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1.0 INTRODUCTION

General Motors Corporation (GM) has completed voluntary interim response activities at the Mount Morris Dump Site in Genesee County, Michigan in accordance with a December 2, 1999 letter from Conestoga-Rovers & Associates (CRA) to Ms. Karen Diehl of the Michigan Department of Environmental Quality (MDEQ). These interim response activities, which achieved compliance with the generic residential cleanup criteria, as defined by Section 20120a(1)(a) of Michigan Public Act 451, are considered to be the final response activities necessary at the Site. This report presents a summary of the response activities recently completed for the two distinct waste disposal areas [Disposal Area No. 1 (DA1) and Disposal Area No. 2 (DA2)] and the general surficial debris removal at the property. These areas are referred to collectively as the Mount Morris Dump Sites (Sites). The location of the Sites is presented on Figure 1.1. The Sites are located on an 84-acre parcel of industrial-zoned land north of Stanley Road in Genessee County, Michigan and is currently owned by Remediation and Liability Management (REALM) Company, Inc., a subsidiary of GM. More detailed Site plans for the two disposal areas are presented on Figures 1.2, 1.3, and 1.4.

The scope of work for the remedial activities was as follows:

- clear and grub the Sites as necessary;
- construct access roads, as necessary;
- removal and off-site disposal of surficial debris (approximately 8.6 tons) on the property within the former disposal areas and on the remainder of the property;
- excavation, transportation, and off-Site disposal of 14,748 tons of non-hazardous material exceeding generic residential criteria from DA1 and DA2;
- removal and off-Site disposal of 28 drum remnants from DA2;
- collection of soil verification samples;
- backfill or taper and partially backfill areas; and
- Site restoration.

CRA provided oversight of the remedial activities on behalf of REALM. CRA Services was the subcontractor that performed the excavation activities.

The report is divided into the following sections:

Section 1.0 provides an overview of the Scope of Work and summary of the remedial activities completed at the Site.

Section 2.0 presents the background information about the Sites and provides a summary of the conclusions from the Phase I and Phase II investigative activities, which were performed in June 1991 and September to November 1992, respectively. The supplemental investigative activities that were completed in 1996 are also summarized.

Section 3.0 describes the removal activities. These activities included the removal of the surface debris, excavation of the impacted soil, off-Site disposal of debris and soil, and backfilling excavations.

Section 4.0 describes the verification soil sampling that was performed during the excavation activities.

Section 5.0 presents the statistical analysis of the verification soil sampling results.

Section 6.0 presents conclusions based on the remedial activities that were performed.

This report includes the following information as appendices to the report as supporting documentation:

Appendix A	Remedial Action Evaluation
Appendix B	Soil Disposal Documentation
Appendix C	Drum Logs
Appendix D	RCRA Characterization of Drum Contents
Appendix E	Data Quality Assessment and Laboratory Reports
Appendix F	Drum Disposal Manifest

2.0 SITE BACKGROUND

2.1 SITE LOCATION

The Sites are located north of Flint, Michigan and southeast of the Town of Mt. Morris, Michigan; in Section 7, T8N, R6E in Genesee Township, Genesee County, Michigan. The Sites are located on the west side of an 84-acre parcel of industrially zoned land owned by REALM. The 84-acre property is bounded immediately to the west by the Chesapeake and Ohio Railroad and further west by a commercial strip plaza. The 84 acre property is bounded immediately to the south by a Consumer Power right-of-way. The 84 acre property is located 2,000 feet west of Lewis Road.

The property where the Sites are located is zoned exclusively for industrial use. The Sites and surrounding 84 acres have never been used for any residential or agricultural purpose. The zoning in the vicinity of the Site is presented on Figure 2.1. Historically, the Sites have been used exclusively as disposal areas for miscellaneous waste materials. For these reasons, the Sites qualify as a "generic industrial site," as that term is defined in ERD Operational Memorandum #18.

The Sites consist of two distinct disposal areas. DA1 is an open area approximately 1 acre in size based on soil exceedances of 20 times residential drinking water criteria, SWP criteria or background. DA1 is surrounded by heavy vegetation. DA1 is situated approximately 400 feet north of DA2. DA2 is also in a heavily vegetated area and is less than one-tenth of an acre in size based on soil exceedances of 20 times drinking water criteria, SWP criteria or background.

The Sites are located in an area with low to moderate topographic relief. Elevations on the Sites range from 767 to 789 feet above mean sea level (AMSL). In DA1, the surface elevations slope toward the drainage ditches on the western and northern sides. The main drainage ditch to the west of DA1 receives surface water runoff from the drainage ditch to the north of DA1. In DA2, surface water runoff flows to the drainage ditch to the west of DA2.

2.2 SITE USE

The two disposal areas were used by a former property owner exclusively for the disposal of miscellaneous waste material. Site investigation indicated that DA1 received metal grindings, wooden floor blocks and general refuse. DA2 reportedly received paint wastes. These findings are consistent with the results of the investigations and

excavations. The property is currently undeveloped and zoned industrial. Usage of the property for biking or hunting may occur, however, these individuals are trespassers on private property. There is no indication of organized or structured recreational activities, only indicators of trespassers, dirt bike riders and related activities.

2.3 SUMMARY OF SITE INVESTIGATIONS

MDEQ collected environmental samples in April and May 1990 to characterize various media at the Sites for leachable metals, aromatic hydrocarbons, and polychlorinated biphenyls (PCBs).

A Phase I Investigation was performed by CRA to characterize the general nature and extent of volatile organic compounds (VOCs), PCBs, metals, and cyanide contamination of the subsurface soils, groundwater, ditch sediments, and wooden floor blocks in DA1 and DA2. The Phase I work was conducted by CRA between June 25 to 28, 1991.

A Phase II Investigation was conducted from September 14, 1992 to November 12, 1992 by SSOE Inc. (SSOE) to further characterize the nature and extent of VOC, base-neutral and acid extractable (BNA), PCB, and metal contamination of the subsurface soils and groundwater in DA1 and DA2.

In order to complete the remedy, additional soil samples were collected in DA1 and DA2 in July and August 1996, an additional round of groundwater samples was collected in DA1 and DA2 in October 1996, and additional soil samples were collected in DA1 in November 1996. These data are included in Appendix A.

2.4 PRESENTATION OF INVESTIGATION RESULTS

The results of the 1990 MDEQ work and the Phase I Investigation were submitted to MDEQ in a report entitled Preliminary Site Investigation Data Report dated November 19, 1991, prepared by CRA. Results of Phase II Investigation are presented in a separate report prepared by SSOE. SSOE was retained jointly by GM and the former property owner, Mr. Summerfield. The results of the additional soil and groundwater sampling completed in 1996 are presented in the remedial action evaluation presented in Appendix A.

The investigation results are compared to the Act 451 Part 201 criteria in Appendix A.

2.4.1 SOIL AND FILL MATERIALS

The soil and fill materials in DA1 and DA2 were sampled for VOC, BNA, PCB, and metals. For DA1, the fill consisted of metal grindings, wood floor blocks, and general refuse. For DA2, the fill consisted of paint wastes.

