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May 10, 2000
Project 85740-100.000

Jaspal Walia, P.E.
New York State Department of
Environmental Conservation
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Remedial Construction Certification Report
Saginaw-Buffalo Site, Buffalo, NY
NYSDEC Site No. 915152

Dear Mr. Walia:

On behalf of General Motors Corporation (GM), Wehran-New York, Inc. (EMCON) is pleased to submit four (4) copies of the Remedial Construction Certification Report for the above-referenced site. This is the report required under I.(D) of the Consent Order.

Please contact us if you have any questions on the enclosed report.

Sincerely,

EMCON

Katherine B. Galanti
Task Manager

Kenneth C. Malinowski, Ph.D.
Project Manager

Attachments

cc: M. Napolitan - GM
A. Thrubis - GM Legal
B. Kogut - Bond, Schoeneck & King, LLP
M. Desmond - NYSDEC
C. O'Connor - NYSDOH
NYSDOH Albany (2)

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REMEDIAL CONSTRUCTION CERTIFICATION REPORT

SAGINAW-BUFFALO SITE

NYSDEC SITE NO. 915152

Prepared for

General Motors Corporation
Worldwide Facilities Group
Environmental Services Group - Remediation

May 10, 2000

Prepared by

EMCON
1775 Baseline Road, Suite 220
Grand Island, New York 14072

Project 85740-100.000

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CERTIFICATION OF PROFESSIONAL ENGINEER

Remedial Construction Certification Report
Saginaw-Buffalo Site
Buffalo, NY
NYSDEC Site No. 915152

EMCON prepared the Remedial Design Report (issued July 2, 1998 and revised July 21, 1998) for this Site. The on-site observation of the construction activities identified in the Remedial Design Report was performed under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I hereby certify that the Remedial Design Report as modified by the deviations identified in the attached Remedial Construction Certification Report.

This certification is made to satisfy the certification requirement set forth at Paragraph I.D of the Order on Consent entered into between General Motors Corporation and the New York State Department of Environmental Conservation, Index #B9-0410-92-09 (effective date – August 13, 1998).

WEHRAN - NEW YORK, INC.

STATE OF NEW YORK
DENNIS G. FENN
No. 50131
LICENSED PROFESSIONAL ENGINEER

Dennis G. Fenn, P.E.
Vice President
NYPE License No. 50131

1 INTRODUCTION AND GENERAL CONSTRUCTION OPERATIONS

This Remedial Construction Certification Report has been completed for General Motors Corporation (GM) for the Saginaw-Buffalo site in Buffalo, New York. The Site has been listed in the Registry of Inactive Hazardous Waste Disposal Sites in New York State as Site No. 915152. This report has been prepared in accordance with the Remedial Design Report issued July 2, 1998 and revised July 21, 1998 (as modified by the deviations described herein), and the Order on Consent between GM and the New York State Department of Environmental Conservation (NYSDEC) which became effective on August 13, 1998 (the "RD/RA Order").

Remediation activities were conducted between July 1998 and March 2000. This report details the remedial activities completed to address soil and groundwater under Operable Unit 1 (OU1) for PCBs and OU2 for lead.

1.1 Site Location and Background

The Site, a portion of a former GM-Saginaw facility, is located at 1001 East Delavan Avenue in Buffalo, New York. The property and facility are currently owned and operated by American Axle & Manufacturing, Inc. (AAM), which purchased the property and facility from GM on February 28, 1994. The area of investigation (the "Site") consists of seven acres of Parking Lot No. 4, located east of the main facility and separated from the main facility by a Conrail right-of-way (ROW). The original NYSDEC Registry listing was for a one-acre area contaminated with polychlorinated biphenyls (PCBs) around the Wastewater Treatment Plant (WWTP). This area is referred to as Operable Unit 1 (OU1). OU2 addresses the elevated lead concentrations in the fill materials found throughout the seven-acre parking lot. The Site is shown on Figure 1.

GM And NYSDEC entered into an Order on Consent (Index #B9-0410-92-09), effective February 2, 1995, pursuant to which GM performed an Interim Remedial Measure (IRM) at OU1 and conducted a Site Investigation and Engineering Evaluation of Alternatives at both of the operable units. Based upon the Engineering Evaluation of Alternatives Report prepared by Wehran-New York, Inc. (EMCON), NYSDEC prepared a Proposed Remedial Action Plan, which it submitted for public comment in February of 1998.

Following a period of public comment, NYSDEC selected a final remedial alternative for the Site in a Record of Decision (ROD) that was issued in March of 1998. A Remedial Design (RD) Report was prepared by EMCON to implement the ROD-selected remedial alternatives at the two operable units at the Site. The RD Report (issued July 2, 1998 and revised July 21, 1998) was approved by the NYSDEC and attached as Appendix B to the RD/RA Order.

In summary, the remedial activities performed for this Site included:

- Dewatering the OU1 area and on-site water treatment, confirmatory effluent sampling and analysis, and batch discharge to the Buffalo Sewer Authority sanitary sewer system;
- Excavating fill/soil containing greater than the site cleanup goal of 10 ppm PCBs in the OU1 area, and confirmatory sampling;
- Transporting excavated materials off-site for treatment and disposal at Chemical Waste Management's Model City, New York facility;
- Backfilling of the OU1 area excavation with clay soil; and
- Paving the excavation area (OU1) and repaving of the OU2 area (the remainder of Parking Lot No. 4).

1.2 Project Kickoff

Sevenson Environmental Services, Inc. (Sevenson) was selected by GM as the remediation contractor for the project. Sevenson was responsible for completing dewatering, soil excavation, loading of waste, and backfilling. Chemical Waste Management (CWM) of Model City, New York was selected as the disposal site for excavated materials. Louis Del Prince & Sons, Inc. was selected to complete the paving of the site. EMCON provided oversight of all contractors during remediation and construction activities.

A preconstruction meeting/site mobilization conference was held at EMCON's offices on July 29, 1998. Mr. Jaspal Walia, the NYSDEC Project Manager, as well as representatives of EMCON, GM, Sevenson, and CWM, were present. Several representatives of AAM also attended by phone. Details of the project were addressed in preparation for the project start on July 31, 1998. Sevenson's work plan to implement the technical specifications was provided to Mr. Jaspal Walia. Copies of the meeting minutes are provided as Appendix A.

The analytical laboratories selected by EMCON to complete confirmatory analyses, specifically Advanced Environmental Services (water treatment system samples), Columbia Analytical Services, Inc. (confirmatory soil samples), and Galson Laboratories (perimeter and personal air samples), were approved by the NYSDEC in a letter dated July 31, 1998.

1.3 Contractor Pre-Work Submittals

Pre-work submittals for the OU1 remediation were prepared by Sevenson in accordance with Specification Section 01300 of the RD and provided to EMCON on July 29, 1998. The submittals were reviewed and accepted by EMCON. As part of the pre-work submittals, Sevenson prepared a Quality Control (QC) Plan. The QC Plan was implemented in accordance with Specification Section 01400.

Likewise, Louis Del Prince & Sons prepared pre-work submittals for the OU2 paving and provided them to EMCON on October 28, 1998. The submittals, including material properties and specifications, were reviewed and accepted by EMCON.

1.4 Progress Reports

Progress reports were completed on a monthly basis during months when field activities occurred. The reports discussed work completed in the previous month, analytical and quality assurance test results, deliverables that were submitted, work activities projected to be completed in the upcoming month, potential delays, and work plan modifications. These progress reports were submitted to the NYSDEC by the 10th day of each month in accordance with Paragraph II of the RD/RA Order.

2 DEWATERING AND ON-SITE WATER TREATMENT

2.1 Field Procedures

EMCON submitted a temporary discharge permit application to the Buffalo Sewer Authority (BSA) on July 27, 1998. Copies of the application package and BSA permit are provided as Appendix B.

The discharge permit was approved and signed by BSA on August 3, 1998. The discharge permit required sampling of treated water for total lead, total zinc, and total PCBs and set limits of 2 mg/L, 2 mg/L, and non-detect at 0.0003 mg/L, respectively. Weekly updates of analytical data and volumes of water discharged were required to be submitted to Mr. James Overholt of BSA.

Dewatering of the excavation area began on July 31, 1998. Water was pumped from the manhole of the existing in-place groundwater collection system. Once the excavation was opened, water was pumped directly from the excavation, as well as from the manhole.

The water treatment system consisted of one 20,000-gallon influent tank used for oil/water separation and precipitation of suspended solids through the addition of polyaluminum chloride solution; four bag filter housings in dual in-line configuration (two 5-micron/1-micron combinations); multi-media filter consisting of 4,000 pounds of filter sand, 2,000 pounds of modified organoclay for removal of emulsified and organic oils, and 2,000 pounds of Calgon Filtrasorb 300 carbon; and two 0.35 micron cartridge filters for removal of small particulates. Treated water was stored in one of four effluent frac tanks pending analytical results prior to discharge to the BSA sanitary sewer system. Figure 2 shows a layout of the treatment system. Replacement of the filter media and carbon was necessary once during the project due to fouling of the carbon with oil. The contractor then began using alum rather than the polyaluminum chloride to remove solids.

Upon filling of an effluent frac tank, the treated water was sampled by Advanced Environmental Services. Each batch of treated water was sampled for PCBs, total lead, and total zinc in accordance with the BSA discharge permit. Batches that were below BSA permit limits were discharged, while batches that exceeded the permit limits were

recirculated through the bag filters and carbon. As a result of storing water which exceeded the discharge limit for PCBs, two of the effluent frac tanks were no longer used for treated water storage. An additional effluent frac tank was taken off-line during the course of the project because it too had contained treated water that exceeded the discharge limit.

Throughout the course of the project, 219,500 gallons of treated water were discharged to BSA. A total of 61,800 gallons of water was required to be retreated due to exceedances of the discharge limits. No oil was disposed of during the water treatment; only during the final cleaning of the treatment system.

The water treatment system was disassembled, cleaned, and demobilized between September 25, 1998 and October 9, 1998. Washwaters, sludges, and oils from cleaning of the oil/water separator tank and frac tanks, and spent carbon and filter media were characterized and disposed of accordingly. Approximately 5,000 gallons of PCB-containing oil (LNAPL) and sludge were generated during the project. This material was manifested as a TSCA waste and shipped to Chemical Waste Management in Model City, New York and ultimately to Port Arthur, Texas for destruction. Copies of the manifest and destruction confirmation are provided in Appendix C. The characterization data and disposal documentation for the carbon and filter media are also provided in Appendix C.

2.2 Deviations from the Remedial Design

The RD called for sedimentation/equalization, oil/water separation, pre-filtration using two 5-micorn filters, carbon treatment using two 1,000-pound granular activated carbon (GAC) contactors in series, and one 1-micron post filtration unit. The system presented in Sevenson's work plan, which was provided to Mr. Jaspal Walia of NYSDEC Region 9 at the preconstruction meeting held on July 29, 1998 and used at the site, provided a greater level of treatment than that presented in the RD Report. As discussed in Section 2.1, the actual system included the addition of polyaluminum chloride solution to precipitate suspended solids and consisted of four bag filter housings in dual in-line configuration (two 5-micron/1-micron combinations); multi-media filter consisting of 4,000 pounds of filter sand, 2,000 pounds of modified organoclay for removal of emulsified and organic oils, and 2,000 pounds of Calgon Filtrasorb 300 carbon; and two 0.35-micron cartridge filters for removal of small particulates. Alum was later used to precipitate solids rather than polyaluminum chloride.

A sample of untreated water was collected from the on-site manhole on June 9, 1998 and analyzed for the following parameters: pH, base neutral compounds using USEPA Method 625, PCBs using USEPA Method 608, and metals by the USEPA 200 series of methods, specifically arsenic, barium, cadmium, chromium, copper, lead, mercury,

nickel, selenium, silver, and zinc. This data was provided to BSA with the discharge permit application on July 27, 1998. Based on the results of this data, BSA only required analysis of the treated waters for PCBs, total lead, and total zinc for all batches including the initial and subsequent batches. Copies of the BSA discharge permit and permit application package are attached as Appendix B.

2.3 Analytical Data

The results of the analytical testing of the treated waters are summarized on Table 2-1. Complete copies of the analytical data packages are provided as Appendix D.

3 EXCAVATION AND DISPOSAL

3.1 Field Procedures

The RD Report called for excavation of impacted soils south of the AST containment structure and to the west of this structure, along with excavation of a dewatering pit located north of the structure beyond the limits of contamination. Excavation began on August 3, 1998 south of the aboveground storage tank (AST) containment structure (see Record Drawing 1). The area south of the AST containment structure is hereafter referred to as the main excavation. One truckload of the excavated material was transported to Chemical Waste Management (CWM) as a representative sample load to ensure that the stabilization formulation was effective on the actual site material. Once CWM verified that the treated material met the appropriate limits, excavation and transportation of the remaining site material to CWM proceeded.

Excavation continued with removal of soil from an area on the north side of the AST containment structure intended to serve as a dewatering pit. Oil/oily soil was encountered in the pit. Consequently, the area on the north side of the AST containment structure was excavated from the west wall of the WWTP westward to the property line in a 15-foot wide trench (hereafter referred to as the north or northern trench) to an average depth of approximately 10 feet below grade (approximately two feet into the top of native clay). This cut continued southward along the west side of the AST containment structure to the northern corner of the main excavation (hereafter referred to as the west or western trench). Record Drawing 1 shows the limits of the excavation including the locations of the northern and western trenches and the main excavation.

Soils from the main excavation were removed to approximately one to two feet into the top of native clay. The depth of clay ranged from approximately 5.5 feet in the southeast corner of the excavation to approximately 7.5 feet along the western end. Excavation along the western wall of the main excavation extended to a depth of approximately 11 feet to fully remove the existing groundwater collection pipe, associated bedding, and the manhole in the southwest corner. The north wall of the main excavation extended to approximately five feet off the south wall of the AST containment structure. Further excavation to the north was not possible due to the presence of underground electrical

lines and concerns for undermining the foundation of the AST containment structure. Photographs of the excavation activities are provided in Appendix E.

A hard layer of slag material was encountered around the perimeter of the AST containment structure at approximately 1.5 to 2 feet below ground surface. It took repeated tries with the backhoe bucket to break through this material. There was a concern that vibrations caused by the repeated pounding would damage the walls of the AST containment structure. As a result, at several points around the perimeter of the AST containment structure, excavation was terminated 4 to 5 feet away from the containment structure walls.

Once excavation was completed to a point where the sidewalls and floor looked visibly clean (i.e., no visible petroleum product or staining), soil samples were collected for field screening. A total of 120 discrete samples were collected and underwent field screening using a Millipore Envirogard Immunoassay kit for PCBs. Results were reported as either greater or less than a trigger value of 10 ppm. If field screening results were less than 10 ppm, excavation was considered complete in that direction and confirmatory composite soil samples were collected for PCB analysis at an off-site laboratory. If field screening results were greater than 10 ppm, excavation was continued until field screening results were below the trigger value.

A total of 28 composite soil samples were sent to Columbia Analytical Services in Rochester, New York for confirmatory PCB analysis. Sampling locations are shown on Record Drawing 2 (sidewall samples) and Record Drawing 3 (bottom samples). Field screening results are provided on Table 3-1. As shown on Table 3-1, there was generally a very good correlation between screening and laboratory results.

Overexcavation was conducted in areas along the west wall of the main excavation, the east wall of the western trench, the north wall of the main excavation, and the east wall of the main excavation below the spill containment pad in an effort to achieve soils below the PCB cleanup goal. Overexcavation was completed by removing an additional two-foot thick section of material or until soils were visibly clean. Field screening was then conducted again. Impacted areas were repeatedly overexcavated until the cleanup goal was met or other factors prevented further excavation (i.e., building/structure foundations).

The cleanup goal was achieved along the west and east walls of the main excavation; however, soils above the 10 ppm cleanup goal still remain along the east wall of the western trench and the north wall of the main excavation. Further excavation was prevented due to the proximity of the AST containment structure and concerns for compromising its structural integrity.

Excavation activities were completed on August 20, 1998. When complete, the excavation covered approximately 11,000 square feet in area. A volume of approximately 3,388 cubic yards of impacted soils (4,012.67 tons) was removed. The material was manifested as a RCRA/TSCA waste (due to the presence of both lead and PCBs) and transported to Chemical Waste Management in Model City, New York for lead stabilization and land disposal. Table 3-2 provides a summary of the waste shipments. Copies of the hazardous waste manifests, land ban paperwork, and certificates of disposal are provided in Appendix F.

3.2 Deviations from the Remedial Design

The RD called for excavated material to be stabilized to eliminate free liquid and the performance of paint filter tests to ensure that stabilization was effective. This was not necessary due to changes in the field procedures. Rather than loading excavated material directly into dump trailers, material was stockpiled overnight within the excavation footprint allowing free liquid to drain back into the excavation. This soil management practice also assured a more time-efficient loading of dump trailers. Trailers were able to be continually loaded until full, thereby minimizing demurrage time and providing for more consistent scheduling at the landfill.

During excavation of the north dewatering pit located to the north of the AST containment structure, oily material with PCB content greater than the cleanup goal was encountered. As a result, material to the north of the AST containment structure was excavated for disposal. This northern extension of the trench extended from the west corner of the AST containment structure to the east corner. The excavation was approximately 15 feet wide in the north/south direction and extended to a depth of about 8 feet below ground surface. The trench was extended eastward through clean soils to the west wall of the WWTP in order to extend the clay backfill to the WWTP. This barrier was constructed to prevent groundwater migration from upgradient areas into impacted soils still present in the area of the AST containment structure.

Material along the east sidewall of the west trench (i.e., along the west side of the AST containment structure) and the north sidewall of the main excavation (i.e., along the south side of the AST containment structure) had concentrations of PCBs greater than the 10 ppm cleanup goal. Concerns for undermining the AST containment structure walls and tanks prevented further excavation in this area. As a result of the foregoing, an Addendum to the ROD-Selected Alternative, dated January 25, 1999, was prepared and submitted to the NYSDEC. The Addendum described the changes to the ROD-selected remedy, namely the suspension of soil excavation in areas around the AST containment structure where impacted soils exceeded the 10 ppm PCB cleanup goal, and the measures taken to prevent migration of contaminants from this area. The steps to address the

remaining soils above the PCB cleanup goal are further discussed in Section 4.2 of this report. The location of remaining impacted soils above the 10 ppm PCB cleanup goal is shown on Record Drawing 4. Appendix G contains correspondence between EMCON and the NYSDEC pertaining to the remaining impacted soils and a copy of the Addendum.

Additional excavation was conducted in the area of the spill containment pad in order to achieve the cleanup goal along the east wall of the excavation. One of the two sections of the concrete spill containment pad was removed and the underlying soils excavated. Soils were transported to CWM for stabilization/disposal. The area was backfilled and the spill containment pad reconstructed in accordance with original construction specifications. Expansion joints in the concrete were required to be filled with an impermeable caulk material. Specifications for the caulking products are provided in Appendix H.

3.3 Analytical Data

The results of the analytical testing of the composite soil samples are summarized in Table 3-3. Three duplicate samples were obtained to meet the 10% duplicate requirement in the RD. Complete copies of the analytical data packages are provided as Appendix I.

4 BACKFILL

4.1 Field Procedures

Backfilling activities were conducted from August 14, 1998 to September 8, 1998. The excavation was backfilled with clay soil obtained from Pine Hill Materials Corporation. Stone placed above the clay was obtained from Buffalo Crushed Stone, Inc. Copies of the material analysis and source certification are provided in Appendix J.

Backfill was placed in two-foot lifts and compacted to approximately 12-inches in thickness. Backfill was compacted by means of a sheep's-foot roller and large, single-drum vibratory roller to a minimum density of 85 percent of maximum dry density. A total of nine lifts were placed. Due to excessive moisture (greater than 20%), several loads of backfill were refused by Sevenson and returned to the supplier.

Clay backfill was brought to within two feet of ground surface in the main excavation area and within one foot of ground surface in the west and north trenches. A geogrid mesh was placed on top of the compacted clay to help stabilize the material. Stone was placed above the geogrid to within six inches of the ground surface in preparation for paving. The surface was graded away from the AST containment structure in preparation for paving. Record Drawing 5 depicts the typical backfill cross section.

In-place compaction tests were conducted by Glynn Geotechnical Engineering on each lift of material placed, specifically around the AST containment structure. Test results are presented on Table 4-1. Original results are provided in Appendix K. Additionally, Shelby tube samples were collected to confirm that the permeability of the backfill was below the specified limit of 1×10^{-7} cm/sec. One sample was collected from the north trench and one sample and one duplicate were collected from the main excavation just south of the AST containment structure. The testing showed that the clay has an average in-place hydraulic conductivity of 4.5×10^{-8} cm/sec. Record Drawing 6 shows the locations of the Shelby tube samples.

4.2 Deviations from the Remedial Design

Material along the east sidewall of the west trench (i.e., along the west side of the AST containment structure) and the north sidewall of the main excavation (i.e., along the south side of the AST containment structure) had concentrations of PCBs greater than the 10 ppm cleanup goal. Concerns for undermining the AST containment structure walls and tanks prevented further excavation in this area. Because removal of this material was not possible, containment was considered to be the best option and a clay containment wall surrounding the AST containment structure was selected as the containment method. Clay soil was already available onsite since it was being used for backfill at the site. The NYSDEC Project Manager additionally required that the in-place permeability of the clay be demonstrated to be less than 1×10^{-7} cm/sec on the north and south sides of the AST containment structure.

A clay containment wall was constructed on the north, west and south sides of the AST containment structure. On the north side of the AST containment structure, the clay containment wall was extended to the west wall of the WWTP. Since a clean limit was already reached on the east end of the north trench, additional material excavated to extend the clay containment wall to the WWTP was used as backfill along the northern sidewall of the north trench.

Backfill was compacted to a minimum density of 85 percent, as opposed to the target 95 percent as requested by AAM in the preconstruction meeting. This change was due to the moisture content of the clay. Efforts to reduce the water content in the backfill material brought on site were only moderately successful. Due to the lower minimum clay density, it was determined that a geogrid would be placed above the clay, followed by approximately 1.5 feet of compacted stone. This approach sufficiently stabilized the material to provide a suitable base for the parking lot.

4.3 Analytical and Geotechnical Data

As requested by the NYSDEC Project Manager, Shelby tube samples on the north and south sides of the AST containment structure were collected to determine the permeability of the clay. The testing showed that the clay has an average in-place hydraulic conductivity of 4.5×10^{-8} cm/sec. Copies of the test reports are provided as Appendix K. Table 4-1 provides a summary of the in-place density testing results.

5 PAVING

5.1 Field Procedures

Paving of the newly backfilled areas and remainder of the site began on October 5, 1998 and was completed on November 13, 1998. The parking lot was divided into three sections and the paving completed in three phases to accommodate the parking and access requirements of AAM. Record Drawing 7 shows a layout of the parking lot and phases. EMCON personnel provided oversight of the paving activities and took photographs throughout the three phases. Representative photographs of the paving activities are included in Appendix E.

Phase I of the paving was conducted between October 5, 1998 and October 25, 1998. The Phase I area consisted of the excavation area, remaining northern third of the parking lot, motorcycle parking area, and eastern aisle. Paving activities consisted of rolling the stone backfill area to compact the new material, placement of a minimum of two inches of binder material over the compacted stone, reconstruction of two damaged manholes, filling low areas in previously paved sections of the Phase I area to level the surface, removal of 1,007 square feet of damaged asphalt, placement of petromat fabric, placement of a minimum of two inches of binder material over the petromat, placement of one inch of topcoat binder, and striping of the newly laid asphalt. Guard rails and fence posts were also installed.

Phase II of the paving was conducted between October 26, 1998 and November 1, 1998. The Phase II area consisted of the parking area between the eastern and western entrance aisles. Activities included reconstruction of two damaged manholes, filling low areas with binder to level the surface, removal of 445 square feet of damaged asphalt, placement of petromat fabric, placement of a minimum of two inches of binder material over the petromat, placement of one inch of topcoat binder, and striping of the newly laid asphalt. New guardrails were also installed.

Phase III paving was completed between November 2, 1998 and November 16, 1998. The Phase III area consisted of the western entrance aisle and the area south of the Phase I area. Activities in the Phase III area included removal of 24,761 square feet of damaged asphalt and replacement with four inches of binder. Additional activities included reconstruction of one damaged manhole, filling low areas with binder to level the surface,

placement of petromat fabric, placement of a minimum of two inches of binder material over the petromat, placement of one inch of topcoat binder, striping of the newly laid asphalt, and installation of new guard rails.

The new asphalt pavement was allowed to weather for one season and was seal-coated and restriped in July 1999. Material specifications for paving products used are provided in Appendix L. A cross section of the typical parking lot construction is provided as Record Drawing 8.

5.2 Deviations from the Remedial Design

Paving was conducted in three stages rather than the stated two stages to accommodate the needs of AAM.

Core samples to evaluate the thickness of the asphalt and subbase were not completed. Alternatively, the contractor removed asphalt in damaged areas and did localized inspections of the subbase in those areas. It was determined that asphalt was degrading due to inadequate thickness of the asphalt binder material and not as a result of inadequate subbase.

6 AIR MONITORING

6.1 Field Procedures

As part of the Community Air Monitoring Plan, an air monitoring program was developed to collect air samples from the perimeter of the Site and personal air samples from personnel within the excavation area. Record Drawing 9 shows the perimeter air monitoring locations. The samples were collected and analyzed in accordance with NIOSH Analytical Methods 5503 for PCBs and 7300 for lead. In addition, particulate levels were monitored in the work area using a Miniram respirable dust meter.

Perimeter and personal air monitoring was performed throughout the work shift on days when intrusive activities were being performed. Sampling was not performed on those days when substantial precipitation occurred. This was deemed acceptable as substantial precipitation not only destroys the sampling media, but also reduces airborne particulates. Perimeter air sampling was completed for 10 days.

Particulate levels within the work area were monitored periodically in the field with the Miniram and compared to site-specific action levels. A site-specific action level of 1 mg/m^3 of total dust was established for the work area. A site-specific action level of 0.15 mg/m^3 of total dust was established as the action level for the perimeter of the Site. Action levels were not exceeded.

6.2 Analytical Data

A total of 6 personal air samples and 10 perimeter air samples were collected and analyzed. Only four of the samples had detectable levels of lead. PCBs were not detected in any of the samples. All of the detected lead levels were well below the site-specific action level of 0.025 mg/m^3 for lead. The analytical data is summarized on Table 6-1. Complete analytical reports are provided as Appendix M.

7 ADDITIONAL ITEMS

7.1 Monitoring Well Decommissioning

Monitoring wells MW-207 and RW-95-1 were decommissioned on September 25, 1998. Decommissioning activities were conducted by Earth Dimensions, Inc. of Elma, New York under the oversight of an EMCON geologist. MW-207 was overdrilled and all construction materials removed. The borehole was then backfilled with bentonite grout. RW-95-1 was a cased, bedrock monitoring well. Consequently, the well was grouted in place in accordance with the procedure outlined in the NYSDEC document "Groundwater Monitoring Well Decommissioning Procedures," dated October 1996.

7.2 Deviations from the Remedial Design

At the request of the NYSDEC Project Manager, a shallow overburden groundwater monitoring well was installed on the south side of the spill containment pad between the containment pad and the existing storm sewer lateral leading from Manhole 1 to the center main. This well, designated as MW-211, was installed on March 1, 1999 by Earth Dimensions, Inc. under the oversight of EMCON personnel. Record Drawing 10 shows the location of the new well. A boring log for MW-211 is provided in Appendix N. The well will be monitored on a semi-annual basis for PCBs and total and soluble lead as part of the monitoring program to be initiated at the site upon NYSDEC's approval of this report. The installation of this well was undertaken due to the presence of PCB-impacted soils above the 10 ppm cleanup goal in certain areas of the Site (see Addendum to ROD-Selected Alternative).

7.3 Monitoring and Inspection Program

In accordance with Paragraph I.F of the RD/RA Order, the monitoring/inspection program described in Section 5 of the RD Report will be implemented within 30 days after NYSDEC's approval of the Remedial Construction Certification Report. As noted in the RD Report, groundwater and storm sewer monitoring will be conducted on a semi-annual basis; inspection of the asphalt will be conducted on an annual basis.

