6.5 - 7	FILL; sand & gravel, slag, black, saturated
		½ bag bentointe at top and bottom
		natural materials backfill
		Ground Elevation = 590.3 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City October 2, 1985

BORING NUMBER SB-F-3 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-F-3 1'	0 - 1	TOPSOIL; silt, sand, gravel, black, dry
SB-F-3 3'	2.5 - 3	FILL; silt, sand, gravel w/bricks, black, dry
SB-F-3 5'	4.5 - 5	FILL; silt, sand, gravel w/bricks, black, saturated
SB-F-3 7'	6.5 - 7	FILL; silt, sand, gravel w/bricks, black, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 588.2 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City October 3, 1985

BORING NUMBER SB-F-4 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-F-4 1'	0 - 1	TOPSOIL; fine-med. silty sand, semi sorted, black,
		cohesive
SB-F-4 3'	2.5 - 3	FILL; silt, sand, gravel, brick, black, moist
SB-F-4 5'	4.5 - 5	SANDY SILT; med.-coarse, trace of fine gravel, lt.
		gray, saturated
SB-F-4 7'	6.5 - 7	SANDY SILT; med.-coarse, trace of fine gravel, lt.
		gray, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 585.8 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City DATE: September 30, 1985 FILE:

BORING NUMBER SB-G-1 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-G-1 1'	0 - 1	SILTY SAND; fine-coarse, semi sorted, gray, dry
SB-G-1 3'	2.5 - 3	FILL: cloth, plastic, glass
SB-G-1 5'	4.5 - 5	FILL; cloth, plastic, glass
SB-G-1 7'	6.5 - 7	FILL; cloth, plastic, glass
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.8 ft.

Piezometer: ☐ Screen _____ Pipe_____ Total Depth (BGL)_____

0053-454 CPC/Bay City October 2, 1985

BORING NUMBER SB-G-2 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-G-2 1'	0 - 1	TOPSOIL; silty sand, dk. brown, dry
SB-G-2 3'	2.5 - 3	FILL; silt, sand, gravel, brick, black, dry
SB-G-2 5'	4.5 - 5	FILL; silt, sand, gravel, brick, black, dry
SB-G-2 7'	6.5 - 7	FILL; silt, sand, gravel, brick, black, dry
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 589.3 ft.

Piezometer: ☐ Screen Pipe Total Depth (BGL)

0053-454 CPC/Bay City DATE October 2, 1985 DATE

BORING NUMBER SB-G-3 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-G-3 1'	0 - 1	TOPSOIL; silt, sand, gravel, black, dry
SB-G-3 3'	2.5 - 3	FILL; silt, sand, gravel & wood chips, black, dry
SB-G-3 5'	4.5 - 5	FILL; silt, sand, gravel & wood chips, black, dry
SB-G-3 7'	6.5 - 7	FILL; silt, sand, gravel, wood chips & slag, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 588.1 ft.

0053-454 CPC/Bay City DATE September 30, 1985 PAGE

BORING NUMBER SB-H-1 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-H-1 1'	0 - 1	TOPSOIL; fine-coarse sand, non sorted, brown, moist
SB-H-1 3'	2.5 - 3	SAND; fine-med., semi sorted, brown, moist, shell
		fragments
SB-H-1 5'	4.5 - 5	FILL; rocks, gravel, asphalt
SB-H-1 7'	6.5 - 7	FILL; in nose cone, next 3" contains fine-med. sand,
		sorted, white, saturated, next 2" contains wood chips,
		black, wet
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.4 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

J.O.B. Number: 0053-454 CPC/Bay City DATE: October 2, 1985 LOG:

BORING NUMBER SB-H-2 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-H-2 1'	0 - 1	SANDY SILT: w/gravel, black, dry
SB-H-2 3'	2.5 - 3	FILL: sand, gravel, brick, slag, wood, dry, black
SB-H-2 5'	4.5 - 5	FILL; predominately wood, some slag, black-brown, dry
SB-H-2 7'	6.5 - 7	WOOD CHIPS: black, dry
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 587.2 ft.

Piezometer: ☐ Screen _____ Pipe_____ Total Depth (BGL)_____

0053-454 CPC/Bay City October 2, 1985

BORING NUMBER SB-H-3 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-H-3 1'	0 - 1	TOPSOIL; silty sand, gravel, shell fragments, black,
		dry
SB-H-3 3'	2.5 - 3	SAND; fine-med., sorted, gray, dry, shell fragments
SB-H-3 5'	4.5 - 5	SAND: fine-med. w/gravel, shell fragments, gray, moist
SB-H-3 7'	6.5 - 7	FILL; clay, sand, gravel, black, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 587.9 ft.

Piezometer: ☐ Screen _____ Pipe_____ Total Depth (BGL)_____

0053-454 CPC/Bay City October 3, 1985

BORING NUMBER SB-H-4 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-H-4 1'	0 - 1	TOPSOIL; med.-coarse silty sand, non sorted, black,
		dry
SB-H-4 3'	2.5 - 3	FILL: sand, gravel, brick, black, dry
SB-H-4 5'	4.5 - 5	SILTY SAND: fine-med., semi sorted, black, dry
SB-H-4 7'	6.5 - 7	CLAY TILL; w/fine-coarse sand, non sorted, lt. gray,
		cohesive
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 587.1 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-454 CPC/Bay City DATE October 3, 1985 PAGE _____

BORING NUMBER SB-H-5 TOTAL DEPTH 7' S.W.L. (BGL) _____

Sample Number	Sample Interval	Lithologic Description
SB-H-5 1'	0 - 1	TOPSOIL; silt, sand, gravel, black, dry
SB-H-5 3'	2.5 - 3	FILL; sand, gravel, slag, black, dry
SB-H-5 5'	4.5 - 5	FILL; sand, gravel, slag, black, dry
SB-H-5 7'	6.5 - 7	FILL; sand, gravel, slag, black, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 585.9 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City DATE October 3, 1985 DATE

BORING NUMBER SB-I-4 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-I-4 1'	0 - 1	TOPSOIL; silt, sand, gravel, black, dry
SB-I-4 3'	2.5 - 3	FILL; silt, sand, gravel, brick, black, dry
SB-I-4 5'	4.5 - 5	FILL; silt, sand, gravel, brick, black, dry w/wood
		chips
SB-I-4 7'	6.5 - 7	FILL; silt, sand, gravel, brick, black, dry w/wood
		chips
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 587.3 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

0053-454 CPC/Bay City | October 3, 1985 | [illegible]

BORING NUMBER SB-I-5 TOTAL DEPTH 7' S.W.L. (BGL) _____

Sample Number	Sample Interval	Lithologic Description
SB-I-5 1'	0 - 1	TOPSOIL; silt, sand, gravel, black, dry
SB-I-5 3'	2.5 - 3	CLAY TILL; fine-coarse sands, non sorted, lt. gray,
		cohesive
SB-I-5 5'	4.5 - 5	FILL: silt, sand, gravel, brick, wood chips, black,
		moist
SB-I-5 7'	6.5 - 7	FILL: silt, sand, gravel, brick, wood chips, black,
		moist
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 586.9 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

Job No. 0053-454 CPC/Bay City Date: October 3, 1985 PAGE

BORING NUMBER SB-I-6 TOTAL DEPTH 7' S.W.L. (BGL)

Sample Number	Sample Interval	Lithologic Description
SB-I-6 1'	0 - 1	SANDY SILT; fine-coarse, non sorted, black, cohesive
SB-I-6 3'	2.5 - 3	CLAY TILL; w/trace of fine gravel, lt. gray, cohesive
SB-I-6 5'	4.5 - 5	SAND; fine, well sorted, lt. gray, moist
SB-I-6 7'	6.5 - 7	SILTY SAND: fine-coarse, non sorted w/fine gravel,
		black, saturated
		½ bag bentonite at top and bottom
		natural materials backfill
		Ground Elevation = 585.1 ft.

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC	WELL/BORING No.: TMW-1
LOCATION: Bay City, Michigan	DATE DRILLED: October 9, 1987
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: Galvanized/2-Inch I.D.
TOTAL DEPTH DRILLED: 14 Feet BGL	TOTAL CASING: 12 Feet
GROUND ELEVATION:	T.O.C. ELEVATION:
GROUT TYPE/QUANTITY: Hole Plug	SCREEN TYPE/LENGTH: #7 Slot 960 Stainless Steel
GROUT INTERVAL(S): 9-7.5 Feet	SCREENED INTERVAL: 9 - 14 feet BGL
DEPTH TO WATER: 6.5 Feet BGL	GRAVEL PACK TYPE: Coarse
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: 14-9 Feet
	STATIC WATER LEVEL: DATE:

REMARKS: Next to MSA-5

LOGGED BY: Michael P. McDermott | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2		TOPSOIL: organic, black
2-7		SAND: fine, with silt, light brown to dark gray, saturated at
		approximately 6.5 feet bgl
7-8		PEAT: black
8-8.5		CLAY: dark greenish gray, wet
8.5-10		CLAY: fine, sandy, black
10-10.5		PEAT AND NUTSHELLS: black
10.5-12.5		SAND: with silt and shell fragments, dark gray-black, fine-
		medium
12.5-13		CLAY: with wood fragments, black
13-16		SAND: with silt, fine-medium, dark gray
	S.S.S.	BLOW COUNTS
	8-10	11, 4, 6, 5
	10-12	9, 4 5, 5
	12-14	3, 3, 3, 3
	14-16	2, 1, 2, 2

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

OJECT: CPC	WELL/BORING No.: TMW-2
LOCATION: Bay City, Michigan	DATE DRILLED: October 11, 1987
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: Galvanized/2-Inch I.D.
TOTAL DEPTH DRILLED: 19 Feet BGL	TOTAL CASING: 18 Feet
GROUND ELEVATION:	T.O.C. ELEVATION:
GROUT TYPE/QUANTITY: Hole Plug	SCREEN TYPE/LENGTH: #7 Slot 960 Stainless Steel
GROUT INTERVAL(S): 11-9.5 Feet BGL	SCREENED INTERVAL: 14 - 19 feet BGL
DEPTH TO WATER: 6 Feet BGL	GRAVEL PACK TYPE: Coarse
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: 19-14 Feet BGL
	STATIC WATER LEVEL: DATE:

REMARKS: Next to MSA-4

LOGGED BY: Michael P. McDermott SIGNATURE:

PTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2		TOPSOIL
2-4		SAND: with silt, fine, light brown
4-10		CLAY: with sand and silt, contains wood chips (6-10'), saturated
		at 6 feet, black
10-19		CLAY: with sand and organic matter, dark gray

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC	WELL/BORING No.: TMW-3
LOCATION: Bay City, Michigan	DATE DRILLED: October 11, 1987
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: Galvanized/2-Inch I.D.
TOTAL DEPTH DRILLED: 18 Feet BGL	TOTAL CASING: 18 Feet
GROUND ELEVATION:	T.O.C. ELEVATION:
GROUT TYPE/QUANTITY: Hole Plug/1	SCREEN TYPE/LENGTH: #7 Slot 960 Stainless Steel
GROUT INTERVAL(S): 8-6.5 Feet	SCREENED INTERVAL: 14-19 Feet BGL
DEPTH TO WATER: 7 Feet BGL	GRAVEL PACK TYPE: Coarse
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: 19-14 Feet BGL
	STATIC WATER LEVEL: DATE:

REMARKS: Northwest edge of MSA

LOGGED BY: Michael P. McDermott | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2		SAND: slag and bricks, light brown
2-7		CLAY: with sand and silt, soft, wet, black
7-8		SAND: with clay and silt, very cohesive, wet, medium-coarse,
		black
8-9		SLAG: brown-red
9-12		CLAY: with silt, black, sandy
12-20		PEAT: with interbeds of silty sand, olive green
20 +		SAND: with silt, medium, light gray
	S.S.S.	BLOW COUNTS
	18-20	1, 2, 1, 3

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC	WELL/BORING No.: TMW-4 s&d
LOCATION: Bay City, Michigan	DATE DRILLED: October 11, 1987
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: Galvanized/2-Inch I.D.
TOTAL DEPTH DRILLED: 23 Feet, 8 Feet	TOTAL CASING: 21 Feet, 5 Feet
GROUND ELEVATION:	T.O.C. ELEVATION:
GROUT TYPE/QUANTITY: Hole Plug	SCREEN TYPE/LENGTH: #7 Slot 960 Stainless Steel
GROUT INTERVAL(S): 6 - 4.5 Feet, Surface	SCREENED INTERVAL: 18-23 & 3-8 feet BGL
DEPTH TO WATER: Approximately 6 Feet BGL	GRAVEL PACK TYPE: Coarse
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: 23-18 & 8-3 Feet
	STATIC WATER LEVEL: DATE:

REMARKS: Center of MSA

LOGGED BY: Michael P. McDermott SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		SAND: fine with silt, light brown
1-8		SAND: with silt, crushed bricks, and wood, black
8-16		SANDY, SILTY CLAY: with wood and gravel, wire, dark silver, black
16-25		SAND AND GRAVEL: medium-coarse
	S.S.S.	BLOWCOUNTS
	23-25	5, 4, 4, 1

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC	WELL/BORING No.: TMW-5
LOCATION: Bay City, Michigan	DATE DRILLED: October 12, 1987
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: Galvanized/2-Inch
TOTAL DEPTH DRILLED: 14 Feet BGL	TOTAL CASING: 12 Feet
GROUND ELEVATION:	T.O.C. ELEVATION:
GROUT TYPE/QUANTITY: Hole Plug	SCREEN TYPE/LENGTH: #7 Slot 960 Stainless Steel
GROUT INTERVAL(S): 6-4.5 Feet	SCREENED INTERVAL: 9-14 Feet BGL
DEPTH TO WATER: 6 Feet BGL	GRAVEL PACK TYPE: Coarse
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: 14-9 Feet
	STATIC WATER LEVEL: DATE:

REMARKS:

LOGGED BY: Gary Thornsbury | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-6		SANDY CLAY: with fill material, black
6-10		SILTY CLAY: with wood chips 8-10 feet, light gray, saturated at
		6 feet bgl
10-12		SAND: medium-coarse, light gray
12-14		SILTY CLAY and PEAT: interbedded, light gray.
	S.S.S.	BLOWCOUNTS
	8-10	1, 1, 1, 1
	10-12	5, 5, 5, 7
	12-14	10, 2, 2, 2

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC	WELL/BORING No.: TMW-6
LOCATION: Bay City, Michigan	DATE DRILLED: October 12, 1987
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: Galvanized/2-Inch I.D.
TOTAL DEPTH DRILLED: 14 Feet BGL	TOTAL CASING: 12 Feet
GROUND ELEVATION:	T.O.C. ELEVATION:
GROUT TYPE/QUANTITY: Hole Plug/1	SCREEN TYPE/LENGTH: 960 #7 Slot Stainless Steel
GROUT INTERVAL(S):	SCREENED INTERVAL: 9 - 14 feet BGL
DEPTH TO WATER: Approximately 7 Feet BGL	GRAVEL PACK TYPE: Coarse
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: 14-9 Feet BGL
	STATIC WATER LEVEL: DATE:

REMARKS:

LOGGED BY: Gary Thornsbury | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-6		SANDY CLAY FILL: black
6-8		SILTY CLAY: moist, black
8-14		SILTY SANDY CLAY: with cinders and wood chips, 3 inches of peat
		at approximately 11 feet bgl, gray
	S.S.S.	BLOW COUNTS
	8-10	2, 1, 1, 1
	10-12	2, 2, 2, 2
	12-14	2, 2, 2, 2

BORE LOGS

LAGOON AREA (LA)

Lagoon Area

Well No.	Boring No.	Date	Ground Surface Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Total Depth (feet BGL)	Elevation at Bottom of Screen (ft AMSL)	Screen Length (feet)	Diameter of Screen/Boring (inches)
CMW-1		5/24/88	587.60	N/A	28	559.60	5	2
DB-3		12/4/86	584.27	N/A	67	544.27	10	4
EW-1		6/28/88	587.10	583.19	52	555.10	10	6
EW-2		6/8/88	587.20	N/A	72	542.20	10	6
	GEO-1	7/29/87	N/A	N/A	66.5	N/A	N/A	4
	GEO-2	7/30/87	N/A	N/A	68	N/A	N/A	4
	GEO-3	7/31/87	N/A	N/A	56	N/A	N/A	4
	GEO-4	7/31/87	N/A	N/A	66	N/A	N/A	4
	GEO-10	8/5/87	N/A	N/A	59.5	N/A	N/A	4
	GEO-11	8/6/87	N/A	N/A	59.5	N/A	N/A	4
	GEO-12	8/6/87	N/A	N/A	60.5	N/A	N/A	3-1/4 ID
	GEO-13	8/7/87	N/A	N/A	53	N/A	N/A	3-1/4 ID
	GEO-14	8/7/87	N/A	N/A	60.5	N/A	N/A	3-1/4 ID
	GEO-15	8/7/87	N/A	N/A	70	N/A	N/A	3-1/4 ID
	GEO-16	8/10/87	N/A	N/A	53.5	N/A	N/A	3-1/4 ID
	GEO-17	8/10/87	N/A	N/A	58.5	N/A	N/A	3-1/4 ID
	GEO-18	8/10/87	N/A	N/A	61	N/A	N/A	3-1/4 ID
	GEO-1A	11/2/87	585.50	N/A	>50	N/A	N/A	N/A
	GEO-2A	11/2/87	586.00	N/A	65	N/A	N/A	N/A
	GEO-3A	11/4/87	586.50	N/A	60	N/A	N/A	N/A
	GEO-4A	11/4/87	588.50	N/A	53	N/A	N/A	N/A
	GEO-5A	11/5/87	581.00	N/A	56	N/A	N/A	N/A
	GEO-6A	11/5/87	586.00	N/A	54	N/A	N/A	N/A
	GEO-7A	11/6/87	587.00	N/A	65	N/A	N/A	N/A
LMW-1S		12/8/88	586.40	N/A	15	571.40	10	2
LMW-2S		12/12/88	586.40	589.29	15	571.40	10	2
LMW-3D		12/9/88	586.40	589.82	30	556.40	5	2
LMW-4D		12/12/88	586.20	588.43	30	556.20	5	2
LMW-5S		12/8/88	587.20	589.51	15	572.20	10	2
LMW-6S		12/8/88	586.90	590.71	15	571.90	10	2
LMW-7S		12/8/88	588.80	590.68	15	573.80	10	2
LMW-8S		12/8/88	588.40	592.31	15	573.40	10	2
LMW-9D		12/8/88	588.70	590.72	30	558.70	5	2
LMW-10D		12/7/88	588.30	591.64	30	558.30	5	2
LMW-11S		12/8/88	587.40	591.14	15	572.40	10	2
LMW-12S		12/8/88	586.90	591.29	15	571.90	10	2
MW-2		9/25/85	586.80	590.25	9.8	577.00	2	N/A
MW-3		9/24/85	587.20	588.73	10	577.20	2	N/A
MW-4		9/24/85	588.02	589.07	10.5	577.52	2	N/A
MW-5		9/27/85	587.30	586.5 ??	9.6	577.70	2	N/A
MW-6		9/27/85	586.80	589.45	10.3	576.50	2	N/A
MW-11		7/1/86	587.00	588.15	23	570.00	10	2
MW-12		7/1/86	585.00	N/A	21.5	568.00	10	2
MW-13		7/29/86	N/A	N/A	18	17 FT BGL	10	2
MW-14		7/29/86	N/A	N/A	18	17 FT BGL	10	2

Lagoon Area

Well No.	Boring No.	Date	Ground Surface Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Total Depth (feet BGL)	Elevation at Bottom of Screen (ft AMSL)	Screen Length (feet)	Diameter of Screen/Boring (inches)
MW-15		7/29/86	N/A	N/A	18	17 FT BGL	10	2
MW-16		7/30/86	N/A	N/A	18	17 FT BGL	10	2
MW-17		7/30/86	N/A	N/A	18	17 FT BGL	10	2
MW-18		7/30/86	N/A	N/A	18	17 FT BGL	10	2
MW-19		7/30/86	N/A	N/A	18	17 FT BGL	10	2
	SB4-69	2/00/69	N/A	N/A	95	N/A	N/A	N/A
	SB5-69	2/00/69	N/A	N/A	95	N/A	N/A	N/A
	SB6-69	2/00/69	N/A	N/A	95	N/A	N/A	N/A
	SB7-69	2/00/69	N/A	N/A	95	N/A	N/A	N/A
	SB8-69	2/00/69	N/A	N/A	95	N/A	N/A	N/A
	SB9-69	2/00/69	N/A	N/A	95	N/A	N/A	N/A
	SB12-70	12/00/70	N/A	N/A	12	N/A	N/A	N/A
	SB13-70	12/00/70	N/A	N/A	12	N/A	N/A	N/A
	SB-20	5/20/88	587.00	N/A	17	N/A	N/A	N/A
	SB-21	5/20/88	587.00	N/A	16	N/A	N/A	N/A
	SB-22	5/20/88	587.00	N/A	16	N/A	N/A	N/A
	SB-23	5/20/88	587.00	N/A	14	N/A	N/A	N/A
	SB-24	5/20/88	587.00	N/A	16	N/A	N/A	N/A
	SB-25	5/20/88	587.00	N/A	16	N/A	N/A	N/A
	SB-26	6/2/88	587.00	N/A	14	N/A	N/A	N/A
	SB-27	6/3/88	587.00	N/A	14	N/A	N/A	N/A
	SB-28	6/3/88	587.00	N/A	14	N/A	N/A	N/A
	SB-29	6/3/88	587.00	N/A	14	N/A	N/A	N/A
	SB-30	6/3/88	587.00	N/A	16	N/A	N/A	N/A
	SB-31A	8/18/88	586.56	N/A	14	N/A	N/A	N/A
	SB-32-A	8/18/88	586.86	N/A	16	N/A	N/A	N/A
	SB-33-A	8/19/88	587.04	N/A	12.5	N/A	N/A	N/A
	SB-34-A	8/19/88	587.64	N/A	16	N/A	N/A	N/A
	SB-35-A	8/22/88	587.23	N/A	18	N/A	N/A	N/A
	SB-36-A	8/23/88	587.02	N/A	16	N/A	N/A	N/A
	SB-37-A	8/23/88	587.09	N/A	16	N/A	N/A	N/A
	SB-38-A	8/23/88	586.92	N/A	14	N/A	N/A	N/A

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: CMW-1
LOCATION: Bay City, MI (Lagoon Area)	DATE DRILLED: 5/23/88 through 5/24/88
DRILLING METHOD: Cable Tool 22-W	CASING TYPE/DIA.: 6" Black Steel-Surface 2" Stainless Steel-Well Pipe
TOTAL DEPTH DRILLED: 28 Feet BGL	TOTAL CASING: 23 Feet
GROUND ELEVATION: 587.60 Feet	T.O.C. ELEVATION:
GROUT TYPE/QUANTITY: Benseal/1 Bag (50#)	SCREEN TYPE/LENGTH: Stainless Steel/ 2" x 5' Slot: .010
GROUT INTERVAL(S): Surface Plug Around 6-Inches	SCREENED INTERVAL: 23-28 Feet BGL
DEPTH TO WATER: 8.91 Feet BGL	GRAVEL PACK TYPE: #50 Washed Silica Sand
WATER LEVEL ELEVATION: 578.69 Feet	GRAVEL PACK INTERVAL: 28 Feet to Surface
	STATIC WATER LEVEL: 8.91 DATE: 10/28/88

REMARKS: Drilled by Chuck Vermillion, Lester Johnson and Mike Osogwin.

LOGGED BY: Chuck Vermillion SIGNATURE: Charles M Vermillion

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-3		FILL: brownish-gray, crushed limestone, silt, fine-coarse sand,
		fine-medium gravel, dry.
3-15		SAND: dark gray, fine-coarse, some fine gravel, organic material,
		saturated.
15-22		SAND: gray, fine-medium, some fine gravel, saturated.
22-28		SAND: light brown, fine-coarse, little fine gravel, saturated.
28		Total depth drilled.

PART 1

OHM

JOB NO. 4294

BORE HOLE NO. DB - 3

PROJECT: GM/CPC Phase II	LOCATION: Bay City, MI
DRILLING CONTRACTOR: CTI	DRILLING EQUIPMENT: CME - 75
HYDROGEOLOGIST: R. Brown	DRILLER: R. Near
DATE START/TIME: 12/3/86 0900 / DATE FINISH/TIME: 12/4/86	SURFACE ELEVATION: 584.27 / TOTAL DEPTH: 67.0'BLS
WELL CASING: 4" Steel / SCREEN TYPE: 4" Stainless	LENGTH: 30' / SLOT: 10

GROUND WATER			
DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE			S.S.	
DIAMETER			2"	
HAMMER WEIGHT			140 lbs	
FALL			30"	

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0				Sand, fine med., dark brown, roots, minor chrome fragments (SM)	Moist, top soil	
1	1	5 5 8	5"			
2	2	3 6 7	15"	Sand, med. coarse, brown, some fine sand shell fragments (SM)	Moist	
3				Clay, silty, sandy, dark gray, shell fragments, wood fragments @ 5.0' (CL)		
4	3	1 2 1	18"		Moist	
5						
6						
7	4	1 1 2	18"	Sand, silty, sandy, dark gray, shell fragments, roots (SM)	Moist	
8						
9						
10	5	1 2 1	18"	Sand, fine silty, gray, with some clay, minor shell fragments, roots (SM)		

PART 2

OHM

JOB NO 4294

BORE HOLE NO. DB - 3

OJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV - ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
11						
12	6	1 0 0	18"	Sand, fine silty, gray, with some clay, shell fragments, wood fragments (SM)	Weight of hammer for 18"	
13						
14	7	1 2 2	18"	Sand, fine silty, gray, with some clay, shell and wood fragments (SM)	Wet	
15						
16	8			Full Shelby Tube DB3-8 15.5 - 17.5 0945 Sand @ bottom of Shelby Tube		
17						
18						
19						
20						
21						
22	9	5 7 9	18"	Sand, med.-coarse, gray (SP)		
23						
24						
25						
26						

PART 2

OHM

JOB NO 4294

BORE HOLE NO. DB - 3

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
26						
27						
	10	5 7 11	15"	Sand, med.-coarse, gray (SP)	DB3 - 10A duplicate	
28						
29						
30						
31						
32						
	11	11 15 22	18"	Sand, med.-coarse, gray, with gravel Top 6" gravel (GP)		
33						
34						
35						
36						
37						
	12	10 15 15	18"	Sand and gravel, coarse, gray (GP)		
38						
39						
40						
41						

PART 2

OHM

PAGE 4 OF 5

JOB NO 4294

BORE HOLE NO. DB - 3

OJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
41						
42						
43	13	15 30 28	18"	Sand and gravel, coarse, gray Gravel, with some coarse sand Sand, med.-coarse, with some gravel (GP)	42.0-42.5 42.5-43.0 43.0-43.5	
44						
45					Gravel @ 45.0' 1425 to much gravel, stop to mix up new batch of mud	
46						
47	14	14 15 16		Sand and gravel, coarse, gray (GP)		
48						
49						
50						
51						
52	15	19 32 35		Sand and gravel, coarse, gray (GP)		
53						
54						
55						
56						

PART 2

OHM

PAGE 5 OF 5

JOB NO 4294

BORE HOLE NO. DB - 3

PROJECT GM/CPC Phase II

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
56						
57						
58	16	6 9 14	18"	Clay, silty, gray, with some pebbles (CL)		
59						
60						
61						
62						
63						
64						
65						
				EOB	Expect some caving	

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: EW-1
LOCATION: Bay City, MI (Lagoon Area)	DATE DRILLED: 6/9/88 through 6/28/88
DRILLING METHOD: Cable Tool 22-W	CASING TYPE/DIA.: 12-Inch Black Steel-Surface 6-Inch Black Steel-Well Pipe
TOTAL DEPTH DRILLED: 52 Feet BGL	TOTAL CASING: 48.09 Feet
GROUND ELEVATION: 587.10 Feet	T.O.C. ELEVATION: 583.19 Feet
GROUT TYPE/QUANTITY: Benseal/2 Bags (100#)	SCREEN TYPE/LENGTH: Stainless Steel/ 6" x 10' Slot: .010
GROUT INTERVAL(S): Surface Plug Around 12 Inches	SCREENED INTERVAL: 37-47 Feet/ Sediment Trap 47-52 Feet
DEPTH TO WATER: 8.59 Feet BGL	GRAVEL PACK TYPE: #20 Washed Silica Sand
WATER LEVEL ELEVATION: 587.51 Feet	GRAVEL PACK INTERVAL: 32-52 Feet BGL
	STATIC WATER LEVEL: 8.59 DATE: 10/28/88

REMARKS: Drilled by Chuck Vermillion, Lester Johnson and Mike Osogwin.

LOGGED BY: Chuck Vermillion SIGNATURE: Charles H Vermillion

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2		FILL: brownish-gray, limestone with fine-coarse sand, some clay, some silt, compacted, dry.
2-30		FILL: brownish-gray, silty clay, with very fine-medium sand, saturation at approximately 10 feet.
30-35		SAND: light brownish-gray, very fine, silty, saturated.
35-40		SAND: light brown, very fine, saturated. NOTE: occasional seams of gray clay, moist.
40-49		SAND: light brown, very fine-medium, with fine-medium gravel, occasional clay stringers (brown), saturated.
49-52		CLAY: light brown with fine-medium sand, some fine-medium gravel, moist.
52		Total depth drilled.

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: EW-2
LOCATION: Bay City, MI (Lagoon Area)	DATE DRILLED: 5/6/88 through 6/8/88
DRILLING METHOD: Cable Tool 22-W	CASING TYPE/DIA.: 12-Inch Black Steel-Surface 6-Inch Black Steel-Well Pipe
TOTAL DEPTH DRILLED: 72 Feet BGL	TOTAL CASING: Not Completed
GROUND ELEVATION: 587.20 Feet	T.O.C. ELEVATION: Not Completed
GROUT TYPE/QUANTITY: Benseal/2 Bags (100#)	SCREEN TYPE/LENGTH: Stainless Steel/ 6" x 10' Slot: .035
GROUT INTERVAL(S): Surface Plug Around 12-Inches	SCREENED INTERVAL: Sediment Trap 35-45 Feet/45-50 Feet
DEPTH TO WATER: 9.61 Feet BGL	GRAVEL PACK TYPE: #50 Washed Silica Sand
WATER LEVEL ELEVATION: 577.59 Feet	GRAVEL PACK INTERVAL: 30-50 Feet BGL
	STATIC WATER LEVEL: 9.61 DATE: 10/28/88

REMARKS: Drilled by Chuck Vermillion, Marty Puffpaff and Lester Johnson.

LOGGED BY: Chuck Vermillion SIGNATURE: Charles M Vermillion

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-4		FILL: brownish-gray, crushed limestone with fine-coarse sand, some clay, some silt, compacted, dry.
4-13		BLACK ORGANIC MATERIAL: fine-coarse sand with fine-medium gravel, wood (from buried logs), saturated.
13-20		LIGHT GRAY ORGANIC MATERIAL: fine-medium sand with fine gravel, wood, saturated.
20-30		SAND: brown, fine-coarse, with fine-medium gravel, saturated.
30-45		SAND: gray, fine-medium, with wood, saturated.
45-62		SAND: brown, fine-coarse with fine gravel, saturated. NOTE: Occasional seams of clay, moist.
62-72		CLAY: grayish-brown, some fine-coarse sand with fine-medium gravel, moist.
72		Total depth drilled.

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO-1
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/Auger
SIZE/TYPE OF BIT	4"
SAMPLING METHOD	SS, ST
START/FINISH DATE	07/29-07/29
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE	MAT.
LENGTH	DIA.
SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE
TOP OF WELL CASING	TOP & BOTTOM SCREEN
GW SURFACE	DATE
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.5	SS	1.5	4 5 5	Loose, fine sand, very silty, medium brown, dry			
3.0					Becoming moist at 3.5 feet		
4.0	SS	1.5	3 3 4	Sand, fine to medium, medium brown, moist			
5.5							
8.0	SS	1.5		Sand, medium to coarse, shell fragment, medium gray, very wet	Groundwater at 8.0 feet		
9.5							
10							
15							
16.5	SS	1.5	1 2 1	Sand, clay, very wet, marl at 16.0 feet, medium gray and olive color			
18.0							
20.0							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-1

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPH LITHO
25							
26.5 ↕ 28	SS	1.5	1 2 1	Sand, peat, organics at 27.0 feet, medium brown			
30							
35							
36.5 ↕ 38	SS	1.5	10 4 2	Sand and silt, fine to medium, medium gray			
40							
45							
50							

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-1

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55							
60					Clay aquiclude at 62.0 feet		
64 ↕ 65.5	SS	.75	4 8 9	Clay with some pebbles, very plastic, gray color			
				BOTTOM OF BORING = 66.5 feet			
				NOTE: Bit became lodged at 30.0 feet, sand heaving. Sampling was discontinued after 36.5 feet. Drilled to 64.0 feet and flushed with water. Unable to obtain a Shelby Tube sample at this location. Lost several hours freeing the center rod.			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 2
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/ Auger
SIZE/TYPE OF BIT	4"
SAMPLING METHOD	SS, ST
START/FINISH DATE	07/30-07/30
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0				Sand and silt, fine to medium, trace clay, very dry, medium brown	Large slabs of concrete in area		
1.5	SS	2.0	10 9 6 6	Sand, fine to medium, trace clay, dark brown, moist at 3.0 feet			
3.5							
4.5	SS	0.5	2 2 2	Clay with pebbles to 1/2", very wet, fairly stiff, medium gray	Groundwater at 5.5 feet		
6.0							
7.0	SS	1.5	0 0 2 1	Sand and silt, little clay, pebbles to 1/2", black, very wet	Material very soft, splitspoon settled the first foot		
9.0							
10				Water problems, sand heaving at 10.0 feet. Drilled to clay at approximately 60.0 feet. Augered to 64.0 feet, pushed a Shelby Tube followed by a split spoon.			
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-2

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55							
60					Clay aquiclude at 60.0 feet		
64	ST	1.5		Clay, medium gray			
66	SS	1.5	6 9 13 13	Clay, gray, very plastic, trace pebbles	Very good - spoon sample		
68				BOTTOM OF BORING = 68.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.: GEO-3

PROJECT NO./NAME: CPC - GEO-CON/00064-01-00002

LOCATION: Bay City, Michigan

DRILLING CONTRACTOR/DRILLER: CTI and Associates, Inc./Harry Bledsden

HART GEOLOGIST/OFFICE: Paul L. Kanaskie/Cherry Hill

DRILLING EQUIPMENT/METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START/FINISH DATE
Rotary/Auger	4"	SS, ST	07/30-07/31

WELL INSTALLED? YES ☐ NO ☒ | CASING MAT./DIA. | SCREEN: TYPE | MAT. | LENGTH | DIA. | SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS:

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	$g_r a_b$			Sand and silt, very fine, light gray	Very dry		
1.5	SS	2.0	$2_1 3_3$	Sand, medium to coarse, wood chips, light brown			
3.5							
4.5	SS	3/4	$1_4 1_1$	Sand and clay, medium to coarse, dark brown	Groundwater at 7.0 feet		
6.0							
7.0	SS	1.75	$0_3 1_3$	Silty, clayey sand, fine to medium, shells and metal fragments, dark gray	Spoon settled the first 6"		
9.0							
10							
15							
17.	SS	1.5	$1_2 1_1$	Silty sand, medium to fine, dark gray, oil sheen and odor			
18.5							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-3

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
54 ↕ 56	SS	.75	9 15 20 24	Took a Shelby Tube at 49.0 to 51.0 feet, poor recovery. Tried again at 51.0 to 53.0 feet, again poor recovery. Decided to take a spoon and get a Shelby Tube in another hole. Clay with pebbles to 1/2", light gray, very plastic	Clay aquiclude at 50.0 feet		
				BOTTOM OF BORING = 56.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO-4
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/ Auger
SIZE/TYPE OF BIT	4"
SAMPLING METHOD	SS, ST
START/FINISH DATE	07/31-07/31
WELL INSTALLED? YES ☐ NO ☒	
CASING MAT./DIA.	
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
0	grab			Sand and silt, pebbles to 1/2", dry			
1.0							
1.5	SS	1.0	18 8 5	Sand, medium to fine, pebbles and shells to 1/2", dry, medium brown			
3.0							
4.0	SS	1.0	1 1 1	Sand, medium to coarse, pebbles to 1/2" wood at 5.5 feet, medium brown (moist)	Could not drive spoon past 18"		
6.0							
7.0	SS	1.0	1 2 3 5	Sand, medium to coarse, trace clay, wood pebbles to 1/2", dark gray, black	Groundwater at 7.0 feet		
9.0							
10							
15							
17	SS	1.0	1 35	Clay, sand, wood, pebbles to 1/2", dark gray, black	Spoon driven only to 12"		
18.5							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-4

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55							
60					Clay aquiclude at 59.0 feet		
61	SS	0	22 16 11 15	No sample, spoon plugged with wood			
63							
64	ST	2.0		Clay, good sample			
66				BOTTOM OF BORING = 66.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.: GEO-10

PROJECT NO./NAME: CPC - GEO-CON/00064-01-00002

LOCATION: Bay City, Michigan

DRILLING CONTRACTOR/DRILLER: CTI and Associates, Inc./Harry Bledsden

HART GEOLOGIST/OFFICE: Paul L. Kanaskie/Cherry Hill

DRILLING EQUIPMENT/METHOD	SIZE/TYPE OF BIT	SAMPLING METHOD	START/FINISH DATE
Rotary/	4"	SS, ST	08/05-08/05

WELL INSTALLED? YES ☐ NO ☒ | CASING MAT./DIA. |

SCREEN: TYPE | MAT. | LENGTH | DIA. | SLOT SIZE

ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE | TOP OF WELL CASING | TOP & BOTTOM SCREEN | GW SURFACE | DATE

REMARKS: Sand heaving at 9.0 feet; sampling discontinued

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	S_a S_b			Sand, fine to medium, light brown	Very dry		
1.5	SS	1.0	12 15 12	Sand and clay, fine, organics (wood), light brown-black	Moist		
3.0							
4.0							
5	SS		3 3 7 14	Sand, medium to coarse, shells, little clay, trace organics (wood), dark gray, black	Wet at 5.0 feet		
6.0							
7.0	SS	1.5		Sand, medium to coarse, shell fragments, light brown, black	Very wet		
9.0							
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-10

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
54	SS	1.0	$^{8}_{12}{}_{19}$	Clay, very stiff, slightly plastic, some pebbles to 1/4", dark gray	Clay aquiclude at 52.5 feet		
55.5							
56.5	ST	22"		Clay, good sample			
59.5				BOTTOM OF BORING = 59.5 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO-11
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/05-08/06
WELL INSTALLED? YES ☐ NO ☒	
CASING MAT./DIA.	
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	150 feet from northwest corner

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	Sa Sb		9	Sand, medium to coarse, organics, medium brown, trace shell fragments	Moist		
1.5	SS	1.0	10 7 7	Sand, medium to coarse, trace clay, medium brown-black, trace organics	Moist		
3.0							
4.0				Sand, coarse, trace shell fragments, light brown-black	Wet		
5	SS	1.5	5 8 8 6		Groundwater at 5.0 feet		
6.0							
7.0				Sand, trace clay, organics (wood, roots), shell fragments, brown	Wet		
	SS	6"	1 1 2				
8.5							
10							
15							
17	SS	2.0	1 1 1 1	Sand and clay, trace shell fragments, medium gray, black	Wet		
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GE0-11

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55							
58	SS	8"	12 16 20	Clay, very stiff, slightly plastic, medium gray, trace pebbles to 1/4"	Clay aquiclude at 57.0 feet		
59.5				BOTTOM OF BORING = 59.5 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO-12
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS
START/FINISH DATE	08/06-08/06
WELL INSTALLED? YES ☐ NO ☒	
CASING MAT./DIA.	
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	Located between GEO-10 and GEO-11

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
	g_{r_a}			Sand, fine to medium, some organics (roots) brown	Dry		
1.5	SS	1.5	$^{9}12_{11}$	Sand, medium to coarse, trace clay, brown, shell fragments	Moist		
3.0							
4.0							
5	SS	1.0	$^{2}2_{6}$	Sand, medium to coarse, shell fragments little wood chips, brown, gray	Wet Groundwater at 5.0 feet		
6.0							
7.0							
	SS	1.0	$^{3}3_{6}$	Sand, coarse, some clay, wood chips, shell fragments, dark gray, black	Wet		
9.0							
10							
15							
17	SS	8"	$^{1}2_{3}$	Sand and clay, shell fragments, light brown, gray, sand (medium to coarse), clay below sand			
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GE0-12

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55							
56.5 ↕ 58	SS		13 17 21	Gravel, up to 1/2", pebbles, trace clay	Clay aquiclude at 57.5 feet		
59 ↕ 60.5	SS	1.5	5 7 9	Clay, very stiff, slightly plastic, gray, trace pebbles	Spoon full		
				BOTTOM OF BORING = 60.5 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 13
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/06-08/06
WELL INSTALLED? YES ☐ NO ☒	
CASING MAT./DIA.	
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	Located at southern toe of rock fill

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
				Sand and organics, trace clay, black	Dry		
1.5	SS	.75	10 12 12	Clay, shell fragments, trace pebbles, organics (roots) black	Moist		
3.0							
4.0				Clay to 4-1/2 feet, then sand from 4.5 to 6.0 feet, sand, medium to coarse, shell			
5	SS	1.5	5 8 9 10	fragments, black to light brown	Moist		
6.0							
7.0					Groundwater at 7.0 feet		
	SS	1.5	1 2 2	Clay, sand, organics, gray-black, shell			
8.5				fragments, sand coarse, clay some pebbles	Moist		
10							
15							
17			0 1 1 1	Clay, very plastic, soft, trace shell,	Spoon settled		
	SS	2.0		wood, gray	first 6"		
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-13

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
25							
27 ↕ 28.5	SS		1 1 2	Sand, medium to coarse clay lenses throughout, medium brown			
30							
35							
40							
44 ↕ 46	SS	1.0	6 9 13 14	Clay and sand, clay is in layered seams inside the sand			
49 ↕ 50.5	SS	1.0	7 12 20	Clay, trace pebbles to 1/4", very stiff, slightly plastic, gray	Clay aquiclude at 48.0 eet		

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-13

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
51 ↕ 53	ST			Tube had 18" of clay, very stiff	Could not push Shelby past 18"		
				BOTTOM OF BORING = 53.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 14
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS
START/FINISH DATE	08/07-08/07
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.)	GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE
REMARKS:	South of GEO-4 (approximately 175 feet spacing due to trees)

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	g r a b			Sand, fine to medium, organics (roots) light brown	Dry		
1.5							
3.0	SS	1.0	4 6 3	Sand, medium to coarse organics, cement light brown, black	Dry		
4.0							
6.0	SS	8"	2 2 3 3	Sand, fine to coarse, some shells and shell fragments, light brown, brown	Groundwater at 5.0 feet		
7.0							
8.5	SS		5 7 8	Sand, fine to coarse, little shell fragments, light brown, brown			
10				Sand - heaving problems			
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

HART

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-14

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55					Clay aquiclude at 57.0 feet		
59 ↕ 60.5	SS	1.0	7 10 13	Clay, stiff, slightly plastic, some rocks to 3/4" in clay, medium gray			
				BOTTOM OF BORING = 60.5 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 15
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS
START/FINISH DATE	08/07-08/07
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	Located midway between GEO-2 and GEO-4

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
	gr a b			Sand, fine to coarse, medium brown, gravel at surface to 1"	Dry		
1.5 – 3.0	SS	14"	7 10 7	Sand, fine to medium, medium brown, trace clay, pebbles to 1/8"	Moist		
4.0 – 6.0	SS	8"	3 2 3 4	Sand, fine to coarse, medium brown, clay with shell fragments, trace pebbles	Groundwater at 6.0 feet		
7.0 – 8.5	SS	10"	2 1 2	Sand, medium to coarse, gray and green shell fragments, organics	Wet		
10							
15							
17 – 19	SS	12"	3 2 2 2	Sand, medium to coarse, trace clay, shell fragments, organics (wood chips), light brown, dark gray			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-15

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
65				Experienced problems flushing augers; did not take a spoon until 68.0 - 70.0 feet	Clay aquiclude at 64.0 feet		
68 ↕ 70	SS	2.0	0 6 8 8	Clay, stiff, very plastic, pebbles to 1/4", gray			
				BOTTOM OF BORING = 70.0 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 16
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/10-08/10
WELL INSTALLED? YES ☐ NO ☐	
CASING MAT./DIA.	
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	

REMARKS: North of GEO-3 (Rain over the weekend)

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
0				Silty sand, some organics, black	Moist		
1.0							
1.5	SS	1.0	7 7 5	Silty sand, some organics (wood chips, roots), trace clay, pebbles to 1/4", light brown-black	Moist		
3.0							
4.0							
5	SS	1.0	5 5 6 4	Sand, medium to coarse, trace shells, light brown-black	Groundwater at 5.5 feet		
6.0							
7.0			2 1 2	Clay, some organics, trace shells, dark gray (silty)	Wet		
8.5							
10							
15							
17	SS	8"	1 2 2 2	Clay, silty with organics, wood chips, dark gray	Spoon plugged with wood fibers		
19							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-16

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
27 ↕ 28.5	SS	1.0	3 1 4	Silty sand, some clay, light gray	Very wet		

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-16

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
52 ↕ 53.5	SS	1.0	7 11 17	Clay, very stiff, slightly plastic pebbles to 1/4", light gray	Clay aquiclude at 51.0 feet		
				Tried to take a Shelby tube but clay was so stiff that the Shelby pulled off the bolts and stayed int he boring BOTTON OF BORING = 53.5 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO- 17
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/10-08/10
WELL INSTALLED? YES ☐ NO ☒	CASING MAT./DIA.
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	LOG OF TEST BORING — DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
				Sand, fine to medium, predominantly fine Some silt and shell fragments, organics	Moist		
1.5 ↕ 3.0	SS	1.5	3 5 4	Sand, medium to coarse, shell fragments, light brown	Moist, very clean sand		
4.0 ↕ 6.0	SS	1.0	2 1 3 5	Sand, predominantly coarse, shell fragments, light brown-gray, wood chips	Groundwater at 5.0 feet		
7.0 ↕ 8.5	SS	1.5	2 1 2	Sand, coarse with shell to 7-1/2; silty clay, wood chips 7-1/2 - 8-1/2, light brown-black	Wet		
17 ↕ 19	SS	4"	1 1 22	Sand, coarse shell fragments, light brown			

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-17

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
54	SS	1.5	7 14 19 26	Clay, slightly plastic, very stiff, gray	Clay aquiclude at 53.0 feet		
56							
56.5	ST	1.75		Tube full; good smaple			
58.5				BOTTOM OF BORING = 58.5 feet			

FRED C. HART ASSOCIATES, INC.

TEST BORING LOG

BORING/WELL LOCATION SKETCH MAP

N

BORING NO.	GEO-18
PROJECT NO./NAME	CPC - GEO-CON/00064-01-00002
LOCATION	Bay City, Michigan
DRILLING CONTRACTOR/DRILLER	CTI and Associates, Inc./Harry Bledsden
HART GEOLOGIST/OFFICE	Paul L. Kanaskie/Cherry Hill
DRILLING EQUIPMENT/METHOD	Rotary/
SIZE/TYPE OF BIT	3-1/4" I.D.
SAMPLING METHOD	SS, ST
START/FINISH DATE	08/10-08/10
WELL INSTALLED? YES ☐ NO ☒	
CASING MAT./DIA.	
SCREEN: TYPE / MAT. / LENGTH / DIA. / SLOT SIZE	
ELEVATION OF: (FT. ABOVE M.S.L.) GROUND SURFACE / TOP OF WELL CASING / TOP & BOTTOM SCREEN / GW SURFACE / DATE	
REMARKS:	Last boring on lagoon area

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
1.0	g r a b			Silty sand, some organics (roots), few pebbles to 1/2" (sand predominantly fine)	Dry		
1.5	SS	1.5	2 2 2	Sand, medium to coarse to 2.5 feet, clay lense at 2.5 feet (shell fragments, pebbles to 1/4"), light brown, gray	Moist at 3.0 feet		
3.0							
4.0							
5	SS	1.5	4 5 3 2	Sand, medium to coarse, predominantly coarse, little shell fragments, light brown	Groundwater at 5.0 feet		
6.0							
7.0							
8.5	SS	1.5	2 3 4	Sand, coarse, very clean, some shell fragments, light brown	Very wet, sand heaving up in aguers		
10							
15							

Proportions Used: Trace = 0-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Sampling Abbreviations: SS = Split Spoon, ST = Shelby Tube, CSC = Continuous Soil Core

FRED C. HART ASSOCIATES, INC.

BORING NO. GEO-18

LOG OF TEST BORING

DEPTH (FT)	SAMPLE NO. AND TYPE	RECOVERY (FT)	PENETRATION RESISTANCE BLOWS/FT	DESCRIPTION	REMARKS	WELL CONST.	GRAPHIC LITHO LOG
55					Clay aquiclude at 56.0 feet		
57 ↑	SS	6"	10 14 20 20	Clay, pebbles to 1/4", slightly plastic, very stiff, medium gray			
59 ↓ ↑	ST	175		Clay		-	
61 ↓				BOTTOM OF BORING = 61.0 feet			

Professional Service Industries, Inc.
Michigan Testing Engineers Division

LOG OF SOIL BORING NO. GEO-- 1A

O-CON.INC PROJECT Proposed Slurry Wall

JOB NO. 411-75026 1987 LOCATION CPC Group

SURFACE ELEV. 585.5' DATE 11-2-87 Bay City, Michigan

RECEIVED

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. Wt P.C.F.	Unc. Comp. Strength PSF Qp	Qu	%
		Sandy TOPSOIL, moixt						
	1							
		Mix SAND, moist						
	2							
	3							
	4							
	5							
		Mix SAND, wet						
	6							
	7							
	8							
	9							
	10							
		MARL, moist, soft						
	11							
	12							
	13							
	14							
	15							
			1					
1 SS	16		1					
			1					
	17		2					
			1					
2 SS	18		½					
			½					
	19		1					
			1					
3 SS	20		1					
			1					
	21		1					
			1					
4 SS	22		1					
			1					
	23		2					
			2					
5 SS	24	Medium SAND, brown, wet and layers of peat, medium compact	2					
			2					
	25		4					
		Medium SAND, brown, wet, medium compact	3					

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

GROUND WATER OBSERVATIONS

G W ENCOUNTERED AT	5	FT.	0 INS.
G W ENCOUNTERED AT	23	FT.	0 INS.
G W AFTER COMPLETION		FT.	INS.
G W AFTER HRS.		FT.	INS.

Professional Service Industries, Inc. CONTINUATION OF SOIL BORING NO. GEO-- 1A

Michigan Testing Engineers Division

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 585.5' DATE 11-2-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Medium SAND, brown, wet, medium compact	3					
	26		2					
6 SS			3					
	27		4					
			1					
7	28		2					
SS		Coarse SAND, brown, wet, compact	2					
	29		8					
		Medium SAND, brown, wet, medium compact	5					
8	30		3					
SS			2					
	31		3					
		Medium SAND, brown wet and streaks of peat, slightly compact	2					
9	32		1					
SS			1					
	33		2					
		SILT, gray and layers of brown sand, wet, slightly compact	1					
10	34		1					
SS			1					
	35		1					
			1					
11	36		1					
			2					
	37		2					
			1					
12	38		1					
SS			1					
	39		2					
			1					
13	40		1					
SS			2					
	41		2					
		Medium SAND, brown, wet, extremely compact	9					
14	42		16					
SS			30					
	43		42					
			10					
15	44		20					
SS			30					
	45		45					
		Medium SAND, brown, wet, very compact	10					
16	46		6					
SS			9					
	47		15					
		Coarse SAND, brown, wet, extremely compact	16					
17	48		30					
SS			19					
	49		18					
			12					
18	50	CLAY, gray with pebbles, moist, extremely stiff	14					
SS			19					

TYPE OF SAMPLE

D - DISTURBED
SS - SPLIT SPOON
TH - UNDIST LINER

REMARKS:

PLUGGING PROCEDURE

MINERAL WELL ACT PERMIT NO. _____

HOLE SEALED WITH _____ BETWEEN

Professional Service Industries, Inc.
Michigan Testing Engineers Division

LOG OF SOIL BORING NO. GEO - 2A
PROJECT Proposed Slurry Wall
LOCATION CPC Group
Bay City, Michigan

JOB NO. 411-75026
SURFACE ELEV. 586' DATE 11-2-87

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
	1	Mix sand and concrete, FILL, moist						
	2							
	3							
	4							
	5							
	6	RIVER BOTTOM, wet						
	7							
	8							
	9							
	10							
	11							
	12							
	13	MARL						
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
		Fine SAND, brown, wet, extremely compact						

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST. LINER

REMARKS:

GROUND WATER OBSERVATIONS
G W ENCOUNTERED AT 5 FT. 0 INS.
G W ENCOUNTERED AT 25 FT. 0 INS.
G W AFTER COMPLETION FT. INS.