2.4.2 WOODEN FLOOR BLOCKS

Wood floor blocks were identified in DA1 only. It is estimated that less than 1 cubic yard of floor blocks is present in the fill in DA1. All visible wooden floor blocks were removed from DA1 in December 1997 and March 1998 and disposed of off Site.

2.4.3 GROUNDWATER

The shallow overburden groundwater is generally encountered at 9 to 14 feet below ground surface (BGS) in DA1, and 2 to 9 feet BGS in DA2.

The well purging and development logs from SSOE, are presented in Appendix A. These logs indicate that many of the wells were bailed or pumped dry during the purging and sampling activities. In addition, during 1996 groundwater sampling, several wells were pumped dry at flows of less than 1 gpm, indicating a poor yield.

Michigan Department of Health regulations would prohibit the installation of shallow overburden wells (i.e., less than 25 feet deep) in the area since such wells would be prone to surface contamination not associated with the Sites. The shallow overburden groundwater at the Sites discharges to nearby ditches, and therefore, there is no reasonable possibility that a drinking water well will be installed in the shallow overburden downgradient of the Sites.

In addition, based on available water supply well logs for wells in the area, drinking water is obtained in the bedrock aquifer at depths ranging from 240 to 300 feet BGS. However, MDEQ has identified a shallow well which is 28 feet deep, which is located within approximately 1/2 mile in an upgradient direction from the Site. Local water well records are presented in Appendix A. City water is also available in the vicinity of the Sites.

2.4.4 SITE DITCHES

The ditches consist of manmade swales or erosional scars from stormwater runoff. They do not appear to drain any surface water body. The north-south ditch is approximately 10 feet wide and 5 feet below ground surface. The east-west swales are overgrown with trees and bushes and are very narrow and shallow. These ditches and swales do not appear on the USGS quadrangle map for the area. Figure 2.2 presents a copy of the USGS quadrangle for this area. DA1 is adjacent to the north-south ditch and the northerly east-west swale, and DA2 is more than 100 feet from the nearest ditch.

The ditches are generally overgrown and have been observed on several occasions to be dry. Flow characteristics can range from no flow at all to at least 7.9 cfm measured on May 21, 1991. Flow depth in the ditches varies from dry to as much as 6 inches deep. Typically, flows in the ditches are greatest in the spring and fall and during and immediately following rainfall events or snow melt. The groundwater table is located close to the invert elevation of the ditches. The water table would intersect the ditches only during the seasonal high groundwater conditions. As a result, these ditches are not expected to sustain, on a consistent basis, any surface water ecosystem. Based on field observations, no significant aquatic life has been observed in the ditches, however, MDEQ has reported observing aquatic macro invertebrates and has recommended that GSI criteria be used for the Site.

Surface water flow in these ditches flows northward. The closest surface water feature in a downstream direction, identified on the USGS quadrangle, are intermittent drains located in excess of 1/2 mile west of the Sites. These intermittent drains lead to Brent Run which is located 3 miles west of the Sites. Brent Run flows for another 9 miles before it enters the Flint River.

3.0 REMOVAL ACTIVITIES

The remedial action evaluation required under Act 451 Part 201, and previously submitted to the MDEQ, is presented in Appendix A.

3.1 DEBRIS REMOVAL

A total of 8.6 tons of surface debris was removed from within the former disposal areas and on the remainder of the property during the removal activities. Surface debris consisting of metals grindings, scrap metal, and wooden floor blocks were removed from DA1. The remainder of the surface debris that was present over the remainder of the property consisted of junk cars, discarded tires, scrap metal, and household items such as refrigerators, televisions, and stoves. A visual reconnaissance of the Site confirmed that all of the surface debris was removed. The junk cars were transported to Clinkston and Sons, Inc. The remaining surface debris was transported to Venice Park RDF in Lennon, Michigan. There is no evidence of any other disposal activities at the Site.

3.2 IMPACTED FILL AND SOIL EXCAVATION

A total of 14,748 tons of fill and soil were excavated and removed from the Sites. The materials were excavated using a tracked excavator without teeth on the bucket. Excavated materials were transported to Venice Park RDF in Lennon, Michigan. Verification samples were collected from DA1 and DA2 at the locations presented on Plans 1 and 2. The load tickets are provided in Appendix B.

A total of approximately 9,260 cubic yards (13,932 tons) of soil was excavated from DA1. The average depth of excavation was 6 feet below the previous grade with a maximum depth of 10 feet. Groundwater was not encountered during excavation activities. All visible fill and at least the upper 6 inches to 12 inches of native soil were removed. Native clay and marl were encountered below the fill adjacent to the ditch. The elevation of the bottom of the excavation was approximately 760 feet above mean sea level (AMSL) except in the vicinity of MW-7S, MW-8S, and MW-14S, which were excavated to a depth of approximately 756 feet AMSL. Monitoring wells MW-7S, MW-8S and MW-14 were abandoned during the excavation of DA1. The bottom elevation of these wells was approximately 756 feet AMSL. DA1 was regraded to promote drainage to the ditch and prevent ponding. The final grade for DA1 is presented on Plan 3. Excavation of the soil to the confining layer has effectively

removed the impacted aquifer from DA1 since the clay and marl are impermeable. The aquifer in DA1 was dry during the soil excavation activities. The contaminant sources and the impacted aquifer have been removed from DA1.

A total of approximately 515 cubic yards (816 tons) of fill and soil was excavated from DA2. The average depth of excavation was approximately 5 feet below the previous grade with a maximum depth of 6 feet. The fill and soil that was removed from excavations was dry. Native clay was encountered below the excavated material. The elevation of the bottom of the excavation was approximately 780 feet AMSL. Monitoring well MW-13S and MW-13D were abandoned during the excavation of DA2. The bottom elevation of this well was 776.6 feet AMSL. DA2 was regraded to promote drainage to the ditch and prevent ponding. The final grade for DA2 is presented on Plan 4. Excavation of the soil has effectively removed the impacted aquifer from DA2. The aquifer in DA2 was dry during the soil excavation activities. The contaminant sources and the impacted aquifer have been removed from DA2.

3.3 DRUM REMNANT REMOVAL ACTIVITIES

A small area containing drum remnants was discovered on the west side of DA2 during the excavation of the impacted soils. A total of twenty-eight 55-gallon carbon-steel drum remnants were recovered from DA2 on January 25 and 26, 2000. The drum remnants were buried at depths of 0.5 to 5 feet. The drum remnants were excavated by removing the soil in 6 inch lifts using an excavator without teeth on the bucket. When each drum carcass was exposed it was lifted out carefully and moved to a staging area within the excavation. Each drum carcass was inspected and the size, type, condition, and contents of the drum carcass were logged. If the drum carcass contained any materials, the contents were sampled and the drum carcass was carefully loaded by hand into overpack containers. Empty drum remnants were crushed by the excavator and placed into the overpack containers. The overpack containers were sealed, labeled and transported in a sling to a berm-lined, on-Site containment area. At least 5 feet of soil below the drums was also removed. The soil verification samples are included in the samples taken from DA-2.