TABLES

Table 2-1
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF WATER TREATMENT DATA

		Analytical							
Tank	Date	PCBs (ug/L)		Lead (mg/L)		Zinc (mg/L)			Date
No.	Treated	Discharge Limit	Result	Discharge Limit	Result	Discharge Limit	Result	Gallons	Discharged
1	08/01/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	0.017	21,000	08/03/1998
2	08/02/1998	ND @ 0.3 ug/L	4100	2 mg/L	ND @ 0.08 mg/L	2 mg/L	ND @ 0.016 mg/L	19,250	Retreated to Tank 3
3	08/03/1998	ND @ 0.3 ug/L	4560	2 mg/L	ND @ 0.08 mg/L	2 mg/L	0.037	20,150	Retreated to Tank 1
4	08/03/1998	ND @ 0.3 ug/L	2880	2 mg/L	ND @ 0.08 mg/L	2 mg/L	0.058	5,100	Retreated to Tank 1
1	08/06/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	0.037	20,400	08/08/1998
2	08/07/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.04 mg/L	2 mg/L	ND @ 0.016 mg/L	20,100	08/08/1998
1	08/07/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.04 mg/L	2 mg/L	ND @ 0.016 mg/L	20,000	08/09/1998
1	08/08/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.04 mg/L	2 mg/L	ND @ 0.016 mg/L	19,600	08/10/1998
2	08/10/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	0.085	20,800	08/11/1998
1	08/13/1998	ND @ 0.3 ug/L	4	2 mg/L	ND @ 0.08 mg/L	2 mg/L	ND @ 0.016 mg/L	17,300	Retreat to Tank 2
2	08/14/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	ND @ 0.016 mg/L	16,900	08/14/1998
2	08/15/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	ND @ 0.016 mg/L	10,100	08/16/1998
2	08/18/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	ND @ 0.016 mg/L	15,600	08/18/1998
2	08/20/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	ND @ 0.016 mg/L	13,100	08/20/1998
2	08/24/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	0.023	16,400	08/24/1998
2	08/28/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	0.043	13,500	08/28/1998
2	09/01/1998	ND @ 0.3 ug/L	ND @ 0.3 ug/L	2 mg/L	ND @ 0.08 mg/L	2 mg/L	ND @ 0.016 mg/L	12,000	09/02/1998
					TOTAL GALLONS TREATED (INCLUDING RETREATS)			281,300	
						TOTAL GALLONS DISCHARGED		219,500	

Table 3-1
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF FIELD SCREENING DATA

Date Screened	Sample ID	Field Screen Result (ppm)	Composite Sample ID*	Composite Lab Result	Duplicate Result
08/07/1998	A-1	<10	Comp 1	ND	ND
08/07/1998	A-2	<10			
08/07/1998	B-1	<10			
08/07/1998	B-2	<10			
08/07/1998	CT-1	<10			
08/07/1998	A-2	<10	Comp 2	ND	
08/07/1998	A-3	<10			
08/07/1998	B-2	<10			
08/11/1998	B-3	<10			
08/07/1998	CT-2	<10			
08/07/1998	A-3	<10	Comp 3	ND	
08/07/1998	A-4	<10			
08/11/1998	B-3	<10			
08/11/1998	B-4	<10			
08/07/1998	CT-3	<10			
08/07/1998	A-4	<10	Comp 4	ND	
08/07/1998	A-5	<10			
08/11/1998	B-4	<10			
08/11/1998	B-5	<10			
08/07/1998	CT-4	<10			
08/07/1998	B-1	<10	Comp 5	ND	
08/07/1998	B-2	<10			
08/11/1998	C-1	<10			
08/11/1998	C-2	<10			
08/11/1998	CT-5	<10			
08/07/1998	B-2	<10	Comp 6	ND	
08/11/1998	B-3	<10			
08/11/1998	C-2	<10			
08/13/1998	C-3	<10			
08/11/1998	CT-6	<10			
08/11/1998	B-3	<10	Comp 7	ND	
08/11/1998	B-4	<10			
08/13/1998	C-3	<10			
08/11/1998	C-4	<10			
08/11/1998	CT-7	<10			
08/11/1998	B-4	<10	Comp 8	ND	
08/11/1998	B-5	<10			
08/11/1998	C-4	<10			
08/11/1998	C-5	<10			
08/11/1998	CT-8	<10			
08/11/1998	C-1	<10	Comp 9	ND	
08/11/1998	C-2	<10			
08/11/1998	D-1	<10			
08/13/1998	D-2	<10			
08/13/1998	CT-9	<10			

Table 3-1
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF FIELD SCREENING DATA

Date Screened	Sample ID	Field Screen Result (ppm)	Composite Sample ID*	Composite Lab Result	Duplicate Result
08/11/1998	C-2	<10	Comp 10	ND	
08/13/1998	C-3	<10			
08/13/1998	D-2	<10			
08/13/1998	D-3	<10			
08/13/1998	CT-10	<10			
08/13/1998	C-3	<10	Comp 11	ND	
08/11/1998	C-4	<10			
08/13/1998	D-3	<10			
08/13/1998	CT-11	<10			
08/05/1998	NB-1	<10	North Pit Bottom	ND	
08/11/1998	NB-2	<10			
08/06/1998	NB-3	<10			
08/06/1998	WB-1	<10	West Trench Bottom	ND	
08/06/1998	NB-3	<10			
08/05/1998	N-1	<10	North Pit North Wall	ND	
08/06/1998	N-2	<10			
08/06/1998	N-3	<10			
08/06/1998	N-4	<10			
08/06/1998	NE-1	<10	NE-1	ND	
08/06/1998	S-1	<10	North Pit South Wall	8.7 ppm	
08/06/1998	S-2	≥10			
08/06/1998	S-3	<10			
08/06/1998	E-1	**>10**	---		
08/06/1998	E-2	**>10**	---		
08/07/1998	E-1B	**>10**	East Wall Comp #1	**21 ppm**	
08/07/1998	E-2B	**>10**			
08/07/1998	E-3	**>10**			
08/07/1998	N1-SP	**>10**	---		
08/07/1998	N2-SP	**>10**	---		
08/07/1998	N3-SP	**>10**	---		
08/11/1998	N1-SPB	**>10**	North Wall Comp #1	**140 ppm**	
08/11/1998	N2-SPB	**>10**			
08/11/1998	N3-SPB	**>10**			
08/11/1998	N4-SP	<10	North Wall Comp #2	**140 ppm**	
08/11/1998	N5-SP	**>10**			
08/11/1998	N6-SP	**>10**			
08/21/1998	N7-SP	**>10**	---		
08/21/1998	N8-SP	**>10**	---		
08/11/1998	S1-SP	<10	South Wall Comp #1	ND	
08/11/1998	S2-SP	<10			
08/13/1998	S3-SP	<10			
08/13/1998	S4-SP	<10	South Wall Comp #2	ND	ND
08/11/1998	S5-SP	<10			
08/11/1998	S6-SP	<10			

Table 3-1
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF FIELD SCREENING DATA

Date Screened	Sample ID	Field Screen Result (ppm)	Composite Sample ID*	Composite Lab Result	Duplicate Result
08/07/1998	E-4	**>10**	---		
08/11/1998	E-4B	**>10**	---		
08/12/1998	E-4C	**>10**	---		
08/11/1998	E-5	**>10**	---		
08/12/1998	E-5B	**>10**	---		
08/13/1998	E-4D	**>10**	East Wall Comp #2	**95 ppm**	
08/13/1998	E-5C	**>10**			
08/17/1998	E-4 Horiz	**>10**	---		
08/20/1998	E-4E	<10	---		
08/21/1998	E-4F	<10	East Wall Comp #2B	3.4 ppm	
08/20/1998	E-5D	<10			
08/11/1998	E-6	<10	East Wall Comp #3	ND	
08/11/1998	E-7	<10			
08/11/1998	E-8	<10			
08/06/1998	W-1	**>10**	---		
08/07/1998	W-1B	**>10**	---		
08/07/1998	W-3	**>10**	---		
08/11/1998	W-1C	**>10**	West Wall Comp 1	**17 ppm**	**19 ppm**
08/06/1998	W-2	<10			
08/11/1998	W-3B	<10			
08/13/1998	W-1D	<10	---		
08/17/1998	W-1D	<10	West Wall Comp 1B	**19 ppm**	
08/17/1998	W-2B	<10			
08/11/1998	W-3B	<10			
08/20/1998	**	<10	West Wall Comp 1R	ND	
08/11/1998	W-6	**>10**	---		
08/11/1998	W-7	**>10**	---		
08/07/1998	W-4	<10	West Wall Comp 2	ND	
08/11/1998	W-5	<10			
08/12/1998	W-6B	<10			
08/12/1998	W-7B	<10			

NOTES:

ppm Parts per million

ND Non-detect. Detection limits ranged from 490 ug/kg (or ppb) to 710 ug/kg.

>10 Indicates that the field screened sample exceeded the cleanup criteria and was not sent for laboratory analysis. Overexcavation was conducted in the location of these samples prior to resampling.

--- Sample not included as part of a laboratory composite sample (due to exceedence of cleanup goal).

* The composite samples for laboratory analysis were made up of the individual field screened samples as indicated. A sample ID consisting of a number followed by a letter (e.g., East Wall Comp #2B) indicates that the sample is a subsequent sample from the indicated location after overexcavation was completed.

** Resample of W-1D, W-2B, and W-3B after overexcavation. Field screening was not conducted.

Table 3-2
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF WASTE MATERIAL LOADS

Date Shipped	Manifest No.	AAM Shipper No.	Weight (lbs)	Weight (tons)	Land Ban	Certificate of Disposal
08/03/1998	NYB8901423	712684	50,920	25.46	X	X
08/05/1998	NYB8901432	712699	72,280	36.14	X	X
	NYB8901441	712700	68,880	34.44	X	X
	NYB8901459	712701	58,560	29.28	X	X
	NYB8901468	712702	62,440	31.22	X	X
	NYB8901477	712703	68,780	34.39	X	X
	NYB8901486	712704	67,620	33.81	X	X
	NYB8901495	712705	53,760	26.88	X	X
	NYB8901504	712706	58,460	29.23	X	X
	NYB8901513	712707	77,360	38.68	X	X
	NYB8901522	712708	80,180	40.09	X	X
	NYB8901531	712709	79,440	39.72	X	X
	NYB8901549	712710	41,600	20.8	X	X
	NYB8901558	712711	84,260	42.13	X	X
	NYB8901567	712712	68,520	34.26	X	X
	NYB8901576	712713	58,580	29.29	X	X
	NYB8901585	712714	66,040	33.02	X	X
08/06/1998	NYB8901594	712715	72,240	36.12	X	X
	NYB8901603	712716	69,480	34.74	X	X
	NYB8901612	712717	55,000	27.5	X	X
	NYB8901621	712718	59,680	29.84	X	X
	NYB8901639	712729	69,480	34.74	X	X
	NYB8901648	712730	65,240	32.62	X	X
	NYB8901657	712731	71,900	35.95	X	X
	NYB8901666	712732	79,280	39.64	X	X
	NYB8901675	712733	71,960	35.98	X	X
	NYB8901684	712734	71,880	35.94	X	X
	NYB8901693	712735	38,040	19.02	X	X
	NYB8901702	712736	69,420	34.71	X	X
	NYB8901711	712737	62,640	31.32	X	X
	NYB8901729	712738	66,820	33.41	X	X
	NYB8901738	712739	64,540	32.27	X	X
	NYB8901747	712740	73,900	36.95	X	X
	NYB8901756	712741	71,680	35.84	X	X
	NYB8901765	712742	89,580	44.79	X	X
08/07/1998	NYB8901774	712743	74,540	37.27	X	X
	NYB8901783	712744	74,480	37.24	X	X
	NYB8901792	712745	60,440	30.22	X	X
	NYB8901801	712746	75,660	37.83	X	X
	NYB8901819	712747	73,980	36.99	X	X
	NYB8901828	712748	85,060	42.53	X	X
	NYB8901837	712759	67,620	33.81	X	X

Table 3-2
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF WASTE MATERIAL LOADS

Date Shipped	Manifest No.	AAM Shipper No.	Weight (lbs)	Weight (tons)	Land Ban	Certificate of Disposal
	NYB8901846	712760	75,140	37.57	X	X
	NYB8901855	712761	69,440	34.72	X	X
	NYB8901864	712762	74,440	37.22	X	X
	NYB8901873	712763	59,620	29.81	X	X
	NYB8901882	712764	54,960	27.48	X	X
	NYB8901891	712765	66,000	33	X	X
	NYB8901909	712766	67,520	33.76	X	X
	NYB8901918	712767	73,200	36.6	X	X
	NYB8901927	712768	56,340	28.17	X	X
08/10/1998	NYB8901936	712772	69,480	34.74	X	X
	NYB8901945	712773	68,040	34.02	X	X
	NYB8901954	712774	71,240	35.62	X	X
	NYB8901963	712775	54,500	27.25	X	X
	NYB8901972	712776	76,140	38.07	X	X
	NYB8901981	712777	78,220	39.11	X	X
	NYB8901999	712778	72,260	36.13	X	X
	NYB8902008	712779	67,380	33.69	X	X
	NYB8902017	712781	68,260	34.13	X	X
	NYB8902026	712782	66,740	33.37	X	X
	NYB8902035	712783	71,840	35.92	X	X
	NYB8902044	712784	70,120	35.06	X	X
	NYB8902053	712785	70,940	35.47	X	X
	NYB8902062	712786	65,460	32.73	X	X
	NYB8902071	712787	76,860	38.43	X	X
	NYB8902089	712788	71,680	35.84	X	X
	NYB8902098	712789	72,900	36.45	X	X
	NYB8902107	712790	64,860	32.43	X	X
	NYB8902116	712791	70,520	35.26	X	X
08/11/1998	NYB8902125	712792	63,640	31.82	X	X
	NYB8902134	712793	70,440	35.22	X	X
	NYB8902143	712794	71,820	35.91	X	X
	NYB8902152	712795	67,460	33.73	X	X
	NYB8902161	712796	70,760	35.38	X	X
	NYB8902179	712801	67,920	33.96	X	X
	NYB8902188	712802	68,660	34.33	X	X
	NYB8902197	712803	67,820	33.91	X	X
	NYB8902206	712804	72,480	36.24	X	X
	NYB8902215	712805	81,020	40.51	X	X
	NYB8902224	712806	82,700	41.35	X	X
	NYB8902233	712807	69,340	34.67	X	X
	NYB8902242	712808	67,480	33.74	X	X
	NYB8902251	712809	76,500	38.25	X	X
	NYB8902269	712810	64,840	32.42	X	X
	NYB8902278	712811	68,940	34.47	X	X

Table 3-2
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF WASTE MATERIAL LOADS

Date Shipped	Manifest No.	AAM Shipper No.	Weight (lbs)	Weight (tons)	Land Ban	Certificate of Disposal
	NYB8902287	712812	72,840	36.42	X	X
	NYB8902296	712813	57,160	28.58	X	X
	NYB8902305	712814	77,900	38.95	X	X
	NYB8902314	712815	77,020	38.51	X	X
	NYB8902323	712816	65,220	32.61	X	X
08/12/1998	NYB8902332	712817	72,640	36.32	X	X
	NYB8902341	712818	70,840	35.42	X	X
	NYB8902359	712819	72,100	36.05	X	X
	NYB8902368	712820	73,200	36.6	X	X
	NYB8902377	712821	70,060	35.03	X	X
	NYB8902386	712822	66,240	33.12	X	X
	NYB8902395	712823	83,900	41.95	X	X
	NYB8902404	712824	61,720	30.86	X	X
	NYB8902413	712830	60,560	30.28	X	X
08/13/1998	NYB8902431	712832	68,740	34.37	X	X
	NYB8902449	712833	71,480	35.74	X	X
	NYB8902458	712834	72,540	36.27	X	X
	NYB8902467	712835	69,960	34.98	X	X
	NYB8902476	712836	60,540	30.27	X	X
08/14/1998	NYB8902485	712859	55,880	27.94	X	X
	NYB8902494	712860	44,140	22.07	X	X
08/18/1998	NYB8902503	712868	51,100	25.55	X	X
	NYB8902512	712869	67,740	33.87	X	X
08/19/1998	NYB8902521	712870	51,740	25.87	X	X
	NYB8902539	712871	57,780	28.89	X	X
	NYB8902548	712872	49,320	24.66	X	X
	NYB8902557	712873	49,200	24.6	X	X
	NYB8902566	712879	41,920	20.96	X	X
08/20/1998	NYB8902575	712880	52,060	26.03	X	X
	NYB8902584	712881	50,420	25.21	X	X
	NYB8902593	712882	61,960	30.98	X	X
	NYB8902602	712883	52,380	26.19	X	X
	NYB8902611	712884	48,880	24.44	X	X
	NYB8902629	712920	58,020	29.01	X	X
TOTAL LOADS	120	**TOTAL WEIGHT**	8,025,340	4,012.67		

Table 3-3
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF CONFIRMATORY SOIL SAMPLING RESULTS

Sample ID	Date	Results (mg/kg) *							Comments
		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	
NORTH TRENCH									
NE-1 (North Pit-E.Wall)	08/06/1998	0.71U	0.71U	0.71U	0.71U	0.71U	0.71U	0.71U	
North Pit-N. Wall	08/06/1998	0.72U	0.72U	0.72U	0.72U	0.72U	0.72U	0.72U	
North Pit-S. Wall	08/06/1998	1.3U	1.3U	1.3U	8.7	1.3U	1.3U	1.3U	
North Pit Bottom	08/11/1998	0.49U	0.49U	0.49U	0.49U	0.49U	0.49U	0.49U	
WEST TRENCH									
West Trench Bottom	08/06/1998	0.49U	0.49U	0.49U	0.49U	0.49U	0.49U	0.49U	
East-1	08/07/1998	3.8U	3.8U	3.8U	3.8U	21	3.8U	3.8U	Overexcavation not possible.
W. Wall Comp #1	08/11/1998	3.4U	3.4U	3.4U	3.4U	17	3.4U	3.4U	
Blind Dupe #2	08/11/1998	3.4U	3.4U	3.4U	3.4U	19	3.4U	3.4U	
West Wall Comp 1B	08/13/1998	3.2U	3.2U	3.2U	3.2U	19	3.2U	3.2U	Resample of W.Wall Comp #1 after overexcavation
West Wall Comp 1R	08/20/1998	0.51U	0.51U	0.51U	0.51U	0.51U	0.51U	0.51U	Resample of W.Wall Comp 1B after overexcavation
MAIN EXCAVATION SIDEWALLS									
North Wall-S. Pit - Comp #1	08/12/1998	35U	35U	35U	35U	140	35U	35U	Overexcavation not possible.
North Wall-S. Pit - Comp #2	08/12/1998	31U	31U	31U	31U	140	31U	31U	Overexcavation not possible.
East Wall Comp #2	08/13/1998	13U	13U	13U	13U	95	13U	13U	
East Wall Comp #2B	08/21/1998	0.64U	0.64U	0.64U	0.64U	3.4	0.64U	0.64U	Resample of E.Wall Comp #2 after overexcavation
E. Wall Comp #3	08/11/1998	0.64U	0.64U	0.64U	0.64U	0.64U	0.64U	0.64U	
West Wall- Comp #2	08/12/1998	0.71U	0.71U	0.71U	0.71U	0.71U	0.71U	0.71U	
South Wall-South Pit Comp #1	08/13/1998	0.65U	0.65U	0.65U	0.65U	0.65U	0.65U	0.65U	
South Wall-South Pit Comp #2	08/13/1998	0.68U	0.68U	0.68U	0.68U	0.68U	0.68U	0.68U	
Blind Dupe #3	08/13/1998	0.66U	0.66U	0.66U	0.66U	0.66U	0.66U	0.66U	

Table 3-3
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF CONFIRMATORY SOIL SAMPLING RESULTS

Sample ID	Date	Results (mg/kg) *							Comments
		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	
MAIN EXCAVATION BOTTOM									
Composite #1	08/07/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	
Blind Duplicate #1	08/07/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	
Comp 2	08/11/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	
Comp 3	08/11/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	
Comp 4	08/11/1998	0.51U	0.51U	0.51U	0.51U	0.51U	0.51U	0.51U	
Comp 5	08/11/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	
Comp #6	08/13/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	
Comp #7	08/13/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	
Comp 8	08/11/1998	0.51U	0.51U	0.51U	0.51U	0.51U	0.51U	0.51U	
Comp #9	08/13/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	
Comp #10	08/13/1998	0.49U	0.49U	0.49U	0.49U	0.49U	0.49U	0.49U	
Comp #11	08/13/1998	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	

Notes:

* Samples analyzed for PCBs per USEPA Method 8082

mg/kg milligrams per kilogram or parts per million

0.5U non-detect at a detection limit of 0.5 mg/kg

Table 4-1
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF BACKFILL IN-PLACE DENSITY TESTING

Date	Test No.	Probe Depth	Dry Density	% Moisture	% Proctor	Location
08/20/1998	1	12"	113.4	16.8	87.2	Lift #1/40' south of ASTs
	2	12"	109.3	18.0	84.1	Lift #1/west of ASTs
	3	12"	112.2	17.9	86.3	Lift #1/southwest of ASTs
08/21/1998	1	12"	110.2	18.3	84.8	Lift #2/south of ASTs
	2	12"	110.9	18.1	85.3	Lift #2/west of ASTs
	3	12"	114.0	14.2	87.7	Lift #2/southwest of ASTs
08/21/1998	1	12"	110.5	18.9	85.0	Lift #3/south of ASTs
	2	12"	117.6	15.2	90.5	Lift #3/south of ASTs
	3	12"	111.3	18.1	85.6	Lift #3/west of ASTs
	4	12"	111.4	18.0	85.7	Lift #3/southwest of ASTs
08/24/1998	1	12"	116.6	15.3	89.7	Lift #4/south of ASTs
	2	12"	113.0	17.6	86.9	Lift #4/southwest of ASTs
	3	12"	114.0	17.6	87.7	Lift #4/west of ASTs
08/24/1998	1	12"	110.8	15.5	85.2	Lift #5/west of ASTs
	2	12"	119.1	11.9	91.6	Lift #5/southwest of ASTs
	3	12"	116.3	14.6	89.5	Lift #5/south of ASTs
08/26/1998	1	12"	111.3	19.1	85.6	Lift #6/south of ASTs
	2	12"	108.8	19.9	83.7	Lift #6/southwest of ASTs
	3	12"	105.6	20.0	81.3	Lift #6/south of WWTP
	4	12"	113.5	17.6	87.3	Lift #6/south of WWTP
	5	12"	114.8	17.7	88.3	Lift #6/west of ASTs
	6	12"	111.2	18.7	85.5	Lift #6/west of ASTs
08/27/1998	1	12"	108.5	20.0	83.5	Lift #7/south of ASTs
	2	12"	112.2	18.1	86.3	Lift #7/southwest of ASTs
	3	12"	115.3	15.5	88.7	Lift #7/west of ASTs
	4	12"	111.8	17.6	86.0	Lift #7/west of ASTs
08/27/1998	1	12"	112.6	19.1	86.6	Lift #7/south of WWTP
	2	12"	115.3	16.3	88.7	Lift #7/south of ASTs
	3	12"	110.4	18.7	84.9	Lift #8/west of ASTs
	4	12"	109.2	19.2	84.0	Lift #8/west of ASTs
08/28/1998	1	12"	112.3	17.5	86.4	Lift #8/south of ASTs
	2	12"	110.3	18.5	84.8	Lift #8/south of ASTs
	3	12"	112.1	17.9	86.2	Lift #9/west of ASTs
	4	12"	110.8	18.3	85.2	Lift #9/west of ASTs
	5	12"	117.4	15.1	90.3	Lift #8/south of WWTP
08/28/1998	1	12"	111.0	15.8	85.4	Lift #9/south of WWTP
	2	12"	114.8	14.9	88.3	Lift #9/south of ASTs
	3	12"	112.3	18.5	86.4	Lift #9/south of ASTs
09/08/1998	1	12"	114.9	16.3	88.4	N Trench/N of Tanks

Material	Maximum Density (pcf)	Optimum Moisture (%)
Clay	130.0	10.7

* Geotechnical testing conducted by Glynn Geotechnical Engineering

Table 6-1
GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION
SUMMARY OF AIR SAMPLING RESULTS

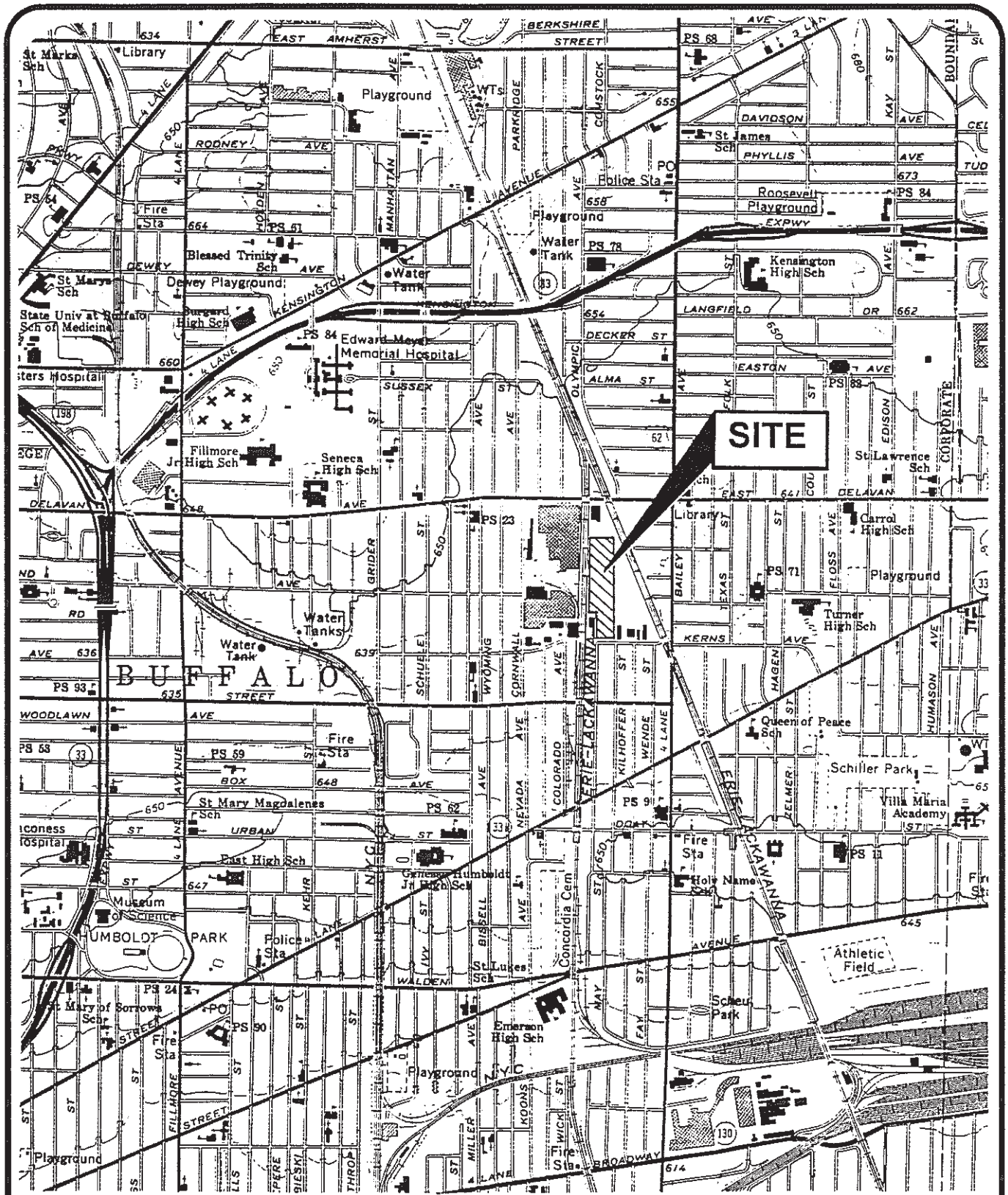
Sample	Action Level [1]		Day 1 08/04/1998		Day 2 08/05/1998		Day 3 08/06/1998		Day 4 08/07/1998		Day 5 08/08/1998		Day 6 08/10/1998		Day 7 08/11/1998		Day 8 08/12/1998		Day 9 08/13/1998		Day 10 08/14/1998	
	PCBs	Lead	PCBs	Lead	PCBs	Lead	PCBs	Lead	PCBs	Lead	PCBs	Lead	PCBs	Lead	PCBs	Lead	PCBs	Lead	PCBs	Lead	PCBs	Lead
Operator	0.025	25	<0.0002	0.87	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.3	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
Laborer	0.025	25	<0.0002	0.58	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.3	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
North	0.025	25	<0.0002	0.41	<0.0002	<0.4	NA[2]	<0.4	<0.0002	<0.3	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.5
South	0.025	25	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.3	<0.0002	<0.4	<0.0002	<0.5	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.5
East	0.025	25	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.6	<0.0002	<0.4	<0.0002	0.9	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.5
West	0.025	25	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.3	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.4	<0.0002	<0.5

[1] All PCB action levels and results are in units of mg/m^3. Lead action levels and results are in units of ug/m^3.

