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DOCUMENTATION OF DUE CARE COMPLIANCE

200 Blue Star Highway | Douglas, Michigan
PM Project Number 01-10275-1-0004

Prepared for:

City of the Village of Douglas
86 West Center Street
City of the Village of Douglas, Michigan 49406

Prepared by:

PM Environmental, Inc.
4080 West Eleven Mile Road
Berkley, Michigan 48072

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March 28, 2019

Mr. William LeFevere
City of the Village of Douglas
86 West Center Street
City of the Village of Douglas, Michigan 49406

RE: Documentation of Due Care Compliance for the Industrial Property Located at 200 Blue Star Highway, Douglas, Michigan
PM Environmental, Inc. Project No. 01-10275-1-0004

Dear Mr. LeFevere:

Enclosed is a copy of the Documentation of Due Care Compliance (DDCC) prepared in accordance with Rule 1003(5) of Section 20107(a) of P.A. 451, as amended, and the Part 10 Rules by PM Environmental, Inc. (PM).

If you have any questions regarding the information in this report, please contact us at 800.313.2966.

Sincerely,
PM ENVIRONMENTAL, INC.

Andrea Galli
Project Consultant

J. Adam Patton, CHMM
Manager of Site Investigation Services

Enclosure

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1.0 INTRODUCTION

This Documentation of Due Care Compliance (DDCC) report was prepared on behalf of City of the Village of Douglas for the Industrial Property located at 200 Blue Star Highway, Douglas, Allegan County, Michigan (hereafter referred to as the "subject property"), in accordance with Rule 1003(5) of Section 20107a of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended. Part 201 requires that documentation be maintained demonstrating that the subject property is in compliance with Section 7a of Part 201, which must be made available to the Michigan Department of Environmental Quality (MDEQ) upon request.

Section 7a of Part 201 imposes "due care" obligations on owners and operators of contaminated properties that are generally described as 1) prevent exacerbation; 2) mitigate unacceptable exposure and operate in a manner that protects the public health and safety; 3) take reasonable precautions against third party omissions; 4) reasonably cooperate with parties authorized to conduct response activities; 5) comply with land or resource use restrictions; and, 6) not impede any land or resource use restrictions.

This DDCC is representative of the current and intended use as outlined in Sections 1.1 and 1.2. If changes to the property use, zoning, operations, and/or layout occur, re-evaluation of potential exposure pathways and associated amendments to this report may be required.

1.1 Site Description and Background

The subject property consists of one parcel totaling approximately 7.18 acres and is located on the west side of Blue Star Highway and the east side of Ferry Street, north of Wiley Road and south of Freemont Street, in the City of the Village of Douglas, Michigan (Figure 1). The subject property is developed with a 146,761 square foot industrial building located in the northwestern portion of the property. Asphalt and concrete paved parking areas are present surrounding the subject building. The remainder of the property contains landscaped areas (Figure 2).

The subject property was initially developed by 1938 with the construction of two small structures in the southwestern portion of the property and a small fallow orchard present in the western portion of the property. Between 1938 and 1955, two industrial buildings were constructed in the eastern and western portions of the property. The buildings were demolished between 1955 and 1963 when the current building was constructed. The two small structures in the southern portion of the property were demolished between 1968 and 1975. An addition was constructed to the southern portion of the current building between 1975 and 1968. The subject building was occupied by various light industrial occupants from initial construction to 2014 and has been vacant since that time. The most recent occupant and owner of the property is Haworth Inc. (formerly Haworth Manufacturing), who used the building for plating, buffing, zinc die casting, metal forming, stamping, phosphatizing and painting metal parts since approximately 1976. Other prior occupants included Chase Manufacturing.

1.2 Intended Use of the Subject Property

The City of the Village of Douglas intends to demolish the current subject buildings and the property will be left as vacant land for the immediately foreseeable future. The buildings will remain vacant/unoccupied until demolished. The existing building slabs and existing

asphalt/concrete surface cover will remain and will be maintained as a dermal contact barrier and to prevent potential exacerbation of existing contamination until redevelopment occurs.

The subject property is currently connected to municipal water, sanitary sewer, and storm sewer utilities, as well as natural gas, electrical, and telecommunications utilities. No private water wells have been identified in association with the subject property through review of municipal and MDEQ records.

The subject property is currently zoned C-2: General Commercial. The intended use and zoning are consistent with a Nonresidential property use.

1.3 Summary of Previous Reports

PM reviewed the following previous environmental reports for the subject property. Copies of the previous site investigation reports, including sample location maps and analytical summary tables, are included in Appendix C of PM's March 2019 Phase I Environmental Site Assessment (ESA), which is provided under separate cover. Additionally, relevant figures and tables from the previous site investigations are included in Appendix A.

Name of Report	Date of Report	Company that Prepared Report
Technical Memorandum No. 3 Ground Water Investigation	2-1993	Environmental Resources Management North Central, Inc. (ERM-North Central)
Wicks Creek and Offsite Groundwater Investigation Report and Response Action Analysis	1-1994	ERM-North Central
Remedial Investigation Report	12-2003	Earth Tech, Inc.
Downgradient Groundwater-Surface Water Investigation and Baseline Monitored Natural Attenuation Evaluation Report	4-2014	Weston Solutions of Michigan, Inc. (Weston Solutions)
Sub-Slab and Indoor Air Sample Location Map	2015	Weston Solutions
Phase II ESA	10-9-2015	Environmental Resources Management Michigan, Inc. (ERM)
Remedial Alternatives Evaluation (RAE)	5-11-2018	GHD Services Inc., (GHD)
Polychlorinated Biphenyl (PCB) Cleanup Plan and Application for Risk-Based Cleanup and Disposal Approval (Cleanup Plan)	8-3-2018	GHD
Groundwater Sampling Results and Summary	3-13-2019	GHD
Phase I ESA	3-28-2019	PM
Baseline Environmental Assessment (BEA)	3-28-2019	PM

Historical records indicated that several on- and off-site subsurface investigations have been conducted dating back to at least 1987 and have identified concentrations of volatile organic compounds (VOCs), PCBs, and heavy metals exceeding Michigan's Part 201 Residential and Nonresidential Generic Cleanup Criteria (GCC), including a groundwater plume comprised of VOCs at the downgradient subject property boundary. PCB concentrations at the subject property

also exceed federal Toxic Substance Control Act (TSCA) Subpart D cleanup standards, and Michigan's Part 201 Residential and Nonresidential Direct Contact criteria.

The 1993-2013 site investigations indicated that several monitoring wells were installed mainly around the perimeter of the building, with exception to one monitoring well installed inside the building, in August 1993. Concentrations of various chlorinated solvents, including trichloroethylene, were detected in several groundwater samples collected above Part 201 Residential and Nonresidential Drinking Water (DW), Groundwater Surface Water Interface (GSI), and/or Groundwater Volatilization to Indoor Air Inhalation (GVII) cleanup criteria. In addition, these concentrations exceeded the Residential and Nonresidential Recommended Interim Action Screening Levels (RIASLs). Concentrations of petroleum VOCs were also detected in groundwater on the east side of the building above Part 201 Residential and Nonresidential DW and GSI cleanup criteria. The 2003 Remedial Investigation also indicated that concentrations of nickel, zinc, TCE, and xylenes were detected in soils above the Part 201 cleanup criteria. A source area air sparge (AS)/soil vapor extraction (SVE) remediation system was installed in the northwestern corner of the property in 2006 which operated until 2013. Subsequent groundwater and surface water sampling completed in 2012 indicated that chlorinated VOC concentrations continued to persist in the source area (Haworth) and in the downgradient plume.

A figure was provided that indicates a total of nine indoor air samples were collected in the subject building in June 2015 and 30 soil gas points were installed and sampled throughout the building in July 2015. The figure indicates that eight of the soil gas samples collected exceeded Nonresidential RIASLs for TCE (1,200 mg/m^3). A full report was not available and the indoor air results were not included on the figure.

The 2015 Phase II ESA was conducted to assess the following Recognized Environmental Conditions (RECs) that were identified in a prior Phase I ESA completed by ERM in August 2001:

- VOC contamination documented beneath the subject building and subsequent MDEQ sub-slab and indoor air sampling, which identified concentrations of VOCs above the current MDEQ Nonresidential Vapor Intrusion Screening Levels (VISLs) for vapor intrusion;

- Three 6,000-gallon underground storage tanks (USTs) located southwest of the building, two 500-gallon USTs located east and west of the building, three concrete waste treatment tanks beneath the concrete slab in the eastern portion of the building, and a 17,500-gallon fuel oil UST that was once located on leased land across Ferry Street, to the west of the subject property, which were all reported to have been removed, but no soil sampling documentation was available;

- The structural integrity of floor drains and trench drains in the subject building; and

- Former die casting operations conducted between the 1950s and 1971.

In August 2015, ERM conducted a subsurface investigation in the former die cast pit area (east room). The west pit was 8.0 feet by 6.0 feet, the north pit was 10.0 feet by 10.0 feet, and the east pit was 20.0 feet by 10.0 feet. The pits were reportedly pumped empty, cleaned by hydro blasting, and backfilled with clean fill decades ago. The scope of work included the advancement of 10 soil borings (GP-1 through GP-10) and the collection of soil samples for analysis of PCBs.

Groundwater was not encountered in any of the soil borings advanced during ERM's August 2015 site investigation.

Soil analytical results identified concentrations of PCBs above 1.0 parts per million (ppm) in GP-2 (1.3 ppm at 5.0 feet below ground surface [bgs]), GP-3 (1,800 ppm at 5.0 feet bgs and 38 ppm at 10.0 feet bgs), and GP-10 (2.1 ppm at 8.0 feet bgs). Upon completion of the August 2015 investigation, the horizontal and vertical extent of PCB impacts had not been defined to within the 1.0 ppm TSCA subpart D cleanup standard for unrestricted land use.

In addition, ERM collected six 24-hour indoor air samples (IA-1 through IA-6) at representative locations in the building for laboratory analysis of VOCs. The MDEQ had previously collected samples while the heating ventilating, and air conditioning (HVAC) system was not operating in the building; however, ERM requested the HVAC system remain on during the September 2015 indoor air sampling to provide better representation of indoor air quality while the space is occupied/operating. No concentrations of VOCs were identified in any of the indoor air samples collected from the subject property above laboratory MDLs.

ERM also traced a vent pipe present along the eastern wall of the subject property building, which was suspected of being associated with a former fuel oil UST. The vent pipe tracing activities were completed using a metal detector and ground-penetrating radar with no UST identified and no sampling completed. The other UST basins identified as RECs were not assessed.

PM reviewed a Remedial Alternatives Evaluation (RAE) for the subject property completed by GHD Services Inc., (GHD) and dated May 11, 2018. GHD reviewed previous consultants' reports that documented the nature and extent of trichloroethene (TCE) and PCB impacts at the subject property to evaluate remedial alternatives for the risks associated with the VOC groundwater plume and PCBs in soil for the vapor intrusion and direct contact pathways, respectively.

Figures included in the RAE documented that ERM completed additional site investigations in December 2015, August, November, and December 2016, and January 2017 to attempt to delineate the horizontal and vertical extent of PCB impacts at the subject property. Copies of the reports related to these investigations from December 2015 through January 2017 were not available for review. The soil analytical results identified concentrations of PCBs above 100.0 ppm, which would require removal in low occupancy areas, in GP-11 (5.0-5.5 feet bgs; 130 ppm; GP-16 (1.0-1.5 and 5.0-5.5 feet bgs; 9,500 and 2,900 ppm respectively); GP-17 (1.0-1.5 feet bgs; 12,000 ppm); GP-18 (14.5-15.0 feet bgs; 2,000 ppm); GP-28 (1.0-1.5, 5.0-5.5, and 15.0-15.5 feet bgs; 580 ppm, 130 ppm, and 560 ppm, respectively); GP-36 (1.0-1.5 feet bgs; 370 ppm); GP-37 (0.5-1.0 and 15.0-15.5 feet bgs; 130 ppm and 980 ppm, respectively); GP-40 (1.0-1.5 and 11.5-12.0 feet bgs; 120 and 26,000 ppm, respectively); GP-41 (1.0-1.5 feet bgs; 2,100 ppm); GP-43 (14.5-15.0 feet bgs; 3,100 ppm); GP-69 (0.8-1.3 and 11.5-12 feet bgs; 230 and 1,500 ppm respectively); GP-97 (12.0-12.5 feet bgs; 3,200 ppm); and GP-98 (11.5-12.0 feet bgs; 2,800 ppm).

The horizontal extent of impacts was delineated in all directions to within the TSCA cleanup standard for low occupancy areas of 100 ppm. The vertical extent of PCB impacts had not been delineated to below 100 ppm at GP-11, GP-18, GP-28, GP-36, GP-37, GP-40, GP-41, GP-43, GP-69, GP-97, and GP-98.

ERM collected concrete samples from the building concrete slab in the east room (warehouse) in August and December 2016 and January 2017, and samples were collected form the surface and lower layers of concrete (lower layers at an undefined depth). Concentrations of PCBs greater

than 1.0 ppm were identified in all of the deep samples at concentrations ranging from 3.4 ppm to 5,600 ppm. The locations of the highest concentrations of PCBs were identified around the north and east pits, where concentrations exceeded 100 ppm at sample locations 51, 52, 54, 55, 56, 57, 117, and 123.

ERM collected 10 surface concrete samples from the west room in the northwestern portion of the building in November and December 2016 and January 2017. None of the concrete surface sample results from the west room exceeded 10 ppm.

In June 2018, GHD conducted additional site investigation work to attempt to vertically delineate the extent of PCB impacts greater than 1 ppm and 100 ppm, respectively, and/or confirm soil boring refusal depths encountered by ERM during previous site investigations in the central portion of the east room between 12.0 and 15.0 feet bgs to evaluate 27 identified data gaps. GHD concluded that the drilling work confirmed refusal at 21 of the 27 data gaps between 12.0 and 15.0 feet bgs. At the remaining six soil boring locations (BH-003, BH-004, BH008, BH-009, BH-010, and BH-018), soil samples were collected at depths to 19.0 to 20.0 feet bgs, and the soil analytical results for these borings did not identify concentrations of PCBs above laboratory MDLs.

Based on the results of the additional site investigation work with confirmed refusal depths and lack of PCBs identified at 20.0 feet bgs, GHD assumed vertical delineation in the east room at approximately 18.0 to 20.0 feet bgs. Additional vertical delineation would be required to fully define the vertical extent of PCB impacts to within the TSCA subpart D cleanup standards below refusal depths.

The results of GHD's investigation are included in a PCB Cleanup Plan (Cleanup Plan), dated August 3, 2018. GHD's Cleanup Plan contains a Draft PCB Cleanup Plan that was completed by ERM in 2017. This Cleanup Plan documents additional groundwater and soil gas sampling conducted by ERM to evaluate if PCBs were impacting these media.

ERM installed four temporary monitoring wells to a depth of approximately 40 feet bgs to the north of the east room for collection of groundwater samples for laboratory analysis of PCBs. No concentrations of PCBs were identified above laboratory MDLs, and GHD and ERM concluded that there is no evidence of PCBs impacting groundwater at the subject property. The temporary monitoring wells were installed to the north, assumed downgradient location of the east room, as previous investigations documented that the primary aquifer is located approximately 40 feet bgs, and groundwater flow was determined to be to the northwest, towards Wicks Creek.

ERM collected three soil gas samples in the east room for laboratory analysis of PCBs, and no concentrations of PCBs were identified above laboratory MDLs. GHD concluded that since the east and west rooms are covered with 6- to 12-inches of concrete and their proposed cleanup plan includes placement of an epoxy cap over the entirety of the two rooms, the vapor intrusion pathway is not complete. The soil gas samples were collected in the northwest, southern and central portions of the east room. Based on the location of the samples away from the areas with the observed highest PCB concentrations, additional soil gas sampling may be required to fully evaluate the vapor intrusion pathway.

GHD conducted additional concrete floor sampling in the east and west rooms. The west room does not contain concentrations of PCBs in concrete above 100 ppm, and PCBs have been delineated to 1 ppm within the west room. PCB concentrations exceed 100 ppm in the north

central portion of the east room and have been fully delineated. Along the east and north walls of the building, PCB concentrations were greater than 1 ppm but less than 5 ppm, and all other delineation samples collected from the east room were below 1 ppm or non-detect.

The most recent groundwater monitoring results dated 2019 document similar concentrations as previously identified and indicates that the chlorinated VOCs present in groundwater have not mobilized the PCBs present in the impacted soils to groundwater.

PM completed a Phase I ESA dated March 28, 2019 for the subject property. The following RECs were identified:

- The subject property was occupied by various industrial operations from between 1938 and 1955 to 2014. Previous subsurface investigations document soil and groundwater contamination is present which exceeds the current Part 201 Residential and Nonresidential GCC. Based on these analytical results, the subject property would be classified as a "facility," as defined by Part 201 of P.A. 451 of the Michigan NREPA, as amended. The PCB contamination identified on-site also exceeds the TSCA standards, and a BEA will not protect the purchaser from cleanup to TSCA standards. Additionally, contaminant concentrations detected exceed the MDEQ/Michigan Department of Health and Human Services (MDHHS) August 2017 RIASLs and a potential vapor intrusion concern is present for the current building.

- A significant amount of site investigation activities has been completed at the subject property. However, the majority of the soil and groundwater sampling conducted in the building was located in the former die casting area in the northern portion of the building, and limited soil and groundwater sampling was completed in the remainder of the former operational areas, where manufacturing operations occurred (i.e. plating, buffing, zinc die casting, metal forming, stamping, phosphatizing and painting metal parts, etc.). Additionally, three concrete waste treatment tanks were located beneath the concrete slab in the eastern portion of the building and no soil or groundwater sampling was completed in this area. The potential exists for additional soil and groundwater contamination to be present in these areas.

- A 2015 Phase II ESA indicates three 6,000-gallon USTs were located southwest of the building, two 500-gallon USTs were located east and west of the building, and a 17,500-gallon fuel oil UST that was once located on leased land across the street to the west of the subject property. All of the USTs were reported to have been removed, but no documentation was available to verify UST removal or soil sampling. A vent pipe on the east side of the building was investigated in 2015, but no UST was located, and no sampling was completed in this area. The potential exists for orphan USTs to be present on the property and/or for a release to have occurred.

- PM was unable to determine the historical heat sources for the subject building or the former structures on the subject property. No visual evidence of fuel oil use was identified during the site reconnaissance. However, there is the potential for a fuel oil AST or UST to have been used at the property and for a release to have occurred.

- PM was unable to determine whether the subject building or the former structures on the subject property were connected to municipal sewer or private septic fields prior to 1988. The structures may have been connected to a private septic field. The historical waste

management practices associated with the long term industrial operations and the potential on-site septic field are unknown and may be a source of subsurface contamination.

No off-site RECs were identified.

A BEA dated March 28, 2019 was prepared and submitted to the MDEQ on behalf of the City of Village of Douglas based on the previous analytical results.

1.4 Geology and Hydrogeology

Based on available soil boring logs from previous site investigations, the general geology consists of sand with thin layers of silt and limited clay to a depth of at least 15.0 feet bgs.

Groundwater was encountered at approximately 40 feet bgs. Groundwater flow direction was calculated to the northwest.

1.5 Location of Contaminated Media on the Subject Property

The analytical results for the soil and groundwater samples collected from the subject property during the previous site investigations were compared with the State of Michigan cleanup criteria as presented in Attachment 1 to MDEQ Operational Memorandum Number 1 "Part 201/213 Cleanup Criteria," December 2013 and in accordance with Section 20120a(1), using the Residential and Nonresidential Generic Cleanup Criteria, and with the TSCA Subpart D cleanup standards. Additionally, the soil and groundwater analytical results from previous site investigations were compared to the MDEQ/MDHHS August 2017 RIASLs, which are not promulgated in law but are the current screening levels for voluntary evaluation of the vapor intrusion pathway.

As indicated in Section 1.3, concentrations of target analytes were identified in soil and groundwater samples collected from the subject property above Part 201 Residential and Nonresidential Drinking Water Protection (DWP)/DW, Groundwater Surface Water Interface Protection (GSIP)/GSI, Residential and Nonresidential Soil Volatilization to Indoor Air Inhalation (SVII)/GVII, and/or Residential and Nonresidential Direct Contact (DC) cleanup criteria. Based on these exceedances, the subject property is a facility under Part 201 of P.A. 451, as amended, and the rules promulgated thereunder. PCB concentrations detected in soil samples also exceeded TSCA cleanup standards. Additionally, concentrations of VOCs were detected in soil, groundwater, and soil gas samples above Residential and Nonresidential RIASLs.

Analytical tables and sample location figures from investigation activities completed at the subject property are included in Appendix A.

2.0 EXPOSURE PATHWAY EVALUATION

The following exposure pathways were evaluated and determined to be complete/potentially complete. Exposure pathways are eliminated when they are determined not to be complete or it is demonstrated that unacceptable exposures do not exist and that response activities are not required to prevent or mitigate unacceptable exposures.

The subject property is currently zoned C-2: General Commercial, which is consistent with a Nonresidential property use in accordance with Part 201. Based upon the current zoning and

likely Nonresidential use of the subject property in the future, the Part 201 Nonresidential cleanup criteria are applicable.

The following exposure pathway analysis is based on the currently known information collected during the previous and current site investigations. If evidence is discovered of additional impact, the exposure pathways will need to be re-evaluated.

Complete and/or Potentially Complete Exposure Pathway?		
Pathway	**Yes/No**	**Justification**
Groundwater Ingestion	No	• No water wells exist at the subject property. • Subject property connected to municipal water.
Surface Water	No	• No surface water is present on the subject property.
Indoor Air Inhalation	No	• Buildings are vacant and are planned to be demolished, and will remain vacant/unoccupied until demolished. • Nonresidential RIASL exceedances detected.
Ambient Air Volatile Soil/ Particulate Soil Inhalation	No	• No exceedances detected.
Direct Contact	**Yes**	• Part 201 Nonresidential DC cleanup criteria/EPA TSCA cleanup standards exceedances detected. Surface cover will be maintained at the subject property to prevent dermal contact exposures to contaminated soils.

BOLD - Response activities are required based upon a relevant human exposure pathway and exceedance of an applicable criterion (Section 1.7).

OTHER PATHWAYS AND DUE CARE CONSIDERATIONS	
Migration Via Utility Corridors or other means	Utility corridors on or adjacent to the subject property may represent pathways for contaminant migration and may act as a conduit for direct contact or vapor exposure to third parties completing subsurface work. Appropriate notices to utility easement holders regarding the presence of soil, groundwater, and soil gas contamination will be submitted as outlined in Section 3.0.
Fire and Explosion Hazards	No compounds were identified above the flammability and explosively screening level and no non-aqueous phase liquid (NAPL) was identified.