The drum removal logs are provided in Appendix C. All of the drum remnants were crushed, bent, and corroded. Fifteen of the drum remnants contained residual solid or partially solid paint wastes of varying colors. The contents of one of the drum remnants were liquid. The remaining twelve drum remnants were empty. The contents of the drums were subjected to a full RCRA characterization. The results of the RCRA characterization are provided in Appendix D. The drum contents were determined to

be hazardous for lead. The analytical results are consistent with the material representing a lead-based paint waste. The drum remnants with liquid or solid contents were transported in 16 overpack containers to EQ in Belleville, Michigan on April 3, 2000 using appropriate protocols. The drum disposal manifest is presented in Appendix F.

3.4 GRADING

Following completion of the excavation and subsequent verification sampling, DA1 was graded to the final elevations presented on Plan 3 with available clean on-site soils. Zero to four feet of on-site soil was moved to or relocated within DA1 for final grading to promote drainage over the area from east to west, towards the stormwater drainage ditch. In the northwest corner of the former disposal area, in the vicinity of former MW-8 and MW-14, approximately 4 feet of material was placed on the native clay to bring the area to final grade. No wells were replaced in this area due to the excavation of the formerly impacted aquifer and the lack of sufficient material to monitor (i.e. only 4 feet).

Following completion of the excavation and subsequent verification sampling, DA2 was graded to the final elevations presented on Plan 4 with available on-site soil. Soil was moved to DA2 for final grade which promotes drainage away from the area.

4.0 VERIFICATION SAMPLING ACTIVITIES

Soil verification samples were collected and placed in laboratory pre-sterilized glass jars. New sample gloves were worn at each location. The soil samples were shipped in iced coolers under chain-of-custody procedures to Southern Petroleum Laboratories in Houston, Texas. The data quality assessment and laboratory reports are provided in Appendix E.

The analytical data collected during the soil sampling program were collected and analyzed using the protocols described in the document entitled "Guidance Document Verification of Soil Remediation" dated April 1994, Revision 1.

4.1 DISPOSAL AREA NO. 1

4.1.1 SOIL

A total of 69 verification soil samples were collected from DA1 in accordance with the document entitled "Guidance Document Verification of Soil Remediation" dated April 1994, Revision 1. The soil samples were analyzed for selected metals (mercury, lead, zinc, cadmium, selenium), polychlorinated biphenyls (PCBs), selected semi-volatile organic compounds (SVOCs) (2-methylnaphthalene, benzo(a)pyrene, pentachlorophenol), and selected volatile organic compound (VOCs) (1,4-dichlorobenzene, ethylbenzene, xylenes). The parameters were selected based on previous investigation results exceeding generic residential criteria. The soil sample locations are shown on Plan 1. The analytical results for the soil samples are provided in Table 4.1.

The analytical results show that no SVOCs, or PCBs were detected in any of the soil samples collected from DA1. Total xylenes were detected above the residential criterion at sample location 64 (DA164). An additional foot of soil was removed and the soil at this location was resampled and xylenes were not detected in the resample (sample location DA174). Total selenium and lead were present at concentrations marginally above the applicable criteria at four of the 69 sample locations. However, the actual groundwater samples taken even prior to the fill materials being removed indicated that neither lead nor selenium exceeded the generic residential drinking water criteria or GSI criteria, therefore, the criteria for this pathway were not exceeded for these constituents.

Therefore, the individual exceedances are not appropriate since groundwater data itself has not exhibited an impact from selenium and minor exceedances of default background levels for lead do not relate to an unacceptable residential exposure.

There were no other exceedances of the residential criteria for any other parameters, or sampling locations. All method detection limits were below the applicable generic residential criteria.

The aquifer was excavated to the native marl and clay in the northwest quadrant of DA-1, which is where exceedances of the generic groundwater criteria were previously identified. Since all excavated soil was dry, the impacted aquifer has been removed to the clay confining unit in areas of previously impacted groundwater. Therefore, DA1 no longer meets the definition of a Facility under Part 201 of Michigan Public Act 451.

4.1.2 GROUNDWATER

In DA1, two temporary wells were installed at the former MW-14 and MW-8 area (HP1) and at the former location of MW-7 (HP2) on February 28, 2001. Figure 4.1 presents the locations of the temporary wells.

Please note that the location of HP1 was adjusted since the proposed location was inaccessible due to the presence of surface water. The stormwater from a new subdivision on the west side of the railroad tracks discharges through a culvert under the railroad tracks and enters the ditch in the vicinity of former MW-14. This routing seems to have been recently completed and likely resulted in the surface water accumulation in the former DA1 area. Thus, the location sampled was the closest accessible location to the former wells. However, since the objective was to characterize groundwater in the vicinity of former MW-8 and MW-14, the sample location should be adequate.

HP1 and HP2 were installed using a 4 ¼-inch inside diameter (ID) hollow stem augers (HSA). The water table was encountered at 8 feet below ground surface (bgs) at both locations. The bottom of the temporary wells were set 9 feet bgs. The temporary wells consisted of 1-inch diameter PVC riser with a 5-foot long screen. The wells were purged at a rate of 250 mL per minute, for 2 hours. A total of 7 to 8 gallons was purged from each well. A groundwater sample was collected from each of the two locations and analyzed for dissolved mercury and dissolved zinc. Table 4.2 presents the analytical results and the Site-specific GSI criteria.

In a letter from the MDEQ dated March 16, 1999, the site-specific GSI criteria for total zinc was set at 1,100 µg/L.

Both sample results were significantly below the criteria. Following sample collection, the temporary wells were removed and backfilled with bentonite pellets.

4.2 DISPOSAL AREA NO. 2

4.2.1 SOIL

A total of 21 verification soil samples were collected from DA2 in accordance with the document entitled "Guidance Document Verification of Soil Remediation" dated April 1994, Revision 1. The soil samples were analyzed for selected SVOCs (2-methylnaphthalene, naphthalene, nitrobenzene, 2-methylphenol) and selected VOCs (ethylbenzene, toluene, xylenes). The parameters were selected based on previous investigation results exceeding generic residential criteria. The soil sample locations are shown on Plan 2. The analytical results for the soil samples are provided in Table 4.3.

The analytical results show that no SVOCs were detected in any of the soil samples collected from DA2. Total xylenes and toluene were detected above the applicable criteria at two of the 21 sample locations. However, the actual groundwater samples taken even prior to the soil removal indicated that neither xylenes nor toluene exceeded generic residential drinking water criteria, except at the shallow well screened within former source. Following source removal, a groundwater sample was collected at the location of the previous exceedances. Sample results were below applicable criteria.

Therefore, the individual exceedances are not appropriate since groundwater data itself has not exhibited an impact from xylenes or toluene.

The remaining compounds were either not detected or were present at concentrations below the residential criteria. All method detection limits were below the generic residential criteria.