[2] Sample lost in field.

[3] Operator and Laborer personnel sampling was discontinued once baseline measurements were established.

FIGURES



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REV	
PROJECT NO.	35740-100.000

FIGURE 1
SITE LOCATION MAP
FORMER GENERAL MOTORS
SAGINAW DIVISION SITE

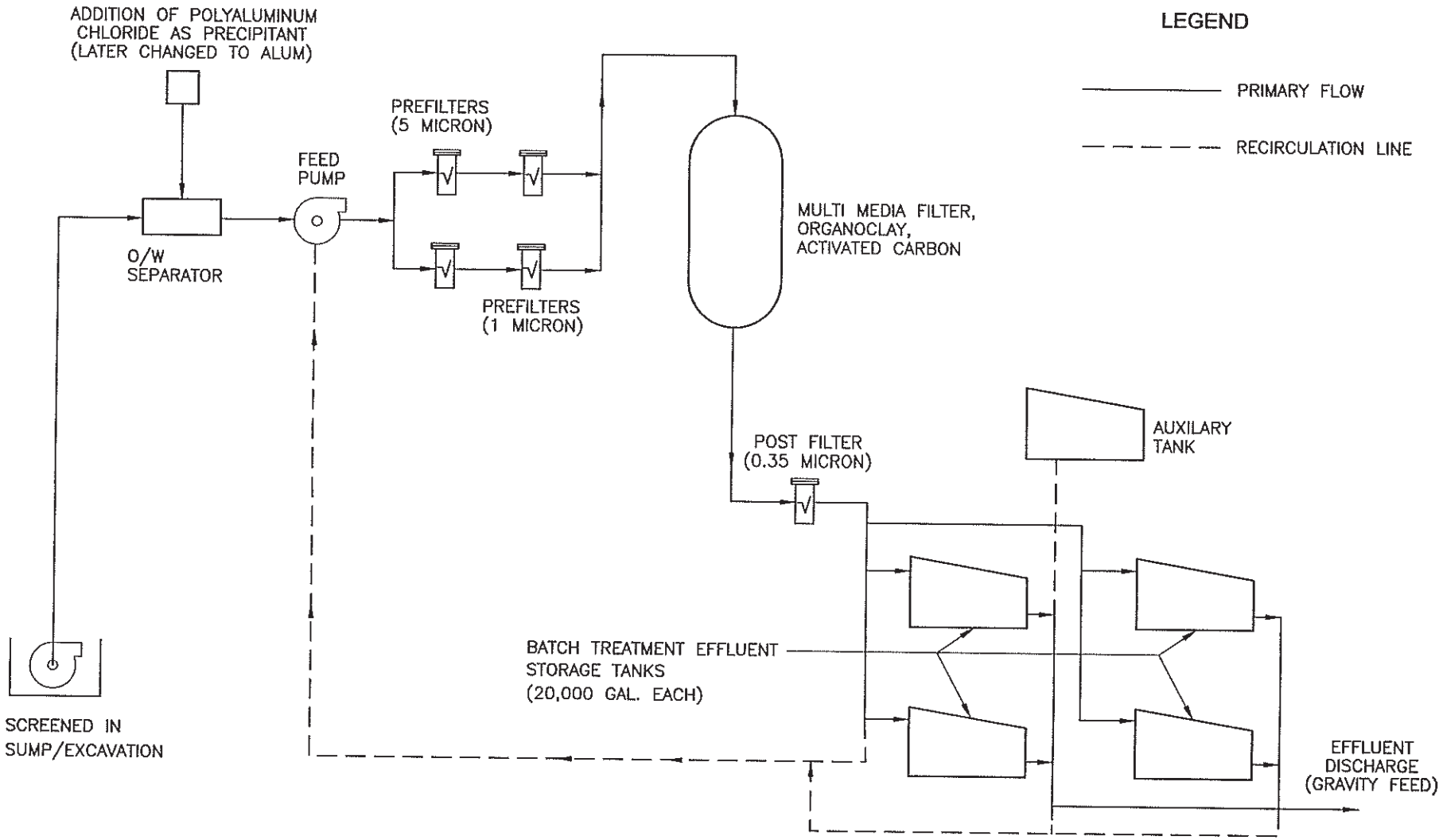

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FIGURE 2
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK

WATER TREATMENT SYSTEM FLOW DIAGRAM

DRAWINGS

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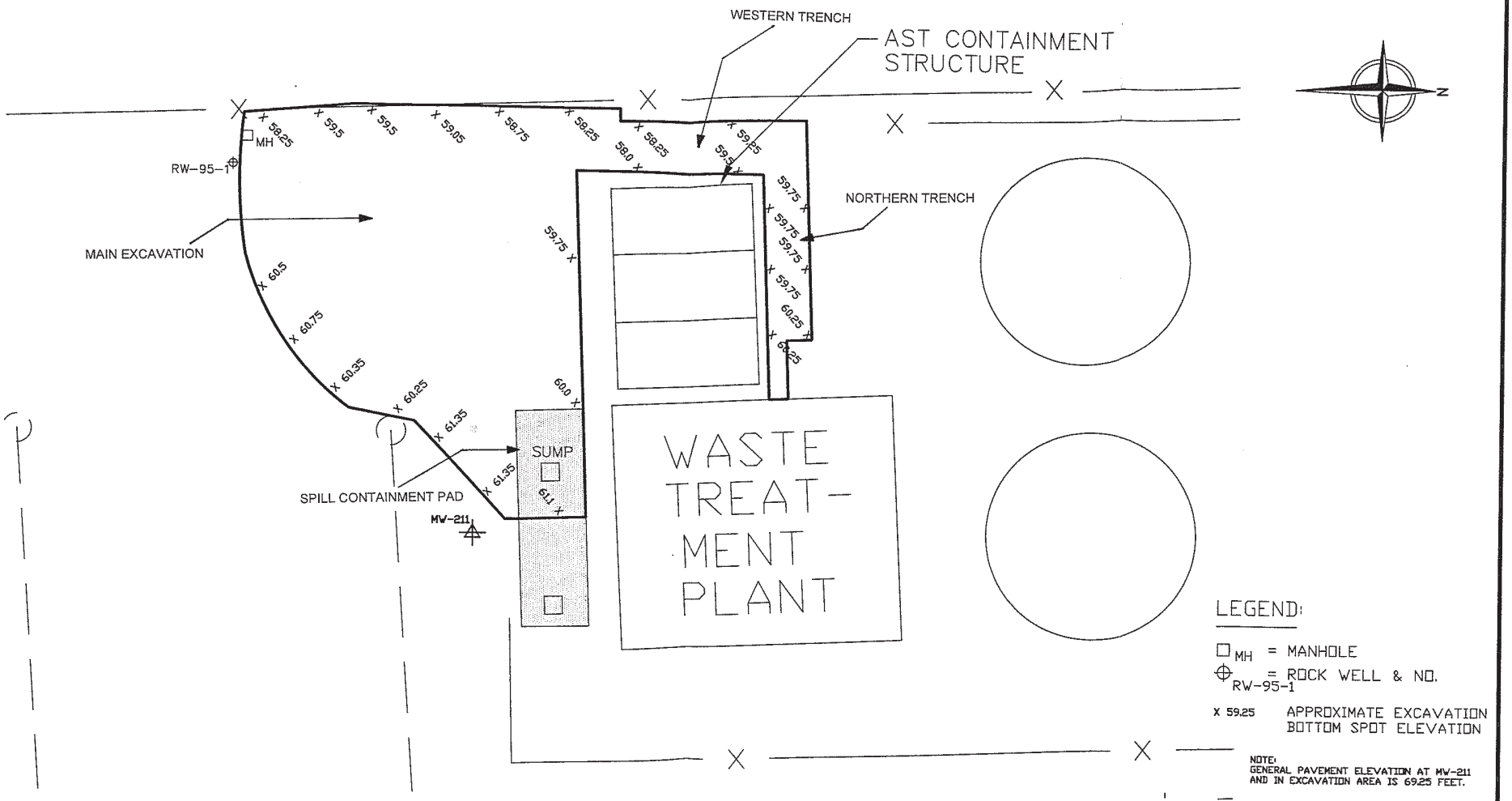

LEGEND:

□ MH = MANHOLE

⊕ RW-95-1 = ROCK WELL & NO.

X 59.25 APPROXIMATE EXCAVATION BOTTOM SPOT ELEVATION

NOTE:
GENERAL PAVEMENT ELEVATION AT MW-211 AND IN EXCAVATION AREA IS 69.25 FEET.

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DRAWING I
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
LIMIT OF EXCAVATION
RECORD DRAWING

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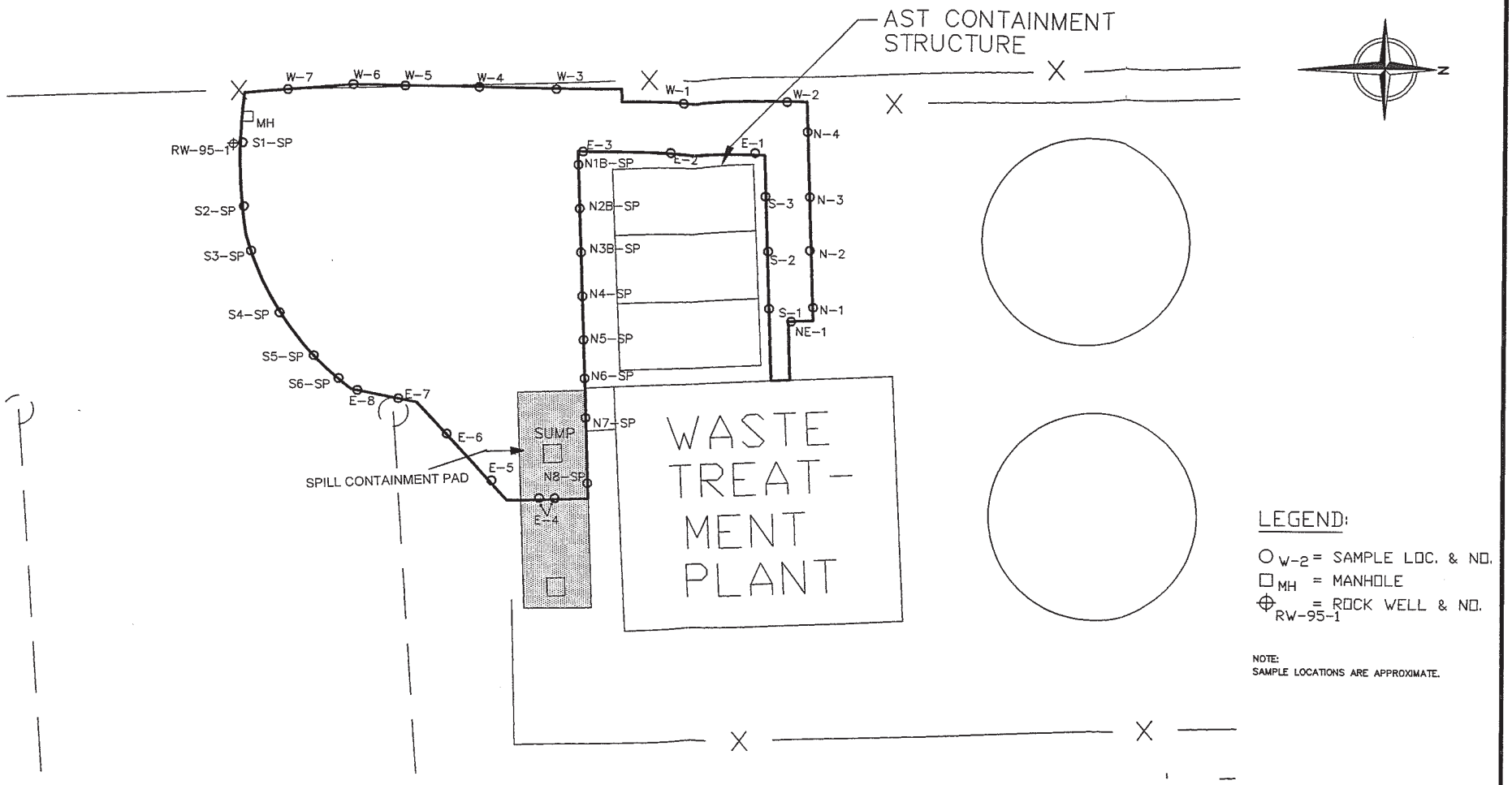

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0 30 60
SCALE IN FEET

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DRAWING 2
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
SIDEWALL SOIL SAMPLE LOCATIONS
RECORD DRAWING

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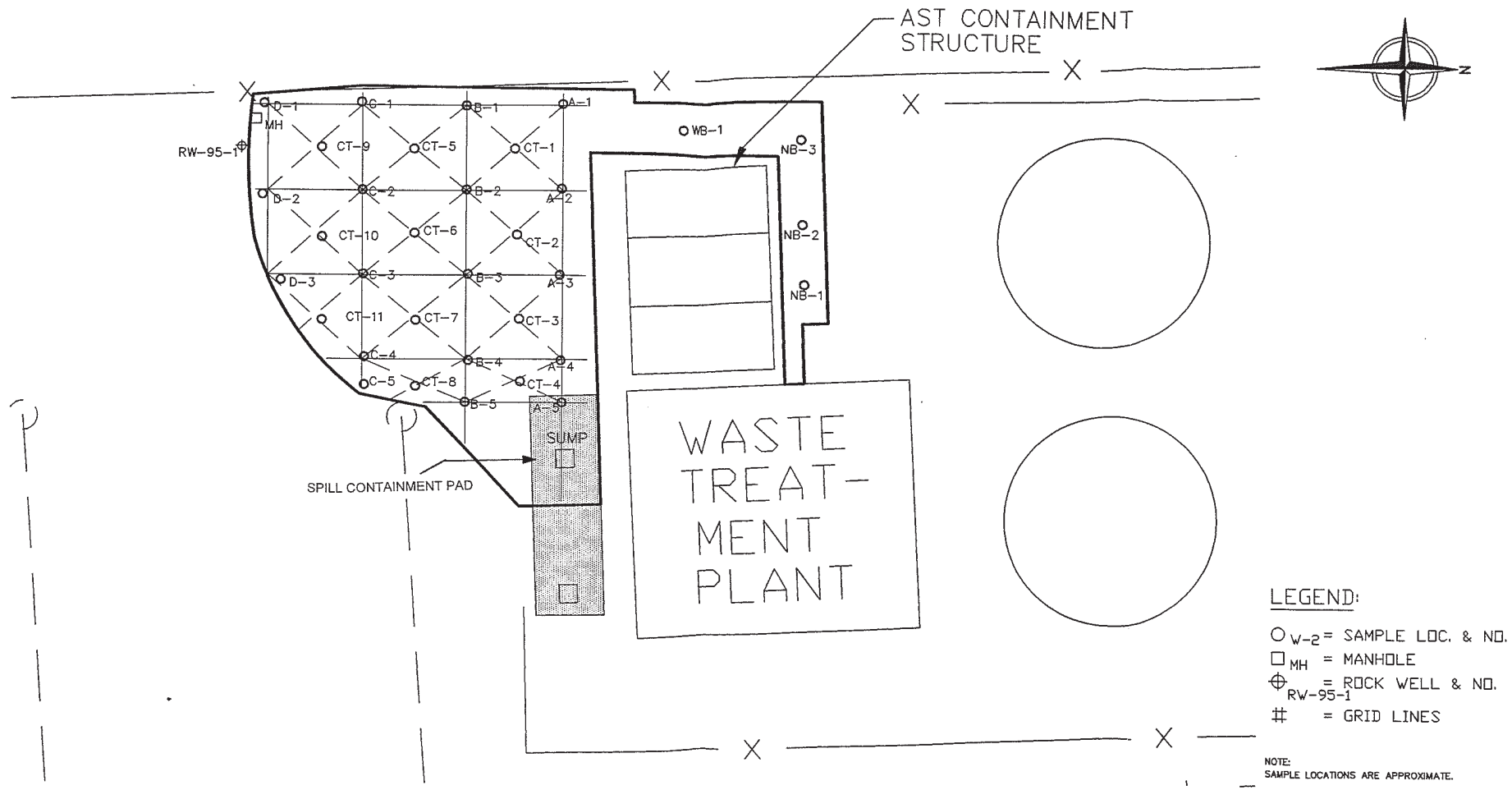

LEGEND:

- ○ W-2 = SAMPLE LOC. & NO.
- □ MH = MANHOLE
- ⊕ RW-95-1 = ROCK WELL & NO.
- # = GRID LINES

NOTE:
SAMPLE LOCATIONS ARE APPROXIMATE.

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DRAWING 3
GM CORP. SAGINAW–BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
BOTTOM SOIL SAMPLE LOCATIONS
RECORD DRAWING

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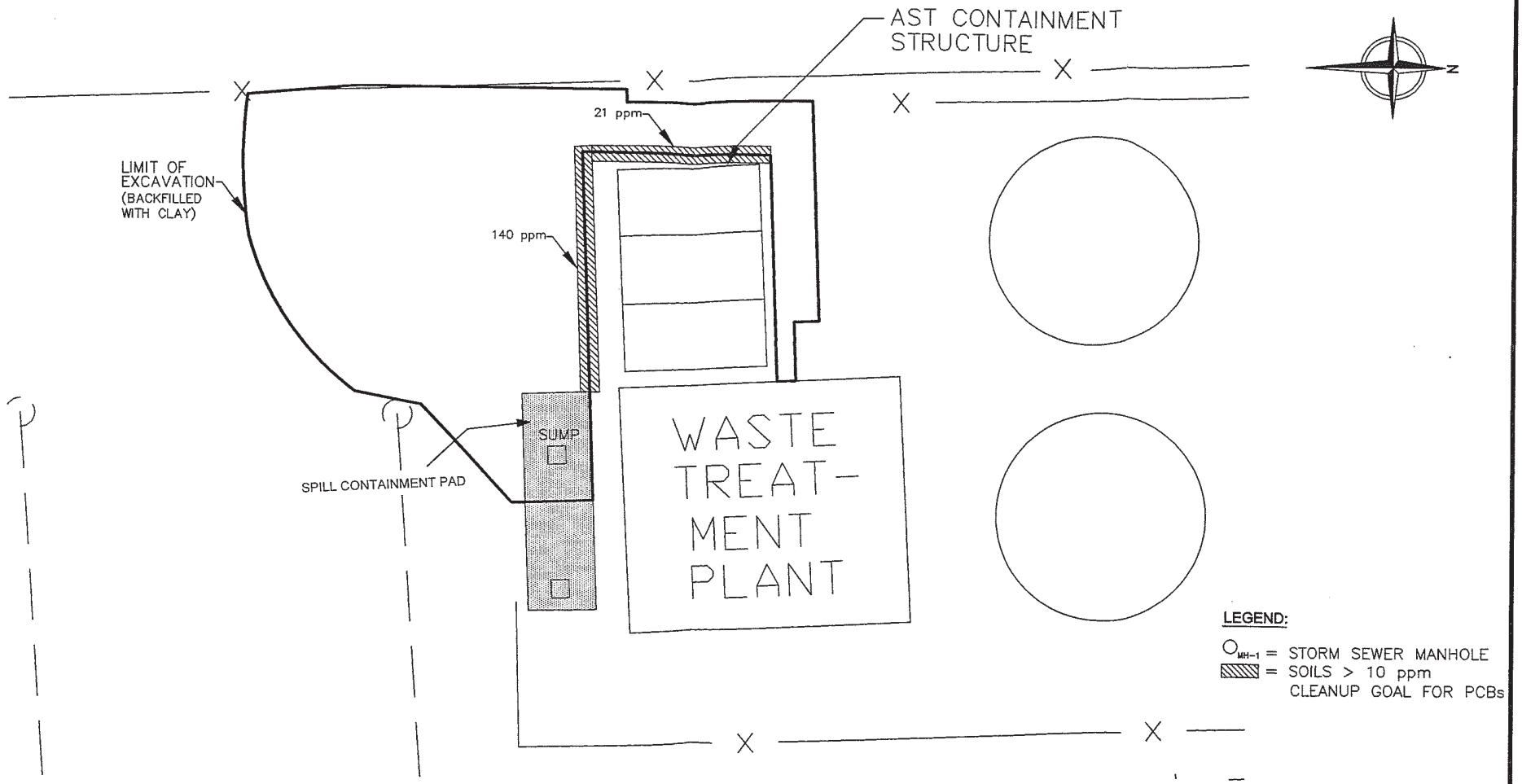

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WEHRAN-NEW YORK, INC.

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SCALE IN FEET

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APP KCM
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PROJECT NO. 795532

DRAWING 4
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
LOCATION OF REMAINING PCB-IMPACTED SOIL
RECORD DRAWING

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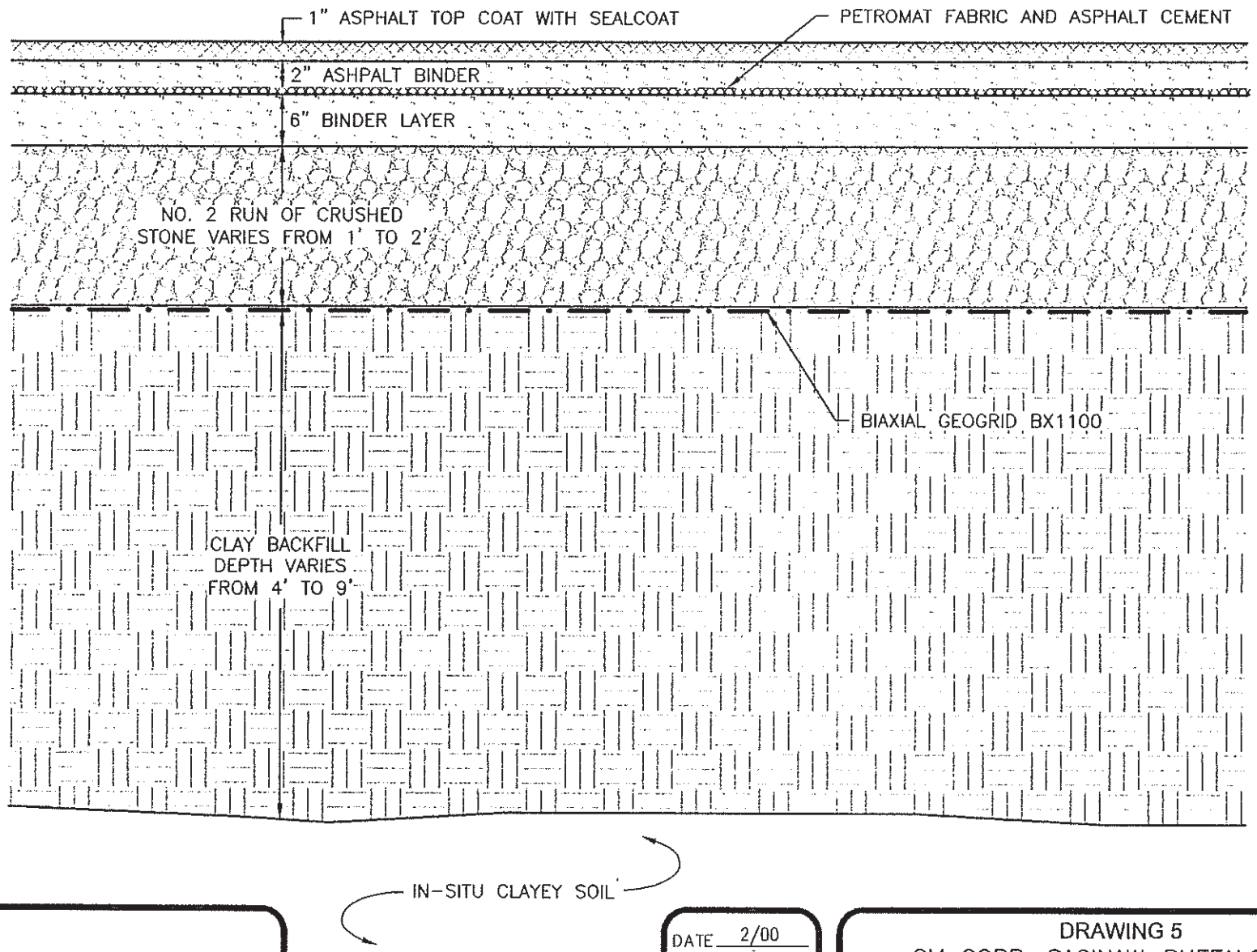

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APP KCM
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PROJECT NO. 795532

DRAWING 5
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
TYPICAL BACKFILL CROSS-SECTION
RECORD DRAWING

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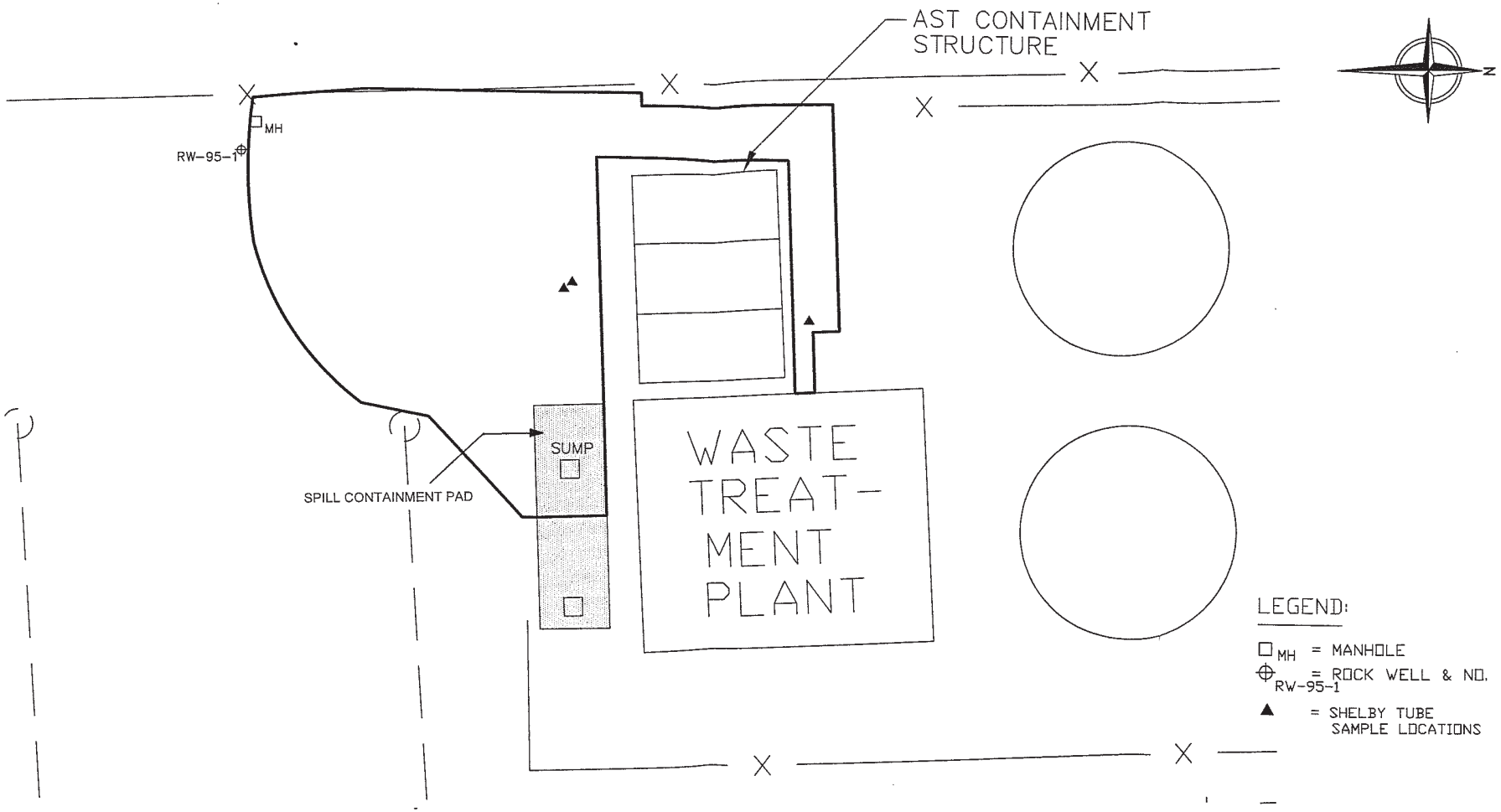