3.0 PLAN FOR RESPONSE ACTIVITY

PM understands that the subject property is intended to be redeveloped for Nonresidential purposes at a later date. Based on this, the Response activities outlined below are recommended to facilitate the planned Nonresidential use of the subject property in accordance with the due care provisions in Section 20107A of Part 201.

Preventing Indoor Air Inhalation Exposures

As indicated in Section 1.2, the subject buildings are intended to be demolished, with the existing floor slabs and surface pavement remaining in-place. Until demolition occurs, the subject

property buildings will remain vacant and unoccupied. This will prevent potential inhalation exposures via the vapor intrusion pathway.

Preventing Groundwater Ingestion Exposures

Concentrations of various VOCs and metals were identified in soil and groundwater that exceed the Part 201 Residential DWP/DW cleanup criteria. The subject property is currently connected to the municipal water supply with no water supply wells present. To prevent potential groundwater ingestion exposures, no water supply wells should be installed, groundwater should not be used for any purpose, and the municipal water supply should be used as the sole water supply utility to the subject property.

Preventing Exacerbation of Existing Contamination

Contaminated soil and groundwater at the subject property, including those excavated as part of site grading, utility, pavement, and building footing excavation, and landscaping activities, and should not be relocated to another onsite location or an offsite location without proper pre-characterization. Contaminated soil and groundwater intended for offsite relocation should be properly disposed at a licensed disposal facility.

Characteristically non-hazardous contaminated soils intended for onsite relocation should be placed in similarly contaminated areas of the subject property and equipped with engineering controls (as required) to prevent unacceptable occupant exposures and exacerbation of existing contamination. If onsite relocation of contaminated soils is conducted, appropriate notice should also be submitted to the MDEQ within 14 days of relocation along with documentation that the relocation was conducted in accordance with Section 20120c of Part 201.

The existing building slabs and pavement areas will remain following building demolition and will be maintained to prevent potential exacerbation of existing contamination until development occurs.

Utilities installed at the subject property should be constructed of materials compatible with the contaminants present, and the associated utility corridors should be designed in a manner that does not exacerbate existing contamination via migration.

Preventing Dermal Contact Exposures

As discussed in Section 1.3, concentrations of PCBs were detected in soils above the Part 201 Nonresidential DC cleanup criteria/EPA TSCA cleanup standards. To prevent dermal contact exposure to contaminated soils and contain particulates, the following response activities will be conducted:

Existing surface cover, including concrete building foundations, concrete and asphalt sidewalks, driveways, and parking areas and non-paved surface cover, including areas of seeded topsoil and landscaping should be maintained and inspected over the entire subject property. A surface barrier inspection form is included in Appendix B.

Notices should be supplied to utility companies, easement holders, and the local fire department as notification to allow proper management of impacted soil or groundwater to prevent

exacerbation and unacceptable exposures to comply with Section 7a within the statutory guidelines.

Additionally, concentrations of PCBs were detected in the concrete floor samples collected in the former die cast rooms in the northern portion of the subject building above the TSCA cleanup standards for a High Occupancy Area (for non-porous surfaces). In accordance with TSCA, the concrete floor slab in the area depicted on Figure 3 will be epoxy coated with the epoxy coating inspected and maintained per the form included in Appendix B, in order to prevent unacceptable human exposure risks. .

Migration Notices

TCE concentrations in groundwater have migrated offsite to the northwest above the Part 201 Residential and Nonresidential cleanup criteria. Notices of migration of contamination will be submitted to adjacent impacted property owners and the MDEQ within 45-days of initial property ownership and/or operation, in accordance with Rule 1017 Part 201. Appendix D contains a Notice of Migration of Contamination form to be used to furnish notice to adjacent impacted property owners and the MDEQ.

If changes to the property use, zoning, operations, and/or layout occur, re-evaluation of potential exposure pathways and associated amendments to this report will be required.

4.0 EVALUATION AND DEMONSTRATION OF COMPLIANCE WITH SECTION 7A OBLIGATIONS

4.1 Exacerbation (Section 7a(1)(a))

In addition to the Response Activities described in Section 3.0, the following measures will be undertaken to prevent exacerbation of existing contamination:

- If construction activities occur in the future, an environmental professional may be present. Any subsurface construction will be planned and implemented in a manner as to not increase exacerbation of the identified contamination. This included preparation of pre-construction soil and groundwater management plans, and associated characterization, management, relocation, and/or disposal of contaminated media.

- Except for wells and devices that are part of a MDEQ-approved response activity, construction or use of wells or other devices to extract groundwater for irrigation, or any other use will be prohibited, without prior evaluation and/or implementation of appropriate treatment or other engineering controls required to prevent potential exposures through ingestion or to prevent exacerbation of existing soil and/or groundwater impact. Short-term dewatering for construction purposes is permitted, provided the dewatering, including management and disposal of the groundwater, is conducted in accordance with all applicable local, state, and federal laws and regulations and does not cause or result in a new release, exacerbation of contamination, or any other violation of local, state, and federal environmental laws and regulations including, but not limited to, Part 201 of the NREPA, as amended.

4.2 Due Care (Section 7a(1)(b))

Based on the anticipated use of the subject property, due care will be exercised to allow for the intended use of the facility in a manner that protects the public health and safety.

- Response activities including maintaining surface cover and sealing interior concrete floors in the northern portion of the building will be conducted as outlined in Section 3.0.

- Prior to any excavation or intrusive activity, including but not limited to the installation of building footings, sub-grade utilities, or other similar features, an evaluation of the potential hazardous substances in soil and groundwater will be under taken to assure protection of persons who may come into direct contact with contaminated soil and/or groundwater, and compliance with Section 20107a of the NREPA.

- Any construction of wells or other devices to extract groundwater for consumption, irrigation, or any other use will be prohibited, as described in Section 4.1. This will eliminate any threat to human health from ingestion of groundwater on the subject property.

- As indicated in Section 1.2, the subject buildings will remain vacant/unoccupied until demolition. If the buildings are to be occupied, further assessment of the vapor intrusion pathway, remediation of the impacted source soils, and/or mitigation of the vapors beneath the building must be conducted.

4.3 Reasonable Precautions (Section 7a(1)(c))

Reasonable precautions will be taken against the reasonably foreseeable acts or omissions of a third party and the consequences that are foreseeable could result from those acts or omissions.

- All potential third party contractors who may work sub-grade on the subject property will be notified of the presence of soil contaminants and that site-specific health and safety plans and/or requirements for 40-hour personal protection and safety training are necessary if working in the impacted area of the subject property. The owner will provide prospective future owners with the existing documentation, including this DDCC plan and the March 2019 BEA concerning the existing subsurface contamination. Utility Notices have also been prepared as outlined in Appendix C, and must be submitted within 45 days of initial subject property ownership and/or operation.

4.4 Reasonable Cooperation, Assistance, and Access (Section 7a(1)(d))

Reasonable cooperation, assistance, and access will be provided to the persons (i.e. including liable parties) that are authorized to conduct response activities at the facility, including the cooperation and access necessary for the installation, integrity, operation, and maintenance of any complete or partial response activity at the facility. This includes the ongoing due care response activities described in Section 3.0.

4.5 Use Restriction Compliance (Section 7a(1)(e))

No land use or resource use restrictions are known or required in connection with the planned response activities and Nonresidential land use. In the event that any land use or resource use restriction is placed on the facility, the owner will comply with them.

4.6 Effectiveness or Integrity of Use Restrictions (Section 7a(1)(f))

As indicated in Section 4.5, no land use or resource use restrictions are known to be in place for the subject property. In the event that any land use or resource use restrictions are placed on the property, the effectiveness and integrity of the land use or resource restrictions employed at the property will not be impeded.

5.0 DUE CARE DOCUMENTATION

Rule 1003(5) of Section 20107a of P.A. 451, as amended, requires that documentation demonstrating that the subject property is in compliance with Section 7a of Part 201 must be made available to the MDEQ upon request, including but not limited to, the following:

- Sealing the PCB contaminated concrete floor slab in the northern portion of the building;
- Notices to easement holders of record, utility franchise holders of record, and owners and/or operators of all public utilities that serve the subject property, regarding onsite soil, groundwater, and/or soil gas contamination (Appendix C);
- Surface cover inspections and associated operation and maintenance activities (Appendix B);
- Documentation of subsurface construction activities in impact areas, including any soil or groundwater sampling/characterization reports and waste disposal manifests;
- Vapor intrusion assessment and/or mitigation documentation, including soil gas/indoor air analytical reports, mitigation system diagrams, and associated operation and maintenance plans; and
- Notice(s) of Migration of Contamination (Appendix D).

If you have questions regarding this report, please contact PM at 800.313.2966.

Report Prepared By:

Andrea Galli
Project Consultant

Report Reviewed By:

J. Adam Patton, CHMM
Manager of Site Investigation Services

Figures

PM ENVIRONMENTAL Environmental & Engineering Services

ALLEGAN COUNTY

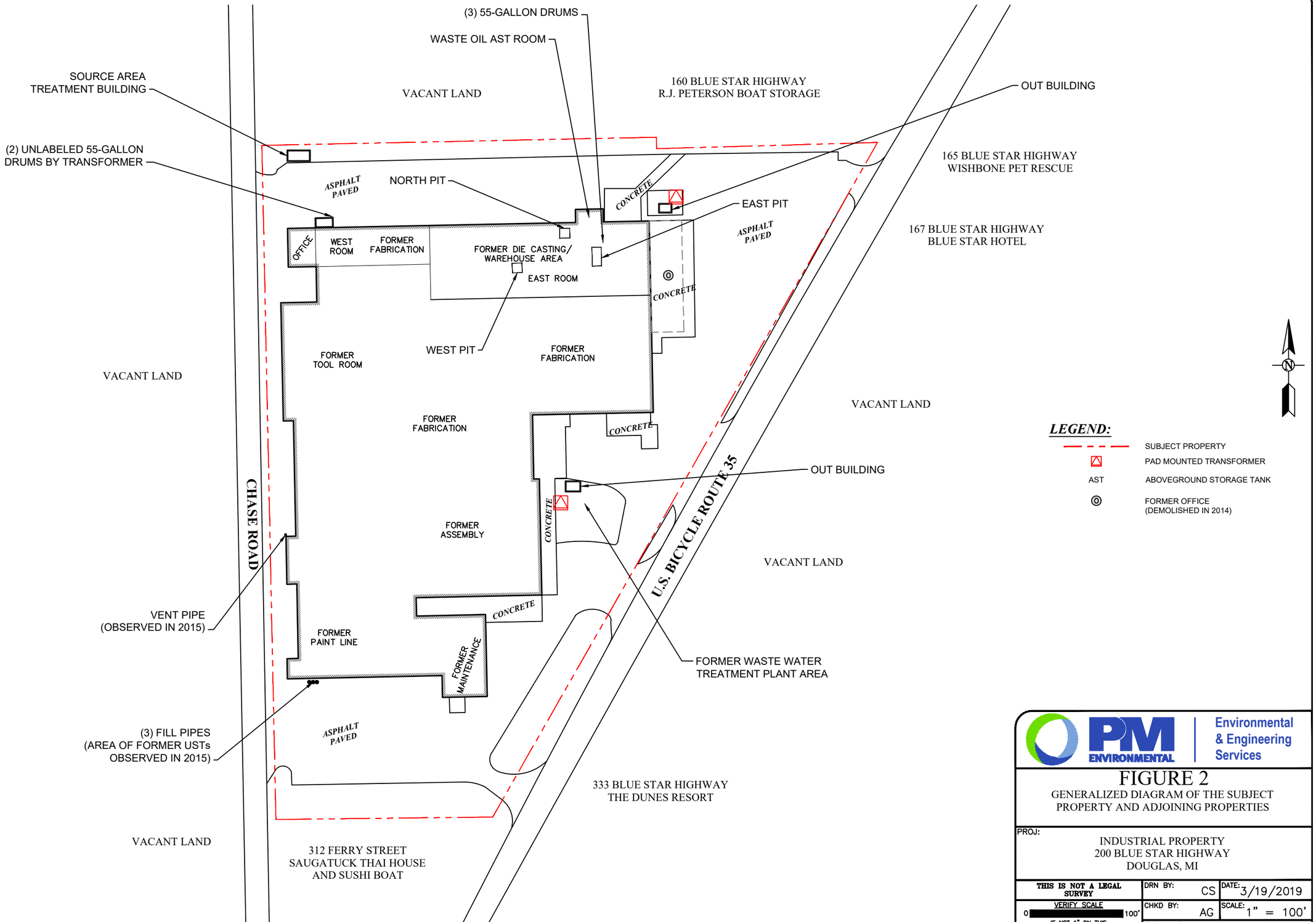
FIGURE 1

PROPERTY VICINITY MAP

UNITED STATES GEOLOGICAL SERVEY, 7.5 MINUTE SERIES

SAUGATUCK, MI QUADRANGLE, 1951. PHOTO REVISED 1975.

PM ENVIRONMENTAL Environmental & Engineering Services	PROJ: INDUSTRIAL PROPERTY 200 BLUE STAR HIGHWAY DOUGLAS, MI	THIS IS NOT A LEGAL SURVEY VERIFY SCALE 0 — 2,000' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	DRN BY: CS CHKD BY: AG FILE NAME: 01-10275-1-003F00R00	DATE: 3/19/2019 SCALE: 1" = 2,000'



PM ENVIRONMENTAL | Environmental & Engineering Services

FIGURE 2

GENERALIZED DIAGRAM OF THE SUBJECT PROPERTY AND ADJOINING PROPERTIES

PROJ:

INDUSTRIAL PROPERTY
200 BLUE STAR HIGHWAY
DOUGLAS, MI

THIS IS NOT A LEGAL SURVEY	DRN BY: CS	DATE: 3/19/2019
VERIFY SCALE 0 100' IF NOT 1" ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	CHKD BY: AG	SCALE: 1" = 100'
	FILE NAME: 01-10275-1-003F00R00	

Appendix A

PM ENVIRONMENTAL Environmental & Engineering Services

TABLE 2-1

GROUND WATER ELEVATION MEASUREMENTS
HAWORTH PLANT SITE
DOUGLAS, MICHIGAN

WELL #	Elevation (1)		Total Depth (ft)	Top of Screen (1)	Bottom of Screen (1)	10/26/92		1/14/93	
	TOC	Ground				Depth to water level (ft)	Water Level (1)	Depth to water level (ft)	Water Level (1)
Intermediate wells									
MW301I	647.71	648.20	41.00	597.20	607.20	34.87	612.84	34.48	613.23
MW302I	646.96	647.40	42.00	595.40	605.40	36.49	610.47	36.15	610.81
MW303I	644.16	644.80	42.00	592.80	602.80	34.65	609.51	34.54	609.62
MW304I	648.26	648.80	46.00	592.80	602.80	39.70	608.56	39.64	608.62
MW305I	642.01	642.30	38.00	594.30	604.30	31.50	610.51	31.27	610.74
MW306I	644.35	644.90	42.00	592.90	602.90	35.00	609.35	34.92	609.43
D-103	650.46	648.50	57.25	581.25	591.25	42.35	608.11	42.28	608.18
Perched wells									
D-104	646.75	648.50	13.60	624.90	634.90	5.00	641.75	N/C	N/C
D-109	646.99	647.20	19.45	617.75	627.75	16.85	630.14	15.46	631.53
Deep wells									
MW301D	648.00	648.10	50.00	588.10	598.10	35.15	612.85	34.54	613.46
MW304D	648.43	649.00	62.00	577.00	587.00	39.49	608.94	38.95	609.48

Note:
(1) Measurements are in feet above mean sea level.

Key:
N/C = Measurement was not collected.

TABLE 3-1

HORIZONTAL GROUND WATER VELOCITY CALCULATIONS
OCTOBER 26, 1992 GROUND WATER MEASUREMENTS
HAWORTH PLANT SITE
DOUGLAS, MICHIGAN

The horizontal ground water velocity was calculated using the survey, geotechnical, and slug test results obtained during Task 3 activities. These data were obtained from monitoring wells MW301I and MW304I, which are located in the southeastern and northwestern section of the site. Hydraulic conductivities were averaged to provide an estimate of the aquifer's hydraulic condutivity in the site area. Effective porosity was conservatively estimated at 25 percent based on the lower range of total porosity values for medium-grained sand (Groundwater by Freeze and Cherry, 1979).

Ground Water Velocity (v) Formula:

$v = (K/n)(dh/dl)$
[from Freeze and Cherry, 1979]

Where:

K = horizontal hydraulic conductivity (cm/sec)
n = effective porosity (unitless)
dh = change in head (feet)
dl = change in length (feet)

Calculation:

K (ave.) = 0.0009 cm/sec [K calculated below]

n = 0.25 [estimated from Freeze and Cherry, 1979, p. 37]

dh = 4.28 feet = 612.84 feet [MW301I] - 608.56 feet [MW304I]
[from 10/26/92 ground water elevation measurements]

dl = 650 feet [from site survey]

Therefore:

v (cm/sec) = (0.0053 cm/sec /0.25)(4.28 feet /650 feet)

v (cm/sec) = 2.49E-05 cm/sec

Converting Units:

v (ft/day) = v (cm/sec)* 1417.323 ft day/cm sec
[1417.323 ft day/cm sec is a conversion constant]

v (ft/day) = 0.0353 ft/day

v (ft/yr) = 12.9 ft/yr

Hydraulic Conductivity (K)

Well No.	K	
MW301I	2.10E-05	cm/sec
MW302I	1.54E-03	cm/sec
MW303I	1.05E-03	cm/sec
MW304I	1.69E-03	cm/sec
MW305I	1.61E-03	cm/sec
MW306I	6.95E-04	cm/sec
MW301D	1.66E-05	cm/sec

K (ave.)= 0.0009 cm/sec

TABLE 3-2

HORIZONTAL GROUND WATER VELOCITY CALCULATIONS
JANUARY 14, 1993 GROUND WATER MEASUREMENTS
HAWORTH PLANT SITE
DOUGLAS, MICHIGAN

The horizontal ground water velocity was calculated using the survey, geotechnical, and slug test results obtained during Task 3 activities. These data were obtained from monitoring wells MW301I and MW304I, which are located in the southeastern and northwestern section of the site. Hydraulic conductivities were averaged to provide an estimate of the aquifer's hydraulic condutivity in the site area. Effective porosity was conservatively estimated at 25 percent based on the lower range of total porosity values for medium-grained sand (Groundwater by Freeze and Cherry, 1979).

Ground Water Velocity (v) Formula:

$v = (K/n)(dh/dl)$
[from Freeze and Cherry, 1979]

Where:

K = horizontal hydraulic conductivity (cm/sec)
n = effective porosity (unitless)
dh = change in head (feet)
dl = change in length (feet)

Calculation:

K (ave.) = 0.0009 cm/sec [K calculated below]

n = 0.25 [estimated from Freeze and Cherry, 1979, p. 37]

dh = 4.61 feet = 613.23 feet [MW301I] - 608.62 feet [MW304I]
[from 1/14/93 ground water elevation measurements]

dl = 650 feet [from site survey]

Therefore:

v (cm/sec) = (0.0053 cm/sec /0.25)(4.61 feet /650 feet)

v (cm/sec) = 2.68E-05 cm/sec

Converting Units:

v (ft/day) = v (cm/sec)* 1417.323 ft day/cm sec
[1417.323 ft day/cm sec is a conversion constant]

v (ft/day) = 0.0380 ft/day

v (ft/yr) = 13.9 ft/yr

Hydraulic Conductivity (K)

Well No.	K
MW301I	2.10E-05 cm/sec
MW302I	1.54E-03 cm/sec
MW303I	1.05E-03 cm/sec
MW304I	1.69E-03 cm/sec
MW305I	1.61E-03 cm/sec
MW306I	6.95E-04 cm/sec
MW301D	1.66E-05 cm/sec

K (ave.)= 0.0009 cm/sec

Table 4-1

RESULTS OF ORGANIC ANALYSIS
HAWORTH SITE
DOUGLAS, MICHIGAN

(Page 1 of 3)

Sample Location **Sample Type** **Date Sampled** **Dilution Factor**	**D103** **Water** **10/27/92** **330 X**	**D104** **Water** **10/27/92** **1 X**	**D109** **Water** **10/27/92** **1 X**	**MW301D** **Water** **10/26/92** **1 X**	**MW301I** **Water** **10/26/92** **1 X**	**MW301IFB** **Field Blank** **10/26/92** **1 X**	**MW302I** **Water** **10/27/92** **1 X**	**MW302IFD** **Duplicate** **10/27/92** **1 X**
Volatiles								
1,1-Dichloroethene	3,300 U	10 U	2 J	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	940 J	10 U	58	10 U	10 U	10 U	5 J	4 J
1,1,1-Trichloroethane	3,300 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	50,000	10 U	120	10 U	10 U	10 U	10	9 J
Tetrachloroethene	3,300 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	3,300 U	10 U	10 U	10 U	10 U	10 U	100	86
Ethyl benzene	3,300 U	10 U	10 U	10 U	10 U	10 U	140	110
Xylene (total)	3,300 U	10 U	10 U	10 U	10 U	10 U	530	440
Semivolatiles								
Dilution Factor	1 X	1 X	1 X	1 X	1 X	1 X	1 X	1 X
Phenol	10 U	10 U	10 U	3 J	1 J	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyphenol	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	5 J	4 J
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Di-n-butylphthalate	10 U	10 U	10 U	2 J	2 J	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	3 J	10 U	10 U
Di-n-octylphthalate	10 U	10 U	4 J	10 U	10 U	10 U	10 U	10 U

Table 4-1

RESULTS OF ORGANIC ANALYSIS
HAWORTH SITE
DOUGLAS, MICHIGAN

(Page 2 of 3)

Sample Location Sample Type Date Sampled Dilution Factor	MW303I Water 10/27/92 1,000 X	MW303IFD Duplicate 10/27/92 1,000 X	MW304D Water 10/26/92 10 X	MW304I Water 10/26/92 100 X	MW305I Water 10/27/92 1 X	MW305I Reanalysis 10/27/92 13 X	MW306I Water 10/27/92 62 X	MW306I Reanalysis 10/27/92 83 X
Volatiles								
1,1-Dichloroethene	10,000 U	10,000 U	100 U	1,000 U	1 J	130 U	620 U	830 U
1,2-Dichloroethene (total)	1,800 J	2,100 J	78 J	570 J	960 J	1,100	770	750 J
1,1,1-Trichloroethane	2,000 J	2,400 J	100 U	160 J	24	21 J	220 J	220 J
Trichloroethene	140,000	160,000	1,500	16,000	1,000 J	2,000	13,000 J	13,000
Tetrachloroethene	10,000 U	10,000 U	100 U	1,000 U	9 J	130 U	620 U	830 U
Toluene	10,000 U	10,000 U	100 U	1,000 U	10 U	130 U	620 U	830 U
Ethyl benzene	10,000 U	10,000 U	100 U	1,000 U	10 U	130 U	620 U	830 U
Xylene (total)	10,000 U	10,000 U	100 U	1,000 U	10 U	130 U	620 U	830 U
Semivolatiles								
Dilution Factor	1 X	1 X	1 X	1 X	1 X		1 X	
Phenol	10 U	10 U	10 U	10 U	10 U	NA	10 U	NA
1,4-Dichlorobenzene	3 J	2 J	10 U	10 U	10 U	NA	10 U	NA
1,2-Dichlorobenzene	9 J	8 J	10 U	10 U	10 U	NA	10 U	NA
4-Methyphenol	10 U	10 U	10 U	10 U	10 U	NA	10 U	NA
Naphthalene	10 U	10 U	10 U	10 U	10 U	NA	10 U	NA
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	NA	10 U	NA
Pentachlorophenol	25 U	25 U	25 U	9 J	25 U	NA	2 J	NA
Di-n-butylphthalate	10 U	10 U	3 J	10 U	10 U	NA	10 U	NA
bis(2-Ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	NA	10 U	NA
Di-n-octylphthalate	10 U	10 U	10 U	10 U	10 U	NA	10 U	NA

Table 4-1

RESULTS OF ORGANIC ANALYSIS
HAWORTH SITE
DOUGLAS, MICHIGAN

Sample Location	**TB-1**
Sample Type	**Trip Blank**
Date Sampled	**10/26/92**
Dilution Factor	**1 X**
Volatiles	
1,1-Dichloroethene	10 U
1,2-Dichloroethene (total)	10 U
1,1,1-Trichloroethane	10 U
Trichloroethene	10 U
Tetrachloroethene	10 U
Toluene	10 U
Ethyl benzene	10 U
Xylene (total)	10 U
Semivolatiles	
Dilution Factor	
Phenol	NA
1,4-Dichlorobenzene	NA
1,2-Dichlorobenzene	NA
4-Methyphenol	NA
Naphthalene	NA
Diethylphthalate	NA
Pentachlorophenol	NA
Di-n-butylphthalate	NA
bis(2-Ethylhexyl)phthalate	NA
Di-n-octylphthalate	NA

Key:

U = Compound was analyzed for but not detected.
J = Indicates an estimated value.
D = Compund identified in an analysis at a secondary dilution factor
E = Concentrations exceed the calibration range of the instrument.