Since all excavated soil was dry, the impacted aquifer has been removed in the area of previously impacted groundwater. Therefore DA2 no longer meets the definition of a Facility under Part 201 of Michigan Public Act 451.

4.2.2 GROUNDWATER

In DA2, one temporary well (HP3) was installed in the former location of MW-13S on February 28, 2001. Figure 4.2 presents the location of the temporary well.

HP3 was installed using a 4 ¼-inch ID HSA. The water table was encountered at 7 feet bgs. The bottom of the temporary well was set 9 feet bgs. The temporary well consisted of 1-inch diameter PVC riser with a 5-foot long screen. The well was purged at a rate of 200 mL per minute, for 2.25 hours. A total of 8 gallons was purged. A groundwater sample was collected and analyzed for toluene, ethylbenzene, xylenes, and 4-methylphenol. Table 4.2 presents the analytical results and residential drinking water criteria.

Sample results were below the criteria. Following sample collection, the temporary wells were removed and backfilled with bentonite pellets.

5.0 CONCLUSIONS

Based on the data collected from the verification soil and groundwater sampling program completed after all impacted materials were removed from the Sites, the following conclusions are made:

- all of the surface debris was removed from the Sites. A total of approximately 8.6 tons of surface debris consisting of old cars, household appliances, and wooden floor blocks was removed from the Sites;
- all of the impacted soils have been removed from the Sites. A total of 14,748 tons of soil were excavated and disposed off-Site;
- a total of twenty-eight 55-gallon drum remnants were removed from the Site;
- the soil verification sampling demonstrates that Sites have been successfully remediated to Generic Residential Criteria; and
- additional groundwater monitoring conducted at the Sites confirmed that there are no remaining impacts to groundwater.

The Sites have been successfully remediated to the Generic Residential Criteria. Therefore, the Sites no longer meet the definition of a Facility under Part 201 of Michigan Public Act 451. In addition, the RAP proposals previously submitted are now considered to be withdrawn.

TABLE 4.1

SUMMARY OF VERIFICATION SOIL SAMPLE RESULTS
MOUNT MORRIS DUMP SITE--DISPOSAL AREA 1
GENESEE COUNTY, MICHIGAN

	Units	Residential Criteria	S-12626-991214-SSH -DA101	-DA102	S-12626-000110-SSH -DA1DA1	-DA103	-DA104	-DA105	-DA106	-DA107	-DA108	-DA109	-DA110	-DA111	-DA112	-DA113	-DA114	-DA115	-DA116/ -DA117(DUP)
Metals																			
Mercury, Total	mg/kg	1.7	ND(0.115)	ND(0.116)	ND(0.286)	ND(0.109)	ND(0.110)	ND(0.116)	ND(0.119)	ND(0.115)	ND(0.119)	ND(0.106)	ND(0.109)	ND(0.125)	0.163	0.144	ND(0.130)	ND(0.116)	0.464 / 0.58
Lead, Total	mg/kg	21	4.25	6.87	3.37	3.92	3.78	5.5	4.93	6.38	6.75	2.57	4.39	6.8	12.3	8.05	8.96	7.46	12.7 / 12.3
Zinc, Total	mg/kg	2400	24.7	32.4	68.9	21.4	33.4	101	39.5	53.1	43	108	52	86	186	68.3	89.8	42	118 / 98.4
Cadmium, Total	mg/kg	6	0.11	0.13	0.314	0.0654	0.0767	0.105	0.179	0.126	0.155	ND(0.0531)	0.0765	0.488	0.564	0.325	0.39	0.349	1.99 / 2.23
Selenium, Total	mg/kg	4	0.42	0.48	3.11	ND(0.218)	ND(0.219)	ND(0.233)	ND(0.238)	ND(0.230)	0.321	ND(0.213)	ND(0.219)	0.512	0.615	0.5	0.519	0.384	1.29 / 1.31
Polychlorinated Biphenyls (PCBs)																			
Aroclor 1016	ug/kg	1200	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Aroclor 1221	ug/kg	1200	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Aroclor 1232	ug/kg	1200	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Aroclor 1242	ug/kg	1200	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Aroclor 1248	ug/kg	1200	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Aroclor 1254	ug/kg	1200	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Aroclor 1260	ug/kg	1200	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Semivolatile Organic Compounds (SVOCs)																			
2-Methylnaphthalene	ug/kg	57000	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Benzo(a)pyrene	ug/kg	1400	ND(380)	ND(380)	ND(940)	ND(360)	ND(360)	ND(380)	ND(390)	ND(380)	ND(390)	ND(350)	ND(360)	ND(410)	ND(420)	ND(410)	ND(430)	ND(380)	ND(490) / ND(470)
Pentachlorophenol	ug/kg	3200	ND(920)	ND(930)	ND(2300)	ND(870)	ND(880)	ND(930)	ND(950)	ND(920)	ND(950)	ND(850)	ND(870)	ND(1000)	ND(1000)	ND(1000)	ND(1000)	ND(930)	ND(1200) / ND(1100)
Volatile Organic Compounds (VOCs)																			
1,4-Dichlorobenzene	ug/kg	1600	ND(63)	ND(64)	ND(160)	ND(60)	ND(60)	ND(64)	ND(65)	ND(63)	ND(65)	ND(58)	ND(60)	ND(69)	ND(71)	ND(69)	ND(71)	ND(64)	ND(81) / ND(79)
Ethylbenzene	ug/kg	1500	ND(57)	ND(58)	ND(140)	ND(55)	ND(55)	ND(58)	ND(60)	ND(57)	ND(60)	ND(53)	ND(55)	ND(62)	ND(64)	ND(62)	ND(65)	ND(58)	ND(74) / ND(71)
Xylenes, Total	ug/kg	5600	ND(170)	ND(170)	ND(430)	ND(160)	ND(160)	ND(170)	ND(180)	ND(170)	ND(180)	ND(160)	ND(160)	ND(190)	ND(190)	ND(190)	ND(190)	ND(170)	ND(220) / ND(210)