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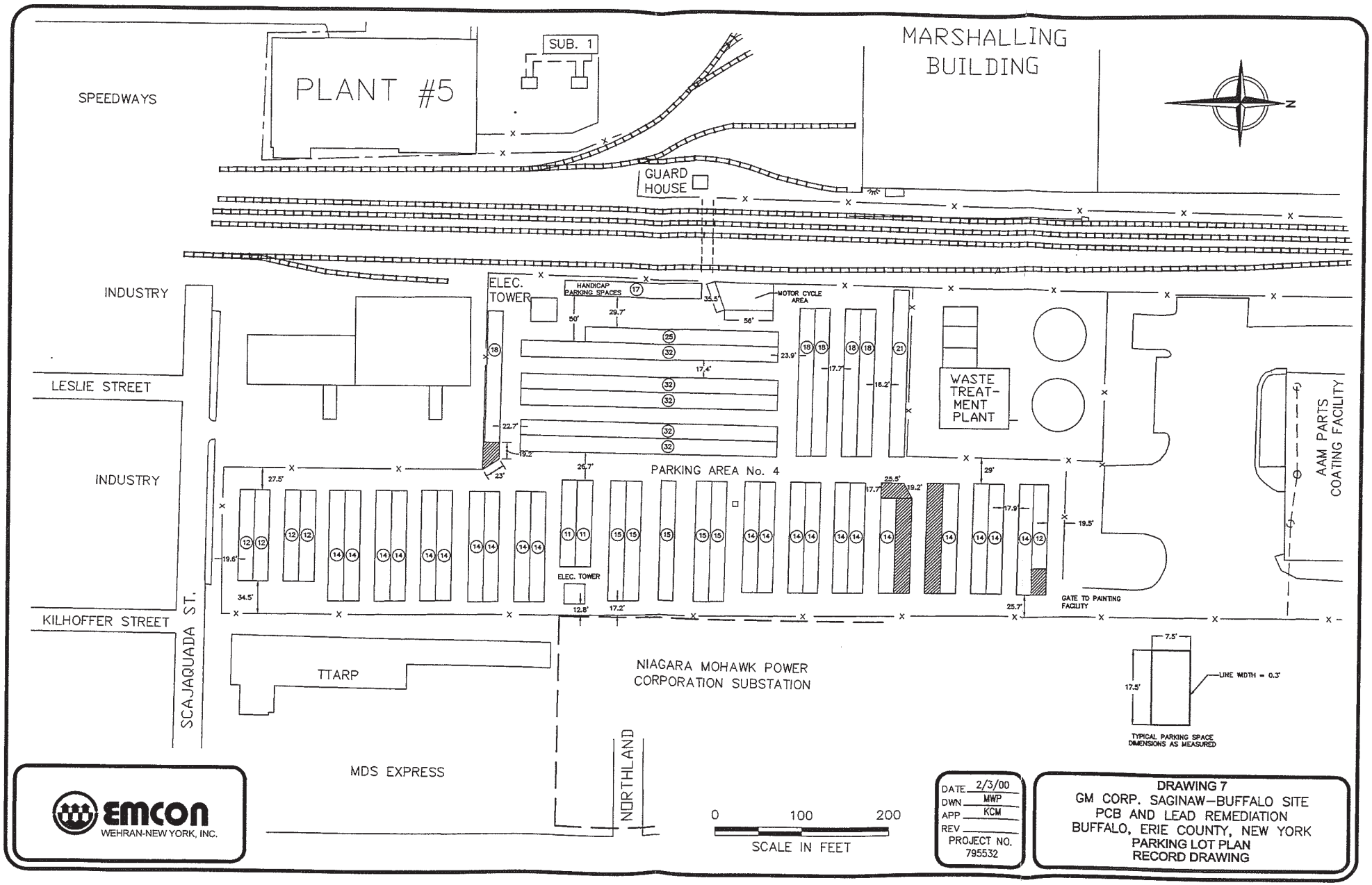
PROJECT NO. 795532

DRAWING 6
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
SHELBY TUBE SAMPLE LOCATIONS
RECORD DRAWING



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PROJECT NO.	795532

DRAWING 7
GM CORP. SAGINAW–BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
PARKING LOT PLAN
RECORD DRAWING

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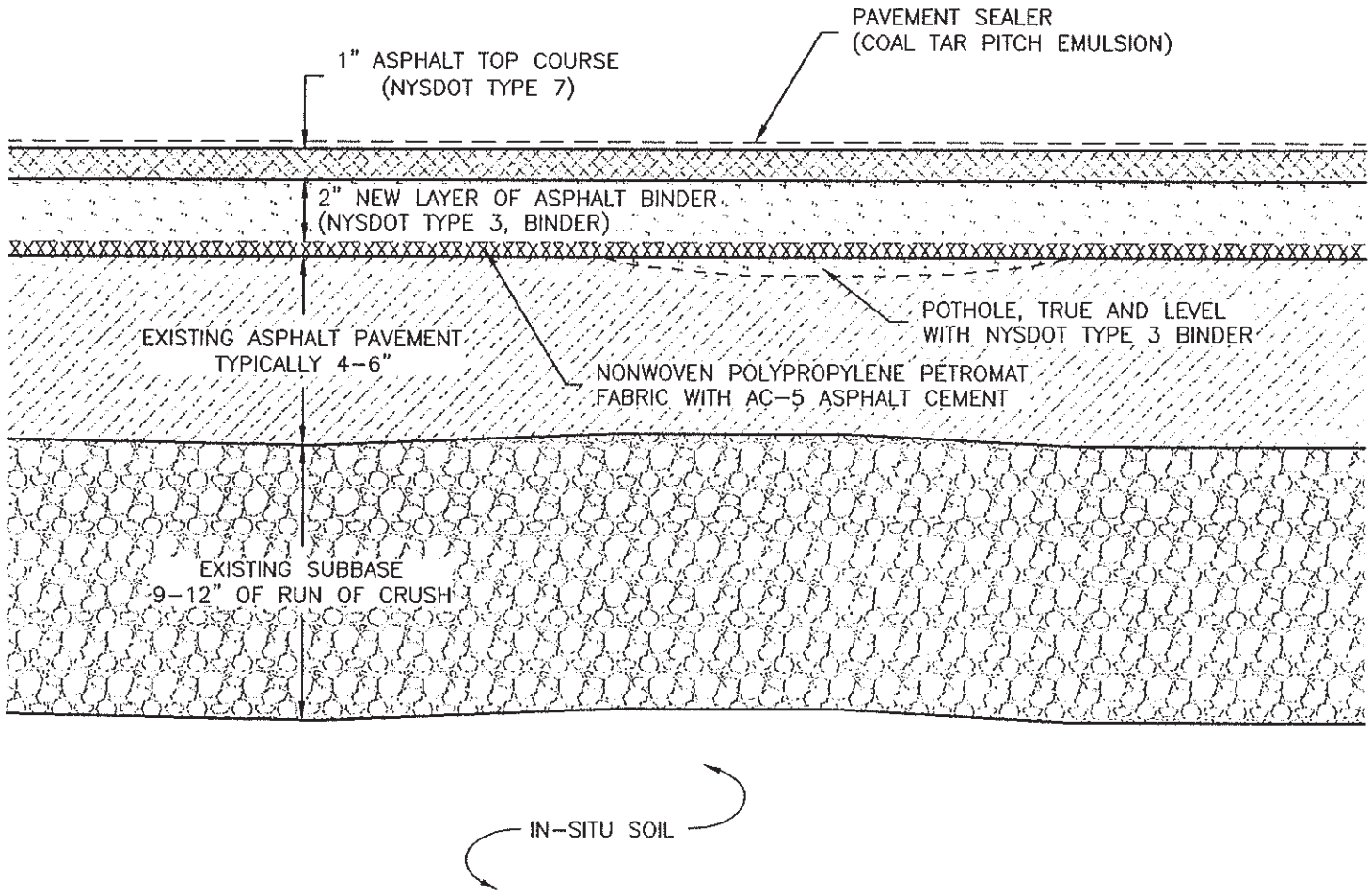

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PROJECT NO.
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DRAWING 8
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
TYPICAL PAVEMENT CROSS-SECTION
RECORD DRAWING

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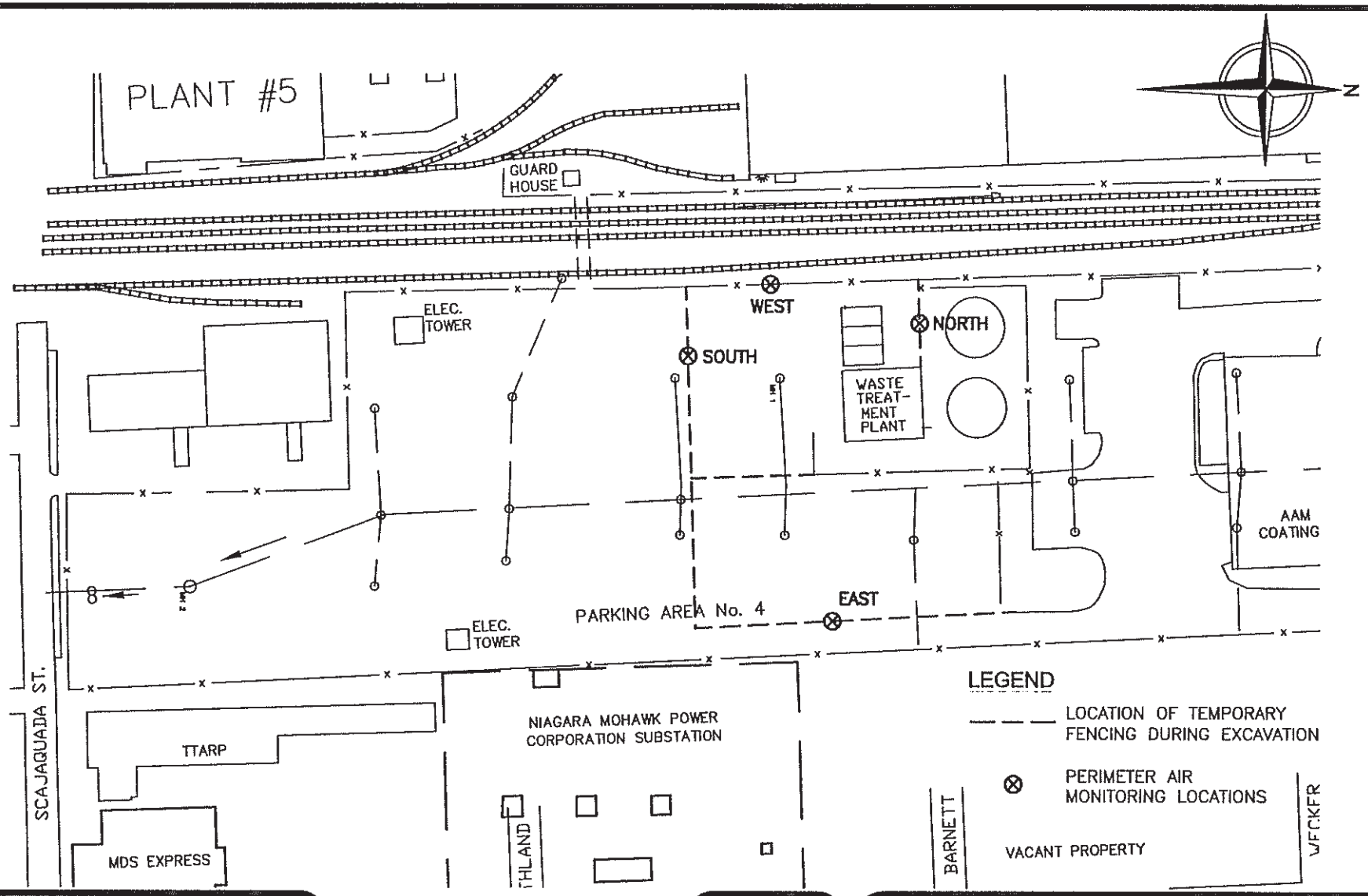

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PROJECT NO.
795532

DRAWING 9
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
LOCATION OF AIR MONITORING POINTS
RECORD DRAWING

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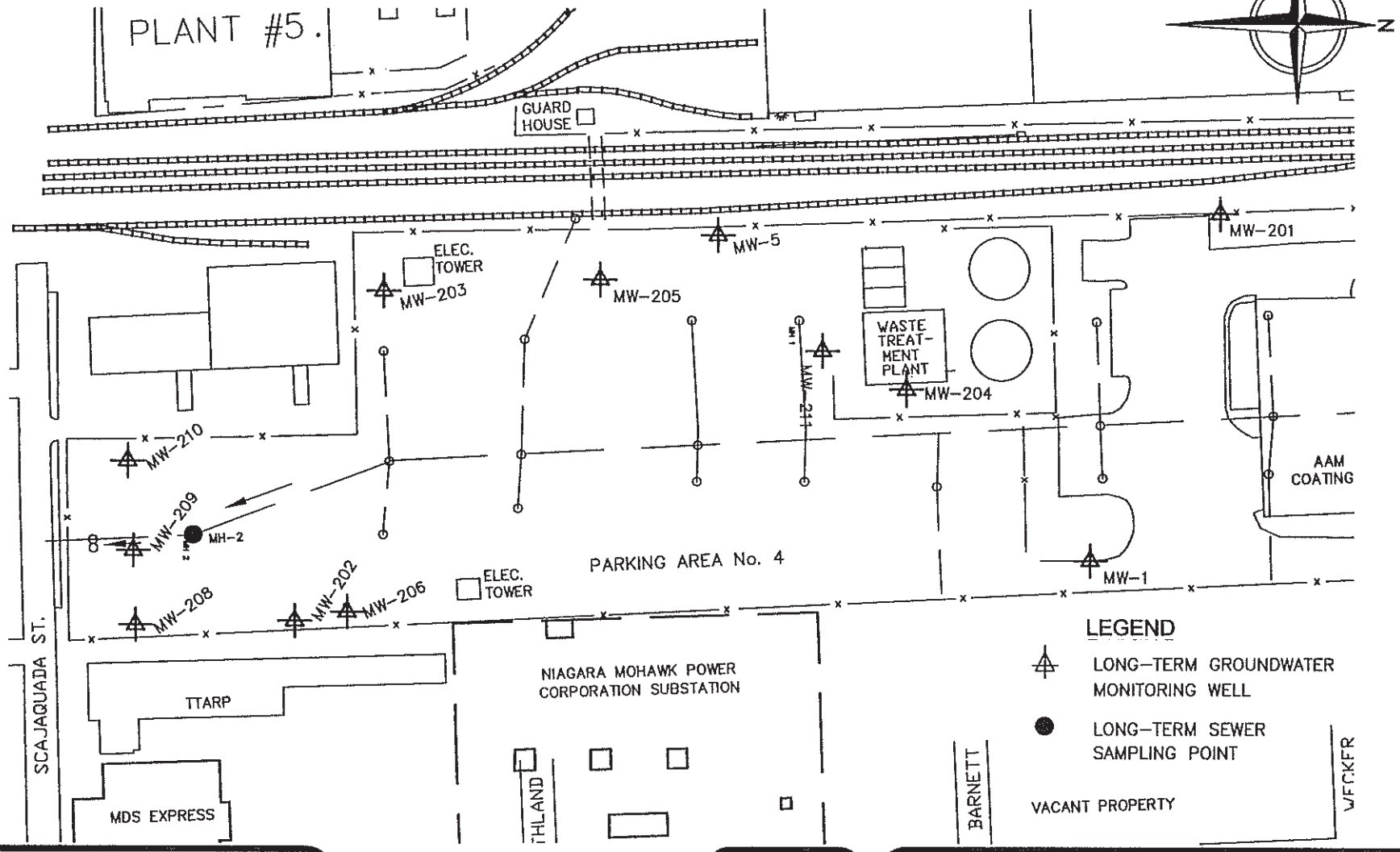


EMCON
WEHRAN-NEW YORK, INC.

DATE 2/00
DWN MWP
APP KCM
REV
PROJECT NO.
795532

DRAWING 10
GM CORP. SAGINAW-BUFFALO SITE
PCB AND LEAD REMEDIATION
BUFFALO, ERIE COUNTY, NEW YORK
LOCATION OF NEW MONITORING WELL MW-211
RECORD DRAWING

APPENDIX A

MEETING MINUTES

MEETING MINUTES

TO: Mark Napolitan - GM
Jaspal Walia - NYSDEC Region 9
Gary Giancola - Sevenson Environmental Services
Don Kopacz - CWM
Tony Glieco, AAM
Ken Malinowski, GM

DATE: July 30, 1998

FROM: Kathy Galanti - EMCON

RE: Pre-Construction Meeting - Saginaw-Buffalo Site, Buffalo, NY
OU1 Remediation Project

A pre-construction meeting was held at EMCON on July 29, 1998 at 7:30 AM. An introduction of those present and a description of project requirements was conducted by Kathy Galanti. The following highlights of the meeting have been prepared. You may contact EMCON at (716)773-1801 if there are any additional items that require clarification. Please distribute the minutes to the other attendees as appropriate.

Attendees:

Name	Company	Name	Company
Kathy Galanti	EMCON	Ken Paisley	Sevenson
Dennis Hoyt	EMCON	Frank Fracassi	Sevenson
Jennifer League	EMCON	Tony Glieco	AAM *
Mark Napolitan	GM	Chuck Bernd	AAM *
Jaspal Walia	NYSDEC	Jim Ray	AAM *
Don Kopacz	CWM	Jim Gentzke	AAM *
Rick Cooney	CWM	Diane Olearczyk	AAM *
Janet McMahon	CWM	Bill Hutley	AAM *
Gary Giancola	Sevenson	Ed Gilbert	AAM *
Tony Certo	Sevenson	Chris Schunk	AAM *

* By phone

1. A copy of the sign-in sheet for the meeting has been attached.

2. **Mobilization**: Sevenson will begin installation of the safety fence and mobilization on Wednesday, July 29, 1998. Fenced area must be signed to prevent unauthorized entry. Mobilization will include delivery of the fractionation tanks, a site trailer, and associated equipment. Sevenson may obtain water from AAM's Waste Water Treatment Plant (WWTP) or a hydrant located at the corner of Scajaquada and Kilhoffer Streets. A hydrant permit from the City of Buffalo Division of Water would be required to tap into the hydrant.

3. **Dewatering**: Dewatering will begin on Friday, July 31, 1998 by means of the existing groundwater collection trench. Additional sump holes will be dug on Monday, August 3, 1998. Lengths of 18"-24" perforated pipe will be installed in each sump, and the sumps backfilled with gravel. Two-inch submersible pumps will be placed in the sumps and the existing manhole at the southwestern corner of the excavation area.

   The dewatering plan also calls for staging excavated material within the excavation area. Material will be placed within a diked area on the asphalt and allowed to drain. Drainage from the stockpile will be directed back into the excavation. The stockpile will be loaded the following day. Stockpiled material will be covered as necessary. Jaspal approves the temporary staging of excavated material to assist with dewatering.

4. **Water Treatment**: Water treatment will begin on Friday July 31, 1998. Treated water may not be discharged during the WWTP's operational hours (7:00 AM to 3:30 PM). BSA has prepared the draft discharge permit, but is awaiting NYSDEC Division of Water approval before issuing the permit. No discharge can occur until the permit is issued.

5. **Manifesting**: Jim Gentzke of AAM will be responsible for signing all manifests. CWM will provide prepared manifests and land ban paperwork. Dennis Hoyt of EMCON will meet with Jim Gentzke the previous afternoon to have paperwork for the following day's loads signed. Jim Gentzke will also provide AAM bills of lading for the following day's loads. Dennis will return all appropriate copies to AAM the following day. EMCON will obtain copies of all outgoing paperwork for their records. Weights on the manifests must be in kilograms and should indicate "estimated".

6. **Traffic**: Care must be taken to avoid disruption of AAM and local traffic. The site must be maintained clean. AAM's heaviest traffic is at approximately 7 AM and 3:30 PM (shift change).

7. **Coordination of Trucks/Disposal**: CWM will coordinate all transportation with Tony Certo of Sevenson. CWM requires confirmatory testing of a representative

sample load of soil from the excavation area at least 36 hours before actual excavation takes place due to the analysis turn around time. The sample load excavation will take place on Monday, August 3, 1998. Transportation of the remaining material will begin Wednesday, August 5, 1998.

Sevenson has requested additional loads above the 16 guaranteed from CWM to ensure all material is removed from the site by August 19, 1998 (wants 25 loads/per day). CWM believes they may be able to provide an additional 4 to 8 loads per day and will look into scheduling. If material is stockpiled from the previous day, trucks will be able to be loaded first thing in the morning, possibly allowing up to three trips per day for some trucks.

Delivery hours at CWM are 6 AM to 4:30 PM, Monday through Friday, with the possibility of being open on Saturday. CWM is closed on Sundays, so no loads may be sent off-site. Sevenson requested that CWM be available to accept loads on Saturday, August 8, 1998, and Saturday, August 15, 1998.

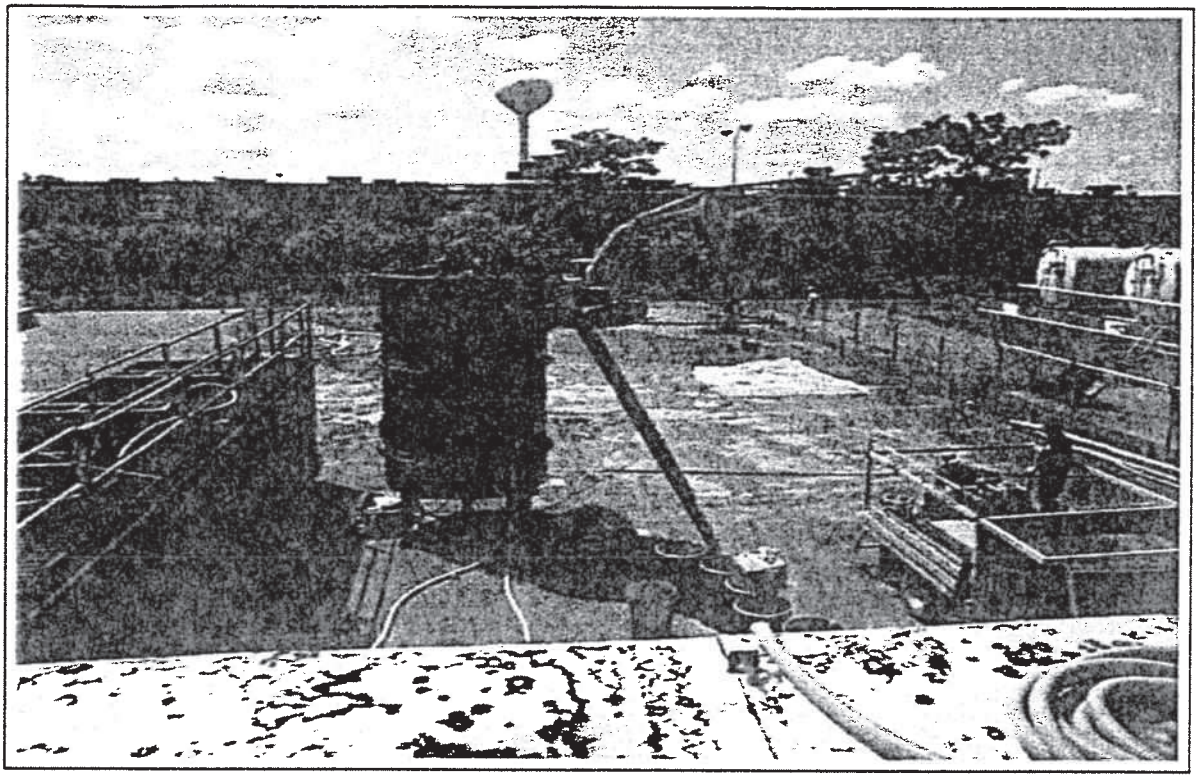
8. **Excavation**: Excavation of the main portion of material will begin on Tuesday, August 4, 1998. The day's material will be stockpiled as described above for transportation on Wednesday, August 5, 1998. Sevenson will be excavating from the west to the east side of the site heading southward. Chuck Bernd of AAM requested that Conrail be notified of the excavation as a courtesy.

9. **Backfilling**: A clay material from Pine Hill Concrete will be used as backfill material. Sevenson will provide gradation data as well as analytical data on contents. Chuck Bernd of AAM expressed concern over settling, but was reassured that backfill will be compacted to 95% maximum density.

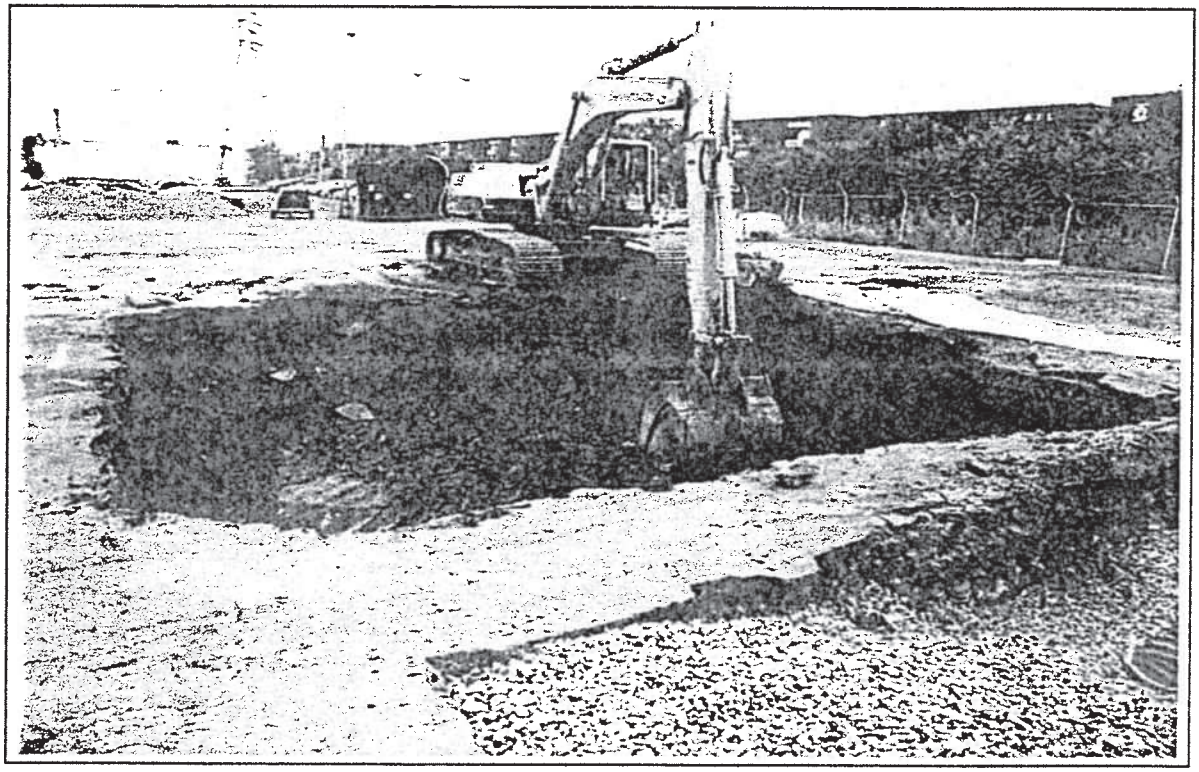
Attachment: Sign-in Sheet

APPENDIX E

PHOTOGRAPHS



Photograph 1: Looking west over excavation area during setup of water treatment system.