TABLE 4-2

RESULTS OF INORGANIC ANALYSIS
HAWORTH SITE
DOUGLAS, MICHIGAN

(Page 1 of 2)

Sample Location Sample Type Date Sampled	D103 Water 10/27/92	D104 Water 10/27/92	D109 Water 10/27/92	MW301D Water 10/26/92	MW301I Water 10/26/92	MW301IFB Field Blank 10/26/92	MW302I Water 10/27/92	MW302IFD Duplicate 10/27/92
Aluminum	95.5 U	75.6 U	71.0 U	57.7 U	71.1 U	47.0 U	112.0 U	104.0 U
Arsenic	4.0 U	13.4 J	4.0 U	16.5	7.8	4.0 U	4.0 U	4.0 U
Barium	80.8	13.8 U	98.8	69.6	100.0	2.0 U	28.2	31.0
Calcium	58500	26800	58300	33500	73400	74.3	44200	45000
Copper	5.0 U	5.0 U	5.8			5.0 U	5.0 U	5.0 U
Iron	119	57 U	854	57 U	71.7	57 U	57.9 J	160 J
Lead	2.0 J	20.3	2.0 U	2.0 U	2.0 U	2.0 U	34.4	3.7 J
Magnesium	19400	5990	16800	12400	25500	46 U	14700	14900
Manganese	22.6	3.6	7250.0	17.9	70.1	2.0 U	266.0	310.0
Nickel	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U	11.0 U
Potassium	1360 U	1360 U	3650	4810	3390	1360 U	1740	1930
Sodium	13900	4950	94900	6340	40100	566	12200	13300
Zinc	4.0 U	6.7 U	7.5 U	13.1 U	316.0	3.0	17.1	34.9

TABLE 4-2

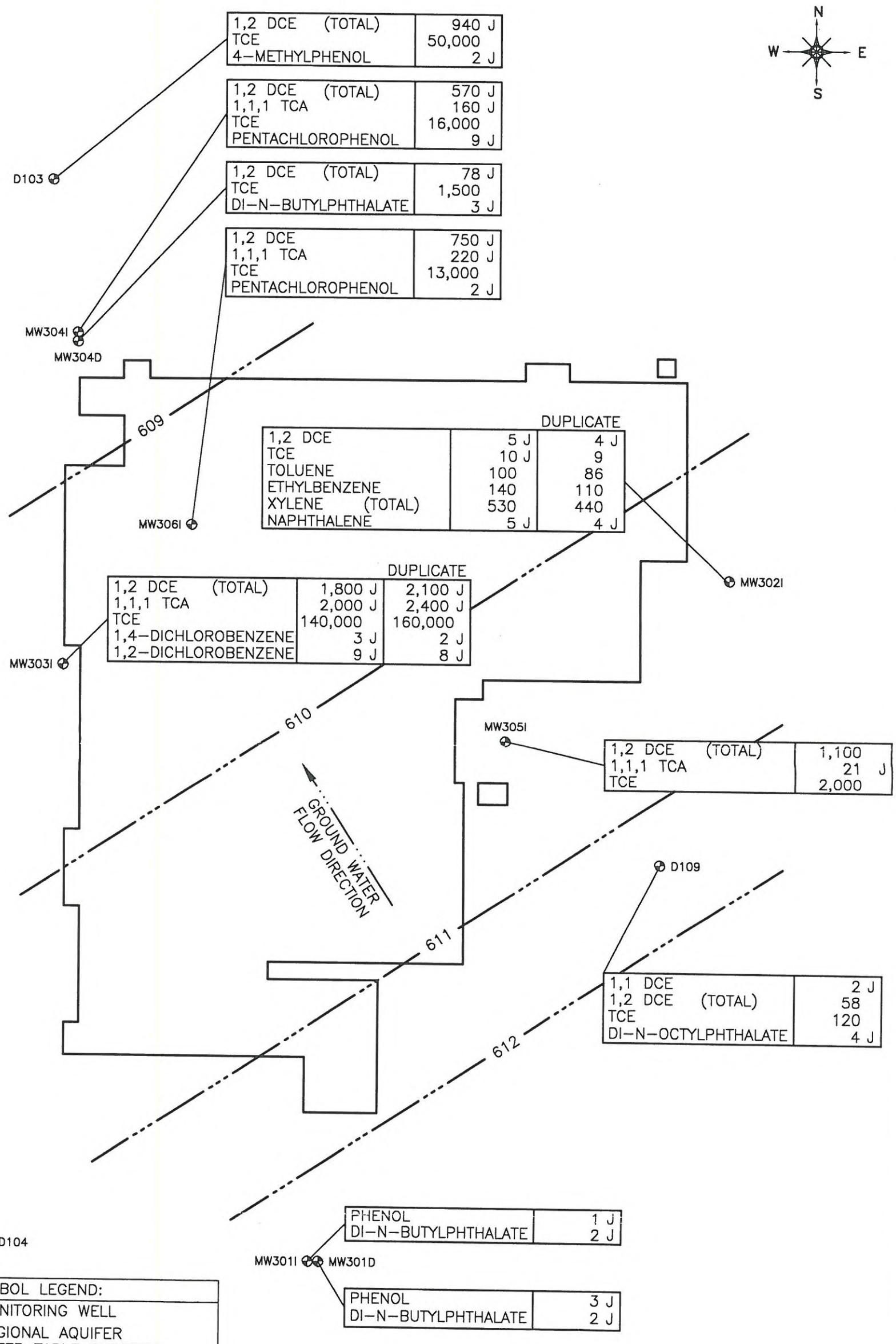
RESULTS OF INORGANIC ANALYSIS
HAWORTH SITE
DOUGLAS, MICHIGAN

Sample Location Sample Type Date Sampled	MW303I Water 10/27/92	MW303IFD Duplicate 10/27/92	MW304D Water 10/26/92	MW304I Water 10/26/92	MW305I Water 10/27/92	MW306I Water 10/27/92
Aluminum	47.0 U	47.0 U	836.0	48.6 U	66.3 U	47.0 U
Arsenic	4.0 U	4.0 U	9.7	7.9	4.0 U	4.0 U
Barium	104.0	102.0	83.6	56.4	37.4	40.2
Calcium	111000	111000	45100	116000	82300	106000
Copper	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Iron	57 U	57 U	621	57 U	119	57 U
Lead	4.8	2.6	2.0 U	2.5	2.0 U	3.4 J
Magnesium	38500	38500	15700	23800	29500	22100
Manganese	1010.0	986.0	32.3	3330.0	690.0	636.0
Nickel	20.3	19.6	11.0 U	11.0 U	11.0 U	11.0
Potassium	10600	11400	4080	5550	1590	2560 B
Sodium	118000	121000	16300	41600	39600	32400
Zinc	1220.0	1050.0	14.1 U	503.0	5.0 U	53.2

Key:

U = Compound was analyzed for but not detected.
J = Indicates an estimated value.
B = Compound detected in laboratory blank.

PROJECT:	REPORT:	DRAWN:	CHECKED:	DATE:	APPROVED:	CLIENT NAME:
9248-6	TM3	CMM-		01/21/93		HAWORTH



SYMBOL LEGEND:	
⊕	MONITORING WELL
—610—	REGIONAL AQUIFER WATER TABLE SURFACE - DATA COLLECTED 10/26/92
1,1 DCE	1,1-DICHLOROETHENE
1,2 DCE	1,2-DICHLOROETHENE
TCE	TRICHLOROETHENE
1,1,1 TCA	1,1,1-TRICHLOROETHANE
ND	NOT DETECTED
J	ESTIMATED CONCENTRATION
D	LABORATORY DILUTED SAMPLE

NOTE: ALL UNITS IN ug/L

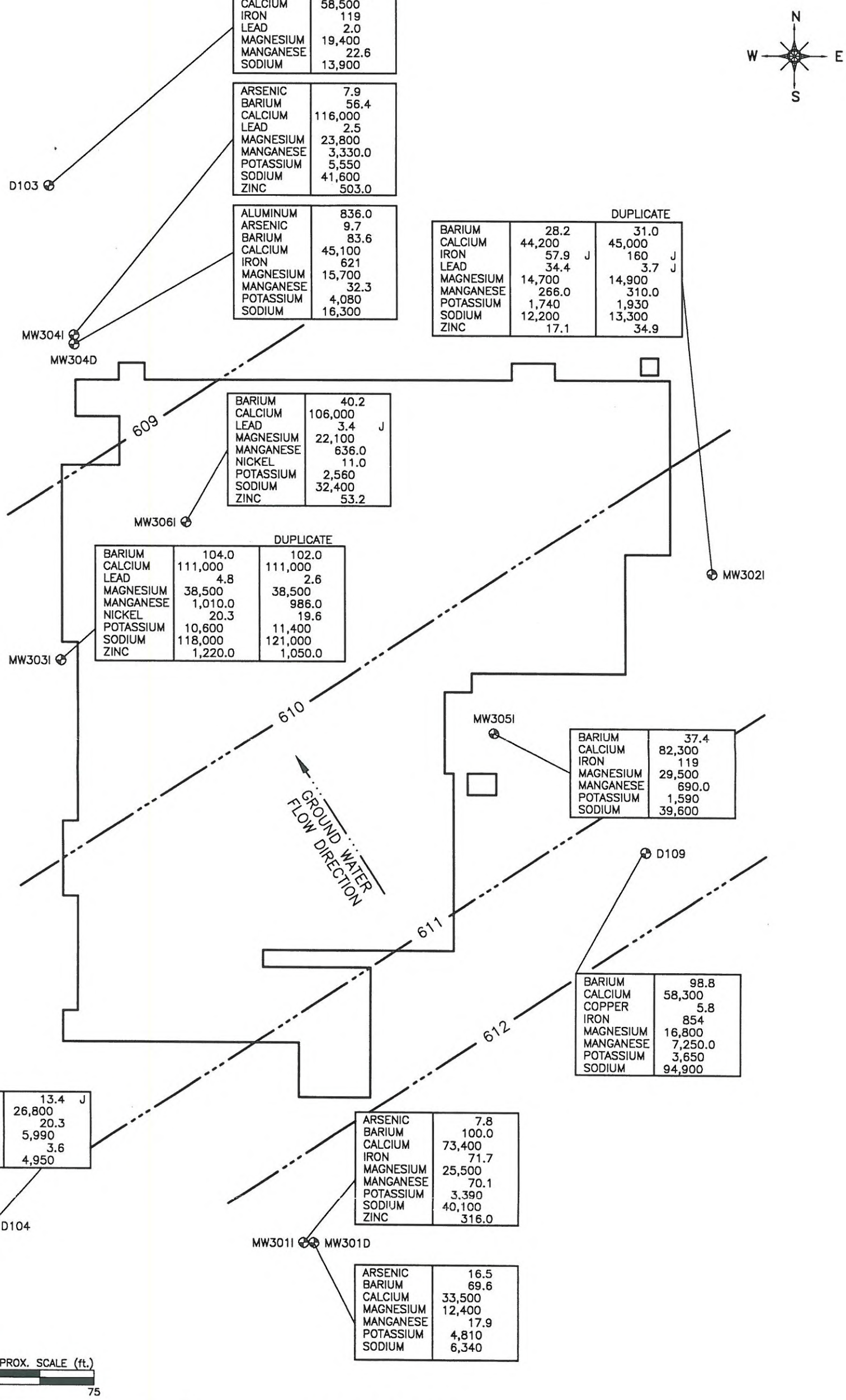
APPROX. SCALE (ft.) 0 75

FIGURE 4-1

ORGANIC ANALYTICAL RESULTS
GROUND WATER SAMPLES
HAWORTH PLANT SITE
DOUGLAS, MICHIGAN

ERM

PROJECT:	REPORT:	DRAWN:	CHECKED:	DATE:	APPROVED:	CLIENT NAME:
9248-6	TM3	CMM-		01/21/93		HAWORTH



SYMBOL LEGEND:	
⊕	MONITORING WELL
—610—	REGIONAL AQUIFER WATER TABLE SURFACE – DATA COLLECTED 10/26/92
	ESTIMATED CONCENTRATION

FIGURE 4-2

INORGANIC ANALYTICAL RESULTS
GROUND WATER SAMPLES
HAWORTH PLANT SITE
DOUGLAS, MICHIGAN

NOTE: ALL UNITS IN ug/L.