	Units	Residential Criteria	S-12626-000111-SSH -DA118	-DA119	-DA120	-DA121	-DA122	-DA123	-DA124	-DA125	-DA126	-DA127	-DA128	-DA129	-DA130/ -DA131(DUP)
Metals															
Mercury, Total	mg/kg	1.7	0.231	ND(0.123)	ND(0.128)	0.26	ND(0.250)	ND(0.208)	ND(0.111)	ND(0.118)	ND(0.133)	ND(0.110)	ND(0.204)	ND(0.196)	ND(0.114) / ND(0.109)
Lead, Total	mg/kg	21	12.9	7.74	9.39	15.4	ND(2.50)	5.3	3.72	6.9	5.66	5.56	4.91	3.11	4.73 / 2.86
Zinc, Total	mg/kg	2400	179	92.9	72	278	60.4	44.9	34	98.5	72.2	33.5	300	390	61.6 / 34.7
Cadmium, Total	mg/kg	6	4.67	0.383	0.449	1.72	0.275	0.208	0.144	0.165	0.253	0.0876	0.347	0.373	0.125 / 0.12
Selenium, Total	mg/kg	4	4.04	0.481	0.628	3.34	2.1	1.31	ND(0.222)	0.435	0.587	0.537	1.35	2.98	0.307 / ND(0.217)
Polychlorinated Biphenyls (PCBs)															
Aroclor 1016	ug/kg	1200	ND(600)	ND(410)	ND(420)	ND(570)	ND(820)	ND(690)	ND(370)	ND(390)	ND(440)	ND(360)	ND(670)	ND(650)	ND(380) / ND(360)
Aroclor 1221	ug/kg	1200	ND(600)	ND(410)	ND(420)	ND(570)	ND(820)	ND(690)	ND(370)	ND(390)	ND(440)	ND(360)	ND(670)	ND(650)	ND(380) / ND(360)
Aroclor 1232	ug/kg	1200	ND(600)	ND(410)	ND(420)	ND(570)	ND(820)	ND(690)	ND(370)	ND(390)	ND(440)	ND(360)	ND(670)	ND(650)	ND(380) / ND(360)
Aroclor 1242	ug/kg	1200	ND(600)	ND(410)	ND(420)	ND(570)	ND(820)	ND(690)	ND(370)	ND(390)	ND(440)	ND(360)	ND(670)	ND(650)	ND(380) / ND(360)
Aroclor 1248	ug/kg	1200	ND(600)	ND(410)	ND(420)	ND(570)	ND(820)	ND(690)	ND(370)	ND(390)	ND(440)	ND(360)	ND(670)	ND(650)	ND(380) / ND(360)
Aroclor 1254	ug/kg	1200	ND(600)	ND(410)	ND(420)	ND(570)	ND(820)	ND(690)	ND(370)	ND(390)	ND(440)	ND(360)	ND(670)	ND(650)	ND(380) / ND(360)
Aroclor 1260	ug/kg	1200	ND(600)	ND(410)	ND(420)	ND(570)	ND(820)	ND(690)	ND(370)	ND(390)	ND(440)	ND(360)	ND(670)	ND(650)	ND(380) / ND(360)
Semivolatile Organic Compounds (SVOCs)															
2-Methylnaphthalene	ug/kg	57000	ND(330)	ND(330)	ND(330)	ND(330)	ND(820)	ND(690)	ND(330)	ND(330)	ND(330)	ND(330)	ND(670)	ND(650)	ND(330) / ND(330)
Benzo(a)pyrene	ug/kg	1400	ND(330)	ND(330)	ND(330)	ND(330)	ND(820)	ND(690)	ND(330)	ND(330)	ND(330)	ND(330)	ND(670)	ND(650)	ND(330) / ND(330)
Pentachlorophenol	ug/kg	3200	ND(800)	ND(800)	ND(800)	ND(800)	ND(2000)	ND(1700)	ND(800)	ND(800)	ND(800)	ND(800)	ND(1600)	ND(1600)	ND(800) / ND(800)
Volatile Organic Compounds (VOCs)															
1,4-Dichlorobenzene	ug/kg	1600	ND(100)	ND(68)	ND(71)	ND(95)	ND(140)	ND(110)	ND(61)	ND(65)	ND(73)	ND(60)	ND(110)	ND(110)	ND(63) / ND(60)
Ethylbenzene	ug/kg	1500	ND(91)	ND(62)	ND(64)	ND(86)	ND(120)	ND(100)	ND(56)	ND(59)	ND(67)	ND(55)	ND(100)	ND(98)	ND(57) / ND(54)
Xylenes, Total	ug/kg	5600	ND(270)	ND(190)	ND(190)	ND(260)	ND(380)	ND(310)	ND(170)	ND(180)	ND(200)	ND(160)	ND(310)	ND(290)	ND(170) / ND(160)

TABLE 4.1

SUMMARY OF VERIFICATION SOIL SAMPLE RESULTS
MOUNT MORRIS DUMP SITE--DISPOSAL AREA 1
GENESEE COUNTY, MICHIGAN

	Units	Residential Criteria	S-12626-000112-SSH -DA132	-DA133	-DA134	-DA135	-DA136	-DA137	-DA138	-DA139	-DA140	-DA141	-DA142	-DA143	-DA144	-DA145	-DA146 / -DA147(DUP)
Metals																	
Mercury, Total	mg/kg	1.7	ND(0.137)	ND(0.345)	ND(0.208)	ND(0.333)	ND(0.323)	ND(0.120)	ND(0.286)	ND(0.556)	ND(0.400)	ND(0.147)	ND(0.119)	ND(0.132)	ND(0.196)	ND(0.213)	ND(0.110) / ND(0.115)
Lead, Total	mg/kg	21	6.14	6.93	6.51	ND(3.33)	28.3	5.09	6.36	8.53	5.48	5.34	6.33	22.6	12.7	3.75	1.78 / 2.33
Zinc, Total	mg/kg	2400	81	168	367	37.8	1390	46.1	797	813	43.2	128	64.1	197	576	104	46.1 / 67.5
Cadmium, Total	mg/kg	6	0.247	1.55	0.875	0.2	0.516	0.337	0.571	1.17	1.16	0.662	0.298	0.303	0.843	0.383	0.0657 / 0.069
Selenium, Total	mg/kg	4	0.808	3.83	2.44	2.2	3.26	0.627	2.43	3.56	4.12	2.18	0.464	0.763	2.35	1.83	0.219 / ND(0.230)
Polychlorinated Biphenyls (PCBs)																	
Aroclor 1016	ug/kg	1200	ND(450)	ND(1100)	ND(680)	ND(1100)	ND(1100)	ND(400)	ND(940)	ND(1800)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Aroclor 1221	ug/kg	1200	ND(450)	ND(1100)	ND(680)	ND(1100)	ND(1100)	ND(400)	ND(940)	ND(1800)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Aroclor 1232	ug/kg	1200	ND(450)	ND(1100)	ND(680)	ND(1100)	ND(1100)	ND(400)	ND(940)	ND(1800)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Aroclor 1242	ug/kg	1200	ND(450)	ND(1100)	ND(680)	ND(1100)	ND(1100)	ND(400)	ND(940)	ND(1800)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Aroclor 1248	ug/kg	1200	ND(450)	ND(1100)	ND(680)	ND(1100)	ND(1100)	ND(400)	ND(940)	ND(1800)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Aroclor 1254	ug/kg	1200	ND(450)	ND(1100)	ND(680)	ND(1100)	ND(1100)	ND(400)	ND(940)	ND(1800)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Aroclor 1260	ug/kg	1200	ND(450)	ND(1100)	ND(680)	ND(1100)	ND(1100)	ND(400)	ND(940)	ND(1800)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Semivolatile Organic Compounds (SVOCs)																	
2-Methylnaphthalene	ug/kg	57000	ND(450)	ND(1100)	ND(690)	ND(2200)	ND(2100)	ND(400)	ND(1900)	ND(3700)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Benzo(a)pyrene	ug/kg	1400	ND(450)	ND(1100)	ND(690)	ND(2200)	ND(2100)	ND(400)	ND(1900)	ND(3700)	ND(1300)	ND(490)	ND(390)	ND(430)	ND(650)	ND(700)	ND(360) / ND(380)
Pentachlorophenol	ug/kg	3200	ND(1100)	ND(2800)	ND(1700)	ND(5300)	ND(5200)	ND(960)	ND(4600)	ND(8900)	ND(3200)	ND(1200)	ND(950)	ND(1100)	ND(1600)	ND(1700)	ND(880) / ND(920)
Volatile Organic Compounds (VOCs)																	
1,4-Dichlorobenzene	ug/kg	1600	ND(75)	ND(190)	ND(110)	ND(180)	ND(180)	ND(66)	ND(160)	ND(310)	ND(220)	ND(81)	ND(65)	ND(72)	ND(110)	ND(120)	ND(60) / ND(63)
Ethylbenzene	ug/kg	1500	ND(68)	ND(170)	ND(100)	ND(170)	ND(160)	ND(60)	ND(140)	ND(280)	ND(200)	ND(74)	ND(60)	ND(66)	ND(98)	ND(110)	ND(55) / ND(57)
Xylenes, Total	ug/kg	5600	ND(210)	ND(520)	ND(310)	ND(500)	ND(480)	ND(180)	ND(430)	ND(830)	ND(600)	ND(220)	ND(180)	ND(200)	ND(290)	ND(320)	ND(160) / ND(170)