Photograph 2: Looking south at commencement of main excavation. South Dewatering pit in forefront.

EMCON

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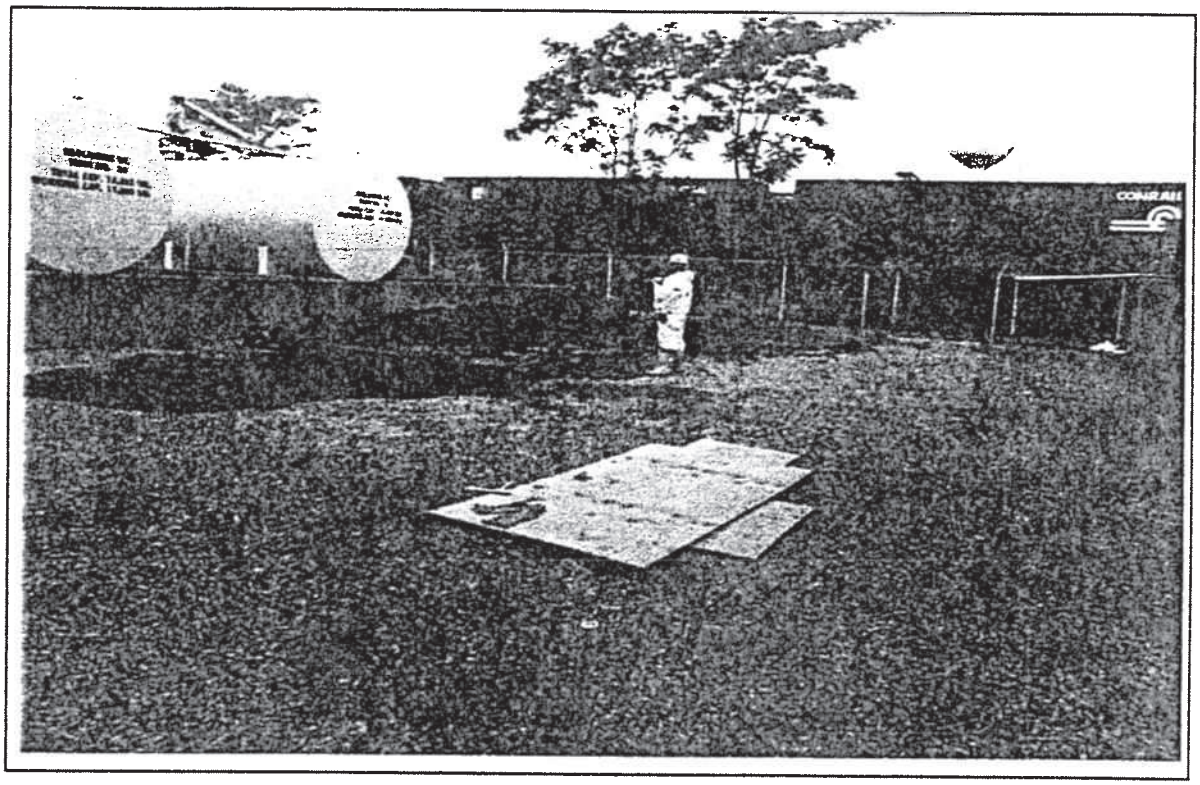
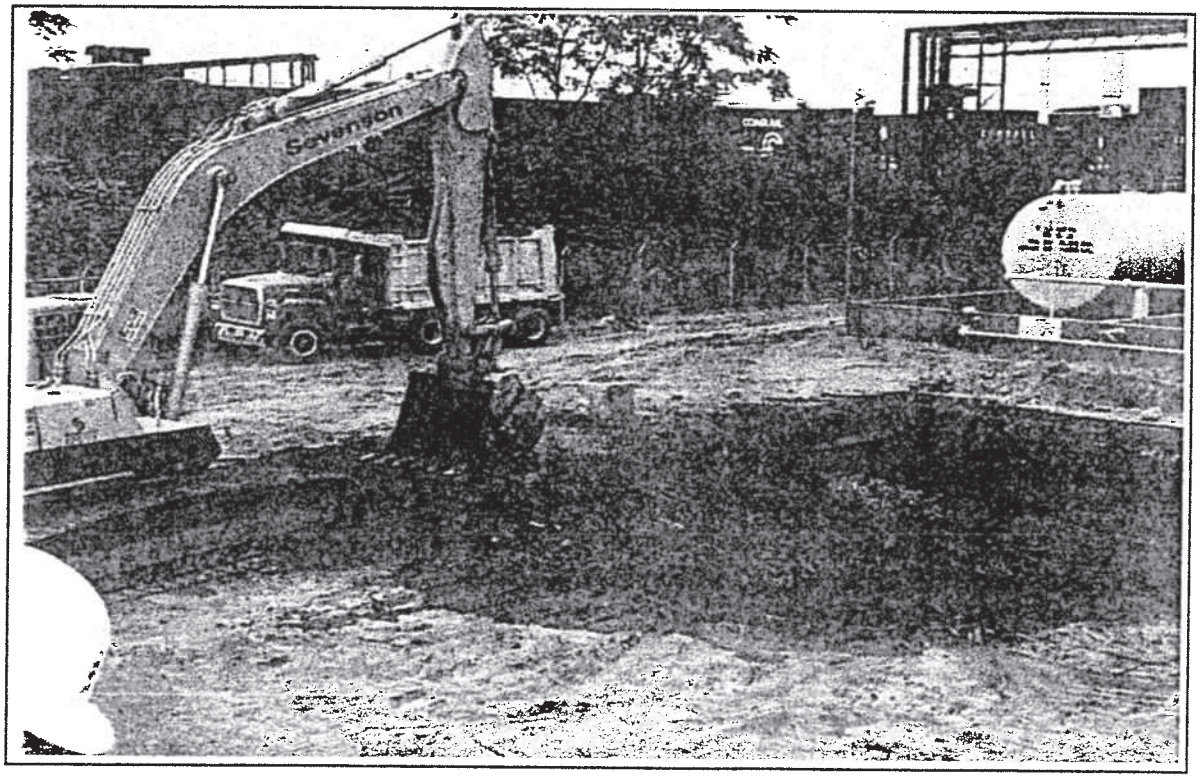
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 1 & 2

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 3: Looking west-southwest at excavation of north trench area.



Photograph4: Looking northwest toward main excavation.

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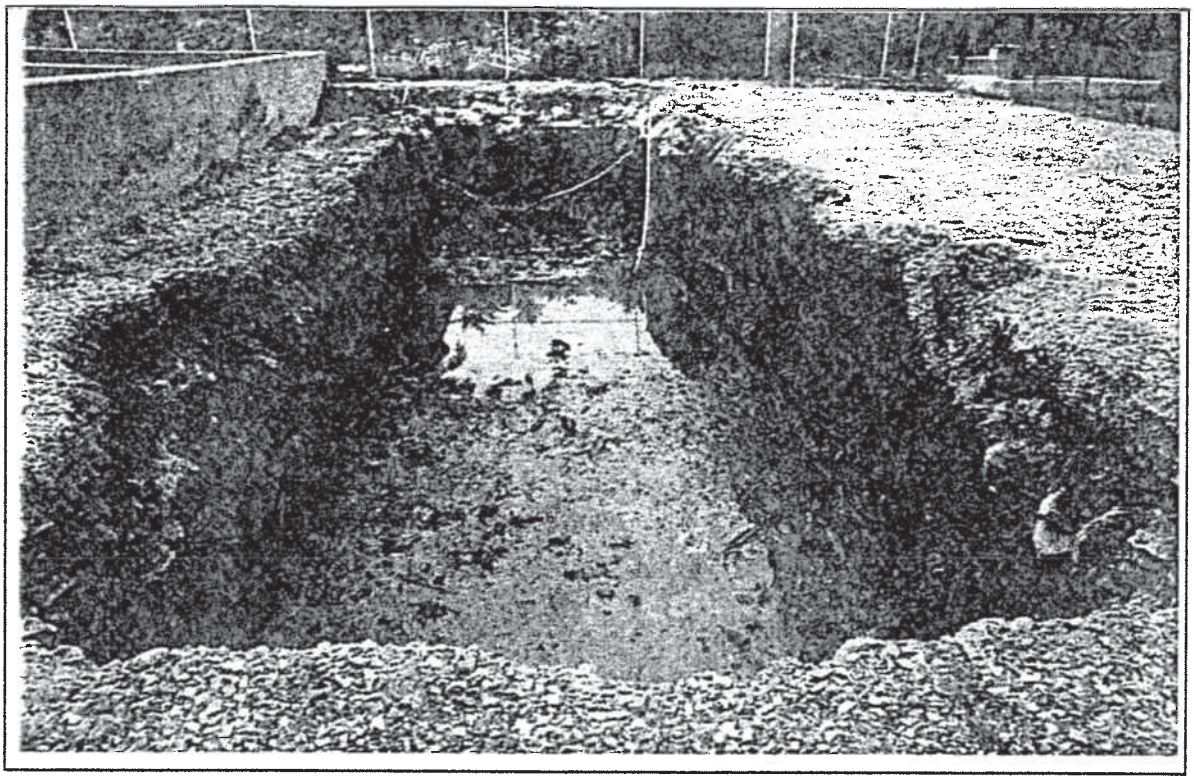
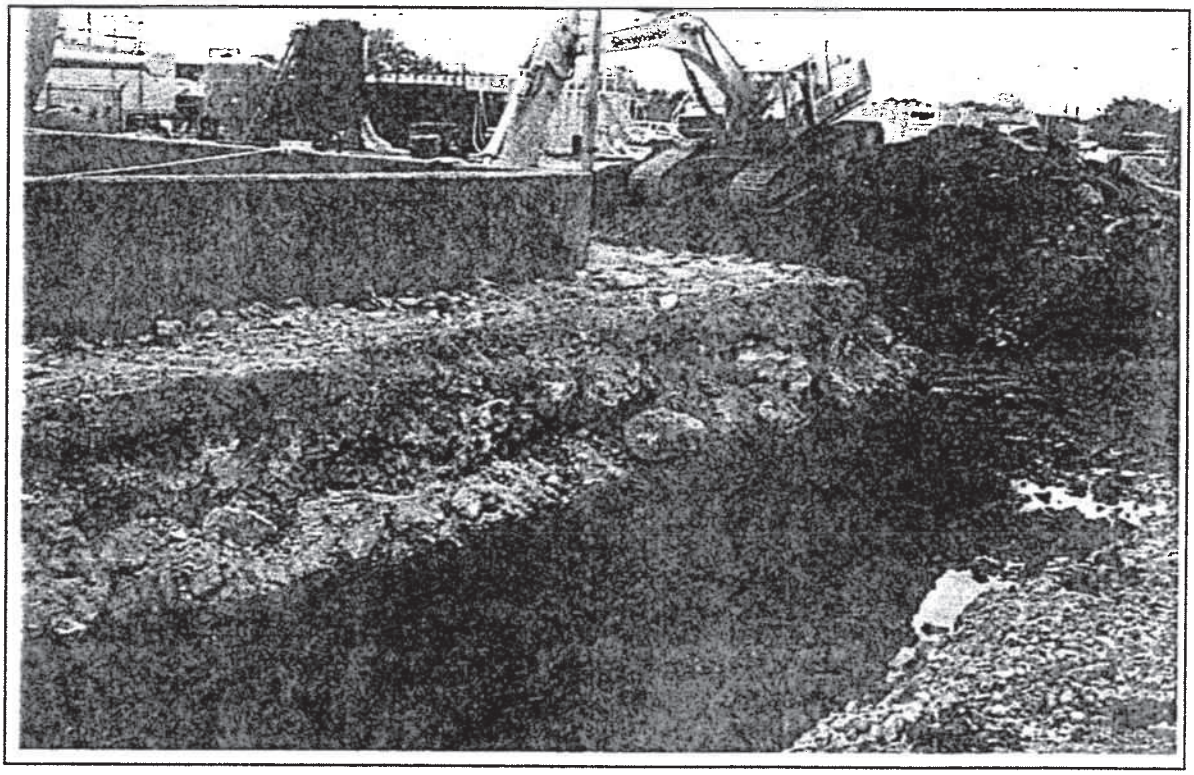
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 3 & 4

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 5: Looking west across north trench.



Photograph 6: Looking southeast across west trench toward main excavation.

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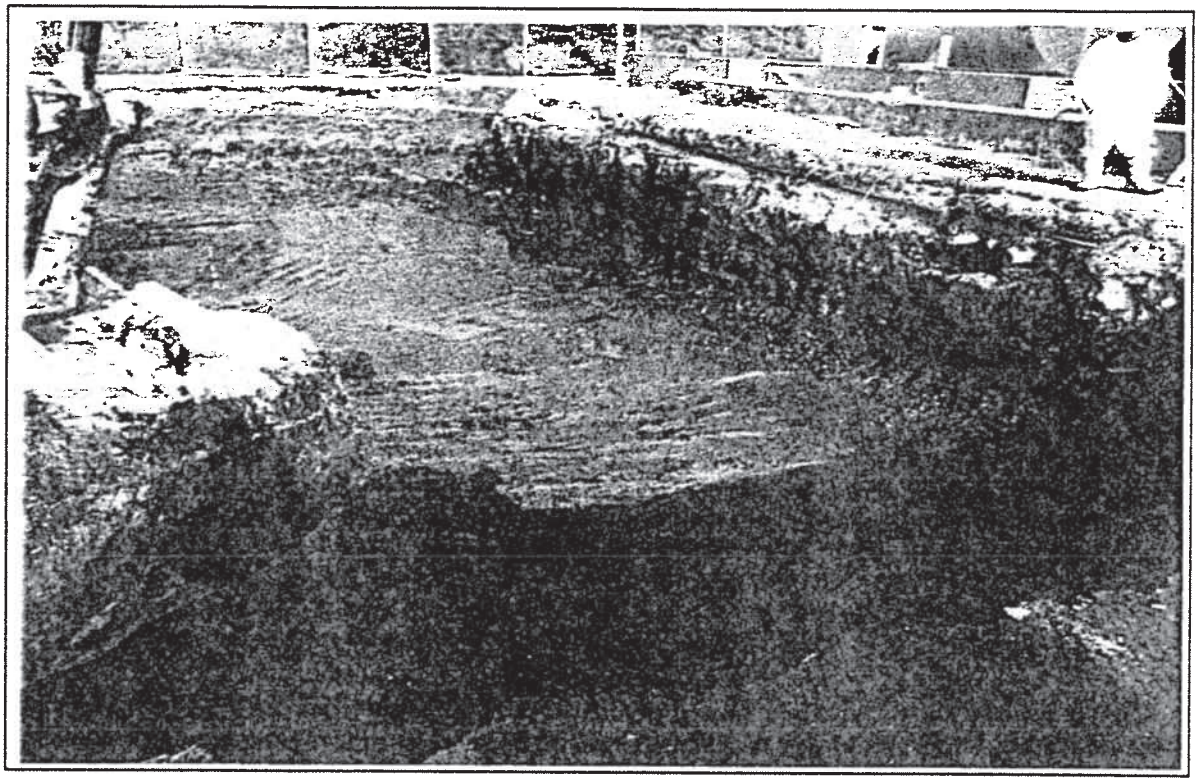
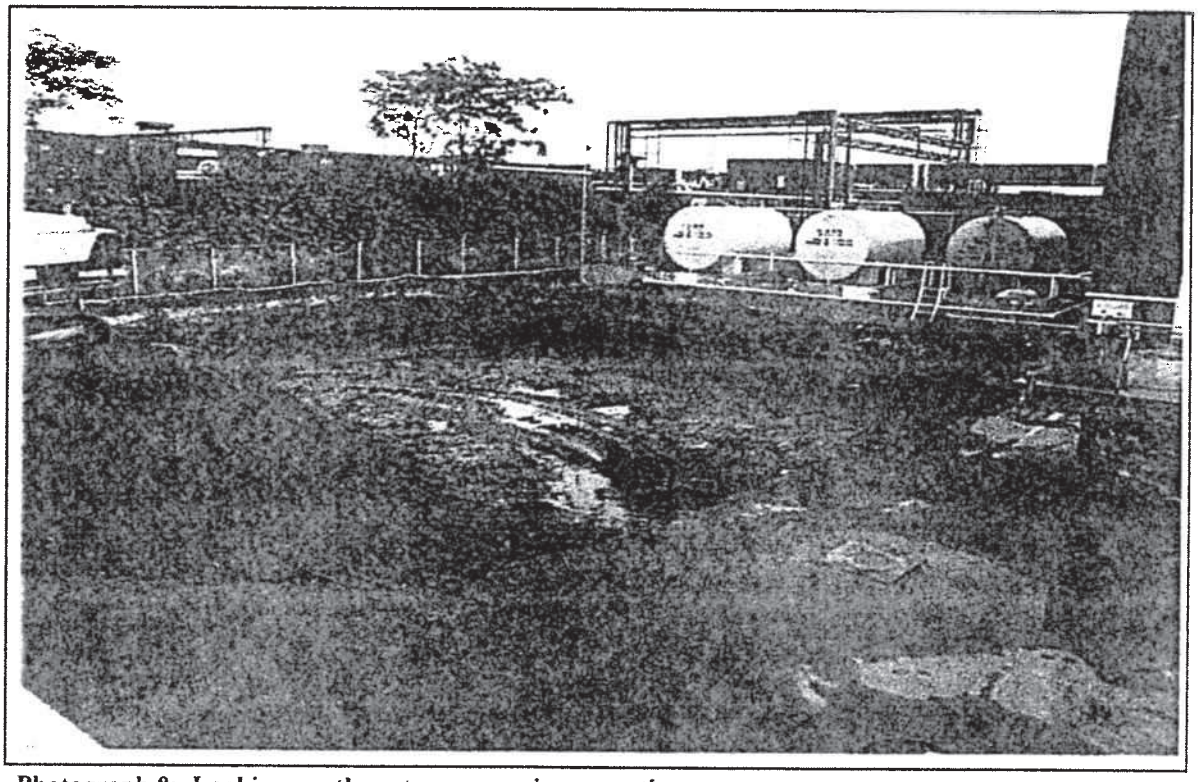
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 5 & 6

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 7: Looking west across northern edge of main excavation.



Photograph 8: Looking northwest across main excavation.

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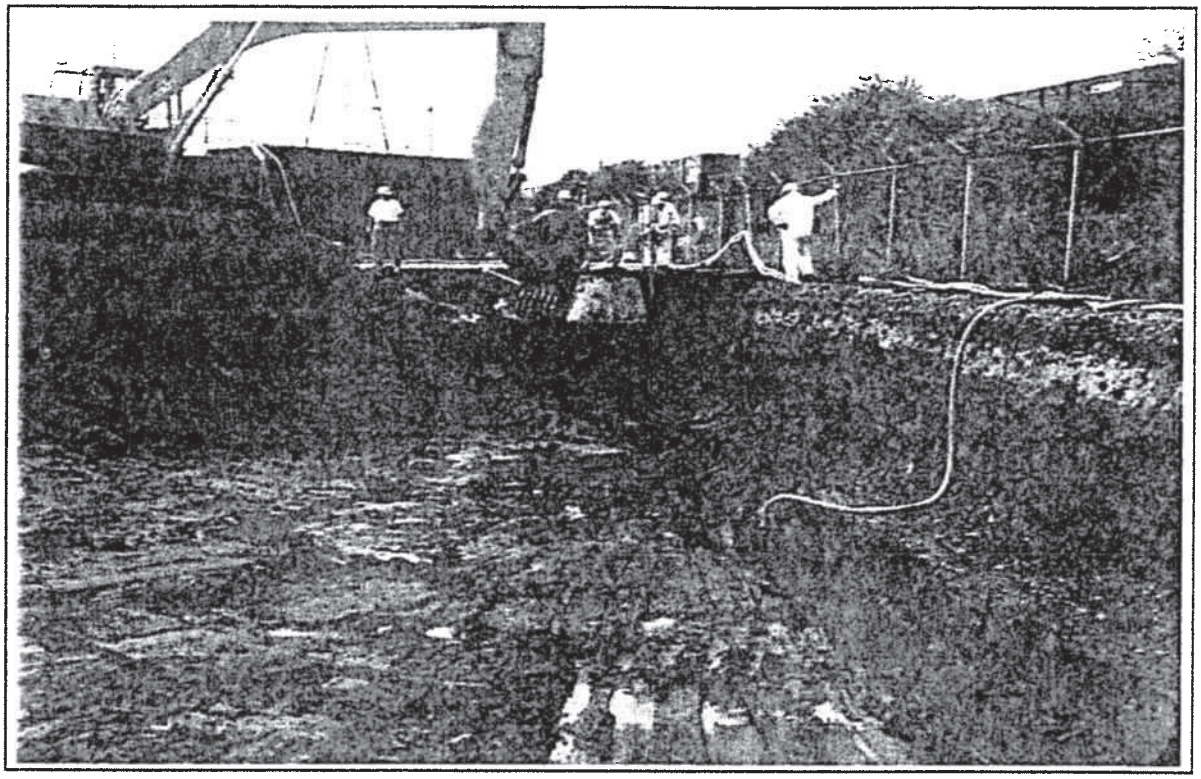
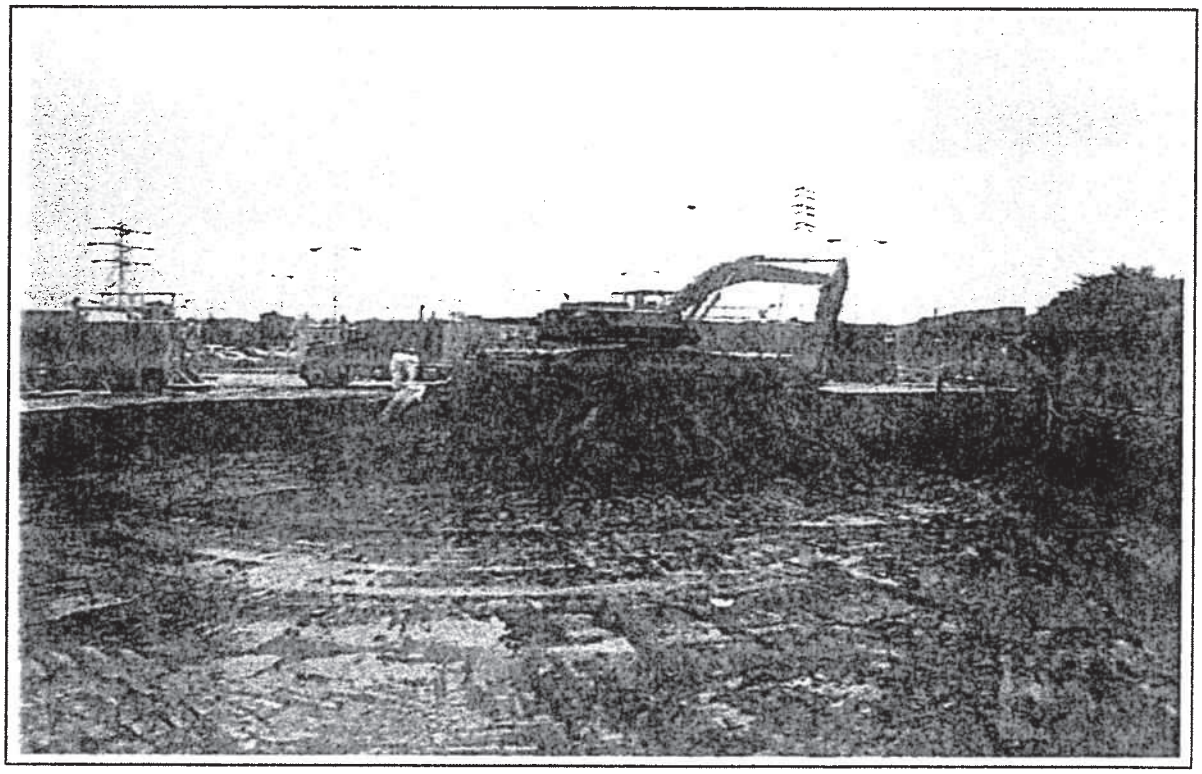
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 7 & 8

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 9: Looking southwest across main excavation at removal of former GW Collection System manhole.



Photograph 10: Looking south across main excavation.

EMCON

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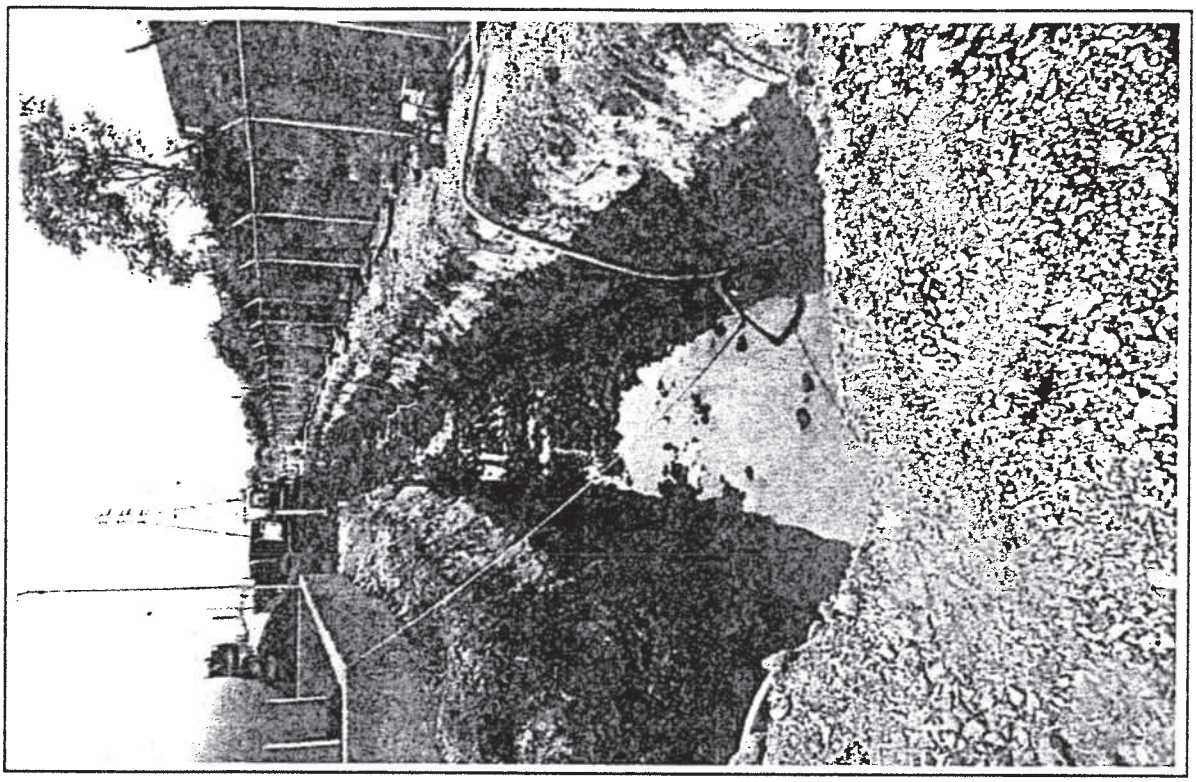
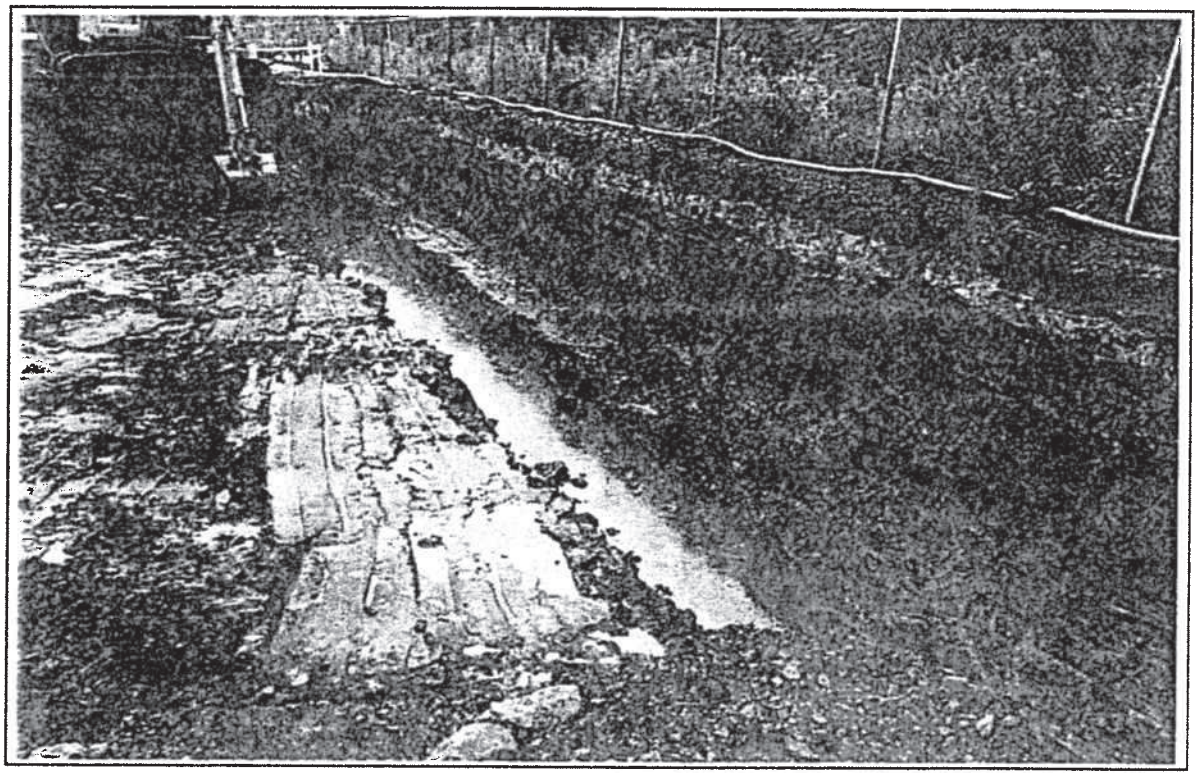
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 9 & 10

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 11: Looking south along west trench.