Professional Service Industries, Inc. CONTINUATION OF SOIL BORING NO. GEO - 2A

Michigan Testing Engineers Division

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 586' DATE 11-2-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Fine SAND, brown, wet, extremely compact						
	26							
	27							
	28							
	29							
			14					
1 SS	30		16					
			10					
	31		10					
			8					
2 SS	32		10					
			11					
	33	Fine SAND, brown, wet, very compact	12					
			5					
3 SS	34		9					
			10					
	35		11					
			3					
4	36		5					
			8					
	37		12					
			6					
5 SS	38		8					
			11					
	39		14					
			3					
6 SS	40		5					
			12					
	41		15					
			9					
7 SS	42	Coarse SAND, brown, wet, extremely compact	16					
			20					
	43		33					
			5					
8 SS	44		15					
			26					
	45		25					
			6					
9 SS	46		9					
			15					
	47		25					
			15					
10 SS	48		25					
			35					
	49		40					
			15					
11 SS	50	Coarse SAND and GRAVEL, brown, wet, extremely compact	30					
			45					

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER

REMARKS:

PLUGGING PROCEDURE
MINERAL WELL ACT PERMIT NO. _____
HOLE SEALED WITH _____ BETWEEN

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 2A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 586' DATE 11-2-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
	51	Coarse SAND and GRAVEL, brown, wet, extremely compact	45					
			65					
			7					
12 SS	52		16					
			18					
	53		25					
			9					
13 SS	54		15					
			21					
	55		30					
	56							
	57							
	58							
	59							
	60							
	61							
	62							
	63	CLAY, gray with pebbles, moist, very stiff	8					
			8					
14 SS	64		10					
			14					
	65	END OF BORING						
	66							
	67							
	68							
	69							
	70							
	71							
	72							
	73							
	74							
	75							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON

REMARKS:

Professional Service Industries, Inc.

Michigan Testing Engineers Division

LOG OF SOIL BORING NO. GEO - 3A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 586.5' DATE 11-4-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Sandy TOPSOIL, brown, moist						
	1							
		Medium SAND, brown, moist						
	2							
	3							
	4							
	5							
		Medium SAND, brown, wet						
	6							
		MARL						
	7							
	8							
	9							
		RIVER BOTTOM and WOOD, wet, compact	2					
1 SS	10		4					
			4					
	11		5					
			4					
2 SS	12		3					
		RIVER BOTTOM and WOOD, wet, medium compact	2					
	13		2					
			2					
3 SS	14		1					
		MARL and PEAT, wet, soft	1					
	15		1					
			1					
4 SS	16		1					
			1					
	17		1					
			1					
5 SS	18		1					
			2					
	19		1					
			2					
6 SS	20		1					
			2					
	21		1					
		Medium SAND, brown, wet, medium compact	3					
7 SS	22		4					
			2					
	23		3					
			4					
8 SS	24		4					
		Medium SAND, brown, wet and streaks of peat, compact	4					
	25		4					
			6					

TYPE OF SAMPLE

D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

GROUND WATER OBSERVATIONS

G W ENCOUNTERED AT	5	FT.	0	INS.
G W ENCOUNTERED AT	9	FT.	0	INS.
G W AFTER COMPLETION		FT.		INS.
G W AFTER HRS		FT.		INS.

Professional Service Industries, Inc. CONTINUATION OF SOIL BORING NO. GEO - 3A

Michigan Testing Engineers Division

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 586.5' DATE 11-4-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Medium SAND, brown, wet and streaks	6					
9	26	of peat, compact	8					
SS			4					
	27	Medium SAND, brown, wet and streaks of	8					
		peat, extremely compact	13					
10	28		17					
SS			6					
	29		9					
			15					
11	30		21					
SS			4					
	31	Coarse SAND, brown, wet, compact	4					
			6					
12	32		9					
SS			6					
	33		6					
			7					
13	34		10					
SS			10					
	35	Coarse SAND and GRAVEL, brown, wet,	10					
		very compact	11					
14	36		14					
SS			6					
	37		9					
			11					
15	38		14					
SS			6					
	39	Medium SAND, brown, wet, extremely	12					
		compact	26					
16	40		30					
SS			9					
	41		15					
			30					
17	42		33					
SS			10					
	43		15					
			25					
18	44		40					
SS			9					
	45		15					
			17					
19	46		25					
SS			10					
	47		10					
			19					
20	48		30					
SS			10					
	49		19					
			25					
21	50		25					
SS			9					

TYPE OF SAMPLE

D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

PLUGGING PROCEDURE

MINERAL WELL ACT PERMIT NO. _____

HOLE SEALED WITH _____ BETWEEN

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 3A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 586.5' DATE 11-4-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. Wt P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
			9					
	51	Medium SAND, brown, wet, extremely compact	15					
			25					
22	52		40					
SS			10					
	53		10					
			15					
	54		20					
	55							
	56							
	57	CLAY, gray with pebbles, moist, very stiff						
	58							
	59							
	60							
	61	END OF BORING						
	62							
	63							
	64							
	65							
	66							
	67							
	68							
	69							
	70							
	71							
	72							
	73							
	74							
	75							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

Professional Service Industries, Inc.
Michigan Testing Engineers Division

LOG OF SOIL BORING NO. GEO - 4A
PROJECT Proposed Slurry Wall
LOCATION CPC Group
Bay City, Michigan

JOB NO. 411-75026
SURFACE ELEV. 588.5' DATE 11-4-87

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		STONES						
	1	Medium SAND, brown, moist						
	2							
	3							
	4							
	5							
	6							
	7	Medium SAND, brown, wet						
	8							
	9							
	10	RIVER BOTTOM and VEGETATION, moist, soft						
1 SS	11		1 1					
	12		2 2					
2 SS	13	MARL and VEGETATION, moist, soft	4 3					
	14		2 2					
3 SS	15		1 1					
	16		1 2					
4 SS	17		1 1					
	18		1 1					
5 SS	19		½ ½					
	20		1 1					
6 SS	21		½ 1					
	22		1 1					
7 SS	23		1 1					
	24	MARL and WOOD, moist, firm	2 3					
8 SS	25	Medium SAND, brown, wet and streaks of peat, compact	1 2 6					

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER

REMARKS:

GROUND WATER OBSERVATIONS

G W ENCOUNTERED AT	6	FT.	0	INS.
G W ENCOUNTERED AT	25	FT.	0	INS.
G W AFTER COMPLETION		FT.		INS.

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 4A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 588.5' DATE 11-4-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Medium SAND, brown, wet and streaks of peat, compact	6					
	26		5					
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
	42							
	43							
	44							
	45							
	46							
	47							
	48							
	49							
	50							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST. LINER

REMARKS:

PLUGGING PROCEDURE
MINERAL WELL ACT PERMIT NO. _____
HOLE SEALED WITH _____ BETWEEN

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 4A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 588.5' DATE 11-4-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Medium SAND, brown, wet and streaks of peat, compact						
	51		11					
			17					
9								
SS	52	CLAY, gray with pebbles, moist, extremely stiff	21					
			27					
	53	END OF BORING						
	54							
	55							
	56							
	57							
	58							
	59							
	60							
	61							
	62							
	63							
	64							
	65							
	66							
	67							
	68							
	69							
	70							
	71							
	72							
	73							
	74							
	75							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

Professional Service Industries, Inc.
Michigan Testing Engineers Division

LOG OF SOIL BORING NO. GEO - 5A
PROJECT Proposed Slurry Wall
LOCATION CPC Group
Bay City, Michigan

JOB NO. 411-75026
SURFACE ELEV. 581' DATE 11-5-87

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
	1	MARL						
	2							
	3							
	4							
	5							
	6							
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21	Medium SAND, brown, wet						
	22							
	23							
	24							
	25							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER

REMARKS:

GROUND WATER OBSERVATIONS

G W ENCOUNTERED AT	21	FT.	0 INS.
G W ENCOUNTERED AT		FT.	INS.
G W AFTER COMPLETION		FT.	INS.

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 5A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 581' DATE 11-5-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Medium SAND, brown, wet						
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
	42							
1 SS	43	SILT and SAND, gray, wet, slightly compact						
	44							
	45							
	46							
	47							
	48							
	49							
	50	CLAY, gray with pebbles, moist, very stiff						

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER

REMARKS:

PLUGGING PROCEDURE
MINERAL WELL ACT PERMIT NO. _____
HOLE SEALED WITH _____ BETWEEN

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 5A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 581' DATE 11-5-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
2 SS	51	CLAY, gray with pebbles, moist, very stiff						
	52							
	53							
	54							
3 SS	55	CLAY, gray with pebbles, moist, stiff	6 8 8					
	56		10					
	57	END OF BORING						
	58							
	59							
	60							
	61							
	62							
	63							
	64							
	65							
	66							
	67							
	68							
	69							
	70							
	71							
	72							
	73							
	74							
	75							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST. LINER

REMARKS:

Professional Service Industries, Inc.

Michigan Testing Engineers Division

LOG OF SOIL BORING NO. GEO - 6A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 586' DATE 11-5-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		SAND, brown, moist						
	1							
	2							
	3							
	4							
	5							
	6							
	7	MARL						
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
		Medium SAND, brown, wet						

TYPE OF SAMPLE

D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

GROUND WATER OBSERVATIONS

G W ENCOUNTERED AT	6 FT.	0 INS.
G W ENCOUNTERED AT	25 FT.	0 INS.
G W AFTER COMPLETION	FT.	INS.

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 6A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 586' DATE 11-5-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Medium SAND, brown, wet						
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
	42							
	43							
	44							
	45							
	46							
	47							
	48							
	49							
	50							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

PLUGGING PROCEDURE
MINERAL WELL ACT PERMIT NO. _____
HOLE SEALED WITH _____ BETWEEN

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 6A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 586' DATE 11-5-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Medium SAND, brown, wet						
	51							
	52	CLAY, gray with pebbles, moist, extremely stiff	10					
1			15					
SS	53		24					
			27					
	54	END OF BORING						
	55							
	56							
	57							
	58							
	59							
	60							
	61							
	62							
	63							
	64							
	65							
	66							
	67							
	68							
	69							
	70							
	71							
	72							
	73							
	74							
	75							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

Professional Service Industries, Inc.

Michigan Testing Engineers Division

LOG OF SOIL BORING NO. GEO - 7A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 587' DATE 11-6-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Mix sand FILL, moist						
	1							
	2							
		MUD						
	3							
	4							
	5							
	6							
		RIVER BOTTOM						
	7							
	8							
	9							
	10							
	11							
	12							
	13							
	14							
	15							
		MARL						
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
		Medium SAND, brown, wet						
	25							

TYPE OF SAMPLE

D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER

REMARKS:

GROUND WATER OBSERVATIONS

G W ENCOUNTERED AT	6	FT.	0	INS.
G W ENCOUNTERED AT	24	FT.	0	INS.
G W AFTER COMPLETION		FT.		INS.

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 7A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 587' DATE 11-6-87

Bay City, Michigan

Sample & Type	Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. Wt. P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		Medium SAND, brown, wet						
	26							
	27							
	28							
	29							
	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							
	40							
	41							
	42							
	43							
	44							
	45							
	46							
	47							
	48							
	49							
	50							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON

REMARKS:

PLUGGING PROCEDURE
MINERAL WELL ACT PERMIT NO. _____

Professional Service Industries, Inc.
Michigan Testing Engineers Division

CONTINUATION OF SOIL BORING NO. GEO - 7A

PROJECT Proposed Slurry Wall

JOB NO. 411-75026

LOCATION CPC Group

SURFACE ELEV. 587' DATE 11-6-87

Bay City, Michigan

Sample & Type		Depth	SOIL DESCRIPTION	Penetration Blows for 6"	Moisture %	Dry Den. WL P.C.F.	Unc. Comp. Strength PSF Qp	Unc. Comp. Strength PSF Qu	Str. %
		51	Medium SAND, brown, wet						
		52							
		53							
		54							
		55	Coarse SAND and GRAVEL, brown, wet						
		56							
		57							
		58							
		59							
		60							
		61							
		62							
		63		8					
1 SS		64	CLAY, gray with pebbles, moist, very stiff	8 10 17					
		65							
		66	END OF BORING						
		67							
		68							
		69							
		70							
		71							
		72							
		73							
		74							
		75							

TYPE OF SAMPLE
D - DISTURBED
SS - SPLIT SPOON
UL - UNDIST LINER
TW - THIN WALL TUBE

REMARKS:

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-1S
LOCATION: Bay City, Michigan	DATE DRILLED: December 8, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 586.4 feet	T.O.C. ELEVATION: 589.29 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, brown, concrete fragments
1-2'		CLAY; sand, light brown, concrete fragments
2-7'		SAND; clay, brown, moist, wood and concrete fragments
7-15'		SAND; grayish-brown, wet, shell fragments

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-2S
LOCATION: Bay City, Michigan	DATE DRILLED: December 12, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 586.4 feet	T.O.C. ELEVATION: 589.82 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, brown
1-3.5'		CLAY; sand, dark brown
3.5-8'		SAND; clay, brown, moist, concrete and wood fragments
8-15'		SAND; grayish-brown, wet, shell fragments

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-3D
LOCATION: Bay City, Michigan	DATE DRILLED: December 9, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 30 feet BGL	TOTAL CASING: 27.5 feet
GROUND ELEVATION: 586.4 feet	T.O.C. ELEVATION: 588.43 feet
GROUT TYPE/QUANTITY: slurry grout/200 gallons	SCREEN TYPE/LENGTH: #7 slot stainless steel 5 feet
GROUT INTERVAL(S): surface - 20 feet BGL	SCREENED INTERVAL: 25 - 30 feet BGL
DEPTH TO WATER: 10 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 20 - 30 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, brown, concrete fragments
1-3'		CLAY; sand, light brown, concrete fragments
3-7'		SAND; clay, brown, moist, wood debris
7-16'		SAND; gray, wet, shell fragments
16-19'		CLAY; silt, grayish-brown
19-30'		SAND; gray, wet

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: LMW-4D
LOCATION: Bay City, Michigan	DATE DRILLED: December 12, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 30 feet BGL	TOTAL CASING: 27.5 feet
GROUND ELEVATION: 586.2 feet	T.O.C. ELEVATION: 589.51 feet
GROUT TYPE/QUANTITY: slurry grout/100 gallons	SCREEN TYPE/LENGTH: #7 slot stainless steel 5 feet
GROUT INTERVAL(S): surface - 20 feet BGL	SCREENED INTERVAL: 25 - 30 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 20 - 30 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, brown, concrete fragments
1-3'		CLAY; sand, dark brown, concrete fragments
3-8'		SAND; clay, grayish-brown, moist, wood and concrete fragments
8-17'		SAND; gray, wet, shell fragments
17-20'		CLAY; silt, grayish-brown
20-30'		SAND; gray, wet

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: LMW-5S
LOCATION: Bay City, Michigan	DATE DRILLED: December 8, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 587.2 feet	T.O.C. ELEVATION: 590.71 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2'		CLAY; brown, wood fragments
2-4.5'		CLAY; dark brown, wood fragments
4.5-15'		SAND; gray, wet, shell fragments

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-6S
LOCATION: Bay City, Michigan	DATE DRILLED: December 8, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 586.9 feet	T.O.C. ELEVATION: 590.68 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2.5'		CLAY; brown, wood fragments
2.5-4.5'		CLAY; dark brown, wood fragments
4.5-16'		SAND; gray, wet, shell fragments

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-7S
LOCATION: Bay City, Michigan	DATE DRILLED: December 8, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 588.8 feet	T.O.C. ELEVATION: 592.31 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-3'		CLAY; sand, brown, wood and metal fragments
3-4'		CLAY; dark brown, oil odors
4-15'		SAND; gray, wet, shell fragments

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: L MW-8S
LOCATION: Bay City, Michigan	DATE DRILLED: December 8, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 588.4 feet	T.O.C. ELEVATION: 590.72 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-3.5'		CLAY; sand, brown, wood and metal fragments
3.5-4'		CLAY; dark brown, oil odors
4-15'		SAND; gray, wet, shell fragments

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: LMW-9D
LOCATION: Bay City, Michigan	DATE DRILLED: December 8, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 30 feet BGL	TOTAL CASING: 27.5 feet
GROUND ELEVATION: 588.7 feet	T.O.C. ELEVATION: 591.64 feet
GROUT TYPE/QUANTITY: slurry grout/100 gallons	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 23feet BGL	SCREENED INTERVAL: 25 - 30 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 25 - 30 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H20/SOIL SAMPLE	FORMATION DESCRIPTION
0-3'		CLAY; sand, brown, wood and metal fragments
3-4'		CLAY; dark brown, oily odors
4-17'		SAND; gray, wet, shell fragments
17-22'		CLAY; silt, grayish-brown
22-30'		SAND; gray, wet

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: L MW-10D
LOCATION: Bay City, Michigan	DATE DRILLED: December 7, 1988
DRILLING METHOD: Holllow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 30 feet BGL	TOTAL CASING: 27.5 feet
GROUND ELEVATION: 588.3 feet	T.O.C. ELEVATION: 591.14 feet
GROUT TYPE/QUANTITY: slurry grout/100 gallons	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 22 feet BGL	SCREENED INTERVAL: 25 - 30 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 22 - 30 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Bell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-3.5'		CLAY; sand, brown, wood and metal fragments
3.5-4'		CLAY; dark brown, oily odor
4-16'		SAND; gray, wet, shell fragments
16-23'		CLAY; silt, grayish-brown
23-30'		SAND; gray, wet

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	MW-11S
LOCATION:	Bay City, Michigan	DATE DRILLED:	December 8, 1988
DRILLING METHOD:	Hollow-Stem Auger	CASING TYPE/DIA.:	galvanized/2-inch
TOTAL DEPTH DRILLED:	15 feet BGL	TOTAL CASING:	7.5 feet
GROUND ELEVATION:	587.4 feet	T.O.C. ELEVATION:	591.29 feet
GROUT TYPE/QUANTITY:	dry bentonite/1 bag	SCREEN TYPE/LENGTH:	#7 slot stainless steel 10 feet
GROUT INTERVAL(S):	surface - 3 feet BGL	SCREENED INTERVAL:	5 - 15 feet BGL
DEPTH TO WATER:	8 feet BGL	GRAVEL PACK TYPE:	sand
WATER LEVEL ELEVATION:	NA	GRAVEL PACK INTERVAL:	3 - 15 feet BGL
		STATIC WATER LEVEL:	NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, brown
1-3'		CLAY; sand, dark brown
3-15'		SAND; gray, wet, shell fragments

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: MW-12S
LOCATION: Bay City, Michigan	DATE DRILLED: December 8, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: galvanized/2-inch
TOTAL DEPTH DRILLED: 15 feet BGL	TOTAL CASING: 7.5 feet
GROUND ELEVATION: 586.9 feet	T.O.C. ELEVATION: 590.25 feet
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: #7 slot stainless steel 10 feet
GROUT INTERVAL(S): surface - 3 feet BGL	SCREENED INTERVAL: 5 - 15 feet BGL
DEPTH TO WATER: 8 feet BGL	GRAVEL PACK TYPE: sand
WATER LEVEL ELEVATION: NA	GRAVEL PACK INTERVAL: 3 - 15 feet BGL
	STATIC WATER LEVEL: NA DATE:

REMARKS: Geology based on auger cuttings

LOGGED BY: Jim Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY; sand, brown
1-3.5'		CLAY; sand, dark brown
3.5-15'		SAND; gray, wet, shell fragments

0053-454 CPC/Bay City | September 25, 1985 |

BORING NUMBER MW-2 TOTAL DEPTH 10' S.W.L. (BGL) approx. 3.67'

Sample Number	Sample Interval	Lithologic Description
MW-2 1'	0 - 1	TOPSOIL; fine-med. sand, sorted, brown, dry
MW-2 3'	2.5 - 3	SANDY SILT; fine, dk. gray, dry
MW-3 5'	4.5 - 5	SAND; fine-med., sorted w/silt, wood, shells, dk.
		gray
MW-2 7'	6.5 - 7	SANDY SILT; fine sand, gray, moist, shell fragment;
MW-2 9'	8.5 - 9	SANDY SILT: fine sand, gray, saturated
		screen set from 7.8 - 9.8 feet BGL
		sand pack installed
		cement grout
		1 well guard and lock
		Ground Elevation = 586.8 ft.
		Top of Casing Elevation = 588.73 ft.

Piezometer: ☐ Screen 924 #7 Pipe 10' Total Depth (BGL) 9.8'

0053-454 CPC/Bay City September 24, 1985

BORING NUMBER MW-3 TOTAL DEPTH 10' S.W.L. (BGL) approx. 6.2'

Sample Number	Sample Interval	Lithologic Description
MW-3 1'	0 - 1	TOPSOIL; fill
MW-3 3'	2.5 - 3	FILL; sand, gravel, bricks, sticks, black
MW-3 5'	4.5 - 5	SAND; w/gravel, fine-med. sand, fine gravel, black,
		moist
MW-3 7'	6.5 - 7	SAND: fine-med., semi sorted, gray, shell fragments,
		saturated
MW-3 9'	8.5 - 9	SAND: fine-med., semi sorted, gray, shell fragments,
		saturated w/wood chips
		screen set from 8 - 10 feet BGL
		sand pack installed
		cement grout
		1 well guard and lock
		Ground Elevation = 587.2 ft.
		Top of Casing Elevation = 589.07 ft.

Piezometer: ☐ Screen 924 #7 Pipe 10' Total Depth (BGL) 10'

0053-454 CPC/Bay City DATE: September 24, 1985 FILE:

BORING NUMBER MW-4 TOTAL DEPTH 12' S.W.L. (BGL) approx. 5.1'

Sample Number	Sample Interval	Lithologic Description
MW-4 1'	0 - 1	TOPSOIL; fine-med. sand, sorted, brown, dry
MW-4 3'	2.5 - 3	SAND; fine-med., sorted, brown, dry
MW-4 5'	4.5 - 5	SAND; to silt to coarse sand to fine gravel, saturated
		w/crushed shell fragment & root systems (organics)
MW-4 7'	6.5 - 7	SAND; coarse w/large amount shell fragments, root
		system
MW-4 9'	8.5 - 9	SAND: fine-coarse, fine-med. gravel, shell fragments,
		wood
MW-4 11'	11.5 - 12	SANDY SILT: fine-med. sands, wood fragments, satu-
		rated, gray
		screen set from 8.5 - 10.5 feet BGL
		sand pack installed
		cement grout
		1 well guard and lock
		Ground Elevation = 588.02 ft.
		Top of Casing Elevation = 586.5 ft.

Piezometer: ☐ Screen 924 #7 Pipe 10' Total Depth (BGL) 10.5'

0053-454 CPC/Bay City September 27, 1985

BORING NUMBER MW-5 TOTAL DEPTH 10' S.W.L. (BGL) approx. 5.52'

Sample Number	Sample Interval	Lithologic Description
MW-5 1'	0 - 1	SAND; med., sorted, brown, dry
MW-5 3'	2.5 - 3	SAND; fine-med., sorted, brown, dry, shell fragments;
MW-5 5'	4.5 - 5	SAND; fine-med., sorted, brown, dry, shell fragments,
		saturated
MW-5 7'	6.5 - 7	SAND; fine-coarse, non sorted, fine gravel, shell
		fragments, root system
MW-5 9'	8.5 - 9	SAND; fine-med., semi sorted, brown, saturated, shell
		fragments
		screen set from 7.6 - 9.6 feet BGL
		sand pack installed
		cement grout
		1 well guard and lock
		Ground Elevation = 587.3 ft.
		Top of Casing Elevation = 589.45 ft.

Piezometer: ☐ Screen 924 #7 Pipe 10' Total Depth (BGL) 9.6'

0053-454 CPC/Bay City September 27, 1985

BORING NUMBER MW-6 TOTAL DEPTH 12' S.W.L. (BGL) approx. 3.97'

Sample Number	Sample Interval	Lithologic Description
MW-6 1'	0 - 1	SAND: fine-med., sorted, brown, dry w/gravel fill
MW-6 3'	2.5 - 3	SANDY SILT; fine-med.-coarse, sorted, small amount of
		fine gravel, brown, dry
MW-6 5'	4.5 - 5	SAND: fine-coarse, non sorted, black-brown, moist,
		trace of root system, saturated at 4 ft.
MW-6 7'	6.5 - 7	SAND; fine-coarse, non sorted, black-brown, moist,
		trace of root system
MW-6 9'	8.5 - 9	SAND: fine-coarse, non sorted, black-brown, moist,
		trace of root system
	11.5 - 12	SANDY SILT: fine, sorted, gray, saturated, shell
		fragments
		screen set from 8.3 - 10.3 feet BGL
		sand pack installed
		cement grout
		1 well guard and lock
		Ground Elevation = 586.8 ft.
		Top of Casing Elevation = 588.15 ft.

Piezometer: ☐ Screen 924 #7 Pipe 10' Total Depth (BGL) 10.3'

PART 1

OHM

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JOB NO. 3791

BORE HOLE NO. MW-11

PROJECT GM/CPC West Lagoon Dewat	LOCATION Bay City, MI
DRILLING CONTRACTOR Construction Testing & Inspection	DRILLING EQUIPMENT CME 45 Hollow Stem Auger
HYDROGEOLOGIST Gary Sunderland & Greg Brown	DRILLER Richard Near
DATE START/TIME 7/1/86 1300 / DATE FINISH/TIME 7/ 1/86 1500	SURFACE ELEVATION approx. 587' / TOTAL DEPTH 23' BLS
WELL CASING 2" Stainless Steel / SCREEN TYPE 2" Stainless Steel	LENGTH 10' (7'-17') / SLOT 10 slot

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
				DIAMETER				
				HAMMER WEIGHT	140 lbs.			
				FALL	30"			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
1					ss = split spoon sample	
		2		SS 1.5-3.0' Sand, clayey with organics, medium brown fill (SM)	1300	
	1	2				
		5				
3						
4		2				
	2	1		SS 4.0-5.5' Sand to 4.5', Silty sand with pebbles, dark gray (SM)	1315 very moist	
5		2				
6						
		1		SS 6.5-8.0' Sand-very fine to medium, dark gray, shell fragments (SM)	1330 very wet	
7	3	0				
		0				
8						
9		3		SS 9.0-10.5' Sand, very silty with wood chips and shell fragments, black (SM)	1340 very oily strong oil smell oil sheen observed	
	4	3				
10		3				
11						

PART 2

OHM

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JOB NO 3971

BORE HOLE NO. MW-11

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	5	1 1 3		SS 11.5-13.0' Silt, clayey, dark gray to black, wood chips (OL)	1400 strong oil smell sticky, very wet	
14	6	2 1 2		SS 14.0-15.5' Clay, very silty, slightly sandy with sand lenses, black (OH)	1415 very sticky oily smell	
16	7	2 1 2		SS 16.5-18.0' Sand-Fine to medium, wood chips, med. gray to dark gray (SM)	1420 Wood Chips are oily	
19	8	1 1 1		SS 19.0-20.5' Sand-Fine to medium, lt. to med. gray, sand to 20', silt, slighty sandy, clayey wood chips, shell fragments (SM)	1430 Wood Chips have oily smell	
22	9	2 3 5		SS 21.5' to 23.0' Sand, silty, clayey, pebbles, lt. to med. gray, shell fragments (SC)	1450 No noticeable smell	
					Gravel Pack to 4' below land surface. Bentonite Seal Cement Cap	

PART 1

OHM

JOB NO. 3971

BORE HOLE NO. MW-12

PROJECT: GM/CPC West Lagoon Dewat	LOCATION: Bay City, MI
DRILLING CONTRACTOR: Construction Testing & Inspection	DRILLING EQUIPMENT: CME 45 Hollow-Stem Auger
HYDROGEOLOGIST: Gary Sunderland & Greg Brown	DRILLER: Richard Near
DATE START/TIME: 7/1/86 1600 / DATE FINISH/TIME: 7/1/86 1700	SURFACE ELEVATION: approx. 585' / TOTAL DEPTH: 21.5' BLS
WELL CASING: 2" Stainless Steel / SCREEN TYPE: 2" Stainless Steel	LENGTH: 10' (7'-17') / SLOT: 10 slot

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
				DIAMETER				
				HAMMER WEIGHT	140 lbs.			
				FALL	30"			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
1				Sand, silty loam to 1.0' small boulder at 1' (SM)	SS = Split spoon sample	
2	10	3 2 2		SS 1.5-3.0' Sand-fine to medium gray, clean (SP)	1605 No odor dry	
3						
4		5		SS 4.0-5.5' Sand-fine to medium, med. dark gray, organics (SP)	1610 Wet	
5	11	3 1				
6						
7	12	3 1		SS 6.5-8.0' Sand, clayey, silty with pebbles, organics, black wood chips (SM)	1615	
8						
9		2		SS 9.0-10.5 Sand-fine to medium with clay layers, pebbles, wood chips, shell fragments (SC)	1620 very poor return	
	13	1				
		1				
11						

PART 2

OHM

JOB NO 3971

BORE HOLE NO. MW-12

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	14	2 1 0		SS 11.5-13.0' Sand-fine to medium, clay layers, pebbles, wood chips, shell fragments (SC)	1625	
13						
14		1		SS 14.0-15.5' Silt, sand, brownish gray, many wood chips, chips are black (ML)	1630 No odor poor sample return	
15	15	1 1				
16						
17		1		SS 16.5-18.0' Clay at 17', silty, slightly	1640 No odor	
	16	1 1		sandy, dark gray to black, organics, wood chips (OL)		
18						
19						
20				SS 19.5-21.5' Shelby tube sample 100% recovery Bottom of sample contained large amounts of sand and some wood chips	1650 sent tube with CTI	
21						
22					Gravel Pack to 4' Below land surface Bentonite Seal Cement Cap	

PART 1

OHM

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JOB NO. 3971

BORE HOLE NO. MW-13

PROJECT: GM/CPC West Lagoon Dewat	LOCATION: Bay City, MI
DRILLING CONTRACTOR: Construction Testing & Inspection	DRILLING EQUIPMENT: CME 45 Auger
HYDROGEOLOGIST: Gary Sunderland & Greg Brown	DRILLER: Richard Near
DATE START/TIME: 7/29/86	DATE FINISH/TIME: 7/29/86
SURFACE ELEVATION:	TOTAL DEPTH: 18' BLS
WELL CASING: SS 2"	SCREEN TYPE: SS 10 slot
LENGTH: 10' (7'-17')	SLOT: 10 slot

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
				DIAMETER				
				HAMMER WEIGHT	140 lbs.			
				FALL	30"			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
1					SS = Split Spoon Sample	
2	18	1 2 3		SS 1.5-3.0' Clay, silty, med. dark gray (ML)	1055 Dry, Fill	
3						
4	19	2 1 1		SS 4.0-5.5' Sand, silty, fine grained, brown to dark gray, shell fragments (SM)	1100 Wet	
5						
6						
7	20	2 3 5		SS 6.5-8.0' Sand, silty, brown with black lenses, ½" pebbles, shell fragments (SM)	1110 Wet	
8						
9	21	5 6 7		SS 9.0-10.5' Sand, fine to very coarse, brown rounded grains, wood chips, shell fragments (SW)	1125 Oil sheen Dupl. sample taken	
11						

PART 2

OHM

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JOB NO 3971

BORE HOLE NO. MW-13

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	23	2 4 2		SS 11.5'-13.0' Sand, medium grained, brown wood chips, shell fragments (SP)	1130 No oil Sheen or odor noticed	
13						
14	24	2		SS 14.0'-15.5' Sand, med. to coarse, gray (SP)	1140 Oil on	
		0 0		sand, silty, fine, darker gray shell fragments (SM)	shell fragments	
15						
16						
17	25	1		SS 16.5'-18.0' Sand, silty, coarse, shell and wood fragments. (SP)	1145	
		0		Sand, silty, fine, less shell fragments (SM)	Oil sheen at change	
18					Gravel Pack to 3' below land surface. Bentonite Seal Cement Cap	

PART 1

OHM

JOB NO. 3971

BORE HOLE NO. MW-14

PROJECT: GM/CPC West Lagoon Dewat	LOCATION: Bay City, MI
DRILLING CONTRACTOR: Construction Testing & Inspection	DRILLING EQUIPMENT: CME 45 Hollow Stem Auger
HYDROGEOLOGIST: Gary Sunderland & Greg Brown	DRILLER: Richard Near
DATE START/TIME: 7/29/86	DATE FINISH/TIME: 7/29/86
SURFACE ELEVATION:	TOTAL DEPTH: 18' BLS
WELL CASING: 2" Stainless Steel	SCREEN TYPE: 2" Stainless Steel
LENGTH: 10' (7'-17')	SLOT: 10 slot

GROUND WATER

DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE				
DIAMETER				
HAMMER WEIGHT	140 lbs.			
FALL	30"			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
					SS = Split Spoon Sample	
2	26	3 3		SS 1.5'-3.0' Clay, silty, med. gray (ML)	1335 Clay-dry	
3		5		Sand, coarse, brown (SP)	Sand-wet	
4	27	2 3 6		SS 4.0'-5.5' Sand, coarse, brown, clayey at 4.0', dark lenses within sand, shell fragments (SP)	1345	
7	28	2 2 4		SS 6.5'-8.0' Sand, coarse, brown, angular black pebbles to 1/8", thin, silt layers, many shell frag. (SM)	1350 Shell frag. increase with depth	
9	29	4 4 5		SS 9.0'-10.5' Sand, coarse, gray-brown, angular, many shell frag. slightly silty, thin white layer, angular pebbles to ¼" (SM)	1400 White material appears to be derived from shells	
11						

PART 2

OHM

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JOB NO 3971

BORE HOLE NO. MW-14

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION		REMARKS	GRAPHIC LOG
12	30	1 1		SS 11.5'-13.0'	Sand, fine to coarse, brown, shell fragments at 12.5, pebbles to 3/8" (SW)	1405	
13		0			Sand, very fine to fine, black & brown wood chips, shell fragments (SM)		
14	31	1		SS 14.0'-15.5'	Sand, coarse, brown, pebbles to ½", oil droplets (SM)	1415 small sample obtained, very wet oil smell, sheen	
15		0					
16		0					
17	32	1		SS 16.5"-17.0"	Sand, coarse, brown, wood chips, silt, sandy, black (ML)	1420 Duplicate sample taken, mainly of the silt	
18		1 0				Gravel Pack to 3 Below Land Surface Bentonite Seal Cement Cap	

PART 1

OHM

JOB NO. 3971

BORE HOLE NO. MW-15

PROJECT: GM/CPC West Lagoon Dewat

LOCATION: Bay City, MI

DRILLING CONTRACTOR: Construction, Testing & Inspection

DRILLING EQUIPMENT: CME 45 Hollow Stem Auger

HYDROGEOLOGIST: Gary Sunderland & Greg Brown

DRILLER: Richard Near

DATE START/TIME	DATE FINISH/TIME	SURFACE ELEVATION	TOTAL DEPTH
7/29/86	7/29/86		18' BLS

WELL CASING	SCREEN TYPE	LENGTH	SLOT
2" Stainless Steel	2" Stainless Steel	10' (7'-17')	10 slot

GROUND WATER			
DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE				
DIAMETER				
HAMMER WEIGHT	140 lbs.			
FALL	30"			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV -ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
1					SS = Split Spoon sample	
2	33	2 2 2		SS 1.5'-3.0' Clay, very silty, sandy, med brown (ML)	1505 rock stuck in sample, just 3" obtained, oily sheen	
3						
4	34	1 1 5		SS 4.0'-5.5' Sand, med. to coarse, black, rounded, well sorted (SW)	1512 very strong oil smell however not free product but looked saturated	
5						
6						
7	35	2 2 4		SS 6.5'-8.0' Sand, med. to coarse, black, At 17.5 sand looked cleaner brown color (SW)	1518 All sample had strong oil odor, and oil sheen	
8						
9	36	2 3 5		SS 9.0'-10.5' Sand, med. to coarse brown to black, rounded, oily (SW)	1525 Visable oil droplets	
11						

PART 2

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JOB NO 3971

BORE HOLE NO: MW-15

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	37	2 1 2		SS 11.5'-13/0' Sand, med. to coarse, brown to black, very silty @ 12.5' (SW)	1530 very oily, silty at 12.5'	
13						
14	38	1 1 2		SS 14.0'-15.5' Silt, slightly sandy, med. brown to black, wood chips, shell fragments (ML)	1535 Oil odor much less now slightly noticeable	
15						
16						
17	39	1 1 1		SS 16.5'-18.0' Clay, silty, slightly sandy, med. dark gray with black streaks, small pebbles (CL)	1545 Very slight oil odor	
18					Gravel Pack to [illegible] Below Land Surface Bentonite Seal Cement Cap	

PART 1

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JOB NO. 3971

BORE HOLE NO. MW-16

PROJECT GM/CPC West Lagoon Dewat	LOCATION Bay City, MI
DRILLING CONTRACTOR Construction Testing & Inspection	DRILLING EQUIPMENT CME 45 Hollow Stem Auger
HYDROGEOLOGIST Gary Sunderland & Greg Brown	DRILLER Richard Near
DATE START/TIME 7/30/86	DATE FINISH/TIME 7/30/86
SURFACE ELEVATION	TOTAL DEPTH 18' BLS
WELL CASING 2" Stainless Steel	SCREEN TYPE 2" Stainless Steel
LENGTH 10' (7'-17')	SLOT 10 slot

GROUND WATER			
DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE				
DIAMETER				
HAMMER WEIGHT	140 lbs.			
FALL	30"			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
1					SS = Split Spoon sample	
2	40	1		SS 1.5'-3.0' Sand, fine, brown, pebbles	0745 Wet	
		4		to ¼", changing to black	Slightly oily smell	
3		4		sand (SM)		
4						
	41	2		SS 4.0'-5.5' Sand, fine, brown, changing	0750 Wet	
5		5		to black sand (SM)	Slight oil smell	
		4		Clay, dark gray, silty (ML)		
6						
7	42	2		SS 6.5'-8.0' Sand, coarse, tan-brown,	0755 Wet	
		4		angular, many shell frag. (SW)	No oily smell noted	
8		5				
9						
		2		SS 9.0'-10.5' No sample	0800 Very Wet	
		4			Sample washed out of spoon	
		6				
11						

PART 2

OHM

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JOB NO 3971

BORE HOLE NO.

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	43	3 2		SS 11.5'-13.0' Sand, coarse, tan-brown, few shell fragments (SW)	0810	
13		1		Sand, med. to fine, slightly silty, brown, no shell fragments (SW)		
14	44	1		SS 14.0'-15.5' Sand, very fine, silty brown-gray, some shells, tree twigs, large pieces of wood, wood chips (SP)	0815 large wood chip appears to be part of a pine 2 x 4	
15		2 1				
16						
17	45	1		SS 16.5'-18.0' Sand, very fine, silty, brown, large wood chips at 17.5' ½" white chaulky layer then silty, clay, dark gray plastic, spoon gets silty with depth and shell fragments decrease with depth (SP)	0820	
18		1 1			moist	

Gravel Pack to
Below Land Surface
Bentonite Seal
Cement Cap

PART 1

OHM

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JOB NO. 3971

BORE HOLE NO. MW-17

PROJECT: GM/CPC West Lagoon Dewat	LOCATION: Bay City, MI
DRILLING CONTRACTOR: Construction, Testing & Inspection	DRILLING EQUIPMENT: CME 45 Hollow Stem Auger
HYDROGEOLOGIST: Gary Sunderland & Greg Brown	DRILLER: Richard Near
DATE START/TIME: 7/30/86	DATE FINISH/TIME: 7/30/86
SURFACE ELEVATION:	TOTAL DEPTH: 18' BLS
WELL CASING: 2" Stainless Steel	SCREEN TYPE: 2" Stainless Steel
LENGTH: 10' (7'-17')	SLOT: 10 slot

GROUND WATER

DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE				
DIAMETER				
HAMMER WEIGHT	140 lbs.			
FALL	30"			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
1				Road Gravel, Compacted, Dry	SS = Split Spoon Sample	
2	46	2 6		SS 1.5'-3.0' Clay, sandy, silty, light brown, moderately plastic with pebbles (ML)	0910 Dry to slightly slightly moist	
3		8		Sand, med. to coarse, black (SW)	Moderate Oil smell	
4	47	3		SS 4.0'-5.5' Sand, med. to coarse, black rounded, well sorted, wood chips, shell fragments (SW)	0915 Wet slight oil sheen noticed	
5		3				
		1				
6						
7	48	3		SS 6.5'-8.0' Sand, fine to coarse, med. gray, rounded, well sorted a few shell fragments (SW)	0920 Wet slightly oily odor noticed	
		6				
8		6				
9	49	3		SS 9.0'-10.5' Sand, med. to coarse, gray with some black streaks, few shell fragments (SW)	0926 slight to moderate oil smell	
		3				
		3				
11						

PART 2

OHM

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JOB NO 3971

BORE HOLE NO. MW-17

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	50	1 1 1		SS 11.5'-13.0' Clay, sandy, silty, dark brown to black, shell frag. black wood chips (CL)	0935 Moderate oil odor and sheen	
13						
14	51	1 1 1		SS 14.0'-15.5' Clay, sandy, silty, med. dark gray, a few pebbles and some shell frag. (CL)	0944 slightly oil smell	
15						
16						
17	52	1 0 1		SS 16.5'-18.0' Clay, sandy, silty, med to dark gray, mod. plastic, large shell fragments (CL)	0950	
18					Gravel Pack to 3 Below land Surface Bentonite Sea Cement Cap	

PART 1

OHM

JOB NO. 3971

BORE HOLE NO. MW-18

PROJECT: GM/CPC West Lagoon Dewat

LOCATION: Bay City, MI

DRILLING CONTRACTOR: Construction Testing & Inspection

DRILLING EQUIPMENT: CME 45 Hollow Stem Auger

HYDROGEOLOGIST: Gary Sunderland & Greg Brown

DRILLER: Richard Near

DATE START/TIME: 7/30/86

DATE FINISH/TIME: 7/30/86

SURFACE ELEVATION:

TOTAL DEPTH: 18' BLS

WELL CASING: 2" Stainless Steel

SCREEN TYPE: 2" Stainless Steel

LENGTH: 10' (7'-17')

SLOT: 10 slot

GROUND WATER			
DATE	TIME	DEPTH	WEATHER

	CASING	CORE	SAMPLER	TUBE
TYPE				
DIAMETER				
HAMMER WEIGHT	140 lbs.			
FALL	30 "			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOVERY	BORE HOLE LOG: LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
1					SS = Split spoon sample	
2	53	3 5		SS 1.5'-3.0' Clay, sandy, silty, light brown (ML)	1040 Moist	
3		9		Sand, med. to coarse, dark gray to black, pebbles, dark brown to black wood chips (SW)		
4	54	3		SS 4.0'-5.5' Sand, med. to coarse, gray to black, rounded, well sorted some fine sand (SW)	1046 No noticeable oil smell	
5		3				
6		3				
7	55	3		SS 6.5'-8.0' Sand, med. to coarse, gray to black, well sorted, shell fragments (SW)	1052	
8		5				
9		6				
	56	3		SS 9.0'-10.5' Sand, med to coarse, gray to black, many shell fragments (SW)	1100 Possibly slight oil smell	
		4				
11		3				

PART 2

OHM

JOB NO 3971

BORE HOLE NO. MW-18

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	57	1 0		SS 11.5'-13.0' Sand, med. to coarse, gray to black, many shell frag. grading into a sand w/silt (SW)	1105	
13		0		Clay, silty, med to dark gray plastic (ML)	Duplicate sample taken to show grading in spoon	
14	58	2		SS 14.0'-15.5' Clay, sandy, silty, dark gray to black, slightly pebbly, black wood chips (ML)	1110 No noticeable smell	
15		0				
16		0				
17	59	2		SS 16.5'-18.0' Clay, sandy, silty, brown to gray to black, many wood chips, shell fragments (ML)	1115 No noticeable smell	
18		0				
					Gravel Pack to 3' Below land Surface Bentonite Seal Cement Cap	

PART 1

OHM

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JOB NO. 3971

BORE HOLE NO. MW-19

PROJECT GM/CPC West Lagoon Dewat	LOCATION Bay City, MI
DRILLING CONTRACTOR Construction Testing & Inspection	DRILLING EQUIPMENT CME 45 Hollow Stem Auger
HYDROGEOLOGIST Gary Sunderland & Greg Brown	DRILLER Richard Near
DATE START/TIME 7/30/86 / DATE FINISH/TIME 7/30/86	SURFACE ELEVATION / TOTAL DEPTH 18' BLS
WELL CASING 2" Stainless Steel / SCREEN TYPE 2" Stainless Steel	LENGTH 10' (7'-17') / SLOT 10 slot

GROUND WATER					CASING	CORE	SAMPLER	TUBE
DATE	TIME	DEPTH	WEATHER	TYPE				
				DIAMETER				
				HAMMER WEIGHT	140 lbs.			
				FALL	30"			

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	BORE HOLE LOG LITHOLOGIC DESCRIPTION	(time) REMARKS	GRAPHIC LOG
					SS = Split Spoon sample	
1						
	60	3		SS 1.5'-3.0' Sand, med. to coarse grained light brown, large wood chips (SW)	1345 Moist	
2		3		Sand, fine, clayey, black (SC)	No odor	
3		3				
4	61	2		SS 4.0'-5.5' Sand, fine grained, clayey wood chips (SC)		
		3				
5		4		Sand, coarse, angular frag., med. gray, shell frag. (SP)	1350 Wet	
6						
7	62	1		Sand, coarse, brown, shell		
		0		SS 6.5'-8.0' fragments (SP)	1355	
				Silt, Sandy, No Shells (SM)		
8		2		Sand, coarse, brown (SP)		
9						
	63	2		SS 9.0'-10.5' Sand, coarse, brown, large	1405	
		2		black wood chips, many shell	No oily smell	
		2		fragments. Some silt (SP)		
11						

PART 2

OHM

PAGE 2 OF 2

JOB NO 3971

BORE HOLE NO MW-19

PROJECT GM/CPC West Lagoon Dewat

LOCATION Bay City, MI

REMARKS

DEPTH	SAMPLE NO.	BLOW COUNT PER 6"	RECOV-ERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
12	64	1		SS 11.5'-13.0' Sand, coarse, brown-gray, many shell frag. large		
		1		black wood chip, sandy silt		
13		1		brown, slightly plastic (SP)		
14	65	3		SS 14.0'-15.5' Sand, coarse, brown, shells, wood chips (SP)		
		2		Sand, very fine, silty, bl. wood chips, shells (SM)		
15		2		Sand, coarse, silty, black wood chips (SP)		
16						
17	66			SS 16.5'-18.0' Sand, coarse, brown, wood chips, shells (SP)		
				Sand, fine, silty, bl. wood chips (SM)		
18				Clay, sandy, dark brown (ML)	Gravel Pack to 3' Below land Surface Bentonite Seal Cement Plug	

JOB NUMBER 0053-1454 CPC/Bay City DATE February, 1969 PAGE _____

BORING NUMBER SB 4-69 TOTAL DEPTH 95' S.W.L. (BGL) _____

Sample Number	From to Feet	Lithologic Description
	0 - 4'6"	Firm moist plant waste and river bottom fill
	4'6" - 8'6"	Compact wet coarse river bottom sand, medium to
		slight vegetation
	8'6" - 10'3"	Medium compact wet coarse river bottom sand
	10'3" - 23'0"	Extremely soft moist river bottom & marl
	23'0" - 34'0"	Compact wet medium brown sand, layers of silty blue
		clay
	34'0" - 46'6"	Compact wet medium brown sand
	46'6" - 56'6"	Extremely stiff moist silty oxidized blue clay,
		sand and pebbles
	56'6" - 74'0"	Stiff moist silty blue clay, sand and pebbles
	74'0" - 86'8"	Stiff moist silty blue clay, sand and pebbles,
		lenses of silt
	86'8" - 95'0"	Extremely stiff moist blue clay, sand & pebbles

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053 - 1454 CPC/Bay City DATE February, 1969 PAGE _____

BORING NUMBER SB 5-69 TOTAL DEPTH 95' S.W.L. (BGL) _____

Sample Number	From__to__ Feet	Lithologic Description
	0 - 4'6"	Compact moist organic brown sand fill, slight
		vegetation, slight clay content, medium organic
	4'6" - 8'6"	Very compact wet medium to coarse gray sand, slight
		organic matter, light vegetation
	8'6" - 12'0"	Compact wet medium gray sand
	12'0" - 22'6"	Soft moist swamp bottom
	22'6" - 50'6"	Compact wet medium gray sand
	50'6" - 56'6"	Extremely stiff moist blue clay, sand and pebbles
	56'6" - 74'0"	Stiff moist blue clay, sand and pebbles
	74'0" - 86'0"	Firm moist silty blue clay, sand & pebbles
	86'0" - 87'6"	Extremely compact moist gray sand and gravel, some
		large stones
	87'6" - 89'6"	Extremely stiff moist blue clay, sand and pebbles
	89'6" - 95'0"	Extremely stiff moist shaley clay, sand and pebbles,
		layers of coal

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-1454 CPC/Bay City DATE February, 1969 PAGE _____

BORING NUMBER SB 6-69 TOTAL DEPTH 95' S.W.L. (BGL) _____

Sample Number	From __ to __ Feet	Lithologic Description
	0 - 3'6"	Firm moist peat and miscellaneous plant waste,
		medium to high vegetation
	3'6" - 7'6"	Soft moist medium river bottom sand
	7'6" - 12'0"	Compact wet medium river bottom sand
	12'0" - 22'0"	Extremely soft moist marl and river bottom
	22'0" - 32'0"	Compact wet coarse brown sand, layers of silty
		blue clay
	32'0" - 36'0"	Compact wet coarse brown sand, occasional layers
		of silty blue clay
	36'0" - 48'0"	Compact wet coarse brown sand
	48'0" - 52'0"	Extremely stiff moist silty oxidized blue clay,
		sand and pebbles
	52'0" - 66'6"	Very stiff moist silty blue clay, sand and pebbles
	66'6" - 87'6"	Stiff moist silty blue clay, sand and pebbles,
		occasional layers of wet gray sand
	87'6" - 95'0"	Extremely stiff moist blue clay, sand and pebbles

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-1454 CPC/Bay City DATE February, 1969 PAGE

BORING NUMBER SB 7-69 TOTAL DEPTH 95' S.W.L. (BGL)

Sample Number	From to Feet	Lithologic Description
	0 - 4'7"	Medium compact moist medium organic sand fill,
		high clay content
	4'7" - 6'4"	Stiff moist mixed brown clay and sand fill, slight
		to medium organic streaks
	6'4" - 9'0"	Compact very moist coarse brown sand, fill
	9'0" - 12'6"	Medium compact wet river bottom sand, light
		vegetation, sea shells
	12'6" - 23'0"	Soft moist swamp bottom, high organic matter
	23'0" - 48'0"	Compact wet coarse gray sand
	48'0" - 56'8"	Extremely stiff moist blue clay, sand and pebbles
	56'8" - 72'6"	Stiff moist blue clay, sand and pebbles
	72'6" - 87'6"	Firm moist silty blue clay
	87'6" - 89'6"	Extremely stiff moist sandy blue clay, sand and
		pebbles
	89'6" - 95'0"	Extremely stiff moist blue clay, high sand and
		pebbles, hardpan

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-1454 DATE February, 1969 PAGE

BORING NUMBER SB 8-69 TOTAL DEPTH 95' S.W.L. (BGL)

Sample Number	From to Feet	Lithologic Description
	0 - 3'0"	Stiff moist medium organic clay fill, sand and
		pebbles, medium vegetation
	3'0" - 6'10"	Compact moist medium brown sand, occasional layers
		of organic clay, light vegetation
	6'10" - 12'6"	Compact very moist to wet medium brown sand
	12'6" - 23'6"	Soft moist discolored swamp bottom
	23'6" - 48'6"	Compact wet medium to coarse brown sand and gravel
	48'6" - 52'6"	Extremely stiff moist blue clay, sand and pebbles
	52'6" - 72'6"	Stiff moist blue clay, sand and pebbles
	72'6" - 83'6"	Firm moist silty blue clay
	83'6" - 86'0"	Stiff moist silty blue clay
	86'0" - 87'0"	Extremely compact moist gray sand and gravel
	87'0" - 95'0"	Extremely stiff moist blue clay, high sand and
		pebbles, hardpan

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-1454 DATE February, 1969 PAGE

BORING NUMBER SB 9-69 TOTAL DEPTH 95' S.W.L. (BGL)

Sample Number	From to Feet	Lithologic Description
	0 - 3'0"	Compact moist topsoil, clay and sand fill
	3'0" - 6'6"	Slightly compact moist medium brown sand fill
	6'6" - 11'6"	Loosely compact wet coarse river bottom sand, high vegetation
	11'6" - 22'0"	Extremely soft moist marl, large layers of sand
	22'0" - 48'6"	Compact wet coarse brown sand
	48'6" - 52'6"	Extremely stiff moist blue clay, sand and pebbles
	52'6" - 72'6"	Stiff moist blue clay, sand and pebbles
	72'6" - 86'4"	Firm moist silty blue clay, occasional thin streaks of sand
	86'4" - 87'6"	Extremely compact moist gray sand and gravel
	87'6" - 95'0"	Extremely stiff moist blue clay, high sand and pebbles

Piezometer: ☐ Screen _____ Pipe _____ Total Depth (BGL) _____

JOB NUMBER 0053-1454 CPC/Bay City DATE December, 1970 PAGE _____

BORING NUMBER SB 12-70 TOTAL DEPTH 12' S.W.L. (BGL) _____

Sample Number	From ___ to ___ Feet	Lithologic Description
	0 - 2'8"	Compact moist river bottom sand fill, shells
	2'8" - 8'6"	Compact wet river bottom sand with vegetation and
		shells, slightly organic
	8'6" - 10'6"	Medium compact wet river bottom sand
	10'6" - 12'0"	Slightly compact slightly organic river bottom sand

JOB NUMBER 0053-1454 CPC/Bay City DATE December, 1970 PAGE _____

BORING NUMBER SB 13-70 TOTAL DEPTH 12' S.W.L. (BGL) _____

Sample Number	From__to__ Feet	Lithologic Description
	0 - 3'2"	Slightly compact moist river bottom sand, shells
		and wood fill, slightly organic
	3'2" - 8'6"	Slightly compact wet river bottom sand, shells and
		wood fill, slightly organic
	8'6" - 12'0"	Extremely loose wet coarse slightly organic river
		bottom sand

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-20
LOCATION: Bay City, Michigan	DATE DRILLED: May 20, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 17 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - ½ feet BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: 5 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 1 foot to 17 feet BGL.