	Units	Residential Criteria	S-12626-000117-SSH -DA148	-DA149	-DA150	-DA151	-DA152	-DA153	-DA154	-DA155	-DA156	-DA157	-DA158	-DA159
Metals														
Mercury, Total	mg/kg	1.7	ND(0.118)	ND(0.118)	ND(0.196)	ND(0.357)	ND(0.278)	ND(0.112)	ND(0.345)	0.325	ND(0.208)	ND(0.137)	ND(0.167)	ND(0.141)
Lead, Total	mg/kg	21	6.13	7.77	11.9	6.28	6.49	5.37	5.37	13.9	7.52	11.7	10.6	9.43
Zinc, Total	mg/kg	2400	44.9	63.8	162	94.8	126	30.9	114	135	63.3	149	89.8	89.9
Cadmium, Total	mg/kg	6	0.129	0.224	1.76	2.39	0.611	0.36	0.931	1.71	0.229	0.589	1.12	1.17
Selenium, Total	mg/kg	4	0.259	0.4	2.96	2.75	1.31	0.506	2.28	2.37	2.17	0.685	2.33	1.63
Polychlorinated Biphenyls (PCBs)														
Aroclor 1016	ug/kg	1200	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Aroclor 1221	ug/kg	1200	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Aroclor 1232	ug/kg	1200	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Aroclor 1242	ug/kg	1200	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Aroclor 1248	ug/kg	1200	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Aroclor 1254	ug/kg	1200	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Aroclor 1260	ug/kg	1200	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Semivolatile Organic Compounds (SVOCs)														
2-Methylnaphthalene	ug/kg	57000	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Benzo(a)pyrene	ug/kg	1400	ND(390)	ND(390)	ND(650)	ND(1200)	ND(920)	ND(370)	ND(1100)	ND(560)	ND(690)	ND(450)	ND(550)	ND(460)
Pentachlorophenol	ug/kg	3200	ND(940)	ND(940)	ND(1600)	ND(2900)	ND(2200)	ND(900)	ND(2800)	ND(1400)	ND(1700)	ND(1100)	ND(1300)	ND(1100)
Volatile Organic Compounds (VOCs)														
1,4-Dichlorobenzene	ug/kg	1600	ND(65)	ND(65)	ND(110)	ND(200)	ND(150)	ND(62)	ND(190)	ND(93)	ND(110)	ND(75)	ND(92)	ND(77)
Ethylbenzene	ug/kg	1500	ND(59)	ND(59)	ND(98)	ND(180)	ND(140)	ND(56)	ND(170)	ND(85)	ND(100)	ND(68)	ND(83)	ND(70)
Xylenes, Total	ug/kg	5600	ND(180)	ND(180)	ND(290)	ND(540)	ND(420)	ND(170)	ND(520)	ND(250)	ND(310)	ND(210)	ND(250)	ND(210)

TABLE 4.1

SUMMARY OF VERIFICATION SOIL SAMPLE RESULTS
MOUNT MORRIS DUMP SITE--DISPOSAL AREA 1
GENESEE COUNTY, MICHIGAN

	Units	Residential Criteria	S-12626-000119-SSH -DA160	-DA161	-DA162	-DA163	-DA164	-DA165	-DA166	-DA167	-DA168	-DA169	-DA170	-DA171 / -DA172(DUP)	S-12626-000127-SSH -DA174 (re-verification of -DA164)
Metals															
Mercury, Total	mg/kg	1.7	ND(0.108)	ND(0.112)	ND(0.133)	ND(0.110)	ND(0.145)	ND(0.114)	ND(0.110)	ND(0.112)	ND(0.114)	ND(0.108)	ND(0.108)	ND(0.108) / ND(0.107)	NA
Lead, Total	mg/kg	21	2.62	3.82	6.2	4.42	7.39	4.89	4.13	5.79	4.47	2.63	3.1	2.94 / 3.26	NA
Zinc, Total	mg/kg	2400	228	26.5	49.5	24.8	150	1100	39.9	38.7	32.5	12.6	14.8	27.1 / 2450	NA
Cadmium, Total	mg/kg	6	ND(0.325)	ND(0.337)	ND(0.400)	ND(0.330)	0.851	ND(0.341)	ND(0.329)	ND(0.337)	ND(0.341)	ND(0.325)	ND(0.325)	ND(0.323) / ND(0.322)	NA
Selenium, Total	mg/kg	4	ND(0.542)	ND(0.562)	0.975	ND(0.549)	2.56	ND(0.568)	ND(0.549)	ND(0.562)	ND(0.568)	ND(0.542)	ND(0.542)	ND(0.538) / ND(0.537)	NA
Polychlorinated Biphenyls (PCBs)															
Aroclor 1016	ug/kg	1200	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	NA
Aroclor 1221	ug/kg	1200	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	NA
Aroclor 1232	ug/kg	1200	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	NA
Aroclor 1242	ug/kg	1200	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	NA
Aroclor 1248	ug/kg	1200	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	NA
Aroclor 1254	ug/kg	1200	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	NA
Aroclor 1260	ug/kg	1200	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	NA
Semivolatile Organic Compounds (SVOCs)															
2-Methylnaphthalene	ug/kg	57000	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	NA
Benzo(a)pyrene	ug/kg	1400	ND(360)	ND(370)	ND(440)	ND(360)	ND(480)	ND(380)	ND(360)	ND(370)	ND(380)	ND(360)	ND(360)	ND(350) / ND(350)	
Pentachlorophenol	ug/kg	3200	ND(870)	ND(900)	ND(1100)	ND(880)	ND(1200)	ND(910)	ND(880)	ND(900)	ND(910)	ND(870)	ND(870)	ND(860) / ND(860)	NA
Volatile Organic Compounds (VOCs)															
1,4-Dichlorobenzene	ug/kg	1600	ND(60)	ND(62)	ND(73)	ND(60)	ND(80)	ND(63)	ND(60)	ND(62)	ND(63)	ND(60)	ND(60)	ND(59) / ND(59)	NA
Ethylbenzene	ug/kg	1500	ND(54)	ND(56)	ND(67)	ND(55)	ND(72)	ND(57)	ND(55)	ND(56)	ND(57)	ND(54)	ND(54)	ND(54) / ND(54)	NA
Xylenes, Total	ug/kg	5600	ND(160)	ND(170)	720	ND(160)	8600	ND(170)	ND(160)	ND(170)	ND(170)	ND(160)	ND(160)	ND(160) / ND(160)	ND(150)