Photograph 12: Looking south along western edge of main excavation.

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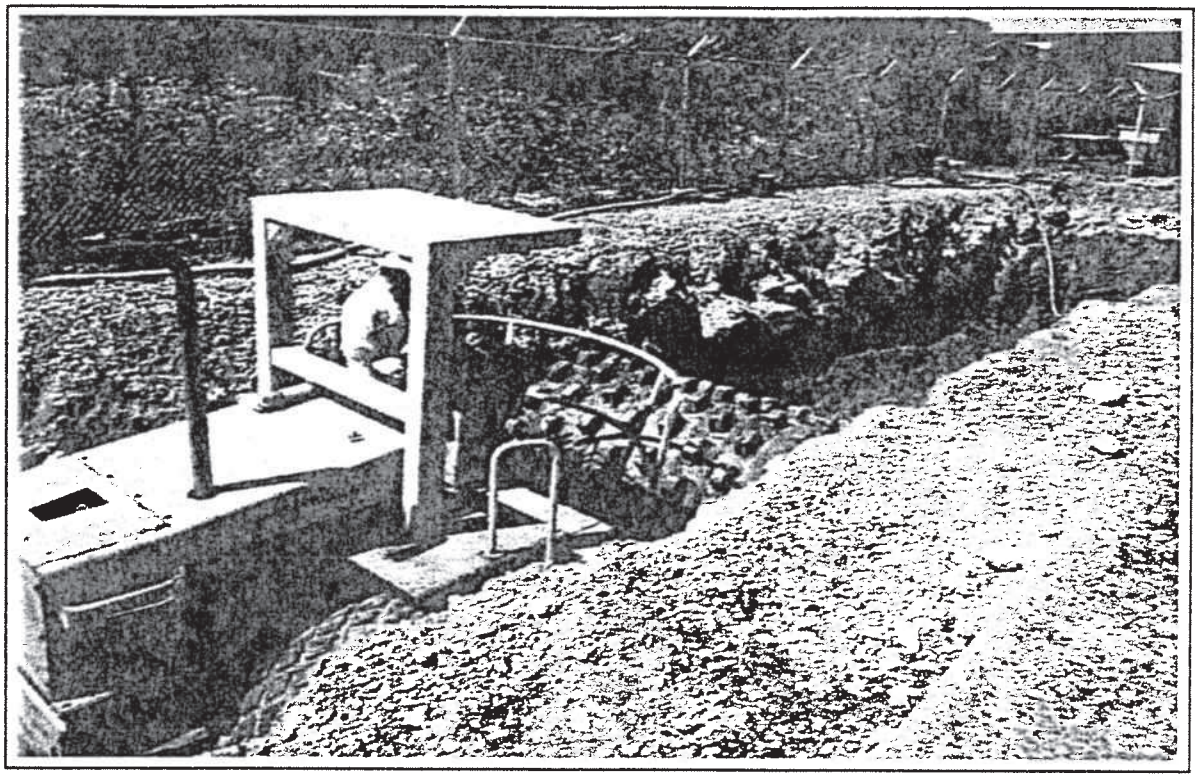
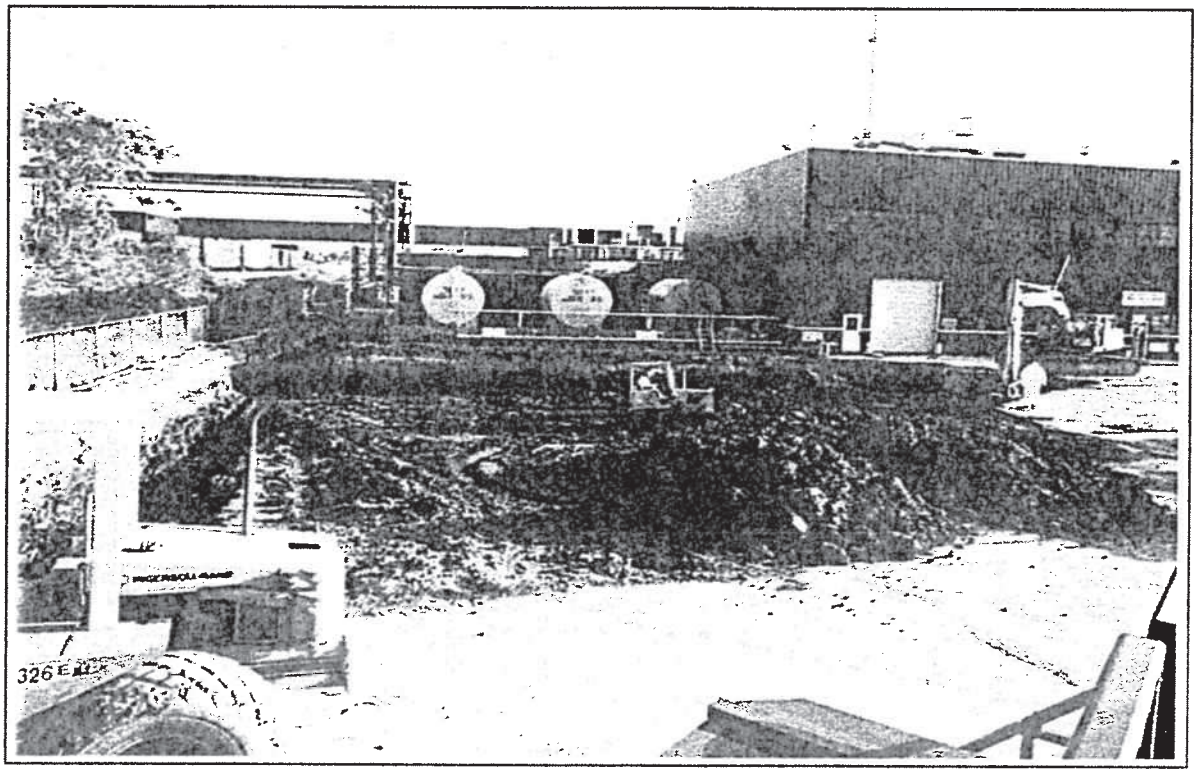
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 11 & 12

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 13: Backfilling of the western trench.



Photograph 14: Looking north at backfilling of main excavation. Removal of spill containment pad underway.

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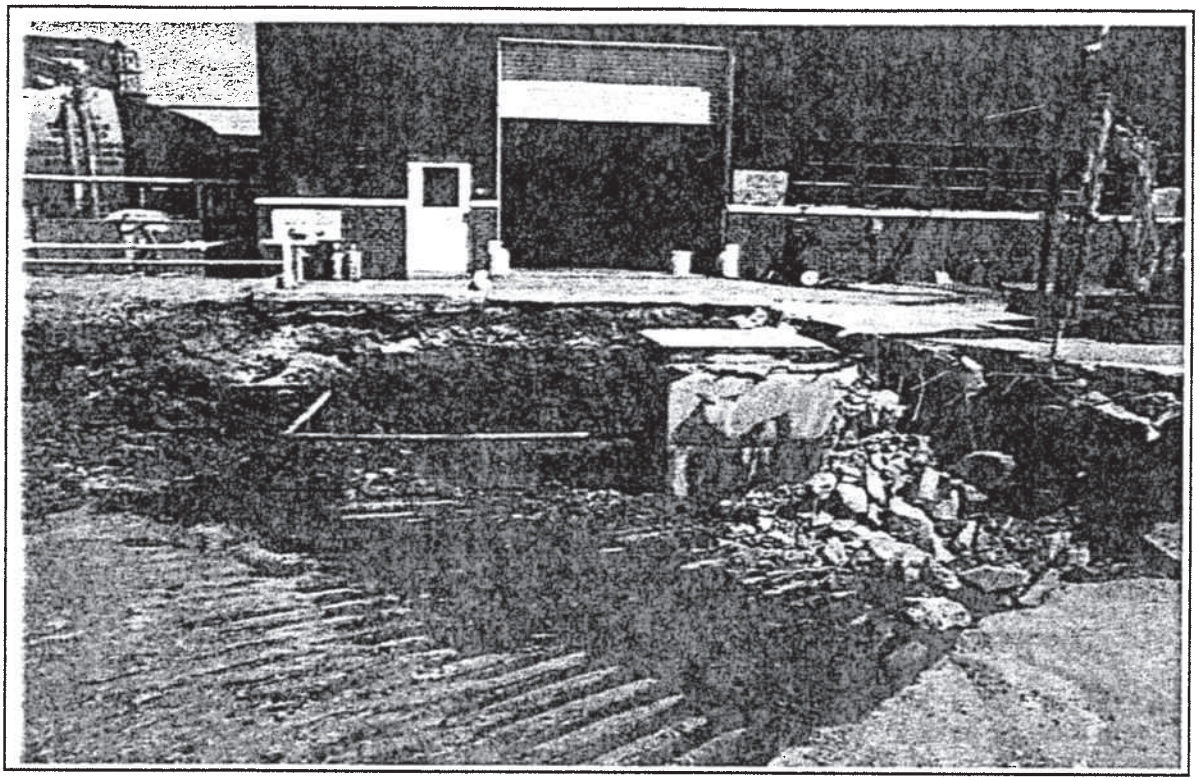
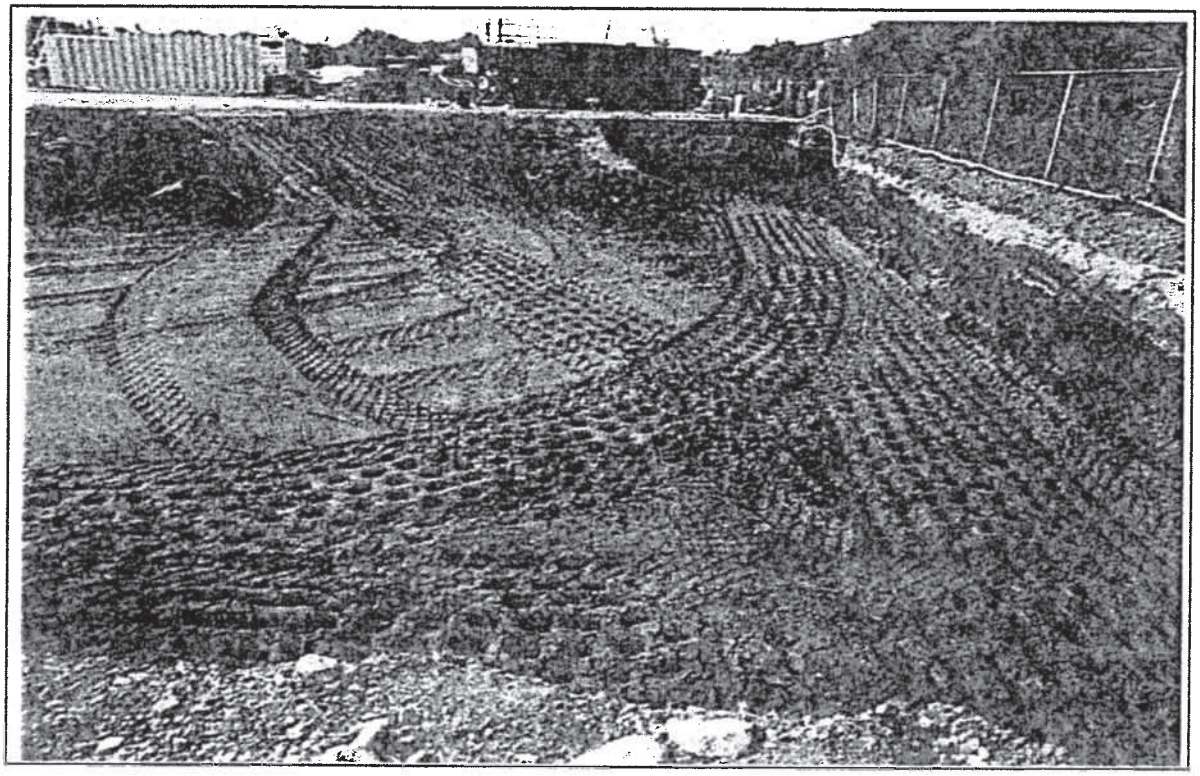
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 13 & 14

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 15: Looking north at removal of spill containment pad.



Photograph16: Looking south at backfilling of main excavation.

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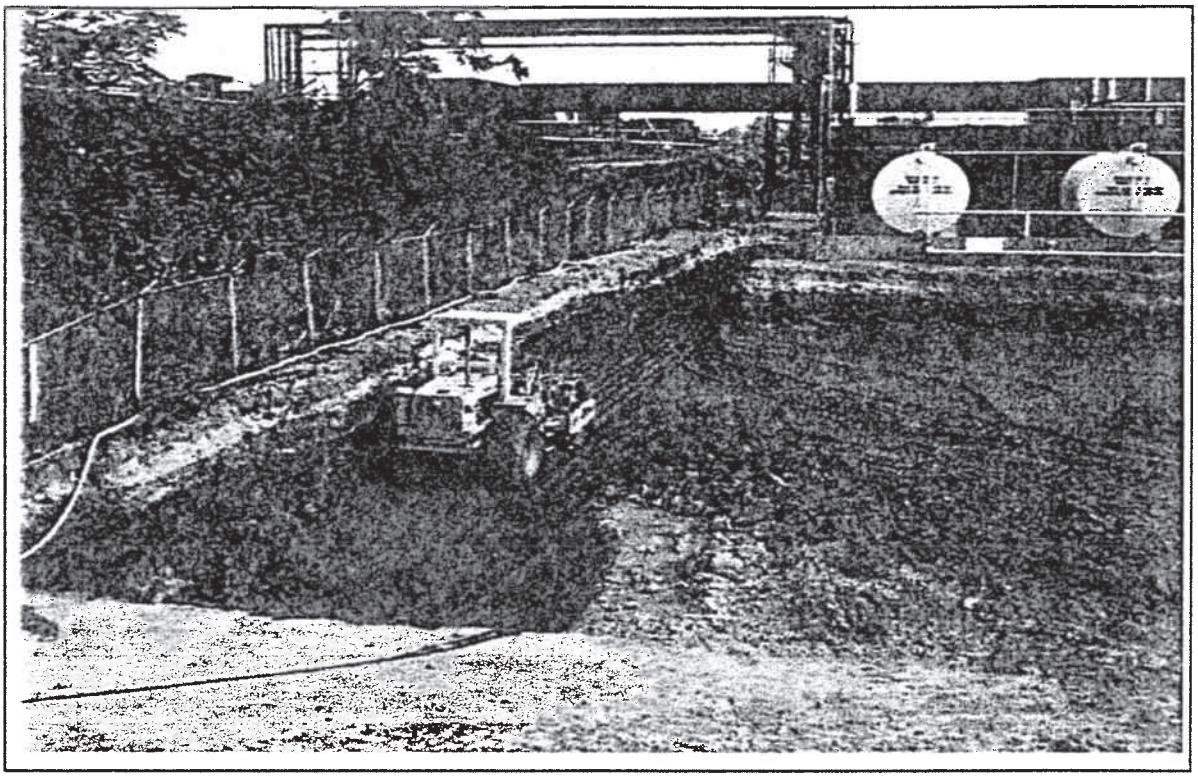
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 15 & 16

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 17: Looking north at backfilling of main excavation.

Photograph 18: Looking north at backfilling of western trench.

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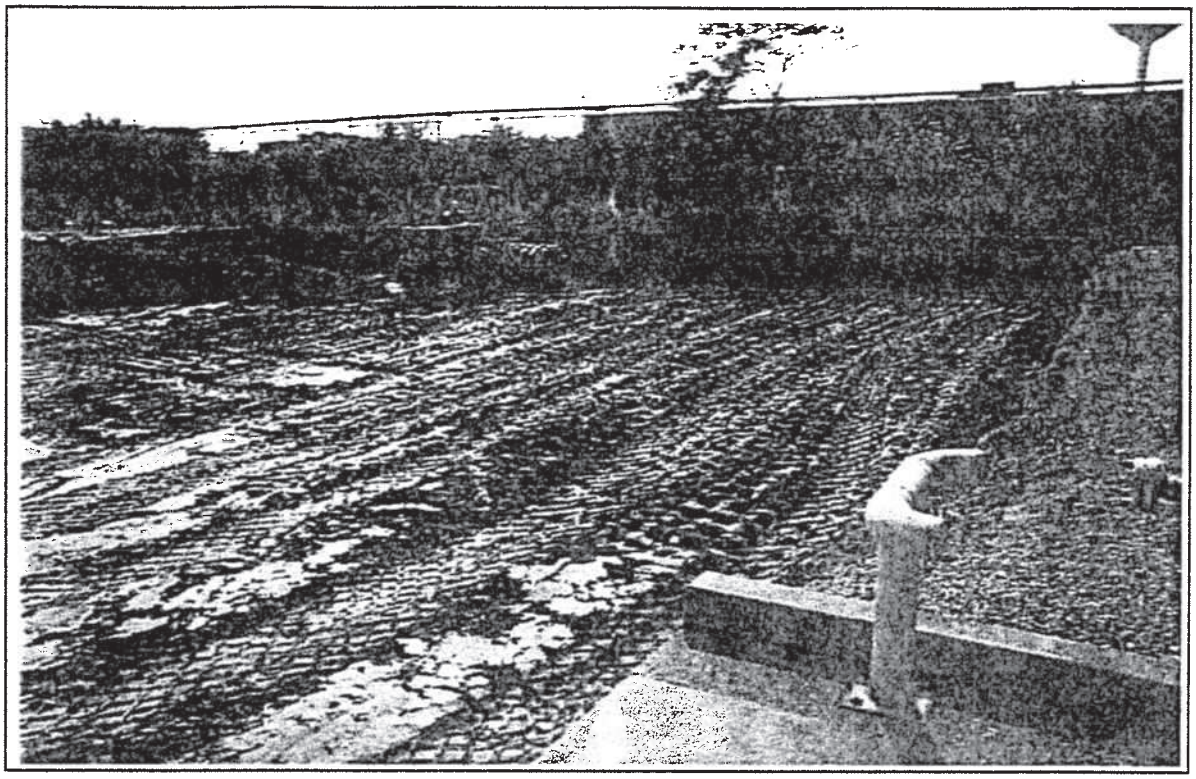
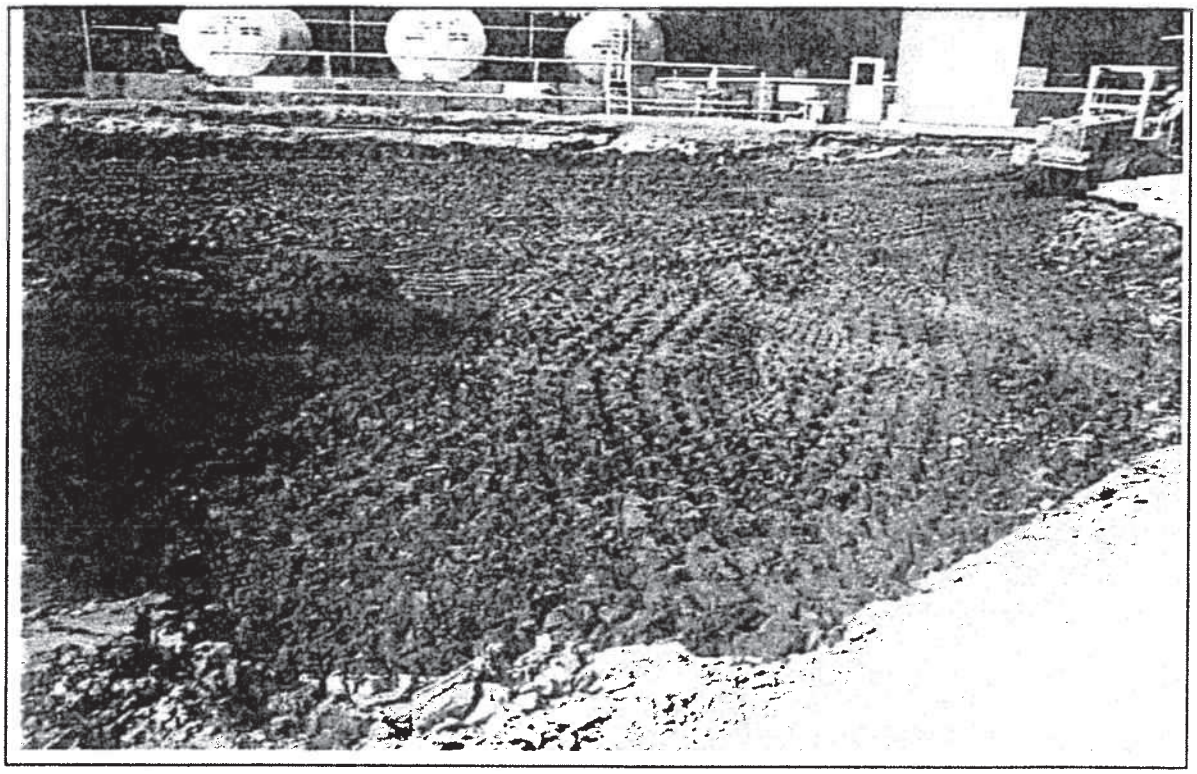
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 17 & 18

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 19: Looking west across northern edge of main excavation. Backfilling in progress.



Photograph 20: Looking north across main excavation. Backfilling of spill containment pad area underway.

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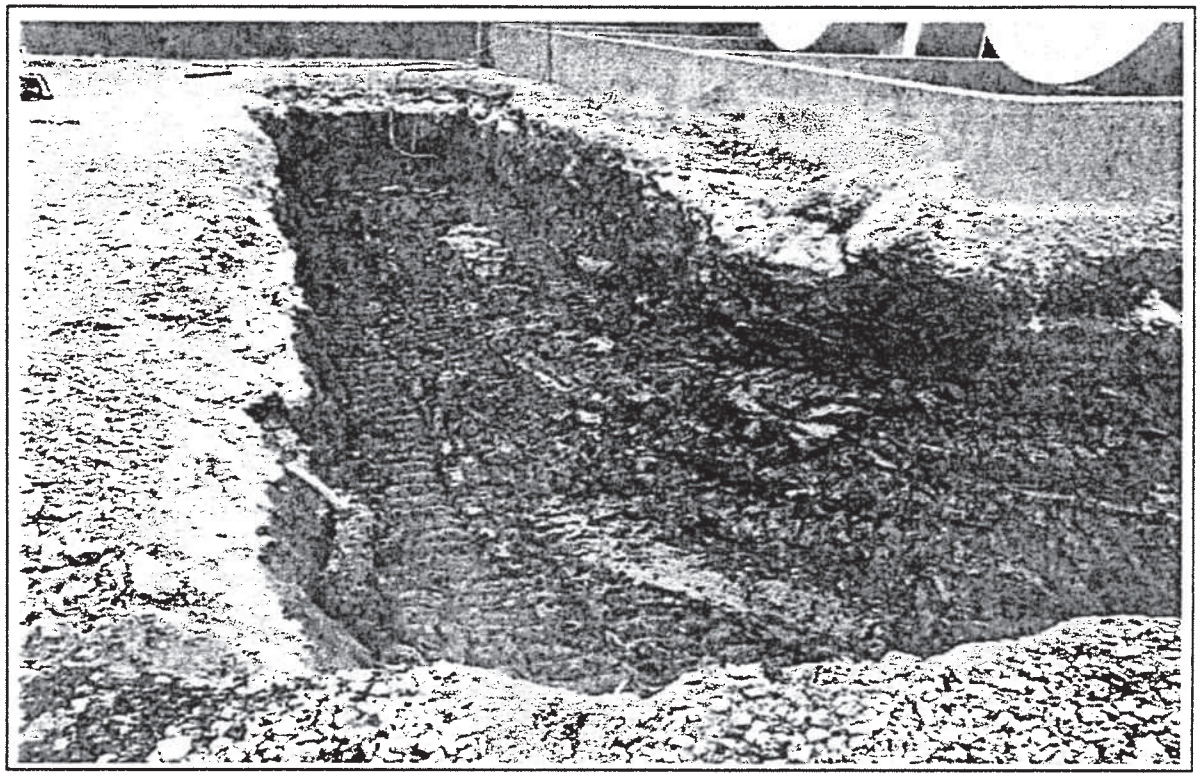
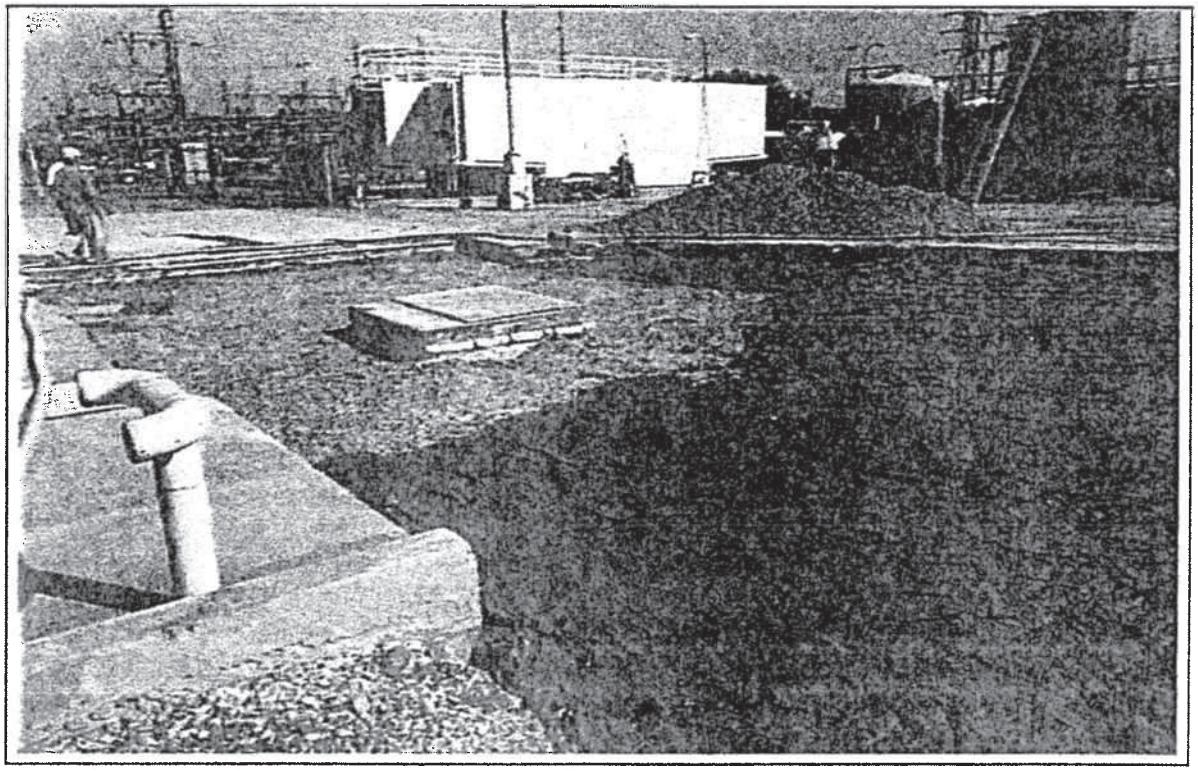
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 19 & 20

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 21: Looking east at backfilling of north trench, prior to extension of cut to WWTP wall.