LOGGED BY: Terrence M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY AND GRAVEL; gray, dry
1-3'	SSS/1-3'	CLAY; grayish-brown, dry
3-3.5'	SSS/3-5'	CLAY; grayish-brown, dry; HNu reading = 5
3.5-5'	SSS/3-5'	SAND; med., black, strong oily odor, moist; HNu reading = 5
5-7'	SSS/5-7'	SAND; med., black, strong oily odor, saturated; HNu reading = 5
7-8'	SSS/7-9'	SAND; med., black, strong oily odor, saturated; HNu reading = 2-5
8-9'	SSS/7-9'	SAND; med., dk. gray, moderate oily odor w/some shells; HNU reading =
		2-5
9-10.5'	SSS/9-11'	SAND; med., dk. gray, moderate oily odor w/some shells; HNU reading =
10.5-11'	SSS/9-11'	CLAY; dk. greenish-brown
11-13'	SSS/11-13'	NO SAMPLE RETAINED
13-15'	SSS/13-15'	SAND; med., black, oily sheen w/shells; HNu reading = 5-10
15-16.3'	SSS/15-17'	SAND; med., black, oily sheen w/shells; HNu reading = 5
16.3-17'	SSS/15-17'	CLAY; dk, greenish-brown, slight oily odor, very moist

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-21
LOCATION: Bay City, Michigan	DATE DRILLED: May 20, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 16 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - ½ feet BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: 5 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continuously split-spoon sample from a depth of 2 feet to 16 feet BGL

LOGGED BY: Terrence M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY AND GRAVEL; gray, dry
1-3'	SSS/2-4'	CLAY; grayish-brown, dry; HNu reading = 2
3-4'	SSS/2-4'	SAND; med., dk. gray, strong oily odor, moist; HNu reading = 2
4-6'	SSS/4-6'	SAND; med., dk. gray, strong oily odor, saturated at 5.5 feet BGL;
		HNu reading = 2
6-8'	SSS/6-8'	SAND; med., gray, strong oily odor, saturated; HNu reading = 2.5
8-9'	SSS/8-10'	SAND; med., gray, strong oily odor, saturated; HNu reading = 5-10
9-10'	SSS/8-10'	CLAY; dk. greenish-brown w/organic material, slight oily odor, very
		moist; HNu reading = 2
10-12'	SSS/10-12'	CLAY; dk. greenish-brown w/organic material, slight oily odor, very
		moist; HNu readding = 2
12-14'	SSS/12-14'	CLAY; dk. greenish-brown w/organic material, slight oily odor, very
		moist; HNu reading = 0
14-16'	SSS/14-16'	CLAY; dk. greenish-brown w/organic material, slight oily odor, very
		moist, HNu reading = 0

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-22
LOCATION: Bay City, Michigan	DATE DRILLED: May 20, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 16 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - ½ feet BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: 5 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 16 feet BGL.

LOGGED BY: Terrence M. Farrell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY AND GRAVEL; gray, dry
1-3.3'	SSS/2-4'	CLAY; grayish-brown, dry; HNu reading = 0
3.3-4'	SSS/2-4'	SAND; med., gray, slight oily odor, moist; HNu reading = 0
4-6'	SSS/4-6'	SAND; med., gray, slight oily odor, saturation at 5 feet BGL; HNu reading = 0
6-8'	SSS/6-8'	SAND; med., gray, slight oily odor w/black sand inclusion; HNu reading = 0.1
8-10'	SSS/8-10'	SAND; med., gray, slight oily odor w/black sand inclusion; HNU reading = 1.0
10-12'	SSS/10-12'	SAND; med., gray, slight oily odor w/black sand inclusion; HNu reading = 14
12-14'	SSS/12-14'	SAND; med., lt. gray, slight oily odor w/black sand inclusion; HNu reading = 10-13
14-15.5'	SSS/14-16'	SAND; med., lt. gray, slight oily odor w/black sand inclusion; HNu reading = 5
15.5-16'	SSS/14-16'	CLAY; greenish-brown, very moist; HNu reading = 0.1

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-23
LOCATION: Bay City, Michigan	DATE DRILLED: May 20, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 14 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - ½ feet BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: 4 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 14 feet BGL

LOGGED BY: Terrence M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-3.3'	SSS/2-4'	CLAY; grayish-brown, dry
3.3-4'	SSS/2-4'	SAND; med., gray, slight oily odor, moist
4-6'	SSS/4-6'	SAND; med., gray, slight oily odor, saturated
6-8'	SSS/6-8'	SAND; med., black, oily sheen, saturated
8-10'	SSS/8-10'	SAND; med., black, oily sheen, saturated
10-12'	SSS/10-12'	SAND; med., black, oily sheen, saturated
12-13.7'	SSS/12-14'	SAND; med., black, oily sheen, saturated
13.7-14'	SSS/12-14'	CLAY; greenish-brown, very moist

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-24
LOCATION: Bay City, Michigan	DATE DRILLED: May 20, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 16 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx.. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - ½ feet BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: 5 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continuously split-spoon sampled from a depth of 2 feet to 14 feet BGL

LOGGED BY: Terrence M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1'		CLAY AND GRAVEL; gray, dry
1-4'	SSS/2-4'	CLAY; grayish-brown, dry
4-4.5'	SSS/4-6'	CLAY; grayish-brown, dry
4.5-6'	SSS/4-6'	SAND; med. dk. gray, slight oily odor, moist-saturated at 5 feet BGL
6-8'	SSS/6-8'	SAND; med., gray, slight oily odor w/shells
8-10'	SSS/8-10'	SAND; med., gray, very slight oily odor w/shells
10-12'	SSS/10-12'	SAND; med., gray, very slight oily odor w/shells
12-14'	SSS/12-14'	SAND: gray, clay in spoon tip
14-16'	SSS/14-16'	CLAY; dk. greenish-brown, very moist w/organic material

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-25
LOCATION: Bay City, Michigan	DATE DRILLED: May 20, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 16 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite/1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - ½ feet BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: 6 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continuously split-spoon sampled from a depth of 2 feet to 16 feet BGL

LOGGED BY: Terrence M. Farrell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1	CLAY AND	GRAVEL; gray, dry
1-4'	SSS/2-4'	CLAY; grayish-brown, dry
4-6'	SSS/4-6'	SAND; med., dk. gray, strong oily odor, moist
6-8'	SSS/6-8'	SAND; med., gray, very slight oily odor, saturated
8-9.7'	SSS/8-10'	SAND; med., gray, very slight oily odor, saturated
9.7-10'	SSS/8-10'	CLAY; greenish-brown, very slight oily odor, moist w/organic material
10-11'	SSS/10-12'	CLAY; greenish-brown, very slight oily odor, moist w/organic material
11-12'	SSS/10-12'	SAND; med., gray, slight oily odor
12-14'	SSS/12-14'	SAND; med., dk. gray, slight oily odor
14-16'	SSS/14-16'	CLAY; greenish-brown, very moist, very slight oily odor w/shells at
		at feet BGL

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-26
LOCATION: Bay City, Michigan	DATE DRILLED: June 2, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 14 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite / 1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - 1 foot BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: approx. 6 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continuously split-spoon sampled from a depth of 2 feet to 14 feet BGL.

LOGGED BY: Terrence M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-3	SSS/2-4'	CLAY; with sand and gravel, brownish black, very slight oily odor
3-4	SSS/2-4'	SAND; gray, moist, slight oily odor
4-5.5	SSS/4-6'	SAND; gray, very moist, slight oily odor
5.5-6	SSS/4-6'	SAND; very dark gray, saturated, oily odor
6-6.5	SSS/6-8'	SAND; black, saturated, strong oily odor
6.5-8	SSS/6-8'	SAND; dark gray, saturated, oily odor; 0.2 ft. clay layer @ 7.5 feet BGL
8-10	SSS/8-10'	SAND; with shells and wood fragments, gray, saturated, slight oily odor
10-13.7	SSS/10-12'	SAND; with shells, gray, saturated, very slight oily odor
	SSS/12-14'	
13.7-14	SSS/12-14'	CLAY; with organic material, greenish-brown, soft, very moist, odorless

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-27
LOCATION: Bay City, Michigan	DATE DRILLED: June 3, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 14 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite / 1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5 - 1 foot BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: approx. 4 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 14 feet BGL.

LOGGED BY: Terrence M. Farrell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-3	SSS/2-4'	CLAY; with sand and gravel, brownish black, very slight oily odor
3-4	SSS/2-4'	SAND; dark grayish-brown, moist, strong oily odor
4-5.5	SSS/4-6'	SAND; grayish-tan, very moist, slight oily odor
5.5-5.7	SSS/4-6'	SAND; black, very moist, oily odor
5.7-5.9	SSS/4-6'	CLAY; greenish-brown, firm
5.9-6	SSS/4-6'	SAND; black, saturated, strong oily odor
6-8	SSS/6-8'	SAND; dark gray, saturated, visable oil
8-10	SSS/8-10'	SAND; with shells, brownish-gray, saturated, strong oily odor
10-12	SSS/10-12'	SAND; with shells and clay inclusions, grayish-brown, saturated, visable oil
12-13.8	SSS/12-14'	SAND; with shells, saturated, strong oily odor
13.8-14	SSS/12-14'	CLAY; with organic material, greenish-brown, soft, very moist, odorless

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-28
LOCATION: Bay City, Michigan	DATE DRILLED: June 3, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 14 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite / 1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5-1 foot BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: approx. 4 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 14 feet BGL.

LOGGED BY: Terrence M. Farrell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-3.5	SSS/2-4'	CLAY; with sand and gravel, brownish black, very slight
		oily odor
3.5-4	SSS/2-4'	SAND; gray, moist, slight oily odor
4-8	SSS/4-6'	SAND; with shell fragments, dark gray, saturated, slight
	SSS/6-8'	oily odor
8-13.5	SSS/8-10'	SAND; with shells, dark gray, saturated, slight oily odor
	SSS/10-12'	
	SSS/12-14'	
13.5-14	SSS/12-14'	CLAY; with organic material, greenish-brown, soft, very
		moist, odorless

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-29
LOCATION: Bay City, Michigan	DATE DRILLED: June 3, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 14 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite / 1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5-1 foot BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: approx. 4 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 14 feet BGL.

LOGGED BY: Terrence M. Farrell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-3.5	SSS/2-4'	CLAY; with sand and gravel, brownish black, very slight oily odor
3.5-4	SSS/2-4'	SAND; gray, moist, slight oily odor
4-6	SSS/4-6'	SAND; with shell fragments and small clay inclusions, dark gray, saturated, slight oily odor
6-10	SSS/6-8'	SAND; with shells, gray, saturated, slight oily odor
	SSS/8-10'	
10-12	SSS/10-12'	SAND: with shells, gray, saturated, oily odor
12-13.8	SSS/12-14'	SAND; with shells, gray, saturated, oily sheen
13.8-14	SSS/12-14'	CLAY; with organic material, greenish-brown, soft, very moist, odorless

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City - Lagoons	WELL/BORING No.: SB-30
LOCATION: Bay City, Michigan	DATE DRILLED: June 3, 1988
DRILLING METHOD: Hollow-Stem Auger	CASING TYPE/DIA.: NA
TOTAL DEPTH DRILLED: 16 feet BGL	TOTAL CASING: NA
GROUND ELEVATION: approx. 587 feet plant datum	T.O.C. ELEVATION: NA
GROUT TYPE/QUANTITY: dry bentonite / 1 bag	SCREEN TYPE/LENGTH: NA
GROUT INTERVAL(S): 5-1 foot BGL	SCREENED INTERVAL: NA
DEPTH TO WATER: approx. 4 feet BGL	GRAVEL PACK TYPE: NA
WATER LEVEL ELEVATION:	GRAVEL PACK INTERVAL: NA
	STATIC WATER LEVEL: NA DATE:

REMARKS: This boring was continously split-spoon sampled from a depth of 2 feet to 16 feet BGL.

LOGGED BY: Terrence M. Farrell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-1		CLAY AND GRAVEL; gray, dry
1-4.5	SSS/2-4'	CLAY; with sand and gravel, brown, saturated, slight oily odor
4.5-4.7	SSS/4-6'	SAND; black, moist, saturated, very strong oily odor
4.7-6	SSS/4-6'	SAND; with shells and a large wood fragment, greenish-gray, very moist, oily odor
6-6.2	SSS/6-8'	SAND; black, saturated, oily sheen
6.2-8	SSS/6-8'	SAND; with shells and wood fragments, greenish-gray, saturated, oily odor
8-10	SSS/8-10'	SAND; with shells, brown, saturated, visable oil
10-14	SSS/10-12'	SAND; with shells, brown, saturated, prominent visable oil
	SSS/12-14'	
14-14.7	SSS/14-16'	SAND; with clay inclusions, brown, visable oil
14.7-16	SSS/14-16'	CLAY; with organic material and wood fragments, dark greenish-brown, soft, very moist, slight oily odor

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT:	CPC - Bay City	WELL/BORING No.:	SB31-A
LOCATION:	Bay City, Michigan	DATE DRILLED:	8/18/88
DRILLING METHOD:	Hollow Stem Auger /D-25	CASING TYPE/DIA.:	n/a
TOTAL DEPTH DRILLED:	14 feet BGL	TOTAL CASING:	n/a
GROUND ELEVATION:	586.56 Feet Plant Datum	T.O.C. ELEVATION:	n/a
GROUT TYPE/QUANTITY:	Hole Plug / 5 bags	SCREEN TYPE/LENGTH:	n/a
GROUT INTERVAL(S):	4 to 12 Feet BGL	SCREENED INTERVAL:	n/a
DEPTH TO WATER:	5 feet BGL	GRAVEL PACK TYPE:	n/a
WATER LEVEL ELEVATION:	n/a	GRAVEL PACK INTERVAL:	n/a
		STATIC WATER LEVEL:	n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H20/SOIL SAMPLE	FORMATION DESCRIPTION
0-2.0'		GRAVEL; brown, little sand, dry
2.0'-2.4'		SANDY CLAY; brown, dry
2.4'-4.5'		SANDY CLAY; greyish brown, dry
4.5'-5.0'		SANDY CLAY; black, dry
5.0'-6.0'		SAND; grey to greyish black, shell fragments, moist, strong rotting
		organic odors
6.0'-12.7'		SAND; grey, shell fragments, wet, strong rotting organic odors
12.7'-14.0'		SANDY CLAY; dark brown, wood and organic fragments, moist
		SPLIT-SPOON SAMPLE I.D. / SPLIT-SPOON DEPTH INTERVAL - FEET BGL
		SB31-1 0-2
		SB31-2 2-4
		SB31-3 4-6
		SB31-4 6-8
		SB31-5 8-10
		SB31-6 10-12
		SB31-7 12-14

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

OJECT: CPC - Bay City	WELL/BORING No.: SB32-A
LOCATION: Bay City, Michigan	DATE DRILLED: 8/18/88
DRILLING METHOD: Hollow Stem Auger /D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 16 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 586.86 Feet Plant Datum	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 4 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface to the depth of the prevoius boring at this location

LOGGED BY: James Gell | SIGNATURE:

PTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.4'		GRAVEL; light brown, sand, dry
0.4'-1.2'		SANDY CLAY; brown, dry
1.2'-2.0'		SANDY CLAY; grey, diesel fuel odors, moist
2.0'-8.6'		SAND; grey to greyish black, shell fragments, strong diesel fuel odors, moist to wet
8.6'-10.0'		SAND, brown, strong diesel fuel odors, wet
10.0'-14.0'		SAND; black, strong diesel fuel odors, wet
14.0'-16.0'		SANDY CLAY; dark brown, wood fragments, strong oily odors
		SPLIT-SPOON SAMPLE I.D. / SPLIT-SPOON DEPTH INTERVAL - FEET BGL
		SB32-1 0-2
		SB32-2 2-4
		SB32-3 4-6
		SB32-4 6-8
		SB32-5 8-10
		SB32-6 10-12
		SB32-7 12-14
		SB32-8 14-16

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: SB33-A
LOCATION: Bay City, Michigan	DATE DRILLED: 8/19/88
DRILLING METHOD: Hollow Stem Auger /D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 12.5 fet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 587.04 Feet Plant Datum	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 3 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 4.6 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.3'		GRAVEL; light brown, little sand, dry
0.3'-2.0'		SANDY CLAY; brown, wood fragments, dry
2.0'-3.0'		SANDY CLAY; dark brown, wood fragments, dry
3.0'-4.0'		SANDY CLAY; black, wood fragments, dry, strong oily odor
4.0'-4.6'		SANDY CLAY; brown, wood fragments, dry
4.6'-12.5'		SAND; grey, shell fragments, wet, strong organic odors
12.5'		Wood in nose cone of split spoon
		SPLIT-SPOON SAMPLE I.D. / SPLIT-SPOON DEPTH INTERVAL - FEET BGL
		SB33-1 0-2
		SB33-2 2-4
		SB33-3 4-6
		SB33-4 6-8
		SB33-5 8-10
		SB33-6 10-12
		SB33-7 12-14

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: SB34-A
LOCATION: Bay City, Michigan	DATE DRILLED: 8/19/88
DRILLING METHOD: Hollow Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 16 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 587.64 Feet Plant Datum	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: .Hole Plug / 5 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 4 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface.

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-2.0'		GRAVEL; brown, little sand, dry
2.0'-4.0'		SANDY CLAY; greenish grey, trace gravel, dry
4.0'-13.5'		SAND; grey, shell fragments, strong oily/rotting organic odors, wet
13.5'-16.0'		SANDY CLAY; dark brown, dry
		SPLIT-SPOON SAMPLE I.D. / SPLIT-SPOON DEPTH INTERVAL - FEET BGL
		SB34-1 0-2
		SB34-2 2-4
		SB34-3 4-6
		SB34-4 6-8
		SB34-5 8-10
		SB34-6 10-12
		SB34-7 12-14
		SB34-8 14-16

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: SB35-A
LOCATION: Bay City, Michigan	DATE DRILLED: 8/22/88
DRILLING METHOD: Hollow Stem Auger /D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 18 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 587.23 Feet Plant Datum	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: . Hole Plug / 6 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 5 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface.

LOGGED BY: James Gell | SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.5'		GRAVEL; brown, little sand, dry
0.5'-1.9'		SANDY CLAY; brown, dry
1.9'-5.0'		SANDY CLAY; dark grey, dry
5.0'-15.5'		SAND; grey, shell fragments, slight rotting organic odors, wet
15.5'-18.0'		SANDY CLAY; dark brown, strong oily odors, oily sheen, moist
		SPLIT-SPOON SAMPLE I.D. / SPLIT-SPOON DEPTH INTERVAL - FEET BGL
		SB35-1 0-2
		SB35-2 2-4
		SB35-3 4-6
		SB35-4 6-8
		SB35-5 8-10
		SB35-6 10-12
		SB35-7 12-14
		SB35-8 14-16
		SB35-9 16-18

BORING/WELL LOG DATA

KECK CONSULTING SERVICES, INC.

PROJECT: CPC - Bay City	WELL/BORING No.: SB36 - A
LOCATION: Bay City, Michigan	DATE DRILLED: 8/23/88
DRILLING METHOD: Hollow Stem Auger / D-25	CASING TYPE/DIA.: n/a
TOTAL DEPTH DRILLED: 16 feet BGL	TOTAL CASING: n/a
GROUND ELEVATION: 587.02 Feet Plant Datum	T.O.C. ELEVATION: n/a
GROUT TYPE/QUANTITY: Hole Plug / 6 bags	SCREEN TYPE/LENGTH: n/a
GROUT INTERVAL(S): 4 to 12 feet BGL	SCREENED INTERVAL: n/a
DEPTH TO WATER: 4 feet BGL	GRAVEL PACK TYPE: n/a
WATER LEVEL ELEVATION: n/a	GRAVEL PACK INTERVAL: n/a
	STATIC WATER LEVEL: n/a DATE:

REMARKS: Boring was continuously split-spoon sampled from the ground surface.

LOGGED BY: James Gell SIGNATURE:

DEPTH	H2O/SOIL SAMPLE	FORMATION DESCRIPTION
0-0.5'		GRAVEL; brown, little sand, dry
0.5'-4.0'		SILTY CLAY; brownish grey, oily odors, dry
4.0'-12.2'		SAND; grey, shell fragments, strong oily odors/rotten organic odors, wet
12.2'-16.0'		SILTY CLAY; dark brown, trace sand, strong oily odor
		SPLIT-SPOON SAMPLE I.D. — SPLIT-SPOON DEPTH INTERVAL - FEET BGL
		SB36-1 — 0-2
		SB36-2 — 2-4
		SB36-3 — 4-6
		SB36-4 — 6-8
		SB36-5 — 8-10
		SB36-6 — 10-12
		SB36-7 — 12-14
		SB36-8 — 14-16

APPENDIX C

PLAN C-1 - EXISTING WELLS
1990 STATIC WATER ELEVATIONS

STAT. WATER LEVEL

(Feet Above Mean Sea Level)

Well	3/18/91	3/13/91	3/6/91	2/28/91	2/18/91	2/12/91	2/4/91	1/28/91	1/21/91	1/14/91	1/7/91
		1991									
MW #1	-			-							
MW #2	-			-							
MW #3	dry	<5772		dry							
MW #4	-			-							
MW #5	-			-							
MW #6	-			-							
MW #7	579.89			579.44							
MW #8	585.57			584.51							
MW #9	585.41			585.24							
MW #10	580.61			580.12							
MW #11	-			-							
MW #15	-			-							
MW #16	580.44			580.18							
MSA-1	-			-							
MSA-2	-			-							
MSA-3	-			-							
MSA-4	585.96			585.19							
MSA-5	580.36			581.15							
DB-1	-			-							
DB-2	578.36			577.97							
DB-3	-			-							
LMW-13S	582.01	582.16	582.16	*	*	*	*	*	*	*	*
LMW-14S	582.88	582.69	583.31	*	*	*	*	*	*	*	*
LMW-15D	578.61	578.96	578.41	*	*	*	*	*	*	*	*
LMW-16D	578.47	578.46	578.33	*	*	*	*	*	*	*	*
LMW-17S	585.46	585.17	585.60	584.61	584.21	584.66	584.47	584.26	584.73	584.70	584.56
MSA-4	585.98	585.81	586.03	585.21	584.24	585.07	583.80	584.19	585.15	584.59	584.49
MSA-5	580.36	580.57	581.03	*	579.84	580.15	579.91	579.68	579.90	579.98	580.25

	1991										
Well	3/18/91	3/13/91	3/6/91	2/28/91	2/18/91	2/12/91	2/4/91	1/28/91	1/21/91	1/14/91	1/7/91
LMW-18S	580.19	580.00	580.42	579.76	579.44	579.65	579.58	579.57	579.53	579.91	579.65
LMW-19S	581.63	581.63	581.85	581.37	581.20	581.35	581.48	581.12	581.21	581.30	581.33
LMW-24D	579.90	579.89	580.04	579.76	579.74	579.70	579.57	579.77	579.93	579.97	579.91
LMW-20D	578.74	578.14	578.58	*	577.45	577.68	577.52	576.99	577.49	577.41	577.62
LMW-21D	578.15	577.99	578.06	*	577.28	577.39	577.24	576.86	577.36	577.21	577.55
LMW-22S	585.22	585.10	585.48	*	583.96	584.35	584.03	583.96	584.30	584.35	584.29
LMW-23S	578.12	578.14	578.17	*	578.06	578.07	578.12	578.06	578.05	578.07	578.08
RIVER	579.54	580.09	579.28	579.22	579.32	579.23	579.38	578.75	579.38	579.24	579.75
MW-3	10.33	10.36	10.34	10.62	10.78	10.79	10.74	11.06	10.98	10.16	10.40
DB-2	11.69	11.78	11.85	12.11	12.95	14.16	13.97	13.94	13.64	14.57	12.71
GMRL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CMW-2	4.28	4.29	4.26	4.86	5.70	5.52	5.33	6.31	5.80	6.29	5.39
RCHIMEDES	8.43	7.96	8.72	FROZEN	8.69	8.77	8.78	FROZEN	8.62	8.77	FROZEN
CARB. SYS.	31036300	31032670	30870860	30785970	30629550	30502230	30452630	30338750	30163600	29984550	29790360
EW-2	-	-	-	-	-	-	-	-	-	-	-
LMW-1S	579.53	579.90	579.39	579.11	*	*	*	*	*	*	*
LMW-2S	579.83	579.94	580.04	579.33	579.18	579.32	579.36	579.35	579.81	579.77	579.83
LMW-3D	578.49	578.74	578.32	578.06	578.08	578.06	578.01	577.73	578.19	578.08	578.49
LMW-4D	576.45	576.68	576.33	576.04	576.04	**	575.99	575.78	576.31	576.22	576.58
LMW-5S	579.71	579.94	579.66	579.28	579.31	579.32	579.28	579.20	579.53	579.45	579.75
LMW-6S	580.81	580.83	580.90	580.59	580.48	580.57	580.55	580.59	580.79	580.68	580.70
LMW-7S	580.41	580.05	580.23	579.79	579.55	579.58	579.31	579.48	579.55	579.73	579.80
LMW-8S	580.82	580.81	580.87	580.54	580.44	580.53	580.51	580.58	580.73	580.70	580.77
LMW-9D	577.60	577.72	577.58	577.19	577.11	577.18	577.11	576.95	577.29	577.22	577.46
LMW-10D	576.43	576.60	576.36	576.00	575.96	576.00	575.95	575.75	576.11	576.03	576.31
LMW-11S	579.37	579.57	579.53	579.06	579.12	579.21	579.17	579.04	579.46	579.24	579.44
LMW-12S	580.41	580.39	580.68	580.00	579.85	580.08	580.13	580.03	580.29	580.28	580.29

Well	Top of Casing	5/29/91	5/21/91	5/13/91	5/07/91	4/30/91	4/23/91	4/16/91	4/10/91	4/03/91	3/26/91
MW #1	587.65	-	-	-	-	-	-	-	-	-	-
MW #2	588.73	-	-	-	-	-	-	-	-	-	-
MW #3	589.07										
MW #4	588.02	-	-	-	-	-	-	-	-	-	-
MW #5	589.45	-	-	-	-	-	-	-	-	-	
MW #6	588.15	-	-	-	-	-	-	-	-	-	
MW #7	587.96	-	-	-	-	-	-	-	-	-	
MW #8	589.62	-	-	-	-	-	-	-	-	-	
MW #9	591.23	-	-	-	-	-	-	-	-	-	
MW #10	587.20	-	-	-	-	-	-	-	-	-	
MW #11	598.46	-	-	-	-	-	-	-	-	-	-
MW #15	598.25	-	-	-	-	-	-	-	-	-	-
MW #16	589.77	-	-	-	-	-	-	-	-	-	-
MSA-1	588.12	-	-	-	-	-	-	-	-	-	
MSA-2	589.20	-	-	-	-	-	-	-	-	-	
MSA-3	587.76	-	-	-	-	-	-	-	-	-	
MSA-4	589.56										
MSA-5	589.80										
DB-1	589.40	-	-	-	-	-	-	-	-	-	
DB-2	590.05										
DB-3	586.77	-	-	-	-	-	-	-	-	-	
LMW-13S	589.35	584.08	582.45	583.31	583.60	584.11	583.74	584.12	584.32	584.07	582.55
LMW-14S	589.65	584.87	583.29	584.11	584.53	584.96	584.44	584.77	584.83	584.55	583.04
LMW-15D	588.77	579.41	579.37	579.23	578.69	578.87	579.29	579.01	579.39	578.62	578.31
LMW-16D	589.26	579.34	579.21	579.14	578.63	579.01	579.27	578.93	579.11	578.54	578.29
LMW-17S	589.76	585.86	585.25	586.01	585.92	586.27	585.96	586.18	586.04	585.78	585.55
MSA-4	589.56	585.83	585.59	586.22	586.09	586.42	586.45	586.43	586.15	585.81	585.99
MSA-5	589.80	581.25	581.01	581.12	581.49	582.85	582.00	582.95	583.09	580.98	580.26

Well	Top of Casing	5/29/91	5/21/91	5/13/91	5/07/91	4/30/91	4/23/91	4/16/91	4/10/91	4/03/91	3/26/91
LMW-18S	591.44	580.67	580.56	580.76	580.62	580.97	580.93	580.83	580.52	580.18	580.16
LMW-19S	589.19	582.05	581.78	581.92	582.15	582.62	582.26	582.73	582.61	581.95	581.85
LMW-24D	591.77	580.71	580.56	580.72	580.82	580.86	580.83	580.62	580.48	580.16	580.07
LMW-20D	592.19	579.67	579.48	579.50	579.07	579.54	579.71	579.27	579.23	578.76	578.46
LMW-21D	591.39	579.02	578.86	578.81	578.39	578.84	579.00	578.64	578.72	578.25	578.00
LMW-22S	593.09	585.62	584.89	585.34	585.72	586.28	585.93	586.30	586.08	585.59	585.36
LMW-23S	591.31	578.33	578.28	578.34	578.36	578.41	578.36	578.38	578.29	578.23	578.16
RIVER	587.62	580.25	580.06	580.11	579.55	579.47	580.21	579.89	580.48	579.38	579.15
MW-3		10.02	9.95	9.65	9.57	9.49	9.64	9.72	9.86	10.14	10.34
DB-2		10.85	11.01	11.06	11.57	11.15	10.92	11.28	11.11	11.66	11.90
GMRL		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CMW-2		N/A	N/A	N/A	N/A	N/A	3.11	3.57	3.09	4.03	4.26
ARCHIMEDES		7.70	7.69	7.92	8.48	8.49	7.96	8.11	7.52	8.51	8.81
CARB. SYS.		31695300	31655460	31567070	31513940	31504410	31464320	31288230	31156340	31041350	31040380
EW-2		6529000	549800	4450000	3657000	-	1803000	964000	184000	-	-
LMW-1S	589.29	580.30	580.20	580.02	579.47	579.82	580.12	579.92	580.41	579.48	579.32
LMW-2S	589.82	581.05	580.35	580.78	580.98	581.68	581.29	581.24	580.80	580.27	580.01
LMW-3D	588.43	579.32	579.21	579.06	578.55	578.80	579.15	578.87	579.22	578.44	578.25
LMW-4D	589.51	577.29	577.15	577.04	576.53	576.90	577.20	576.87	577.13	576.43	576.25
LMW-5S	590.71	580.37	580.42	580.44	580.29	580.77	580.81	580.75	580.71	579.97	579.66
LMW-6S	590.68	581.36	581.12	581.24	581.31	581.83	581.43	581.99	581.92	580.99	580.95
LMW-7S	592.31	580.44	580.50	580.93	581.23	581.46	581.23	581.22	580.83	580.41	580.16
LMW-8S	590.72	581.74	581.46	581.63	581.81	582.07	581.82	581.77	581.56	581.22	580.98
LMW-9D	591.64	578.42	578.24	578.19	577.76	578.23	578.42	578.09	578.20	577.66	577.44
LMW-10D	591.14	577.26	577.11	577.03	576.53	576.63	577.22	576.86	577.04	576.43	576.24
LMW-11S	591.29	580.41	580.31	580.18	579.96	580.45	580.55	580.31	580.24	579.79	579.34
LMW-12S	590.25	581.52	581.11	581.43	581.52	581.92	581.58	581.57	581.27	580.79	580.51

Data logger.

* Unable to open.

Well	1/4/91	12/26/90	12/17/90	12/10/90	11/26/90	11/19/90	11/13/90	11/6/90	10/29/90	10/22/90	10/15/90
MW #1											
MW #2											
MW #3											
MW #4											
MW #5											
MW #6											
MW #7											
MW #8											
MW #9											
MW #10											
MW #11											
MW #15											
MW #16											
MSA-1											
MSA-2											
MSA-3											
MSA-4											
MSA-5											
DB-1											
DB-2											
DB-3											
LMW-13S	*	*	*	*	580.95	581.37	582.16	582.41	581.45	582.86	584.31
LMW-14S	*	*	*	*	581.71	582.09	582.62	583.30	582.17	583.51	584.95
LMW-15D	*	*	*	*	578.76	578.20	578.60	578.78	578.38	578.78	578.72
LMW-16D	*	*	*	*	577.99	576.77	577.02	578.75	576.77	578.52	578.58
LMW-17S	584.93	584.71	585.53	585.24	584.80	585.07	585.11	585.18	584.87	585.36	585.92
MSA-4	585.30	585.41	585.75	585.62	584.51	585.32	585.38	585.38	585.06	585.79	586.09
MSA-5	580.47	579.77	580.25	580.29	580.04	580.26	580.78	582.06	580.36	580.89	582.49

Well	1/4/91	12/26/90	12/17/90	12/10/90	11/26/90	11/19/90	11/13/90	11/6/90	10/29/90	10/22/90	10/15/90
LMW-18S	579.88	579.45	580.06	579.87	579.55	579.87	579.90	579.93	579.70	580.06	580.25
LMW-19S	581.44	581.22	581.40	581.31	580.98	581.14	581.37	582.03	581.01	581.35	581.81
LMW-24D	579.91	580.01	580.08	580.06	580.01	580.03	580.07	580.01	580.10	580.18	580.05
LMW-20D	577.72	576.77	577.56	578.68	577.40	577.24	577.57	578.81	577.37	578.56	579.05
LMW-21D	577.53	576.76	577.33	578.30	577.65	577.08	577.39	578.51	577.27	578.19	578.31
LMW-22S	584.67	584.39	585.22	585.00	584.41	584.80	584.99	584.97	584.52	585.17	585.82
LMW-23S	578.11	578.04	578.15	578.11	578.09	578.14	578.17	578.14	578.18	578.30	578.36
RIVER	579.37	579.49	579.55	580.11	579.94	579.31	579.62	579.56	579.45	579.73	579.72
MW-3	10.35	10.83	10.70	10.76	11.11	10.94	10.92	11.02	11.05	10.98	11.17
DB-2	13.44	14.10	13.05	11.48	12.25	15.32	14.33	11.44	13.80	11.69	11.62
GMRL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CMW-2	5.27	6.51	5.77	4.32	4.98	6.38	5.77	4.12	7.19	4.36	4.15
ARCHIMEDES	FROZEN	8.57	8.54	7.94	8.08	8.69	8.33	8.22	8.51	8.16	8.20
CARB. SYS.	29722880	29546330	29306740	29188170	28872010	28615840	28385780	28102190	27793970	27575030	27463130
EW-2	-										
LMW-1S	*	*	*	*	579.94	579.37	579.86	579.88	579.60	579.77	579.69
LMW-2S	580.07	579.86	580.30	580.38	580.00	580.36	580.62	580.54	580.21	580.65	580.91
LMW-3D	578.28	577.99	578.27	578.85	578.63	578.09	578.47	578.58	578.26	578.63	578.56
LMW-4D	576.44	575.93	576.52	577.03	576.83	576.35	576.75	576.87	576.52	576.83	576.71
LMW-5S	579.65	579.40	579.58	579.87	579.74	579.44	579.80	579.97	579.49	579.60	579.56
LMW-6S	580.80	580.63	580.77	580.83	580.48	580.57	580.68	581.14	580.41	580.64	580.85
LMW-7S	579.86	579.62	579.76	579.66	579.18	579.28	578.41	579.07	578.96	579.01	578.84
LMW-8S	580.89	580.71	580.84	580.89	580.52	580.64	580.77	580.87	580.54	580.77	580.91
LMW-9D	577.43	576.92	577.37	577.78	577.50	577.09	577.61	577.87	577.33	577.63	577.53
LMW-10D	576.22	575.76	576.17	576.67	576.44	576.00	576.44	576.66	576.17	576.47	576.34
LMW-11S	579.47	579.15	579.48	579.59	579.52	579.39	579.85	580.57	579.57	579.60	579.88
LMW-12S	580.48	580.23	580.61	580.66	580.24	580.47	580.62	580.71	580.35	580.70	580.90

Well	10/10/90	9/25/90	9/17/90	9/10/90	9/5/90	8/29/90	8/28/90	8/20/90	8/13/90	8/6/90	8/2/90
MW #1											
MW #2											
MW #3											
MW #4											
MW #5											
MW #6											
MW #7											
MW #8											
MW #9											
MW #10											
MW #11											
MW #15											
MW #16											
MSA-1											
MSA-2											
MSA-3											
MSA-4											
MSA-5											
DB-1											
DB-2											
DB-3											
LMW-13S	581.32	581.06	580.97	581.03	580.79	582.45		581.29	582.78	579.55	579.08
LMW-14S	583.96	582.14	582.28	582.06	581.54	582.64		582.37	582.97	580.75	579.97
LMW-15D	580.14	578.03	578.82	578.58	578.59	578.90		578.65	578.97	579.23	578.68
LMW-16D	579.88	576.02	577.12	576.67	576.33	578.55		576.24	576.82	578.09	577.37
LMW-17S	585.65	585.02	584.62	584.64	584.13	584.56		584.24	583.93	583.32	583.35
MSA-4	585.72	585.49	585.26	585.20	584.36	584.73		584.34	584.10	583.39	583.45
MSA-5	583.29	580.45	581.66	581.08	580.38	581.55		580.32	580.42	580.23	579.91

Well	10/10/90	9/25/90	9/17/90	9/10/90	9/5/90	8/29/90	8/28/90	8/20/90	8/13/90	8/6/90	8/2/90
LMW-18S	580.29	579.93	579.61	579.79	579.58	579.86		579.39	579.43	579.32	579.21
LMW-19S	585.50	581.04	581.22	581.05	580.66	581.33		580.67	580.57	580.66	580.22
LMW-24D	579.83	579.86	579.76	579.67	579.58	579.51		579.42	579.39	579.33	579.33
LMW-20D	579.70	576.60	577.42	579.96	576.60	578.23		576.55	576.96	577.14	576.36
LMW-21D	579.29	576.55	577.42	576.96	576.77	578.06		576.73	577.08	577.59	577.04
LMW-22S	585.35	584.70	584.39	584.51	583.96	584.20		583.81	583.59	583.13	584.09
LMW-23S	578.25	578.23	578.19	578.26	578.20	578.13		578.16	578.14	578.09	578.13
RIVER	581.14	579.27	579.93	579.75	579.92	579.95		579.91	580.22	580.47	579.87
MW-3	10.77	11.25	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY
DB-2	10.37	15.41	14.93	15.35	15.24	11.69		15.85	14.26	12.04	12.81
GMRL	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A
CMW-2	N/A	7.15	6.07	6.41	7.02	4.47		7.03	6.37	4.95	5.79
ARCHIMEDES	6.72	8.72	8.00	8.18	8.00	8.11		7.97	7.67	7.46	8.02
CARB. SYS.	27456160	27137790	26849400	26600620	26413660	26149820		25944140	25653900	25391580	25239540
EW-2											
LMW-1S	581.26	579.26	580.11	579.82	579.97	580.06		580.04	580.35	580.54	579.93
LMW-2S	580.60	580.45	580.39	580.42	580.04	580.14		580.07	580.05	579.95	579.97
LMW-3D	579.97	577.92	578.69	578.42	578.48	578.31		578.15	578.39	578.65	578.11
LMW-4D	578.14	576.15	576.93	576.64	576.69	576.93		576.73	577.00	577.18	576.69
LMW-5S	580.51	579.09	579.71	579.41	579.48	579.57		579.63	579.75	579.85	579.40
LMW-6S	580.83	580.20	580.28	580.10	579.78	580.03		579.83	579.64	579.66	579.45
LMW-7S	578.86	578.43	578.31	578.28	578.20	578.05		578.10	578.20	578.24	578.32
LMW-8S	580.59	580.40	580.41	580.34	580.02	580.18		580.16	579.98	579.95	579.96
LMW-9D	578.74	576.90	577.66	577.31	577.30	577.60		577.34	577.55	577.66	577.18
LMW-10D	577.74	575.74	576.57	576.22	576.24	576.56		576.28	576.54	576.70	576.16
LMW-11S	581.27	579.28	580.04	579.65	579.61	579.96		579.94	579.84	580.72	579.66
LMW-12S	580.61	580.68	580.65	580.57	580.27	580.52		580.40	580.32	580.37	580.36

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								1990			
Well	7/23/90	7/16/90	7/9/90	7/2/90	6/26/90	6/19/90	6/13/90	6/5/90	5/29/90	5/21/90	5/13/90
MW #1											
MW #2											
MW #3								578.32			
MW #4											
MW #5											
MW #6											
MW #7								578.90			
MW #8								583.71			
MW #9								584.58			
MW #10								579.81			
MW #11											
MW #15											
MW #16								582.55			
MSA-1											
MSA-2											
MSA-3											
MSA-4											
MSA-5											
DB-1											
DB-2								573.66			
DB-3											
LMW-13S	579.19	579.25	579.45	579.89	580.05	579.80	580.02	580.48	581.23	582.25	579.02
LMW-14S	579.81	579.79	580.08	580.33	580.59	580.63	580.48	580.99	581.57	581.81	580.79
LMW-15D	578.54	578.24	578.62	578.55	578.20	578.55	577.95	578.29	579.32	578.87	578.50
LMW-16D	575.95	575.33	576.15	576.39	575.92	576.17	575.29	575.77	576.89	575.82	577.09
LMW-17S	583.67	583.48	583.54	583.77	583.96	583.79	584.08	584.32	584.61	584.89	584.47
MSA-4	584.04	583.46	583.62	583.96	584.06	583.66	584.04	584.33	584.93	585.20	584.87
MSA-5	580.07	579.94	579.87	579.93	579.85	579.75	579.80	580.00	580.87	580.63	579.63

Well	7/23/90	7/16/90	7/9/90	7/2/90	6/26/90	6/19/90	6/13/90	1990 6/5/90	5/29/90	5/21/90	5/13/90
LMW-18S	579.32	579.25	579.34	579.38	579.47	579.49	579.71	579.67	579.77	579.68	579.62
LMW-19S	580.42	580.21	580.35	580.48	580.59	580.68	580.96	581.13	581.39	581.75	581.45
LMW-24D	579.51	579.42	579.48	579.58	579.63	579.48	579.61	579.70	579.61	579.66	579.65
LMW-20D	576.16	575.71	576.20	576.63	576.46	576.20	575.30	575.81	576.71	576.25	575.66
LMW-21D	576.48	576.12	576.58	576.78	576.54	576.62	576.09	576.43	577.26	576.87	576.63
LMW-22S	583.48	583.69	583.34	583.49	583.62	583.57	583.83	584.07	584.27	584.50	584.10
LMW-23S	578.11	578.14	578.16	578.07	578.19	579.21	579.44	578.27	578.25	578.27	578.24
RIVER	579.83	579.47	579.86	579.72	579.32	579.77	579.10	579.44	580.52	580.29	579.71
MW-3	DRY	DRY	11.27	11.25	DRY	10.78	10.75	11.02	10.47	11.29	11.05
DB-2	15.35	16.81	16.08	15.56	15.71	15.96	16.85	16.39	14.70	14.28	13.19
GMRL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CMW-2	7.53	8.20	7.34	6.97	7.41	7.40	8.22	7.71	6.47	7.01	6.09
ARCHIMEDES	8.11	8.40									
CARB. SYS.	24806710	24475420	24208960	23944630	23850810	N/A	23639760	23255540	N/A	22524420	22524420
EW-2											
LMW-1S	579.94	579.69	579.96	579.90	579.54	579.90	579.35	579.59	580.69	580.24	579.49
LMW-2S	580.16	580.19	580.33	580.52	580.70	580.80	580.80	581.05	581.30	581.53	580.96
LMW-3D	578.02	577.72	578.44	578.44	578.08	578.42	577.85	578.17	579.30	578.72	578.25
LMW-4D	576.62	576.37	576.63	576.65	576.33	576.66	576.15	576.49	577.49	576.94	576.33
LMW-5S	579.49	579.36	579.39	579.45	579.20	579.43	579.12	579.37	580.21	579.87	579.38
LMW-6S	579.52	579.36	579.26	579.32	579.53	581.40	581.88	582.50	582.56	582.94	582.53
LMW-7S	578.46	578.55	578.68	578.81	578.93	579.05	579.17	579.33	579.38	577.36	579.23
LMW-8S	580.06	580.11	580.32	581.41	581.41	582.07	582.61	583.22	583.21	583.49	583.26
LMW-9D	577.22	577.01	577.22	577.27	577.05	577.27	576.90	577.12	578.04	577.54	576.94
LMW-10D	576.17	575.95	576.17	576.22	575.94	576.22	575.76	576.07	577.09	576.47	575.90
LMW-11S	579.72	579.74	579.64	579.72	579.55	579.61	579.40	579.52	580.22	579.88	579.27
LMW-12S	580.61	580.58	580.68	580.98	581.48	581.94	582.10	582.35	582.40	582.58	582.48

Well	9/18/89	9/12/89	9/5/89	8/29/89	8/23/89	8/22/89	8/15/89	8/8/89	8/1/89	7/25/89	7/18/89
MW #1					-						
MW #2					-						
MW #3					578.23						
MW #4					-						
MW #5					-						
MW #6					-						
MW #7					578.51						
MW #8					581.88						
MW #9					582.02						
MW #10					579.91						
MW #11					-						
MW #15					-						
MW #16					580.59						
MSA-1					-						
MSA-2					-						
MSA-3					-						
MSA-4					583.51						
MSA-5					579.41						
DB-1					-						
DB-2					573.66						
DB-3					-						
LMW-13S	579.31	579.92	578.77	579.09		579.29	579.55	580.27	579.50	579.95	580.03
LMW-14S	579.25	579.43	578.97	579.25		579.61	579.59	580.36	579.82	580.26	580.26
LMW-15D	578.37	578.51	578.33	578.19		578.49	578.49	578.67	578.65	578.66	578.48
LMW-16D	574.67	575.15	574.64	574.17		577.14	576.05	573.80	575.20	574.01	573.34
LMW-17S	583.65	584.00	583.31	583.59		583.72	583.96	584.30	584.09	584.67	585.26
MSA-4	583.86	584.10	583.27	583.62		583.64	584.06	584.56	583.76	584.15	584.80
MSA-5	580.12	580.35	579.81	579.94		580.05	580.17	580.63	580.19	580.30	580.34

Well	5/8/90	4/30/90	4/24/90	4/16/90	4/9/90	4/2/90	3/26/90	3/19/90	3/12/90	3/5/90	2/26/90
MW #1											
MW #2											
MW #3											
MW #4											
MW #5											
MW #6											
MW #7											
MW #8											
MW #9											
MW #10											
MW #11											
MW #15											
MW #16											
MSA-1											
MSA-2											
MSA-3											
MSA-4											
MSA-5											
DB-1											
DB-2											
DB-3											
LMW-13S	579.02	579.07	580.80	580.87	581.05	580.79	581.31	582.72	584.52	579.63	579.49
LMW-14S	580.53	580.98	581.03	581.17	581.18	581.31	581.56	581.71	581.71	579.95	579.47
LMW-15D	577.54	577.66	577.73	577.86	577.51	578.08	577.94	577.97	577.97	577.74	577.58
LMW-16D	574.51	573.18	574.88	574.74	573.33	576.63	575.27	577.93	577.93	577.60	577.55
LMW-17S	584.42	584.31	584.67	584.85	584.82	585.06	584.76	584.86	584.86	583.31	583.36
MSA-4	584.79	584.60	585.18	585.37	585.21	585.32	585.03	585.49	585.49	584.60	584.44
MSA-5	578.77	579.56	579.63	579.76	579.83	579.86	580.07	581.57	581.57	579.21	579.14

Well	5/8/90	4/30/90	4/24/90	4/16/90	4/9/90	4/2/90	3/26/90	3/19/90	3/12/90	3/5/90	2/26/90
LMW-18S	579.77	579.63	579.77	579.78	579.76	580.03	579.67	580.15	580.15	579.31	579.11
LMW-19S	581.49	581.50	581.65	581.68	581.66	581.68	581.65	582.59	582.59	581.32	581.18
LMW-24D	579.71	579.76	579.75	579.85	579.96	579.92	579.89	579.54	579.54	579.39	579.25
LMW-20D	574.69	575.67	574.81	575.68	575.52	575.92	576.26	578.12	578.12	577.78	577.64
LMW-21D	575.55	575.69	575.71	576.30	575.82	576.48	576.46	577.66	577.66	577.29	577.28
LMW-22S	584.06	583.96	584.29	584.41	584.40	584.58	584.34	584.28	584.28	583.06	583.00
LMW-23S	578.24	578.22	578.23	578.15	578.12	578.14	578.11	578.19	578.19	578.04	578.02
RIVER	578.67	578.98	578.99	579.13	578.73	579.28	579.75	578.95	578.95	578.78	578.52
MW-3	11.36	11.35	10.60	10.99	10.93	10.95	DRY	DRY	DRY	DRY	DRY
DB-2	17.52	17.80	17.28	16.30	17.64	13.61	16.02	12.26	12.26	12.61	17.36
GMRL	4.41	4.42	4.41	4.27	4.32	4.24	4.46	5.42	5.42	6.02	6.22
CMW-2	8.98	9.69	8.63	7.96	9.49	6.51	7.66	5.02	5.02	5.34	9.25
ARCHIMEDES CARB. SYS. EW-2	22486900	21832880	21725320	21604190	21287050	20958270	20677320	20475550	20475550	20475550	20475550
LMW-1S	579.02	579.07	579.09	579.27	579.04	579.25	579.41	579.58	579.20	578.81	578.88
LMW-2S	580.87	580.82	580.90	580.89	580.86	580.95	580.84	581.15	580.74	580.29	580.34
LMW-3D	577.43	577.55	577.60	577.40	577.05	577.49	577.44	578.50	577.93	577.62	577.54
LMW-4D	575.74	575.89	575.91	576.15	575.83	576.12	576.18	576.70	576.21	575.86	575.86
LMW-5S	579.02	579.08	579.14	579.26	579.13	579.29	579.31	579.60	579.19	578.74	578.85
LMW-6S	582.57	582.56	582.62	582.60	582.48	582.66	582.39	582.45	583.35	582.28	582.33
LMW-7S	579.27	579.27	579.27	579.26	579.20	579.16	578.99	578.78	578.62	578.30	578.24
LMW-8S	583.29	583.29	583.28	583.14	583.11	583.17	582.96	583.07	583.61	582.87	582.93
LMW-9D	576.48	576.65	576.64	576.88	576.64	576.87	577.02	577.44	577.04	576.64	576.66
LMW-10D	575.33	575.52	575.52	575.80	575.52	575.75	575.89	576.34	575.90	575.52	575.58
LMW-11S	579.09	579.03	579.05	579.15	579.01	579.07	579.15	579.35	579.51	578.74	578.85
LMW-12S	582.24	582.16	582.26	582.14	582.08	582.11	581.92	582.08	582.33	581.54	581.55

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Well	2/19/90	2/12/90	2/5/90	1/29/90	1/22/90	1/15/90	1/9/90	1/2/90	12/26/89	12/18/89	12/11/89
MW #1											
MW #2											
MW #3											
MW #4											
MW #5											
MW #6											
MW #7											
MW #8											
MW #9											
MW #10											
MW #11											
MW #15											
MW #16											
MSA-1											
MSA-2											
MSA-3											
MSA-4											
MSA-5											
DB-1											
DB-2											
DB-3											
LMW-13S	578.40	578.77	578.28	578.43	579.01	577.82	577.96	577.63	577.94	578.26	579.07
LMW-14S	578.49	579.12	578.22	578.26	578.21	579.85	577.95	577.81	578.05	578.44	579.20
LMW-15D	577.24	577.65	577.00	577.47	577.27	577.01	577.35	577.22	577.43	577.37	577.89
LMW-16D	573.94	577.52	573.69	574.08	573.89	573.54	573.78	573.68	573.98	575.49	575.83
LMW-17S	583.09	583.26	583.22	583.43	583.29	582.92	583.10	582.53	582.61	582.94	583.14
MSA-4	584.07	584.14	583.65	583.75	583.40	582.38	582.44	581.98	582.34	582.88	583.40
MSA-5	578.96	579.05	579.22	579.44	579.43	578.90	578.98	578.84	578.94	579.19	579.50