ERM

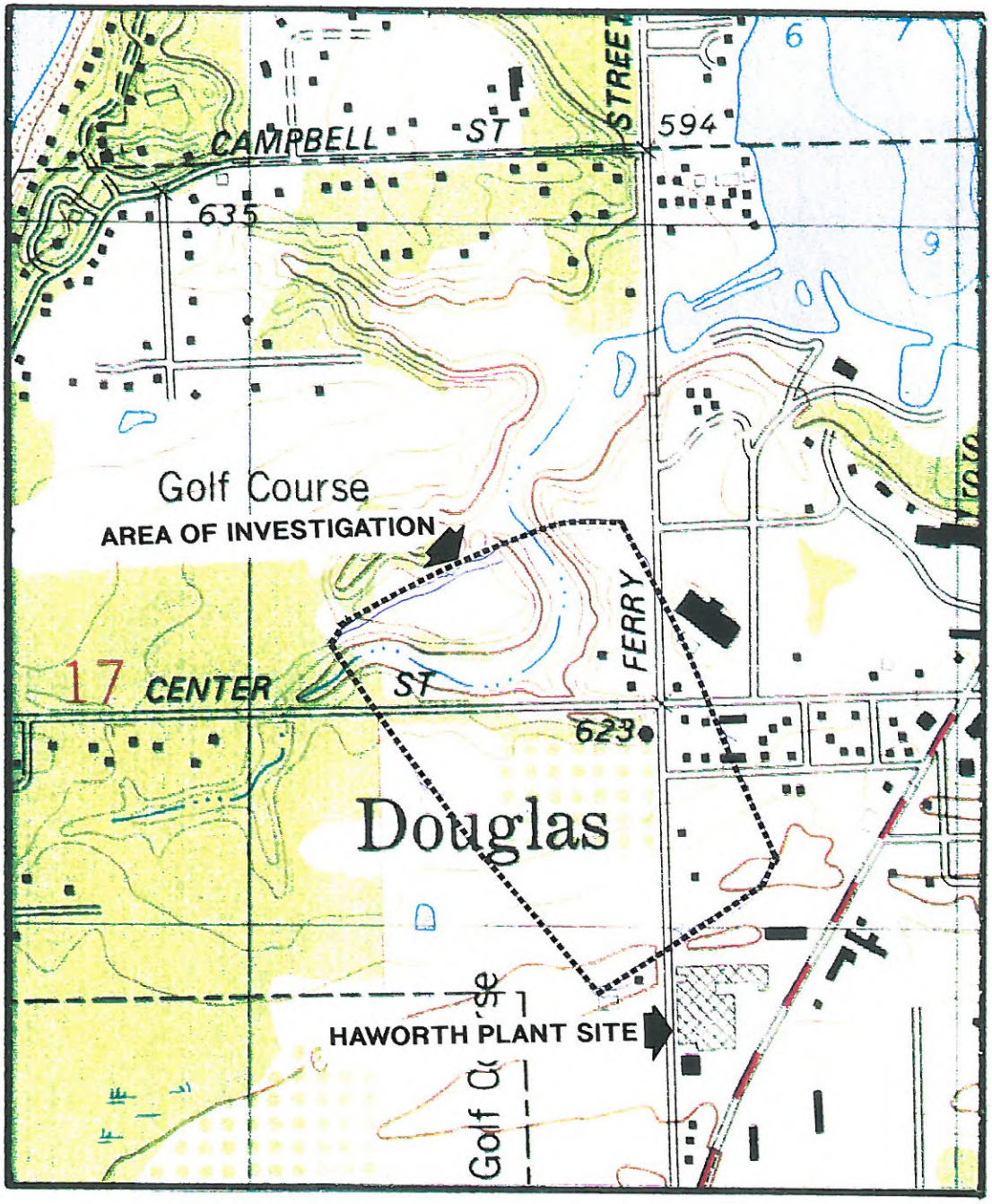


FIGURE 6-2

GROUND WATER SCREENING INVESTIGATION AREA
HAWORTH PLANT SITE
DOUGLAS, MICHIGAN

APPROX. SCALE (ft.)
0 800

PROJECT:	9248-8
REPORT:	TM3
DRAWN:	CMM
CHECKED:	
DATE:	2/11/93
APPROVED:	
CLIENT NAME:	HAWORTH

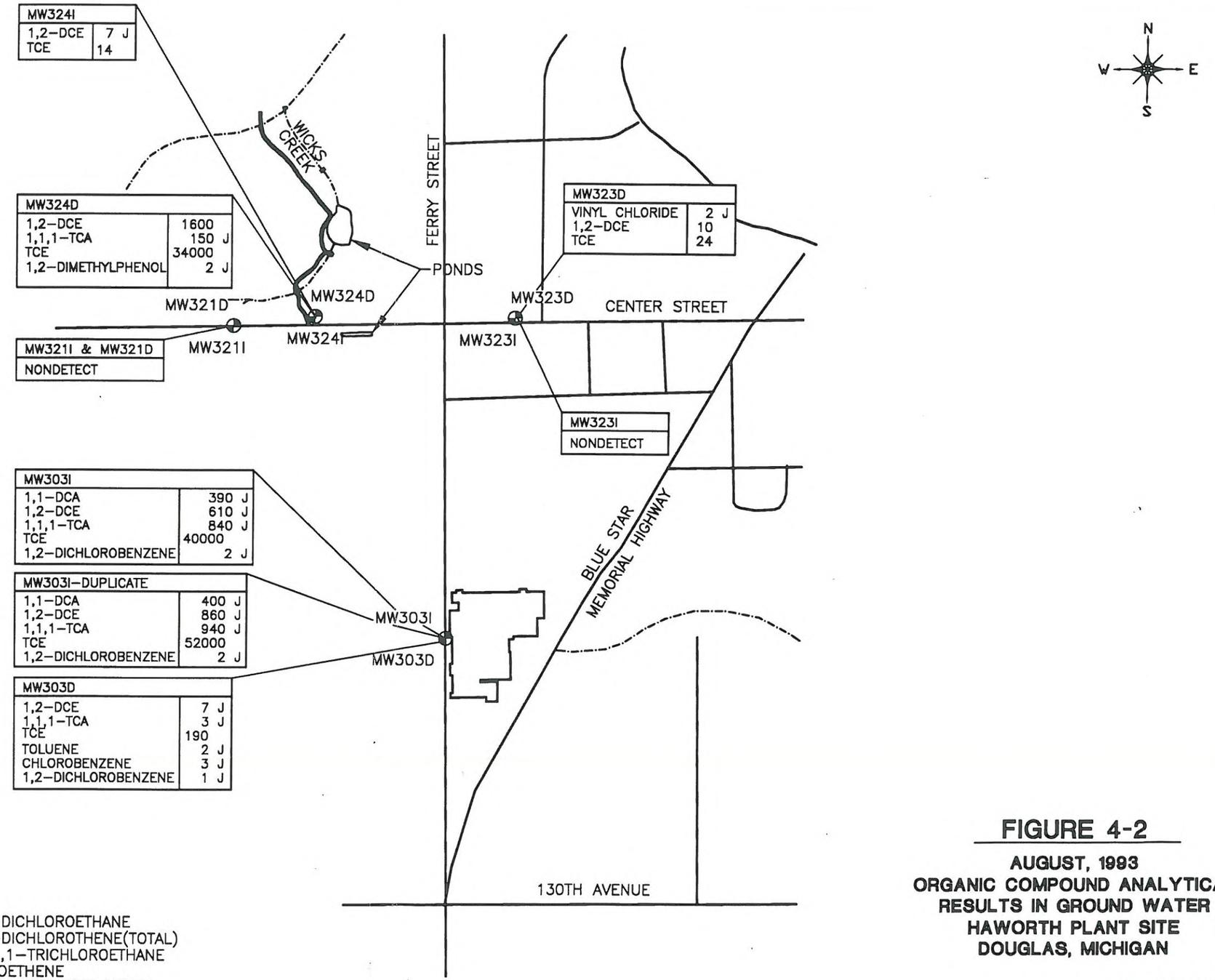


FIGURE 4-2

AUGUST, 1993
ORGANIC COMPOUND ANALYTICAL RESULTS IN GROUND WATER
HAWORTH PLANT SITE
DOUGLAS, MICHIGAN

ERM

FIG4-2A

CLIENT NAME HAWORTH | APPROVED | DATE 9/29/93 | DRAWN FK | DESIGNED | REPORT | PROJECT 9248-10

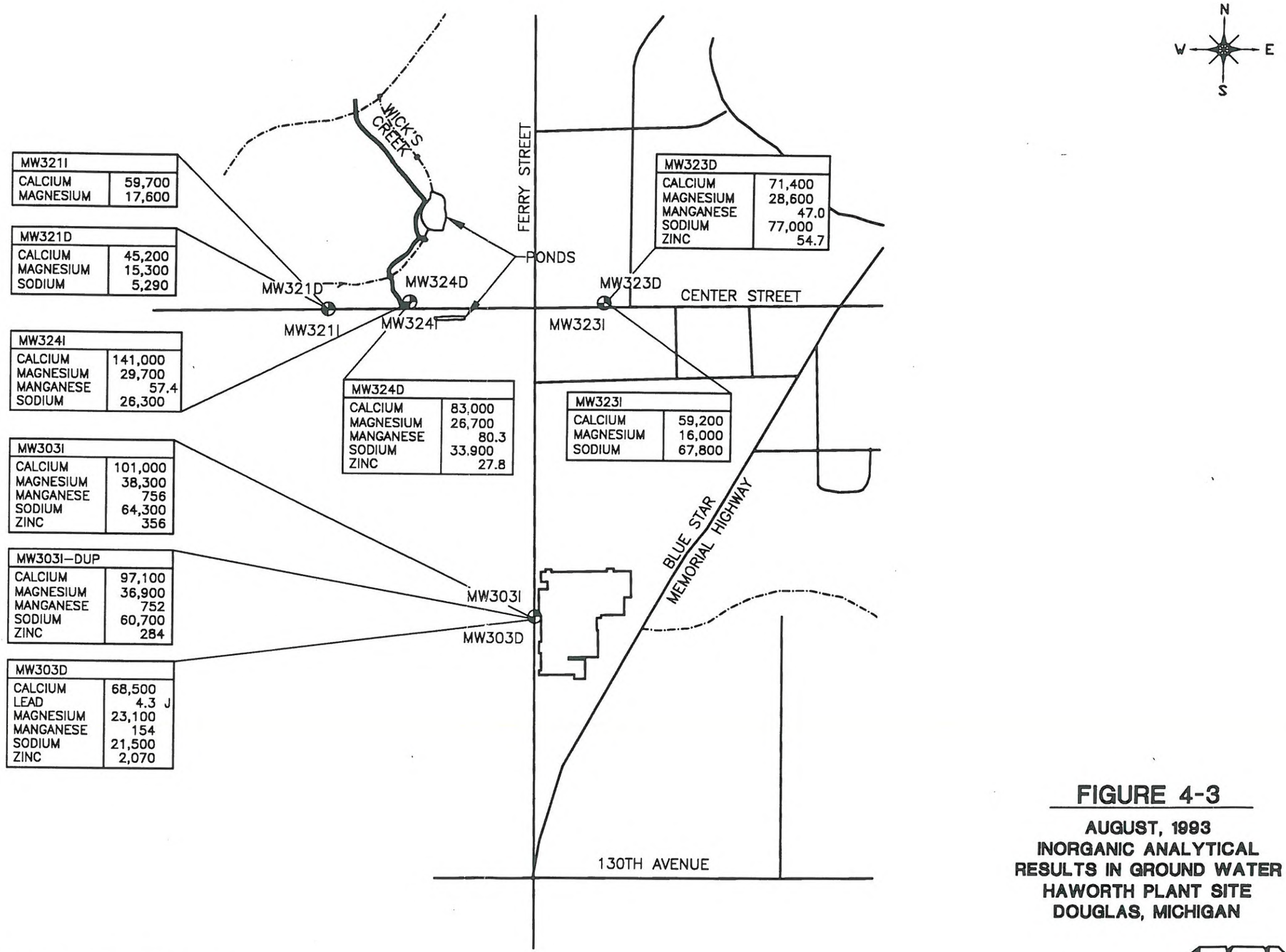
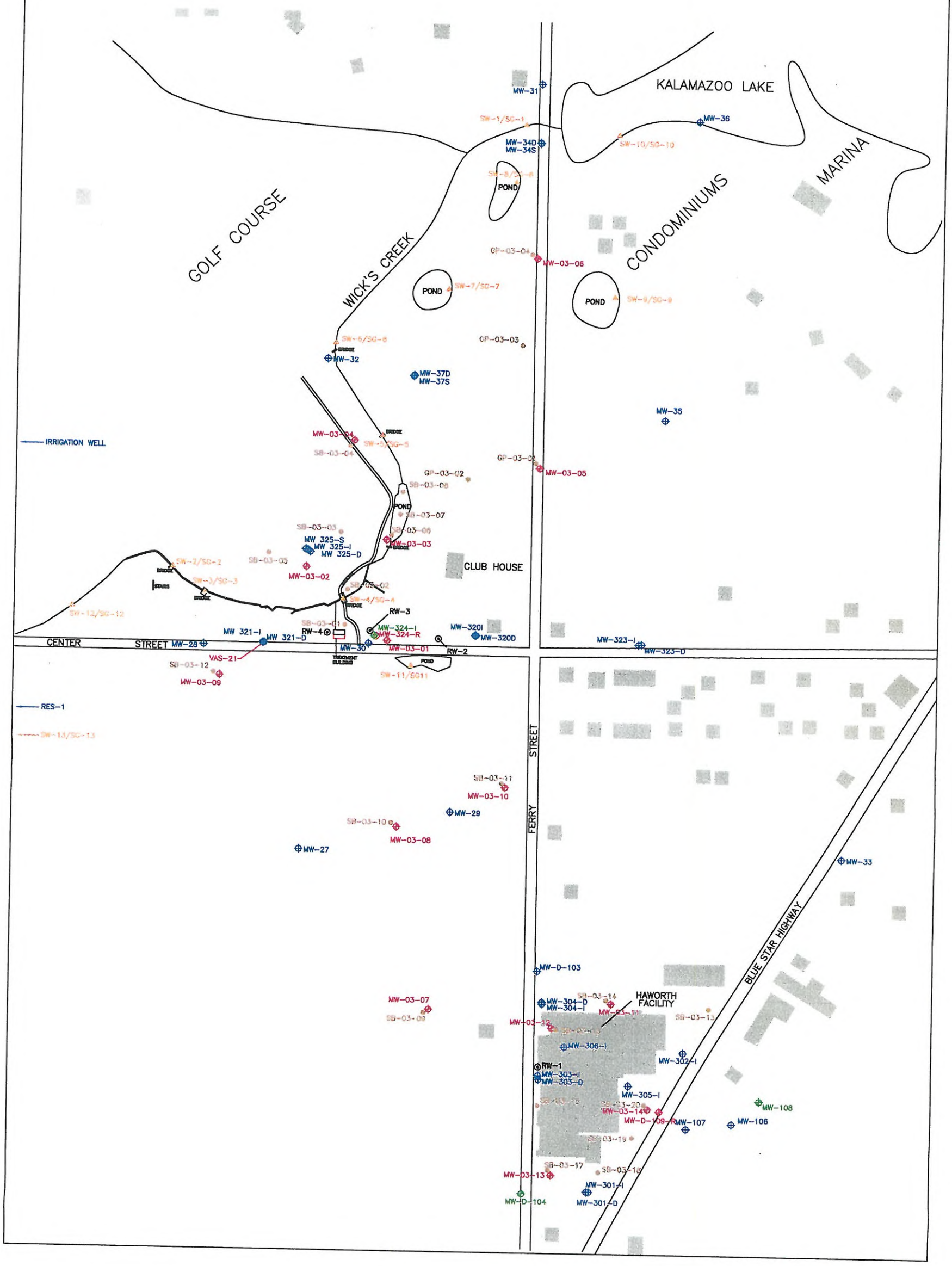


FIGURE 4-3

AUGUST, 1993
INORGANIC ANALYTICAL RESULTS IN GROUND WATER
HAWORTH PLANT SITE
DOUGLAS, MICHIGAN

ERM

CLIENT NAME	HAWORTH
APPROVED	
DATE	9/29/93
DESIGNED	
DRAWN	FK
REPORT	
PROJECT	9248-10



LEGEND

- MW-03-12 — RI MONITORING WELL (2003)
- MW-30 — EXISTING MONITORING WELL
- MW-108 — ABANDONED/DESTORYED MONITORING WELL
- SB-03-13 — SOIL BORING
- RW-1 — RECOVERY WELL
- SW-11/SG11 — SURFACE WATER SAMPLING LOCATION/STAFF GAUGE

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

5555 Glenwood Hills Parkway, SE • P.O. Box 874 • Grand Rapids, MI 49588-0874 • (616) 942-9600

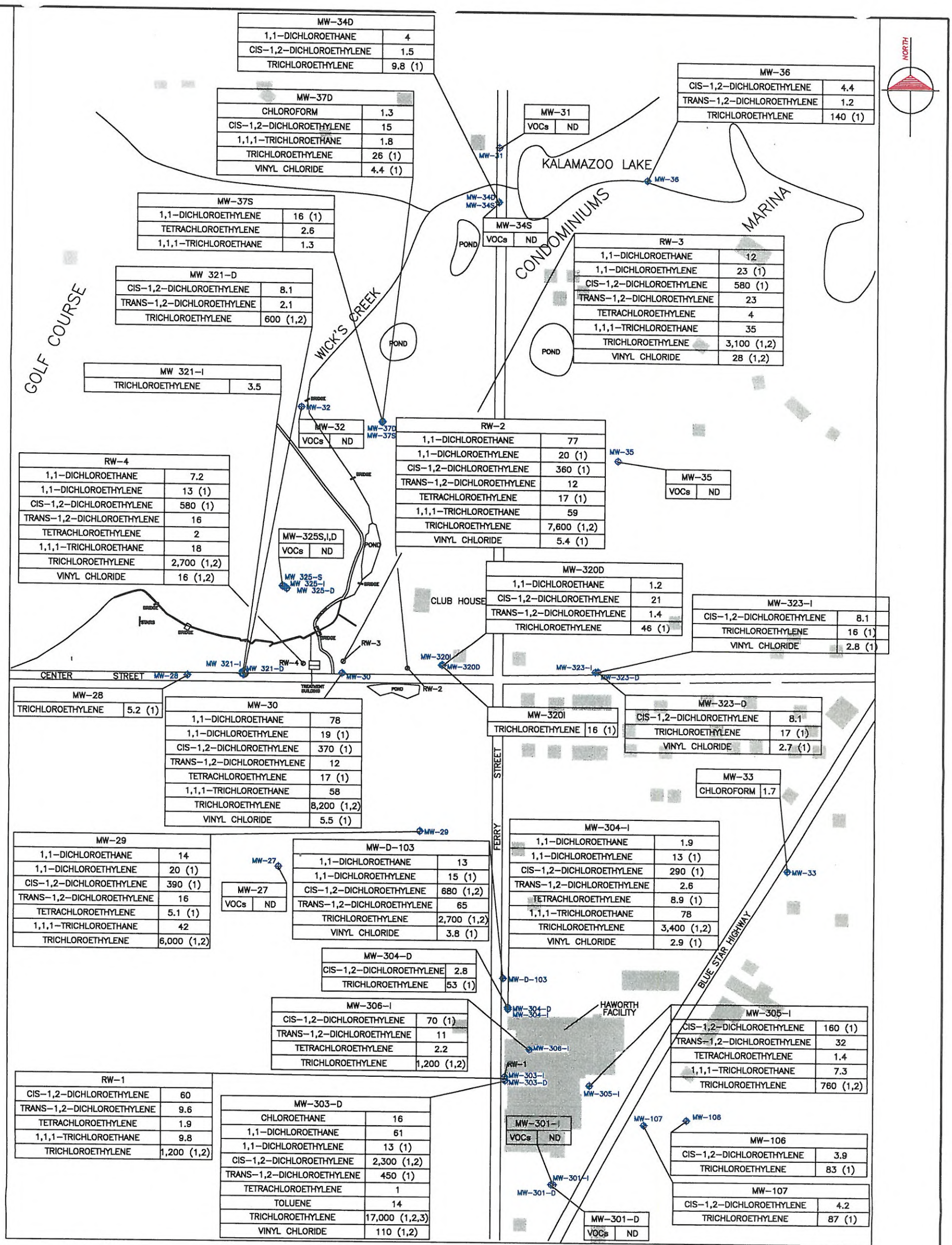
DRAWN BY: KOR	DATE: AUGUST, 2003
CHECKED BY: CAB	EDITED BY: DCT121503
FILE NAME: 65766-BASEMAP	

FIGURE 1

VILLAGE OF DOUGLAS SITE MAP

VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



MW-34D	
1,1-DICHLOROETHANE	4
CIS-1,2-DICHLOROETHYLENE	1.5
TRICHLOROETHYLENE	9.8 (1)

MW-37D	
CHLOROFORM	1.3
CIS-1,2-DICHLOROETHYLENE	15
1,1,1-TRICHLOROETHANE	1.8
TRICHLOROETHYLENE	26 (1)
VINYL CHLORIDE	4.4 (1)

MW-31	
VOCs	ND

MW-36	
CIS-1,2-DICHLOROETHYLENE	4.4
TRANS-1,2-DICHLOROETHYLENE	1.2
TRICHLOROETHYLENE	140 (1)

MW-37S	
1,1-DICHLOROETHYLENE	16 (1)
TETRACHLOROETHYLENE	2.6
1,1,1-TRICHLOROETHANE	1.3

MW-34S	
VOCs	ND

RW-3	
1,1-DICHLOROETHANE	12
1,1-DICHLOROETHYLENE	23 (1)
CIS-1,2-DICHLOROETHYLENE	580 (1)
TRANS-1,2-DICHLOROETHYLENE	23
TETRACHLOROETHYLENE	4
1,1,1-TRICHLOROETHANE	35
TRICHLOROETHYLENE	3,100 (1,2)
VINYL CHLORIDE	28 (1,2)

MW 321-D	
CIS-1,2-DICHLOROETHYLENE	8.1
TRANS-1,2-DICHLOROETHYLENE	2.1
TRICHLOROETHYLENE	600 (1,2)

MW 321-I	
TRICHLOROETHYLENE	3.5

MW-32	
VOCs	ND

RW-2	
1,1-DICHLOROETHANE	77
1,1-DICHLOROETHYLENE	20 (1)
CIS-1,2-DICHLOROETHYLENE	360 (1)
TRANS-1,2-DICHLOROETHYLENE	12
TETRACHLOROETHYLENE	17 (1)
1,1,1-TRICHLOROETHANE	59
TRICHLOROETHYLENE	7,600 (1,2)
VINYL CHLORIDE	5.4 (1)

MW-35	
VOCs	ND

RW-4	
1,1-DICHLOROETHANE	7.2
1,1-DICHLOROETHYLENE	13 (1)
CIS-1,2-DICHLOROETHYLENE	580 (1)
TRANS-1,2-DICHLOROETHYLENE	16
TETRACHLOROETHYLENE	2
1,1,1-TRICHLOROETHANE	18
TRICHLOROETHYLENE	2,700 (1,2)
VINYL CHLORIDE	16 (1,2)

MW-325S,I,D	
VOCs	ND

MW-320D	
1,1-DICHLOROETHANE	1.2
CIS-1,2-DICHLOROETHYLENE	21
TRANS-1,2-DICHLOROETHYLENE	1.4
TRICHLOROETHYLENE	46 (1)

MW-323-I	
CIS-1,2-DICHLOROETHYLENE	8.1
TRICHLOROETHYLENE	16 (1)
VINYL CHLORIDE	2.8 (1)

MW-28	
TRICHLOROETHYLENE	5.2 (1)

MW-30	
1,1-DICHLOROETHANE	78
1,1-DICHLOROETHYLENE	19 (1)
CIS-1,2-DICHLOROETHYLENE	370 (1)
TRANS-1,2-DICHLOROETHYLENE	12
TETRACHLOROETHYLENE	17 (1)
1,1,1-TRICHLOROETHANE	58
TRICHLOROETHYLENE	8,200 (1,2)
VINYL CHLORIDE	5.5 (1)

MW-320I	
TRICHLOROETHYLENE	16 (1)

MW-323-D	
CIS-1,2-DICHLOROETHYLENE	8.1
TRICHLOROETHYLENE	17 (1)
VINYL CHLORIDE	2.7 (1)

MW-33	
CHLOROFORM	1.7

MW-29	
1,1-DICHLOROETHANE	14
1,1-DICHLOROETHYLENE	20 (1)
CIS-1,2-DICHLOROETHYLENE	390 (1)
TRANS-1,2-DICHLOROETHYLENE	16
TETRACHLOROETHYLENE	5.1 (1)
1,1,1-TRICHLOROETHANE	42
TRICHLOROETHYLENE	6,000 (1,2)

MW-27	
VOCs	ND

MW-D-103	
1,1-DICHLOROETHANE	13
1,1-DICHLOROETHYLENE	15 (1)
CIS-1,2-DICHLOROETHYLENE	680 (1,2)
TRANS-1,2-DICHLOROETHYLENE	65
TRICHLOROETHYLENE	2,700 (1,2)
VINYL CHLORIDE	3.8 (1)

MW-304-I	
1,1-DICHLOROETHANE	1.9
1,1-DICHLOROETHYLENE	13 (1)
CIS-1,2-DICHLOROETHYLENE	290 (1)
TRANS-1,2-DICHLOROETHYLENE	2.6
TETRACHLOROETHYLENE	8.9 (1)
1,1,1-TRICHLOROETHANE	78
TRICHLOROETHYLENE	3,400 (1,2)
VINYL CHLORIDE	2.9 (1)

MW-304-D	
CIS-1,2-DICHLOROETHYLENE	2.8
TRICHLOROETHYLENE	53 (1)

MW-306-I	
CIS-1,2-DICHLOROETHYLENE	70 (1)
TRANS-1,2-DICHLOROETHYLENE	11
TETRACHLOROETHYLENE	2.2
TRICHLOROETHYLENE	1,200 (1,2)

MW-305-I	
CIS-1,2-DICHLOROETHYLENE	160 (1)
TRANS-1,2-DICHLOROETHYLENE	32
TETRACHLOROETHYLENE	1.4
1,1,1-TRICHLOROETHANE	7.3
TRICHLOROETHYLENE	760 (1,2)

RW-1	
CIS-1,2-DICHLOROETHYLENE	60
TRANS-1,2-DICHLOROETHYLENE	9.6
TETRACHLOROETHYLENE	1.9
1,1,1-TRICHLOROETHANE	9.8
TRICHLOROETHYLENE	1,200 (1,2)

MW-303-D	
CHLOROETHANE	16
1,1-DICHLOROETHANE	61
1,1-DICHLOROETHYLENE	13 (1)
CIS-1,2-DICHLOROETHYLENE	2,300 (1,2)
TRANS-1,2-DICHLOROETHYLENE	450 (1)
TETRACHLOROETHYLENE	1
TOLUENE	14
TRICHLOROETHYLENE	17,000 (1,2,3)
VINYL CHLORIDE	110 (1,2)

MW-301-I	
VOCs	ND

MW-106	
CIS-1,2-DICHLOROETHYLENE	3.9
TRICHLOROETHYLENE	83 (1)

MW-107	
CIS-1,2-DICHLOROETHYLENE	4.2
TRICHLOROETHYLENE	87 (1)

MW-301-D	
VOCs	ND

LEGEND

RW-4 — RECOVERY WELL

MW-306-I — EXISTING MONITORING WELL

(1) — EXCEEDS PART 201 RESIDENTIAL AND COMMERCIAL DRINKING WATER CRITERIA

(2) — EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA

(3) — EXCEEDS PART 201 VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA

ND — PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITERS (ug/L)
2. LOCATIONS MW-27, MW-31, MW-32, MW-34S, MW-35, MW-301I, MW-301D, MW-325S, MW-325I, AND MW-325D WERE ALSO ANALYZED FOR VOC'S AND NO CONTAMINANTS WERE DETECTED.
3. ANY ADDITIONAL LOCATIONS NOT LISTED OR PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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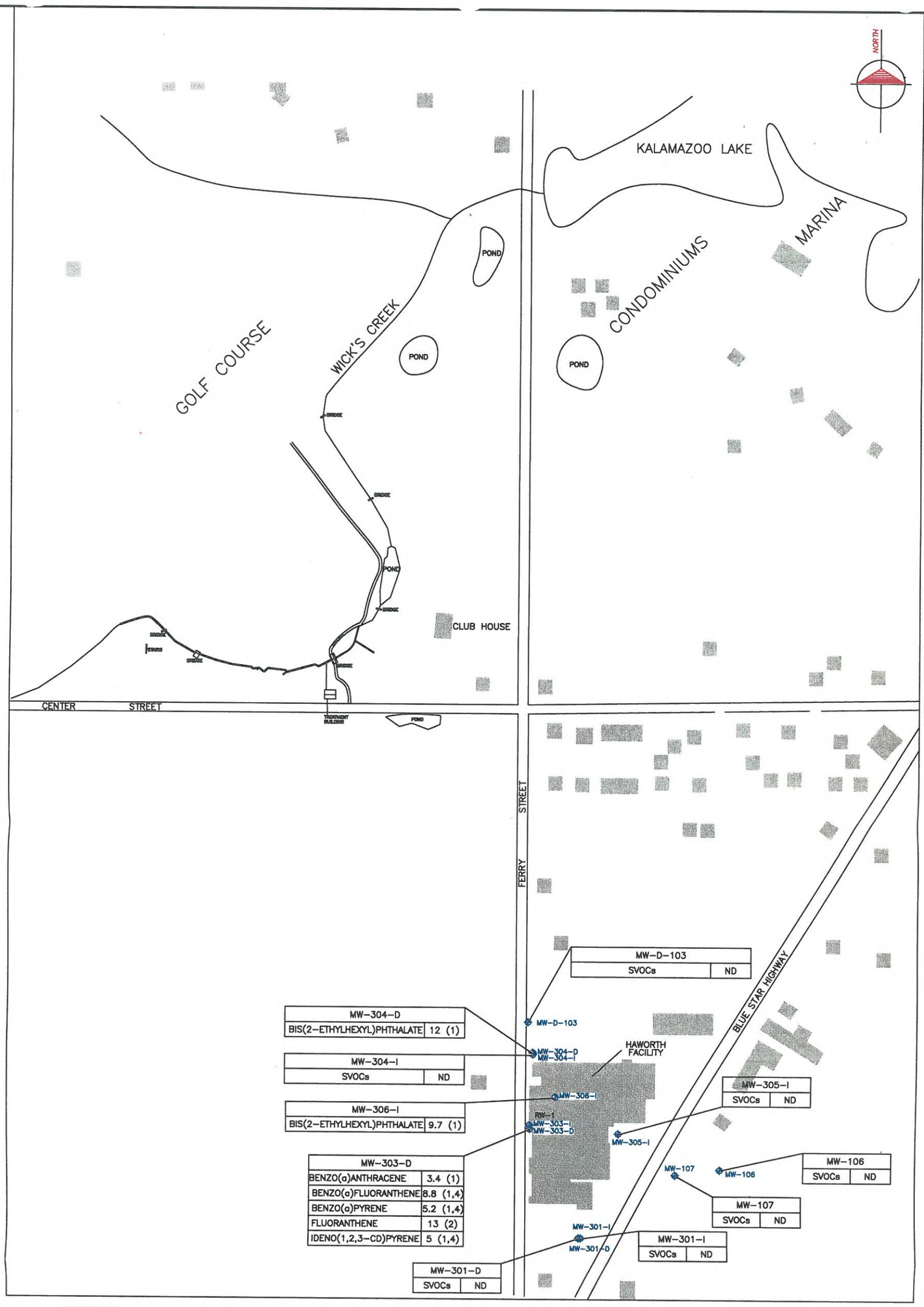
FIGURE 6