TABLE 4.2

SUMMARY OF GROUNDWATER SAMPLE VERIFICATION RESULTS
MOUNT MORRIS DUMP SITE
MOUNT MORRIS, MICHIGAN

				Disposal Area 1		*Disposal Area 2*
	Units	*GSI Criteria*	*Residential Criteria*	*W-12626-010228-SSH-DA1-02*	*W-12626-010228-SSH-DA1-01*	*W-12626-010228-SSH-DA2-01*
Metals				***HP1***	***HP2***	***HP3***
Mercury	mg/L	0.0002	0.002	ND(0.0002)	ND(0.0002)	NA
Zinc	mg/L	1.1*	2.4	0.167	0.0297	NA
VOCs						
Ethylbenzene	ug/L	18	74	NA	NA	ND(1)
Toluene	ug/L	140	790	NA	NA	ND(1)
Xylenes	ug/L	35	280	NA	NA	ND(3)
4-Methylphenol	ug/L	71	370	NA	NA	ND(6)

Notes:

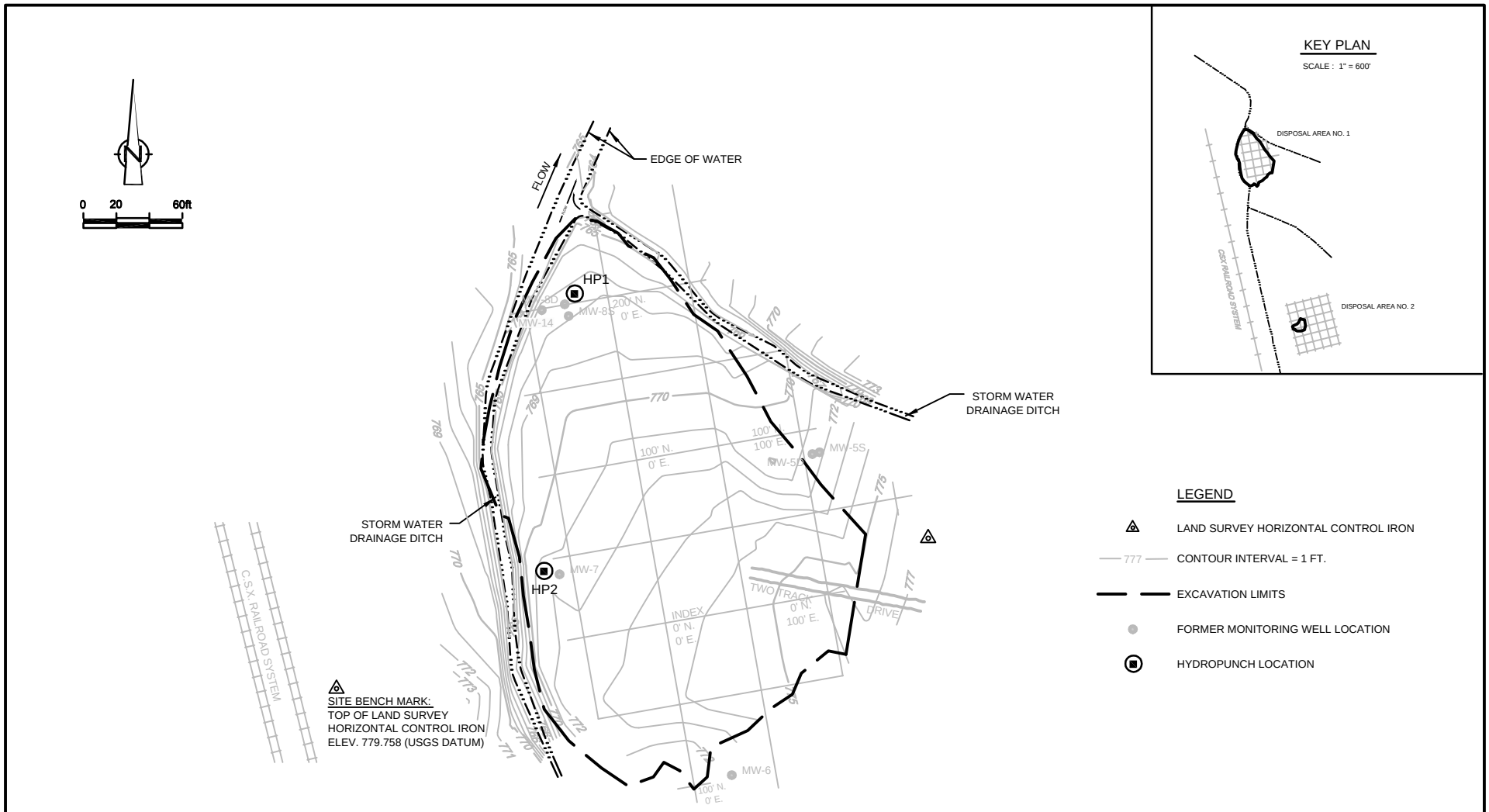
* - GSI criteria based on a letter from the MDEQ dated March 16, 1999 (Attachement A).
NA - not analyzed

TABLE 4.3

SUMMARY OF VERIFICATION SOIL SAMPLE RESULTS
MOUNT MORRIS DUMP SITE--DISPOSAL AREA 2
GENESEE COUNTY, MICHIGAN

	Units	Residential Criteria	S-12626-000124-SSH -DA201	-DA202	-DA203	-DA204	-DA205
Semivolatile Organic Compounds (SVOCs)							
2-Methylnaphthalene	ug/kg	57000	ND(350)	ND(360)	ND(350)	ND(360)	ND(370)
Napthalene	ug/kg	17000	ND(350)	ND(360)	ND(350)	ND(360)	ND(370)
Nitrobenzene	ug/kg	330	ND(350)	ND(360)	ND(350)	ND(360)	ND(370)
2-Methylphenol	ug/kg	3200	ND(350)	ND(360)	ND(360)	ND(360)	ND(370)
Volatile Organic Compounds (VOCs)							
Ethylbenzene	ug/kg	1500	ND(53)	ND(54)	ND(53)	ND(54)	ND(56)
Toluene	ug/kg	16000	ND(53)	ND(54)	ND(53)	ND(54)	ND(56)
Xylenes, Total	ug/kg	5600	ND(160)	ND(160)	ND(160)	ND(160)	ND(170)