Well	2/19/90	2/12/90	2/5/90	1/29/90	1/22/90	1/15/90	1/9/90	1/2/90	12/26/89	12/18/89	12/11/89
LMW-18S	578.95	579.11	579.16	579.19	579.26	578.86	579.05	578.55	578.70	578.74	578.99
LMW-19S	580.80	580.96	580.85	581.14	581.05	580.84	580.80	580.27	580.13	580.13	580.22
LMW-24D	579.25	579.25	579.19	579.22	579.13	579.08	579.07	579.10	579.15	579.26	579.33
LMW-20D	574.71	577.62	574.42	574.44	574.56	574.37	574.59	574.25	574.50	575.07	576.24
LMW-21D	575.22	577.23	575.28	575.48	575.33	575.14	575.24	575.08	575.27	575.64	576.39
LMW-22S	582.93	583.05	583.24	583.34	583.19	582.80	582.95	582.59	582.61	582.89	583.07
LMW-23S	577.98	578.00	578.03	578.02	577.99	577.94	577.97	577.96	577.87	577.93	577.94
RIVER	578.61	578.54	578.12	578.76	578.59	578.47	578.64	578.58	578.73	578.49	579.16
MW-3	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
DB-2	17.36	12.65	17.60	16.60	16.18	16.72	16.32	17.37	17.40	15.06	14.60
GMRL	6.22	6.21	6.24	6.32	6.35	6.69	6.52	6.64	6.40	6.22	6.00
CMW-2	9.25	5.44	9.32	8.86	9.21	9.46	9.22	9.37	9.17	7.56	7.37
ARCHIMEDES CARB. SYS. EW-2	20356700	20063940	20016190	19633630	19244140	18868440	18554970	18205910			
LMW-1S	578.68	578.81	578.76	578.82	578.68	578.63	578.71	578.54	578.74	578.68	579.10
LMW-2S	580.22	580.36	580.32	580.49	580.43	580.02	580.00	579.72	579.81	580.01	580.19
LMW-3D	577.12	577.55	576.89	577.37	577.15	577.06	577.24	577.07	576.85	576.85	577.35
LMW-4D	575.36	575.84	575.26	575.67	575.46	575.36	575.53	575.32	575.51	575.51	576.00
LMW-5S	578.68	578.74	578.72	578.73	578.79	578.31	578.34	578.21	578.29	578.50	578.91
LMW-6S	582.24	582.26	582.31	582.38	582.34	582.13	582.19	581.99	581.99	582.14	582.17
LMW-7S	578.23	578.16	578.07	577.91	577.86	577.81	577.87	577.94	577.99	578.10	578.21
LMW-8S	582.79	582.79	582.84	582.99	582.91	582.67	582.76	582.57	582.60	582.72	582.67
LMW-9D	576.02	576.60	576.03	576.29	576.16	576.04	576.15	575.95	576.14	576.18	576.70
LMW-10D	574.89	575.50	574.90	575.24	575.04	574.94	575.08	574.87	575.08	575.10	575.61
LMW-11S	578.54	578.67	578.65	578.66	578.70	578.56	578.59	578.49	578.57	578.62	578.85
LMW-12S	581.41	581.55	581.54	581.73	581.66	581.29	581.44	580.96	581.00	581.15	581.30

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Well	12/4/89	11/27/89	11/20/89	11/13/89	11/6/89	10/30/89	10/23/89	10/16/89	10/9/89	10/2/89	9/25/89
MW #1											
MW #2											
MW #3											
MW #4											
MW #5											
MW #6											
MW #7											
MW #8											
MW #9											
MW #10											
MW #11											
MW #15											
MW #16											
MSA-1											
MSA-2											
MSA-3											
MSA-4											
MSA-5											
DB-1											
DB-2											
DB-3											
LMW-13S	579.41	579.03	579.19	578.17	578.07	578.49	578.34	578.36	578.18	578.67	578.98
LMW-14S	579.26	578.95	578.80	576.27	578.27	576.93	578.55	578.57	578.50	578.80	579.10
LMW-15D	577.88	577.88	577.94	577.73	577.80	577.91	578.08	578.07	578.16	577.78	578.09
LMW-16D	577.26	573.97	576.79	576.59	576.77	578.18	577.15	576.22	575.90	574.29	574.40
LMW-17S	583.82	583.51	583.94	583.16	582.84	583.19	583.22	583.14	582.93	583.29	583.50
MSA-4	584.35	584.54	584.95	583.17	583.08	583.41	583.17	583.28	582.78	583.30	583.56
MSA-5	580.00	579.89	580.05	579.28	579.18	579.47	579.58	579.41	579.53	579.66	579.96

Well	12/4/89	11/27/89	11/20/89	11/13/89	11/6/89	10/30/89	10/23/89	10/16/89	10/9/89	10/2/89	9/25/89
LMW-18S	579.44	579.24	579.42	578.96	578.80	579.11	578.93	579.03	578.88	579.30	579.39
LMW-19S	580.59	580.51	580.74	580.01	580.01	580.02	579.99	579.94	579.94	580.17	580.44
LMW-24D	579.32	579.30	579.30	579.27	579.31	579.30	579.34	579.42	579.50	579.62	579.69
LMW-20D	577.28	576.59	576.04	575.60	575.70	575.76	576.34	575.98	575.47	575.25	575.62
LMW-21D	577.34	576.44	576.61	576.49	576.53	576.47	576.99	576.64	576.45	575.93	576.22
LMW-22S	583.66	583.37	583.65	583.10	582.79	583.11	583.06	583.09	582.99	583.27	583.51
LMW-23S	577.96	577.97	577.92	577.89	577.81	577.87	577.86	577.87	577.87	577.95	577.99
RIVER	578.83	579.13	579.31	578.74	579.01	579.04	579.12	579.37	579.44	579.07	579.32
MW-3											
DB-2											
GMRL											
CMW-2											
ARCHIMEDES											
CARB. SYS.											
EW-2											
LMW-1S	579.08	579.09	579.08	579.10	578.97	579.12	579.19	579.19	579.46	579.24	579.43
LMW-2S	580.48	580.32	580.35	580.12	580.07	580.14	580.09	580.07	580.01	580.10	580.12
LMW-3D	577.44	577.43	577.45	577.28	571.32	577.40	577.58	577.52	577.65	577.31	577.62
LMW-4D	576.22	576.14	576.09	575.96	575.95	576.06	576.21	576.16	576.26	576.01	576.26
LMW-5S	578.97	578.94	579.00	578.91	578.88	578.93	579.04	578.90	579.08	578.87	579.15
LMW-6S	582.39	582.28	582.63	582.31	582.38	582.33	582.23	582.29	582.24	582.36	582.43
LMW-7S	578.30	578.22	578.12	577.96	577.96	578.02	578.07	578.13	578.21	578.23	578.37
LMW-8S	582.96	582.92	583.28	582.98	582.90	583.03	582.90	582.98	582.86	582.99	582.99
LMW-9D	576.99	576.90	576.69	576.62	576.55	576.68	576.84	576.80	576.83	576.73	576.84
LMW-10D	575.92	575.83	575.68	575.59	575.54	575.67	575.81	575.76	575.81	575.65	575.76
LMW-11S	578.95	578.90	578.91	578.94	578.88	579.02	579.19	579.06	580.27	580.21	579.42
LMW-12S	581.64	581.50	581.67	581.32	581.20	581.39	581.18	581.30	581.06	581.30	581.18

Well	9/18/89	9/12/89	9/5/89	8/29/89	8/23/89	8/22/89	8/15/89	8/8/89	8/1/89	7/25/89	7/18/89
LMW-18S	579.43	579.53	579.32	579.51		579.58	579.65	579.64	579.59	579.75	579.82
LMW-19S	580.68	580.86	580.37	580.53		580.64	580.79	580.99	580.82	580.94	581.11
LMW-24D	579.71	579.70	579.69	579.78		579.87	579.92	580.02	580.05	580.11	580.29
LMW-20D	575.69	576.34	575.31	575.54		576.52	575.15	575.73	575.65	576.01	574.90
LMW-21D	576.31	576.63	576.07	576.14		577.11	576.29	576.31	576.55	576.45	575.94
LMW-22S	583.67	583.95	583.31	583.51		583.66	583.89	584.24	583.93	584.34	584.82
LMW-23S	577.99	577.95	577.99	578.01		578.03	578.03	578.02	578.03	578.04	578.04
RIVER	579.72	579.92	579.67	579.52		579.56	579.94	580.19	580.00	580.32	580.12
MW-3											
DB-2											
GMRL											
CMW-2											
ARCHIMEDES											
CARB. SYS.											
EW-2											
LMW-1S	579.78	579.88	579.75	579.69		579.77	579.80	580.24	580.03	580.13	580.04
LMW-2S	580.14	580.08	579.71	579.64		579.65	579.38	579.37	579.23	579.39	579.60
LMW-3D	577.91	578.04	577.86	577.80		577.90	577.90	578.25	578.16	578.22	578.05
LMW-4D	576.55	576.67	576.49	576.46		576.64	576.49	576.93	576.75	576.91	576.69
LMW-5S	579.40	579.50	579.25	579.34		579.31	579.34	579.81	579.59	579.63	579.61
LMW-6S	582.40	582.49	582.21	582.21		582.17	582.06	581.94	581.85	581.88	580.43
LMW-7S	578.47	578.52	578.46	578.59		578.72	578.86	578.97	579.07	579.35	579.44
LMW-8S	582.92	582.97	582.89	582.79		582.71	582.52	582.37	582.23	582.37	582.35
LMW-9D	577.15	577.29	577.05	577.10		577.33	577.05	577.56	577.26	577.49	577.27
LMW-10D	576.13	576.24	576.05	576.05		576.21	576.02	576.52	576.24	576.47	576.21
LMW-11S	579.64	579.67	579.49	579.62		579.69	579.61	580.06	579.88	579.92	579.88
LMW-12S	581.09	581.03	580.72	580.46		580.06	579.36	578.55	578.43	578.48	578.70

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1989

Well	7/11/89	7/5/89	6/27/89	6/20/89	6/13/89	6/6/89	5/30/89	5/25/89	5/16/89	5/9/89	5/2/89
MW #1								-			
MW #2								-			
MW #3								578.02			
MW #4								-			
MW #5								-			
MW #6								-			
MW #7								578.72			
MW #8								583.29			
MW #9								584.23			
MW #10								579.87			
MW #11								-			
MW #15								-			
MW #16								581.09			
MSA-1								-			
MSA-2								-			
MSA-3								-			
MSA-4								579.59			
MSA-5								584.69			
DB-1								-			
DB-2								581.97			
DB-3											
LMW-13S	580.43	581.32	581.15	583.33	584.37	585.55	581.02	580.85	580.70	580.83	581.25
LMW-14S	580.53	581.60	583.01	584.20	584.25	582.80	581.63	581.68	581.57	581.93	582.16
LMW-15D	578.96	578.93	579.34	579.41	580.56	579.10	578.99	577.90	578.72	578.95	578.70
LMW-16D	573.63	574.42	579.00	581.00	581.22	579.11	578.64	577.93	578.63	578.98	578.56
LMW-17S	584.90	585.06	586.14	586.42	585.81	585.03	584.76	584.82	585.14	584.78	585.26
MSA-4	584.31	584.99	586.19	586.19	586.18	586.53	585.19	585.13	585.76	584.63	584.86
MSA-5	580.43	580.55	581.09	582.53	581.84	582.05	581.20	580.66	579.90	579.90	580.30

					1989						
Well	7/11/89	7/5/89	6/27/89	6/20/89	6/13/89	6/6/89	5/30/89	5/25/89	5/16/89	5/9/89	5/2/89
LMW-18S	579.83	580.04	581.40	580.01	580.46	580.44	579.90	579.89	579.70	579.68	579.89
LMW-19S	581.16	581.36	581.65	582.08	581.69	581.87	581.27	581.11	580.94	581.13	581.19
LMW-24D	580.45	580.52	580.58	580.45	580.38	580.29	580.39	580.40	580.08	580.27	580.07
LMW-20D	575.21	577.24	578.77	579.41	579.51	579.25	578.78	578.61	578.69	578.75	578.79
LMW-21D	576.04	577.04	578.53	578.85	578.20	578.84	578.22	577.54	578.16	578.35	578.39
LMW-22S	584.39	584.61	585.23	579.87	586.23	585.75	584.84	584.59	584.58	584.61	584.89
LMW-23S	578.07	578.11	578.17	579.99	579.40	579.58	577.97	577.87	577.78	578.14	577.81
RIVER	580.42	580.32	580.35	580.14	580.25	579.30	580.17	573.70	579.69	579.98	579.72
MW-3											
DB-2											
GMRL											
CMW-2											
RCHIMEDES											
CARB. SYS.											
EW-2											
LMW-1S	580.51	580.20	580.21	580.41	580.92	579.81	579.71	579.77	579.90	579.83	579.69
LMW-2S	579.81	580.10	581.54	580.84	580.84	580.97	579.74	578.97	579.72	579.57	579.92
LMW-3D	578.46	578.34	578.62	578.97	580.85	578.48	578.26	577.63	578.15	578.41	578.58
LMW-4D	577.02	577.11	577.26	577.55	579.77	576.11	576.84	577.13	576.80	577.09	576.86
LMW-5S	579.89	579.87	579.98	580.23	580.08	578.89	579.59	578.04	579.69	579.71	579.71
LMW-6S	581.95	582.01	581.17	582.40	582.30	582.10	582.13	582.02	581.79	581.56	581.73
LMW-7S	579.61	579.81	580.23	579.43	580.11	581.51	579.26	578.41	579.22	580.36	579.31
LMW-8S	582.41	582.57	581.70	582.92	582.80	583.54	582.80	581.99	582.22	575.80	582.22
LMW-9D	577.50	577.92	577.92	578.23	579.51	577.99	577.59	578.56	577.47	583.22	576.74
LMW-10D	576.49	576.80	576.89	577.17	579.59	576.62	576.49	577.72	576.39	576.68	576.18
LMW-11S	580.05	580.04	580.07	579.17	580.17	580.16	579.57	577.19	579.70	579.54	579.39
LMW-12S	579.54	580.05	580.64	578.15	581.03	581.54	580.28	579.08	579.95	579.89	579.95

Well	4/25/89	4/18/89	4/11/89	4/4/89	3/28/89	3/21/89	3/16/89	1988 6/7/88	1988 3/29/88	1987 5/26/87	1987 12/5/86
MW #1								582.11	580.50	580.32	-
MW #2								-	587.70	582.73	-
MW #3								578.93	-	580.99	-
MW #4								-	-	583.02	-
MW #5								583.45	583.82	582.66	-
MW #6								-	-	582.29	-
MW #7								579.32	579.62	580.96	-
MW #8								582.70	584.98	583.29	-
MW #9								583.65	585.58	584.23	-
MW #10								580.59	580.54	582.12	-
MW #11								-	-	591.29	-
MW #15								-	-	592.50	-
MW #16								583.58	583.78	-	-
MSA-1								-	-	581.45	582.39
MSA-2								-	-	582.20	582.14
MSA-3								582.54	582.70	582.14	581.32
MSA-4								580.65	581.05	583.32	583.75
MSA-5								580.48	580.24	581.02	581.02
DB-1								581.06	579.94	581.44	583.05
DB-2								580.67	579.68	581.12	582.10
DB-3										581.02	583.03
LMW-13S	581.51	581.97	582.08	582.51	580.08	578.39	578.45				
LMW-14S	582.58	582.90	582.90	582.55	580.51	578.45	578.75				
LMW-15D	578.82	578.77	579.13	578.77	578.67	577.78	577.44				
LMW-16D	578.61	578.51	578.24	578.32	578.26	572.58	574.71				
LMW-17S	585.76	586.26	586.32	586.86	581.23	584.50	584.21				
MSA-4	585.76	585.77	585.97	585.94	585.34	579.84	583.37				
MSA-5	580.00	580.07	580.32	581.15	583.32	579.16	579.30				

Well	4/25/89	4/18/89	4/11/89	4/4/89	3/28/89	3/21/89	3/16/89	1988 6/7/88	3/29/88	1987 5/26/87	12/5/86
LMW-18S	579.93	580.04	579.83	579.92	579.87	579.20	580.84				
LMW-19S	581.34	581.48	579.40	581.19	581.45	580.69	580.88				
LMW-24D	580.12	580.19	580.18	580.02	N/A	580.09	580.21				
LMW-20D	578.64	578.64	578.59	578.47	578.11	573.05	575.14				
LMW-21D	578.17	578.20	577.92	577.91	578.21	574.97	576.01				
LMW-22S	585.14	585.19	585.39	585.34	585.05	584.49	584.41				
LMW-23S	577.92	577.96	577.84	577.71	578.08	577.85	577.56				
RIVER	579.90	579.29	579.04	579.02	577.81	579.62	578.94				
MW-3											
DB-2											
GMRL											
CMW-2											
RCHIMEDES											
CARB. SYS.											
EW-2											
LMW-1S	579.70	579.51	579.34	580.36	580.76	579.46	579.29				
LMW-2S	579.82	579.82	579.92	582.12	584.59	579.49	579.72				
LMW-3D	578.33	578.03	577.83	578.08	578.25	577.37	577.33				
LMW-4D	576.82	576.74	576.55	576.62	577.65	576.04	576.11				
LMW-5S	579.71	579.55	579.39	579.61	579.57	579.49	579.26				
LMW-6S	581.85	581.76	582.15	581.91	585.10	581.80	581.92				
LMW-7S	579.45	579.56	579.61	582.31	579.07	578.96	578.88				
LMW-8S	582.33	582.31	582.35	582.59	582.86	582.48	582.59				
LMW-9D	577.49	577.51	577.25	577.44	577.52	576.20	576.84				
LMW-10D	576.44	576.46	576.18	576.56	577.72	575.55	575.49				
LMW-11S	579.49	579.39	579.29	579.26	579.71	579.15	579.16				
LMW-12S	579.95	580.15	580.47	580.80	581.93	580.89	580.65				

	1986			1985	
Well	11/26/86	8/21/86	5/19/86	11/21/85	10/16/85
MW #1	580.82	580.15	580.65	581.32	581.23
MW #2	582.90	582.65	582.90	582.98	582.90
MW #3	580.74	-	-	580.74	580.74
MW #4	583.27	582.36	579.85	580.27	581.69
MW #5	582.87	582.45	580.45	580.95	581.95
MW #6	582.82	582.72	582.90	582.73	582.65
MW #7	581.13	580.71	580.46	581.96	581.13
MW #8	583.79	582.12	583.62	585.79	585.70
MW #9	584.81	580.07	584.65	-	580.73
MW #10	582.70	583.28	582.20	583.12	582.70
MW #11	-	-	-	-	-
MW #15	-	-	-	-	-
MW #16	-	-	-	-	-
MSA-1	-	-	-	-	-
MSA-2	-	-	-	-	-
MSA-3	-	-	-	-	-
MSA-4	-	-	-	-	-
MSA-5	-	-	-	-	-
DB-1	-	-	-	-	-
DB-2	-	-	-	-	-
DB-3	-	-	-	-	-
LMW-13S					
LMW-14S					
LMW-15D					
LMW-16D					
LMW-17S					
MSA-4					
MSA-5					

	1986			1985	
Well	11/26/86	8/21/86	5/19/86	11/21/85	10/26/85
LMW-18S					
LMW-19S					
LMW-24D					
LMW-20D					
LMW-21D					
LMW-22S					
LMW-23S					
RIVER					
MW-3					
DB-2					
GMRL					
CMW-2					
ARCHIMEDES					
CARB. SYS.					
EW-2					
LMW-1S					
LMW-2S					
LMW-3D					
LMW-4D					
LMW-5S					
LMW-6S					
LMW-7S					
LMW-8S					
LMW-9D					
LMW-10D					
LMW-11S					
LMW-12S					

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APPENDIX D

PLAN D-1 - SAMPLING LOCATIONS
MASTER ANALYTICAL RESULTS LISTING
SUMMARY OF ANALYSIS TABLES
DATA BASE

MSA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (a)

Location	Sampling Date	Analyses
CMW-2	05/21/91	PCBs
DB-1-1	11/18/86	PCBs
DB-1-10	11/18/86	PCBs
DB-1-11	11/18/86	PCBs
DB-1-12	11/18/86	PCBs
DB-1-13	11/18/86	PCBs
DB-1-14	11/18/86	PCBs
DB-1-15	11/18/86	PCBs
DB-1-16	11/18/86	PCBs
DB-1-2	11/18/86	PCBs
DB-1-3	11/18/86	PCBs
DB-1-4	11/18/86	PCBs
DB-1-5	11/18/86	PCBs
DB-1-6	11/18/86	PCBs
DB-1-7	11/18/86	PCBs
DB-1-8	11/18/86	PCBs
DB-2-1	11/18/86	PCBs
DB-2-11	11/18/86	PCBs
DB-2-12	11/18/86	PCBs
DB-2-13	11/18/86	PCBs
DB-2-14	11/18/86	PCBs
DB-2-15	11/18/86	PCBs
DB-2-16	11/18/86	PCBs
DB-2-2	11/18/86	PCBs
DB-2-3	11/18/86	PCBs
DB-2-4	11/18/86	PCBs
DB-2-5	11/18/86	PCBs
DB-2-6	11/18/86	PCBs
DB-2-7	11/18/86	PCBs
GEO190002	08/26/87	PCBs
GEO190203	08/26/87	PCBs
GEO190406	08/26/87	PCBs
GEO190709	08/26/87	PCBs
GEO200002	08/26/87	PCBs
GEO200203	08/26/87	PCBs
GEO200406	08/26/87	PCBs
GEO200709	08/26/87	PCBs
GEO210002	08/26/87	PCBs
GEO210203	08/26/87	PCBs
GEO210406	08/26/87	PCBs
GEO210709	08/26/87	PCBs
GEO220002	08/26/87	PCBs
GEO220203	08/26/87	PCBs
GEO220406	08/26/87	PCBs
GEO220709	08/26/87	PCBs
GEO230002	08/26/87	PCBs
GEO230203	08/26/87	PCBs

MSA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (b)

Location	Sampling Date	Analyses
GEO230406	08/26/87	PCBs
GEO230709	08/26/87	PCBs
GEO240002	08/26/87	PCBs
GEO240203	08/26/87	PCBs
GEO240406	08/26/87	PCBs
GEO240709	08/26/87	PCBs
GEO250002	08/26/87	PCBs
GEO250203	08/26/87	PCBs
GEO250406	08/26/87	PCBs
GEO250709	08/26/87	PCBs
GEO260002	08/26/87	PCBs
GEO260203	08/26/87	PCBs
GEO260406	08/26/87	PCBs
GEO260709	08/26/87	PCBs
GEO270002	08/26/87	PCBs
GEO270203	08/26/87	PCBs
GEO270406	08/26/87	PCBs
GEO270709	08/26/87	PCBs
GEO280002	08/26/87	PCBs
GEO280203	08/26/87	PCBs
GEO280406	08/26/87	PCBs
GEO280709	08/26/87	PCBs
GEO50002	08/03/87	PCBs
GEO50203	08/03/87	PCBs
GEO50203	08/06/87	VOCs
GEO50406	08/03/87	PCBs
GEO50709	08/03/87	PCBs
GEO60002	08/03/87	PCBs
GEO60203	08/03/87	PCBs
GEO60203	08/06/87	VOCs
GEO60406	08/03/87	PCBs
GEO60709	08/03/87	PCBs
GEO70002	08/04/87	PCBs
GEO70203	08/04/87	PCBs
GEO70203	08/06/87	VOCs
GEO70406	08/04/87	PCBs
GEO70709	08/04/87	PCBs
GEO80002	08/04/87	PCBs
GEO80203	08/04/87	PCBs
GEO80203	08/06/87	VOCs
GEO80406	08/04/87	PCBs
GEO80709	08/04/87	PCBs
GEO90002	08/04/87	PCBs
GEO90203	08/05/87	PCBs
GEO90406	08/05/87	PCBs
GEO90709	08/05/87	PCBs
KCS110002	07/08/88	PCBs

MSA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (c)

Location	Sampling Date	Analyses
KCS110203	07/08/88	PCBs
KCS110305	07/08/88	PCBs
KCS110507	07/08/88	PCBs
KCS110709	07/08/88	PCBs
KCS110910	07/08/88	PCBs
KCS111012	07/08/88	PCBs
KCS120010	07/15/88	PCBs
KCS130010	07/15/88	PCBs
KCS140010	07/15/88	PCBs
KCS150010	07/15/88	PCBs
KCS210002	07/08/88	PCBs
KCS210204	07/08/88	PCBs
KCS210406	07/08/88	PCBs
KCS210607	07/08/88	PCBs
KCS210709	07/08/88	PCBs
KCS210911	07/08/88	PCBs
KCS211112	07/08/88	PCBs
KCS220010	07/15/88	PCBs
KCS230010	07/15/88	PCBs
KCS240010	07/15/88	PCBs
KCS250010	07/15/88	PCBs
KCS310002	07/08/88	PCBs
KCS310204	07/08/88	PCBs
KCS310406	07/08/88	PCBs
KCS310607	07/08/88	PCBs
KCS310709	07/08/88	PCBs
KCS310911	07/08/88	PCBs
KCS311112	07/08/88	PCBs
KCS320010	07/15/88	PCBs
KCS340010	07/15/88	PCBs
KCS350010	07/15/88	PCBs
KCS410002	07/08/88	PCBs
KCS410204	07/08/88	PCBs
KCS410406	07/08/88	PCBs
KCS410607	07/08/88	PCBs
KCS410709	07/08/88	PCBs
KCS410911	07/08/88	PCBs
KCS411112	07/08/88	PCBs
KCS420010	07/15/88	PCBs
KCS430010	07/15/88	PCBs
KCS440010	07/15/88	PCBs
KCS450010	07/15/88	PCBs
KS-169	04/10/86	METs,PCBs
KSC330010	07/15/88	PCBs
MSA-1-1	11/18/86	GCs ,PCBs
MSA-1-2	11/18/86	GCs ,PCBs
MSA-1-3	11/18/86	GCs ,PCBs

MSA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (d)

Location	Sampling Date	Analyses
MSA-1-4	11/18/86	GCs ,PCBs
MSA-1-5	11/18/86	GCs ,PCBs
MSA-1-6	11/18/86	GCs ,PCBs
MSA-1-7	11/18/86	GCs ,PCBs
MSA-2-1	11/18/86	GCs ,PCBs
MSA-2-2	11/18/86	GCs ,PCBs
MSA-2-3	11/18/86	GCs ,PCBs
MSA-2-4	11/18/86	GCs ,PCBs
MSA-2-5	11/18/86	GCs ,PCBs
MSA-2-6	11/18/86	GCs ,PCBs
MSA-2-7	11/18/86	GCs ,PCBs
MSA-2-8	11/18/86	GCs ,PCBs
MSA-3-1	11/18/86	GCs ,PCBs
MSA-3-2	11/18/86	GCs ,PCBs
MSA-3-3	11/18/86	GCs ,PCBs
MSA-3-4	11/18/86	GCs ,PCBs
MSA-3-5	11/18/86	GCs ,PCBs
MSA-3-6	11/18/86	GCs ,PCBs
MSA-3-7	11/18/86	GCs ,PCBs
MSA-3-8	11/18/86	GCs ,PCBs
MSA-4-1	11/18/86	GCs ,PCBs
MSA-4-2	11/18/86	GCs ,PCBs
MSA-4-3	11/18/86	GCs ,PCBs
MSA-4-4	11/18/86	GCs ,PCBs
MSA-4-5	11/18/86	GCs ,PCBs
MSA-4-6	11/18/86	GCs ,PCBs
MSA-4-7	11/18/86	GCs ,PCBs
MSA-4-8	11/18/86	GCs ,PCBs
MSA-5-1	11/18/86	GCs ,PCBs
MSA-5-2	11/18/86	GCs ,PCBs
MSA-5-3	11/18/86	GCs ,PCBs
MSA-5-4	11/18/86	GCs ,PCBs
MSA-5-5	11/18/86	GCs ,PCBs
MSA-5-6	11/18/86	GCs ,PCBs
MSA-5-7	11/18/86	GCs ,PCBs
MSA-5-8	11/18/86	GCs ,PCBs
MSA330010	07/15/88	PCBs
MW-1-1	09/25/85	PCBs
MW-1-11	12/03/85	PCBs
MW-1-3	12/03/85	PCBs
MW-1-5	12/03/85	PCBs
SB-16-0.3	12/03/85	PCBs
SB-16-1	12/03/85	PCBs
SB-16-2	12/03/85	PCBs
SB-17-0.3	12/03/85	PCBs
SB-17-1	12/03/85	PCBs
SB-17-2	12/03/85	PCBs

MSA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (e)

Location	Sampling Date	Analyses
SB-B-1-1	10/01/85	PCBs
SB-B-1-3	12/03/85	PCBs
SB-B-1-5	12/03/85	PCBs
SB-B-1-7	12/03/85	PCBs
SB-B-2-1	10/01/85	PCBs
SB-B-2-1	12/03/85	PCBs
SB-B-2-3	12/03/85	PCBs
SB-B-2-5	12/03/85	PCBs
SB-B-2-7	12/03/85	PCBs
SB-C-1-1	10/01/85	PCBs
SB-C-1-3	12/03/85	PCBs
SB-C-1-5	12/03/85	PCBs
SB-C-1-7	12/03/85	PCBs
SB-C-2-1	10/01/85	PCBs
SB-C-2-3	12/03/85	PCBs
SB-C-2-5	12/03/85	PCBs
SB-C-2-7	12/03/85	PCBs
SB-C-3-1	10/02/85	PCBs
SB-C-3-3	12/03/85	PCBs
SB-C-3-5	12/03/85	PCBs
SB-C-3-7	12/03/85	PCBs
SB-D-1-1	10/01/85	PCBs
SB-D-1-3	12/03/85	PCBs
SB-D-1-5	12/03/85	PCBs
SB-D-1-7	12/03/85	PCBs
SB-D-2-1	10/01/85	PCBs
SB-D-2-1	12/03/85	PCBs
SB-D-2-3	12/03/85	PCBs
SB-D-2-5	12/03/85	PCBs
SB-D-2-7	12/03/85	PCBs
SB-D-3-1	10/02/85	PCBs
SB-D-3-3	12/03/85	PCBs
SB-D-3-5	12/03/85	PCBs
SB-D-3-7	12/03/85	PCBs
SB-E-1-1	10/01/85	PCBs
SB-E-1-3	12/03/85	PCBs
SB-E-1-5	12/03/85	PCBs
SB-E-1-7	12/03/85	PCBs
SB-E-2-1	12/03/85	PCBs
SB-E-2-3	12/03/85	PCBs
SB-E-2-5	12/03/85	PCBs
SB-E-2-7	12/03/85	PCBs
SB-E-3-3	12/03/85	PCBs
SB-E-3-5	12/03/85	PCBs
SB-E-3-7	12/03/85	PCBs
SB-F-1-3	12/03/85	PCBs
SB-F-1-5	12/03/85	PCBs

MSA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (f)

Location	Sampling Date	Analyses
SB-F-1-7	12/03/85	PCBs
SB-F-2-3	12/03/85	PCBs
SB-F-2-5	12/03/85	PCBs
SB-F-2-7	12/03/85	PCBs
SB-F-3-1	10/02/85	PCBs
SB-F-3-3	12/03/85	PCBs
SB-F-3-5	12/03/85	PCBs
SB-F-3-7	12/03/85	PCBs
SB-F-4-1	10/03/85	PCBs
SB-F-4-3	12/03/85	PCBs
SB-F-4-5	12/03/85	PCBs
SB-F-4-7	12/03/85	PCBs
SB-G-1-1	09/30/85	PCBs
SB-G-1-3	12/03/85	PCBs
SB-G-1-5	12/03/85	PCBs
SB-G-1-7	12/03/85	PCBs
SB-G-2-1	10/02/85	PCBs
SB-G-2-3	12/03/85	PCBs
SB-G-2-5	12/03/85	PCBs
SB-G-2-7	12/03/85	PCBs
SB-G-3-1	10/02/85	PCBs
SB-G-3-3	12/03/85	PCBs
SB-G-3-5	12/03/85	PCBs
SB-G-3-7	12/03/85	PCBs
SB-H-1-1	09/30/85	PCBs
SB-H-1-3	12/03/85	PCBs
SB-H-1-5	12/03/85	PCBs
SB-H-1-7	12/03/85	PCBs
SB-H-2-1	10/02/85	PCBs
SB-H-2-3	12/03/85	PCBs
SB-H-2-5	12/03/85	PCBs
SB-H-2-7	12/03/85	PCBs
SB-H-3-1	10/02/85	PCBs
SB-H-3-3	12/03/85	PCBs
SB-H-3-5	12/03/85	PCBs
SB-H-3-7	12/03/85	PCBs
SB-H-4-1	10/03/85	PCBs
SB-H-4-3	12/03/85	PCBs
SB-H-4-5	12/03/85	PCBs
SB-H-4-7	12/03/85	PCBs
SB-H-5-1	10/03/85	PCBs
SB-H-5-3	12/03/85	PCBs
SB-H-5-5	12/03/85	PCBs
SB-H-5-7	12/03/85	PCBs
SB-I-4-1	10/03/85	PCBs
SB-I-4-3	12/03/85	PCBs
SB-I-4-5	12/03/85	PCBs

MSA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (g)

Location	Sampling Date	Analyses
SB-I-4-7	12/03/85	PCBs
SB-I-5-1	10/03/85	PCBs
SB-I-5-3	12/03/85	PCBs
SB-I-5-5	12/03/85	PCBs
SB-I-5-7	12/03/85	PCBs
SB-I-6-1	10/03/85	PCBs
SB-I-6-3	12/03/85	PCBs
SB-I-6-5	12/03/85	PCBs
SB-I-6-7	12/03/85	PCBs
SB310204	06/02/88	PCBs
SB310406	06/02/88	PCBs
SB310608	06/02/88	PCBs
SB310810	06/02/88	PCBs
SB311012	06/02/88	PCBs
SB311214	06/02/88	PCBs
SB320204	06/02/88	PCBs
SB320406	06/02/88	PCBs
SB320608	06/02/88	PCBs
SB320810	06/02/88	PCBs
SB321012	06/02/88	PCBs
SB321214	06/02/88	PCBs
SB330204	06/02/88	PCBs
SB330406	06/02/88	PCBs
SB330608	06/02/88	PCBs
SB330810	06/02/88	PCBs
SB331012	06/02/88	PCBs
SB340204	06/02/88	PCBs
SB340406	06/02/88	PCBs
SB340608	06/02/88	PCBs
SB340810	06/02/88	PCBs
SB341012	06/02/88	PCBs
SB341214	06/02/88	PCBs
SB350204	06/03/88	PCBs
SB350406	06/03/88	PCBs
SB350608	06/03/88	PCBs
SB350810	06/03/88	PCBs
SB351012	06/03/88	PCBs
SS-1	10/28/87	VOCs
SS-2	10/28/87	VOCs
SS-3	10/28/87	VOCs
SS-4	10/28/87	VOCs

MSA Master Analytical Results Listing
Groundwater and Surface Water

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (a)

Location	Sampling Date	Analyses
DB-1	12/09/86	METs,PCBs,VOCs
DB-1	05/27/87	PCBs
DB-1	03/29/88	PCBs
DB-1	06/07/88	PCBs
DB-2	12/09/86	METs,PCBs,VOCs
DB-2	05/27/87	PCBs
DB-2	07/21/87	PCBs,VOCs
DB-2	03/29/88	PCBs
DB-2	06/07/88	PCBs
DB-2	10/04/88	PCBs
DB-2	01/05/89	METs,PCBs,VOCs
DB-2	05/26/89	PCBs
DB-2	08/23/89	PCBs
DB-2	11/29/89	METs,PCBs,VOCs
DB-2	02/22/90	PCBs
DB-2	06/05/90	PCBs
DB-2	08/22/90	PCBs
DB-2	11/30/90	PCBs
DB-2	02/28/91	METs,PCBs
DB-2	03/18/91	VOCs
LMW-20D	01/05/89	METs,PCBs,VOCs
MSA-1	12/09/86	METs,PCBs,VOCs
MSA-1	05/27/87	PCBs
MSA-2	12/09/86	METs,PCBs,VOCs
MSA-2	05/27/87	PCBs
MSA-3	12/09/86	METs,PCBs,VOCs
MSA-3	05/27/87	PCBs
MSA-3	03/29/88	PCBs
MSA-3	06/07/88	PCBs
MSA-4	12/09/86	METs,PCBs,VOCs
MSA-4	05/27/87	PCBs
MSA-4	03/29/88	PCBs
MSA-4	06/07/88	PCBs
MSA-4	10/04/88	PCBs
MSA-4	01/05/89	METs,PCBs,VOCs
MSA-4	12/05/89	METs,PCBs
MSA-4	03/01/90	PCBs
MSA-4	07/02/90	PCBs
MSA-4	08/22/90	PCBs
MSA-4	12/14/90	PCBs
MSA-4	02/28/91	METs,PCBs
MSA-4	03/18/91	VOCs
MSA-5	12/09/86	METs,PCBs,VOCs
MSA-5	05/27/87	PCBs
MSA-5	07/21/87	PCBs,VOCs
MSA-5	03/29/88	PCBs
MSA-5	06/07/88	PCBs

MSA Master Analytical Results Listing
Groundwater and Surface Water

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (b)

Location	Sampling Date	Analyses
MSA-5	10/04/88	PCBs
MSA-5	01/05/89	METs,PCBs,VOCs
MSA-5	12/05/89	METs,PCBs
MSA-5	03/01/90	PCBs
MSA-5	07/02/90	PCBs
MSA-5	08/22/90	PCBs
MSA-5	12/14/90	PCBs
MSA-5	03/04/91	METs,PCBs
MSA-5	03/18/91	VOCs
MW-1	10/16/85	METs,PCBs
MW-1	12/03/85	PCBs
MW-1	05/19/86	VOCs
MW-1	08/20/86	PCBs,VOCs
MW-1	08/22/86	METs
MW-1	12/03/86	METs,PCBs
MW-1	03/29/88	PCBs
MW-1	06/07/88	PCBs

MSA Master Analytical Results Listing
Surface Water

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (a)

Location	Sampling Date	Analyses
CB-N#6	05/22/86	PCBs
CB-N#6	06/20/86	PCBs
CB-N#6	08/21/86	PCBs

SUMMARY OF SOIL ANALYSIS, MACHINE STORAGE AREA
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
DIOXINS (ug/kg)				
CHLORODIBENZODIOXIN (TOT)	11.4-11.4	11.4	1	1
CHLORODIBENZOFURAN (TOT)	42.4-42.4	42.4	1	1
HEPTACHLORODIBENZODIOXIN (TO	6.97-6.97	6.97	1	1
HEPTACHLORODIBENZOFURAN (TOT	37.0-37.0	37.0	1	1
HEXACHLORODIBENZODIOXIN (TOT	2.86-2.86	2.86	1	1
OCTACHLORODIBENZODIOXIN (TOT	1.53-1.53	1.53	1	1
OCTACHLORODIBENZOFURAN (TOT)	3.56-3.56	3.56	1	1
PENTACHLORODIBENZODIOXIN (TO	0.01-0.01	0.01	1	1
PENTACHLORODIBENZOFURAN (TOT	1.64-1.64	1.64	1	1
TETRACHLORODIBENZOFURAN (TOT	0.23-0.23	0.23	1	1
METALS (mg/kg)				
ARSENIC(U)	3.47-3.47	3.47	1	1
BARIUM(U)	108.0-108.0	108.0	1	1
BERYLLIUM	0.45-0.45	0.45	1	1
BORON	116.0-116.0	116.0	1	1
CADMIUM(U)	3.74-3.74	3.74	1	1
CHROMIUM(U)	163.0-163.0	163.0	1	1
COBALT	32.9-32.9	32.9	1	1
COPPER(U)	494.0-494.0	494.0	1	1
LEAD(U)	82.5-82.5	82.5	1	1
MERCURY(U)	0.8-0.8	0.8	1	1
NICKEL	713.0-713.0	713.0	1	1
SILVER	17.2-17.2	17.2	1	1
ZINC(U)	6521.0-6521.0	6521.0	1	1
OTHERS				
CYANIDE	ND-5.8	4.44	39	5
PESTICIDES (mg/kg)				
AROCHLOR 1242 TCLP	ND-0.0021	0.0004	12	9
AROCHLOR 1242(U)	ND-27000.0	2194.5024	73	72
AROCHLOR 1248(U)	ND-1200.0	755.0	73	2
AROCHLOR 1254(U)	ND-3100.0	327.7738	73	21
AROCHLOR 1260(U)	ND-310.0	73.9714	73	7
PCB	ND-75000.0	1045.7551	241	157

Analyte**	Range	Average*	Num. Samps	Num. Dets
VOLATILE ORGANIC COMPOUNDS (ug/kg)				
2-BUTANONE	ND-330.0	330.0	4	1
2-HEXANONE	ND-11.0	11.0	4	1
4-METHYL-2-PENTANONE	ND-110.0	110.0	4	1
ACETONE	21.0-10000.0	2528.25	4	4
BENZENE	ND-24.0	24.0	8	1
ETHYLBENZENE	ND-19.0	19.0	8	1
METHYLENE CHLORIDE	ND-110.0	35.75	8	4
TOLUENE	ND-110.0	36.75	8	4
XYLENE, TOTAL	ND-47.0	47.0	4	1

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

SUMMARY OF GROUNDWATER ANALYSIS, SHALLOW SAND/FILL
MACHINE STORAGE AREA
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
METALS (mg/l)				
ARSENIC	ND-0.021	0.0123	8	3
BARIUM	ND-1.5	0.65	9	8
CHROMIUM	ND-0.21	0.11	9	4
COPPER	ND-5.22	0.6813	14	8
CYANIDE	ND-1.3	0.4587	7	3
IRON	0.124-0.189	0.1565	2	2
LEAD	ND-0.03	0.019	9	2
MERCURY	ND-0.001	0.0005	9	2
NICKEL	ND-0.398	0.1326	8	7
SELENIUM	ND-0.005	0.005	8	1
SILVER	ND-0.01	0.01	6	1
ZINC	0.013-11.3	1.0684	14	14
PESTICIDES (mg/l)				
AROCHLOR 1242	ND-0.18	0.031	24	12
AROCHLOR 1242(F)	ND-0.0002	0.0002	20	2
AROCHLOR 1248	ND-0.003	0.0011	24	10
AROCHLOR 1248(F)	ND-0.0002	0.0002	20	2
AROCHLOR 1254	ND-0.026	0.0077	24	8
PCB	0.0009-0.03	0.0101	15	15
VOLATILE ORGANIC COMPOUNDS (ug/l)				
BENZENE	ND-1.0	1.0	12	1
ETHYLBENZENE	ND-3.0	3.0	12	1
METHYLENE CHLORIDE	ND-10.0	10.0	12	1
TOLUENE	ND-5.0	4.5	12	2
TRANS-1,2-DICHLOROETHYLENE	ND-97.0	87.0	12	2
VINYL CHLORIDE	ND-49.0	39.0	12	2
XYLENE, TOTAL	ND-34.0	32.0	10	2

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

SUMMARY OF GROUNDWATER ANALYSIS, DEEP SAND
MACHINE STORAGE AREA
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
METALS (mg/l)				
ARSENIC	0.001-0.052	0.0327	3	3
BARIUM	0.8-3.2	1.6667	3	3
CHROMIUM	0.03-0.12	0.07	3	3
COPPER	ND-0.04	0.0207	5	3
NICKEL	0.015-0.016	0.0155	2	2
SILVER	0.01-0.02	0.015	2	2
ZINC	ND-0.08	0.0493	5	3
PESTICIDES (mg/l)				
AROCHLOR 1242	ND-0.0001	0.0001	15	1
AROCHLOR 1248	ND-0.0031	0.0018	15	2
AROCHLOR 1248(F)	ND-0.0001	0.0001	13	1
AROCHLOR 1254	ND-0.0001	0.0001	15	1
PCB	ND-0.0029	0.0011	5	4
VOLATILE ORGANIC COMPOUNDS (ug/l)				
1,1,1-TRICHLOROETHANE	ND-99.0	99.0	7	1
BENZENE	ND-20.0	12.5	7	2
ETHYLBENZENE	ND-270.0	270.0	7	1
METHYLENE CHLORIDE	ND-15.0	13.5	7	2
TOLUENE	ND-210.0	210.0	7	1
XYLENE, TOTAL	ND-740.0	740.0	5	1

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

SUMMARY OF SURFACE WATER ANALYSIS
MACHINE STORAGE AREA
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
DIOXINS (ug/l)				
CHLORODIBENZODIOXIN (TOT)	ND-0.0458	0.0233	3	2
CHLORODIBENZOFURAN (TOT)	0.0014-0.0442	0.0175	3	3
HEPTACHLORODIBENZODIOXIN (TO	ND-0.0003	0.0003	3	1
HEPTACHLORODIBENZOFURAN (TOT	ND-0.0001	0.0001	3	1
HEXACHLORODIBENZODIOXIN (TOT	ND-0.0001	0.0001	3	1
HEXACHLORODIBENZOFURAN (TOT)	ND-0.0001	0.0001	3	1
OCTACHLORODIBENZODIOXIN (TOT	ND-0.0185	0.0094	3	2
PENTACHLORODIBENZOFURAN (TOT	ND-0.0001	0.0001	3	1
TETRACHLORODIBENZODIOXIN (TO	ND-0.0273	0.0273	3	1
TETRACHLORODIBENZOFURAN (TOT	0.0011-0.0396	0.0159	3	3
TRICHLORODIBENZOFURAN (TOT)	0.0046-0.0046	0.0046	1	1
PESTICIDES (mg/l)				
PCB	ND-0.013	0.013	2	1

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	CMW-2 05/21/91	DB-1-1 11/18/86	DB-1-10 11/18/86	DB-1-11 11/18/86	DB-1-12 11/18/86	DB-1-13 11/18/86	DB-1-14 11/18/86	DB-1-15 11/18/86	DB-1-16 11/18/86
PESTICIDES/PCBs										
AROCHLOR 1016	mg/kg	< 8	--	--	--	--	--	--	--	--
AROCHLOR 1221	mg/kg	< 8	--	--	--	--	--	--	--	--
AROCHLOR 1232	mg/kg	< 8	--	--	--	--	--	--	--	--
AROCHLOR 1242	mg/kg	< 8	--	--	--	--	--	--	--	--
AROCHLOR 1248	mg/kg	1200	--	--	--	--	--	--	--	--
AROCHLOR 1254	mg/kg	< 8	--	--	--	--	--	--	--	--
AROCHLOR 1260	mg/kg	< 8	--	--	--	--	--	--	--	--
AROCHLOR 1262	mg/kg	< 8	--	--	--	--	--	--	--	--
AROCHLOR 1268	mg/kg	< 8	--	--	--	--	--	--	--	--
PCB	mg/kg	--	1.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	DB-1-2 11/18/86	DB-1-3 11/18/86	DB-1-4 11/18/86	DB-1-5 11/18/86	DB-1-6 11/18/86	DB-1-7 11/18/86	DB-1-8 11/18/86	DB-2-1 11/18/86	DB-2-11 11/18/86
PESTICIDES/PCBs										
PCB	mg/kg	3.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.59	< 0.5

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	DB-2-12 11/18/86	DB-2-13 11/18/86	DB-2-14 11/18/86	DB-2-15 11/18/86	DB-2-16 11/18/86	DB-2-2 11/18/86	DB-2-3 11/18/86	DB-2-4 11/18/86	DB-2-5 11/18/86
PESTICIDES/PCBs										
PCB	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	< 0.5	< 0.5

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	DB-2-6 11/18/86	DB-2-7 11/18/86	GE0190002 08/26/87	GE0190203 08/26/87	GE0190406 08/26/87	GE0190709 08/26/87	GE0200002 08/26/87	GE0200203 08/26/87	GE0200406 08/26/87
PESTICIDES/PCBs										
PCB	mg/kg	< 0.5	< 0.5	--	0.129	2.890	0.520	9.700	6.690	4.450

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE0200709 08/26/87	GE0210002 08/26/87	GE0210203 08/26/87	GE0210406 08/26/87	GE0210709 08/26/87	GE0220002 08/26/87	GE0220203 08/26/87	GE0220406 08/26/87	GE0220709 08/26/87
PESTICIDES/PCBs										
PCB	mg/kg	3.470	1130.000	0.153	154.000	612.000	5.440	2.490	0.654	5.080

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE0230002 08/26/87	GE0230203 08/26/87	GE0230406 08/26/87	GE0230709 08/26/87	GE0240002 08/26/87	GE0240203 08/26/87	GE0230406 08/26/87	GE0240709 08/26/87	GE0250002 08/26/87
PESTICIDES/PCBs										
PCB	mg/kg	1030.000	14.000	0.229	0.126	132.000	17.400	0.229	2.680	12.100

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE0250203 08/26/87	GE0250406 08/26/87	GE0250709 08/26/87	GE0260002 08/26/87	GE0260203 08/26/87	GE0260406 08/26/87	GE0260709 08/26/87	GE0270002 08/26/87	GE0270203 08/26/87
PESTICIDES/PCBs										
PCB	mg/kg	22.200	2.500	1.400	956.000	19.300	0.145	4.910	< 0.002	0.243

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE0270406 08/26/87	GE0270709 08/26/87	GE0280002 08/26/87	GE0280203 08/26/87	GE0280406 08/26/87	GE0280709 08/26/87	GE050002 08/03/87	GE050203 08/03/87	GE050203 08/06/87
PESTICIDES/PCBs										
PCB	mg/kg	15.300	0.341	44.100	840.000	1290.000	57.300	2870.00	387.000	--
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/kg	--	--	--	--	--	--	--	--	< 5
1,1,2,2-TETRACHLOROETHANE	ug/kg	--	--	--	--	--	--	--	--	< 5
1,1,2-TRICHLOROETHANE	ug/kg	--	--	--	--	--	--	--	--	< 5
1,1-DICHLOROETHANE	ug/kg	--	--	--	--	--	--	--	--	< 5
1,1-DICHLOROETHYLENE	ug/kg	--	--	--	--	--	--	--	--	< 5
1,2-DICHLOROETHANE	ug/kg	--	--	--	--	--	--	--	--	< 5
1,2-DICHLOROPROPANE	ug/kg	--	--	--	--	--	--	--	--	< 5
2-BUTANONE	ug/kg	--	--	--	--	--	--	--	--	330
2-CHLOROETHYLVINYLETHER	ug/kg	--	--	--	--	--	--	--	--	< 10
2-HEXANONE	ug/kg	--	--	--	--	--	--	--	--	11
4-METHYL-2-PENTANONE	ug/kg	--	--	--	--	--	--	--	--	110
ACETONE	ug/kg	--	--	--	--	--	--	--	--	10000
ACROLEIN	ug/kg	--	--	--	--	--	--	--	--	< 10
ACRYLONITRILE	ug/kg	--	--	--	--	--	--	--	--	< 10
BENZENE	ug/kg	--	--	--	--	--	--	--	--	24
BROMODICHLOROMETHANE	ug/kg	--	--	--	--	--	--	--	--	< 5
BROMOFORM	ug/kg	--	--	--	--	--	--	--	--	< 5
BROMOMETHANE	ug/kg	--	--	--	--	--	--	--	--	< 10
CARBON DISULFIDE	ug/kg	--	--	--	--	--	--	--	--	< 5
CARBON TETRACHLORIDE	ug/kg	--	--	--	--	--	--	--	--	< 5
CHLOROBENZENE	ug/kg	--	--	--	--	--	--	--	--	< 5
CHLOROETHANE	ug/kg	--	--	--	--	--	--	--	--	< 10
CHLOROFORM	ug/kg	--	--	--	--	--	--	--	--	< 5
CHLOROMETHANE	ug/kg	--	--	--	--	--	--	--	--	< 10
CIS-1,3-DICHLOROPROPYLENE	ug/kg	--	--	--	--	--	--	--	--	< 5
DIBROMOCHLOROMETHANE	ug/kg	--	--	--	--	--	--	--	--	< 5
ETHYLBENZENE	ug/kg	--	--	--	--	--	--	--	--	19

Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE0270406 08/26/87	GE0270709 08/26/87	GE0280002 08/26/87	GE0280203 08/26/87	GE0280406 08/26/87	GE0280709 08/26/87	GE050002 08/03/87	GE050203 08/03/87	GE050203 08/06/87
VOLATILE ORGANICS										
METHYLENE CHLORIDE	ug/kg	--	--	--	--	--	--	--	--	110
STYRENE	ug/kg	--	--	--	--	--	--	--	--	< 5
TETRACHLOROETHYLENE	ug/kg	--	--	--	--	--	--	--	--	< 5
TOLUENE	ug/kg	--	--	--	--	--	--	--	--	110
TRANS-1,2-DICHLOROETHYLENE	ug/kg	--	--	--	--	--	--	--	--	< 5
TRANS-1,2-DICHLOROPROPENE	ug/kg	--	--	--	--	--	--	--	--	< 5
TRICHLOROETHYLENE	ug/kg	--	--	--	--	--	--	--	--	< 5
VINYL ACETATE	ug/kg	--	--	--	--	--	--	--	--	< 10
VINYL CHLORIDE	ug/kg	--	--	--	--	--	--	--	--	< 10
XYLENE, TOTAL	ug/kg	--	--	--	--	--	--	--	--	47

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE050406 08/03/87	GE050709 08/03/87	GE060002 08/03/87	GE060203 08/03/87	GE060203 08/06/87	GE060406 08/03/87	GE060709 08/03/87	GE070002 08/04/87	GE070203 08/04/87
PESTICIDES/PCBs										
PCB	mg/kg	906.000	11.9000	47.7000	< 0.0001	--	34.4000	0.0060	2.1700	331.000
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/kg	--	--	--	--	< 5	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/kg	--	--	--	--	< 5	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/kg	--	--	--	--	< 5	--	--	--	--
1,1-DICHLOROETHANE	ug/kg	--	--	--	--	< 5	--	--	--	--
1,1-DICHLOROETHYLENE	ug/kg	--	--	--	--	< 5	--	--	--	--
1,2-DICHLOROETHANE	ug/kg	--	--	--	--	< 5	--	--	--	--
1,2-DICHLOROPROPANE	ug/kg	--	--	--	--	< 5	--	--	--	--
2-BUTANONE	ug/kg	--	--	--	--	< 10	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/kg	--	--	--	--	< 10	--	--	--	--
2-HEXANONE	ug/kg	--	--	--	--	< 10	--	--	--	--
4-METHYL-2-PENTANONE	ug/kg	--	--	--	--	< 10	--	--	--	--
ACETONE	ug/kg	--	--	--	--	52	--	--	--	--
ACROLEIN	ug/kg	--	--	--	--	< 10	--	--	--	--
ACRYLONITRILE	ug/kg	--	--	--	--	< 10	--	--	--	--
BENZENE	ug/kg	--	--	--	--	< 5	--	--	--	--
BROMODICHLOROMETHANE	ug/kg	--	--	--	--	< 5	--	--	--	--
BROMOFORM	ug/kg	--	--	--	--	< 5	--	--	--	--
BROMOMETHANE	ug/kg	--	--	--	--	< 10	--	--	--	--
CARBON DISULFIDE	ug/kg	--	--	--	--	< 5	--	--	--	--
CARBON TETRACHLORIDE	ug/kg	--	--	--	--	< 5	--	--	--	--
CHLOROBENZENE	ug/kg	--	--	--	--	< 5	--	--	--	--
CHLOROETHANE	ug/kg	--	--	--	--	< 10	--	--	--	--
CHLOROFORM	ug/kg	--	--	--	--	< 5	--	--	--	--
CHLOROMETHANE	ug/kg	--	--	--	--	< 10	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/kg	--	--	--	--	< 5	--	--	--	--
DIBROMOCHLOROMETHANE	ug/kg	--	--	--	--	< 5	--	--	--	--
ETHYLBENZENE	ug/kg	--	--	--	--	< 5	--	--	--	--

Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE050406 08/03/87	GE050709 08/03/87	GE060002 08/03/87	GE060203 08/03/87	GE060203 08/06/87	GE060406 08/03/87	GE060709 08/03/87	GE070002 08/04/87	GE070203 08/04/87
VOLATILE ORGANICS										
METHYLENE CHLORIDE	ug/kg	--	--	--	--	16	--	--	--	--
STYRENE	ug/kg	--	--	--	--	< 5	--	--	--	--
TETRACHLOROETHYLENE	ug/kg	--	--	--	--	< 5	--	--	--	--
TOLUENE	ug/kg	--	--	--	--	13	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/kg	--	--	--	--	< 5	--	--	--	--
TRANS-1,2-DICHLOROPROPENE	ug/kg	--	--	--	--	< 5	--	--	--	--
TRICHLOROETHYLENE	ug/kg	--	--	--	--	< 5	--	--	--	--
VINYL ACETATE	ug/kg	--	--	--	--	< 10	--	--	--	--
VINYL CHLORIDE	ug/kg	--	--	--	--	< 10	--	--	--	--
XYLENE, TOTAL	ug/kg	--	--	--	--	< 5	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE070203 08/06/87	GE070406 08/04/87	GE070709 08/04/87	GE080002 08/04/87	GE080203 08/04/87	GE080203 08/06/87	GE080406 08/04/87	GE080709 08/04/87	GE090002 08/04/87
PESTICIDES/PCBs										
PCB	mg/kg	--	0.8700	99.7000	21.8000	93.5000	--	1.3700	5.8100	3390.00
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
1,1,2-TRICHLOROETHANE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
1,1-DICHLOROETHANE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
1,1-DICHLOROETHYLENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
1,2-DICHLOROETHANE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
1,2-DICHLOROPROPANE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
2-BUTANONE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
2-CHLOROETHYLVINYLETHER	ug/kg	< 10	--	--	--	--	< 10	--	--	--
2-HEXANONE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
4-METHYL-2-PENTANONE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
ACETONE	ug/kg	40	--	--	--	--	21	--	--	--
ACROLEIN	ug/kg	< 10	--	--	--	--	< 10	--	--	--
ACRYLONITRILE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
BENZENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
BROMODICHLOROMETHANE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
BROMOFORM	ug/kg	< 5	--	--	--	--	< 5	--	--	--
BROMOMETHANE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
CARBON DISULFIDE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
CARBON TETRACHLORIDE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
CHLOROBENZENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
CHLOROETHANE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
CHLOROFORM	ug/kg	< 5	--	--	--	--	< 5	--	--	--
CHLOROMETHANE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
DIBROMOCHLOROMETHANE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
ETHYLBENZENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--

Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GE070203 08/06/87	GE070406 08/04/87	GE070709 08/04/87	GE080002 08/04/87	GE080203 08/04/87	GE080203 08/06/87	GE080406 08/04/87	GE080709 08/04/87	GE090002 08/04/87
VOLATILE ORGANICS										
METHYLENE CHLORIDE	ug/kg	6	--	--	--	--	11	--	--	--
STYRENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
TETRACHLOROETHYLENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
TOLUENE	ug/kg	19	--	--	--	--	5	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
TRANS-1,2-DICHLOROPROPENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
TRICHLOROETHYLENE	ug/kg	< 5	--	--	--	--	< 5	--	--	--
VINYL ACETATE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
VINYL CHLORIDE	ug/kg	< 10	--	--	--	--	< 10	--	--	--
XYLENE, TOTAL	ug/kg	< 5	--	--	--	--	< 5	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	GEO90203 08/05/87	GEO90406 08/05/87	GEO90709 08/05/87	KCS110002 07/08/88	KCS110203 07/08/88	KCS110305 07/08/88	KCS110507 07/08/88	KCS110709 07/08/88	KCS110910 07/08/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	--	--	--	2400	110	4900	5600	5900	91
AROCHLOR 1248	mg/kg	--	--	--	< 390	< 8	< 390	< 40	< 390	< 37
AROCHLOR 1254	mg/kg	--	--	--	410	77	< 390	680	540	< 37
AROCHLOR 1260	mg/kg	--	--	--	< 390	< 8	< 390	< 40	< 390	< 37
PCB	mg/kg	< 0.0001	1040.00	14.5000	--	--	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	KCS111012 07/08/88	KCS120010 07/15/88	KCS130010 07/15/88	KCS140010 07/15/88	KCS150010 07/15/88	KCS210002 07/08/88	KCS210204 07/08/88	KCS210406 07/08/88	KCS210607 07/08/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	1100	4000	6300	3100	820	3900	21000	5300	13000
AROCHLOR 1242 TCLP	mg/l	--	0.0021	0.0002	0.0002	0.0002	--	--	--	--
AROCHLOR 1248	mg/kg	< 180	< 40	< 40	< 400	< 40	< 380	< 1900	< 380	< 1800
AROCHLOR 1248 TCLP	mg/l	--	< 0.0002	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1254	mg/kg	< 180	< 40	< 40	< 400	< 40	< 380	3100	760	< 1800
AROCHLOR 1254 TCLP	mg/l	--	< 0.0002	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1260	mg/kg	< 180	35	83	< 400	< 40	< 380	< 1900	< 380	< 1800
AROCHLOR 1260 TCLP	mg/l	--	< 0.0002	< 0.0001	< 0.0001	< 0.0001	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	KCS210709 07/08/88	KCS210911 07/08/88	KCS211112 07/08/88	KCS220010 07/15/88	KCS230010 07/15/88	KCS240010 07/15/88	KCS250010 07/15/88	KCS310002 07/08/88	KCS310204 07/08/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	1700	3100	580	3400	7400	5600	27000	1700	810
AROCHLOR 1248	mg/kg	< 360	< 190	< 170	< 40	< 350	< 80	< 400	< 180	< 190
AROCHLOR 1254	mg/kg	< 360	< 190	< 170	< 40	< 350	< 80	< 400	< 180	< 190
AROCHLOR 1260	mg/kg	< 360	< 190	< 170	< 40	< 350	< 80	< 400	< 180	< 190

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	KCS310406 07/08/88	KCS310607 07/08/88	KCS310709 07/08/88	KCS310911 07/08/88	KCS311112 07/08/88	KCS320010 07/15/88	KCS340010 07/15/88	KCS350010 07/15/88	KCS410002 07/08/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	410	710	240	77	35	550	160	1600	490
AROCHLOR 1242 TCLP	mg/l	--	--	--	--	--	0.0002	0.0002	0.0004	--
AROCHLOR 1248	mg/kg	< 35	< 40	< 40	< 4	< 4	< 35	< 38	< 34	< 180
AROCHLOR 1248 TCLP	mg/l	--	--	--	--	--	< 0.0001	< 0.0001	< 0.0001	--
AROCHLOR 1254	mg/kg	< 35	< 40	< 40	< 4	< 4	< 35	< 38	< 34	250
AROCHLOR 1254 TCLP	mg/l	--	--	--	--	--	< 0.0001	< 0.0001	< 0.0001	--
AROCHLOR 1260	mg/kg	< 35	< 40	< 40	< 4	< 4	< 35	< 38	34	< 180
AROCHLOR 1260 TCLP	mg/l	--	--	--	--	--	< 0.0001	< 0.0001	< 0.0001	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	KCS410204 07/08/88	KCS410406 07/08/88	KCS410607 07/08/88	KCS410709 07/08/88	KCS410911 07/08/88	KCS411112 07/08/88	KCS420010 07/15/88	KCS430010 07/15/88	KCS440010 07/15/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	1900	600	480	29	52	40	70	38	370
AROCHLOR 1242 TCLP	mg/l	--	--	--	--	--	--	0.0002	0.0002	< 0.0001
AROCHLOR 1248	mg/kg	< 400	< 40	< 40	< 7	< 18	< 12	< 30	< 4.0	< 4.0
AROCHLOR 1248 TCLP	mg/l	--	--	--	--	--	--	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1254	mg/kg	< 400	65	45	< 7	29	< 12	< 30	< 4.0	< 4.0
AROCHLOR 1254 TCLP	mg/l	--	--	--	--	--	--	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1260	mg/kg	< 400	40	< 40	< 7	< 18	< 12	< 30	6.8	9.0
AROCHLOR 1260 TCLP	mg/l	--	--	--	--	--	--	< 0.0001	< 0.0001	< 0.0001

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	KCS450010 07/15/88	KSC330010 07/15/88	MSA-1-1 11/18/86	MSA-1-2 11/18/86	MSA-1-3 11/18/86	MSA-1-4 11/18/86	MSA-1-5 11/18/86	MSA-1-6 11/18/86	MSA-1-7 11/18/86
METALS										
CYANIDE	mg/kg	--	--	< 1	< 1	< 1	< 1	< 1	< 1	< 1
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	150	820	--	--	--	--	--	--	--
AROCHLOR 1242 TCLP	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1248	mg/kg	< 4.0	< 35	--	--	--	--	--	--	--
AROCHLOR 1248 TCLP	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1254	mg/kg	< 4.0	< 35	--	--	--	--	--	--	--
AROCHLOR 1254 TCLP	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1260	mg/kg	< 4.0	< 35	--	--	--	--	--	--	--
AROCHLOR 1260 TCLP	mg/l	< 0.0001	--	--	--	--	--	--	--	--
PCB	mg/kg	--	--	< 0.5	1.3	0.5	< 0.5	< 0.5	< 0.5	< 0.5

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	MSA-2-1 11/18/86	MSA-2-2 11/18/86	MSA-2-3 11/18/86	MSA-2-4 11/18/86	MSA-2-5 11/18/86	MSA-2-6 11/18/86	MSA-2-7 11/18/86	MSA-2-8 11/18/86	MSA-3-1 11/18/86
METALS										
CYANIDE	mg/kg	3.4	1.8	< 1	< 1	< 1	< 1	< 1	< 1	< 1
PESTICIDES/PCBs										
PCB	mg/kg	26.7	19.3	1.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	13.9

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	MSA3-2 11/18/86	MSA-3-3 11/18/86	MSA-3-4 11/18/86	MSA-3-5 11/18/86	MSA-3-6 11/18/86	MSA-3-7 11/18/86	MSA-3-8 11/18/86	MSA-4-1 11/18/86	MSA-4-2 11/18/86
METALS										
CYANIDE	mg/kg	--	< 1	< 1	< 1	< 1	< 1	< 1	< 1	5.5
PESTICIDES/PCBs										
PCB	mg/kg	--	2.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	25.7	19.8

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	MSA-4-3 11/18/86	MSA-4-4 11/18/86	MSA-4-5 11/18/86	MSA-4-6 11/18/86	MSA-4-7 11/18/86	MSA-4-8 11/18/86	MSA-5-1 11/18/86	MSA-5-2 11/18/86	MSA-5-3 11/18/86
METALS										
CYANIDE	mg/kg	< 1	< 1	5.7	< 1	5.8	< 1	< 1	< 1	< 1
PESTICIDES/PCBs										
PCB	mg/kg	6.7	< 0.5	1.1	< 0.5	< 0.5	< 0.5	7.3	< 0.5	< 0.5

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	MSA-5-4 11/18/86	MSA-5-5 11/18/86	MSA-5-6 11/18/86	MSA-5-7 11/18/86	MSA-5-8 11/18/86	MSA330010 07/15/88	MW-1-1 09/25/85	MW-1-11 12/03/85	MW-1-3 12/03/85
METALS										
CYANIDE	mg/kg	< 1	< 1	< 1	< 1	< 1	--	--	--	--
PESTICIDES/PCBs										
AROCHLOR 1242 TCLP	mg/l	--	--	--	--	--	< 0.0001	--	--	--
AROCHLOR 1248 TCLP	mg/l	--	--	--	--	--	< 0.0001	--	--	--
AROCHLOR 1254 TCLP	mg/l	--	--	--	--	--	< 0.0001	--	--	--
AROCHLOR 1260 TCLP	mg/l	--	--	--	--	--	< 0.0001	--	--	--
PCB	mg/kg	< 0.5	11.1	< 0.5	< 0.5	< 0.5	--	30.020	< 1	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	MW-1-5 12/03/85	SB-16-0.3 12/03/85	SB-16-1 12/03/85	SB-16-2 12/03/85	SB-17-0.3 12/03/85	SB-17-1 12/03/85	SB-B-1-1 12/03/85	SB-B-1-3 12/03/85	SB-B-1-5 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	76	< 1	< 1	12	3.4	--	14	2.1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-B-1-7 12/03/85	SB-B-2-1 10/01/85	SB-B-2-1 12/03/85	SB-B-2-3 12/03/85	SB-B-2-5 12/03/85	SB-B-2-7 12/03/85	SB-C-1-1 10/01/85	SB-C-1-3 12/03/85	SB-C-1-5 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	2524	110	100	210	11	2.440	1.7	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-C-1-7 12/03/85	SB-C-2-1 10/01/85	SB-C-2-3 12/03/85	SB-C-2-5 12/03/85	SB-C-2-7 12/03/85	SB-C-3-1 10/02/85	SB-C-3-3 12/03/85	SB-C-3-5 12/03/85	SB-C-3-7 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	3.930	130	1.4	< 1	29.78	< 1	1.5	11

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-D-1-1 10/01/85	SB-D-1-3 12/03/85	SB-D-1-5 12/03/85	SB-D-1-7 12/03/85	SB-D-2-1 10/01/85	SB-D-2-1 12/03/85	SB-D-2-3 12/03/85	SB-D-2-5 12/03/85	SB-D-2-7 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	8537	670	75000	1200	6861	5500	4100	13000	38

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-D-3-1 10/02/85	SB-D-3-3 12/03/85	SB-D-3-5 12/03/85	SB-D-3-7 12/03/85	SB-E-1-1 10/01/85	SB-E-1-3 12/03/85	SB-E-1-5 12/03/85	SB-E-1-7 12/03/85	SB-E-2-1 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	136.100	< 1	20	1800	888.500	24	< 1	< 1	44

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-E-2-3 12/03/85	SB-E-2-5 12/03/85	SB-E-2-7 12/03/85	SB-E-3-3 12/03/85	SB-E-3-5 12/03/85	SB-E-3-7 12/03/85	SB-F-1-3 12/03/85	SB-F-1-5 12/03/85	SB-F-1-7 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	< 1	< 1	11000	11	62	1.0	< 1	1.0

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-F-2-3 12/03/85	SB-F-2-5 12/03/85	SB-F-2-7 12/03/85	SB-F-3-1 10/02/85	SB-F-3-3 12/03/85	SB-F-3-5 12/03/85	SB-F-3-7 12/03/85	SB-F-4-1 10/03/85	SB-F-4-3 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	52	1.2	3.3	1767	52	10	22	1662	2.3

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-F-4-5 12/03/85	SB-F-4-7 12/03/85	SB-G-1-1 09/30/85	SB-G-1-3 12/03/85	SB-G-1-5 12/03/85	SB-G-1-7 12/03/85	SB-G-2-1 10/02/85	SB-G-2-3 12/03/85	SB-G-25 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	6.5	153.100	200	160	75	27.6	< 1	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-G-2-7 12/03/85	SB-G-3-1 10/02/85	SB-G-3-3 12/03/85	SB-G-3-5 12/03/85	SB-G-3-7 12/03/85	SB-H-1-1 09/30/85	SB-H-1-3 12/03/85	SB-H-1-5 12/03/85	SB-H-1-7 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	1.2	6794	550	490	6.6	34.140	3.2	300	25

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-H-2-1 10/02/85	SB-H-2-3 12/03/85	SB-H-2-5 12/03/85	SB-H-2-7 12/03/85	SB-H-3-1 10/02/85	SB-H-3-3 12/03/85	SB-H-3-5 12/03/85	SB-H-3-7 12/03/85	SB-H-4-1 10/03/85
PESTICIDES/PCBs										
PCB	mg/kg	45.520	1.6	21	6.3	73.550	58	110	8.5	10.060

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-H-4-3 12/03/85	SB-H-4-5 12/03/85	SB-H-4-7 12/03/85	SB-H-4-7 10/03/85	SB-H-5-1 12/03/85	SB-H-5-3 12/03/85	SB-H-5-5 12/03/85	SB-H-5-7 10/03/85	SB-I-4-1 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	< 1	< 1	--	--	13	< 1	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-I-4-5 12/03/85	SB-I-4-7 12/03/85	SB-I-5-1 10/03/85	SB-I-5-3 12/03/85	SB-I-5-5 12/03/85	SB-I-5-7 12/03/85	SB-I-6-1 10/03/85	SB-I-6-3 12/03/85	SB-I-6-5 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	< 1	1628	2.4	< 1	< 1	290.400	25	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB-I-6-7 12/03/85	SB310204 06/02/88	SB310406 06/02/88	SB310608 06/02/88	SB310810 06/02/88	SB311012 06/02/88	SB311214 06/02/88	SB320204 06/02/88	SB320406 06/02/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	--	18	7.2	630	10	16	2.1	5800	12
AROCHLOR 1248	mg/kg	--	< 2.0	< 0.4	< 40	< 0.4	< 2.0	< 0.08	< 3600	< 4.0
AROCHLOR 1254	mg/kg	--	< 2.0	< 0.4	< 40	< 0.4	< 2.0	0.12	< 3600	< 4.0
AROCHLOR 1260	mg/kg	--	< 2.0	< 0.4	< 40	< 0.4	< 2.0	< 0.08	< 3600	< 4.0
PCB	mg/kg	< 1	--	--	--	--	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB320608 06/02/88	SB320810 06/02/88	SB321012 06/02/88	SB321214 06/02/88	SB330204 06/02/88	SB330406 06/02/88	SB330608 06/02/88	SB330810 06/02/88	SB331012 06/02/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	320	190	150	6.3	2700	8200	2100	36	130
AROCHLOR 1248	mg/kg	< 20	< 20	< 4	< 0.40	310	< 400	< 170	< 17	< 20
AROCHLOR 1254	mg/kg	31	< 20	21	0.79	310	560	< 170	< 17	< 20
AROCHLOR 1260	mg/kg	< 20	< 20	< 4	< 0.40	310	< 400	< 170	< 17	< 20

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB340204 06/02/88	SB340406 06/02/88	SB340608 06/02/88	SB340810 06/02/88	SB341012 06/02/88	SB341214 06/02/88	SB350204 06/03/88	SB350406 06/03/88	SB350608 06/03/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	5.2	7.1	6.4	1.4	5.6	6.2	5.4	5.4	0.96
AROCHLOR 1248	mg/kg	< 1.0	< 1.3	< 1.3	< 0.35	< 0.65	< 1.3	< 0.50	< 0.80	< 0.40
AROCHLOR 1254	mg/kg	< 1.0	1.5	1.5	< 0.35	0.67	< 1.3	0.57	< 0.80	< 0.40
AROCHLOR 1260	mg/kg	< 1.0	< 1.3	< 1.3	< 0.35	< 0.65	< 1.3	< 0.50	< 0.80	< 0.40

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB350810 06/03/88	SB351012 06/03/88	SS-1 10/28/87	SS-2 10/28/87	SS-3 10/28/87	SS-4 10/28/87	KS-169 04/10/86
METALS								
ARSENIC(U)	mg/kg	--	--	--	--	--	--	3.47
BARIUM(U)	mg/kg	--	--	--	--	--	--	108
BERYLLIUM	mg/kg	--	--	--	--	--	--	0.45
BORON	mg/kg	--	--	--	--	--	--	116
CADMIUM(U)	mg/kg	--	--	--	--	--	--	3.74
CHROMIUM(U)	mg/kg	--	--	--	--	--	--	163
COBALT	mg/kg	--	--	--	--	--	--	32.9
COPPER(U)	mg/kg	--	--	--	--	--	--	494
LEAD(U)	mg/kg	--	--	--	--	--	--	82.5
MERCURY(U)	mg/kg	--	--	--	--	--	--	0.8
NICKEL	mg/kg	--	--	--	--	--	--	713
SELENIUM(U)	mg/kg	--	--	--	--	--	--	< 0.3
SILVER	mg/kg	--	--	--	--	--	--	17.2
ZINC(U)	mg/kg	--	--	--	--	--	--	6521
PESTICIDES/PCBs								
AROCHLOR 1242(U)	mg/kg	0.09	0.82	--	--	--	--	--
AROCHLOR 1248(U)	mg/kg	< 0.06	< 0.07	--	--	--	--	--
AROCHLOR 1254(U)	mg/kg	< 0.06	0.10	--	--	--	--	--
AROCHLOR 1260(U)	mg/kg	< 0.06	< 0.07	--	--	--	--	--
CHLORODIBENZODIOXIN (TOT)	ug/kg	--	--	--	--	--	--	11.4
CHLORODIBENZOFURAN (TOT)	ug/kg	--	--	--	--	--	--	42.4
HEPTACHLORODIBENZODIOXIN (T	ug/kg	--	--	--	--	--	--	6.97
HEPTACHLORODIBENZOFURAN (TO	ug/kg	--	--	--	--	--	--	37.0
HEXACHLORODIBENZODIOXIN (TO	ug/kg	--	--	--	--	--	--	2.86
HEXACHLORODIBENZOFURAN (TOT	ug/kg	--	--	--	--	--	--	< 0.03
OCTACHLORODIBENZODIOXIN (TO	ug/kg	--	--	--	--	--	--	1.53
OCTACHLORODIBENZOFURAN (TOT	ug/kg	--	--	--	--	--	--	3.56
PCB	mg/kg	--	--	--	--	--	--	165
PENTACHLORODIBENZODIOXIN (T	ug/kg	--	--	--	--	--	--	0.01

Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB350810 06/03/88	SB351012 06/03/88	SS-1 10/28/87	SS-2 10/28/87	SS-3 10/28/87	SS-4 10/28/87	KS-169 04/10/86
PESTICIDES/PCBs								
PENTACHLORODIBENZOFURAN (TO	ug/kg	--	--	--	--	--	--	1.64
TETRACHLORODIBENZODIOXIN (T	ug/kg	--	--	--	--	--	--	< 0.01
TETRACHLORODIBENZOFURAN (TO	ug/kg	--	--	--	--	--	--	0.23
VOLATILE ORGANICS								
1,1,1-TRICHLOROETHANE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
1,1,2,2-TETRACHLOROETHANE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
1,1,2-TRICHLOROETHANE	ug/kg	--	--	< 15	< 15	< 15	< 15	--
1,1-DICHLOROETHANE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
1,1-DICHLOROETHYLENE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
1,2-DICHLOROETHANE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
1,2-DICHLOROPROPANE	ug/kg	--	--	< 15	< 15	< 15	< 15	--
2-CHLOROETHYLVINYLETHER	ug/kg	--	--	< 50	< 50	< 50	< 50	--
BENZENE	ug/kg	--	--	< 5	< 5	< 5	< 5	--
BROMOFORM	ug/kg	--	--	< 75	< 75	< 75	< 75	--
BROMOMETHANE	ug/kg	--	--	< 50	< 50	< 50	< 50	--
CARBON TETRACHLORIDE	ug/kg	--	--	< 20	< 20	< 20	< 20	--
CHLOROBENZENE	ug/kg	--	--	< 5	< 5	< 5	< 5	--
CHLOROETHANE	ug/kg	--	--	< 50	< 50	< 50	< 50	--
CHLOROFORM	ug/kg	--	--	< 5	< 5	< 5	< 5	--
CHLOROMETHANE	ug/kg	--	--	< 50	< 50	< 50	< 50	--
CIS-1,3-DICHLOROPROPYLENE	ug/kg	--	--	< 20	< 20	< 20	< 20	--
DIBROMOCHLOROMETHANE	ug/kg	--	--	< 15	< 15	< 15	< 15	--
DICHLOROBROMOMETHANE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
ETHYLBENZENE	ug/kg	--	--	< 5	< 5	< 5	< 5	--
METHYLENE CHLORIDE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
TETRACHLOROETHYLENE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
TOLUENE	ug/kg	--	--	< 5	< 5	< 5	< 5	--
TRANS-1,2-DICHLOROETHYLENE	ug/kg	--	--	< 10	< 10	< 10	< 10	--
TRANS-1,3-DICHLOROPROPYLENE	ug/kg	--	--	< 20	< 20	< 20	< 20	--
TRICHLOROETHYLENE	ug/kg	--	--	< 10	< 10	< 10	< 10	--

Historical Analytical Results
Machine Storage Area - Soil Samples

COMPOUND (by Class)	UNITS	SB350810 06/03/88	SB351012 06/03/88	SS-1 10/28/87	SS-2 10/28/87	SS-3 10/28/87	SS-4 10/28/87	KS-169 04/10/86
VOLATILE ORGANICS								
TRICHLOROFLUOROMETHANE	ug/kg	--	--	< 15	< 15	< 15	< 15	--
VINYL CHLORIDE	ug/kg	--	--	< 50	< 50	< 50	< 50	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-1 12/09/86	DB-1 05/27/87	DB-1 03/29/88	DB-1 06/07/88	DB-2 12/09/86	DB-2 05/27/87	DB-2 07/21/87	DB-2 03/29/88	DB-2 06/07/88
METALS										
COPPER	mg/l	0.0120	--	--	--	< 0.0070	--	--	--	--
CYANIDE	mg/l	< 0.02	--	--	--	< 0.02	--	--	--	--
NICKEL	mg/l	0.0150	--	--	--	0.0160	--	--	--	--
ZINC	mg/l	0.0800	--	--	--	0.0220	--	--	--	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	--	--	< 0.0001	< 0.0001	--	--	--	< 0.0001	< 0.0001
AROCHLOR 1016(F)	mg/l	--	--	< 0.0010 F	< 0.0001 F	--	--	--	< 0.0010 F	< 0.0001 F
AROCHLOR 1221	mg/l	--	--	< 0.0005	< 0.0001	--	--	--	< 0.0005	< 0.0001
AROCHLOR 1221(F)	mg/l	--	--	< 0.0010 F	< 0.0001 F	--	--	--	< 0.0010 F	< 0.0001 F
AROCHLOR 1232	mg/l	--	--	< 0.0005	< 0.0001	--	--	--	< 0.0005	< 0.0001
AROCHLOR 1232(F)	mg/l	--	--	< 0.0010 F	< 0.0001 F	--	--	--	< 0.0010 F	< 0.0001 F
AROCHLOR 1242	mg/l	--	--	< 0.0001	0.0001	--	--	--	< 0.0001	< 0.0001
AROCHLOR 1242(F)	mg/l	--	--	< 0.0010 F	< 0.0001 F	--	--	--	< 0.0010 F	< 0.0001 F
AROCHLOR 1248	mg/l	--	--	< 0.0001	< 0.0001	--	--	--	< 0.0001	< 0.0001
AROCHLOR 1248(F)	mg/l	--	--	< 0.0010 F	< 0.0001 F	--	--	--	< 0.0010 F	< 0.0001 F
AROCHLOR 1254	mg/l	--	--	< 0.0001	0.0001	--	--	--	< 0.0001	< 0.0001
AROCHLOR 1254(F)	mg/l	--	--	< 0.0010 F	< 0.0001 F	--	--	--	< 0.0010 F	< 0.0001 F
AROCHLOR 1260	mg/l	--	--	< 0.0001	< 0.0001	--	--	--	< 0.0001	< 0.0001
AROCHLOR 1260(F)	mg/l	--	--	< 0.0010 F	< 0.0001 F	--	--	--	< 0.0010 F	< 0.0001 F
PCB	mg/l	0.0002	0.0007	--	--	< 0.0001	0.0005	0.0029	--	--
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	< 5	--	--	--	99	--	< 5	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
1,1,2-TRICHLOROETHANE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
1,1-DICHLOROETHANE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
1,1-DICHLOROETHYLENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
1,2-DICHLOROETHANE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-1 12/09/86	DB-1 05/27/87	DB-1 03/29/88	DB-1 06/07/88	DB-2 12/09/86	DB-2 05/27/87	DB-2 07/21/87	DB-2 03/29/88	DB-2 06/07/88
VOLATILE ORGANICS										
1,2-DICHLOROPROPANE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
2-BUTANONE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
2-CHLOROETHYLVINYLETHER	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
2-HEXANONE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
4-METHYL-2-PENTANONE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
ACETONE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
ACROLEIN	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
ACRYLONITRILE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
BENZENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
BROMODICHLOROMETHANE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
BROMOETHANE	ug/l	--	--	--	--	--	--	< 10	--	--
BROMOFORM	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
BROMOMETHANE	ug/l	< 10	--	--	--	< 10	--	--	--	--
CARBON DISULFIDE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
CARBON TETRACHLORIDE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
CHLOROBENZENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
CHLOROETHANE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
CHLOROFORM	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
CHLOROMETHANE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
DIBROMOCHLOROMETHANE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
ETHYLBENZENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
METHYLENE CHLORIDE	ug/l	15	--	--	--	12	--	< 5	--	--
STYRENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
TETRACHLOROETHYLENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
TOLUENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
TRANS-1,2-DICHLOROPROPENE	ug/l	< 5	--	--	--	< 5	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	--	--	--	< 5	--	--
TRICHLOROETHYLENE	ug/l	< 5	--	--	--	< 5	--	< 5	--	--
VINYL ACETATE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--
VINYL CHLORIDE	ug/l	< 10	--	--	--	< 10	--	< 10	--	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-1 12/09/86	DB-1 05/27/87	DB-1 03/29/88	DB-1 06/07/88	DB-2 12/09/86	DB-2 05/27/87	DB-2 07/21/87	DB-2 03/29/88	DB-2 06/07/88
VOLATILE ORGANICS										
XYLENE, TOTAL	ug/l	< 5	--	--	--	< 5	--	< 5	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-2 10/04/88	DB-2 01/05/89	DB-2 05/26/89	DB-2 08/23/89	DB-2 11/29/89	DB-2 02/22/90	DB-2 06/05/90	DB-2 08/22/90	DB-2 11/30/90
METALS										
ARSENIC	mg/l	--	0.0450	--	--	0.001	--	--	--	--
BARIUM	mg/l	--	3.2	--	--	1	--	--	--	--
CADMIUM	mg/l	--	< 0.01	--	--	< 0.002	--	--	--	--
CHROMIUM	mg/l	--	0.12	--	--	0.06	--	--	--	--
COPPER	mg/l	--	< 0.01	--	--	0.04	--	--	--	--
LEAD	mg/l	--	< 0.05	--	--	< 0.02	--	--	--	--
MERCURY	mg/l	--	< 0.0005	--	--	< 0.0002	--	--	--	--
SELENIUM	mg/l	--	< 0.0020	--	--	< 0.002	--	--	--	--
SILVER	mg/l	--	--	--	--	0.02	--	--	--	--
ZINC	mg/l	--	< 0.02	--	--	0.046	--	--	--	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1016(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1221	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1221(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1232	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1232(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1242	mg/l	< 0.0001	< 0.0001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1242(F)	mg/l	--	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1248	mg/l	< 0.0001	< 0.0001	< 0.00001	< 0.00001	0.0005	0.0031	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1248(F)	mg/l	--	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	0.0001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1254	mg/l	< 0.0001	< 0.0001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1254(F)	mg/l	--	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1260	mg/l	< 0.0001	< 0.0001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1260(F)	mg/l	--	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1262	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1262(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1268	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1268(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-2 10/04/88	DB-2 01/05/89	DB-2 05/26/89	DB-2 08/23/89	DB-2 11/29/89	DB-2 02/22/90	DB-2 06/05/90	DB-2 08/22/90	DB-2 11/30/90
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	--	< 3	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,2-DICHLOROBENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	< 3	--	--	< 5	--	--	--	--
1,3-DICHLOROBENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
1,4-DICHLOROBENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	< 10	--	--	< 10	--	--	--	--
BENZENE	ug/l	--	5	--	--	< 5	--	--	--	--
BROMODICHLOROMETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
BROMOFORM	ug/l	--	< 15	--	--	< 5	--	--	--	--
BROMOMETHANE	ug/l	--	< 10	--	--	< 10	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	< 4	--	--	< 5	--	--	--	--
CHLOROBENZENE	ug/l	--	< 1	--	--	< 5	--	--	--	--
CHLORODIBROMOMETHANE	ug/l	--	< 3	--	--	--	--	--	--	--
CHLOROETHANE	ug/l	--	< 10	--	--	< 10	--	--	--	--
CHLOROFORM	ug/l	--	< 1	--	--	< 5	--	--	--	--
CHLOROMETHANE	ug/l	--	< 10	--	--	< 10	--	--	--	--
CIS-1,2-DICHLOROETHENE	ug/l	--	--	--	--	< 5	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	< 4	--	--	< 5	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
ETHYLBENZENE	ug/l	--	< 1	--	--	< 5	--	--	--	--
METHYLENE CHLORIDE	ug/l	--	< 2	--	--	< 5	--	--	--	--
STYRENE	ug/l	--	--	--	--	< 5	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	< 2	--	--	< 5	--	--	--	--
TOLUENE	ug/l	--	< 1	--	--	< 5	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	< 2	--	--	< 5	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	< 4	--	--	< 5	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	< 2	--	--	< 5	--	--	--	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-2 10/04/88	DB-2 01/05/89	DB-2 05/26/89	DB-2 08/23/89	DB-2 11/29/89	DB-2 02/22/90	DB-2 06/05/90	DB-2 08/22/90	DB-2 11/30/90
VOLATILE ORGANICS										
TRICHLOROFLUOROMETHANE	ug/l	--	< 3	--	--	< 5	--	--	--	--
VINYL CHLORIDE	ug/l	--	< 10	--	--	< 10	--	--	--	--
XYLENE ORTHO	ug/l	--	--	--	--	< 5	--	--	--	--
XYLENE PARA & META	ug/l	--	--	--	--	< 5	--	--	--	--
XYLENE, TOTAL	ug/l	--	< 10	--	--	--	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-2 02/28/91	DB-2 03/18/91	LMW-20D 01/05/89	MSA-1 12/09/86	MSA-1 05/27/87	MSA-2 12/09/86	MSA-2 05/27/87	MSA-3 12/09/86	MSA-3 05/27/87
METALS										
ARSENIC	mg/l	0.052	--	--	--	--	--	--	--	--
ARSENIC(F)	mg/l	***	--		--	--	--	--	--	--
BARIUM	mg/l	0.8	--	--	--	--	--	--	--	--
BARIUM(F)	mg/l	***	--		--	--	--	--	--	--
CADMIUM	mg/l	< 0.002	--	--	--	--	--	--	--	--
CADMIUM(F)	mg/l	***	--		--	--	--	--	--	--
CHROMIUM	mg/l	0.03	--	--	--	--	--	--	--	--
CHROMIUM(F)	mg/l	***	--		--	--	--	--	--	--
COPPER	mg/l	0.01	--	--	0.0360	--	0.0220	--	0.0180	--
COPPER(F)	mg/l	***	--		--	--	--	--	--	--
CYANIDE	mg/l	--	--	--	--	--	< 0.02	--	< 0.02	--
LEAD	mg/l	< 0.02	--	--	--	--	--	--	--	--
LEAD(F)	mg/l	***	--		--	--	--	--	--	--
MERCURY	mg/l	< 0.0002	--	--	--	--	--	--	--	--
MERCURY(F)	mg/l	***	--		--	--	--	--	--	--
NICKEL	mg/l	--	--	--	0.0760	--	0.1640	--	0.0230	--
SELENIUM	mg/l	< 0.002	--	--	--	--	--	--	--	--
SELENIUM(F)	mg/l	***	--		--	--	--	--	--	--
SILVER	mg/l	0.01	--	--	--	--	--	--	--	--
ZINC	mg/l	< 0.005	--	--	0.1710	--	0.1740	--	0.2560	--
ZINC(F)	mg/l	***	--		--	--	--	--	--	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1016(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1221	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1221(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1232	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1232(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1242	mg/l	< 0.0001	--	< 0.001	--	--	--	--	--	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-2 02/28/91	DB-2 03/18/91	LMW-20D 01/05/89	MSA-1 12/09/86	MSA-1 05/27/87	MSA-2 12/09/86	MSA-2 05/27/87	MSA-3 12/09/86	MSA-3 05/27/87
PESTICIDES/PCBs										
AROCHLOR 1242(F)	mg/l	< 0.0001 F	--		--	--	--	--	--	--
AROCHLOR 1248	mg/l	< 0.0001	--	< 0.0005	--	--	--	--	--	--
AROCHLOR 1248(F)	mg/l	< 0.0001 F	--		--	--	--	--	--	--
AROCHLOR 1254	mg/l	< 0.0001	--	< 0.0005	--	--	--	--	--	--
AROCHLOR 1254(F)	mg/l	< 0.0001 F	--		--	--	--	--	--	--
AROCHLOR 1260	mg/l	< 0.0001	--	< 0.0005	--	--	--	--	--	--
AROCHLOR 1260(F)	mg/l	< 0.0001 F	--		--	--	--	--	--	--
AROCHLOR 1262	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1262(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1268	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1268(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
PCB	mg/l	--	--	--	0.0181	0.0079	0.0081	0.0066	0.0009	0.0018
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
1,1,2-TRICHLOROETHANE	ug/l	--	--	< 3	< 5	--	< 5	--	< 5	--
1,1-DICHLOROETHANE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
1,1-DICHLOROETHYLENE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
1,2-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
1,2-DICHLOROPROPANE	ug/l	--	< 5	< 3	< 5	--	< 5	--	< 5	--
1,3-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
2-BUTANONE	ug/l	--	--	--	< 10	--	< 10	--	< 10	--
2-CHLOROETHYLVINYLETHER	ug/l	--	< 5	< 10	< 10	--	< 10	--	< 10	--
2-HEXANONE	ug/l	--	--	--	< 10	--	< 10	--	< 10	--
4-METHYL-2-PENTANONE	ug/l	--	--	--	< 10	--	< 10	--	< 10	--
ACETONE	ug/l	--	--	--	< 10	--	< 10	--	< 10	--
ACROLEIN	ug/l	--	--	--	< 10	--	< 10	--	< 10	--
ACRYLONITRILE	ug/l	--	--	--	< 10	--	< 10	--	< 10	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-2 02/28/91	DB-2 03/18/91	LMW-20D 01/05/89	MSA-1 12/09/86	MSA-1 05/27/87	MSA-2 12/09/86	MSA-2 05/27/87	MSA-3 12/09/86	MSA-3 05/27/87
VOLATILE ORGANICS										
BENZENE	ug/l	--	< 5	20	< 5	--	< 5	--	< 5	--
BROMODICHLOROMETHANE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
BROMOFORM	ug/l	--	< 5	< 15	< 5	--	< 5	--	< 5	--
BROMOMETHANE	ug/l	--	< 10	< 10	< 10	--	< 10	--	< 10	--
CARBON DISULFIDE	ug/l	--	--	--	< 5	--	< 5	--	< 5	--
CARBON TETRACHLORIDE	ug/l	--	< 5	< 4	< 5	--	< 5	--	< 5	--
CHLOROBENZENE	ug/l	--	< 5	< 1	< 5	--	< 5	--	< 5	--
CHLORODIBROMOMETHANE	ug/l	--	--	< 3	--	--	--	--	--	--
CHLOROETHANE	ug/l	--	< 10	< 10	< 10	--	< 10	--	< 10	--
CHLOROFORM	ug/l	--	< 5	< 1	< 5	--	< 5	--	< 5	--
CHLOROMETHANE	ug/l	--	< 10	< 10	< 10	--	< 10	--	< 10	--
CIS-1,2-DICHLOROETHENE	ug/l	--	< 5	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	< 5	< 4	< 5	--	< 5	--	< 5	--
DIBROMOCHLOROMETHANE	ug/l	--	< 5	--	< 5	--	< 5	--	< 5	--
ETHYLBENZENE	ug/l	--	< 5	270	< 5	--	< 5	--	< 5	--
METHYLENE CHLORIDE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
STYRENE	ug/l	--	< 5	--	< 5	--	< 5	--	< 5	--
TETRACHLOROETHYLENE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
TOLUENE	ug/l	--	< 5	210	< 5	--	< 5	--	< 5	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
TRANS-1,2-DICHLOROPROPENE	ug/l	--	--	--	< 5	--	< 5	--	< 5	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	< 5	< 4	--	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	< 5	< 2	< 5	--	< 5	--	< 5	--
TRICHLOROFLUOROMETHANE	ug/l	--	< 10	< 3	--	--	--	--	--	--
VINYL ACETATE	ug/l	--	--	--	< 10	--	< 10	--	< 10	--
VINYL CHLORIDE	ug/l	--	< 10	< 10	< 10	--	< 10	--	< 10	--
XYLENE ORTHO	ug/l	--	< 5	--	--	--	--	--	--	--
XYLENE PARA & META	ug/l	--	< 5	--	--	--	--	--	--	--
XYLENE, TOTAL	ug/l	--	--	740	< 5	--	< 5	--	< 5	--

LEGEND: F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-3 03/29/88	MSA-3 06/07/88	MSA-4 12/09/86	MSA-4 05/27/87	MSA-4 03/29/88	MSA-4 06/07/88	MSA-4 10/04/88	MSA-4 01/05/89	MSA-4 12/05/89
METALS										
ARSENIC	mg/l	--	--	--	--	--	--	--	0.0210	< 0.001
BARIUM	mg/l	--	--	--	--	--	--	--	1.4	< 0.1
CADMIUM	mg/l	--	--	--	--	--	--	--	< 0.01	< 0.002
CHROMIUM	mg/l	--	--	--	--	--	--	--	0.17	< 0.02
COPPER	mg/l	--	--	0.0940	--	--	--	--	0.02	< 0.01
CYANIDE	mg/l	--	--	0.05	--	--	--	--	--	--
LEAD	mg/l	--	--	--	--	--	--	--	< 0.05	< 0.02
MERCURY	mg/l	--	--	--	--	--	--	--	< 0.0005	< 0.0002
NICKEL	mg/l	--	--	0.1540	--	--	--	--	--	--
SELENIUM	mg/l	--	--	--	--	--	--	--	< 0.0020	< 0.002
SILVER	mg/l	--	--	--	--	--	--	--	--	< 0.01
ZINC	mg/l	--	--	1.6500	--	--	--	--	0.09	0.013
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	< 0.0010	< 0.0004	--	--	< 0.0010	< 0.0001	--	--	< 0.00001
AROCHLOR 1016(F)	mg/l	--	< 0.0001 F	--	--	--	< 0.0001 F	--	--	< 0.00001 F
AROCHLOR 1221	mg/l	< 0.0010	< 0.0004	--	--	< 0.0010	< 0.0001	--	--	< 0.00001
AROCHLOR 1221(F)	mg/l	--	< 0.0001 F	--	--	--	< 0.0001 F	--	--	< 0.00001 F
AROCHLOR 1232	mg/l	< 0.0010	< 0.0004	--	--	< 0.0010	< 0.0001	--	--	< 0.00001
AROCHLOR 1232(F)	mg/l	--	< 0.0001 F	--	--	--	< 0.0001 F	--	--	< 0.00001 F
AROCHLOR 1242	mg/l	0.0079	0.0069	--	--	0.0130	0.0045	0.0007	0.0018	< 0.00001
AROCHLOR 1242(F)	mg/l	--	< 0.0001 F	--	--	--	< 0.0001 F	< 0.0002 F	0.0002 F	< 0.00001 F
AROCHLOR 1248	mg/l	< 0.0010	< 0.0004	--	--	< 0.0010	< 0.0001	< 0.0001	< 0.0001	0.0002
AROCHLOR 1248(F)	mg/l	--	< 0.0001 F	--	--	--	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1254	mg/l	0.0029	0.0016	--	--	0.0042	0.0011	< 0.0001	< 0.0005	< 0.00001
AROCHLOR 1254(F)	mg/l	--	< 0.0001 F	--	--	--	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1260	mg/l	< 0.0010	< 0.0004	--	--	< 0.0010	< 0.0001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1260(F)	mg/l	--	< 0.0001 F	--	--	--	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F
AROCHLOR 1262	mg/l	--	--	--	--	--	--	--	--	< 0.00001
AROCHLOR 1262(F)	mg/l	--	--	--	--	--	--	--	--	< 0.00001 F

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-3 03/29/88	MSA-3 06/07/88	MSA-4 12/09/86	MSA-4 05/27/87	MSA-4 03/29/88	MSA-4 06/07/88	MSA-4 10/04/88	MSA-4 01/05/89	MSA-4 12/05/89
PESTICIDES/PCBs										
AROCHLOR 1268	mg/l	--	--	--	--	--	--	--	--	< 0.00001
AROCHLOR 1268(F)	mg/l	--	--	--	--	--	--	--	--	< 0.00001 F
PCB	mg/l	--	--	0.0174	0.0015	--	--	--	--	--
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	--	< 5	--	--	--	--	< 2	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	--	< 5	--	--	--	--	< 2	--
1,1,2-TRICHLOROETHANE	ug/l	--	--	< 5	--	--	--	--	< 3	--
1,1-DICHLOROETHANE	ug/l	--	--	< 5	--	--	--	--	< 2	--
1,1-DICHLOROETHYLENE	ug/l	--	--	< 5	--	--	--	--	< 2	--
1,2-DICHLOROETHANE	ug/l	--	--	< 5	--	--	--	--	< 2	--
1,2-DICHLOROPROPANE	ug/l	--	--	< 5	--	--	--	--	< 3	--
2-BUTANONE	ug/l	--	--	< 10	--	--	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	--	< 10	--	--	--	--	< 10	--
2-HEXANONE	ug/l	--	--	< 10	--	--	--	--	--	--
4-METHYL-2-PENTANONE	ug/l	--	--	< 10	--	--	--	--	--	--
ACETONE	ug/l	--	--	< 10	--	--	--	--	--	--
ACROLEIN	ug/l	--	--	< 10	--	--	--	--	--	--
ACRYLONITRILE	ug/l	--	--	< 10	--	--	--	--	--	--
BENZENE	ug/l	--	--	< 5	--	--	--	--	1	--
BROMODICHLOROMETHANE	ug/l	--	--	< 5	--	--	--	--	< 2	--
BROMOFORM	ug/l	--	--	< 5	--	--	--	--	< 15	--
BROMOMETHANE	ug/l	--	--	< 10	--	--	--	--	< 10	--
CARBON DISULFIDE	ug/l	--	--	< 5	--	--	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	--	< 5	--	--	--	--	< 4	--
CHLOROBENZENE	ug/l	--	--	< 5	--	--	--	--	< 1	--
CHLORODIBROMOMETHANE	ug/l	--	--	--	--	--	--	--	< 3	--
CHLOROETHANE	ug/l	--	--	< 10	--	--	--	--	< 10	--
CHLOROFORM	ug/l	--	--	< 5	--	--	--	--	< 1	--
CHLOROMETHANE	ug/l	--	--	< 10	--	--	--	--	< 10	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	--	< 5	--	--	--	--	< 4	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-3 03/29/88	MSA-3 06/07/88	MSA-4 12/09/86	MSA-4 05/27/87	MSA-4 03/29/88	MSA-4 06/07/88	MSA-4 10/04/88	MSA-4 01/05/89	MSA-4 12/05/89
VOLATILE ORGANICS										
DIBROMOCHLOROMETHANE	ug/l	--	--	< 5	--	--	--	--	--	--
ETHYLBENZENE	ug/l	--	--	< 5	--	--	--	--	< 1	--
METHYLENE CHLORIDE	ug/l	--	--	< 5	--	--	--	--	< 2	--
STYRENE	ug/l	--	--	< 5	--	--	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	--	< 5	--	--	--	--	< 2	--
TOLUENE	ug/l	--	--	< 5	--	--	--	--	< 1	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	--	< 5	--	--	--	--	< 2	--
TRANS-1,2-DICHLOROPROPENE	ug/l	--	--	< 5	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	--	--	--	--	< 4	--
TRICHLOROETHYLENE	ug/l	--	--	< 5	--	--	--	--	< 2	--
TRICHLOROFLUOROMETHANE	ug/l	--	--	--	--	--	--	--	< 3	--
VINYL ACETATE	ug/l	--	--	< 10	--	--	--	--	--	--
VINYL CHLORIDE	ug/l	--	--	< 10	--	--	--	--	< 10	--
XYLENE, TOTAL	ug/l	--	--	< 5	--	--	--	--	< 10	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-4 03/01/90	MSA-4 07/02/90	MSA-4 08/22/90	MSA-4 12/14/90	MSA-4 02/28/91	MSA-4 03/18/91	MSA-5 12/09/86	MSA-5 05/27/87	MSA-5 07/21/87
METALS										
ARSENIC	mg/l	--	--	--	--	0.014	--	--	--	--
BARIUM	mg/l	--	--	--	--	0.3	--	--	--	--
CADMIUM	mg/l	--	--	--	--	< 0.002	--	--	--	--
CHROMIUM	mg/l	--	--	--	--	0.04	--	--	--	--
COPPER	mg/l	--	--	--	--	0.02	--	5.2200	--	--
CYANIDE	mg/l	--	--	--	--	--	--	< 0.02	--	--
LEAD	mg/l	--	--	--	--	0.03	--	--	--	--
MERCURY	mg/l	--	--	--	--	< 0.0002	--	--	--	--
NICKEL	mg/l	--	--	--	--	--	--	0.3980	--	--
SELENIUM	mg/l	--	--	--	--	< 0.002	--	--	--	--
SILVER	mg/l	--	--	--	--	0.01	--	--	--	--
ZINC	mg/l	--	--	--	--	0.070	--	11.3000	--	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1016(F)	mg/l	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	--	--	--	--	--
AROCHLOR 1221	mg/l	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1221(F)	mg/l	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	--	--	--	--
AROCHLOR 1232	mg/l	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1232(F)	mg/l	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	--	--	--	--
AROCHLOR 1242	mg/l	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1242(F)	mg/l	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	--	--	--	--
AROCHLOR 1248	mg/l	0.0005	0.0009	0.0030	0.0010	0.0020	--	--	--	--
AROCHLOR 1248(F)	mg/l	< 0.00001 F	< 0.0001 F	0.0002 F	< 0.0001 F	< 0.0001 F	--	--	--	--
AROCHLOR 1254	mg/l	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1254(F)	mg/l	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	--	--	--	--
AROCHLOR 1260	mg/l	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1260(F)	mg/l	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	--	--	--	--
AROCHLOR 1262	mg/l	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1262(F)	mg/l	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	--	--	--	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-4 03/01/90	MSA-4 07/02/90	MSA-4 08/22/90	MSA-4 12/14/90	MSA-4 02/28/91	MSA-4 03/18/91	MSA-5 12/09/86	MSA-5 05/27/87	MSA-5 07/21/87
PESTICIDES/PCBs										
AROCHLOR 1268	mg/l	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	--	--	--	--
AROCHLOR 1268(F)	mg/l	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F	--	--	--	--
PCB	mg/l	--	--	--	--	--	--	0.0300	0.0050	0.0029
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
1,1,2,2-TETRACHLOROETHANE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
1,1,2-TRICHLOROETHANE	ug/l	--	--	--	--	--	--	< 5	--	< 5
1,1-DICHLOROETHANE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
1,1-DICHLOROETHYLENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
1,2-DICHLOROBENZENE	ug/l	--	--	--	--	--	< 5	--	--	--
1,2-DICHLOROETHANE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
1,2-DICHLOROPROPANE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
1,3-DICHLOROBENZENE	ug/l	--	--	--	--	--	< 5	--	--	--
1,4-DICHLOROBENZENE	ug/l	--	--	--	--	--	< 5	--	--	--
2-BUTANONE	ug/l	--	--	--	--	--	--	< 10	--	< 10
2-CHLOROETHYLVINYLETHER	ug/l	--	--	--	--	--	< 5	< 10	--	< 10
2-HEXANONE	ug/l	--	--	--	--	--	--	< 10	--	< 10
4-METHYL-2-PENTANONE	ug/l	--	--	--	--	--	--	< 10	--	< 10
ACETONE	ug/l	--	--	--	--	--	--	< 10	--	< 10
ACROLEIN	ug/l	--	--	--	--	--	--	< 10	--	< 10
ACRYLONITRILE	ug/l	--	--	--	--	--	--	< 10	--	< 10
BENZENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
BROMODICHLOROMETHANE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
BROMOFORM	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
BROMOMETHANE	ug/l	--	--	--	--	--	< 10	< 10	--	< 10
CARBON DISULFIDE	ug/l	--	--	--	--	--	--	< 5	--	< 5
CARBON TETRACHLORIDE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
CHLOROBENZENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
CHLOROETHANE	ug/l	--	--	--	--	--	< 10	< 10	--	< 10
CHLOROFORM	ug/l	--	--	--	--	--	< 5	< 5	--	< 5