Photograph 22: Looking southeast at placement of stone in spill containment pad area.

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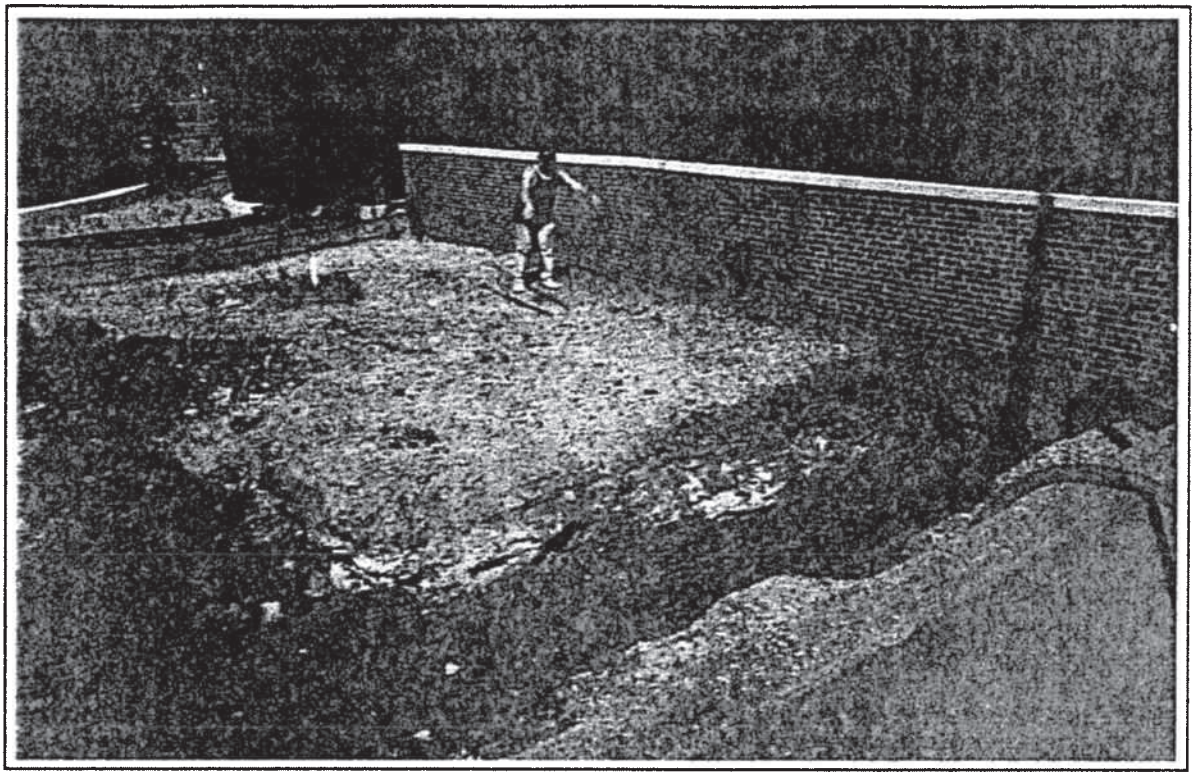
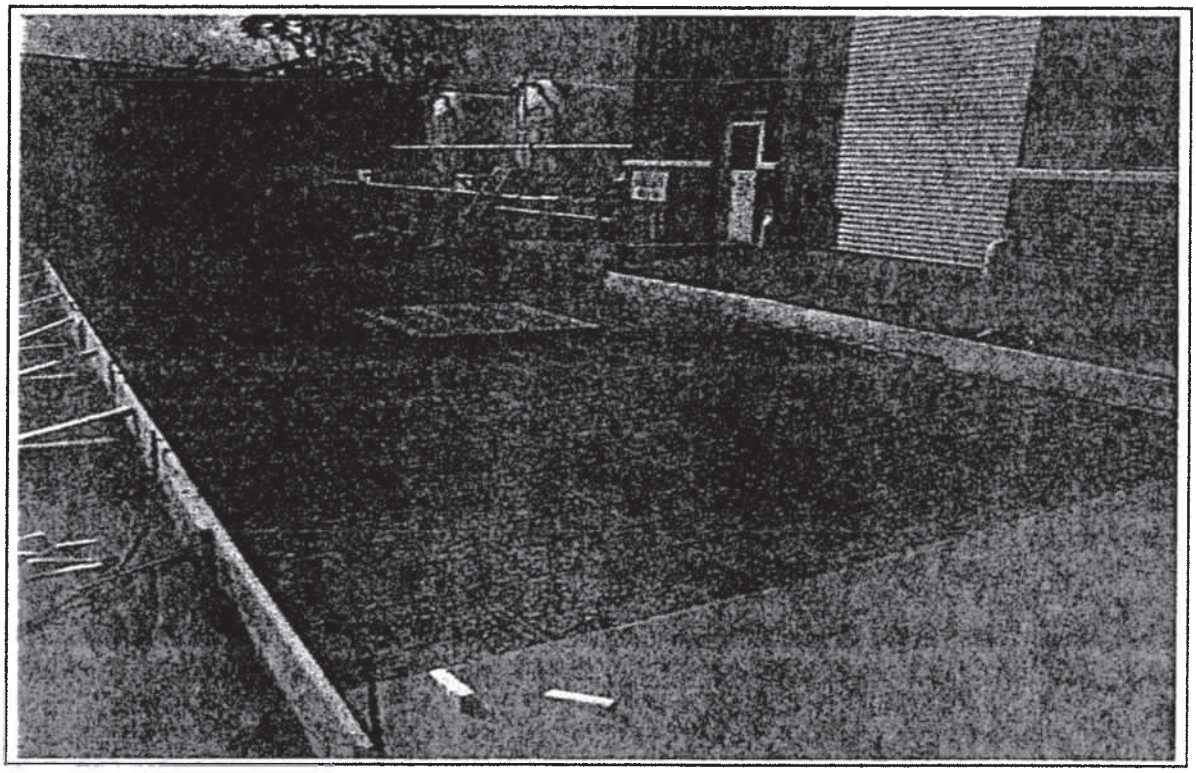
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 21 & 22

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 23: Looking northeast at extension of north trench to WWTP wall.



Photograph 24: Looking northwest at rebar placement for spill containment pad.

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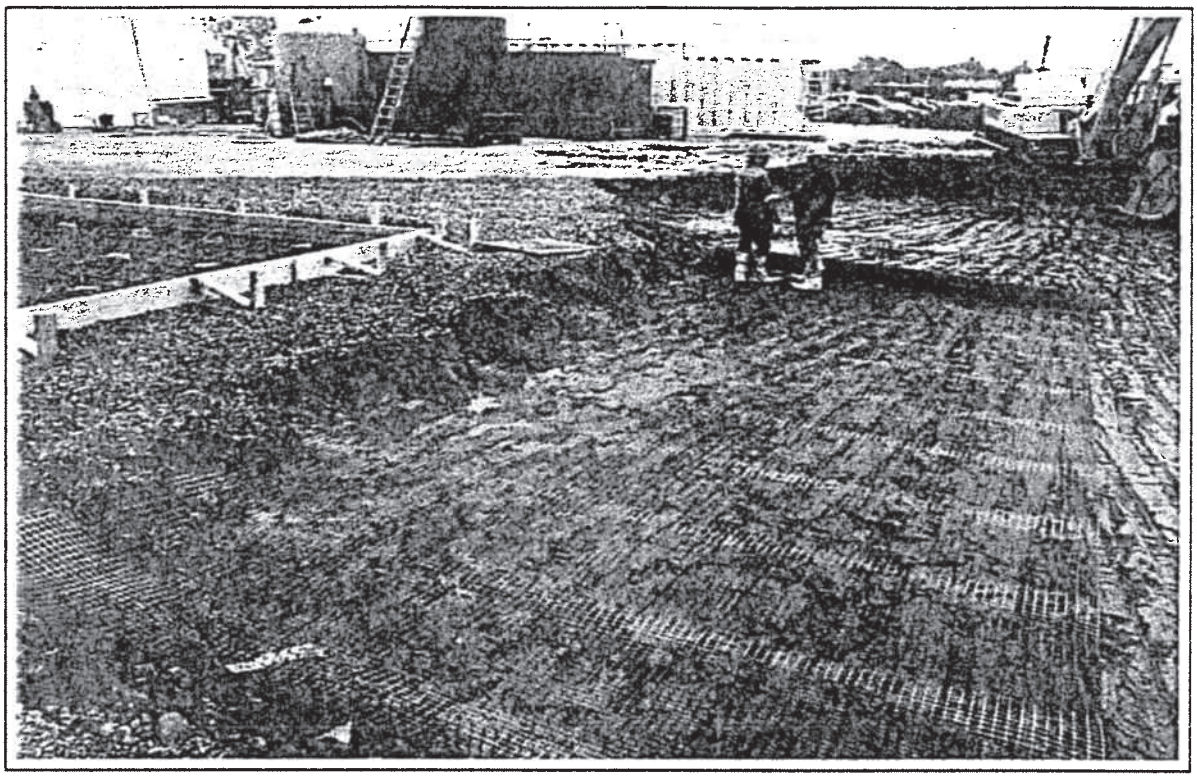
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 23 & 24

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 25: Looking southward across main excavation at placement of Geogrid.

Photograph 26: Looking southward across western trench at top of clay backfill elevation.

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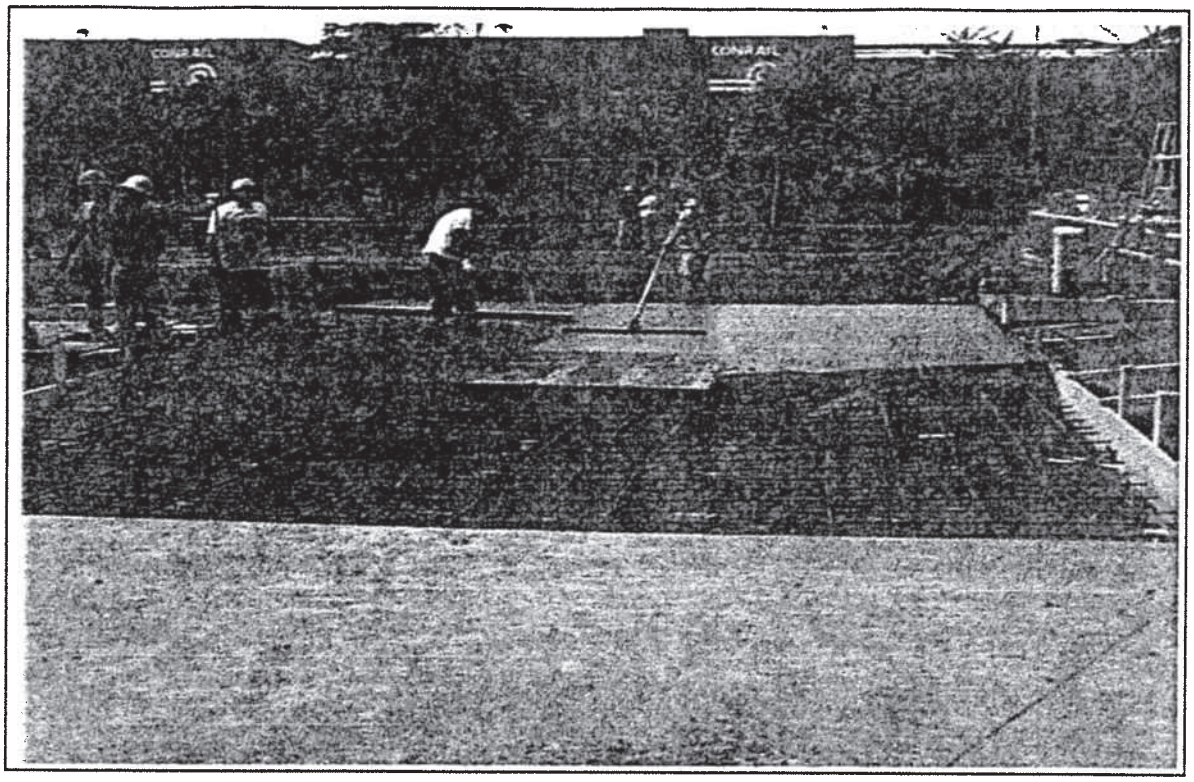
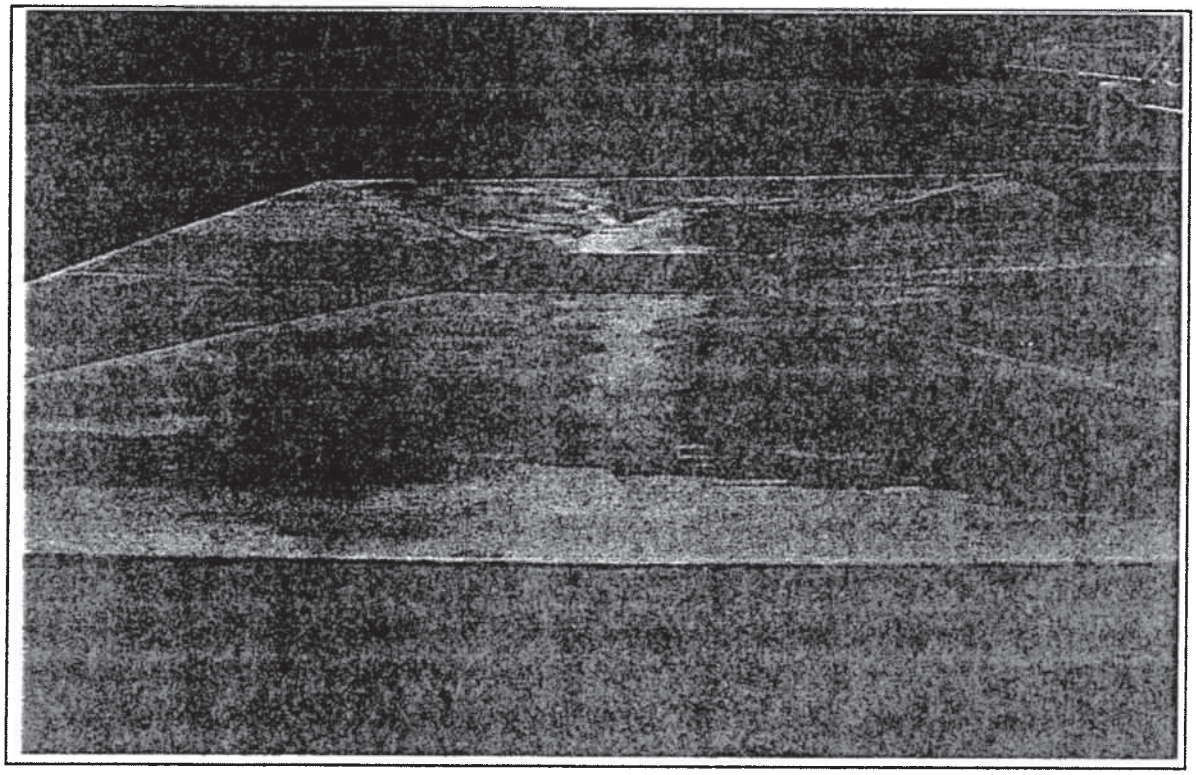
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 25 & 26

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 27: Looking westward across spill containment pad during concrete work.



Photograph 28: Looking westward across finished spill containment pad.

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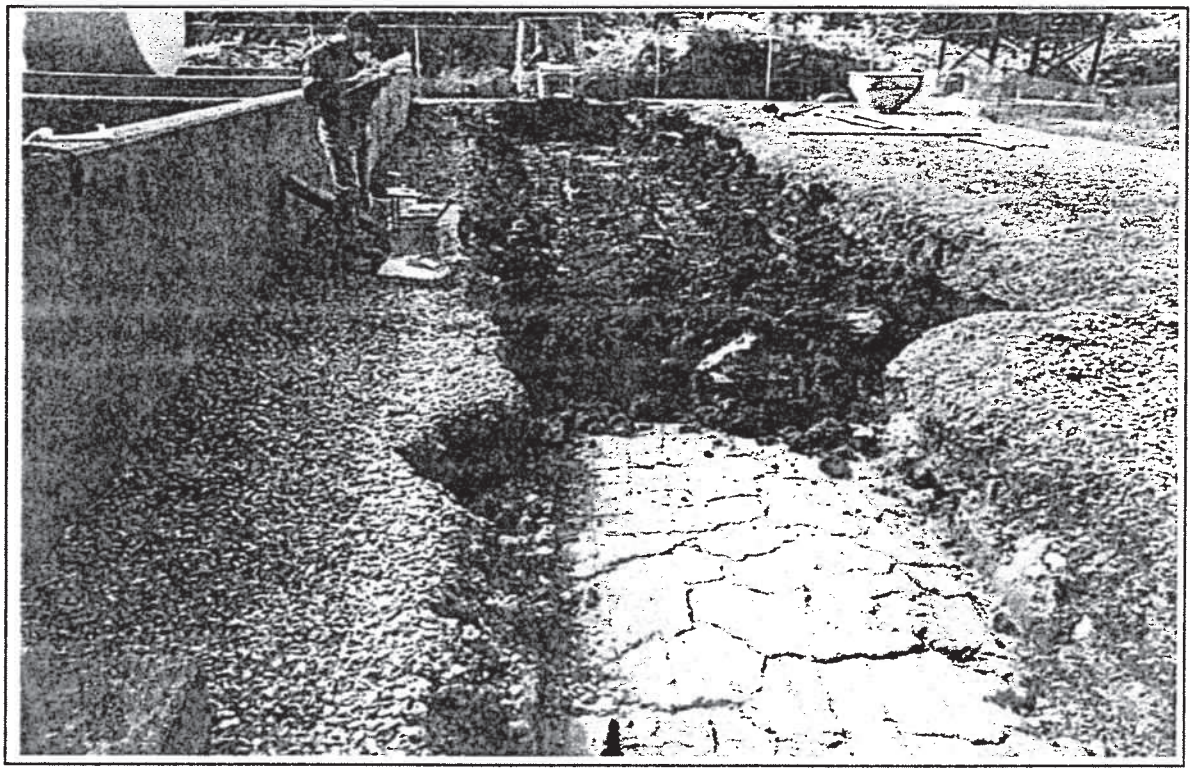
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 27 & 28

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION

Photograph 29: Looking southeast across main excavation during stone placement.



Photograph 30: Looking west across north trench during backfilling.

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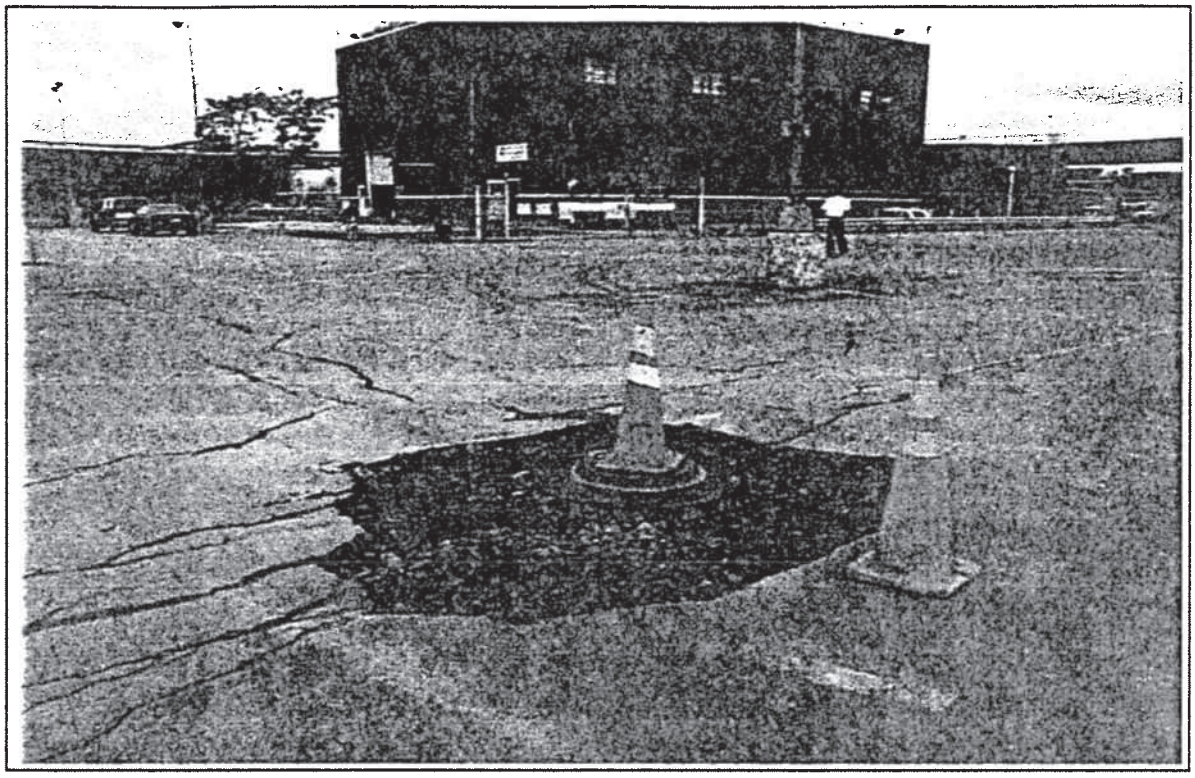
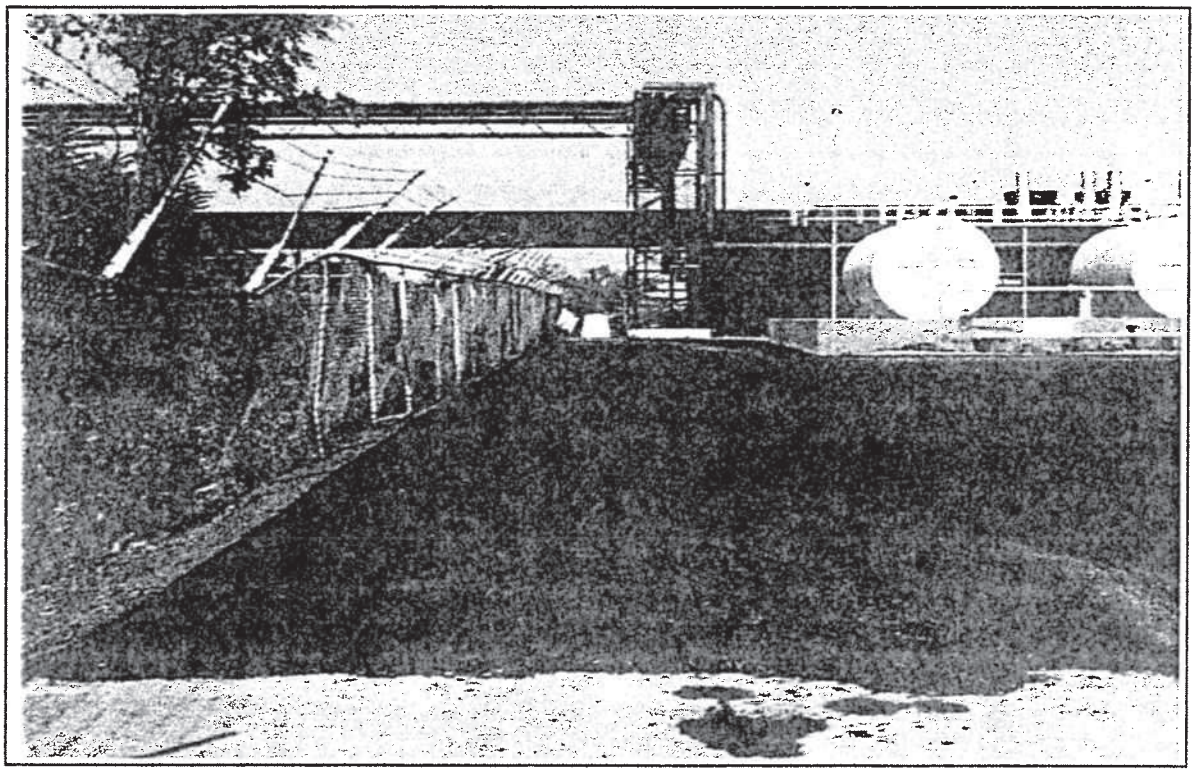
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 29 & 30

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 31: Phase I paving area during prep work. Manhole repair area in forefront.



Photograph 32: Placement of initial binder above stone in excavation area.