CHEMICAL DISTRIBUTION MAP
ROUND 1 GROUNDWATER SAMPLING
RESULTS VOLATILE
ORGANIC COMPOUNDS
APRIL, 2003

VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



LEGEND

RW-4 – RECOVERY WELL

MW-306-I – EXISTING MONITORING WELL

(1) – EXCEEDS PART 201 RESIDENTIAL AND COMMERCIAL DRINKING WATER CRITERIA

(2) – EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA

(4) – EXCEEDS PART 201 GROUNDWATER CONTACT CRITERIA

ND – PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)
2. LOCATIONS MW-D-103, MW-106, MW-107, MW-301I, MW-301D, MW-304I, AND MW-305I WERE ALSO ANALYZED FOR SVOC'S AND NO CONTAMINANTS WERE DETECTED.
3. ANY ADDITIONAL LOCATIONS NOT LISTED OR PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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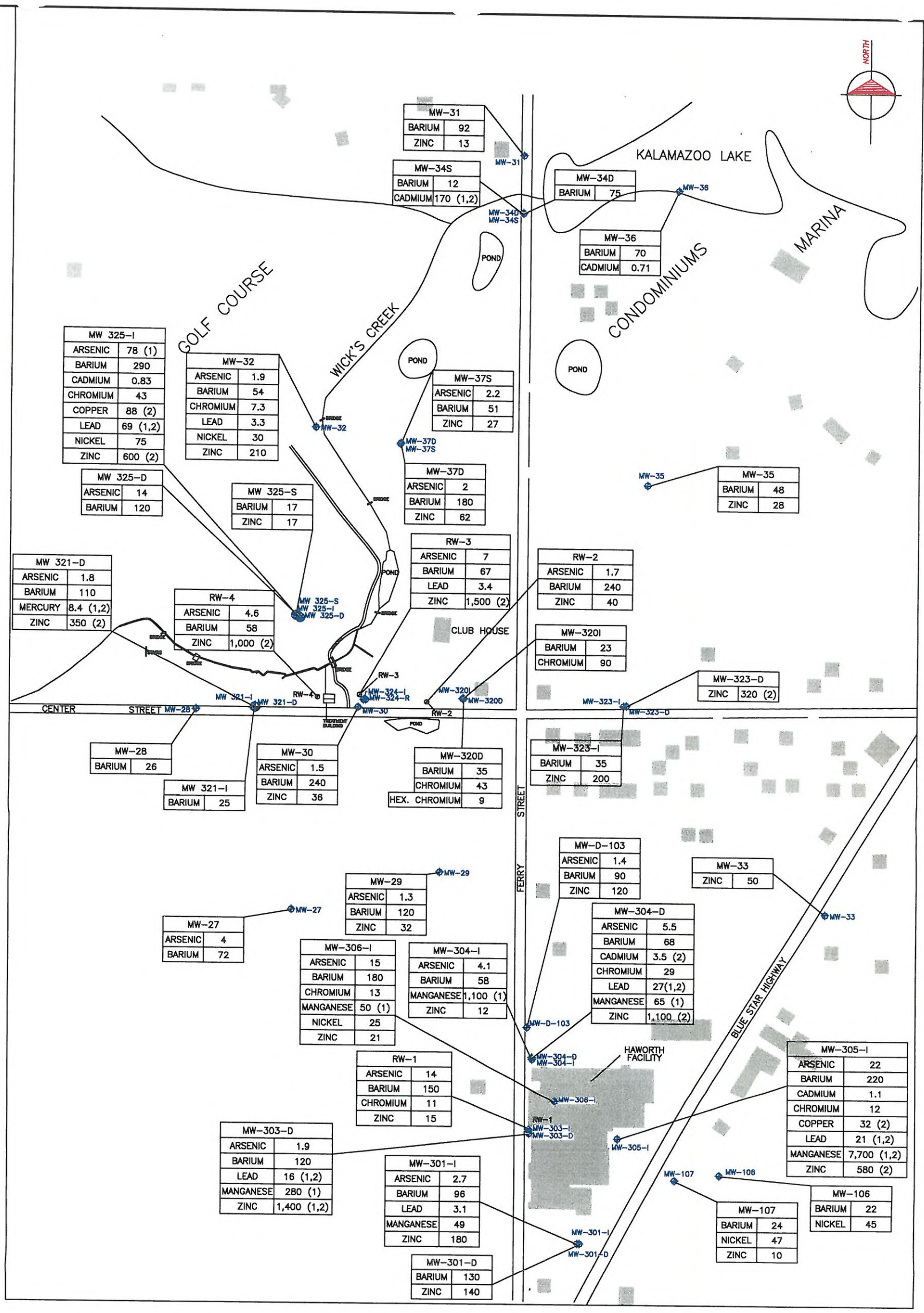
FIGURE 7

CHEMICAL DISTRIBUTION MAP
ROUND 1 GROUNDWATER SAMPLING
RESULTS SEMI-VOLATILE
ORGANIC COMPOUNDS
APRIL, 2003

VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



MW-31	
BARIUM	92
ZINC	13

MW-34S	
BARIUM	12
CADMIUM	170 (1,2)

MW-34D	
BARIUM	75

MW-36	
BARIUM	70
CADMIUM	0.71

MW 325-I	
ARSENIC	78 (1)
BARIUM	290
CADMIUM	0.83
CHROMIUM	43
COPPER	88 (2)
LEAD	69 (1,2)
NICKEL	75
ZINC	600 (2)

MW-32	
ARSENIC	1.9
BARIUM	54
CHROMIUM	7.3
LEAD	3.3
NICKEL	30
ZINC	210

MW-37S	
ARSENIC	2.2
BARIUM	51
ZINC	27

MW-37D	
ARSENIC	2
BARIUM	180
ZINC	62

MW-35	
BARIUM	48
ZINC	28

MW 325-D	
ARSENIC	14
BARIUM	120

MW 325-S	
BARIUM	17
ZINC	17

RW-3	
ARSENIC	7
BARIUM	67
LEAD	3.4
ZINC	1,500 (2)

MW 321-D	
ARSENIC	1.8
BARIUM	110
MERCURY	8.4 (1,2)
ZINC	350 (2)

RW-4	
ARSENIC	4.6
BARIUM	58
ZINC	1,000 (2)

RW-2	
ARSENIC	1.7
BARIUM	240
ZINC	40

MW-320I	
BARIUM	23
CHROMIUM	90

MW-323-D	
ZINC	320 (2)

MW-28	
BARIUM	26

MW 321-I	
BARIUM	25

MW-30	
ARSENIC	1.5
BARIUM	240
ZINC	36

MW-320D	
BARIUM	35
CHROMIUM	43
HEX. CHROMIUM	9

MW-323-I	
BARIUM	35
ZINC	200

MW-D-103	
ARSENIC	1.4
BARIUM	90
ZINC	120

MW-33	
ZINC	50

MW-29	
ARSENIC	1.3
BARIUM	120
ZINC	32

MW-27	
ARSENIC	4
BARIUM	72

MW-304-D	
ARSENIC	5.5
BARIUM	68
CADMIUM	3.5 (2)
CHROMIUM	29
LEAD	27(1,2)
MANGANESE	65 (1)
ZINC	1,100 (2)

MW-306-I	
ARSENIC	15
BARIUM	180
CHROMIUM	13
MANGANESE	50 (1)
NICKEL	25
ZINC	21

MW-304-I	
ARSENIC	4.1
BARIUM	58
MANGANESE	1,100 (1)
ZINC	12

RW-1	
ARSENIC	14
BARIUM	150
CHROMIUM	11
ZINC	15

MW-305-I	
ARSENIC	22
BARIUM	220
CADMIUM	1.1
CHROMIUM	12
COPPER	32 (2)
LEAD	21 (1,2)
MANGANESE	7,700 (1,2)
ZINC	580 (2)

MW-303-D	
ARSENIC	1.9
BARIUM	120
LEAD	16 (1,2)
MANGANESE	280 (1)
ZINC	1,400 (1,2)

MW-301-I	
ARSENIC	2.7
BARIUM	96
LEAD	3.1
MANGANESE	49
ZINC	180

MW-107	
BARIUM	24
NICKEL	47
ZINC	10

MW-106	
BARIUM	22
NICKEL	45

MW-301-D	
BARIUM	130
ZINC	140

LEGEND

RW-4 — RECOVERY WELL

MW-03-12 — EXISTING MONITORING WELL

(1) — EXCEEDS PART 201 RESIDENTIAL AND COMMERCIAL DRINKING WATER CRITERIA

(2) — EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)
2. ANY ADDITIONAL LOCATIONS NOT PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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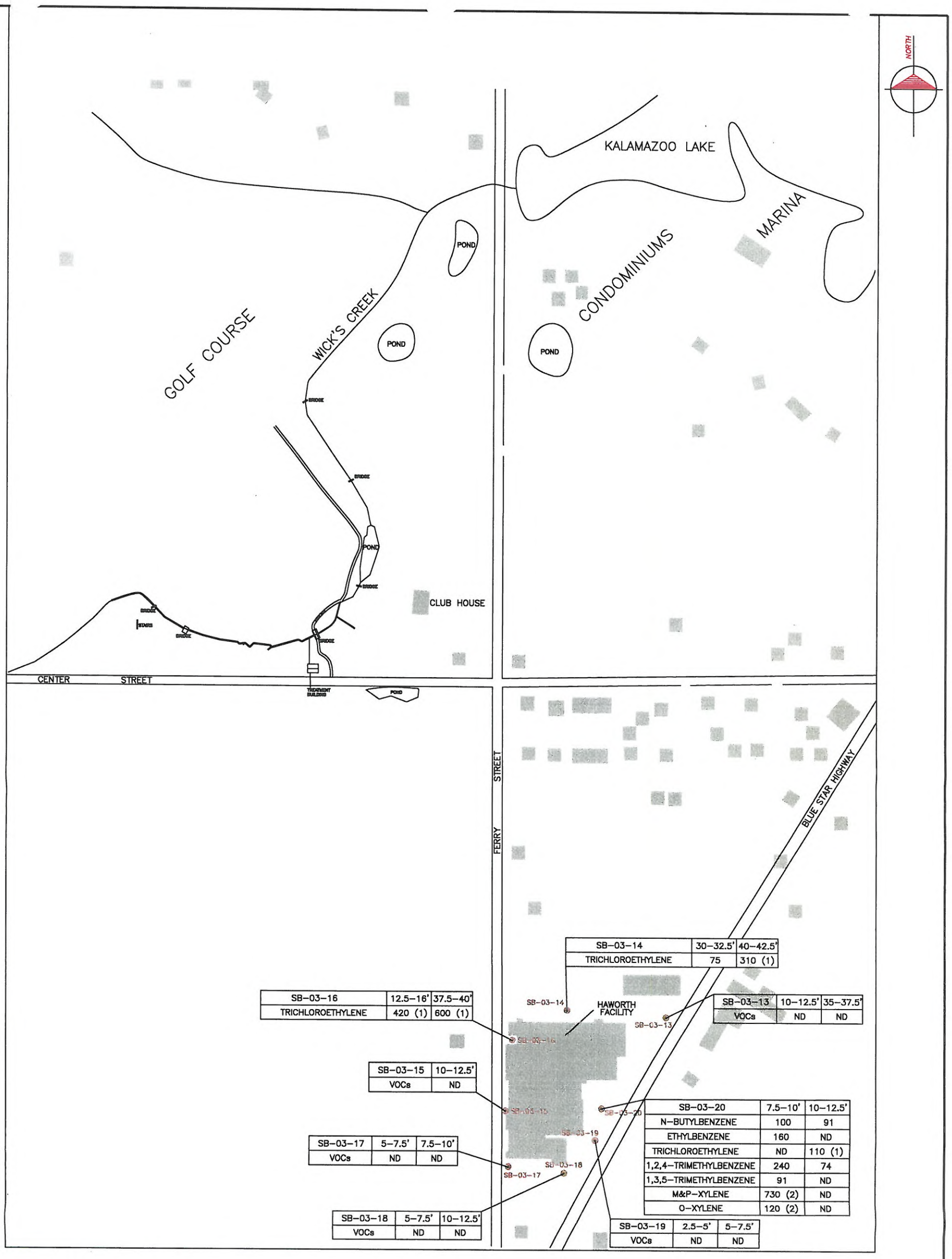
FIGURE 8

CHEMICAL DISTRIBUTION MAP
ROUND 1 GROUNDWATER SAMPLING
RESULTS TOTAL METALS
APRIL, 2003

VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



LEGEND

SB-03-20 – SOIL BORING

(1) – EXCEEDS PART 201 DRINKING WATER PROTECTION CRITERIA

(2) – EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE PROTECTION CRITERIA

ND – PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER KILOGRAM (ug/kg)
2. LOCATIONS SB-03-13 10-12.5', SB-03-13 35-37.5', SB-03-15 10-12.5', SB-03-17 5-7.5', SB-03-17 7.5-10' SB-03-18 5-7.5', SB-03-18 10-12.5', SB-03-19 2.5-5', AND SB-03-19 5-7.5' WERE ALSO ANALYZED FOR VOC'S AND NO CONTAMINANTS WERE DETECTED.
3. ANY ADDITIONAL LOCATIONS NOT LISTED OR PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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FIGURE 14

CHEMICAL DISTRIBUTION MAP

SOURCE AREA

SOIL INVESTIGATION RESULTS

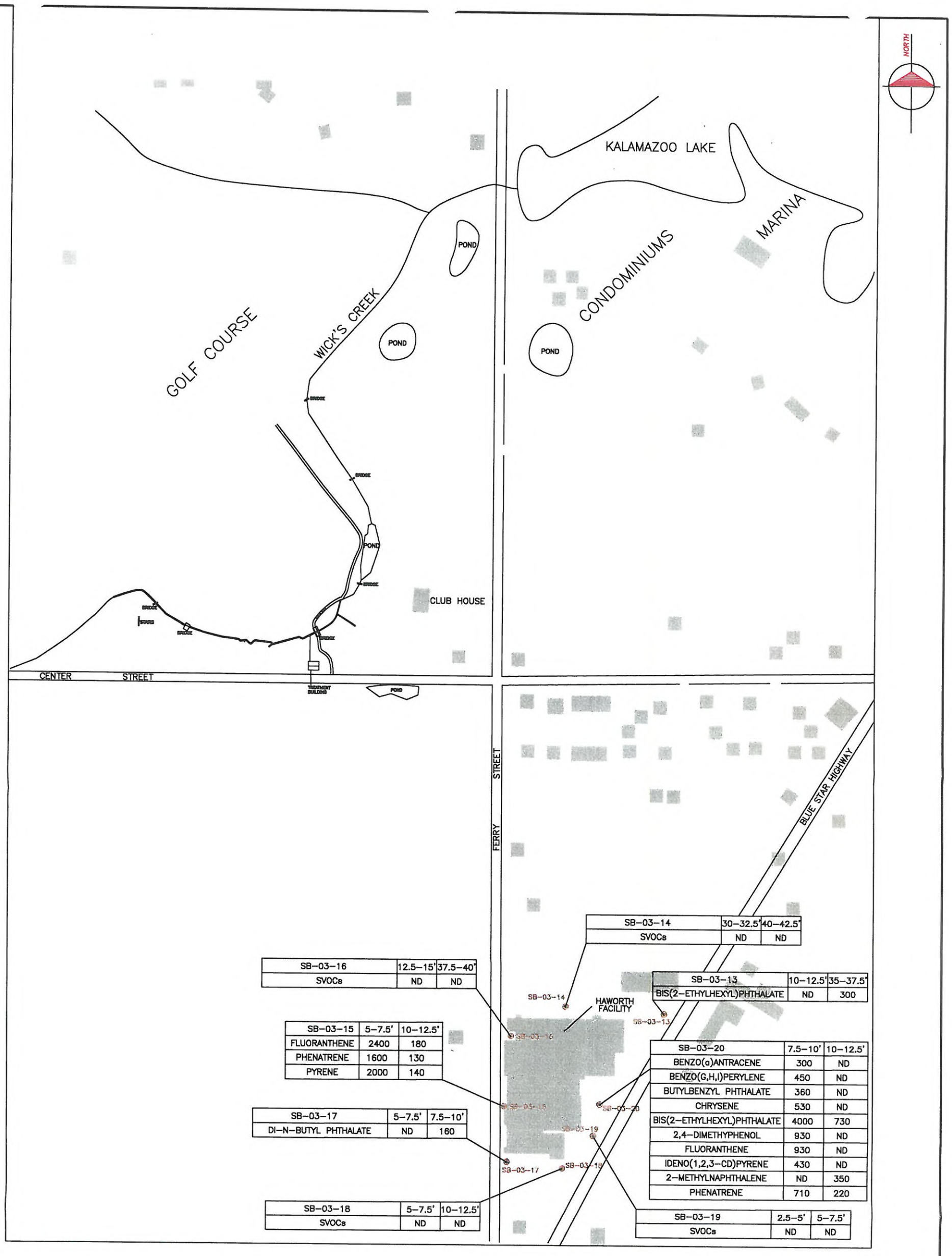
VOLATILE ORGANIC COMPOUNDS

JULY, 2003

VILLAGE OF DOUGLAS

DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



SB-03-14	30-32.5'	40-42.5'
SVOCs	ND	ND

SB-03-13	10-12.5'	35-37.5'
BIS(2-ETHYLHEXYL)PHTHALATE	ND	300

SB-03-16	12.5-15'	37.5-40'
SVOCs	ND	ND

SB-03-15	5-7.5'	10-12.5'
FLUORANTHENE	2400	180
PHENATRENE	1600	130
PYRENE	2000	140

SB-03-20	7.5-10'	10-12.5'
BENZO(a)ANTRACENE	300	ND
BENZO(G,H,I)PERYLENE	450	ND
BUTYLBENZYL PHTHALATE	360	ND
CHRYSENE	530	ND
BIS(2-ETHYLHEXYL)PHTHALATE	4000	730
2,4-DIMETHYPHENOL	930	ND
FLUORANTHENE	930	ND
IDENO(1,2,3-CD)PYRENE	430	ND
2-METHYLNAPHTHALENE	ND	350
PHENATRENE	710	220

SB-03-17	5-7.5'	7.5-10'
DI-N-BUTYL PHTHALATE	ND	160

SB-03-19	2.5-5'	5-7.5'
SVOCs	ND	ND

SB-03-18	5-7.5'	10-12.5'
SVOCs	ND	ND

LEGEND

SB-03-20 ● – SOIL BORING

ND – PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER KILOGRAM (ug/kg)
2. LOCATIONS SB-03-13 10-12.5', SB-03-14 30-32.5', SB-03-14 40-42.5', SB-03-16 12.5-15', SB-03-16 37.5-40', SB-03-17 5-7.5', SB-03-18 5-7.5', SB-03-18 10-12.5', SB-03-19 2.5-5', AND SB-03-19 5-7.5' WERE ALSO ANALYZED FOR SVOC'S AND NO CONTAMINANTS WERE DETECTED.
3. ANY ADDITIONAL LOCATIONS NOT LISTED OR PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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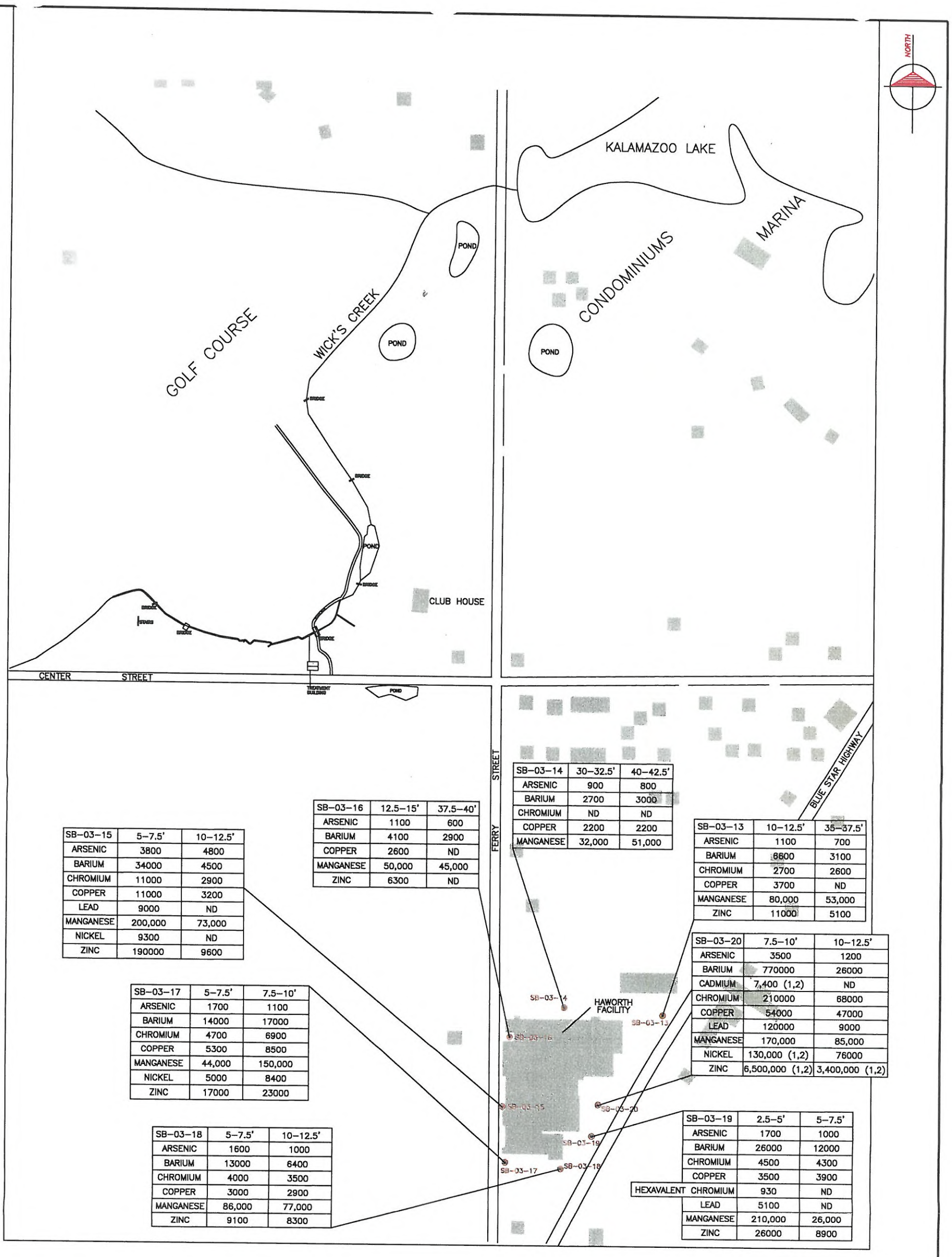
FIGURE 15
CHEMICAL DISTRIBUTION MAP
SOURCE AREA
SOIL INVESTIGATION RESULTS
SEMI-VOLATILE ORGANIC COMPOUNDS
JULY, 2003
VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER	65766.01	SCALE: 1" = 400'