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-4 03/01/90	MSA-4 07/02/90	MSA-4 08/22/90	MSA-4 12/14/90	MSA-4 02/28/91	MSA-4 03/18/91	MSA-5 12/09/86	MSA-5 05/27/87	MSA-5 07/21/87
VOLATILE ORGANICS										
CHLOROMETHANE	ug/l	--	--	--	--	--	< 10	< 10	--	< 10
CIS-1,2-DICHLOROETHENE	ug/l	--	--	--	--	--	< 5	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
DIBROMOCHLOROMETHANE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
ETHYLBENZENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
METHYLENE CHLORIDE	ug/l	--	--	--	--	--	< 5	10	--	< 5
STYRENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
TETRACHLOROETHYLENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
TOLUENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
TRANS-1,2-DICHLOROPROPENE	ug/l	--	--	--	--	--	--	< 5	--	< 5
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	--	--	< 5	--	--	--
TRICHLOROETHYLENE	ug/l	--	--	--	--	--	< 5	< 5	--	< 5
TRICHLOROFLUOROMETHANE	ug/l	--	--	--	--	--	< 10	--	--	--
VINYL ACETATE	ug/l	--	--	--	--	--	--	< 10	--	< 10
VINYL CHLORIDE	ug/l	--	--	--	--	--	< 10	< 10	--	< 10
XYLENE ORTHO	ug/l	--	--	--	--	--	< 5	--	--	--
XYLENE PARA & META	ug/l	--	--	--	--	--	< 5	--	--	--
XYLENE, TOTAL	ug/l	--	--	--	--	--	--	< 5	--	< 5

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-5 03/29/88	MSA-5 06/07/88	MSA-5 10/04/88	MSA-5 01/05/89	MSA-5 12/05/89	MSA-5 03/01/90	MSA-5 07/02/90	MSA-5 08/22/90	MSA-5 12/14/90
METALS										
ARSENIC	mg/l	--	--	--	< 0.0020	0.002	--	--	--	--
BARIUM	mg/l	--	--	--	1.5	0.4	--	--	--	--
CADMIUM	mg/l	--	--	--	< 0.01	< 0.002	--	--	--	--
CHROMIUM	mg/l	--	--	--	0.21	< 0.02	--	--	--	--
COPPER	mg/l	--	--	--	0.02	< 0.01	--	--	--	--
LEAD	mg/l	--	--	--	< 0.05	< 0.02	--	--	--	--
MERCURY	mg/l	--	--	--	< 0.0005	< 0.0002	--	--	--	--
SELENIUM	mg/l	--	--	--	< 0.0020	< 0.002	--	--	--	--
SILVER	mg/l	--	--	--	--	< 0.01	--	--	--	--
ZINC	mg/l	--	--	--	0.03	0.026	--	--	--	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	< 0.0010	< 0.0100	--	--	< 0.00001	< 0.00001	< 0.0002	< 0.0001	< 0.0001
AROCHLOR 1016(F)	mg/l	--	< 0.0001 F	--	--	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1221	mg/l	< 0.0010	< 0.0100	--	--	< 0.00001	< 0.00001	< 0.0002	< 0.0001	< 0.0001
AROCHLOR 1221(F)	mg/l	--	< 0.0001 F	--	--	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1232	mg/l	< 0.0010	< 0.0100	--	--	< 0.00001	< 0.00001	< 0.0002	< 0.0001	< 0.0001
AROCHLOR 1232(F)	mg/l	--	< 0.0001 F	--	--	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1242	mg/l	0.1800	0.1400	0.0099	0.0004	< 0.00001	< 0.00001	< 0.0002	< 0.0001	< 0.0001
AROCHLOR 1242(F)	mg/l	--	< 0.0001 F	< 0.0002 F	0.0001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1248	mg/l	< 0.0010	< 0.0100	< 0.0001	< 0.0001	0.0013	0.0006	0.0008	< 0.0001	< 0.0001
AROCHLOR 1248(F)	mg/l	--	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F	0.0001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1254	mg/l	0.0260	0.0210	< 0.0001	< 0.0001	< 0.00001	< 0.00001	< 0.0002	< 0.0001	< 0.0001
AROCHLOR 1254(F)	mg/l	--	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1260	mg/l	< 0.0010	< 0.0100	< 0.0001	< 0.0001	< 0.00001	< 0.00001	< 0.0002	< 0.0001	< 0.0001
AROCHLOR 1260(F)	mg/l	--	< 0.0001 F	< 0.0001 F	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1262	mg/l	--	--	--	--	< 0.00001	< 0.00001	< 0.0002	< 0.0001	< 0.0001
AROCHLOR 1262(F)	mg/l	--	--	--	--	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1268	mg/l	--	--	--	--	< 0.00001	< 0.00001	< 0.0002	< 0.0001	< 0.0001
AROCHLOR 1268(F)	mg/l	--	--	--	--	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-5 03/29/88	MSA-5 06/07/88	MSA-5 10/04/88	MSA-5 01/05/89	MSA-5 12/05/89	MSA-5 03/01/90	MSA-5 07/02/90	MSA-5 08/22/90	MSA-5 12/14/90
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	--	--	< 2	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	--	--	< 2	--	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	--	--	--	< 3	--	--	--	--	--
1,1-DICHLOROETHANE	ug/l	--	--	--	< 2	--	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	--	--	< 2	--	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	--	--	< 2	--	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	--	--	< 3	--	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	--	--	< 10	--	--	--	--	--
BENZENE	ug/l	--	--	--	< 1	--	--	--	--	--
BROMODICHLOROMETHANE	ug/l	--	--	--	< 2	--	--	--	--	--
BROMOFORM	ug/l	--	--	--	< 15	--	--	--	--	--
BROMOMETHANE	ug/l	--	--	--	< 10	--	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	--	--	< 4	--	--	--	--	--
CHLOROBENZENE	ug/l	--	--	--	< 1	--	--	--	--	--
CHLORODIBROMOMETHANE	ug/l	--	--	--	< 3	--	--	--	--	--
CHLOROETHANE	ug/l	--	--	--	< 10	--	--	--	--	--
CHLOROFORM	ug/l	--	--	--	< 1	--	--	--	--	--
CHLOROMETHANE	ug/l	--	--	--	< 10	--	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	< 4	--	--	--	--	--
ETHYLBENZENE	ug/l	--	--	--	< 1	--	--	--	--	--
METHYLENE CHLORIDE	ug/l	--	--	--	< 2	--	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	--	--	< 2	--	--	--	--	--
TOLUENE	ug/l	--	--	--	< 1	--	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	--	--	< 2	--	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	< 4	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	--	--	< 2	--	--	--	--	--
TRICHLOROFLUOROMETHANE	ug/l	--	--	--	< 3	--	--	--	--	--
VINYL CHLORIDE	ug/l	--	--	--	< 10	--	--	--	--	--
XYLENE, TOTAL	ug/l	--	--	--	< 10	--	--	--	--	--

LEGEND: F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-5 03/04/91	MSA-5 03/18/91	MW-1 10/16/85	MW-1 12/03/85	MW-1 05/19/86	MW-1 08/20/86	MW-1 08/22/86	MW-1 12/03/86	MW-1 03/29/88
METALS										
ARSENIC	mg/l	< 0.001	--	< 0.01	--	--	--	--	< 0.0030	--
BARIUM	mg/l	0.2	--	0.343	--	--	--	0.5150	0.5420	--
CADMIUM	mg/l	< 0.002	--	< 0.01	--	--	--	< 0.0020	< 0.0020	--
CHROMIUM	mg/l	0.02	--	< 0.05	--	--	--	< 0.0120	< 0.0120	--
CONDUCTIVITY	umhos/cm	--	--	1115	--	--	--	--	--	--
COPPER	mg/l	< 0.01	--	< 0.02	--	--	--	< 0.0070	< 0.0070	--
CYANIDE	mg/l	--	--	1.3000	--	--	--	< 0.02	0.026	--
IRON	mg/l	--	--	--	--	--	--	0.1240	0.1890	--
LEAD	mg/l	< 0.02	--	< 0.005	--	--	--	0.0080	< 0.0610	--
MERCURY	mg/l	< 0.0002	--	< 0.0004	--	--	--		0.0010	--
NICKEL	mg/l	--	--	0.10	--	--	--	0.0130	< 0.0120	--
PH		--	--	7.55	--	--	--	--	--	--
SELENIUM	mg/l	< 0.002	--	--	--	--	--	< 0.0040	0.0050	--
SILVER	mg/l	< 0.01	--	--	--	--	--	< 0.0070	< 0.0070	--
TDS	mg/l	--	--	596	--	--	--	--	--	--
ZINC	mg/l	0.018	--	0.03	--	--	--	0.7620	0.367	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	< 0.0001	--	--	--	--	--	--	--	< 0.0010
AROCHLOR 1016(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1221	mg/l	< 0.0001	--	--	--	--	--	--	--	< 0.0010
AROCHLOR 1221(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1232	mg/l	< 0.0001	--	--	--	--	--	--	--	< 0.0010
AROCHLOR 1232(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1242	mg/l	< 0.0001	--	--	--	--	--	--	--	0.0056
AROCHLOR 1242(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1248	mg/l	0.0006	--	--	--	--	--	--	--	< 0.0010
AROCHLOR 1248(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1254	mg/l	< 0.0001	--	--	--	--	--	--	--	0.0043
AROCHLOR 1254(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-5 03/04/91	MSA-5 03/18/91	MW-1 10/16/85	MW-1 12/03/85	MW-1 05/19/86	MW-1 08/20/86	MW-1 08/22/86	MW-1 12/03/86	MW-1 03/29/88
PESTICIDES/PCBs										
AROCHLOR 1260	mg/l	< 0.0001	--	--	--	--	--	--	--	< 0.0010
AROCHLOR 1260(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1262	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1262(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
AROCHLOR 1268	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1268(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
PCB	mg/l	--	--	0.0218	0.01	--	0.0045	--	0.0155	--
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	--	--	--	--	< 5	< 5	--	--	--
1,1-DICHLOROETHANE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
1,2-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
1,3-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
2-BUTANONE	ug/l	--	--	--	--	< 10	< 10	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	< 5	--	--	< 10	< 10	--	--	--
2-HEXANONE	ug/l	--	--	--	--	< 10	< 10	--	--	--
4-METHYL-2-PENTANONE	ug/l	--	--	--	--	< 10	< 10	--	--	--
ACETONE	ug/l	--	--	--	--	< 10	< 10	--	--	--
ACROLEIN	ug/l	--	--	--	--	< 10	< 10	--	--	--
ACRYLONITRILE	ug/l	--	--	--	--	< 10	< 10	--	--	--
BENZENE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
BROMODICHLOROMETHANE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
BROMOFORM	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
BROMOMETHANE	ug/l	--	< 10	--	--	< 10	< 10	--	--	--
CARBON DISULFIDE	ug/l	--	--	--	--	< 5	< 5	--	--	--

Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MSA-5 03/04/91	MSA-5 03/18/91	MW-1 10/16/85	MW-1 12/03/85	MW-1 05/19/86	MW-1 08/20/86	MW-1 08/22/86	MW-1 12/03/86	MW-1 03/29/88
VOLATILE ORGANICS										
CARBON TETRACHLORIDE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
CHLOROBENZENE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
CHLOROETHANE	ug/l	--	< 10	--	--	< 10	< 10	--	--	--
CHLOROFORM	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
CHLOROMETHANE	ug/l	--	< 10	--	--	< 10	< 10	--	--	--
CIS-1,2-DICHLOROETHENE	ug/l	--	< 5	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
DIBROMOCHLOROMETHANE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
ETHYLBENZENE	ug/l	--	< 5	--	--	3 J	< 5	--	--	--
METHYLENE CHLORIDE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
STYRENE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
TETRACHLOROETHYLENE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
TOLUENE	ug/l	--	< 5	--	--	5	4 J	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	< 5	--	--	77	97	--	--	--
TRANS-1,2-DICHLOROPROPENE	ug/l	--	--	--	--	< 5	< 5	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	< 5	--	--	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	< 5	--	--	< 5	< 5	--	--	--
TRICHLOROFLUOROMETHANE	ug/l	--	< 10	--	--	--	--	--	--	--
VINYL ACETATE	ug/l	--	--	--	--	< 10	< 10	--	--	--
VINYL CHLORIDE	ug/l	--	< 10	--	--	29	49	--	--	--
XYLENE ORTHO	ug/l	--	< 5	--	--	--	--	--	--	--
XYLENE PARA & META	ug/l	--	< 5	--	--	--	--	--	--	--
XYLENE, TOTAL	ug/l	--	--	--	--	34	30	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-1 06/07/88
PESTICIDES/PCBs		
AROCHLOR 1016	mg/l	< 0.0001
AROCHLOR 1016(F)	mg/l	< 0.0001 F
AROCHLOR 1221	mg/l	< 0.0001
AROCHLOR 1221(F)	mg/l	< 0.0010 F
AROCHLOR 1232	mg/l	< 0.0001
AROCHLOR 1232(F)	mg/l	< 0.0001 F
AROCHLOR 1242	mg/l	0.0007
AROCHLOR 1242(F)	mg/l	< 0.0001 F
AROCHLOR 1248	mg/l	< 0.0001
AROCHLOR 1248(F)	mg/l	< 0.0001 F
AROCHLOR 1254	mg/l	0.0002
AROCHLOR 1254(F)	mg/l	< 0.0001 F
AROCHLOR 1260	mg/l	< 0.0001
AROCHLOR 1260(F)	mg/l	< 0.0001 F

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Machine Storage Area - Surface Water Samples

COMPOUND (by Class)	UNITS	CB-N#6 05/22/86	CB-N#6 06/20/86	CB-N#6 08/21/86
PESTICIDES/PCBs				
CHLORODIBENZODIOXIN (TOT)	ug/l	0.0458	< 0.00019	0.00079
CHLORODIBENZOFURAN (TOT)	ug/l	0.0442	0.00696	0.00138
HEPTACHLORODIBENZODIOXIN (T	ug/l	< 0.00004	< 0.00002	0.00032
HEPTACHLORODIBENZOFURAN (TO	ug/l	< 0.00002	< 0.00002	0.00010
HEXACHLORODIBENZODIOXIN (TO	ug/l	< 0.00006	< 0.00003	0.00012
HEXACHLORODIBENZOFURAN (TOT	ug/l	< 0.00004	< 0.00002	0.00006
OCTACHLORODIBENZODIOXIN (TO	ug/l	0.0185	< 0.00010	0.00035
OCTACHLORODIBENZOFURAN (TOT	ug/l	< 0.0001	< 0.00009	< 0.00001
PCB	mg/l	< 0.0001	0.013	--
PENTACHLORODIBENZODIOXIN (T	ug/l	< 0.00002	< 0.00002	< 0.00001
PENTACHLORODIBENZOFURAN (TO	ug/l	< 0.00001	< 0.00001	0.00010
TETRACHLORODIBENZODIOXIN (T	ug/l	0.0273	< 0.00002	< 0.00001
TETRACHLORODIBENZOFURAN (TO	ug/l	0.0396	0.00696	0.00112
TRICHLORODIBENZODIOXIN (TOT	ug/l	< 0.00001	--	--
TRICHLORODIBENZOFURAN (TOT)	ug/l	0.0046	--	--

LEGEND:
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Note: Compound names printed are truncated to 27 characters maximum length

LA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (a)

Location	Sampling Date	Analyses
A1-1	09/15/88	PCBs
A1-3	09/15/88	PCBs
A1-5	09/15/88	PCBs
A2-1	09/15/88	PCBs
A2-3	09/15/88	PCBs
A2-5	09/15/88	PCBs
A3-1	09/15/88	PCBs
A3-3	09/15/88	PCBs
A3-5	09/15/88	PCBs
A4-1	09/15/88	PCBs
A4-3	09/15/88	PCBs
A4-5	09/15/88	PCBs
A5-1	09/15/88	PCBs
A5-3	09/15/88	PCBs
A5-5	09/15/88	PCBs
A6-1	09/15/88	PCBs
A6-3	09/15/88	PCBs
A6-5	09/15/88	PCBs
B1-1	09/10/88	PCBs
B1-3	09/10/88	PCBs
B1-5	09/10/88	PCBs
B2-1	09/10/88	PCBs
B2-3	09/10/88	PCBs
B2-5	09/10/88	PCBs
B3-1	09/10/88	PCBs
B3-3	09/10/88	PCBs
B3-5	09/10/88	PCBs
B4-1	09/10/88	PCBs
B4-3	09/10/88	PCBs
B4-5	09/10/88	PCBs
B5-1	09/10/88	PCBs
B5-3	09/10/88	PCBs
B5-5	09/10/88	PCBs
B6-1	09/10/88	PCBs
B6-3	09/10/88	PCBs
B6-5	09/10/88	PCBs
CENTER E	10/23/86	PCBs
CENTER E	10/23/87	PCBs
CENTER W	10/23/86	PCBs
CENTER W	10/23/87	PCBs
DB-3-1	11/18/86	PCBs
DB-3-10	11/18/86	PCBs
DB-3-11	11/18/86	PCBs
DB-3-12	11/18/86	PCBs
DB-3-13	11/18/86	PCBs
DB-3-14	11/18/86	PCBs
DB-3-15	11/18/86	PCBs

LA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (b)

Location	Sampling Date	Analyses
DB-3-16	11/18/86	PCBs
DB-3-2	11/18/86	PCBs
DB-3-3	11/18/86	PCBs
DB-3-4	11/18/86	PCBs
DB-3-5	11/18/86	PCBs
DB-3-6	11/18/86	PCBs
DB-3-7	11/18/86	PCBs
DB-3-9	11/18/86	PCBs
GEO100002	08/05/87	PCBs
GEO100203	08/05/87	PCBs
GEO100406	08/05/87	PCBs
GEO100709	08/05/87	PCBs
GEO10203	08/05/87	PCBs,VOCs
GEO10406	08/05/87	PCBs
GEO10810	08/05/87	PCBs
GEO110002	08/05/87	PCBs
GEO110203	08/05/87	PCBs
GEO110406	08/05/87	PCBs
GEO110709	08/05/87	PCBs
GEO120002	08/06/87	PCBs
GEO120203	08/06/87	PCBs
GEO120406	08/06/87	PCBs
GEO120709	08/06/87	PCBs
GEO130002	08/06/87	PCBs
GEO130203	08/06/87	PCBs
GEO130406	08/06/87	PCBs
GEO130709	08/06/87	PCBs
GEO140002	08/07/87	PCBs
GEO140203	08/07/87	PCBs
GEO140406	08/07/87	PCBs
GEO140709	08/07/87	PCBs
GEO150002	08/07/87	PCBs
GEO150203	08/07/87	PCBs
GEO150406	08/07/87	PCBs
GEO150709	08/07/87	PCBs
GEO160002	08/26/87	PCBs
GEO160203	08/26/87	PCBs
GEO160406	08/26/87	PCBs
GEO160709	08/26/87	PCBs
GEO170002	08/26/87	PCBs
GEO170203	08/26/87	PCBs
GEO170406	08/26/87	PCBs
GEO170709	08/26/87	PCBs
GEO180002	08/26/87	PCBs
GEO180203	08/26/87	PCBs
GEO180406	08/26/87	PCBs
GEO180709	08/26/87	PCBs

LA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (c)

Location	Sampling Date	Analyses
GEO20002	08/05/87	PCBs
GEO20203	08/05/87	VOCs
GEO20204	08/05/87	PCBs
GEO20506	08/05/87	PCBs
GEO20709	08/05/87	PCBs
GEO30002	08/05/87	PCBs
GEO30203	08/05/87	PCBs,VOCs
GEO30506	08/05/87	PCBs
GEO30709	08/05/87	PCBs
GEO40002	08/05/87	PCBs
GEO40203	08/05/87	PCBs,VOCs
GEO40406	08/05/87	PCBs
GEO40709	08/05/87	PCBs
MW-110203	07/01/86	PCBs
MW-110406	07/01/86	PCBs
MW-110708	07/01/86	PCBs
MW-110911	07/01/86	PCBs
MW-111213	07/01/86	PCBs
MW-111416	07/01/86	PCBs
MW-111718	07/01/86	PCBs
MW-111921	07/01/86	PCBs
MW-112223	07/01/86	PCBs
MW-120203	07/01/86	PCBs
MW-120406	07/01/86	PCBs
MW-120708	07/01/86	PCBs
MW-120911	07/01/86	PCBs
MW-121213	07/01/86	PCBs
MW-121416	07/01/86	PCBs
MW-121718	07/01/86	PCBs
MW-2-1	09/25/85	PCBs
MW-2-3	12/03/85	PCBs
MW-2-5	12/03/85	PCBs
MW-2-7	12/03/85	PCBs
MW-2-9	12/03/85	PCBs
MW-3-1	09/24/85	PCBs
MW-3-3	12/03/85	PCBs
MW-3-5	12/03/85	PCBs
MW-3-7	12/03/85	PCBs
MW-3-9	12/03/85	PCBs
MW-4-1	09/25/85	PCBs
MW-4-12	12/03/85	PCBs
MW-4-3	12/03/85	PCBs
MW-4-5	12/03/85	PCBs
MW-4-7	12/03/85	PCBs
MW-4-9	12/03/85	PCBs
MW-5-1	09/26/85	PCBs
MW-5-3	12/03/85	PCBs

LA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (d)

Location	Sampling Date	Analyses
MW-5-5	12/03/85	PCBs
MW-5-7	12/03/85	PCBs
MW-5-9	12/03/85	PCBs
MW-6-1	09/26/85	PCBs
MW-6-12	12/03/85	PCBs
MW-6-3	12/03/85	PCBs
MW-6-5	12/03/85	PCBs
MW-6-7	12/03/85	PCBs
MW-6-9	12/03/85	PCBs
NE CORNER	10/23/86	PCBs
NE CORNER	10/23/87	PCBs
NW CORNER	10/23/86	PCBs
NW CORNER	10/23/87	PCBs
SB200103	05/20/88	PCBs
SB200305	05/20/88	PCBs
SB200507	05/20/88	PCBs
SB200709	05/20/88	PCBs
SB200911	05/20/88	PCBs
SB201315	05/20/88	PCBs
SB201517	05/20/88	PCBs
SB210204	05/20/88	PCBs
SB210406	05/20/88	PCBs
SB210608	05/20/88	PCBs
SB210810	05/20/88	PCBs
SB211012	05/20/88	PCBs
SB211214	05/20/88	PCBs
SB211416	05/20/88	PCBs
SB220204	05/20/88	PCBs
SB220406	05/20/88	PCBs
SB220608	05/20/88	PCBs
SB220810	05/20/88	PCBs
SB221012	05/20/88	PCBs
SB221214	05/20/88	PCBs
SB221416	05/20/88	PCBs
SB230204	05/20/88	PCBs
SB230406	05/20/88	PCBs
SB230608	05/20/88	PCBs
SB230810	05/20/88	PCBs
SB231012	05/20/88	PCBs
SB231214	05/20/88	PCBs
SB240204	05/20/88	PCBs
SB240406	05/20/88	PCBs
SB240608	05/20/88	PCBs
SB240810	05/20/88	PCBs
SB241012	05/20/88	PCBs
SB241214	05/20/88	PCBs
SB241416	05/20/88	PCBs

LA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (e)

Location	Sampling Date	Analyses
SB250204	05/20/88	PCBs
SB250406	05/20/88	PCBs
SB250608	05/20/88	PCBs
SB250810	05/20/88	PCBs
SB251012	05/20/88	PCBs
SB251214	05/20/88	PCBs
SB251416	05/20/88	PCBs
SB260204	06/02/88	PCBs
SB260406	06/02/88	PCBs
SB260608	06/02/88	PCBs
SB260810	06/02/88	PCBs
SB261012	06/02/88	PCBs
SB261214	06/02/88	PCBs
SB270204	06/02/88	PCBs
SB270406	06/03/88	PCBs
SB270608	06/03/88	PCBs
SB270810	06/03/88	PCBs
SB271012	06/03/88	PCBs
SB271214	06/03/88	PCBs
SB280204	06/03/88	PCBs
SB280406	06/03/88	PCBs
SB280608	06/03/88	PCBs
SB280810	06/03/88	PCBs
SB281012	06/03/88	PCBs
SB281214	06/03/88	PCBs
SB290204	06/03/88	PCBs
SB290406	06/03/88	PCBs
SB290608	06/03/88	PCBs
SB290810	06/03/88	PCBs
SB291012	06/03/88	PCBs
SB291214	06/03/88	PCBs
SB300204	06/03/88	PCBs
SB300406	06/03/88	PCBs
SB300608	06/03/88	PCBs
SB300810	06/03/88	PCBs
SB301012	06/03/88	PCBs
SB301214	06/03/88	PCBs
SB301416	06/03/88	PCBs
SB3101	08/18/88	PCBs
SB3102	08/18/88	PCBs
SB3103	08/18/88	PCBs
SB3104	08/18/88	PCBs
SB3105	08/18/88	PCBs
SB3106	08/18/88	PCBs
SB3107	08/18/88	PCBs
SB3201	08/18/88	PCBs
SB3202	08/18/88	PCBs

LA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (f)

Location	Sampling Date	Analyses
SB3203	08/18/88	PCBs
SB3204	08/18/88	PCBs
SB3205	08/18/88	PCBs
SB3206	08/18/88	PCBs
SB3207	08/18/88	PCBs
SB3208	08/18/88	PCBs
SB3301	08/18/88	PCBs
SB3302	08/18/88	PCBs
SB3303	08/18/88	PCBs
SB3304	08/18/88	PCBs
SB3305	08/18/88	PCBs
SB3306	08/18/88	PCBs
SB3307	08/18/88	PCBs
SB3401	08/19/88	PCBs
SB3402	08/19/88	PCBs
SB3403	08/19/88	PCBs
SB3404	08/19/88	PCBs
SB3405	08/19/88	PCBs
SB3406	08/19/88	PCBs
SB3407	08/19/88	PCBs
SB3408	08/19/88	PCBs
SB3501	08/22/88	PCBs
SB3502	08/22/88	PCBs
SB3503	08/22/88	PCBs
SB3504	08/22/88	PCBs
SB3505	08/22/88	PCBs
SB3506	08/22/88	PCBs
SB3507	08/22/88	PCBs
SB3508	08/22/88	PCBs
SB3601	08/22/88	PCBs
SB3602	08/22/88	PCBs
SB3603	08/22/88	PCBs
SB3604	08/22/88	PCBs
SB3605	08/22/88	PCBs
SB3606	08/22/88	PCBs
SB3607	08/22/88	PCBs
SB3608	08/22/88	PCBs
SB3701	08/22/88	PCBs
SB3702	08/22/88	PCBs
SB3703	08/22/88	PCBs
SB3704	08/22/88	PCBs
SB3705	08/22/88	PCBs
SB3706	08/22/88	PCBs
SB3707	08/22/88	PCBs
SB3708	08/22/88	PCBs
SB3801	08/22/88	PCBs
SB3802	08/22/88	PCBs

LA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (g)

Location	Sampling Date	Analyses
SB3803	08/22/88	PCBs
SB3804	08/22/88	PCBs
SB3805	08/22/88	PCBs
SB3806	08/22/88	PCBs
SB3807	08/22/88	PCBs
SB3809	08/22/88	PCBs
SE CORNER	10/23/86	PCBs
SE CORNER	10/23/87	PCBs
SW CORNER	10/23/86	PCBs
SW CORNER	10/23/87	PCBs

LA Master Analytical Results Listing
Groundwater and Surface Water

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (a)

Location	Sampling Date	Analyses
DB-3	12/09/86	METs,PCBs,VOCs
DB-3	05/27/87	PCBs
MW-11	08/29/86	PCBs
MW-11	12/03/86	METs,PCBs
MW-12	08/29/86	PCBs
MW-12	12/03/86	METs,PCBs
MW-13	08/29/86	PCBs
MW-13	12/03/86	METs,PCBs
MW-14	08/29/86	PCBs
MW-14	12/03/86	METs,PCBs
MW-15	08/29/86	PCBs
MW-15	12/03/86	METs,PCBs
MW-16	08/29/86	PCBs
MW-16	11/27/86	VOCs
MW-16	12/03/86	METs,PCBs
MW-16	03/29/88	PCBs
MW-16	06/07/88	PCBs
MW-16	10/04/88	PCBs
MW-16	01/05/89	METs,PCBs,VOCs
MW-16	05/26/89	PCBs
MW-16	08/23/89	PCBs
MW-16	11/29/89	METs,PCBs,VOCs
MW-16	02/22/90	PCBs
MW-16	06/05/90	PCBs
MW-16	08/22/90	PCBs
MW-16	11/30/90	PCBs
MW-16	02/28/91	METs,PCBs
MW-16	03/18/91	VOCs
MW-17	08/29/86	PCBs
MW-17	12/03/86	METs,PCBs
MW-18	08/29/86	PCBs
MW-18	12/03/86	METs,PCBs
MW-18	03/29/88	PCBs
MW-19	08/29/86	PCBs
MW-19	12/03/86	METs,PCBs
MW-19	03/29/88	PCBs
MW-2	10/16/85	METs,PCBs
MW-2	12/03/85	PCBs
MW-2	05/19/86	VOCs
MW-2	08/20/86	PCBs,VOCs
MW-2	08/22/86	METs
MW-2	12/03/86	METs,PCBs
MW-2	05/27/87	PCBs
MW-3	10/16/85	METs,PCBs
MW-3	12/03/85	PCBs
MW-3	08/20/86	PCBs,VOCs
MW-3	08/22/86	METs

LA Master Analytical Results Listing
Groundwater and Surface Water

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (b)

Location	Sampling Date	Analyses
MW-3	11/27/86	VOCs
MW-3	12/03/86	METs,PCBs
MW-3	05/27/87	PCBs
MW-3	03/29/88	PCBs
MW-3	06/07/88	PCBs
MW-3	10/04/88	PCBs
MW-4	10/16/85	METs,PCBs
MW-4	12/03/85	PCBs
MW-4	05/19/86	VOCs
MW-4	08/20/86	PCBs,VOCs
MW-4	08/22/86	METs
MW-4	12/03/86	METs,PCBs
MW-4	05/27/87	PCBs
MW-5	10/16/85	METs,PCBs
MW-5	12/03/85	PCBs
MW-5	05/19/86	VOCs
MW-5	08/20/86	PCBs,VOCs
MW-5	08/22/86	METs
MW-5	12/03/86	METs,PCBs
MW-5	05/27/87	PCBs
MW-5	03/29/88	PCBs
MW-5	06/07/88	PCBs
MW-6	10/16/85	METs,PCBs
MW-6	12/03/85	PCBs
MW-6	05/19/86	VOCs
MW-6	08/20/86	PCBs,VOCs
MW-6	08/22/86	METs
MW-6	12/03/86	METs,PCBs
MW-6	05/27/87	PCBs

SUMMARY OF SOIL ANALYSIS, LAGOON AREA
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
PESTICIDES (mg/kg)				
AROCHLOR 1242	ND-55000.0	1635.3425	170	111
AROCHLOR 1242(DW)	100.0-390.0	273.3333	6	6
AROCHLOR 1242(WW)	25.0-100.0	72.3333	6	6
AROCHLOR 1254	ND-530.0	130.1619	134	27
AROCHLOR 1260	ND-0.27	0.27	169	1
AROCHLOR 1260(DW)	ND-11.0	8.575	6	4
AROCHLOR 1260(WW)	ND-3.5	2.54	6	5
PCB	ND-150.0	6.9449	109	47
VOLATILE ORGANIC COMPOUNDS (ug/kg)				
ACETONE	9.0-31.0	17.75	4	4
BENZENE	ND-4.0	3.5	4	2
METHYLENE CHLORIDE	3.0-15.0	7.75	4	4
TETRACHLOROETHYLENE	ND-5.0	5.0	4	1
TOLUENE	2.0-23.0	11.25	4	4
XYLENE, TOTAL	ND-7.0	7.0	4	1

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

SUMMARY OF GROUNDWATER ANALYSIS, SHALLOW SAND/FILL
LAGOON AREA
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
METALS (mg/l)				
ARSENIC	ND-0.013	0.0068	22	11
BARIUM	ND-0.5	0.1308	27	25
CADMIUM	ND-0.002	0.002	27	1
CHROMIUM	ND-0.26	0.1633	27	3
COPPER	ND-0.09	0.04	27	4
IRON	0.035-6.03	0.4211	19	19
LEAD	ND-1.32	0.343	27	4
MERCURY	ND-0.0007	0.0007	27	2
NICKEL	ND-0.176	0.0482	24	6
SELENIUM	ND-0.015	0.0056	22	13
SILVER	ND-0.422	0.1507	21	3
ZINC	ND-25.8	2.4724	27	26
PESTICIDES (mg/l)				
AROCHLOR 1242	ND-0.037	0.0075	19	7
AROCHLOR 1242(F)	ND-0.0002	0.0002	16	1
AROCHLOR 1248	ND-0.012	0.0029	19	7
AROCHLOR 1254	ND-0.012	0.0055	19	3
PCB	ND-111.0	3.0959	43	36
VOLATILE ORGANIC COMPOUNDS (ug/l)				
1,1-DICHLOROETHANE	ND-83.0	50.3333	14	3
CHLOROETHANE	ND-120.0	68.5	14	2
CIS-1,2-DICHLOROETHENE	ND-26.0	26.0	2	1
ETHYLBENZENE	ND-4.0	4.0	14	1
METHYLENE CHLORIDE	ND-99.0	34.25	14	4
TOLUENE	ND-16.0	16.0	14	1
TRANS-1,2-DICHLOROETHYLENE	ND-110.0	44.5	14	4
VINYL CHLORIDE	ND-150.0	84.25	14	4
XYLENE, TOTAL	ND-15.0	15.0	12	1

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

SUMMARY OF GROUNDWATER ANALYSIS, DEEP SAND
LAGOON AREA
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
METALS (mg/l)				
COPPER	0.011-0.011	0.011	1	1
NICKEL	0.015-0.015	0.015	1	1
ZINC	0.186-0.186	0.186	1	1
PESTICIDES (mg/l)				
PCB	0.0002-0.0022	0.0012	2	2
VOLATILE ORGANIC COMPOUNDS (ug/l)				
METHYLENE CHLORIDE	17.0-17.0	17.0	1	1

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	A1-1 09/15/88	A1-3 09/15/88	A1-5 09/15/88	A2-1 09/15/88	A2-3 09/15/88	A2-5 09/15/88	A3-1 09/15/88	A3-3 09/15/88	A3-5 09/15/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	3	< 1	< 1
AROCHLOR 1260	mg/kg	< 1	< 1	< 1	< 1	< 1	--	< 3	< 1	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	A4-1 09/15/88	A4-3 09/15/88	A4-5 09/15/88	A5-1 09/15/88	A5-3 09/15/88	A5-5 09/15/88	A6-1 09/15/88	A6-3 09/15/88	A6-5 09/15/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	< 1	5.4	3	11	8.3	8.2	< 1	< 1	< 1
AROCHLOR 1260	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	B1-1 09/10/88	B1-3 09/10/88	B1-5 09/10/88	B2-1 09/10/88	B2-3 09/10/88	B2-5 09/10/88	B3-1 09/10/88	B3-3 09/10/88	B3-5 09/10/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	15.1	< 1	< 1	18.2	13.5	< 1	4.6	< 1	< 1
AROCHLOR 1260	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	B4-1 09/10/88	B4-3 09/10/88	B4-5 09/10/88	B5-1 09/10/88	B5-3 09/10/88	B5-5 09/10/88	B6-1 09/10/88	B6-3 09/10/88	B6-5 09/10/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	< 1	< 1	< 1	30	< 1	< 1	270	23	94
AROCHLOR 1260	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	CENTER E 10/23/86	CENTER E 10/23/87	CENTER W 10/23/86	CENTER W 10/23/87	DB-3-1 11/18/86	DB-3-10 11/18/86	DB-3-11 11/18/86	DB-3-12 11/18/86	DB-3-13 11/18/86
PESTICIDES/PCBs										
AROCHLOR 1242(DW)	mg/kg	--	240 DW	--	280 DW	--	--	--	--	--
AROCHLOR 1242(WW)	mg/kg	--	63 WW	--	66 WW	--	--	--	--	--
AROCHLOR 1248(DW)	mg/kg	--	< 3.0 DW	--	< 3.0 DW	--	--	--	--	--
AROCHLOR 1248(WW)	mg/kg	--	< 1.0 WW	--	< 1.0 WW	--	--	--	--	--
AROCHLOR 1254(DW)	mg/kg	--	< 3.0 DW	--	< 3.0 DW	--	--	--	--	--
AROCHLOR 1254(WW)	mg/kg	--	< 1.0 WW	--	< 1.0 WW	--	--	--	--	--
AROCHLOR 1260(DW)	mg/kg	9.7 DW	--	11 DW	--	--	--	--	--	--
AROCHLOR 1260(WW)	mg/kg	2.6 WW	--	2.6 WW	--	--	--	--	--	--
PCB	mg/kg	--	--	--	--	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	DB-3-14 11/18/86	DB-3-15 11/18/86	DB-3-16 11/18/86	DB-3-2 11/18/86	DB-3-3 11/18/86	DB-3-4 11/18/86	DB-3-5 11/18/86	DB-3-6 11/18/86	DB-3-7 11/18/86
PESTICIDES/PCBs										
PCB	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	DB-3-9 11/18/86	GEO100002 08/05/87	GEO100203 08/05/87	GEO100406 08/05/87	GEO100709 08/05/87	GEO10203 08/05/87	GEO10406 08/05/87	GEO10810 08/05/87	GEO110002 08/05/87
PESTICIDES/PCBs										
PCB	mg/kg	< 0.5	0.1380	1.1600	< 0.0001	< 0.0001	< 0.1	< 0.1	< 0.1	0.6170
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,1,2-TRICHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,1-DICHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,1-DICHLOROETHYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,2-DICHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,2-DICHLOROPROPANE	ug/kg	--	--	--	--	--	< 5	--	--	--
2-BUTANONE	ug/kg	--	--	--	--	--	< 10	--	--	--
2-CHLOROETHYLVINYLETHER	ug/kg	--	--	--	--	--	< 10	--	--	--
2-HEXANONE	ug/kg	--	--	--	--	--	< 10	--	--	--
4-METHYL-2-PENTANONE	ug/kg	--	--	--	--	--	< 10	--	--	--
ACETONE	ug/kg	--	--	--	--	--	15	--	--	--
ACROLEIN	ug/kg	--	--	--	--	--	< 10	--	--	--
ACRYLONITRILE	ug/kg	--	--	--	--	--	< 10	--	--	--
BENZENE	ug/kg	--	--	--	--	--	3 J	--	--	--
BROMODICHLOROMETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
BROMOFORM	ug/kg	--	--	--	--	--	< 5	--	--	--
BROMOMETHANE	ug/kg	--	--	--	--	--	< 10	--	--	--
CARBON DISULFIDE	ug/kg	--	--	--	--	--	< 5	--	--	--
CARBON TETRACHLORIDE	ug/kg	--	--	--	--	--	< 5	--	--	--
CHLOROBENZENE	ug/kg	--	--	--	--	--	< 5	--	--	--
CHLOROETHANE	ug/kg	--	--	--	--	--	< 10	--	--	--
CHLOROFORM	ug/kg	--	--	--	--	--	< 5	--	--	--
CHLOROMETHANE	ug/kg	--	--	--	--	--	< 10	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
DIBROMOCHLOROMETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
ETHYLBENZENE	ug/kg	--	--	--	--	--	< 5	--	--	--

Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	DB-3-9 11/18/86	GE0100002 08/05/87	GE0100203 08/05/87	GE0100406 08/05/87	GE0100709 08/05/87	GE10203 08/05/87	GE10406 08/05/87	GE10810 08/05/87	GE0110002 08/05/87
VOLATILE ORGANICS										
METHYLENE CHLORIDE	ug/kg	--	--	--	--	--	3 J	--	--	--
STYRENE	ug/kg	--	--	--	--	--	< 5	--	--	--
TETRACHLOROETHYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
TOLUENE	ug/kg	--	--	--	--	--	2 J	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
TRANS-1,2-DICHLOROPROPENE	ug/kg	--	--	--	--	--	< 5	--	--	--
TRICHLOROETHYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
VINYL ACETATE	ug/kg	--	--	--	--	--	< 10	--	--	--
VINYL CHLORIDE	ug/kg	--	--	--	--	--	< 10	--	--	--
XYLENE, TOTAL	ug/kg	--	--	--	--	--	< 5	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	BE0110203 08/05/87	GE0110406 08/05/87	GE0110709 08/05/87	GE0120002 08/06/87	GE0120203 08/06/87	GE0120406 08/06/87	GE0120709 08/06/87	GE0130002 08/06/87	GE0120203 08/06/87
PESTICIDES/PCBs										
PCB	mg/kg	--	< 0.0001	< 0.0001	0.2540	150.000	< 0.0001	2.0100	3.5000	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

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Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	GE0130406 08/06/87	GE0130709 08/06/87	GE0140002 08/07/87	GE0140203 08/07/87	GE0140406 08/07/87	GE0140709 08/07/87	GE0150002 08/07/87	GE0150203 08/07/87	GE0150406 08/07/87
PESTICIDES/PCBs										
PCB	mg/kg	0.1500	2.5100	7.1500	1.7800	0.8000	0.4500	9.5300	0.1750	1.3700

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

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Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	GE0150709 08/07/87	GE0160002 08/26/87	GE0160203 08/26/87	GE0160406 08/26/87	GE0160709 08/26/87	GE0170002 08/26/87	GE0170203 08/26/87	GE0170406 08/26/87	GE0170709 08/26/87
PESTICIDES/PCBs										
PCB	mg/kg	0.2600	0.471	0.057	< 0.002	< 0.002	0.022	< 0.002	< 0.002	< 0.002

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	GE0180002 08/26/87	GE0180203 08/26/87	GE0180406 08/26/87	GE0180709 08/26/87	GE020002 08/05/87	GE020203 08/05/87	GE020204 08/05/87	GE020506 08/05/87	GE020709 08/05/87
PESTICIDES/PCBs										
PCB	mg/kg	0.226	< 0.002	< 0.002	< 0.002	26.3	--	0.672	0.356	0.229
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,1,2-TRICHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,1-DICHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,1-DICHLOROETHYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,2-DICHLOROETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
1,2-DICHLOROPROPANE	ug/kg	--	--	--	--	--	< 5	--	--	--
2-BUTANONE	ug/kg	--	--	--	--	--	< 10	--	--	--
2-CHLOROETHYLVINYLETHER	ug/kg	--	--	--	--	--	< 10	--	--	--
2-HEXANONE	ug/kg	--	--	--	--	--	< 10	--	--	--
4-METHYL-2-PENTANONE	ug/kg	--	--	--	--	--	< 10	--	--	--
ACETONE	ug/kg	--	--	--	--	--	9 J	--	--	--
ACROLEIN	ug/kg	--	--	--	--	--	< 10	--	--	--
ACRYLONITRILE	ug/kg	--	--	--	--	--	< 10	--	--	--
BENZENE	ug/kg	--	--	--	--	--	< 5	--	--	--
BROMODICHLOROMETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
BROMOFORM	ug/kg	--	--	--	--	--	< 5	--	--	--
BROMOMETHANE	ug/kg	--	--	--	--	--	< 10	--	--	--
CARBON DISULFIDE	ug/kg	--	--	--	--	--	< 5	--	--	--
CARBON TETRACHLORIDE	ug/kg	--	--	--	--	--	< 5	--	--	--
CHLOROBENZENE	ug/kg	--	--	--	--	--	< 5	--	--	--
CHLOROETHANE	ug/kg	--	--	--	--	--	< 10	--	--	--
CHLOROFORM	ug/kg	--	--	--	--	--	< 5	--	--	--
CHLOROMETHANE	ug/kg	--	--	--	--	--	< 10	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
DIBROMOCHLOROMETHANE	ug/kg	--	--	--	--	--	< 5	--	--	--
ETHYLBENZENE	ug/kg	--	--	--	--	--	< 5	--	--	--

Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	GEO180002 08/26/87	GEO180203 08/26/87	GEO180406 08/26/87	GEO180709 08/26/87	GEO20002 08/05/87	GEO20203 08/05/87	GEO20204 08/05/87	GEO20506 08/05/87	GEO20709 08/05/87
VOLATILE ORGANICS										
METHYLENE CHLORIDE	ug/kg	--	--	--	--	--	7	--	--	--
STYRENE	ug/kg	--	--	--	--	--	< 5	--	--	--
TETRACHLOROETHYLENE	ug/kg	--	--	--	--	--	5	--	--	--
TOLUENE	ug/kg	--	--	--	--	--	10	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
TRANS-1,2-DICHLOROPROPENE	ug/kg	--	--	--	--	--	< 5	--	--	--
TRICHLOROETHYLENE	ug/kg	--	--	--	--	--	< 5	--	--	--
VINYL ACETATE	ug/kg	--	--	--	--	--	< 10	--	--	--
VINYL CHLORIDE	ug/kg	--	--	--	--	--	< 10	--	--	--
XYLENE, TOTAL	ug/kg	--	--	--	--	--	< 5	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	GE030002 08/05/87	GE030203 08/05/87	GE030506 08/05/87	GE030709 08/05/87	GE040002 08/05/87	GE040203 08/05/87	GE040406 08/05/87	GE040709 08/05/87	MW-110203 07/01/86
PESTICIDES/PCBs										
PCB	mg/kg	2.69	0.217	2.66	14.6	3.01	3.57	3.6	< 0.1	< 0.16
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
1,1,2-TRICHLOROETHANE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
1,1-DICHLOROETHANE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
1,1-DICHLOROETHYLENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
1,2-DICHLOROETHANE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
1,2-DICHLOROPROPANE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
2-BUTANONE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
2-CHLOROETHYLVINYLETHER	ug/kg	--	< 10	--	--	--	< 10	--	--	--
2-HEXANONE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
4-METHYL-2-PENTANONE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
ACETONE	ug/kg	--	16	--	--	--	31	--	--	--
ACROLEIN	ug/kg	--	< 10	--	--	--	< 10	--	--	--
ACRYLONITRILE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
BENZENE	ug/kg	--	< 5	--	--	--	4 J	--	--	--
BROMODICHLOROMETHANE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
BROMOFORM	ug/kg	--	< 5	--	--	--	< 5	--	--	--
BROMOMETHANE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
CARBON DISULFIDE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
CARBON TETRACHLORIDE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
CHLOROBENZENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
CHLOROETHANE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
CHLOROFORM	ug/kg	--	< 5	--	--	--	< 5	--	--	--
CHLOROMETHANE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
DIBROMOCHLOROMETHANE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
ETHYLBENZENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--

Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	GE030002 08/05/87	GE030203 08/05/87	GE030506 08/05/87	GE030709 08/05/87	GE040002 08/05/87	GE040203 08/05/87	GE040406 08/05/87	GE040709 08/05/87	MW-110203 07/01/86
VOLATILE ORGANICS										
METHYLENE CHLORIDE	ug/kg	--	6	--	--	--	15	--	--	--
STYRENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
TETRACHLOROETHYLENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
TOLUENE	ug/kg	--	10	--	--	--	23	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
TRANS-1,2-DICHLOROPROPENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
TRICHLOROETHYLENE	ug/kg	--	< 5	--	--	--	< 5	--	--	--
VINYL ACETATE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
VINYL CHLORIDE	ug/kg	--	< 10	--	--	--	< 10	--	--	--
XYLENE, TOTAL	ug/kg	--	< 5	--	--	--	7	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	MW-110406 07/10/86	MW-110708 07/01/86	MW-110911 07/01/86	MW-111213 07/01/86	MW-111416 07/01/86	MW-111718 07/01/86	MW-111921 07/01/86	MW-112223 07/01/86	MW-120203 07/01/86
PESTICIDES/PCBs										
PCB	mg/kg	--	< 0.16	4.25	< 0.16	0.17	< 0.16	< 0.16	< 0.16	< 0.16

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	MW-120406 07/01/86	MW-120708 07/01/86	MW-120911 07/01/86	MW-121213 07/01/86	MW-121416 07/01/86	MW-121718 07/01/86	MW-2-1 09/25/85	MW-2-3 12/03/85	MW-2-5 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	4.58	1.11	< 0.16	< 0.16	< 0.16	< 0.16	0.481	< 1	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	MW-2-7 12/03/85	MW-2-9 12/03/85	MW-3-1 09/24/85	MW-3-3 12/03/85	MW-3-5 12/03/85	MW-3-7 12/03/85	MW-3-9 12/03/85	MW-4-1 09/25/85	MW-4-12 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	< 1	49.330	< 1	12	< 1	< 1	1.700	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	MW-4-3 12/03/85	MW-4-5 12/03/85	MW-4-7 12/03/85	MW-4-9 12/03/85	MW-5-1 09/26/85	MW-5-3 12/03/85	MW-5-5 12/03/85	MW-5-7 12/03/85	MW-5-9 12/03/85
PESTICIDES/PCBs										
PCB	mg/kg	< 1	< 1	< 1	< 1	2.180	< 1	5.5	< 1	< 1

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	MW-6-1 09/26/85	MW-6-12 12/03/85	MW-6-3 12/03/85	MW-6-5 12/03/85	MW-6-7 12/03/85	MW-6-9 12/03/85	NE CORNER 10/23/86	NE CORNER 10/23/87	NW CORNER 10/23/86
PESTICIDES/PCBs										
AROCHLOR 1242(DW)	mg/kg	--	--	--	--	--	--	--	100 DW	--
AROCHLOR 1242(WW)	mg/kg	--	--	--	--	--	--	--	25 WW	--
AROCHLOR 1248(DW)	mg/kg	--	--	--	--	--	--	--	< 3.0 DW	--
AROCHLOR 1248(WW)	mg/kg	--	--	--	--	--	--	--	< 1.0 WW	--
AROCHLOR 1254(DW)	mg/kg	--	--	--	--	--	--	--	< 3.0 DW	--
AROCHLOR 1254(WW)	mg/kg	--	--	--	--	--	--	--	< 1.0 WW	--
AROCHLOR 1260(DW)	mg/kg	--	--	--	--	--	--	< 3.0 DW	--	< 3.0 DW
AROCHLOR 1260(WW)	mg/kg	--	--	--	--	--	--	< 1.0 WW	--	3.5 WW
PCB	mg/kg	1.200	1	< 1	< 1	< 1	< 1	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	NW CORNER 10/23/87	SB200103 05/20/88	SB200305 05/20/88	SB200507 05/20/88	SB200709 05/20/88	SB200911 05/20/88	SB201315 05/20/88	SB201517 05/20/88	SB210204 05/20/88
PESTICIDES/PCBs										
AROCHLOR 1016	mg/kg	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1221	mg/kg	--	< 1.0	< 1.0	< 1.0	< 2.0	< 4.0	< 4.0	< 2.0	< 40
AROCHLOR 1232	mg/kg	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1242	mg/kg	--	< 1.0	18	1.0	2.1	3.1	12	1.8	46
AROCHLOR 1242(DW)	mg/kg	390 DW	--	--	--	--	--	--	--	--
AROCHLOR 1242(WW)	mg/kg	100 WW	--	--	--	--	--	--	--	--
AROCHLOR 1248	mg/kg	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1248(DW)	mg/kg	< 3.0 DW	--	--	--	--	--	--	--	--
AROCHLOR 1248(WW)	mg/kg	< 1.0 WW	--	--	--	--	--	--	--	--
AROCHLOR 1254	mg/kg	--	< 1.0	3.3	< 1.0	< 1.0	1.1	4.9	< 1.0	21
AROCHLOR 1254(DW)	mg/kg	< 3.0 DW	--	--	--	--	--	--	--	--
AROCHLOR 1254(WW)	mg/kg	< 1.0 WW	--	--	--	--	--	--	--	--
AROCHLOR 1260	mg/kg	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB210406 05/20/88	SB210608 05/20/88	SB210810 05/20/88	SB211012 05/20/88	SB211214 05/20/88	SB211416 05/20/88	SB220204 05/20/88	SB220406 05/20/88	SB220608 05/20/88
PESTICIDES/PCBs										
AROCHLOR 1016	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0
AROCHLOR 1221	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0
AROCHLOR 1232	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0
AROCHLOR 1242	mg/kg	3.6	< 1.0	1.4	< 1.0	< 1.0	< 1.0	57	< 1.0	< 1.0
AROCHLOR 1248	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1254	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	< 1.0
AROCHLOR 1260	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB220810 05/20/88	SB221012 05/20/88	SB221214 05/20/88	SB221416 05/20/88	SB230204 05/20/88	SB230406 05/20/88	SB230608 05/20/88	SB230810 05/20/88	SB231012 05/20/88
PESTICIDES/PCBs										
AROCHLOR 1016	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1221	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.7	< 480	< 500	< 520
AROCHLOR 1232	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1242	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	490	680	570
AROCHLOR 1248	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1254	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	93	55	100
AROCHLOR 1260	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB231214 05/20/88	SB240204 05/20/88	SB240406 05/20/88	SB240608 05/20/88	SB240810 05/20/88	SB241012 05/20/88	SB241214 05/20/88	SB241416 05/20/88	SB250204 05/20/88
PESTICIDES/PCBs										
AROCHLOR 1016	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 400	< 1.0	< 4.0
AROCHLOR 1221	mg/kg	< 520	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 400	< 2.0	< 4.0
AROCHLOR 1232	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 400	< 1.0	< 4.0
AROCHLOR 1242	mg/kg	870	< 1.0	< 1.0	1.0	< 1.0	< 1.0	2000	2.8	12
AROCHLOR 1248	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 400	< 1.0	< 4.0
AROCHLOR 1254	mg/kg	200	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	530	1.1	< 4.0
AROCHLOR 1260	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 400	< 1.0	< 4.0