	Units	Residential Criteria	S-12626-000127-SSH -DA206	-DA207	-DA208	-DA209	-DA210	-DA211	-DA212	-DA213	-DA214	-DA215	-DA216	-DA217	-DA218	-DA219	-DA220	-DA221
Semivolatile Organic Compounds (SVOCs)																		
2-Methylnaphthalene	ug/kg	57000	ND(340)	ND(360)	ND(340)	ND(350)	ND(350)	ND(350)	ND(350)	ND(340)	ND(340)	ND(420)	ND(420)	ND(390)	ND(360)	ND(350)	ND(410)	ND(410)
Napthalene	ug/kg	17000	ND(340)	ND(360)	ND(340)	ND(350)	ND(350)	ND(350)	ND(350)	ND(340)	ND(340)	ND(420)	ND(420)	ND(390)	ND(360)	ND(350)	ND(410)	ND(410)
Nitrobenzene	ug/kg	330	ND(340)	ND(360)	ND(340)	ND(350)	ND(350)	ND(350)	ND(350)	ND(340)	ND(340)	ND(420)	ND(420)	ND(390)	ND(360)	ND(350)	ND(410)	ND(410)
2-Methylphenol	ug/kg	3200	ND(340)	ND(360)	ND(340)	ND(350)	ND(350)	ND(350)	ND(350)	ND(340)	ND(340)	ND(420)	ND(420)	ND(390)	ND(360)	ND(350)	ND(410)	ND(410)
Volatile Organic Compounds (VOCs)																		
Ethylbenzene	ug/kg	1500	ND(52)	ND(54)	ND(52)	ND(54)	ND(53)	ND(53)	ND(54)	ND(52)	ND(51)	ND(63)	730	1200	ND(55)	ND(54)	160	ND(62)
Toluene	ug/kg	16000	ND(52)	ND(54)	ND(52)	320	ND(53)	ND(53)	ND(54)	ND(52)	ND(51)	ND(63)	ND(63)	31000	ND(55)	ND(54)	18000	ND(62)
Xylenes, Total	ug/kg	5600	ND(160)	ND(160)	ND(160)	ND(160)	ND(160)	ND(160)	ND(160)	ND(160)	ND(150)	ND(190)	420	6200	ND(160)	ND(160)	4000	ND(190)



SOURCES
DARRELL D. HUGHES & ASSOCIATES
LAND SURVEYORS
AND SSOE INC.

figure 4.1

SAMPLE LOCATIONS - DISPOSAL AREA No. 1
MOUNT MORRIS DUMP SITE
Genesee County, Michigan

12626-00(006)GN-WA011 AUG 30/2001

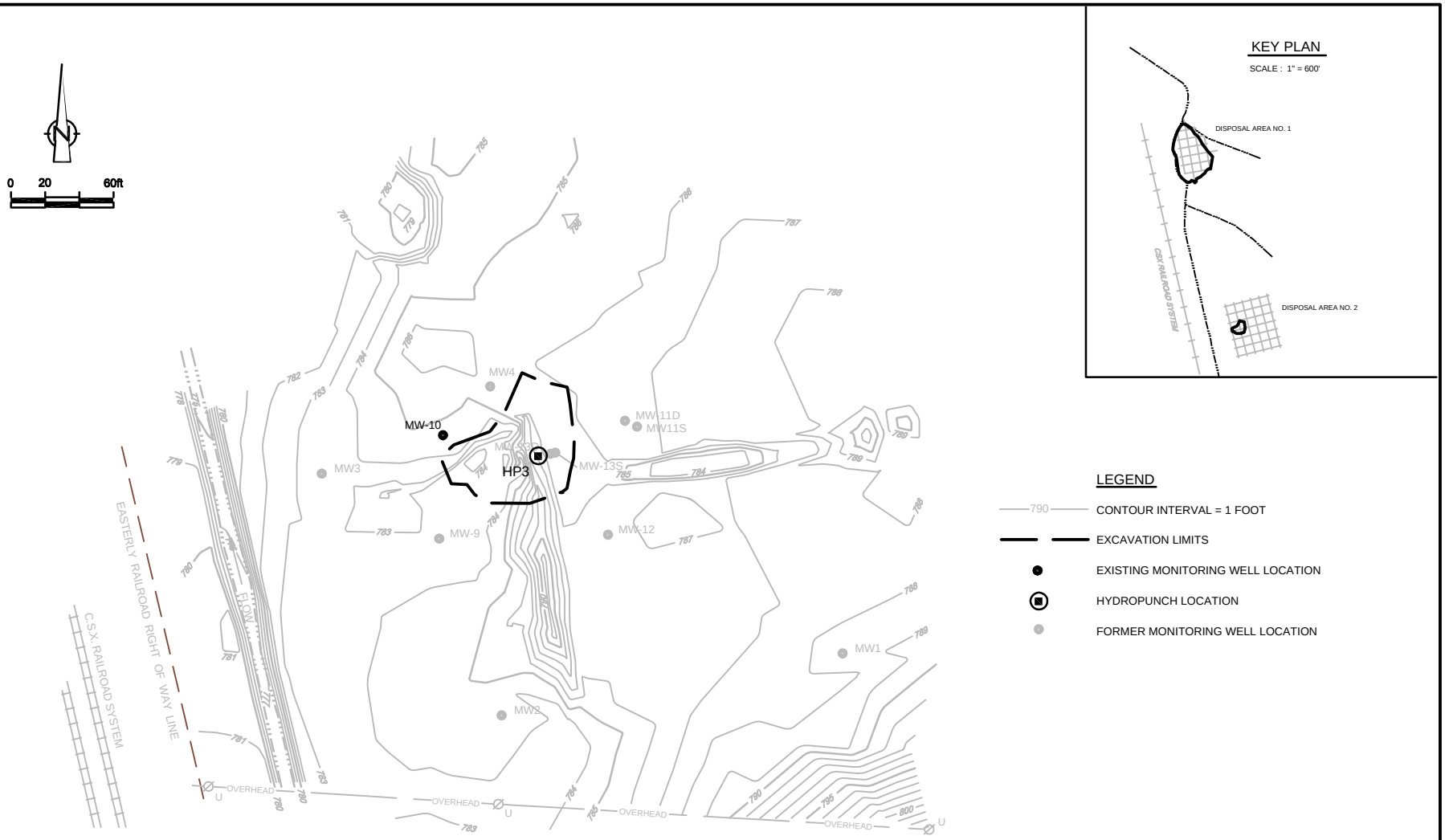


figure 4.2

SAMPLE LOCATIONS - DISPOSAL AREA No. 2
MOUNT MORRIS DUMP SITE
Genesee County, Michigan

SOURCE
DARRELL D. HUGHES & ASSOCIATES
LAND SURVEYORS
AND SSOE INC.

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