SB-03-14	30-32.5'	40-42.5'
ARSENIC	900	800
BARIUM	2700	3000
CHROMIUM	ND	ND
COPPER	2200	2200
MANGANESE	32,000	51,000

SB-03-16	12.5-15'	37.5-40'
ARSENIC	1100	600
BARIUM	4100	2900
COPPER	2600	ND
MANGANESE	50,000	45,000
ZINC	6300	ND

SB-03-13	10-12.5'	35-37.5'
ARSENIC	1100	700
BARIUM	6600	3100
CHROMIUM	2700	2600
COPPER	3700	ND
MANGANESE	80,000	53,000
ZINC	11000	5100

SB-03-15	5-7.5'	10-12.5'
ARSENIC	3800	4800
BARIUM	34000	4500
CHROMIUM	11000	2900
COPPER	11000	3200
LEAD	9000	ND
MANGANESE	200,000	73,000
NICKEL	9300	ND
ZINC	190000	9600

SB-03-20	7.5-10'	10-12.5'
ARSENIC	3500	1200
BARIUM	770000	26000
CADMIUM	7,400 (1,2)	ND
CHROMIUM	210000	68000
COPPER	54000	47000
LEAD	120000	9000
MANGANESE	170,000	85,000
NICKEL	130,000 (1,2)	76000
ZINC	6,500,000 (1,2)	3,400,000 (1,2)

SB-03-17	5-7.5'	7.5-10'
ARSENIC	1700	1100
BARIUM	14000	17000
CHROMIUM	4700	6900
COPPER	5300	8500
MANGANESE	44,000	150,000
NICKEL	5000	8400
ZINC	17000	23000

SB-03-18	5-7.5'	10-12.5'
ARSENIC	1600	1000
BARIUM	13000	6400
CHROMIUM	4000	3500
COPPER	3000	2900
MANGANESE	86,000	77,000
ZINC	9100	8300

SB-03-19	2.5-5'	5-7.5'
ARSENIC	1700	1000
BARIUM	26000	12000
CHROMIUM	4500	4300
COPPER	3500	3900
HEXAVALENT CHROMIUM	930	ND
LEAD	5100	ND
MANGANESE	210,000	26,000
ZINC	26000	8900

LEGEND

SB-03-20 – SOIL BORING

(1) – EXCEEDS PART 201 DRINKING WATER PROTECTION CRITERIA

(2) – EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE PROTECTION CRITERIA

ND – PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER KILOGRAM (ug/kg)
2. ANY ADDITIONAL LOCATIONS NOT PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.
3. ALL MANGANESE CONCENTRATIONS WERE BELOW THE STATE BACKGROUND.

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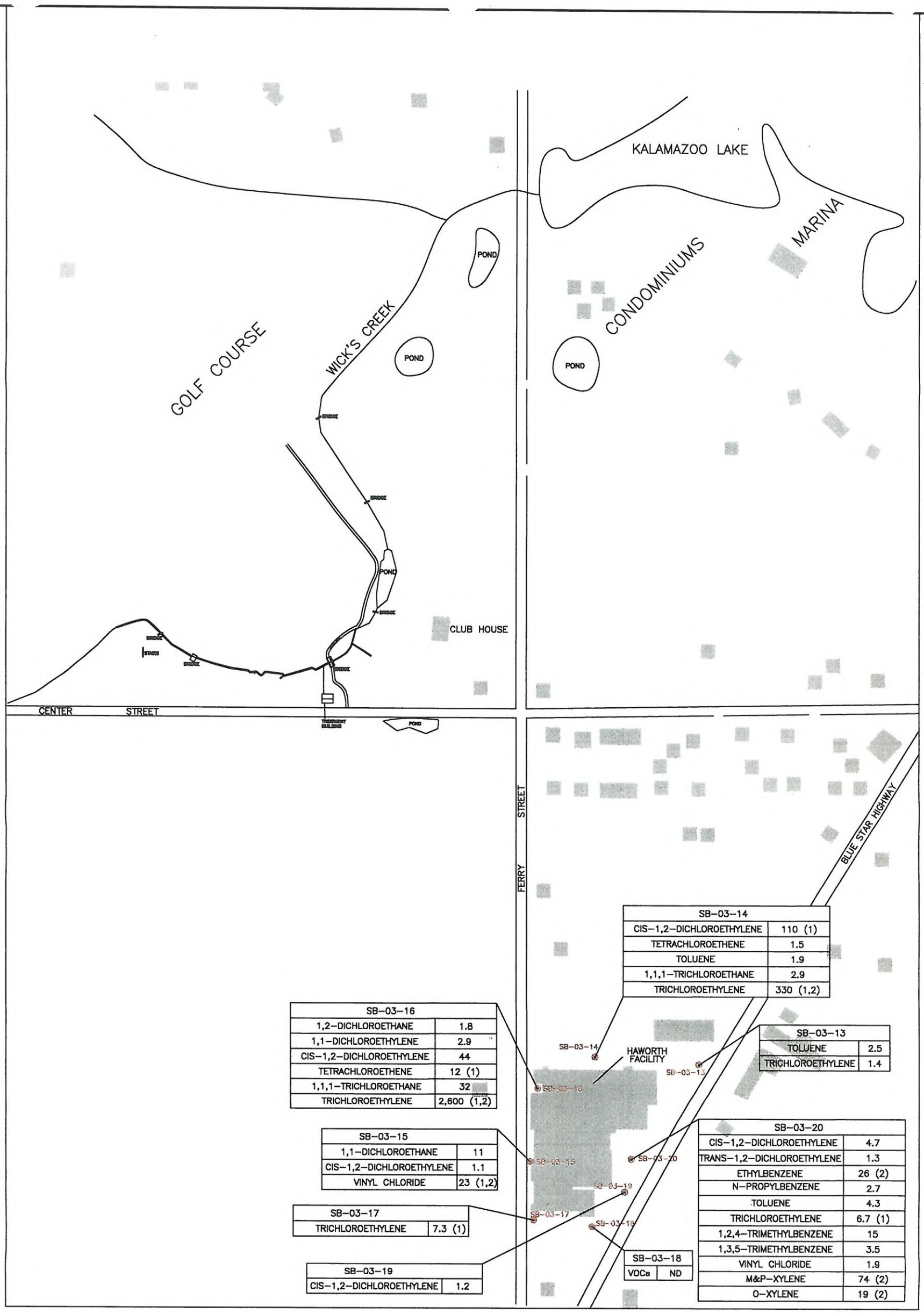
FIGURE 16
CHEMICAL DISTRIBUTION MAP
SOURCE AREA
SOIL INVESTIGATION RESULTS
TOTAL METALS
JULY, 2003
VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01 | SCALE: 1" = 400'



LEGEND

SB-03-20 – SOIL BORING

(1) – EXCEEDS PART 201 RESIDENTIAL AND COMMERCIAL DRINKING WATER CRITERIA

(2) – EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA

ND – PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)
2. LOCATION SB-03-18 12-19' WAS ALSO ANALYZED FOR VOC'S AND NO CONTAMINANTS WERE DETECTED.
3. ANY ADDITIONAL LOCATIONS NOT LISTED OR PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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FILE NAME: 65766-JULY-SGIRVOC	

FIGURE 17

CHEMICAL DISTRIBUTION MAP

SOURCE AREA

GROUNDWATER INVESTIGATION RESULTS

VOLATILE ORGANIC COMPOUNDS

JULY, 2003

VILLAGE OF DOUGLAS

DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'

LEGEND

SB-03-20 ● – SOIL BORING

ND – PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)
2. LOCATIONS SB-03-17 10-12', SB-03-18 12-14', SB-03-19 7-9' WERE ALSO ANALYZED FOR SVOC'S AND NO CONTAMINANTS WERE DETECTED.
3. ANY ADDITIONAL LOCATIONS NOT LISTED OR PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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FILE NAME: 65766-JULY-SGIRSVOC	

FIGURE 18

CHEMICAL DISTRIBUTION MAP

SOURCE AREA

GROUNDWATER INVESTIGATION RESULTS

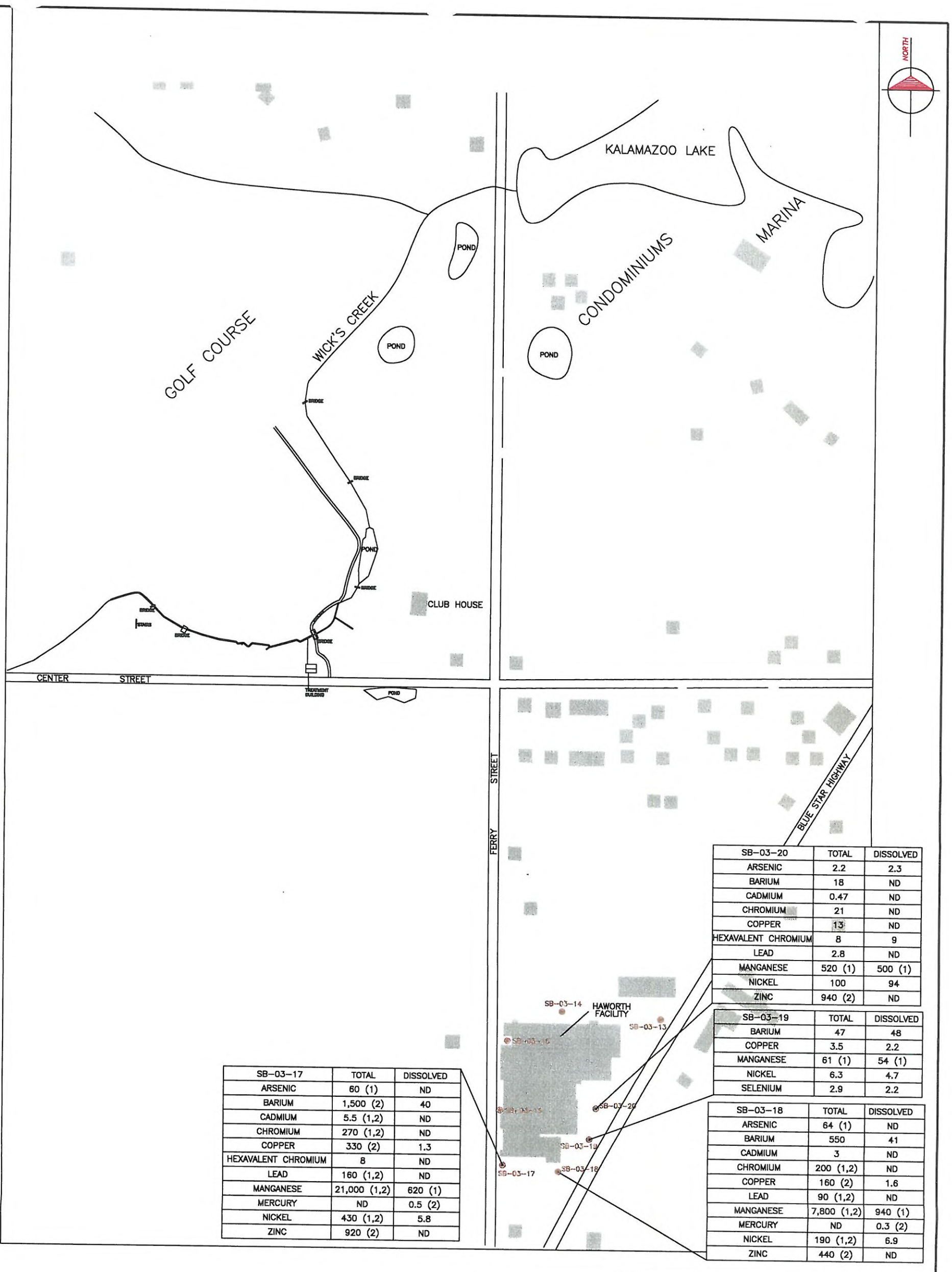
SEMI-VOLATILE ORGANIC COMPOUNDS

JULY, 2003

VILLAGE OF DOUGLAS

DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



SB-03-20	TOTAL	DISSOLVED
ARSENIC	2.2	2.3
BARIUM	18	ND
CADMIUM	0.47	ND
CHROMIUM	21	ND
COPPER	13	ND
HEXAVALENT CHROMIUM	8	9
LEAD	2.8	ND
MANGANESE	520 (1)	500 (1)
NICKEL	100	94
ZINC	940 (2)	ND

SB-03-19	TOTAL	DISSOLVED
BARIUM	47	48
COPPER	3.5	2.2
MANGANESE	61 (1)	54 (1)
NICKEL	6.3	4.7
SELENIUM	2.9	2.2

SB-03-18	TOTAL	DISSOLVED
ARSENIC	64 (1)	ND
BARIUM	550	41
CADMIUM	3	ND
CHROMIUM	200 (1,2)	ND
COPPER	160 (2)	1.6
LEAD	90 (1,2)	ND
MANGANESE	7,800 (1,2)	940 (1)
MERCURY	ND	0.3 (2)
NICKEL	190 (1,2)	6.9
ZINC	440 (2)	ND

SB-03-17	TOTAL	DISSOLVED
ARSENIC	60 (1)	ND
BARIUM	1,500 (2)	40
CADMIUM	5.5 (1,2)	ND
CHROMIUM	270 (1,2)	ND
COPPER	330 (2)	1.3
HEXAVALENT CHROMIUM	8	ND
LEAD	160 (1,2)	ND
MANGANESE	21,000 (1,2)	620 (1)
MERCURY	ND	0.5 (2)
NICKEL	430 (1,2)	5.8
ZINC	920 (2)	ND

LEGEND

SB-03-20 ● – SOIL BORING

(1) – EXCEEDS PART 201 RESIDENTIAL AND COMMERCIAL DRINKING WATER CRITERIA.

(2) – EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA

ND – PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)
2. ANY ADDITIONAL LOCATIONS NOT PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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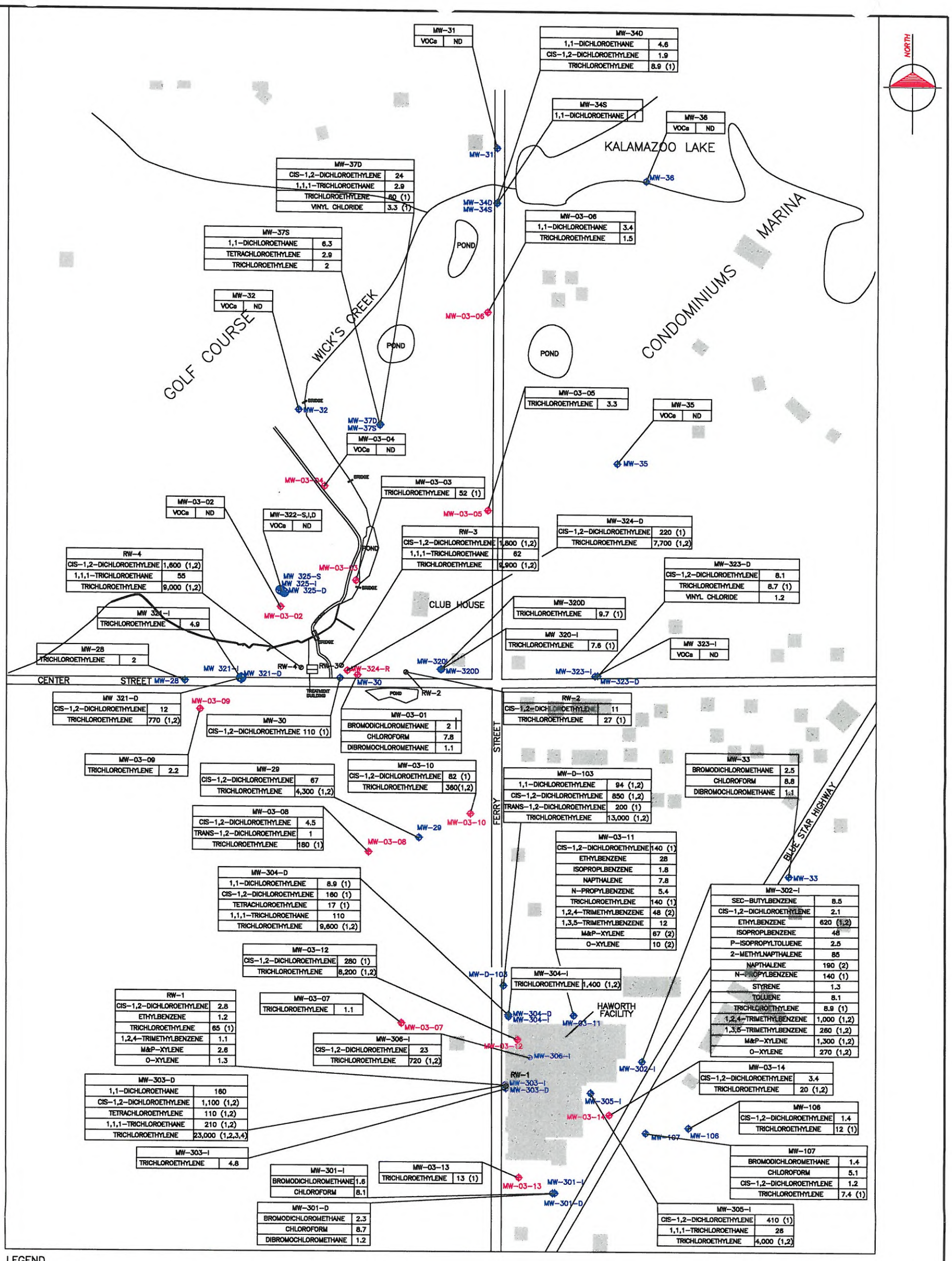
FILE NAME: 65766-JULY-SGIRTM	

FIGURE 19
CHEMICAL DISTRIBUTION MAP
SOURCE AREA
GROUNDWATER INVESTIGATION
RESULTS TOTAL AND DISSOLVED
METALS JULY, 2003
VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



LEGEND

MW-03-12 ◆ – RI MONITORING WELL (2003)

MW-306-I ◆ – EXISTING MONITORING WELL

RW-1 ● – RECOVERY WELL

(1) – EXCEEDS PART 201 RESIDENTIAL AND COMMERCIAL DRINKING WATER CRITERIA

(2) – EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA

(3) – EXCEEDS PART 201 VOLATILIZATION TO INDOOR AIR INHALATION CRITERIA

(4) – EXCEEDS PART 201 GROUNDWATER CONTACT CRITERIA

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)
2. ANY ADDITIONAL LOCATIONS NOT PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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FILE NAME: 65766-JULY-GSRVOC-A	

FIGURE 21

CHEMICAL DISTRIBUTION MAP

ROUND 2 GROUNDWATER

SAMPLING RESULTS

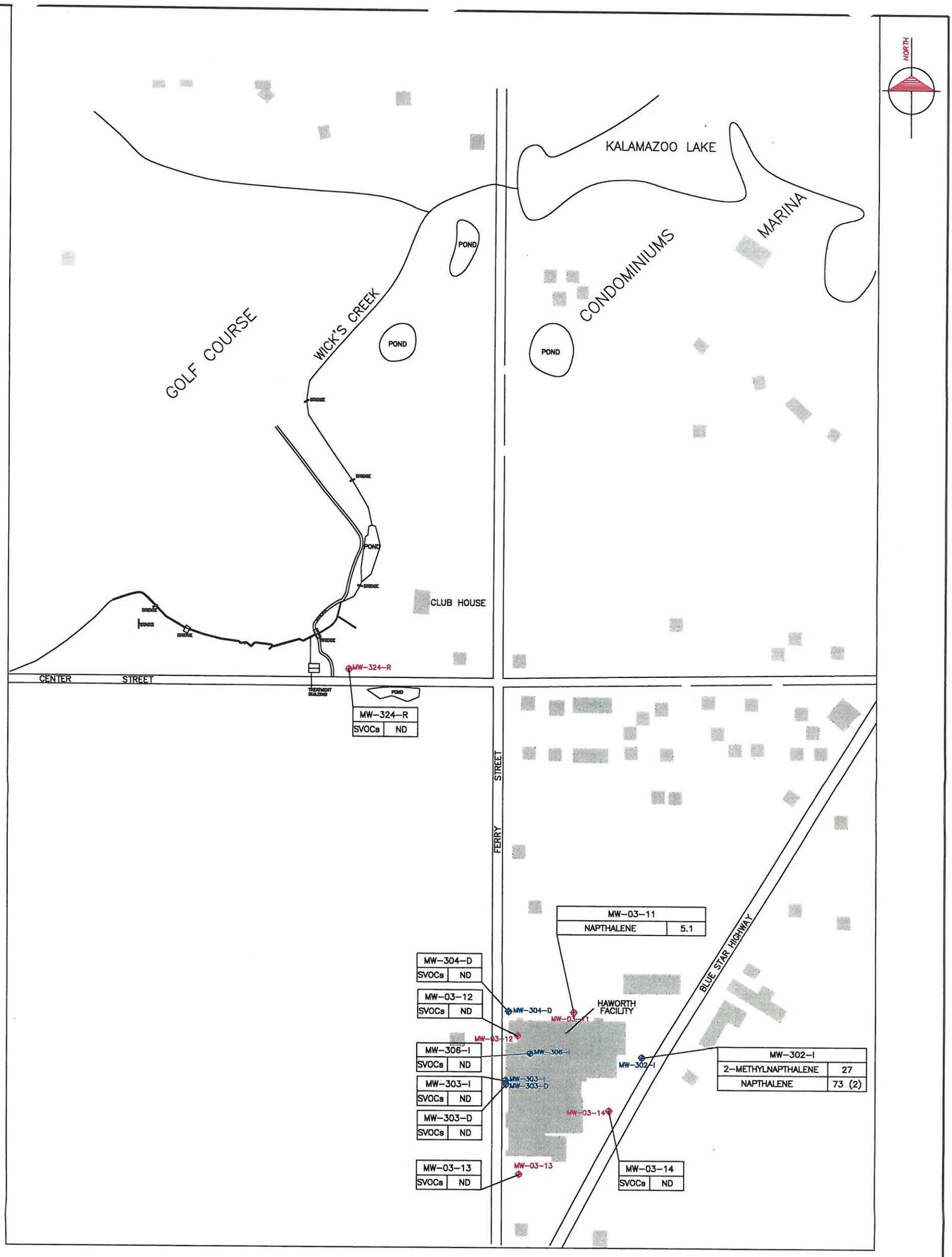
VOLATILE ORGANIC COMPOUNDS

JULY, 2003

VILLAGE OF DOUGLAS

DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



LEGEND

MW-03-12 ◆ – RI MONITORING WELL (2003)