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB250406 05/20/88	SB250608 05/20/88	SB250810 05/20/88	SB251012 05/20/88	SB251214 05/20/88	SB251416 05/20/88	SB260204 06/02/88	SB260406 06/02/88	SB260608 06/02/88
PESTICIDES/PCBs										
AROCHLOR 1016	mg/kg	< 370	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	--	--	--
AROCHLOR 1221	mg/kg	< 370	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	--	--	--
AROCHLOR 1232	mg/kg	< 370	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	--	--	--
AROCHLOR 1242	mg/kg	1400	3.0	11.0	5.0	40	< 1.0	380	430	2000
AROCHLOR 1248	mg/kg	< 370	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 60	< 35	< 65
AROCHLOR 1254	mg/kg	380	< 1.0	3.0	< 1.0	4.8	< 1.0	56	47	180
AROCHLOR 1260	mg/kg	< 370	< 1.0	< 1.0	< 1.0	< 4.0	< 1.0	< 60	< 35	< 65

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB260810 06/02/88	SB261012 06/02/88	SB261214 06/02/88	SB270204 06/02/88	SB270406 06/03/88	SB270608 06/03/88	SB270810 06/03/88	SB271012 06/03/88	SB261214 06/03/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	8.8	260	81	2600	24	360	460	1500	--
AROCHLOR 1248	mg/kg	< 2.0	< 20	< 20	< 200	< 0.05	< 30	< 40	< 40	--
AROCHLOR 1254	mg/kg	< 2.0	22	< 20	280	2.7	36	49	170	--
AROCHLOR 1260	mg/kg	< 2.0	< 20	< 20	< 200	< 0.05	< 30	< 40	< 40	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB280204 06/03/88	SB280406 06/03/88	SB280608 06/03/88	SB280810 06/03/88	SB281012 06/03/88	SB281214 06/03/88	SB290204 06/03/88	SB290406 06/03/88	SB290608 06/03/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	1.0	0.71	0.56	0.39	2.4	< 0.08	0.94	40	0.27
AROCHLOR 1248	mg/kg	< 0.40	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
AROCHLOR 1254	mg/kg	< 0.40	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.47	< 0.08
AROCHLOR 1260	mg/kg	< 0.40	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB290810 06/03/88	SB291012 06/03/88	SB291214 06/03/88	SB300204 06/03/88	SB300406 06/03/88	SB300608 06/03/88	SB300810 06/03/88	SB301012 06/03/88	SB301214 06/03/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	< 0.08	0.08	30	0.47	700	410	3100	1800	620
AROCHLOR 1248	mg/kg	< 0.08	< 0.08	< 0.3	< 0.8	< 40	< 35	< 40	< 37	< 190
AROCHLOR 1254	mg/kg	< 0.08	< 0.08	< 0.3	< 0.8	34	< 35	430	390	< 190
AROCHLOR 1260	mg/kg	< 0.08	< 0.08	0.27	< 0.8	< 40	< 35	< 40	< 37	< 190

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB301416 06/03/88	SB3101 08/18/88	SB3102 08/18/88	SB3103 08/18/88	SB3104 08/18/88	SB3105 08/18/88	SB3106 08/18/88	SB3107 08/18/88	SB3201 08/18/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	25	25	33	37	< 1.0	< 1.0	< 1.0	11	37
AROCHLOR 1248	mg/kg	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1254	mg/kg	< 2.0	< 4.0	< 4.0	< 4.0	< 1.0	< 1.0	< 1.0	< 4.0	< 10
AROCHLOR 1260	mg/kg	< 2.0	< 1.0	< 4.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB3202 08/18/88	SB3203 08/18/88	SB3204 08/18/88	SB3205 08/18/88	SB3206 08/18/88	SB3207 08/18/88	SB3208 08/18/88	SB3301 08/18/88	SB3302 08/18/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	9000	1600	2100	35000	3200	980	55000	22	< 1.0
AROCHLOR 1248	mg/kg	< 100	< 100	< 100	< 1000	< 100	< 10	< 1000	< 1.0	< 1.0
AROCHLOR 1254	mg/kg	< 700	< 300	< 400	< 5000	< 500	< 40	< 8000	< 5.0	< 1.0
AROCHLOR 1260	mg/kg	< 500	< 75	< 100	< 400	< 100	< 20	< 1000	< 1.0	< 1.0

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB3303 08/18/88	SB3304 08/18/88	SB3305 08/18/88	SB3306 08/18/88	SB3307 08/18/88	SB3401 08/19/88	SB3402 08/19/88	SB3403 08/19/88	SB3404 08/19/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	< 1.0	< 1.0	< 1.0	21	1200	14	1.4	< 1.0	< 1.0
AROCHLOR 1248	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 50	< 2.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1254	mg/kg	< 1.0	< 1.0	< 1.0	< 5.0	< 60	< 2.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1260	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 20	< 2.0	< 1.0	< 1.0	< 1.0

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB3405 08/19/88	SB3406 08/19/88	SB3407 08/19/88	SB3408 08/19/88	SB3501 08/22/88	SB3502 08/22/88	SB3503 08/22/88	SB3504 08/22/88	SB3505 08/22/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	2.7	1.2	< 1.0	< 1.0	< 1.0
AROCHLOR 1248	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1254	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0
AROCHLOR 1260	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 1.0

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB3506 08/22/88	SB3507 08/22/88	SB3508 08/22/88	SB3601 08/22/88	SB3602 08/22/88	SB3603 08/22/88	SB3604 08/22/88	SB3605 08/22/88	SB3606 08/22/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	< 1.0	330	2000	1.0	< 1.0	620	180	1300	1500
AROCHLOR 1248	mg/kg	< 1.0	< 40	< 350	< 1.0	< 1.0	< 40	< 35	< 73	< 380
AROCHLOR 1254	mg/kg	< 1.0	< 40	< 350	< 1.0	< 1.0	< 40	< 35	< 73	< 380
AROCHLOR 1260	mg/kg	< 1.0	< 40	< 350	< 1.0	< 1.0	< 40	< 35	< 73	< 380

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB3607 08/22/88	SB3608 08/22/88	SB3701 08/22/88	SB3702 08/22/88	SB3703 08/22/88	SB3704 08/22/88	SB3705 08/22/88	SB3706 08/22/88	SB3707 08/22/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	820	250	110	9200	3400	5800	3500	3700	1900
AROCHLOR 1248	mg/kg	< 130	< 50	< 19	< 3600	< 760	< 750	< 350	< 730	< 390
AROCHLOR 1254	mg/kg	< 130	< 50	< 19	< 3600	< 760	< 750	< 350	< 730	< 390
AROCHLOR 1260	mg/kg	< 130	< 50	< 19	< 3600	< 760	< 750	< 350	< 730	< 390

LEGEND:
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U -Sample unfiltered for analysis
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SB3708 08/22/88	SB3801 08/22/88	SB3802 08/22/88	SB3803 08/22/88	SB3804 08/22/88	SB3805 08/22/88	SB3806 08/22/88	SB3807 08/22/88	SB3809 08/22/88
PESTICIDES/PCBs										
AROCHLOR 1242	mg/kg	37	16	14.0	2400	1100	1700	8400	100	85
AROCHLOR 1248	mg/kg	< 7	< 4	< 1	< 110	< 73	< 180	< 350	< 20	< 19
AROCHLOR 1254	mg/kg	< 7	< 4	< 10	< 1100	< 73	< 180	< 3500	< 20	< 19
AROCHLOR 1260	mg/kg	< 7	< 4	< 1	< 110	< 73	< 180	< 350	< 20	< 19

LEGEND:
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Soil Samples

COMPOUND (by Class)	UNITS	SE CORNER 10/23/86	SE CORNER 10/23/87	SW CORNER 10/23/86	SW CORNER 10/23/87
PESTICIDES/PCBs					
AROCHLOR 1242(DW)	mg/kg	--	350 DW	--	280 DW
AROCHLOR 1242(WW)	mg/kg	--	100 WW	--	80 WW
AROCHLOR 1248(DW)	mg/kg	--	< 3.0 DW	--	< 3.0 DW
AROCHLOR 1248(WW)	mg/kg	--	< 1.0 WW	--	< 1.0 WW
AROCHLOR 1254(DW)	mg/kg	--	< 3.0 DW	--	< 3.0 DW
AROCHLOR 1254(WW)	mg/kg	--	< 1.0 WW	--	< 1.0 WW
AROCHLOR 1260(DW)	mg/kg	7.5 DW	--	6.1 DW	--
AROCHLOR 1260(WW)	mg/kg	2.2 WW	--	1.8 WW	--

LEGEND:
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-3 12/09/86	DB-3 05/27/87	MW-11 08/29/86	MW-11 12/03/86	MW-12 08/29/86	MW-12 12/03/86	MW-13 08/29/86	MW-13 12/03/86	MW-14 08/29/86
METALS										
ARSENIC	mg/l	--	--	--	0.0050	--	0.0050	--	< 0.0030	--
BARIUM	mg/l	--	--	--	0.0270	--	0.0220	--	0.0170	--
CADMIUM	mg/l	--	--	--	< 0.0020	--	< 0.0020	--	< 0.0020	--
CHROMIUM	mg/l	--	--	--	< 0.0120	--	< 0.0120	--	< 0.0120	--
COPPER	mg/l	0.0110	--	--	< 0.0070	--	< 0.0070	--	< 0.0070	--
CYANIDE	mg/l	< 0.02	--	--	--	--	--	--	--	--
IRON	mg/l	--	--	--	0.0640	--	0.0830	--	0.0780	--
LEAD	mg/l	--	--	--	1.3200	--	< 0.0610	--	< 0.0610	--
MERCURY	mg/l	--	--	--	< 0.0010	--	< 0.0010	--	< 0.0010	--
NICKEL	mg/l	0.0150	--	--	< 0.0120	--	< 0.0120	--	< 0.0120	--
SELENIUM	mg/l	--	--	--	0.0040	--	0.0040	--	0.0040	--
SILVER	mg/l	--	--	--	< 0.0070	--	< 0.0070	--	< 0.0070	--
ZINC	mg/l	0.1860	--	--	0.017	--	0.032	--	0.062	--
PESTICIDES/PCBs										
PCB	mg/l	0.0002	0.0022	0.0130	0.0142	0.0110	0.0097	0.0120	0.0017	< 0.0005
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	< 5	--	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	< 5	--	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	< 5	--	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	ug/l	< 5	--	--	--	--	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	< 5	--	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	ug/l	< 5	--	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	< 5	--	--	--	--	--	--	--	--
2-BUTANONE	ug/l	< 10	--	--	--	--	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	< 10	--	--	--	--	--	--	--	--
2-HEXANONE	ug/l	< 10	--	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	ug/l	< 10	--	--	--	--	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	DB-3 12/09/86	DB-3 05/27/87	MW-11 08/29/86	MW-11 12/03/86	MW-12 08/29/86	MW-12 12/03/86	MW-13 08/29/86	MW-13 12/03/86	MW-14 08/29/86
VOLATILE ORGANICS										
ACETONE	ug/l	< 10	--	--	--	--	--	--	--	--
ACROLEIN	ug/l	< 10	--	--	--	--	--	--	--	--
ACRYLONITRILE	ug/l	< 10	--	--	--	--	--	--	--	--
BENZENE	ug/l	< 5	--	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	ug/l	< 5	--	--	--	--	--	--	--	--
BROMOFORM	ug/l	< 5	--	--	--	--	--	--	--	--
BROMOMETHANE	ug/l	< 10	--	--	--	--	--	--	--	--
CARBON DISULFIDE	ug/l	< 5	--	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	ug/l	< 5	--	--	--	--	--	--	--	--
CHLOROBENZENE	ug/l	< 5	--	--	--	--	--	--	--	--
CHLOROETHANE	ug/l	< 10	--	--	--	--	--	--	--	--
CHLOROFORM	ug/l	< 5	--	--	--	--	--	--	--	--
CHLOROMETHANE	ug/l	< 10	--	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	< 5	--	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	< 5	--	--	--	--	--	--	--	--
ETHYLBENZENE	ug/l	< 5	--	--	--	--	--	--	--	--
METHYLENE CHLORIDE	ug/l	17	--	--	--	--	--	--	--	--
STYRENE	ug/l	< 5	--	--	--	--	--	--	--	--
TETRACHLOROETHYLENE	ug/l	< 5	--	--	--	--	--	--	--	--
TOLUENE	ug/l	< 5	--	--	--	--	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	< 5	--	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	< 5	--	--	--	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	< 5	--	--	--	--	--	--	--	--
VINYL ACETATE	ug/l	< 10	--	--	--	--	--	--	--	--
VINYL CHLORIDE	ug/l	< 10	--	--	--	--	--	--	--	--
XYLENE, TOTAL	ug/l	< 5	--	--	--	--	--	--	--	--

LEGEND:

F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-14 12/03/86	MW-15 08/29/86	MW-15 12/03/86	MW-16 08/29/86	MW-16 11/27/86	MW-16 12/03/86	MW-16 03/29/88	MW-16 06/07/88	MW-16 10/04/88
METALS										
ARSENIC	mg/l	0.0120	--	0.0040	--	--	0.0040	--	--	--
BARIUM	mg/l	0.0080	--	0.0850	--	--	< 0.0020	--	--	--
CADMIUM	mg/l	< 0.0020	--	< 0.0020	--	--	< 0.0020	--	--	--
CHROMIUM	mg/l	< 0.0120	--	< 0.0120	--	--	< 0.0120	--	--	--
COPPER	mg/l	< 0.0070	--	< 0.0070	--	--	< 0.0070	--	--	--
IRON	mg/l	0.0780	--	6.0300	--	--	0.0700	--	--	--
LEAD	mg/l	< 0.0610	--	< 0.0610	--	--	< 0.0610	--	--	--
MERCURY	mg/l	< 0.0010	--	< 0.0010	--	--	< 0.0010	--	--	--
NICKEL	mg/l	< 0.0120	--	0.0200	--	--	< 0.0120	--	--	--
SELENIUM	mg/l	< 0.0030	--	< 0.0030	--	--	0.0030	--	--	--
SILVER	mg/l	0.4220	--	< 0.0070	--	--	< 0.0070	--	--	--
ZINC	mg/l	0.011	--	0.052	--	--	0.018	--	--	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	--
AROCHLOR 1016(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	--
AROCHLOR 1221	mg/l	--	--	--	--	--	--	< 0.0050	< 0.0010	--
AROCHLOR 1221(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	--
AROCHLOR 1232	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	--
AROCHLOR 1232(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	--
AROCHLOR 1242	mg/l	--	--	--	--	--	--	0.0031	0.0023	< 0.0010
AROCHLOR 1242(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	< 0.0005 F
AROCHLOR 1248	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	< 0.0001
AROCHLOR 1248(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	< 0.0001 F
AROCHLOR 1254	mg/l	--	--	--	--	--	--	< 0.0010	0.0014	< 0.0001
AROCHLOR 1254(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	< 0.0001 F
AROCHLOR 1260	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	< 0.0001
AROCHLOR 1260(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	< 0.0001 F
PCB	mg/l	0.0001	111.000	0.0276	0.1070	--	0.0235	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-14 12/03/86	MW-15 08/29/86	MW-15 12/03/86	MW-16 08/29/86	MW-16 11/27/86	MW-16 12/03/86	MW-16 03/29/88	MW-16 06/07/88	MW-16 10/04/88
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
1,1-DICHLOROETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	--	--	--	< 5	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	--	--	--	< 5	--	--	--	--
2-BUTANONE	ug/l	--	--	--	--	< 10	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	--	--	--	< 10	--	--	--	--
2-HEXANONE	ug/l	--	--	--	--	< 10	--	--	--	--
4-METHYL-2-PENTANONE	ug/l	--	--	--	--	< 10	--	--	--	--
ACETONE	ug/l	--	--	--	--	< 10	--	--	--	--
ACROLEIN	ug/l	--	--	--	--	< 10	--	--	--	--
ACRYLONITRILE	ug/l	--	--	--	--	< 10	--	--	--	--
BENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
BROMODICHLOROMETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
BROMOFORM	ug/l	--	--	--	--	< 5	--	--	--	--
BROMOMETHANE	ug/l	--	--	--	--	< 10	--	--	--	--
CARBON DISULFIDE	ug/l	--	--	--	--	< 5	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	--	--	--	< 5	--	--	--	--
CHLOROBENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
CHLOROETHANE	ug/l	--	--	--	--	< 10	--	--	--	--
CHLOROFORM	ug/l	--	--	--	--	< 5	--	--	--	--
CHLOROMETHANE	ug/l	--	--	--	--	< 10	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	--	< 5	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
ETHYLBENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
METHYLENE CHLORIDE	ug/l	--	--	--	--	< 5	--	--	--	--
STYRENE	ug/l	--	--	--	--	< 5	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	--	--	--	< 5	--	--	--	--
TOLUENE	ug/l	--	--	--	--	< 5	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	--	--	--	< 5	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-14 12/03/86	MW-15 08/29/86	MW-15 12/03/86	MW-16 08/29/86	MW-16 11/27/86	MW-16 12/03/86	MW-16 03/29/88	MW-16 06/07/88	MW-16 10/04/88
VOLATILE ORGANICS										
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	--	< 5	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	--	--	--	< 5	--	--	--	--
VINYL ACETATE	ug/l	--	--	--	--	< 10	--	--	--	--
VINYL CHLORIDE	ug/l	--	--	--	--	< 10	--	--	--	--
XYLENE, TOTAL	ug/l	--	--	--	--	< 5	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-16 10/04/88	MW-16 01/05/89	MW-16 05/26/89	MW-16 08/23/89	MW-16 11/29/89	MW-16 02/22/90	MW-16 06/05/90	MW-16 08/22/90	MW-16 11/30/90
METALS										
ARSENIC	mg/l	--	0.0130	--	--	0.002	--	--	--	--
BARIUM	mg/l	--	0.46	--	--	0.5	--	--	--	--
CADMIUM	mg/l	--	< 0.01	--	--	0.002	--	--	--	--
CHROMIUM	mg/l	--	0.26	--	--	0.17	--	--	--	--
COPPER	mg/l	--	< 0.01	--	--	0.09	--	--	--	--
LEAD	mg/l	--	< 0.05	--	--	< 0.02	--	--	--	--
MERCURY	mg/l	--	0.0006	--	--	0.0007	--	--	--	--
SELENIUM	mg/l	--	< 0.0020	--	--	< 0.002	--	--	--	--
SILVER	mg/l	--	--	--	--	0.02	--	--	--	--
ZINC	mg/l	--	0.11	--	--	0.305	--	--	--	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1016(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1221	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1221(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1232	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1232(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1242	mg/l	< 0.0010	0.0009	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1242(F)	mg/l	< 0.0005 F	0.0002 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1248	mg/l	< 0.0001	< 0.0001	0.0022	0.0120	0.0043	0.0002	0.0003	0.0004	0.0010
AROCHLOR 1248(F)	mg/l	< 0.0001 F	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1254	mg/l	< 0.0001	< 0.0005	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1254(F)	mg/l	< 0.0001 F	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1260	mg/l	< 0.0001	< 0.0001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1260(F)	mg/l	< 0.0001 F	< 0.0001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1262	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1262(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F
AROCHLOR 1268	mg/l	--	--	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.00001
AROCHLOR 1268(F)	mg/l	--	--	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.00001 F	< 0.0001 F	< 0.0001 F	< 0.0001 F

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-16 10/04/88	MW-16 01/05/89	MW-16 05/26/89	MW-16 08/23/89	MW-16 11/29/89	MW-16 02/22/90	MW-16 06/05/90	MW-16 08/22/90	MW-16 11/30/90
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	--	< 3	--	--	< 5	--	--	--	--
1,1-DICHLOROETHANE	ug/l	--	83	--	--	22	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,2-DICHLOROBENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	< 3	--	--	< 5	--	--	--	--
1,3-DICHLOROBENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
1,4-DICHLOROBENZENE	ug/l	--	--	--	--	< 5	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	< 10	--	--	< 10	--	--	--	--
BENZENE	ug/l	--	< 1	--	--	< 5	--	--	--	--
BROMODICHLOROMETHANE	ug/l	--	< 2	--	--	< 5	--	--	--	--
BROMOFORM	ug/l	--	< 15	--	--	< 5	--	--	--	--
BROMOMETHANE	ug/l	--	< 10	--	--	< 10	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	< 4	--	--	< 5	--	--	--	--
CHLOROBENZENE	ug/l	--	< 1	--	--	< 5	--	--	--	--
CHLORODIBROMOMETHANE	ug/l	--	< 3	--	--	--	--	--	--	--
CHLOROETHANE	ug/l	--	17	--	--	< 10	--	--	--	--
CHLOROFORM	ug/l	--	< 1	--	--	< 5	--	--	--	--
CHLOROMETHANE	ug/l	--	< 10	--	--	< 10	--	--	--	--
CIS-1,2-DICHLOROETHENE	ug/l	--	--	--	--	26	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	< 4	--	--	< 5	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	--	--	--	--	< 5	--	--	--	--
ETHYLBENZENE	ug/l	--	4	--	--	< 5	--	--	--	--
METHYLENE CHLORIDE	ug/l	--	< 2	--	--	< 5	--	--	--	--
STYRENE	ug/l	--	--	--	--	< 5	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	< 2	--	--	< 5	--	--	--	--
TOLUENE	ug/l	--	16	--	--	< 5	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	110	--	--	< 5	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	< 4	--	--	< 5	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	< 2	--	--	< 5	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-16 10/04/88	MW-16 01/05/89	MW-16 05/26/89	MW-16 08/23/89	MW-16 11/29/89	MW-16 02/22/90	MW-16 06/05/90	MW-16 08/22/90	MW-16 11/30/90
VOLATILE ORGANICS										
TRICHLOROFLUOROMETHANE	ug/l	--	< 3	--	--	< 5	--	--	--	--
VINYL CHLORIDE	ug/l	--	110	--	--	< 10	--	--	--	--
XYLENE ORTHO	ug/l	--	--	--	--	< 5	--	--	--	--
XYLENE PARA & META	ug/l	--	--	--	--	< 5	--	--	--	--
XYLENE, TOTAL	ug/l	--	15	--	--	--	--	--	--	--

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
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Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-16 02/28/91	MW-16 03/18/91	MW-17 08/29/86	MW-17 12/03/86	MW-18 08/29/86	MW-18 12/03/86	MW-18 03/29/88	MW-19 08/29/86	MW-19 12/03/86
METALS										
ARSENIC	mg/l	0.011	--	--	< 0.0030	--	< 0.0030	--	--	0.0040
BARIUM	mg/l	0.4	--	--	0.0080	--	0.0560	--	--	0.0160
CADMIUM	mg/l	< 0.002	--	--	< 0.0020	--	< 0.0020	--	--	< 0.0020
CHROMIUM	mg/l	0.06	--	--	< 0.0120	--	< 0.0120	--	--	< 0.0120
COPPER	mg/l	0.03	--	--	< 0.0070	--	< 0.0070	--	--	< 0.0070
IRON	mg/l	--	--	--	0.0870	--	0.0350	--	--	0.1240
LEAD	mg/l	0.04	--	--	< 0.0610	--	< 0.0610	--	--	< 0.0610
MERCURY	mg/l	< 0.0002	--	--	< 0.0010	--	< 0.0010	--	--	< 0.0010
NICKEL	mg/l	--	--	--	< 0.0120	--	< 0.0120	--	--	< 0.0120
SELENIUM	mg/l	< 0.002	--	--	0.0030	--	0.0040	--	--	0.0030
SILVER	mg/l	0.01	--	--	< 0.0070	--	< 0.0070	--	--	< 0.0070
ZINC	mg/l	0.240	--	--	< 0.004	--	0.010	--	--	0.007
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	< 0.0010	--	--	--	--	--	< 0.0001	--	--
AROCHLOR 1016(F)	mg/l	< 0.0001 F	--	--	--	--	--	< 0.0010 F	--	--
AROCHLOR 1221	mg/l	< 0.0010	--	--	--	--	--	< 0.0005	--	--
AROCHLOR 1221(F)	mg/l	< 0.0001 F	--	--	--	--	--	< 0.0010 F	--	--
AROCHLOR 1232	mg/l	< 0.0010	--	--	--	--	--	< 0.0005	--	--
AROCHLOR 1232(F)	mg/l	< 0.0001 F	--	--	--	--	--	< 0.0010 F	--	--
AROCHLOR 1242	mg/l	< 0.0010	--	--	--	--	--	< 0.0001	--	--
AROCHLOR 1242(F)	mg/l	< 0.0001 F	--	--	--	--	--	< 0.0010 F	--	--
AROCHLOR 1248	mg/l	< 0.0010	--	--	--	--	--	< 0.0001	--	--
AROCHLOR 1248(F)	mg/l	< 0.0001 F	--	--	--	--	--	< 0.0010 F	--	--
AROCHLOR 1254	mg/l	< 0.0010	--	--	--	--	--	< 0.0001	--	--
AROCHLOR 1254(F)	mg/l	< 0.0001 F	--	--	--	--	--	< 0.0010 F	--	--
AROCHLOR 1260	mg/l	< 0.0010	--	--	--	--	--	< 0.0001	--	--
AROCHLOR 1260(F)	mg/l	< 0.0001 F	--	--	--	--	--	< 0.0010 F	--	--
AROCHLOR 1262	mg/l	< 0.0010	--	--	--	--	--	--	--	--
AROCHLOR 1262(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-16 02/28/91	MW-16 03/18/91	MW-17 08/29/86	MW-17 12/03/86	MW-18 08/29/86	MW-18 12/03/86	MW-18 03/29/88	MW-19 08/29/86	MW-19 12/03/86
PESTICIDES/PCBs										
AROCHLOR 1268	mg/l	< 0.0010	--	--	--	--	--	--	--	--
AROCHLOR 1268(F)	mg/l	< 0.0001 F	--	--	--	--	--	--	--	--
PCB	mg/l	--	--	0.0470	0.0021	< 0.0005	0.0011	--	< 0.0005	0.0303
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	< 5	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	< 5	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	ug/l	--	< 5	--	--	--	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	< 5	--	--	--	--	--	--	--
1,2-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	< 5	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	< 5	--	--	--	--	--	--	--
1,3-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
1,4-DICHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	< 5	--	--	--	--	--	--	--
BENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	ug/l	--	< 5	--	--	--	--	--	--	--
BROMOFORM	ug/l	--	< 5	--	--	--	--	--	--	--
BROMOMETHANE	ug/l	--	< 10	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	< 5	--	--	--	--	--	--	--
CHLOROBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
CHLOROETHANE	ug/l	--	< 10	--	--	--	--	--	--	--
CHLOROFORM	ug/l	--	< 5	--	--	--	--	--	--	--
CHLOROMETHANE	ug/l	--	< 10	--	--	--	--	--	--	--
CIS-1,2-DICHLOROETHENE	ug/l	--	< 5	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	< 5	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	--	< 5	--	--	--	--	--	--	--
ETHYLBENZENE	ug/l	--	< 5	--	--	--	--	--	--	--
METHYLENE CHLORIDE	ug/l	--	< 5	--	--	--	--	--	--	--
STYRENE	ug/l	--	< 5	--	--	--	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	< 5	--	--	--	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-16 02/28/91	MW-16 03/18/91	MW-17 08/29/86	MW-17 12/03/86	MW-18 08/29/86	MW-18 12/03/86	MW-18 03/29/88	MW-19 08/29/86	MW-19 12/03/86
VOLATILE ORGANICS										
TOLUENE	ug/l	--	< 5	--	--	--	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	< 5	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	< 5	--	--	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	< 5	--	--	--	--	--	--	--
TRICHLOROFLUOROMETHANE	ug/l	--	< 10	--	--	--	--	--	--	--
VINYL CHLORIDE	ug/l	--	< 10	--	--	--	--	--	--	--
XYLENE ORTHO	ug/l	--	< 5	--	--	--	--	--	--	--
XYLENE PARA & META	ug/l	--	< 5	--	--	--	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-19 03/29/88	MW-2 10/16/85	M-2 12/03/85	MW-2 05/19/86	MW-2 08/20/86	MW-2 08/22/86	MW-2 12/03/86	MW-2 05/27/87	MW-3 10/16/85
METALS										
ARSENIC	mg/l	--	< 0.01	--	--	--	--	0.0030	--	< 0.01
BARIUM	mg/l	--	0.074	--	--	--	0.0820	0.1090	--	< 0.05
CADMIUM	mg/l	--	< 0.01	--	--	--	< 0.0020	< 0.0020	--	< 0.01
CHROMIUM	mg/l	--	< 0.05	--	--	--	< 0.0120	< 0.0120	--	< 0.05
CONDUCTIVITY	umhos/cm	--	817	--	--	--	--	--	--	951
COPPER	mg/l	--	< 0.02	--	--	--	< 0.0070	< 0.0070	--	0.02
CYANIDE	mg/l	--	< 0.0200	--	--	--	< 0.02	--	--	< 0.0200
IRON	mg/l	--	--	--	--	--	0.0700	0.0380	--	--
LEAD	mg/l	--	< 0.005	--	--	--	< 0.0070	< 0.0610	--	< 0.005
MERCURY	mg/l	--	< 0.0004	--	--	--	< 0.0002	< 0.0010	--	< 0.0004
NICKEL	mg/l	--	< 0.04	--	--	--	0.0190	< 0.0120	--	< 0.04
PH		--	7.73	--	--	--	--	--	--	6.76
SELENIUM	mg/l	--	--	--	--	--	0.0050	< 0.0030	--	--
SILVER	mg/l	--	--	--	--	--	< 0.0070	< 0.0070	--	--
TDS	mg/l	--	518	--	--	--	--	--	--	612
ZINC	mg/l	--	1.4	--	--	--	1.1400	1.76	--	0.21
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1016(F)	mg/l	< 0.0010 F	--	--	--	--	--	--	--	--
AROCHLOR 1221	mg/l	< 0.0005	--	--	--	--	--	--	--	--
AROCHLOR 1221(F)	mg/l	< 0.0010 F	--	--	--	--	--	--	--	--
AROCHLOR 1232	mg/l	< 0.0005	--	--	--	--	--	--	--	--
AROCHLOR 1232(F)	mg/l	< 0.0010 F	--	--	--	--	--	--	--	--
AROCHLOR 1242	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1242(F)	mg/l	< 0.0010 F	--	--	--	--	--	--	--	--
AROCHLOR 1248	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1248(F)	mg/l	< 0.0010 F	--	--	--	--	--	--	--	--
AROCHLOR 1254	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1254(F)	mg/l	< 0.0010 F	--	--	--	--	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-19 03/29/88	MW-2 10/16/85	M-2 12/03/85	MW-2 05/19/86	MW-2 08/20/86	MW-2 08/22/86	MW-2 12/03/86	MW-2 05/27/87	MW-3 10/16/85
PESTICIDES/PCBs										
AROCHLOR 1260	mg/l	< 0.0001	--	--	--	--	--	--	--	--
AROCHLOR 1260(F)	mg/l	< 0.0010 F	--	--	--	--	--	--	--	--
PCB	mg/l	--	0.0018	--	--	0.0003	--	0.0214	0.0503	0.0043
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	--	--	< 5	< 5	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	--	--	< 5	< 5	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	--	--	--	< 5	< 5	--	--	--	--
1,1-DICHLOROETHANE	ug/l	--	--	--	< 5	< 5	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	--	--	< 5	< 5	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	--	--	< 5	< 5	--	--	--	--
2-BUTANONE	ug/l	--	--	--	< 10	< 10	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	--	--	< 10	< 10	--	--	--	--
2-HEXANONE	ug/l	--	--	--	< 10	< 10	--	--	--	--
4-METHYL-2-PENTANONE	ug/l	--	--	--	< 10	< 10	--	--	--	--
ACETONE	ug/l	--	--	--	< 10	< 10	--	--	--	--
ACROLEIN	ug/l	--	--	--	< 10	< 10	--	--	--	--
ACRYLONITRILE	ug/l	--	--	--	< 10	< 10	--	--	--	--
BENZENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
BROMODICHLOROMETHANE	ug/l	--	--	--	< 5	< 5	--	--	--	--
BROMOFORM	ug/l	--	--	--	< 5	< 5	--	--	--	--
BROMOMETHANE	ug/l	--	--	--	< 10	< 10	--	--	--	--
CARBON DISULFIDE	ug/l	--	--	--	< 5	< 5	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	--	--	< 5	< 5	--	--	--	--
CHLOROBENZENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
CHLOROETHANE	ug/l	--	--	--	< 10	< 10	--	--	--	--
CHLOROFORM	ug/l	--	--	--	< 5	< 5	--	--	--	--
CHLOROMETHANE	ug/l	--	--	--	< 10	< 10	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	--	--	--	< 5	< 5	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-19 03/29/88	MW-2 10/16/85	M-2 12/03/85	MW-2 05/19/86	MW-2 08/20/86	MW-2 08/22/86	MW-2 12/03/86	MW-2 05/27/87	MW-3 10/16/85
VOLATILE ORGANICS										
ETHYLBENZENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
METHYLENE CHLORIDE	ug/l	--	--	--	11	< 5	--	--	--	--
STYRENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
TOLUENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
TRANS-1,2-DICHLOROPROPENE	ug/l	--	--	--	--	< 5	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	--	--	< 5	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	--	--	< 5	< 5	--	--	--	--
VINYL ACETATE	ug/l	--	--	--	< 10	< 10	--	--	--	--
VINYL CHLORIDE	ug/l	--	--	--	< 10	< 10	--	--	--	--
XYLENE, TOTAL	ug/l	--	--	--	< 5	< 5	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-3 12/03/85	MW-3 08/20/86	MW-3 08/22/86	MW-3 11/27/86	MW-3 12/03/86	MW-3 05/27/87	MW-3 03/29/88	MW-3 06/07/88	MW-3 10/04/88
METALS										
ARSENIC	mg/l	--	--	--	--	< 0.0030	--	--	--	--
BARIUM	mg/l	--	--	0.0034	--	0.0390	--	--	--	--
CADMIUM	mg/l	--	--	< 0.0020	--	< 0.0020	--	--	--	--
CHROMIUM	mg/l	--	--	< 0.0120	--	< 0.0120	--	--	--	--
COPPER	mg/l	--	--	< 0.0070	--	< 0.0070	--	--	--	--
CYANIDE	mg/l	--	--	< 0.02	--	< 0.02	--	--	--	--
IRON	mg/l	--	--	0.1610	--	0.1400	--	--	--	--
LEAD	mg/l	--	--	0.0070	--	< 0.0610	--	--	--	--
MERCURY	mg/l	--	--	< 0.0002	--	< 0.0010	--	--	--	--
NICKEL	mg/l	--	--	0.0120	--	< 0.0120	--	--	--	--
SELENIUM	mg/l	--	--	< 0.0040	--	< 0.0030	--	--	--	--
SILVER	mg/l	--	--	< 0.0070	--	< 0.0070	--	--	--	--
ZINC	mg/l	--	--	0.4560	--	0.270	--	--	--	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	--
AROCHLOR 1016(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	--
AROCHLOR 1221	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	--
AROCHLOR 1221(F)	mg/l	--	--	--	--	--	--	--	< 0.0010 F	--
AROCHLOR 1232	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	--
AROCHLOR 1232(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	--
AROCHLOR 1242	mg/l	--	--	--	--	--	--	0.0013	0.0076	0.0001
AROCHLOR 1242(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	< 0.0002 F
AROCHLOR 1248	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	< 0.0001
AROCHLOR 1248(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	< 0.0001 F
AROCHLOR 1254	mg/l	--	--	--	--	--	--	< 0.0010	0.0032	< 0.0001
AROCHLOR 1254(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	< 0.0001 F
AROCHLOR 1260	mg/l	--	--	--	--	--	--	< 0.0010	< 0.0010	< 0.0001
AROCHLOR 1260(F)	mg/l	--	--	--	--	--	--	--	< 0.0001 F	< 0.0001 F
PCB	mg/l	< 0.001	< 0.0001	--	--	0.0014	0.0001	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-3 12/03/85	MW-3 08/20/86	MW-3 08/22/86	MW-3 11/27/86	MW-3 12/03/86	MW-3 05/27/87	MW-3 03/29/88	MW-3 06/07/88	MW-3 10/04/88
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	< 5	--	< 5	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	< 5	--	< 5	--	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	--	< 5	--	< 5	--	--	--	--	--
1,1-DICHLOROETHANE	ug/l	--	< 5	--	46	--	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	< 5	--	< 5	--	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	< 5	--	< 5	--	--	--	--	--
2-BUTANONE	ug/l	--	< 10	--	< 10	--	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	--	< 10	--	< 10	--	--	--	--	--
2-HEXANONE	ug/l	--	< 10	--	< 10	--	--	--	--	--
4-METHYL-2-PENTANONE	ug/l	--	< 10	--	< 10	--	--	--	--	--
ACETONE	ug/l	--	< 10	--	< 10	--	--	--	--	--
ACROLEIN	ug/l	--	< 10	--	< 10	--	--	--	--	--
ACRYLONITRILE	ug/l	--	< 10	--	< 10	--	--	--	--	--
BENZENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
BROMODICHLOROMETHANE	ug/l	--	< 5	--	< 5	--	--	--	--	--
BROMOFORM	ug/l	--	< 5	--	< 5	--	--	--	--	--
BROMOMETHANE	ug/l	--	< 10	--	< 10	--	--	--	--	--
CARBON DISULFIDE	ug/l	--	< 5	--	< 5	--	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	< 5	--	< 5	--	--	--	--	--
CHLOROBENZENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
CHLOROETHANE	ug/l	--	< 10	--	120	--	--	--	--	--
CHLOROFORM	ug/l	--	< 5	--	< 5	--	--	--	--	--
CHLOROMETHANE	ug/l	--	< 10	--	< 10	--	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	--	< 5	--	< 5	--	--	--	--	--
ETHYLBENZENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
METHYLENE CHLORIDE	ug/l	--	< 5	--	< 5	--	--	--	--	--
STYRENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
TOLUENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	< 5	--	26	--	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-3 12/03/85	MW-3 08/20/86	MW-3 08/22/86	MW-3 11/27/86	MW-3 12/03/86	MW-3 05/27/87	MW-3 03/29/88	MW-3 06/07/88	MW-3 10/04/88
VOLATILE ORGANICS										
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	< 5	--	< 5	--	--	--	--	--
VINYL ACETATE	ug/l	--	< 10	--	< 10	--	--	--	--	--
VINYL CHLORIDE	ug/l	--	< 10	--	150	--	--	--	--	--
XYLENE, TOTAL	ug/l	--	< 5	--	< 5	--	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-4 10/16/85	MW-4 12/03/85	MW-4 05/19/86	MW-4 08/20/86	MW-4 08/22/86	MW-4 12/03/86	MW-4 05/27/87	MW-5 10/16/85	MW-5 12/03/85
METALS										
ARSENIC	mg/l	< 0.01	--	--	--	--	< 0.0030	--	0.012	--
BARIUM	mg/l	0.156	--	--	--	0.1590	0.1320	--	0.056	--
CADMIUM	mg/l	< 0.01	--	--	--	< 0.0020	< 0.0020	--	< 0.01	--
CHROMIUM	mg/l	< 0.05	--	--	--	< 0.0120	< 0.0120	--	< 0.05	--
CONDUCTIVITY	umhos/cm	1709	--	--	--	--	--	--	1085	--
COPPER	mg/l	< 0.02	--	--	--	< 0.0070	< 0.0070	--	< 0.02	--
CYANIDE	mg/l	< 0.0200	--	--	--	< 0.02	--	--	< 0.0200	--
IRON	mg/l	--	--	--	--	0.1750	0.5460	--	--	--
LEAD	mg/l	< 0.005	--	--	--	< 0.0070	< 0.0610	--	< 0.005	--
MERCURY	mg/l	< 0.0004	--	--	--	< 0.0002	< 0.0010	--	< 0.0004	--
NICKEL	mg/l	0.05	--	--	--	0.1760	0.0120	--	< 0.04	--
PH		7.02	--	--	--	--	--	--	7.57	--
SELENIUM	mg/l	--	--	--	--	0.0150	0.0030	--	--	--
SILVER	mg/l	--	--	--	--	< 0.0070	< 0.0070	--	--	--
TDS	mg/l	1854	--	--	--	--	--	--	778	--
ZINC	mg/l	12.6	--	--	--	0.0316	25.8	--	0.12	--
PESTICIDES/PCBs										
PCB	mg/l	0.0003	< 0.001	--	0.0002	--	0.0057	0.0013	0.0126	0.0079
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	--	--	< 5	< 5	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	--	--	< 5	< 5	--	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	--	--	< 5	< 5	--	--	--	--	--
1,1-DICHLOROETHANE	ug/l	--	--	< 5	< 5	--	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
1,2-DICHLOROETHANE	ug/l	--	--	< 5	< 5	--	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	--	--	< 5	< 5	--	--	--	--	--
2-BUTANONE	ug/l	--	--	< 10	< 10	--	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-4 10/16/85	MW-4 12/03/85	MW-4 05/19/86	MW-4 08/20/86	MW-4 08/22/86	MW-4 12/03/86	MW-4 05/27/87	MW-5 10/16/85	MW-5 12/03/85
VOLATILE ORGANICS										
2-CHLOROETHYLVINYLETHER	ug/l	--	--	< 10	< 10	--	--	--	--	--
2-HEXANONE	ug/l	--	--	< 10	< 10	--	--	--	--	--
4-METHYL-2-PENTANONE	ug/l	--	--	< 10	< 10	--	--	--	--	--
ACETONE	ug/l	--	--	< 10	< 10	--	--	--	--	--
ACROLEIN	ug/l	--	--	< 10	< 10	--	--	--	--	--
ACRYLONITRILE	ug/l	--	--	< 10	< 10	--	--	--	--	--
BENZENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
BROMODICHLOROMETHANE	ug/l	--	--	< 5	< 5	--	--	--	--	--
BROMOFORM	ug/l	--	--	< 5	< 5	--	--	--	--	--
BROMOMETHANE	ug/l	--	--	< 10	< 10	--	--	--	--	--
CARBON DISULFIDE	ug/l	--	--	< 5	< 5	--	--	--	--	--
CARBON TETRACHLORIDE	ug/l	--	--	< 5	< 5	--	--	--	--	--
CHLOROBENZENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
CHLOROETHANE	ug/l	--	--	< 10	< 10	--	--	--	--	--
CHLOROFORM	ug/l	--	--	< 5	< 5	--	--	--	--	--
CHLOROMETHANE	ug/l	--	--	< 10	< 10	--	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	--	--	< 5	< 5	--	--	--	--	--
ETHYLBENZENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
METHYLENE CHLORIDE	ug/l	--	--	13	< 5	--	--	--	--	--
STYRENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
TETRACHLOROETHYLENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
TOLUENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	--	--	< 5	5	--	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	--	--	< 5	< 5	--	--	--	--	--
VINYL ACETATE	ug/l	--	--	< 10	< 10	--	--	--	--	--
VINYL CHLORIDE	ug/l	--	--	< 10	7 J	--	--	--	--	--
XYLENE, TOTAL	ug/l	--	--	< 5	< 5	--	--	--	--	--

LEGEND:

F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-5 05/19/86	MW-5 08/20/86	MW-5 08/22/86	MW-5 12/03/86	MW-5 05/27/87	MW-5 03/29/88	MW-5 06/07/88	MW-6 10/16/85	MW-6 12/03/85
METALS										
ARSENIC	mg/l	--	--	--	< 0.0030	--	--	--	< 0.01	--
BARIUM	mg/l	--	--	0.1000	0.1470	--	--	--	0.249	--
CADMIUM	mg/l	--	--	< 0.0020	< 0.0020	--	--	--	< 0.01	--
CHROMIUM	mg/l	--	--	< 0.0120	< 0.0120	--	--	--	< 0.05	--
CONDUCTIVITY	umhos/cm	--	--	--	--	--	--	--	817	--
COPPER	mg/l	--	--	< 0.0070	< 0.0070	--	--	--	0.02	--
CYANIDE	mg/l	--	--	< 0.02	--	--	--	--	< 0.0200	--
IRON	mg/l	--	--	0.0580	0.0630	--	--	--	--	--
LEAD	mg/l	--	--	< 0.0070	< 0.0610	--	--	--	0.005	--
MERCURY	mg/l	--	--	< 0.0002	< 0.0010	--	--	--	< 0.0004	--
NICKEL	mg/l	--	--	< 0.0120	< 0.0120	--	--	--	< 0.04	--
PH		--	--	--	--	--	--	--	7.54	--
SELENIUM	mg/l	--	--	0.0130	0.0030	--	--	--	--	--
SILVER	mg/l	--	--	< 0.0070	< 0.0070	--	--	--	--	--
TDS	mg/l	--	--	--	--	--	--	--	484	--
ZINC	mg/l	--	--	4.1500	14.7	--	--	--	0.2	--
PESTICIDES/PCBs										
AROCHLOR 1016	mg/l	--	--	--	--	--	< 0.0010	< 0.0010	--	--
AROCHLOR 1016(F)	mg/l	--	--	--	--	--	--	< 0.0001 F	--	--
AROCHLOR 1221	mg/l	--	--	--	--	--	< 0.0010	< 0.0010	--	--
AROCHLOR 1221(F)	mg/l	--	--	--	--	--	--	< 0.0001 F	--	--
AROCHLOR 1232	mg/l	--	--	--	--	--	< 0.0010	< 0.0010	--	--
AROCHLOR 1232(F)	mg/l	--	--	--	--	--	--	< 0.0001 F	--	--
AROCHLOR 1242	mg/l	--	--	--	--	--	< 0.0010	0.0370	--	--
AROCHLOR 1242(F)	mg/l	--	--	--	--	--	--	< 0.0001 F	--	--
AROCHLOR 1248	mg/l	--	--	--	--	--	< 0.0010	< 0.0010	--	--
AROCHLOR 1248(F)	mg/l	--	--	--	--	--	--	< 0.0001 F	--	--
AROCHLOR 1254	mg/l	--	--	--	--	--	< 0.0010	0.0120	--	--
AROCHLOR 1254(F)	mg/l	--	--	--	--	--	--	< 0.0001 F	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-5 05/19/86	MW-5 08/20/86	MW-5 08/22/86	MW-5 12/03/86	MW-5 05/27/87	MW-5 03/29/88	MW-5 06/07/88	MW-6 10/16/85	MW-6 12/03/85
PESTICIDES/PCBs										
AROCHLOR 1260	mg/l	--	--	--	--	--	< 0.0010	< 0.0010	--	--
AROCHLOR 1260(F)	mg/l	--	--	--	--	--	--	< 0.0001 F	--	--
PCB	mg/l	--	0.0007	--	0.0096	0.0026	--	--	0.0044	0.0099
VOLATILE ORGANICS										
1,1,1-TRICHLOROETHANE	ug/l	< 5	< 5	--	--	--	--	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	< 5	< 5	--	--	--	--	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	< 5	< 5	--	--	--	--	--	--	--
1,1-DICHLOROETHANE	ug/l	< 5	< 5	--	--	--	--	--	--	--
1,1-DICHLOROETHYLENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
1,2-DICHLOROETHANE	ug/l	< 5	< 5	--	--	--	--	--	--	--
1,2-DICHLOROPROPANE	ug/l	< 5	< 5	--	--	--	--	--	--	--
2-BUTANONE	ug/l	< 10	< 10	--	--	--	--	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	< 10	< 10	--	--	--	--	--	--	--
2-HEXANONE	ug/l	< 10	< 10	--	--	--	--	--	--	--
4-METHYL-2-PENTANONE	ug/l	< 10	< 10	--	--	--	--	--	--	--
ACETONE	ug/l	< 10	< 10	--	--	--	--	--	--	--
ACROLEIN	ug/l	< 10	< 10	--	--	--	--	--	--	--
ACRYLONITRILE	ug/l	< 10	< 10	--	--	--	--	--	--	--
BENZENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
BROMODICHLOROMETHANE	ug/l	< 5	< 5	--	--	--	--	--	--	--
BROMOFORM	ug/l	< 5	< 5	--	--	--	--	--	--	--
BROMOMETHANE	ug/l	< 10	< 10	--	--	--	--	--	--	--
CARBON DISULFIDE	ug/l	< 5	< 5	--	--	--	--	--	--	--
CARBON TETRACHLORIDE	ug/l	< 5	< 5	--	--	--	--	--	--	--
CHLOROBENZENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
CHLOROETHANE	ug/l	< 10	< 10	--	--	--	--	--	--	--
CHLOROFORM	ug/l	< 5	< 5	--	--	--	--	--	--	--
CHLOROMETHANE	ug/l	< 10	< 10	--	--	--	--	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
DIBROMOCHLOROMETHANE	ug/l	< 5	< 5	--	--	--	--	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-5 05/19/86	MW-5 08/20/86	MW-5 08/22/86	MW-5 12/03/86	MW-5 05/27/87	MW-5 03/29/88	MW-5 06/07/88	MW-6 10/16/85	MW-6 12/03/85
VOLATILE ORGANICS										
ETHYLBENZENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
METHYLENE CHLORIDE	ug/l	99	< 5	--	--	--	--	--	--	--
STYRENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
TETRACHLOROETHYLENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
TOLUENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	< 5	37	--	--	--	--	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
TRICHLOROETHYLENE	ug/l	< 5	< 5	--	--	--	--	--	--	--
VINYL ACETATE	ug/l	< 10	< 10	--	--	--	--	--	--	--
VINYL CHLORIDE	ug/l	< 10	70	--	--	--	--	--	--	--
XYLENE, TOTAL	ug/l	< 5	< 5	--	--	--	--	--	--	--

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-6 05/19/86	MW-6 08/20/86	MW-6 08/22/86	MW-6 12/03/86	MW-6 05/27/87
METALS						
ARSENIC	mg/l	--	--	--	< 0.0030	--
BARIUM	mg/l	--	--	0.1690	0.1960	--
CADMIUM	mg/l	--	--	< 0.0020	< 0.0020	--
CHROMIUM	mg/l	--	--	< 0.0120	< 0.0120	--
COPPER	mg/l	--	--	< 0.0070	< 0.0070	--
CYANIDE	mg/l	--	--	< 0.02	--	--
IRON	mg/l	--	--	0.0490	0.0520	--
LEAD	mg/l	--	--	< 0.0070	< 0.0610	--
MERCURY	mg/l	--	--	< 0.0002	< 0.0010	--
NICKEL	mg/l	--	--	< 0.0120	< 0.0120	--
SELENIUM	mg/l	--	--	0.0090	< 0.0030	--
SILVER	mg/l	--	--	< 0.0070	< 0.0070	--
ZINC	mg/l	--	--	0.1670	0.414	--
PESTICIDES/PCBs						
PCB	mg/l	--	0.0020	--	0.0088	0.0052
VOLATILE ORGANICS						
1,1,1-TRICHLOROETHANE	ug/l	< 5	< 5	--	--	--
1,1,2,2-TETRACHLOROETHANE	ug/l	< 5	< 5	--	--	--
1,1,2-TRICHLOROETHANE	ug/l	< 5	< 5	--	--	--
1,1-DICHLOROETHANE	ug/l	< 5	< 5	--	--	--
1,1-DICHLOROETHYLENE	ug/l	< 5	< 5	--	--	--
1,2-DICHLOROETHANE	ug/l	< 5	< 5	--	--	--
1,2-DICHLOROPROPANE	ug/l	< 5	< 5	--	--	--
2-BUTANONE	ug/l	< 10	< 10	--	--	--
2-CHLOROETHYLVINYLETHER	ug/l	< 10	< 10	--	--	--
2-HEXANONE	ug/l	< 10	< 10	--	--	--
4-METHYL-2-PENTANONE	ug/l	< 10	< 10	--	--	--

Historical Analytical Results
Lagoon Area - Groundwater Samples

COMPOUND (by Class)	UNITS	MW-6 05/19/86	MW-6 08/20/86	MW-6 08/22/86	MW-6 12/03/86	MW-6 05/27/87
VOLATILE ORGANICS						
ACETONE	ug/l	< 10	< 10	--	--	--
ACROLEIN	ug/l	< 10	< 10	--	--	--
ACRYLONITRILE	ug/l	< 10	< 10	--	--	--
BENZENE	ug/l	< 5	< 5	--	--	--
BROMODICHLOROMETHANE	ug/l	< 5	< 5	--	--	--
BROMOFORM	ug/l	< 5	< 5	--	--	--
BROMOMETHANE	ug/l	< 10	< 10	--	--	--
CARBON DISULFIDE	ug/l	< 5	< 5	--	--	--
CARBON TETRACHLORIDE	ug/l	< 5	< 5	--	--	--
CHLOROBENZENE	ug/l	< 5	< 5	--	--	--
CHLOROETHANE	ug/l	< 10	< 10	--	--	--
CHLOROFORM	ug/l	< 5	< 5	--	--	--
CHLOROMETHANE	ug/l	< 10	< 10	--	--	--
CIS-1,3-DICHLOROPROPYLENE	ug/l	< 5	< 5	--	--	--
DIBROMOCHLOROMETHANE	ug/l	< 5	< 5	--	--	--
ETHYLBENZENE	ug/l	< 5	< 5	--	--	--
METHYLENE CHLORIDE	ug/l	14	< 5	--	--	--
STYRENE	ug/l	< 5	< 5	--	--	--
TETRACHLOROETHYLENE	ug/l	< 5	< 5	--	--	--
TOLUENE	ug/l	< 5	< 5	--	--	--
TRANS-1,2-DICHLOROETHYLENE	ug/l	< 5	< 5	--	--	--
TRANS-1,3-DICHLOROPROPYLENE	ug/l	< 5	< 5	--	--	--
TRICHLOROETHYLENE	ug/l	< 5	< 5	--	--	--
VINYL ACETATE	ug/l	< 10	< 10	--	--	--
VINYL CHLORIDE	ug/l	< 10	< 10	--	--	--
XYLENE, TOTAL	ug/l	< 5	< 5	--	--	--