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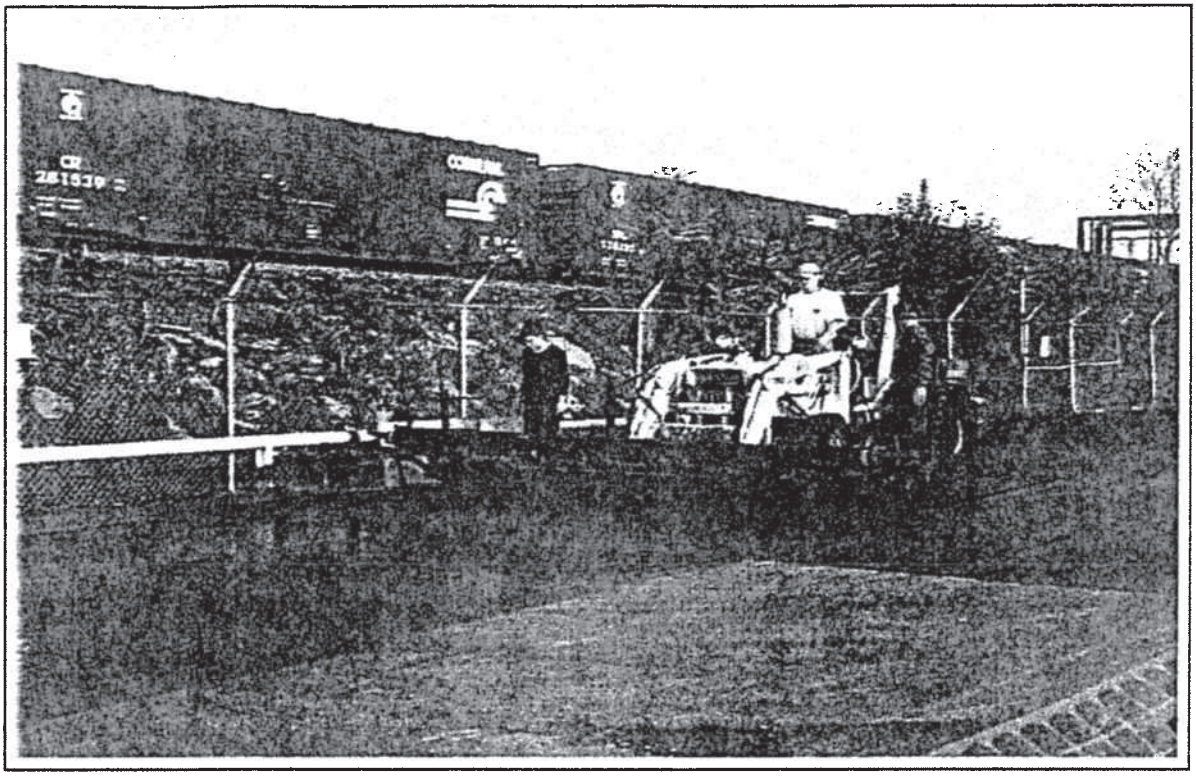
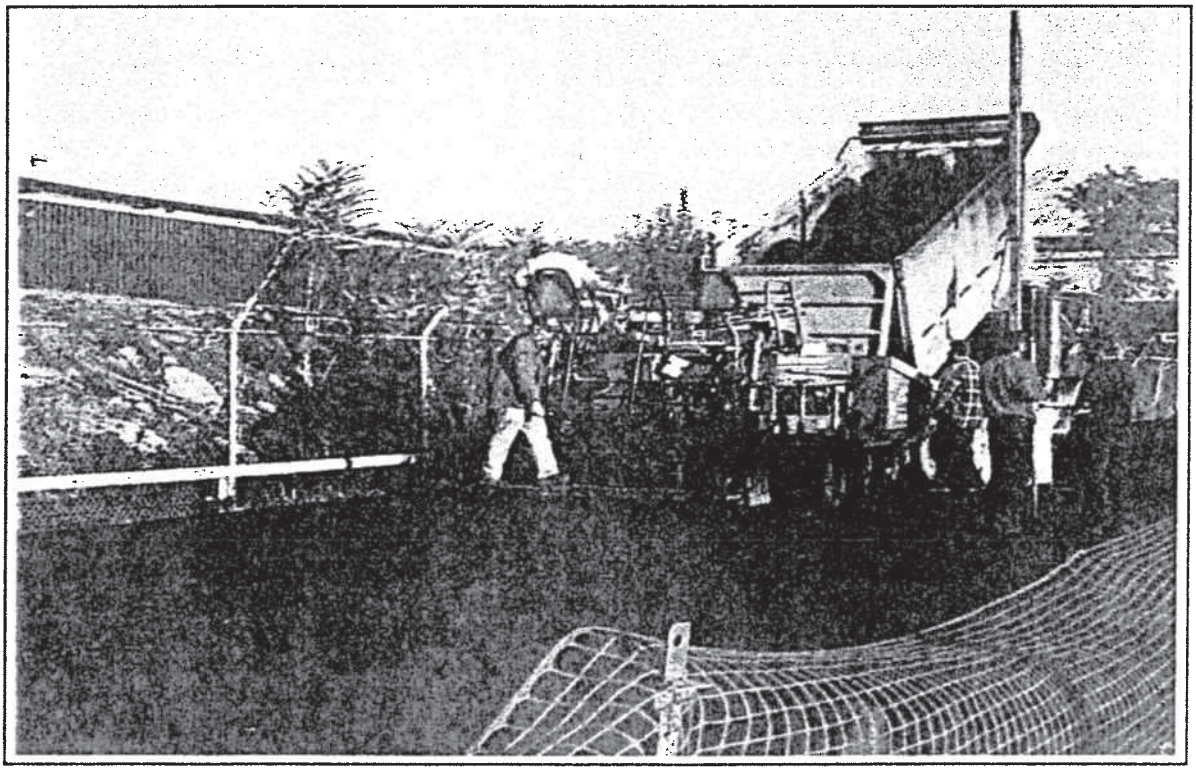
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 31 & 32

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 33: Installation of Petromat fabric in Phase I area.



Photograph 34: Installation of final 2-inch binder coat in Phase I area.

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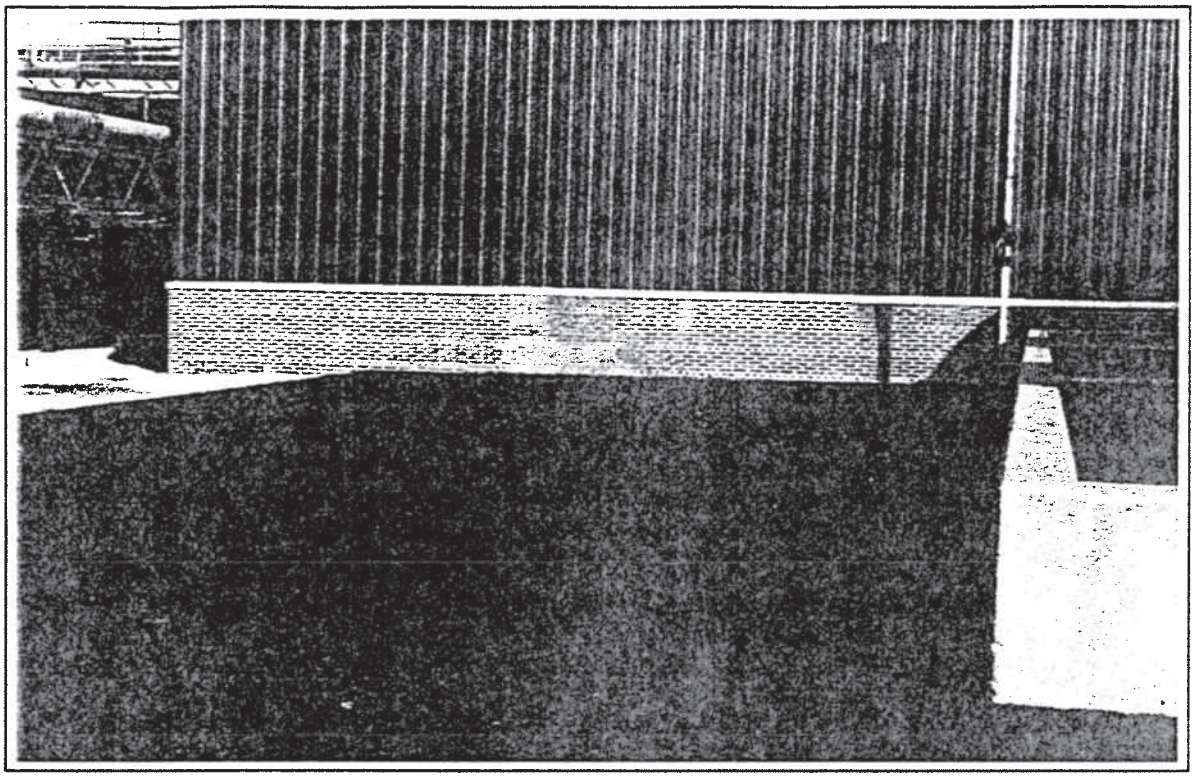
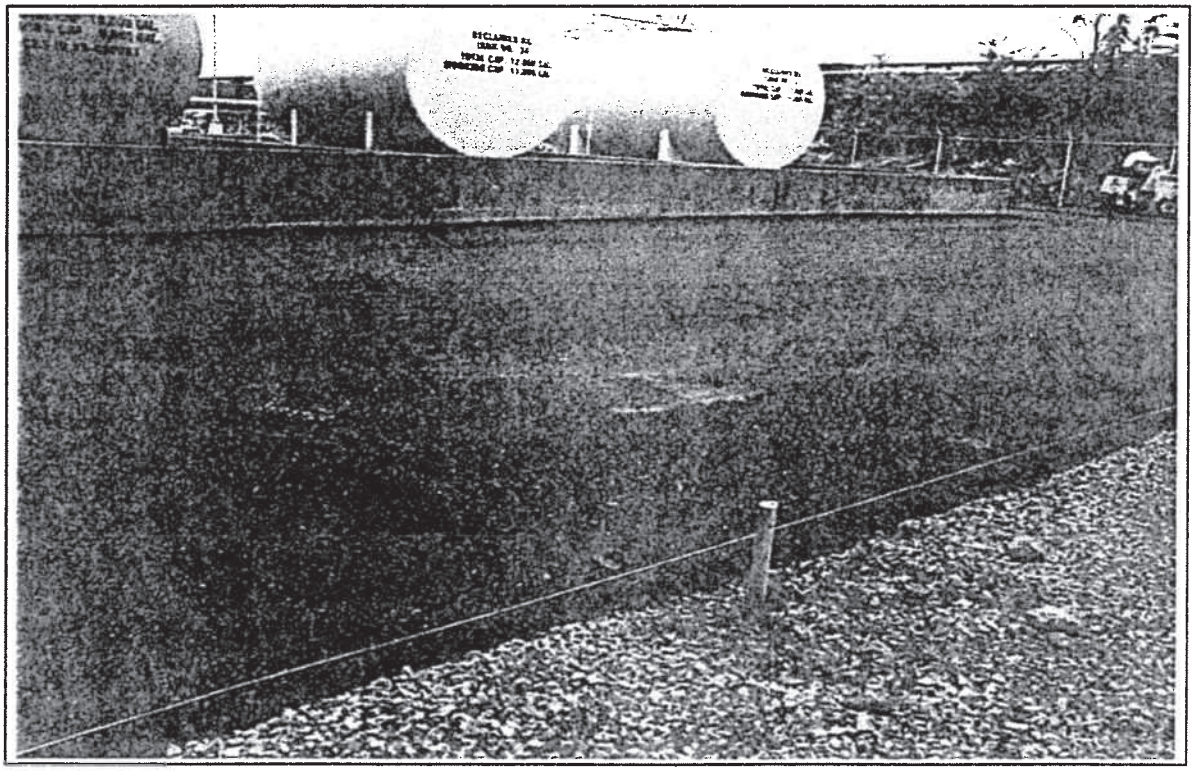
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 33 & 34

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 35: View of final paving behind AST containment structure (looking eastward).



Photograph 36: View of final paving behind AST containment structure (looking southwest).

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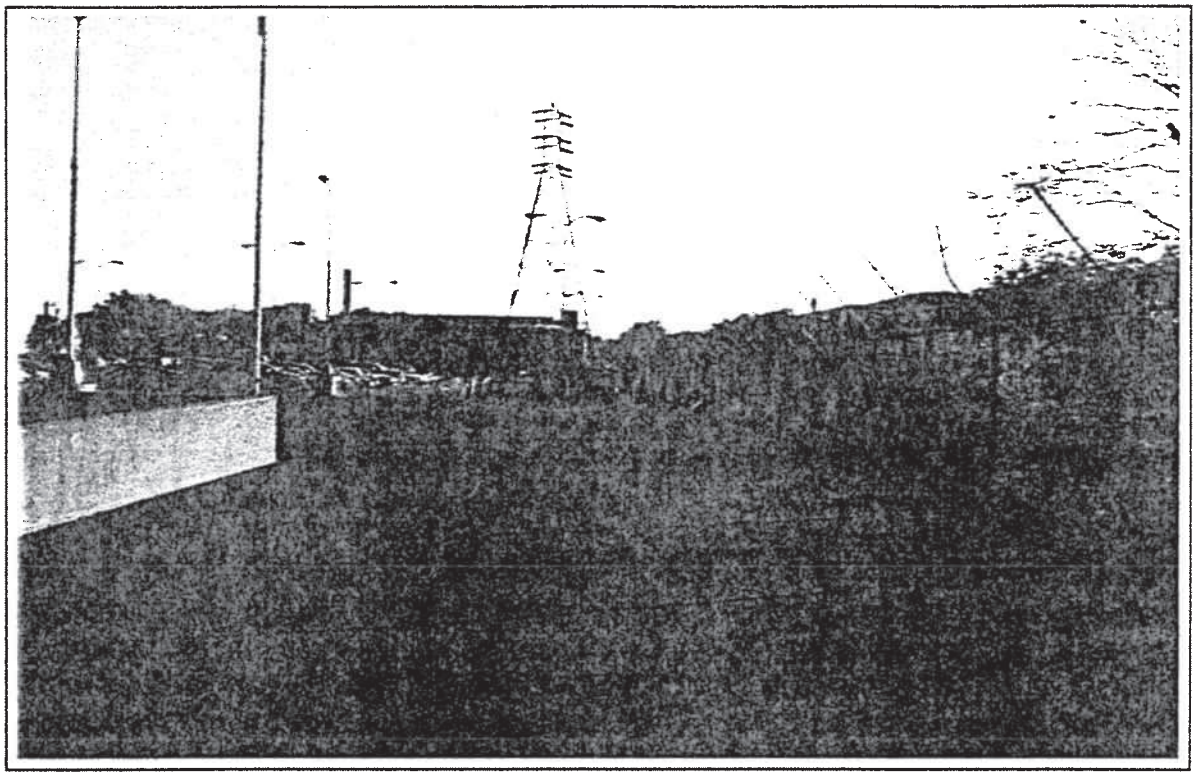
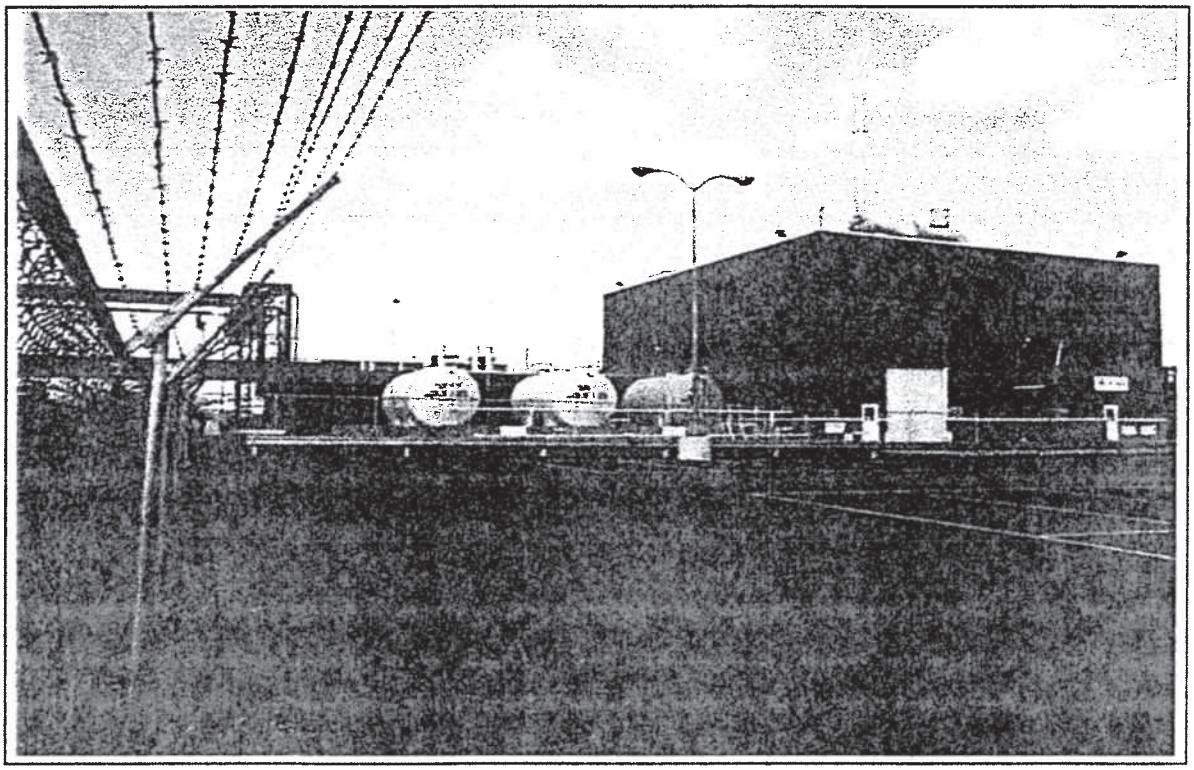
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 35 & 36

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 37: View of final paving in excavation area looking southward.



Photograph 38: View of final paving in excavation area looking northeast.

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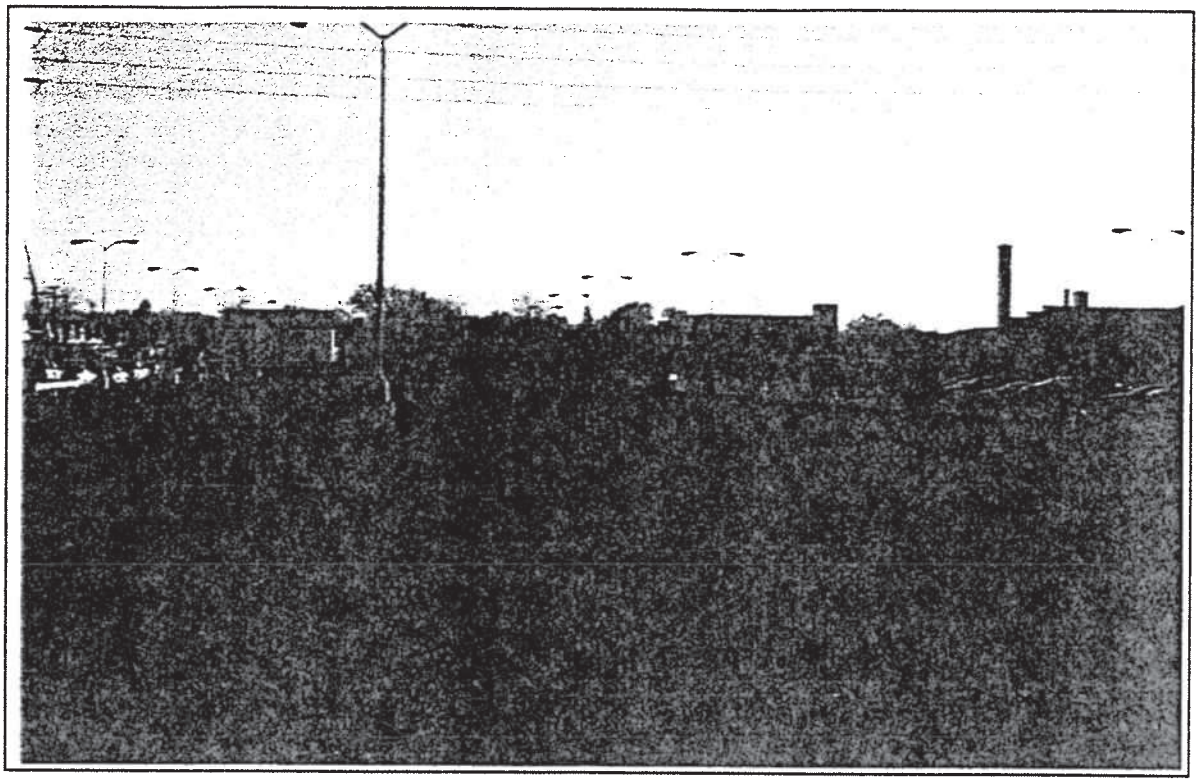
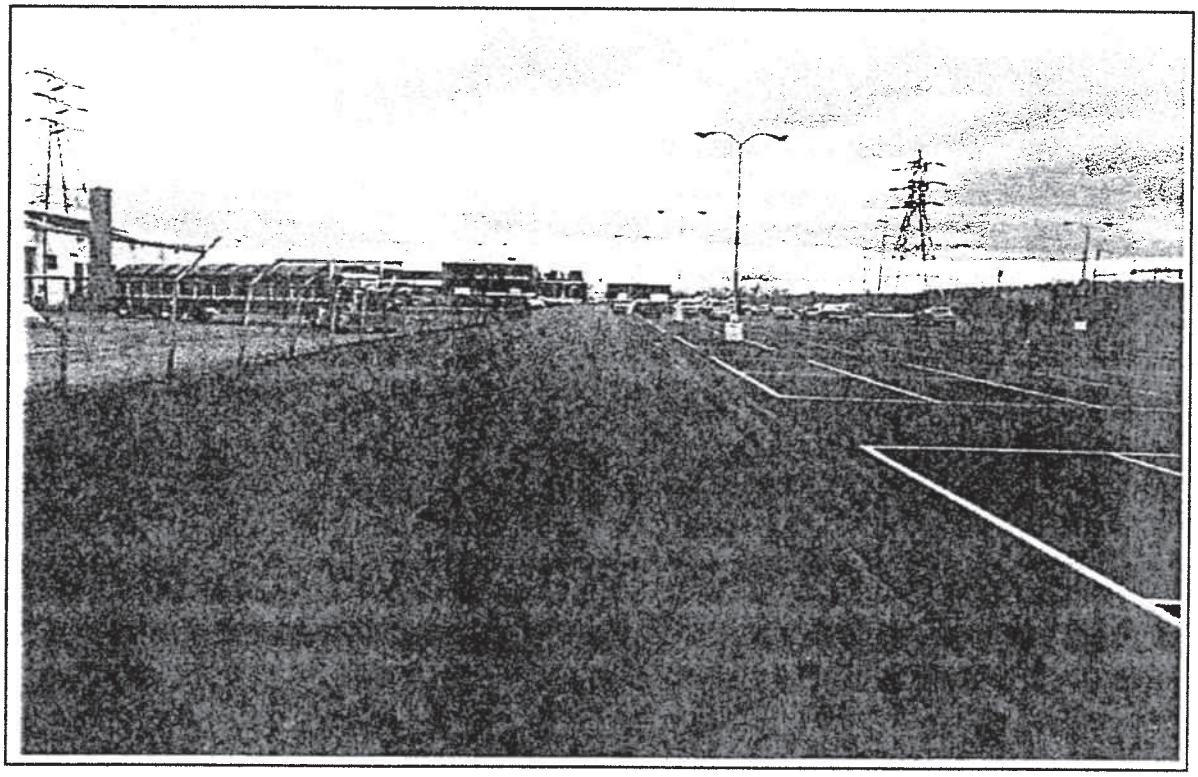
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 37 & 38

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 39: View of Phase II paving area in progress.



Photograph 40: View of completed Phase II paving area.

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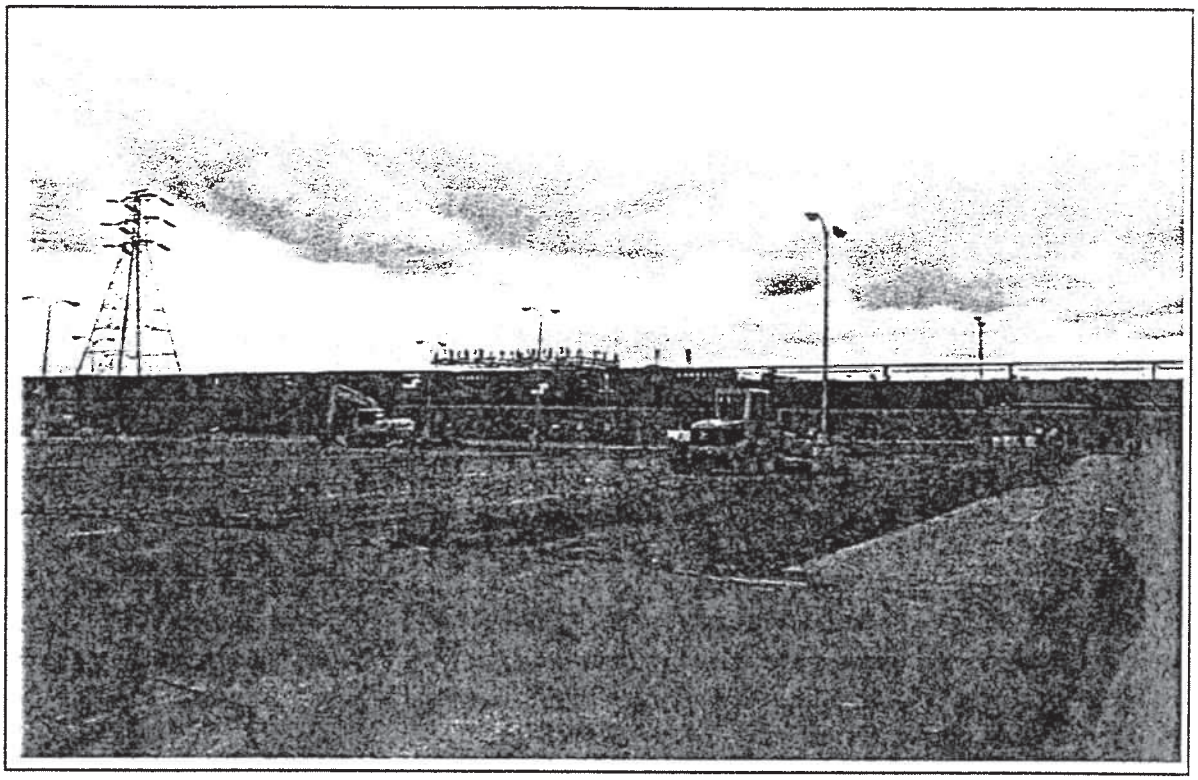
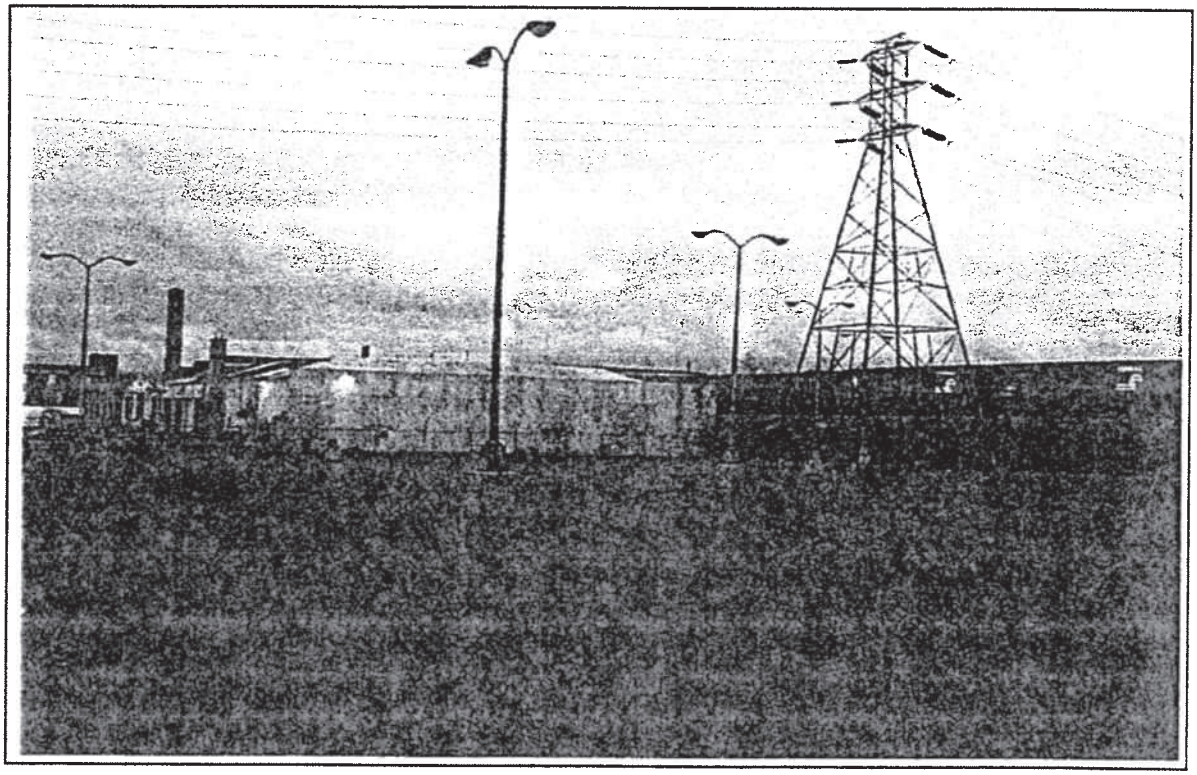
PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 39 & 40

GENERAL MOTORS CORPORATION
SAGINAW-BUFFALO SITE REMEDIATION



Photograph 41: Grading of subbase in Phase III area (repairs prior to paving).



Photograph 42: View of completed Phase III paving area.

EMCON

DATE:	18-Feb-00
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PHOTOGRAPHIC SHEETS
PHOTOGRAPHS 41 & 42

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