MW-30 ◆ – EXISTING MONITORING WELL

(2) – EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA

ND – PARAMETER NOT DETECTED

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITER (ug/L)
2. LOCATIONS MW-303I, MW-303D, MW-304D, MW-306I, MW-324D, MW-03-12, MW-03-13, MW-03-14 WERE ALSO ANALYZED FOR SVOC'S AND NO CONTAMINANTS WERE DETECTED.
3. ANY ADDITIONAL LOCATIONS NOT LISTED OR PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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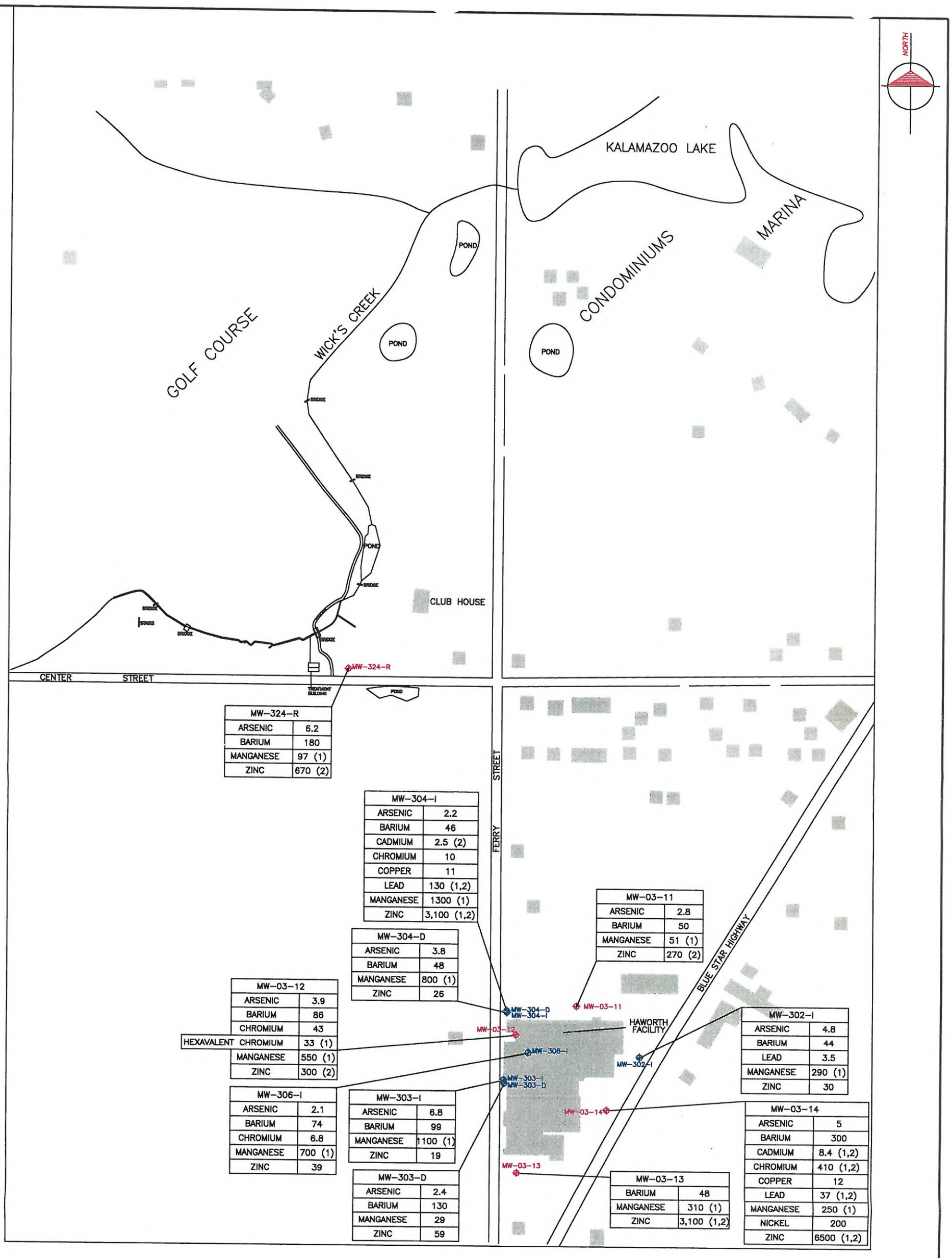
FILE NAME: 65766-APRIL-MWSRSVOC	

FIGURE 22

CHEMICAL DISTRIBUTION MAP
ROUND 2 SAMPLING GROUNDWATER
RESULTS SEMI-VOLATILE
ORGANIC COMPOUNDS
JULY, 2003
VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER 65766.01	SCALE: 1" = 400'



MW-324-R	
ARSENIC	6.2
BARIUM	180
MANGANESE	97 (1)
ZINC	670 (2)

MW-304-I	
ARSENIC	2.2
BARIUM	46
CADMIUM	2.5 (2)
CHROMIUM	10
COPPER	11
LEAD	130 (1,2)
MANGANESE	1300 (1)
ZINC	3,100 (1,2)

MW-304-D	
ARSENIC	3.8
BARIUM	48
MANGANESE	800 (1)
ZINC	26

MW-03-11	
ARSENIC	2.8
BARIUM	50
MANGANESE	51 (1)
ZINC	270 (2)

MW-03-12	
ARSENIC	3.9
BARIUM	86
CHROMIUM	43
HEXAVALENT CHROMIUM	33 (1)
MANGANESE	550 (1)
ZINC	300 (2)

MW-302-I	
ARSENIC	4.8
BARIUM	44
LEAD	3.5
MANGANESE	290 (1)
ZINC	30

MW-306-I	
ARSENIC	2.1
BARIUM	74
CHROMIUM	6.8
MANGANESE	700 (1)
ZINC	39

MW-303-I	
ARSENIC	6.8
BARIUM	99
MANGANESE	1100 (1)
ZINC	19

MW-03-14	
ARSENIC	5
BARIUM	300
CADMIUM	8.4 (1,2)
CHROMIUM	410 (1,2)
COPPER	12
LEAD	37 (1,2)
MANGANESE	250 (1)
NICKEL	200
ZINC	6500 (1,2)

MW-303-D	
ARSENIC	2.4
BARIUM	130
MANGANESE	29
ZINC	59

MW-03-13	
BARIUM	48
MANGANESE	310 (1)
ZINC	3,100 (1,2)

LEGEND

MW-03-12 — RI MONITORING WELL (2003)

MW-30 — EXISTING MONITORING WELL

(1) — EXCEEDS PART 201 RESIDENTIAL AND COMMERCIAL DRINKING WATER CRITERIA

(2) — EXCEEDS PART 201 GROUNDWATER SURFACE WATER INTERFACE CRITERIA

NOTES:

1. ALL RESULTS REPORTED IN MICROGRAMS PER LITER (UG/L)
2. ANY ADDITIONAL LOCATIONS NOT PRESENTED ABOVE WERE NOT SAMPLED FOR THESE PARAMETERS.

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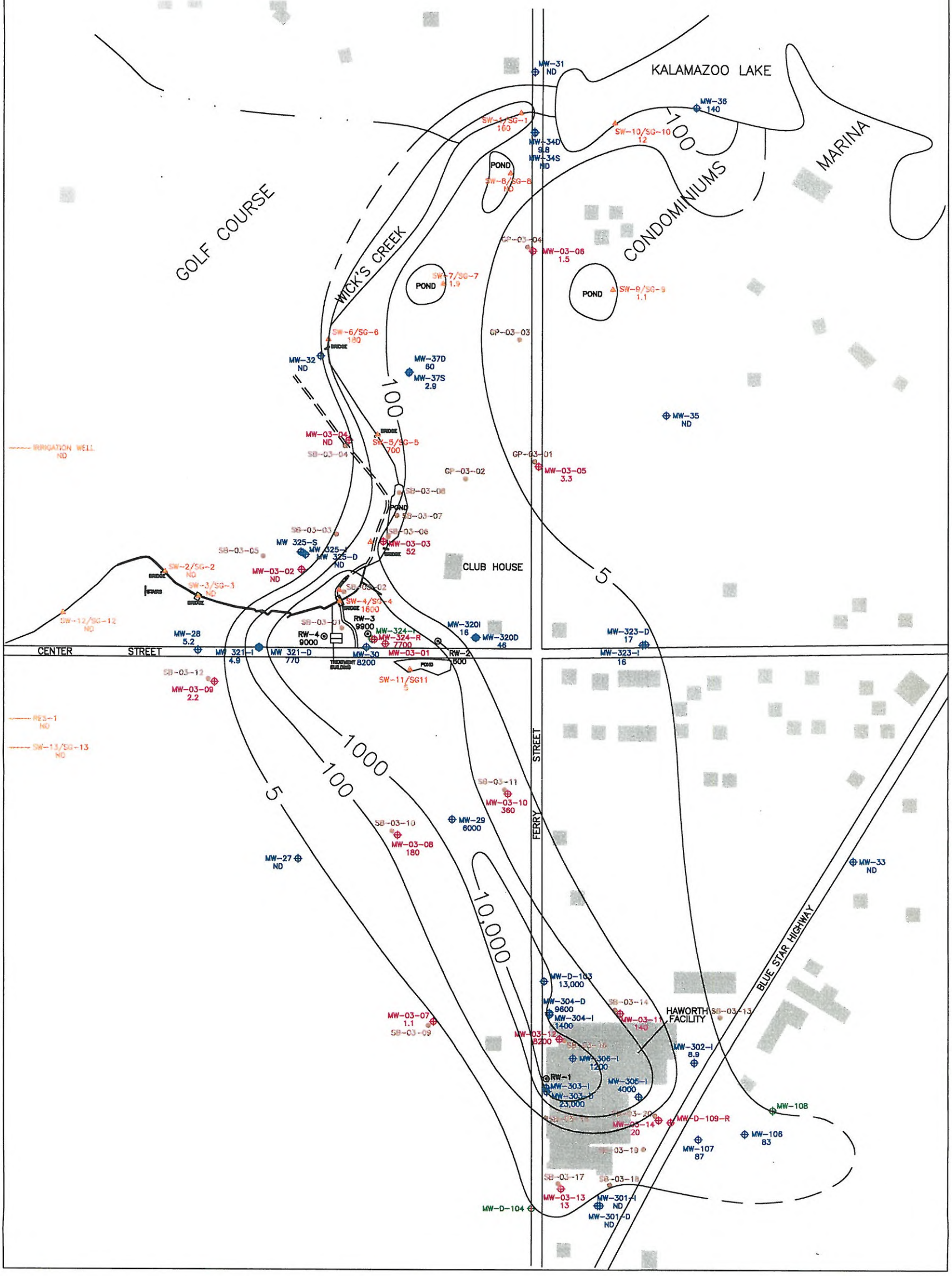
FILE NAME: 65766-JUNE-GSRTM	

FIGURE 23

CHEMICAL DISTRIBUTION MAP
ROUND 2 GROUNDWATER SAMPLING
RESULTS TOTAL METALS
JUNE, 2003

VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER	65766.01	SCALE: 1" = 400'



LEGEND

- MW-03-12 — RI MONITORING WELL (2003)
- MW-30 — EXISTING MONITORING WELL
- MW-108 — ABANDONED/DESTORYED MONITORING WELL
- RW-4 — RECOVERY WELL
- SB-03-07 — SOIL BORING
- SW-2/SG-2 — SURFACE WATER SAMPLING LOCATION
- 8200 — TCE CONCENTRATION (ug/L)

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FILE NAME: 65766-TCEISO	

FIGURE 25

TCE ISOCONCENTRATION MAP

VILLAGE OF DOUGLAS
DOUGLAS, MICHIGAN

PROJECT NUMBER	65766.01	SCALE: 1" = 400'

Table 3. Round 1 Surface Water Sampling Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7
Chloromethane	260	ID	8600	490,000	ND	ND	ND	ND	ND	1.4	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	1.1	ND	ND	3.1
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	1.9	1.8	1.2	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	32	ND	ND	89 (1)	84 (1)	57	1.8
trans - 1,2 Dichloroethene	100 {A}	1,500	85,000	200,000	ND	ND	ND	1.1	1.4	ND	ND
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	1.2	1	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	1.1	ND	ND	2.9	2.7	2	ND
Trichloroethene	5 {A}	200 {X}	15,000	22,000	120 (1)	ND	ND	320 (1,2)	270 (1,2)	180 (1)	1.9
Vinyl Chloride	2 {A}	15	1,100	1,000	3.1 (1)	ND	ND	11 (1)	12 (1)	7.4 (1)	ND

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-8	SW-9	SW-10	SW-11	SW-12	SW-13	
Chloromethane	260	ID	8600	490,000	ND	ND	ND	ND	1.2	ND	
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	3.4	2.2	ND	ND	
trans - 1,2 Dichloroethene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND	
Trichloroethene	5 {A}	200 {X}	15,000	22,000	ND	ND	12 (1)	5 (1)	ND	ND	
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ID = Insufficient data to develop criterion.

ND = Not detected above Method Detection Limit (MDL).

Table 4. Round 1 Surface Water Sampling Results - Village of Douglas - April 2003
Total Metals

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7
Arsenic	50 {A}	150 {X{	NLV	4,300	**1.2**	ND	ND	ND	ND	ND	ND
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	**50**	**55**	**54**	**50**	**47**	**47**	**40**
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	ND	ND	ND	**0.52**	ND
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	**11**	ND	ND	ND	ND	ND

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-8	SW-9	SW-10	SW-11	SW-12	SW-13	
Arsenic	50 {A}	150 {X{	NLV	4,300	ND	**1.1**	**1.2**	ND	ND	**1.2**	
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	**35**	**33**	**62**	**30**	**37**	**88**	
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	ND	ND	ND	ND	
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	ND	ND	ND	ND	ND	

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section 20120a(5) of the act.

{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.
A water hardness value of 260,000 ug/L, analyzed from location SW-10 at Kalamazoo Lake, was used to calculate the GSI criteria.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volitalize under most conditions.

Table 5. Round 1 Groundwater Sampling Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-27	MW-28	MW-29	MW-30	MW-31	MW-32
Chloroethane	430	ID	5,700,000	440,000	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	14	78	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	20 (1)	19 (1)	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	390 (1)	370 (1)	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	16	12	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	5.1 (1)	17 (1)	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	42	58	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	5.2 (1)	6,000 (1,2)	8,200 (1,2)	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	5.5 (1)	ND	ND

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-33	MW-34S	MW-34D	MW-35	MW-36	MW-37S
Chloroethane	430	ID	5,700,000	440,000	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	1.7	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	4	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	16 (1)
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	1.5	ND	4.4	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	1.2	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	2.6
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	1.3
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	ND	9.8 (1)	ND	140 (1)	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND

Notes:

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.

ID = Insufficient data to develop criterion.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 5. Round 1 Groundwater Sampling Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	MW-37D	MW-D-103	MW-106	MW-107	MW-301I	MW-301D
Chloroethane	430	ID	5,700,000	440,000	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	1.3	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	13	ND	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	15 (1)	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	15	680 (1,2)	3.9	4.2	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	65	ND	ND	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	1.8	ND	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	26 (1)	2,700 (1,2)	83 (1)	87 (1)	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	4.4 (1)	3.8 (1)	ND	ND	ND	ND

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	MW-303D	MW-304I	MW-304D	MW-305I	MW-306I	MW-320I
Chloroethane	430	ID	5,700,000	440,000	16	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	61	1.9	ND	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	13 (1)	13 (1)	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	2,300 (1,2)	290 (1)	2.8	160 (1)	70 (1)	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	450 (1)	2.6	ND	32	11	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	1	8.9 (1)	ND	1.4	2.2	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	14	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	78	ND	7.3	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	17,000 (1,2,3)	3,400 (1,2)	53 (1)	760 (1,2)	1,200 (1,2)	16 (1)
Vinyl Chloride	2 {A}	15	1,100	1,000	110 (1,2)	2.9 (1)	ND	ND	ND	ND

Notes:

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.

ID = Insufficient data to develop criterion.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 5. Round 1 Groundwater Sampling Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	MW-320D	MW-321I	MW-321D	MW-323I	MW-323D	MW-325S
Chloroethane	430	ID	5,700,000	440,000	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	1.2	ND	ND	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	21	ND	8.1	8.1	8.1	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	1.4	ND	2.1	ND	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	46 (1)	3.5	600 (1,2)	16 (1)	17 (1)	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	2.8 (1)	2.7 (1)	ND

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	MW-325I	MW-325D	RW-1	RW-2	RW-3	RW-4
Chloroethane	430	ID	5,700,000	440,000	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	77	12	7.2
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	20 (1)	23 (1)	13 (1)
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	60	360 (1)	580 (1)	580 (1)
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	9.6	12	23	16
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	1.9	17 (1)	4	2
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	9.8	59	35	18
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	ND	1,200 (1,2)	7,600 (1,2)	3,100 (1,2)	2,700 (1,2)
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	5.4 (1)	28 (1,2)	16 (1,2)

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)
(4) = Groundwater Contact Criteria (GC)
{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.
{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.
ID = Insufficient data to develop criterion.
{S} = Criterion defaults to the hazardous substance specific water quality solubility.
{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ND = Not detected above Method Detection Limit (MDL).

Table 6. Round 1 Groundwater Sampling Results - Village of Douglas - April 2003
Semi-Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-D-103	MW-106	MW-107	MW-301I	MW-301D	MW-303D
Benzo(a)anthracene	2.1	ID	NLV	9.4 {S,AA}	ND	ND	ND	ND	ND	3.4 (1)
Benzo(b)fluoranthene	2 {M}	ID	ID	2 {M,AA}	ND	ND	ND	ND	ND	8.8 (1,4)
Benzo(a)pyrene	5 {A}	ID	NLV	2 {M,AA}	ND	ND	ND	ND	ND	5.2 (1,4)
bis(2-Ethylhexyl)phthalate	6 {A}	32	NLV	320 {AA}	ND	ND	ND	ND	ND	ND
Fluoranthene	210 {S}	5 {M}	210 {S}	210 {S}	ND	ND	ND	ND	ND	13 (2)
Ideno(1,2,3-cd)pyrene	2 {M}	ID	NLV	2 {M,AA}	ND	ND	ND	ND	ND	5 (1,4)

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-304I	MW-304D	MW-305I	MW-306I		
Benzo(a)anthracene	2.1	ID	NLV	9.4 {S,AA}	ND	ND	ND	ND		
Benzo(b)fluoranthene	2 {M}	ID	ID	2 {M,AA}	ND	ND	ND	ND		
Benzo(a)pyrene	5 {A}	ID	NLV	2 {M,AA}	ND	ND	ND	ND		
bis(2-Ethylhexyl)phthalate	6 {A}	32	NLV	320 {AA}	ND	12 (1)	ND	9.7 (1)		
Fluoranthene	210 {S}	5 {M}	210 {S}	210 {S}	ND	ND	ND	ND		
Ideno(1,2,3-cd)pyrene	2 {M}	ID	NLV	2 {M,AA}	ND	ND	ND	ND		

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)
(4) = Groundwater Contact Criteria (GC)
{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.
{M} = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.
{S} = Criterion defaults to the hazardous substance-specific water solubility limit.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
{AA} = Comparison to these criteria may take into account an evaluation of whether the hazardous substances are adsorbed to particulates rather than dissolved in water.
ID = Insufficient data to develop criterion.
ND = Not detected above Method Detection Limit (MDL).
NLV = Hazardous substance is not likely to volitalize under most conditions.

Table 3. Round 1 Surface Water Sampling Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7
Chloromethane	260	ID	8600	490,000	ND	ND	ND	ND	ND	1.4	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	1.1	ND	ND	3.1
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	1.9	1.8	1.2	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	32	ND	ND	89 (1)	84 (1)	57	1.8
trans - 1,2 Dichloroethene	100 {A}	1,500	85,000	200,000	ND	ND	ND	1.1	1.4	ND	ND
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	1.2	1	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	1.1	ND	ND	2.9	2.7	2	ND
Trichloroethene	5 {A}	200 {X}	15,000	22,000	120 (1)	ND	ND	320 (1,2)	270 (1,2)	180 (1)	1.9
Vinyl Chloride	2 {A}	15	1,100	1,000	3.1 (1)	ND	ND	11 (1)	12 (1)	7.4 (1)	ND

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-8	SW-9	SW-10	SW-11	SW-12	SW-13	
Chloromethane	260	ID	8600	490,000	ND	ND	ND	ND	1.2	ND	
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	3.4	2.2	ND	ND	
trans - 1,2 Dichloroethene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND	
Trichloroethene	5 {A}	200 {X}	15,000	22,000	ND	ND	12 (1)	5 (1)	ND	ND	
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration excceds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ID = Insufficient data to develop criterion.