LEGEND: F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

SA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (a)

Location	Sampling Date	Analyses
12C000575	10/16/87	PCBs
12C0005CM	10/16/87	PCBs
12C0510CM	10/16/87	PCBs
12C101575	10/16/87	PCBs
12C1015CM	10/16/87	PCBs
12C1520CM	10/16/87	PCBs
12L000575	10/13/87	PCBs
12L0005CM	10/15/87	PCBs
12L0510CM	10/15/87	PCBs
12L101575	10/13/87	PCBs
12L1015CM	10/15/87	PCBs
12L1520CM	10/15/87	PCBs
12L202575	10/13/87	PCBs
12L2025CM	10/15/87	PCBs
12L2530CM	10/15/87	PCBs
12L303575	10/13/87	PCBs
12L3035CM	10/15/87	PCBs
12L3540CM	10/15/87	PCBs
12R000575	10/14/87	PCBs
12R0005CM	10/14/87	PCBs
12R0510CM	10/14/87	PCBs
12R1015CM	10/14/87	PCBs
12R1520CM	10/14/87	PCBs
12R2025CM	10/14/87	PCBs
12R2530CM	10/14/87	PCBs
12R3035CM	10/14/87	PCBs
12R3540CM	10/14/87	PCBs
16C000575	10/16/87	PCBs
16C0005CM	10/16/87	PCBs
16C0510CM	10/16/87	PCBs
16C101575	10/16/87	PCBs
16C1015CM	10/16/87	PCBs
16C1520CM	10/16/87	PCBs
16L000575	10/14/87	PCBs
16L0005CM	10/14/87	PCBs
16L0510CM	10/14/87	PCBs
16L101575	10/14/87	PCBs
16L1015CM	10/14/87	PCBs
16L1520CM	10/14/87	PCBs
16L202575	10/14/87	PCBs
16L2025CM	10/14/87	PCBs
16L2530CM	10/14/87	PCBs
16L303575	10/14/87	PCBs
16L3035CM	10/14/87	PCBs
16L3540CM	10/14/87	PCBs
16R000575	10/14/87	PCBs
16R0005CM	10/14/87	PCBs

SA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (b)

Location	Sampling Date	Analyses
16R0510CM	10/14/87	PCBs
16R101575	10/14/87	PCBs
16R1015CM	10/14/87	PCBs
16R1520CM	10/14/87	PCBs
16R202575	10/14/87	PCBs
16R2025CM	10/14/87	PCBs
16R2530CM	10/14/87	PCBs
16R303575	10/14/87	PCBs
16R3035CM	10/14/87	PCBs
16R3540CM	10/14/87	PCBs
18000575	10/12/87	PCBs
180005CM	10/12/87	PCBs
180510CM	10/12/87	PCBs
181015CM	10/12/87	PCBs
181520CM	10/12/87	PCBs
182025CM	10/12/87	PCBs
182530CM	10/12/87	PCBs
18303575	10/12/87	PCBs
183035CM	10/12/87	PCBs
183540CM	10/12/87	PCBs
190005CM	10/12/87	PCBs
190510CM	10/12/87	PCBs
19101575	10/12/87	PCBs
191015CM	10/12/87	PCBs
191520CM	10/12/87	PCBs
19202575	10/12/87	PCBs
192025CM	10/12/87	PCBs
192530CM	10/12/87	PCBs
19303575	10/12/87	PCBs
193035CM	10/12/87	PCBs
193540CM	10/12/87	PCBs
22000575	10/16/87	PCBs
220005CM	10/16/87	PCBs
220510CM	10/16/87	PCBs
22101575	10/16/87	PCBs
221015CM	10/16/87	PCBs
221520CM	10/16/87	PCBs
22202575	10/16/87	PCBs
222025CM	10/16/87	PCBs
222530CM	10/16/87	PCBs
22303575	10/16/87	PCBs
223035CM	10/16/87	PCBs
223540CM	10/16/87	PCBs
3AC000575	10/15/87	PCBs
3AC0005CM	10/15/87	PCBs
3AC0510CM	10/15/87	PCBs
3AC1015CM	10/15/87	PCBs

SA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (c)

Location	Sampling Date	Analyses
3AC1520CM	10/15/87	PCBs
3AL000575	10/16/87	PCBs
3AL0005CM	10/16/87	PCBs
3AL0510CM	10/16/87	PCBs
3AL101575	10/16/87	PCBs
3AL1015CM	10/16/87	PCBs
3AL1520CM	10/16/87	PCBs
3AL202575	10/16/87	PCBs
3AL2025CM	10/16/87	PCBs
3AL2530CM	10/16/87	PCBs
3AL303575	10/16/87	PCBs
3AL3035CM	10/16/87	PCBs
3AL3540CM	10/16/87	PCBs
3AR000575	10/15/87	PCBs
3AR0005CM	10/15/87	PCBs
3AR0510CM	10/15/87	PCBs
3AR101575	10/15/87	PCBs
3AR1015CM	10/15/87	PCBs
3AR1520CM	10/15/87	PCBs
3AR202575	10/15/87	PCBs
3AR2025CM	10/15/87	PCBs
3AR2530CM	10/15/87	PCBs
3AR303575	10/15/87	PCBs
3AR3035CM	10/15/87	PCBs
3AR3540CM	10/15/87	PCBs
4C000575	10/15/87	PCBs
4C0005CM	10/15/87	PCBs
4C0510CM	10/15/87	PCBs
4C101575	10/15/87	PCBs
4C1015CM	10/15/87	PCBs
4C1520CM	10/15/87	PCBs
4L000575	10/11/87	PCBs
4L0005CM	10/11/87	PCBs
4L0510CM	10/11/87	PCBs
4L101575	10/11/87	PCBs
4L1015CM	10/11/87	PCBs
4L1520CM	10/11/87	PCBs
4L202575	10/11/87	PCBs
4L2025CM	10/11/87	PCBs
4L2530CM	10/11/87	PCBs
4L303575	10/11/87	PCBs
4L3035CM	10/11/87	PCBs
4L3540CM	10/11/87	PCBs
4R000575	10/12/87	PCBs
4R0005CM	10/12/87	PCBs
4R0510CM	10/12/87	PCBs
4R101575	10/12/87	PCBs

SA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (d)

Location	Sampling Date	Analyses
4R1015CM	10/12/87	PCBs
4R1520CM	10/12/87	PCBs
4R202575	10/12/87	PCBs
4R2025CM	10/12/87	PCBs
4R2530CM	10/12/87	PCBs
4R303575	10/12/87	PCBs
4R3035CM	10/12/87	PCBs
4R3540CM	10/12/87	PCBs
5C0005CM	10/15/87	PCBs
5C0510CM	10/15/87	PCBs
5C1015CM	10/15/87	PCBs
5C1520CM	10/15/87	PCBs
5L000575	10/10/87	PCBs
5L0005CM	10/10/87	PCBs
5L0510CM	10/10/87	PCBs
5L101575	10/10/87	PCBs
5L1015CM	10/10/87	PCBs
5L1520CM	10/10/87	PCBs
5L202575	10/10/87	PCBs
5L2025CM	10/10/87	PCBs
5L2530CM	10/10/87	PCBs
5L303575	10/10/87	PCBs
5L3035CM	10/10/87	PCBs
5L3540CM	10/10/87	PCBs
5R0005CM	10/09/87	PCBs
5R0510CM	10/09/87	PCBs
5R101575	10/09/87	PCBs
5R1015CM	10/09/87	PCBs
5R1520CM	10/09/87	PCBs
5R2025CM	10/09/87	PCBs
5R2530CM	10/09/87	PCBs
5R3035CM	10/09/87	PCBs
5R3540CM	10/09/87	PCBs
7C000575	10/15/87	PCBs
7C0005CM	10/15/87	PCBs
7C0510CM	10/15/87	PCBs
7C101575	10/15/87	PCBs
7C1015CM	10/15/87	PCBs
7C1520CM	10/15/87	PCBs
7L000575	10/08/87	PCBs
7L0005CM	10/08/87	PCBs
7L0510CM	10/08/87	PCBs
7L101575	10/08/87	PCBs
7L1015CM	10/08/87	PCBs
7L1520CM	10/08/87	PCBs
7L202575	10/08/87	PCBs
7L2025CM	10/08/87	PCBs

SA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (e)

Location	Sampling Date	Analyses
7L2530CM	10/08/87	PCBs
7L303575	10/08/87	PCBs
7L3035CM	10/08/87	PCBs
7L3540CM	10/08/87	PCBs
7R000575	10/08/87	PCBs
7R0005CM	10/08/87	PCBs
7R0510CM	10/08/87	PCBs
7R101575	10/08/87	PCBs
7R1015CM	10/08/87	PCBs
7R1520CM	10/08/87	PCBs
7R202575	10/08/87	PCBs
7R2025CM	10/08/87	PCBs
7R2530CM	10/08/87	PCBs
7R303575	10/08/87	PCBs
7R3035CM	10/08/87	PCBs
7R3540CM	10/08/87	PCBs
8C000575	10/15/87	PCBs
8C0005CM	10/15/87	PCBs
8C0510CM	10/15/87	PCBs
8C101575	10/15/87	PCBs
8C1015CM	10/15/87	PCBs
8C1520CM	10/15/87	PCBs
8L000575	10/08/87	PCBs
8L0005CM	10/08/87	PCBs
8L0510CM	10/08/87	PCBs
8L101575	10/08/87	PCBs
8L1015CM	10/08/87	PCBs
8L1520CM	10/08/87	PCBs
8L202575	10/08/87	PCBs
8L2025CM	10/08/87	PCBs
8L2530CM	10/08/87	PCBs
8L303575	10/08/87	PCBs
8L3035CM	10/08/87	PCBs
8L3540CM	10/08/87	PCBs
8R000575	10/07/87	PCBs
8R0005CM	10/07/87	PCBs
8R0510CM	10/07/87	PCBs
8R101575	10/07/87	PCBs
8R1015CM	10/07/87	PCBs
8R1520CM	10/07/87	PCBs
8R202575	10/07/87	PCBs
8R2025CM	10/07/87	PCBs
8R2530CM	10/07/87	PCBs
8R303575	10/07/87	PCBs
8R3035CM	10/07/87	PCBs
8R3540CM	10/07/87	PCBs
9C000575	10/15/87	PCBs

SA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (f)

Location	Sampling Date	Analyses
9C0005CM	10/15/87	PCBs
9C0510CM	10/15/87	PCBs
9C101575	10/15/87	PCBs
9C1015CM	10/15/87	PCBs
9C1520CM	10/15/87	PCBs
9L0005CM	10/13/87	PCBs
9L0510CM	10/13/87	PCBs
9L101575	10/13/87	PCBs
9L1015CM	10/13/87	PCBs
9L1520CM	10/13/87	PCBs
9L2025CM	10/13/87	PCBs
9L2530CM	10/13/87	PCBs
9L303575	10/13/87	PCBs
9L3035CM	10/13/87	PCBs
9L3540CM	10/13/87	PCBs
9R000575	10/13/87	PCBs
9R0005CM	10/13/87	PCBs
9R0510CM	10/13/87	PCBs
9R101575	10/13/87	PCBs
9R1015CM	10/13/87	PCBs
9R1520CM	10/13/87	PCBs
9R202575	10/13/87	PCBs
9R2025CM	12/18/87	PCBs
9R2530CM	12/18/87	PCBs
9R303575	10/13/87	PCBs
9R3035CM	12/18/87	PCBs
9R3540CM	12/18/87	PCBs
GM1L0010	08/01/91	PCBs
GM1L1030	08/01/91	PCBs
GM1LDRED	08/01/91	PCBs
GM1R0010	08/01/91	PCBs
GM1R1030	08/01/91	PCBs
GM1RDRED	08/01/91	PCBs
GM2L0010	08/01/91	PCBs
GM2L1030	08/01/91	PCBs
GM2LDRED	08/01/91	PCBs
GM2R0010	08/01/91	PCBs
GM2R1030	08/01/91	PCBs
GM2RDRED	08/01/91	PCBs
GM3L0010	08/01/91	PCBs
GM3L1030	08/01/91	PCBs
GM3LDRED	08/01/91	PCBs
GM3R0010	08/01/91	PCBs
GM3R1030	08/01/91	PCBs
HQ10L0010	08/01/91	PCBs
HQ10L1030	08/01/91	PCBs
HQ10LDRED	08/01/91	PCBs

SA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (g)

Location	Sampling Date	Analyses
HQ10R0010	08/01/91	PCBs
HQ10R1030	08/01/91	PCBs
HQ10RDRED	08/01/91	PCBs
HQ4L0010	08/01/91	PCBs
HQ4L1030	08/01/91	PCBs
HQ4LDRED	08/01/91	PCBs
HQ4R0010	08/01/91	PCBs
HQ4R1030	08/01/91	PCBs
HQ4RDRED	08/01/91	PCBs
HQ5L0010	08/01/91	PCBs
HQ5L1030	08/01/91	PCBs
HQ5LDRED	08/01/91	PCBs
HQ5R0010	08/01/91	PCBs
HQ5R1030	08/01/91	PCBs
HQ5RDRED	08/01/91	PCBs
HQ6L0010	08/01/91	PCBs
HQ6L1030	08/01/91	PCBs
HQ6LDRED	08/01/91	PCBs
HQ6R0010	08/01/91	PCBs
HQ6R1030	08/01/91	PCBs
HQ6RDRED	08/01/91	PCBs
HQ7L0010	08/01/91	PCBs
HQ7L1030	08/01/91	PCBs
HQ7LDRED	08/01/91	PCBs
HQ7R0010	08/01/91	PCBs
HQ7R1030	08/01/91	PCBs
HQ7RDRED	08/01/91	PCBs
HQ8L0010	08/01/91	PCBs
HQ8L1030	08/01/91	PCBs
HQ8LDRED	08/01/91	PCBs
HQ8R0010	08/01/91	PCBs
HQ8R1030	08/01/91	PCBs
HQ8RDRED	08/01/91	PCBs
HQ9L0010	08/01/91	PCBs
HQ9L1030	08/01/91	PCBs
HQ9LDRED	08/01/91	PCBs
HQ9R0010	08/01/91	PCBs
HQ9R1030	08/01/91	PCBs
HQ9RDRED	08/01/91	PCBs
HQGLDRED	08/01/91	PCBs
HQGR0010	08/01/91	PCBs
HQGR1030	08/01/91	PCBs
HQGRDRED	08/01/91	PCBs
IN1L0010	08/01/91	PCBs
IN1L1030	08/01/91	PCBs
IN1LDRED	08/01/91	PCBs
IN2C0010	08/01/91	PCBs

SA Master Analytical Results Listing
Soils and Sludge

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (h)

Location	Sampling Date	Analyses
IN2C1030	08/01/91	PCBs
IN2CDRED	08/01/91	PCBs
IN2L0010	08/01/91	PCBs
IN2L1030	08/01/91	PCBs
IN2LDRED	08/01/91	PCBs
IN2R0010	08/01/91	PCBs
IN2R1030	08/01/91	PCBs
IN2RDRED	08/01/91	PCBs
IN3C0010	08/01/91	PCBs
IN3C1030	08/01/91	PCBs
IN3CDRED	08/01/91	PCBs
IN3L0010	08/01/91	PCBs
IN3L1030	08/01/91	PCBs
IN3LDRED	08/01/91	PCBs
IN3R0010	08/01/91	PCBs
IN3R1030	08/01/91	PCBs
IN3RDRED	08/01/91	PCBs
IN4C0010	08/01/91	PCBs
IN4C1030	08/01/91	PCBs
IN4CDRED	08/01/91	PCBs
IN4L0010	08/01/91	PCBs
IN4L1030	08/01/91	PCBs
IN4LDRED	08/01/91	PCBs
IN4R0010	08/01/91	PCBs
IN4R1030	08/01/91	PCBs
IN4RDRED	08/01/91	PCBs
IN5C0010	08/01/91	PCBs
IN5C1030	08/01/91	PCBs
IN5CDRED	08/01/91	PCBs
IN5L0010	08/01/91	PCBs
IN5L1030	08/01/91	PCBs
IN5LDRED	08/01/91	PCBs
IN5R0010	08/01/91	PCBs
IN5R1030	08/01/91	PCBs
IN5RDRED	08/01/91	PCBs
IN6C1030	08/01/91	PCBs
IN6CDRED	08/01/91	PCBs
IN6L0010	08/01/91	PCBs
IN6L1030	08/01/91	PCBs
IN6LDRED	08/01/91	PCBs
IN6R0010	08/01/91	PCBs
IN6R1030	08/01/91	PCBs
IN6RDRED	08/01/91	PCBs

SA Master Analytical Results Listing
Groundwater and Surface Water

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (a)

Location	Sampling Date	Analyses
GM1C	08/01/91	GCs ,PCBs
GM1L	08/01/91	GCs ,PCBs
GM1R	08/01/91	GCs ,PCBs
GM2C	08/01/91	GCs ,PCBs
GM2L	08/01/91	GCs ,PCBs
GM2R	08/01/91	GCs ,PCBs
GM3C	08/01/91	GCs ,PCBs
GM3L	08/01/91	GCs ,PCBs
GM3R	08/01/91	GCs ,PCBs
HQ10C	08/01/91	GCs ,PCBs
HQ10L	08/01/91	GCs ,PCBs
HQ10R	08/01/91	PCBs
HQ1OR	08/01/91	GCs
HQ4C	08/01/91	GCs
HQ4CDISS	08/01/91	PCBs
HQ4CPART	08/01/91	PCBs
HQ4L	08/01/91	GCs
HQ4LDISS	08/01/91	PCBs
HQ4LPART	08/01/91	PCBs
HQ4R	08/01/91	GCs
HQ4RDISS	08/01/91	PCBs
HQ4RPART	08/01/91	PCBs
HQ5C	08/01/91	GCs
HQ5CDISS	08/01/91	PCBs
HQ5CPART	08/01/91	PCBs
HQ5L	08/01/91	GCs
HQ5LDISS	08/01/91	PCBs
HQ5LPART	08/01/91	PCBs
HQ5R	08/01/91	GCs
HQ5RDISS	08/01/91	PCBs
HQ5RPART	08/01/91	PCBs
HQ6C	08/01/91	GCs ,PCBs
HQ6L	08/01/91	GCs ,PCBs
HQ6R	08/01/91	GCs ,PCBs
HQ7C	08/01/91	GCs ,PCBs
HQ7L	08/01/91	GCs ,PCBs
HQ7R	08/01/91	GCs ,PCBs
HQ8C	08/01/91	GCs
HQ8CDISS	08/01/91	PCBs
HQ8CPART	08/01/91	PCBs
HQ8L	08/01/91	GCs
HQ8LDISS	08/01/91	PCBs
HQ8LPART	08/01/91	PCBs
HQ8R	08/01/91	GCs
HQ8RDISS	08/01/91	PCBs
HQ8RPART	08/01/91	PCBs
HQ9C	08/01/91	GCs ,PCBs

SA Master Analytical Results Listing
Groundwater and Surface Water

GENERAL MOTORS, POWERTRAIN DIVISION
BAY CITY, MICHIGAN (b)

Location	Sampling Date	Analyses
HQ9L	08/01/91	GCs ,PCBs
HQ9R	08/01/91	GCs ,PCBs
IN1L	08/01/91	GCs ,PCBs
IN2C	08/01/91	GCs ,PCBs
IN2L	08/01/91	GCs ,PCBs
IN2R	08/01/91	GCs ,PCBs
IN3C	08/01/91	GCs ,PCBs
IN3L	08/01/91	GCs ,PCBs
IN3R	08/01/91	GCs ,PCBs
IN4C	08/01/91	GCs ,PCBs
IN4L	08/01/91	GCs ,PCBs
IN4R	08/01/91	GCs ,PCBs
IN5C	08/01/91	GCs ,PCBs
IN5L	08/01/91	GCs ,PCBs
IN5R	08/01/91	GCs ,PCBs
IN6C	08/01/91	GCs ,PCBs
IN6L	08/01/91	GCs ,PCBs
IN6R	08/01/91	GCs ,PCBs

SUMMARY OF SOIL ANALYSIS, SAGINAW RIVER AREA
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
PESTICIDES (mg/kg)				
AROCHLOR 1242(U)	ND-660.0	6.586	370	273
AROCHLOR 1248(U)	ND-5.0	1.2344	370	32
AROCHLOR 1260(U)	ND-11.0	0.2836	370	163

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

SUMMARY OF SURFACEWATER ANALYSIS
SAGINAW RIVER
GENERAL MOTORS POWERTRAIN DIVISION
BAY CITY, MICHIGAN

Analyte**	Range	Average*	Num. Samps	Num. Dets
OTHERS				
DOC	6.0-50.0	10.95349	43	43
TOTAL SUSPENDED SOLIDS	4.0-42.0	24.19565	46	46
PESTICIDES (mg/l)				
AROCHLOR 1221(F)	ND-0.00009	0.00008	9	2
AROCHLOR 1221(U)	ND-0.00023	0.00014	46	5
AROCHLOR 1242(F)	ND-0.00005	0.00005	9	1
AROCHLOR 1242(U)	ND-0.0009	0.00023	46	21
AROCHLOR 1248(U)	ND-0.00004	0.00004	46	1
AROCHLOR 1254(F)	ND-0.00004	0.00003	9	4
AROCHLOR 1254(U)	ND-0.00017	0.00003	46	14
AROCHLOR 1260(F)	ND-0.00001	0.00001	9	1
AROCHLOR 1260(U)	ND-0.00005	0.00004	46	2

** Analyte names truncated to first 28 characters
* Average is that of "Detected" measurements

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	12C000575 10/16/87	12C0005CM 10/16/87	12C0510CM 10/16/87	12C101575 10/16/87	12C1015CM 10/16/87	12C1520CM 10/16/87	12L000575 10/13/87	12L0005CM 10/15/87	12L0510CM 10/15/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	1.1	0.28	0.16	1.8	0.86	0.72	1.3	0.14	0.42
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.12	0.03	0.01	0.10	0.10	0.13	0.06	0.02	0.09

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	12L101575 10/13/87	12L1015CM 10/15/87	12L1520CM 10/15/87	12L202575 10/13/87	12L2025CM 10/15/87	12L2530CM 10/15/87	12L303575 10/13/87	12L3035CM 10/15/87	12L3540CM 10/15/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	5.2	0.92	0.01	0.11	< 0.01	< 0.01	0.02	< 0.01	< 0.01
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.16	0.10	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	12R000575 10/14/87	12R0005CM 10/14/87	12R0510CM 10/14/87	12R1015CM 10/14/87	12R1520CM 10/14/87	12R2025CM 10/14/87	12R2530CM 10/14/87	12R3035CM 10/14/87	12R3540CM 10/14/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.28	0.03	0.09	0.12	0.16	0.18	0.11	0.10	0.17
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.02	< 0.01	0.01	0.01	0.03	0.02	0.01	0.01	0.02

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	16C000575 10/16/87	16C0005CM 10/16/87	16C0510CM 10/16/87	16C101575 10/16/87	16C1015CM 10/16/87	16C1520CM 10/16/87	16L000575 10/14/87	16L0005CM 10/14/87	16L0510C 10/14/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.89	0.18	0.06	1.1	0.17	1.30	0.08	0.02	0.05
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.13	0.02	0.01	0.13	0.03	0.16	< 0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	16L101575 10/14/87	16L1015CM 10/14/87	16L1520CM 10/14/87	16L202575 10/14/87	16L2025CM 10/14/87	16L2530CM 10/14/87	16L303575 10/14/87	16L3035CM 10/14/87	16L3540CM 10/14/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	16R000575 10/14/87	16R0005CM 10/14/87	16R0510CM 10/14/87	16R101575 10/14/87	16R1015CM 10/14/87	16R1520CM 10/14/87	16R202575 10/14/87	16R2025CM 10/14/87	16R2530CM 10/14/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	1.5	0.20	0.13	1.0	0.17	0.28	1.80	0.65	0.30
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.38	0.06	0.08	0.13	0.05	0.03	0.18	0.08	0.08

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	16R303575 10/14/87	16R3035CM 10/14/87	16R3540CM 10/14/87	18000575 10/12/87	180005CM 10/12/87	180510CM 10/12/87	181015CM 10/12/87	181520CM 10/12/87	182025CM 10/12/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	2.30	0.91	1.2	1.1	0.08	0.09	< 0.01	< 0.01	< 0.01
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.20	0.07	0.16	0.05	0.01	0.01	< 0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	182530CM 10/12/87	18303575 10/12/87	183035CM 10/12/87	183540CM 10/12/87	190005CM 10/12/87	190510CM 10/12/87	19101575 10/12/87	191015CM 10/12/87	191520CM 10/12/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	< 0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	19202575 10/12/87	192025CM 10/12/87	192530CM 10/12/87	19303575 10/12/87	193035CM 10/12/87	193540CM 10/12/87	22000575 10/16/87	220005CM 10/16/87	220510CM 10/16/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	3.90	0.06	2.1
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.19	0.01	0.15

LEGEND:
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GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	22101575 10/16/87	221015CM 10/16/87	221520CM 10/16/87	22202575 10/16/87	222025CM 10/16/87	222530CM 10/16/87	22303575 10/16/87	223035CM 10/16/87	223540CM 10/16/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	4.3	2.1	2.7	8.30	2.3	3.5	10	4.9	2.3
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.19	0.15	0.17	0.21	0.14	0.18	0.29	0.21	0.12

LEGEND:
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GMPT - Bay City Plant
Bay City, Michigan
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	3AC000575 10/15/87	3AC0005CM 10/15/87	3AC0510CM 10/15/87	3AC1015CM 10/15/87	3AC1520CM 10/15/87	3AL000575 10/16/87	3AL0005CM 10/16/87	3AL0510CM 10/16/87	3AL101575 10/16/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.12	< 0.01	< 0.01	< 0.01	< 0.01	0.07	0.10	0.06	0.11
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.02	0.02	0.01

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
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Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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COMPOUND (by Class)	UNITS	3AL1015CM 10/16/87	3AL1520CM 10/16/87	3AL202575 10/16/87	3AL2025CM 10/16/87	3AL2530CM 10/16/87	3AL303575 10/16/87	3AL3035CM 10/16/87	3AL3540CM 10/16/87	3AR000575 10/15/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.04	0.12	0.13	0.08	0.10	0.13	0.07	0.05	3.0
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.01	0.01	0.05	0.02	0.02	0.05	0.02	0.01	0.27

LEGEND:
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U -Sample unfiltered for analysis
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GMPT - Bay City Plant
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COMPOUND (by Class)	UNITS	3AR0005CM 10/15/87	3AR0510CM 10/15/87	3AR101575 10/15/87	3AR1015CM 10/15/87	3AR1520CM 10/15/87	3AR202575 10/15/87	3AR2025CM 10/15/87	3AR2530CM 10/15/87	3AR303575 10/15/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	1.6	4.3	0.07	1.2	0.10	1.3	0.38	0.34	0.05
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.20	0.30	0.01	0.09	0.02	0.04	0.05	0.06	0.01

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
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GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	3AR3035CM 10/15/87	3AR3540CM 10/15/87	4C000575 10/15/87	4C0005CM 10/15/87	4C0510CM 10/15/87	4C101575 10/15/87	4C1015CM 10/15/87	4C1520CM 10/15/87	4L000575 10/11/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.03	< 0.01	0.18	0.02	0.11	0.10	0.11	< 0.01	0.11
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.01	< 0.01	0.01	0.01	0.02	0.01	0.02	< 0.01	0.03

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GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	4L0005CM 10/11/87	4L0510CM 10/11/87	4L101575 10/11/87	4L1015CM 10/11/87	4L1520CM 10/11/87	4L202575 10/11/87	4L2025CM 10/11/87	4L2530CM 10/11/87	4L303575 10/11/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.12	0.12	1.5	1.1	0.02	0.1	< 0.01	< 0.01	0.06
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.03	0.03	0.05	0.09	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
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*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
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GMPT - Bay City Plant
Bay City, Michigan
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	4L3035CM 10/11/87	4L3540CM 10/11/87	4R000575 10/12/87	4R0005CM 10/12/87	4R0510CM 10/12/87	4R101575 10/12/87	4R1015CM 10/12/87	4R1520CM 10/12/87	4R202575 10/12/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	< 0.01	< 0.01	0.14	0.10	0.12	0.14	0.10	0.13	0.16
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	< 0.01	< 0.01	0.02	0.05	0.06	0.02	0.06	0.01	0.01

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GMPT - Bay City Plant
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Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	4R2025CM 10/12/87	4R2530CM 10/12/87	4R303575 10/12/87	4R3035CM 10/12/87	4R3540CM 10/12/87	5C0005CM 10/15/87	5C0510CM 10/15/87	5C1015CM 10/15/87	5C1520CM 10/15/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.12	0.13	0.07	0.13	0.26	0.01	0.01	< 0.01	0.02
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.08	0.03	0.05	0.02	0.05	< 0.01	< 0.01	< 0.01	< 0.01

LEGEND:
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	SL000575 10/10/87	SL0005CM 10/10/87	SL0510CM 10/10/87	SL101575 10/10/87	SL1015CM 10/10/87	SL1520CM 10/10/87	SL202575 10/10/87	SL2025CM 10/10/87	SL2530CM 10/10/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.67	0.14	0.11	0.34	0.09	0.40	0.26	0.09	0.17
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.03	0.01	< 0.01	0.03	0.02	0.02	0.06	0.01	0.02

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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	5L303575 10/10/87	5L3035CM 10/10/87	5L3540CM 10/10/87	5R0005CM 10/09/87	5R0510CM 10/09/87	5R101575 10/09/87	5R1015CM 10/09/87	5R1520CM 10/09/87	5R2025CM 10/09/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.45	0.21	0.25	0.01	0.27	2.5	0.09	0.02	0.02
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.03	0.02	0.02	< 0.01	0.06	0.03	< 0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
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J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
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GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	5R2530CM 10/09/87	5R3035CM 10/09/87	5R3540CM 10/09/87	7C000575 10/15/87	7C0005CM 10/15/87	7C0510CM 10/15/87	7C101575 10/15/87	7C1015CM 10/15/87	7C1520CM 10/15/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.05	0.17	0.14	0.05	0.02	< 0.01	0.01	< 0.01	< 0.01
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	7L000575 10/08/87	7L0005CM 10/08/87	7L0510CM 10/08/87	7L101575 10/08/87	7L1015CM 10/08/87	7L1520CM 10/08/87	7L202575 10/08/87	7L2025CM 10/08/87	7L2530CM 10/08/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.49	3.9	0.02	0.26	< 0.01	< 0.01	0.01	< 0.01	< 0.01
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.04	0.08	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	7L303575 10/08/87	7L3035CM 10/08/87	7L3540CM 10/08/87	7R000575 10/08/87	7R0005CM 10/08/87	7R0510CM 10/08/87	7R101575 10/08/87	7R1015CM 10/08/87	7R1520CM 10/08/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.09	< 0.01	< 0.01	0.15	0.33	0.02	0.05	0.02	< 0.01
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	< 0.01	< 0.01	< 0.01	0.10	0.07	0.05	0.01	< 0.01	< 0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Surface Water Sample Locations

COMPOUND (by Class)	UNITS	GM1C 08/01/91	GM1L 08/01/91	GM1R 08/01/91	GM2C 08/01/91	GM2L 08/01/91	GM2R 08/01/91	GM3C 08/01/91	GM3L 08/01/91	GM3R 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/l	< 0.00002	< 0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00001	< 0.00002	< 0.00001
AROCHLOR 1221(U)	mg/l	0.0001	< 0.00003	< 0.00002	< 0.00002	< 0.00002	0.0001	0.00013	0.00023	< 0.00001
AROCHLOR 1232(U)	mg/l	< 0.00002	< 0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00001	< 0.00002	< 0.00001
AROCHLOR 1242(U)	mg/l	< 0.00002	< 0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00001	< 0.00002	< 0.00001
AROCHLOR 1248(U)	mg/l	< 0.00002	< 0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00001	< 0.00002	< 0.00001
AROCHLOR 1254(U)	mg/l	< 0.00002	0.00005	< 0.00002	0.00002	0.00003	< 0.00002	0.00001	0.00002	0.00001
AROCHLOR 1260(U)	mg/l	0.00002	< 0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00001	< 0.00002	< 0.00001
AROCHLOR 1262(U)	mg/l	< 0.00002	< 0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00001	< 0.00002	< 0.00001
AROCHLOR 1268(U)	mg/l	< 0.00002	< 0.00003	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00001	< 0.00002	< 0.00001

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Surface Water Sample Locations

COMPOUND (by Class)	UNITS	HQ10C 08/01/91	HQ10L 08/01/91	HQ10R 08/01/91	HQ4CDISS 08/01/91	HQ4CPART 08/01/91	HQ4LDISS 08/01/91	HQ4LPART 08/01/91	HQ4RDISS 08/01/91	HQ4RPART 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1016(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00001	--	< 0.00003	--	< 0.00003
AROCHLOR 1221(F)	mg/l	--	--	--	0.00006	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1221(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00001	--	< 0.00003	--	< 0.00003
AROCHLOR 1232(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1232(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00001	--	< 0.00003	--	< 0.00003
AROCHLOR 1242(F)	mg/l	--	--	--	< 0.00001	--	0.00005	--	< 0.00001	--
AROCHLOR 1242(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00001	--	0.00009	--	0.00003
AROCHLOR 1248(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1248(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	0.00004	--	< 0.00003	--	< 0.00003
AROCHLOR 1254(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1254(U)	mg/l	0.00002	< 0.00002	< 0.00002	--	< 0.00001	--	< 0.00003	--	< 0.00003
AROCHLOR 1260(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	0.00001	--
AROCHLOR 1260(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00001	--	< 0.00003	--	< 0.00003
AROCHLOR 1262(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1262(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00001	--	< 0.00003	--	< 0.00003
AROCHLOR 1268(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1268(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00001	--	< 0.00003	--	< 0.00003

LEGEND:
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U -Sample unfiltered for analysis
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*** -Insufficient sample due to well not recharging

Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Surface Water Sample Locations

COMPOUND (by Class)	UNITS	HQ5CDISS 08/01/91	HQ5CPART 08/01/91	HQ5LDISS 08/01/91	HQ5LPART 08/01/91	HQ5RDISS 08/01/91	HQ5RPART 08/01/91	HQ6C 08/01/91	HQ6L 08/01/91	HQ6R 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(F)	mg/l	< 0.00001	--	< 0.00001	--	< 0.00002	--	--	--	--
AROCHLOR 1016(U)	mg/l	--	< 0.00001	--	< 0.00001	--	< 0.00002	< 0.00001	< 0.00002	< 0.00002
AROCHLOR 1221(F)	mg/l	< 0.00001	--	0.00009	--	< 0.00002	--	--	--	--
AROCHLOR 1221(U)	mg/l	--	< 0.00001	--	< 0.00001	--	< 0.00002	< 0.00001	< 0.00002	< 0.00002
AROCHLOR 1232(F)	mg/l	< 0.00001	--	< 0.00001	--	< 0.00002	--	--	--	--
AROCHLOR 1232(U)	mg/l	--	< 0.00001	--	< 0.00001	--	< 0.00002	< 0.00001	< 0.00002	< 0.00002
AROCHLOR 1242(F)	mg/l	< 0.00001	--	< 0.00001	--	< 0.00002	--	--	--	--
AROCHLOR 1242(U)	mg/l	--	< 0.00001	--	0.0001	--	< 0.00002	< 0.00001	0.00012	< 0.00002
AROCHLOR 1248(F)	mg/l	< 0.00001	--	< 0.00001	--	< 0.00002	--	--	--	--
AROCHLOR 1248(U)	mg/l	--	< 0.00001	--	< 0.00001	--	< 0.00002	< 0.00001	< 0.00002	< 0.00002
AROCHLOR 1254(F)	mg/l	0.00003	--	0.00002	--	< 0.00002	--	--	--	--
AROCHLOR 1254(U)	mg/l	--	0.00005	--	< 0.00001	--	0.00017	< 0.00001	< 0.00002	< 0.00002
AROCHLOR 1260(F)	mg/l	< 0.00001	--	< 0.00001	--	< 0.00002	--	--	--	--
AROCHLOR 1260(U)	mg/l	--	< 0.00001	--	< 0.00001	--	< 0.00002	< 0.00001	< 0.00002	< 0.00002
AROCHLOR 1262(F)	mg/l	< 0.00001	--	< 0.00001	--	< 0.00002	--	--	--	--
AROCHLOR 1262(U)	mg/l	--	< 0.00001	--	< 0.00001	--	< 0.00002	< 0.00001	< 0.00002	< 0.00002
AROCHLOR 1268(F)	mg/l	< 0.00001	--	< 0.00001	--	< 0.00002	--	--	--	--
AROCHLOR 1268(U)	mg/l	--	< 0.00001	--	< 0.00001	--	< 0.00002	< 0.00001	< 0.00002	< 0.00002

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GMPT - Bay City Plant
Bay City, Michigan
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COMPOUND (by Class)	UNITS	HQ7C 08/01/91	HQ7L 08/01/91	HQ7R 08/01/91	HQ8CDISS 08/01/91	HQ8CPART 08/01/91	HQ8LDISS 08/01/91	HQ8LPART 08/01/91	HQ8RDISS 08/01/91	HQ8RPART 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1016(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00003	--	< 0.00001	--	< 0.00001
AROCHLOR 1221(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1221(U)	mg/l	< 0.00002	< 0.00002	0.00016	--	< 0.00003	--	< 0.00001	--	< 0.00001
AROCHLOR 1232(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1232(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00003	--	< 0.00001	--	< 0.00001
AROCHLOR 1242(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1242(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	0.00003	--	< 0.00001	--	< 0.00001
AROCHLOR 1248(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1248(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00003	--	< 0.00001	--	< 0.00001
AROCHLOR 1254(F)	mg/l	--	--	--	< 0.00001	--	0.00004	--	0.00001	--
AROCHLOR 1254(U)	mg/l	0.00002	< 0.00002	0.00004	--	< 0.00003	--	< 0.00001	--	0.00001
AROCHLOR 1260(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1260(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00003	--	0.00005	--	< 0.00001
AROCHLOR 1262(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1262(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00003	--	< 0.00001	--	< 0.00001
AROCHLOR 1268(F)	mg/l	--	--	--	< 0.00001	--	< 0.00001	--	< 0.00001	--
AROCHLOR 1268(U)	mg/l	< 0.00002	< 0.00002	< 0.00002	--	< 0.00003	--	< 0.00001	--	< 0.00001

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Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
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Saginaw River - Surface Water Sample Locations

COMPOUND (by Class)	UNITS	HQ9C 08/01/91	HQ9L 08/01/91	HQ9R 08/01/91	IN1L 08/01/91	IN2C 08/01/91	IN2L 08/01/91	IN2R 08/01/91	IN3C 08/01/91	IN3L 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/l	< 0.00003	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1221(U)	mg/l	< 0.00003	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1232(U)	mg/l	< 0.00003	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1242(U)	mg/l	< 0.00003	< 0.00001	< 0.00001	0.0004	0.0004	0.0009	0.0003	0.0003	0.0003
AROCHLOR 1248(U)	mg/l	< 0.00003	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1254(U)	mg/l	< 0.00003	0.00001	0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1260(U)	mg/l	< 0.00003	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1262(U)	mg/l	< 0.00003	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1268(U)	mg/l	< 0.00003	< 0.00001	< 0.00001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001

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GMPT - Bay City Plant
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Saginaw River - Surface Water Sample Locations

COMPOUND (by Class)	UNITS	IN3R 08/01/91	IN4C 08/01/91	IN4L 08/01/91	IN4R 08/01/91	IN5C 08/01/91	IN5L 08/01/91	IN5R 08/01/91	IN6C 08/01/91	IN6L 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1221(U)	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1232(U)	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1242(U)	mg/l	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0002
AROCHLOR 1248(U)	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1254(U)	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1260(U)	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1262(U)	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
AROCHLOR 1268(U)	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging

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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Surface Water Sample Locations

COMPOUND (by Class)	UNITS	IN6R 08/01/91
PESTICIDES/PCBs		
AROCHLOR 1016(U)	mg/l	< 0.0001
AROCHLOR 1221(U)	mg/l	< 0.0001
AROCHLOR 1232(U)	mg/l	< 0.0001
AROCHLOR 1242(U)	mg/l	0.00017
AROCHLOR 1248(U)	mg/l	< 0.0001
AROCHLOR 1254(U)	mg/l	< 0.0001
AROCHLOR 1260(U)	mg/l	< 0.0001
AROCHLOR 1262(U)	mg/l	< 0.0001
AROCHLOR 1268(U)	mg/l	< 0.0001

LEGEND:
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U -Sample unfiltered for analysis
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	7R202575 10/08/87	7R2025CM 10/08/87	7R2530CM 10/08/87	7R303575 10/08/87	7R3035CM 10/08/87	7R3540CM 10/08/87	8C000575 10/15/87	8C0005CM 10/15/87	8C0510CM 10/15/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.09	< 0.01	< 0.01	0.19	< 0.01	0.02	0.09	0.19	0.07
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.07	0.02	0.01

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	8C101575 10/15/87	8C1015CM 10/15/87	8C1520CM 10/15/87	8L000575 10/08/87	8L0005CM 10/08/87	8L0510CM 10/08/87	8L101575 10/08/87	8L1015CM 10/08/87	8L1520CM 10/08/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.29	0.06	0.02	2.4	0.20	0.27	1.5	0.32	0.48
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.03	< 0.01	< 0.01	0.06	0.08	0.03	0.08	0.23	0.10

LEGEND:
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U -Sample unfiltered for analysis
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J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	8L202575 10/08/87	8L2025CM 10/08/87	8L2530CM 10/08/87	8L303575 10/08/87	8L3035CM 10/08/87	8L3540CM 10/08/87	8R000575 10/07/87	8R0005CM 10/07/87	8R0510CM 10/07/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	2.20	0.12	< 0.01	1.0	< 0.01	< 0.01	53	7.1	83
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.07	0.02	< 0.01	0.05	< 0.01	< 0.01	7.8	0.14	11

LEGEND:
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75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
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GMPT - Bay City Plant
Bay City, Michigan
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COMPOUND (by Class)	UNITS	8R101575 10/07/87	8R1015CM 10/07/87	8R1520CM 10/07/87	8R202575 10/07/87	8R2025CM 10/07/87	8R2530CM 10/07/87	8R303575 10/07/87	8R3035CM 10/07/87	8R3540CM 10/07/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	660	290	7.9	34	8.3	3.1	6.70	0.14	1.1
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	2.5	7.1	0.42	1.4	0.300	0.21	0.05	< 0.01	0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	9C000575 10/15/87	9C0005CM 10/15/87	9C0510CM 10/15/87	9C101575 10/15/87	9C1015CM 10/15/87	9C1520CM 10/15/87	9L0005CM 10/13/87	9L0510CM 10/13/87	9L101575 10/13/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.01	< 0.01	< 0.01	0.02	0.15	< 0.01	0.06	0.13	1.2
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.08

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
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75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
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GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	9L1015CM 10/13/87	9L1520CM 10/13/87	9L2025CM 10/13/87	9L2530CM 10/13/87	9L303575 10/13/87	9L3035CM 10/13/87	9L3540CM 10/13/87	9R000575 10/13/87	9R0005CM 10/13/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.28	3.1	1.4	0.12	3.2	0.82	0.15	1.1	0.45
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.02	0.04	0.05	0.01	0.18	0.05	0.01	0.09	0.05

LEGEND:
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U -Sample unfiltered for analysis
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*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
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Bay City, Michigan
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	9R0510CM 10/13/87	9R101575 10/13/87	9R1015CM 10/13/87	9R1520CM 10/13/87	9R202575 10/13/87	9R2025CM 12/18/87	9R2530CM 12/18/87	9R303575 10/13/87	9R3035CM 12/18/87
PESTICIDES/PCBs										
AROCHLOR 1242(U)	mg/kg	0.69	3.5	6.2	10	11	9.6	19	57	15
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AROCHLOR 1260(U)	mg/kg	0.04	0.19	0.43	0.43	0.42	0.46	0.77	1.90	0.92

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	9R3540CM 12/18/87	GM1L0010 08/01/91	GM1L1030 08/01/91	GM1LDRED 08/01/91	GM1R0010 08/01/91	GM1R1030 08/01/91	GM1RDRED 08/01/91	GM2L0010 08/01/91	GM2L1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	--	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	--	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	--	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	3.2	< 0.03	< 0.03	< 0.03	0.73	0.68	< 0.03	< 0.03	< 0.03
AROCHLOR 1248(U)	mg/kg	< 0.01	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.01	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	0.35	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	--	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	--	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	GM2LDRED 08/01/91	GM2R0010 08/01/91	GM2R1030 08/01/91	GM2RDRED 08/01/91	GM3L0010 08/01/91	GM3L1030 08/01/91	GM3LDRED 08/01/91	GM3R0010 08/01/91	GM3R1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	< 0.03	0.73	2.6	< 0.03	0.06	0.03	0.03	< 0.03	< 0.03
AROCHLOR 1248(U)	mg/kg	< 0.03	< 0.03	< 0.03	0.03	0.06	0.03	0.04	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	HQ10L0010 08/01/91	HQ10L1030 08/01/91	HQ10LDRED 08/01/91	HQ10R0010 08/01/91	HQ10R1030 08/01/91	HQ10RDRED 08/01/91	HQ4L0010 08/01/91	HQ4L1030 08/01/91	HQ4LDRED 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	0.31	0.22	0.41	0.18	< 0.03	0.07	< 0.03	< 0.03	< 0.03
AROCHLOR 1248(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	HQ4R0010 08/01/91	HQ4R1030 08/01/91	HQ4RDRED 08/01/91	HQ5L0010 08/01/91	HQ5L1030 08/01/91	HQ5LDRED 08/01/91	HQ5R0010 08/01/91	HQ5R1030 08/01/91	HQ5RDRED 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	0.06	0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.21	0.38	0.06
AROCHLOR 1248(U)	mg/kg	< 0.03	< 0.03	< 0.03	0.58	0.43	1.0	< 0.03	< 0.03	0.06
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
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U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	HQ6L0010 08/01/91	HQ6L1030 08/01/91	HQ6LDRED 08/01/91	HQ6R0010 08/01/91	HQ6R1030 08/01/91	HQ6RDRED 08/01/91	HQ7L0010 08/01/91	HQ7L1030 08/01/91	HQ7LDRED 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	0.41	0.29	0.20	0.11	0.18	0.11	0.56	< 0.03	0.25
AROCHLOR 1248(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
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U -Sample unfiltered for analysis
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J -Estimated value, below detection limit
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	HQ7LDRED 08/01/91	HQ7R0010 08/01/91	HQ7R1030 08/01/91	HQ7RDRED 08/01/91	HQ8L0010 08/01/91	HQ8L1030 08/01/91	HQ8LDRED 08/01/91	HQ8R0010 08/01/91	HQ8R1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	0.25	< 0.03	< 0.03	0.15	0.66	1.9	0.44	< 0.03	< 0.03
AROCHLOR 1248(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	HQ8RDRED 08/01/91	HQ9L0010 08/01/91	HQ9L1030 08/01/91	HQ9LDRED 08/01/91	HQ9R0010 08/01/91	HQ9R1030 08/01/91	HQ9RDRED 08/01/91	IN1L0010 08/01/91	IN1L1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	0.06	0.04	2.7	0.09	0.07	0.13	0.11	3.2	< 0.03
AROCHLOR 1248(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
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U -Sample unfiltered for analysis
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GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	IN1LDRED 08/01/91	IN2C0010 08/01/91	IN2C1030 08/01/91	IN2CDRED 08/01/91	IN2L0010 08/01/91	IN2L1030 08/01/91	IN2LDRED 08/01/91	IN2R0010 08/01/91	IN2R1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	< 0.03	< 0.03	11	< 0.03	13	270	< 0.03	2.8	12
AROCHLOR 1248(U)	mg/kg	2.3	0.78	< 0.03	1.7	< 0.03	< 0.03	1.6	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
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GMPT - Bay City Plant
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Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	IN2RDRED 08/01/91	IN3C0010 08/01/91	IN3C1030 08/01/91	IN3CDRED 08/01/91	IN3L0010 08/01/91	IN3L1030 08/01/91	IN3LDRED 08/01/91	IN3R0010 08/01/91	IN3R1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	0.99	< 0.03	< 0.03	1.0	1.3	3.3	< 0.03	< 0.03	0.47
AROCHLOR 1248(U)	mg/kg	1.1	0.53	0.53	1.1	1.3	< 0.03	5.0	0.46	0.47
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
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Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
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COMPOUND (by Class)	UNITS	IN3RDRED 08/01/91	IN4C0010 08/01/91	IN4C1030 08/01/91	IN4CDRED 08/01/91	IN4L0010 08/01/91	IN4L1030 08/01/91	IN4LDRED 08/01/91	IN4R0010 08/01/91	IN4R1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	0.75	0.38	2.0	< 0.03	0.46	0.64	< 0.03	< 0.03	0.04
AROCHLOR 1248(U)	mg/kg	0.84	0.38	< 0.03	3.4	0.46	0.64	4.1	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
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GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	IN4RDRED 08/01/91	IN5C0010 08/01/91	IN5C1030 08/01/91	IN5CDRED 08/01/91	IN5L0010 08/01/91	IN5L1030 08/01/91	IN5LDRED 08/01/91	IN5R0010 08/01/91	IN5R1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	< 0.03	3.7	1.6	2.9	4.5	5.9	3.4	7.4	6.9
AROCHLOR 1248(U)	mg/kg	0.21	< 0.03	< 0.03	3.3	< 0.03	< 0.03	3.8	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	IN5RDRED 08/01/91	IN6C0010 08/01/91	IN6C1030 08/01/91	IN6CDRED 08/01/91	IN6L0010 08/01/91	IN6L1030 08/01/91	IN6LDRED 08/01/91	IN6R0010 08/01/91	IN6R1030 08/01/91
PESTICIDES/PCBs										
AROCHLOR 1016(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1242(U)	mg/kg	2.9	0.34	0.65	0.10	0.04	0.43	0.13	0.08	0.12
AROCHLOR 1248(U)	mg/kg	3.2	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03	--	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
75 -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length

GMPT - Bay City Plant
Bay City, Michigan
Historical Analytical Results
Saginaw River - Sediment Sample Locations

COMPOUND (by Class)	UNITS	TN6RDRED 08/01/91
PESTICIDES/PCBs		
AROCHLOR 1016(U)	mg/kg	< 0.03
AROCHLOR 1221(U)	mg/kg	< 0.03
AROCHLOR 1232(U)	mg/kg	< 0.03
AROCHLOR 1242(U)	mg/kg	< 0.03
AROCHLOR 1248(U)	mg/kg	< 0.03
AROCHLOR 1254(U)	mg/kg	< 0.03
AROCHLOR 1260(U)	mg/kg	< 0.03
AROCHLOR 1262(U)	mg/kg	< 0.03
AROCHLOR 1268(U)	mg/kg	< 0.03

LEGEND:
F -Sample was filtered before analysis
U -Sample unfiltered for analysis
-- -Analysis not requested.
J -Estimated value, below detection limit
*** -Insufficient sample due to well not recharging
(S -Indicates that the sample was sieved to obtain a particle size of less than 75 um.
Note: Compound names printed are truncated to 27 characters maximum length.

APPENDIX E

PLAN E-1 - STUDY AREAS

PERIMETER BANKS

INLET SLIP

LAGOON AREA

LAGOON AREA

MACHINE STORAGE AREA

POWER HOUSE

BARREL STORAGE

TRUCK REPAIR AND STORAGE

SUPPORT FACILITIES AREA

WASTE WATER FACILITY

UNDEVELOPED AREA

PLANT AREA

RESIDENTIAL AND PARKING AREA

RESIDENTIAL AND PARKING AREA

CROTTY STREET

JOHNSON STREET

WOODSIDE AVENUE

KETCHUM STREET

N. BIRNEY STREET

0 50 100ft

E 10000 E 10500 E 11000 E 11500 E 12000 E 12500

N 11500 N 11000 N 10500 N 10000 N 9500 N 9000

SOURCE
HUBBELL, ROTH & CLARKE, INC.
CONSULTING ENGINEERS
555 HULET DRIVE
BLOOMFIELD HILLS, MICH.
JOB # 90160
SITE PLAN
SHEET 1 OF 1

BM= SQUARE CUT AT SW CORNER OF CONCRETE BASE OF WATER TOWER
ELEV= 587.67

LEGEND
- FENCE
- RAILWAY
- TREELINE
- SHORELINE
- PROPERTY BOUNDARY
- DEEP SOIL MIXING WALL
- STUDY AREAS
- POND AREA

Nº	Revision	Date	Initial

Approved

GMPT DIVISION
BAY CITY PLANT

DESCRIPTION OF CURRENT SITUATION

STUDY AREAS

CRA
CONESTOGA-ROVERS & ASSOCIATES

Drawn by:	Scale:	Date:	File Nº:	Rev.Nº:
J.S.L.	1"=100'	SEPT 1992	P311	0
Designed by: IKR				
Checked by: IKR	Field book:	Project Nº: 3938	Drawing Nº: E-1	

MAY 13/93(M)