ND = Not detected above Method Detection Limit (MDL).

Table 4. Round 1 Surface Water Sampling Results - Village of Douglas - April 2003
Total Metals

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7
Arsenic	50 {A}	150 {X{	NLV	4,300	**1.2**	ND	ND	ND	ND	ND	ND
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	**50**	**55**	**54**	**50**	**47**	**47**	**40**
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	ND	ND	ND	**0.52**	ND
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	**11**	ND	ND	ND	ND	ND

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-8	SW-9	SW-10	SW-11	SW-12	SW-13	
Arsenic	50 {A}	150 {X{	NLV	4,300	ND	**1.1**	**1.2**	ND	ND	**1.2**	
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	**35**	**33**	**62**	**30**	**37**	**88**	
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	ND	ND	ND	ND	
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	ND	ND	ND	ND	ND	

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section 20120a(5) of the act.

{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.
A water hardness value of 260,000 ug/L, analyzed from location SW-10 at Kalamazoo Lake, was used to calculate the GSI criteria.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volitalize under most conditions.

Table 5. Round 1 Groundwater Sampling Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-27	MW-28	MW-29	MW-30	MW-31	MW-32
Chloroethane	430	ID	5,700,000	440,000	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	14	78	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	20 (1)	19 (1)	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	390 (1)	370 (1)	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	16	12	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	5.1 (1)	17 (1)	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	42	58	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	5.2 (1)	6,000 (1,2)	8,200 (1,2)	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	5.5 (1)	ND	ND

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-33	MW-34S	MW-34D	MW-35	MW-36	MW-37S
Chloroethane	430	ID	5,700,000	440,000	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	1.7	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	4	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	16 (1)
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	1.5	ND	4.4	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	1.2	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	2.6
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	1.3
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	ND	9.8 (1)	ND	140 (1)	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND

Notes:

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.

ID = Insufficient data to develop criterion.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 7. Round 1 Groundwater Sampling Results - Village of Douglas - April 2003
Total Metals

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-27	MW-28	MW-29	MW-30	MW-31	MW-32
Arsenic	50 {A}	150 {X}	NLV	4,300	4	ND	1.3	1.5	ND	1.9
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	72	26	120	240	92	54
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	ND	ND	ND	ND
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	ND	ND	ND	ND	ND	7.3
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	100 {A}	11	NLV	460,000	ND	ND	ND	ND	ND	ND
Lead	4 {L}	14 {G,X}	NLV	ID	ND	ND	ND	ND	ND	3.3
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	ND	ND	ND	ND	ND	ND
Mercury	2 {A}	0.0013	56 {S}	56 {S}	ND	ND	ND	ND	ND	ND
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	ND	ND	ND	30
Zinc	2,400	270 {G}	NLV	110,000,000	ND	ND	32	36	13	210

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-33	MW-34S	MW-34D	MW-35	MW-36	MW-37S
Arsenic	50 {A}	150 {X}	NLV	4,300	ND	ND	ND	ND	ND	2.2
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	ND	12	75	48	70	51
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	170 (1,2)	ND	ND	0.71	ND
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	ND	ND	ND	ND	ND	ND
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	100 {A}	11	NLV	460,000	ND	ND	ND	ND	ND	ND
Lead	4 {L}	14 {G,X}	NLV	ID	ND	ND	ND	ND	ND	ND
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	ND	ND	ND	ND	ND	ND
Mercury	2 {A}	0.0013	56 {S}	56 {S}	ND	ND	ND	ND	ND	ND
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	ND	ND	ND	ND
Zinc	2,400	270 {G}	NLV	110,000,000	50	ND	ND	28	15	27

Notes:

Compounds not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section 20120a(5) of the act.

{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.
A water hardness value of 260,000 ug/L, analyzed from location SW-10 at Kalamazoo Lake, was used to calculate the GSI criteria.

{L} = Criteria for lead are derived using a biologically based model, as allowed for under section 20120a(10) of the act.

{S} = Criterion defaults to the hazardous substance-specific water solubility limit.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volitalize under most conditions.

Table 7. Round 1 Groundwater Sampling Results - Village of Douglas - April 2003
Total Metals

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	MW-37D	MW-D-103	MW-106	MW-107	MW-301I	MW-301D
Arsenic	50 {A}	150 {X}	NLV	4,300	2	1.4	ND	ND	2.7	ND
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	180	90	22	24	96	130
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	ND	ND	ND	ND
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	ND	ND	ND	ND	ND	ND
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	100 {A}	11	NLV	460,000	ND	ND	ND	ND	ND	ND
Lead	4 {L}	14 {G,X}	NLV	ID	ND	ND	ND	ND	3.1	ND
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	ND	ND	ND	ND	49	ND
Mercury	2 {A}	0.0013	56 {S}	56 {S}	ND	ND	ND	ND	ND	ND
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	45	47	ND	ND
Zinc	2,400	270 {G}	NLV	110,000,000	62	120	ND	10	180	140

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	MW-303D	MW-304I	MW-304D	MW-305I	MW-306I	MW-320I
Arsenic	50 {A}	150 {X}	NLV	4,300	1.9	4.1	5.5	22	15	ND
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	120	58	68	220	180	23
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	3.5 (2)	1.1	ND	ND
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	ND	ND	29	12	13	90
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	ND	ND	32 (2)	ND	ND
Hexavalent Chromium	100 {A}	11	NLV	460,000	ND	ND	ND	ND	ND	ND
Lead	4 {L}	14 {G,X}	NLV	ID	16 (1,2)	ND	27 (1,2)	21 (1,2)	ND	ND
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	280 (1)	1,100 (1)	65 (1)	7,700 (1,2)	50 (1)	ND
Mercury	2 {A}	0.0013	56 {S}	56 {S}	ND	ND	ND	ND	ND	ND
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	ND	ND	25	ND
Zinc	2,400	270 {G}	NLV	110,000,000	1,400 (2)	12	1,100 (2)	580 (2)	21	ND

Notes:

Compounds not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section 20120a(5) of the act.

{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.
A water hardness value of 260,000 ug/L, analyzed from location SW-10 at Kalamazoo Lake, was used to calculate the GSI criteria.

{L} = Criteria for lead are derived using a biologically based model, as allowed for under section 20120a(10) of the act.

{S} = Criterion defaults to the hazardous substance-specific water solubility limit.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volitalize under most conditions.

Table 7. Round 1 Groundwater Sampling Results - Village of Douglas - April 2003
Total Metals

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	MW-320D	MW-321I	MW-321D	MW-323I	MW-323D	MW-325S
Arsenic	50 {A}	150 {X}	NLV	4,300	ND	ND	1.8	ND	ND	ND
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	35	25	110	35	ND	17
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	ND	ND	ND	ND
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	43	ND	ND	ND	ND	ND
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	100 {A}	11	NLV	460,000	9	ND	ND	ND	ND	ND
Lead	4 {L}	14 {G,X}	NLV	ID	ND	ND	ND	ND	ND	ND
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	ND	ND	ND	ND	ND	ND
Mercury	2 {A}	0.0013	56 {S}	56 {S}	ND	ND	8.4 (1,2)	ND	ND	ND
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	ND	ND	ND	ND
Zinc	2,400	270 {G}	NLV	110,000,000	ND	ND	350 (2)	200	320 (2)	17

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	MW-325I	MW-325D	RW-1	RW-2	RW-3	RW-4
Arsenic	50 {A}	150 {X}	NLV	4,300	78 (1)	14	14	1.7	7	4.6
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	290	120	150	240	67	58
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	0.83	ND	ND	ND	ND	ND
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	43	ND	11	ND	ND	ND
Copper	1,000 {E}	20 {G}	NLV	7,400,000	88 (2)	ND	ND	ND	ND	ND
Hexavalent Chromium	100 {A}	11	NLV	460,000	ND	ND	ND	ND	ND	ND
Lead	4 {L}	14 {G,X}	NLV	ID	69 (1,2)	ND	ND	ND	3.4	ND
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	ND	ND	ND	ND	ND	ND
Mercury	2 {A}	0.0013	56 {S}	56 {S}	ND	ND	ND	ND	ND	ND
Nickel	100 {A}	120 {G}	NLV	74,000,000	75	ND	ND	ND	ND	ND
Zinc	2,400	270 {G}	NLV	110,000,000	600 (2)	ND	15	40	1,500 (2)	1,000 (2)

Notes:

Compounds not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section 20120a(5) of the act.

{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.
A water hardness value of 260,000 ug/L, analyzed from location SW-10 at Kalamazoo Lake, was used to calculate the GSI criteria.

{L} = Criteria for lead are derived using a biologically based model, as allowed for under section 20120a(10) of the act.

{S} = Criterion defaults to the hazardous substance-specific water solubility limit.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volitalize under most conditions.

Table 8. Wicks Creek Soil Investigation Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	DWPC	GSI	GCPC	DCC	SB-03-06 1-2'	SB-03-07 1-2'	SB-03-08 1-2'			
Methylene Chloride	100	19000 {X}	2300000 {C}	1,300,000	460 (1)*	410 (1)*	370 (1)*			

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per kilogram (ug/kg)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration excceds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Drinking Water Protection Criteria (DWPC)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Groundwater Contact Protection Criteria (GCPC)

(4) = Direct Contact Criteria (DCC)

{C} = Value presented is a screening level based on the chemical specific generic soil saturation concentration (Csat) since the calcultated risk based criterion is greater than Csat.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

* The levels of methylene chloride detected in these samples are most likely due to laboratory contamination and do not represent a contaminant risk at the site.

Table 9. Wicks Creek Soil Investigation Results - Village of Douglas - April 2003
Total Metals

Compound	Part 201 Criteria					Sample Location			
	Background	DWPC	GSI	GCPC	DCC	SB-03-06 1-2'	SB-03-07 1-2'	SB-03-08 1-2'	
Arsenic	5,800	23,000	70000 {X}	2,000,000	7,600	**1,500**	**840**	**1,400**	
Barium	75,000	1,300,000	790,000 {G,X}	1,000,000,000 {D}	37,000,000	**8,400**	**5,400**	**14,000**	
Cadmium	1,200	6,000	3,000 {G,X}	230,000,000	550,000	**68**	**50**	**92**	
Chromium	18,000	1,000,000,000 {D}	3,500,000,00 {G,X}	1,000,000,000 {D}	790,000,000	**2,600**	**3,400**	**3,600**	
Copper	32,000	5,800,000	120,000 {G}	1,000,000,000 {D}	20,000,000	**1,400**	**1,300**	**2,300**	
Lead	21,000	700,000	2,500,000 {G,M,X}	ID	400,000	**2,700**	**3,100**	**3,600**	
Manganese	440,000	1,000	72,000 {G,X}	180,000,000	25,000,000	**63,000 (1)**	**31,000 (1)**	**64,000 (1)**	
Mercury	130	1,700	100 {M}	47,000	160,000	**42**	**39**	**25**	
Nickel	20,000	100,000	120,000 {G}	1,000,000,000	40,000,000	**1,700**	**1,700**	**2,500**	
Zinc	47,000	2,400,000	260,000 {G}	1,000,000,000	170,000,000	**11,000**	**8,900**	**17,000**	

Notes:

Compounds that were not detected in any of the samples are not listed.

All results are reported in micrograms per kilogram (ug/kg)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Drinking Water Protection Criteria (DWPC)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Groundwater Contact Protection Criteria (GCPC)

(4) = Direct Contact Criteria (DCC)

{D} = Calculated criterion exceeds 100%, hence it is reduced to 100% or 1.0E+9 ppb.

{G} = Groudwater surface water interface criterion depends on the pH of water hardness, or both, of the receiving surface water.

{M} = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ID = Insufficient data to develop criterion.

Table 10. Wicks Creek Groundwater Investigation Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-01 VAS 4-6'	SB-03-01 VAS 9-11'	SB-03-01 VAS 14-16'	SB-03-02 VAS 11-13'	SB-03-02 VAS 16-18'	SB-03-02 VAS 21-23'
Benzene	5 {A}	200 {X}	5,600	11,000	ND	ND	ND	ND	ND	ND
Chloromethane	260	ID	8600	490,000	1.8	ND	ND	ND	2.6	1.9
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	4.7	20	22
1,1 - Dichloroethylene	70 {A}	65 {X}	200	11,000	ND	ND	1.2	1.2	11	12
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	12	36	50	3800 (1,2)	1200 (1,2)	1800 (1,2)
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	36	21	31
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	2.8	3.8	1.5	23 (1)	21 (1)
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND
1,1,1 - Trichlorethane	200 {A}	200	660,000	1300000 {S}	2.7	7.8	15	ND	23	3.3
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	240 (1,2)	2500 (1,2)	9300 (1,2)	310 (1,2)	2600 (1,2)	5800 (1,2)
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	14 (1)	ND

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-03 VAS 4-6'	SB-03-03 VAS 9-11'	SB-03-03 VAS 14-16'	SB-03-04 VAS 3-5'	SB-03-04 VAS 13-15'	SB-03-04 VAS 23-25'
Benzene	5 {A}	200 {X}	5,600	11,000	2.1	1.6	1.6	ND	ND	ND
Chloromethane	260	ID	8600	490,000	ND	ND	ND	1	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	130	150	120	2	2.1	ND
1,1 - Dichloroethylene	70 {A}	65 {X}	200	11,000	110 (1,2)	76 (1,2)	81 (1,2)	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	35000 (1,2)	30000 (1,2)	29000 (1,2)	470 (1)	370 (1)	30
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	3000 (1,2)	4100 (1,2)	2900 (1,2)	41	34	3.2
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	1.2	ND	1.4	ND	ND	ND
1,1,1 - Trichlorethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	690 (1,2)	150 (1)	130 (1)	27 (1)	6.9 (1)	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	560 (1,2)	86 (1,2)	150 (1,2)	ND	ND	ND

Notes:

Compounds not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 10. Wicks Creek Groundwater Investigation Results - Village of Douglas - April 2003
Volatile Organic Compunds

Compound	Part 201 Criteria									
	RCDW	GSI	GVII	GC	SB-03-05 VAS 3-5'	SB-03-05 VAS 7-9'	SB-03-05 VAS 11-13'	SB-03-06 VAS 3-5'		
Benzene	5 {A}	200 {X}	5,600	11,000	ND	ND	1.4	ND		
Chloromethane	260	ID	8600	490,000	ND	ND	ND	ND		
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	14	34	140	ND		
1,1 - Dichloroethylene	70 {A}	65 {X}	200	11,000	2.5	4.5	61	ND		
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	2400 (1,2)	6700 (1,2)	28000 (1,2)	2.5		
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	310 (1)	660 (1)	4200 (1,2)	ND		
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND		
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND		
1,1,1 - Trichlorethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND		
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	3.6	9.4 (1)	1.4	ND		
Vinyl Chloride	2 {A}	15	1,100	1,000	16 (1,2)	110 (1,2)	560 (1,2)	4 (1)		

Notes:

Compounds not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 11. Wicks Creek Groundwater Investigation Results - Village of Douglas - April 2003
Total and Dissolved Metals

Compound - (Total Metals)	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-01 VAS 4-6'	SB-03-01 VAS 9-11'	SB-03-01 VAS 14-16'	SB-03-02 VAS 11-13'	SB-03-02 VAS 16-18'	SB-03-02 VAS 21-23'
Arsenic	50 {A}	150 {X{	NLV	4,300	43	ND	2.2	6.1	5.4	2.6
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	210	20	35	160	150	110
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	0.61	ND	ND	ND	ND	ND
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	90	ND	ND	24	35	49
Copper	1,000 {E}	20 {G}	NLV	7,400,000	76 (2)	ND	ND	11	13	16
Lead	4 {L}	14 {G,X}	NLV	ID	51 (1,2)	ND	ND	4.9 (1)	4.1 (1)	ND
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	1600 (1)	82 (1)	100 (1)	200 (1)	480 (1)	110 (1)
Nickel	100 {A}	120 {G}	NLV	74,000,000	86	ND	ND	ND	ND	ND
Selenium	50 {A}	5	NLV	970,000	ND	ND	ND	ND	ND	ND
Zinc	2,400	270 {G}	NLV	110,000,000	190	ND	ND	30	34	30

Compound - (Total Metals)	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-03 VAS 4-6'	SB-03-03 VAS 9-11'	SB-03-03 VAS 14-16'	SB-03-04 VAS 3-5'	SB-03-04 VAS 13-15'	SB-03-04 VAS 23-25'
Arsenic	50 {A}	150 {X{	NLV	4,300	2.6	15	32	ND	12	24
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	50	42	140	26	160	2400 (1,2)
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	1.2	ND	ND	ND	ND	9.1 (1,2)
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	ND	ND	ND	ND	59	8.9
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	ND	ND	ND	42 (2)	ND
Lead	4 {L}	14 {G,X}	NLV	ID	ND	ND	ND	ND	22 (1,2)	ND
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	260 (1)	260 (1)	210 (1)	200 (1)	1200 (1)	33,000 (1,2)
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	ND	ND	51	390 (1,2)
Selenium	50 {A}	5	NLV	970,000	ND	ND	ND	ND	ND	4.5
Zinc	2,400	270 {G}	NLV	110,000,000	ND	ND	ND	ND	100	370 (2)

Notes:

Compounds that were not detected in any of the samples are not listed.

All results are reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.

{G} = Groudwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.

{L} = Criterion for lead are derived using a biologically based model, as allowed for under section 20120a(10) of the act.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ID = Insufficient data to develop criterion.

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volatalize under most conditions.

Table 11. Wicks Creek Groundwater Investigation Results - Village of Douglas - April 2003
Total and Dissolved Metals

Compound - (Total Metals)	Part 201 Criteria									
	RCDW	GSI	GVII	GC	SB-03-05 VAS 3-5'	SB-03-05 VAS 7-9'	SB-03-05 VAS 11-13'	SB-03-06 VAS 3-5'		
Arsenic	50 {A}	150 {X{	NLV	4,300	28	13	4.3	5.9		
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	29	150	160	160		
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	ND	ND	ND	ND		
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	ND	13	ND	ND		
Copper	1,000 {E}	20 {G}	NLV	7,400,000	ND	12	ND	ND		
Lead	4 {L}	14 {G,X}	NLV	ID	ND	7.6 (1)	5.7 (1)	ND		
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	73 (1)	290 (1)	200 (1)	4,000 (1,2)		
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	ND	ND		
Selenium	50 {A}	5	NLV	970,000	ND	ND	ND	ND		
Zinc	2,400	270 {G}	NLV	110,000,000	ND	31	21	ND		

Compound - (Dissolved Metals)	Part 201 Criteria									
	RCDW	GSI	GVII	GC	SB-03-01 VS 4-6'	SB-03-02 VAS 11-13'	SB-03-04 VAS 13-15'	SB-03-04 VS 23-25'		
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	13	71	19	440		
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	100 (1)	64 (1)	380 (1)	2,200 (1)		
Zinc	2,400	270 {G}	NLV	110,000,000	ND	ND	ND	19		

Notes:

Compounds that were not detected in any of the samples are not listed.

All results are reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.

{G} = Groudwater surface water interface criterion depends on the pH of water hardness, or both, of the receiving surface water.

{L} = Criterion for lead are derived using a biologically based model, as allowed for under section 20120a(10) of the act.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ID = Insufficient data to develop criterion.

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volatalize under most conditions.

Table 12. Plume Groundwater Investigation Results - Village of Douglas - April and July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	GP-03-01 VAS 28-30	GP-03-01 VAS 38-40	GP-03-02 VAS 28-30	GP-03-02 VAS 38-40	SB-03-09 40-45'	SB-03-09 43-48'
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	ND	5.6	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	23	ND	ND	ND
Methylene Chloride	5 {A}	940 {X}	220,000	220,000	ND	ND	ND	8 (1)	ND	ND
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	1.3	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	4.7	ND
1,1,1-Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	ND	ND	8.8 (1)	ND	ND

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-10 30-35'	SB-03-10 33-38'	SB-03-11 28-33'	SB-03-11 35-40'	SB-03-12 29-34'	
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	1.7	2.8	2	ND	
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	18	10	57	170 (1)	ND	
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	3.7	1.8	ND	1.7	ND	
Methylene Chloride	5 {A}	940 {X}	220,000	220,000	ND	ND	ND	ND	ND	
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	2.3	ND	
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	5.2	3.1	6.1	9.8	3.8	
1,1,1-Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	1.8	6.3	ND	
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	190 (1)	310 (1,2)	1,200 (1,2)	1.7	

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 13. Source Area Soil Investigation R... - Village of Douglas - July 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	DWPC	GSI	GCPC	DCC	SB-03-13 10-12.5'	SB-03-13 35-37.5'	SB-03-14 30-32.5'	SB-03-14 40-42.5'	SB-03-15 5-7.5'	SB-03-15 10-12.5'
n-Butylbenzene	1,600	ID	120,000	2,500,000	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,500	360	140000 {C}	140000 {C}	ND	ND	ND	ND	ND	ND
Trichloroethylene	100	4,000 {X}	440,000	500,000 {C,DD}	ND	ND	75	310 (1)	ND	ND
1,2,4-Trimethylbenzene	2,100	570	110,000 {C}	110,000 {C}	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	1,800	1,100	94,000 {C}	94,000 {C}	ND	ND	ND	ND	ND	ND
m&p-Xylene	5,600	700	150,000 {C}	150,000 {C}	ND	ND	ND	ND	ND	ND
o-Xylene	5,600	700	150,000 {C}	150,000 {C}	ND	ND	ND	ND	ND	ND

Compound	Part 201 Criteria				Sample Location					
	DWPC	GSI	GCPC	DCC	SB-03-16 12.5-15'	SB-03-16 37.5-40'	SB-03-17 5-7.5'	SB-03-17 7.5-10'	SB-03-18 5-7.5'	SB-03-18 10-12.5'
n-Butylbenzene	1,600	ID	120,000	2,500,000	ND	ND	ND	ND	ND	ND
Ethylbenzene	1,500	360	140000 {C}	140000 {C}	ND	ND	ND	ND	ND	ND
Trichloroethylene	100	4,000 {X}	440,000	500,000 {C,DD}	420 (1)	600 (1)	ND	ND	ND	ND
1,2,4-Trimethylbenzene	2,100	570	110,000 {C}	110,000 {C}	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	1,800	1,100	94,000 {C}	94,000 {C}	ND	ND	ND	ND	ND	ND
m&p-Xylene	5,600	700	150,000 {C}	150,000 {C}	ND	ND	ND	ND	ND	ND
o-Xylene	5,600	700	150,000 {C}	150,000 {C}	ND	ND	ND	ND	ND	ND

Compound	Part 201 Criteria				Sample Location					
	DWPC	GSI	GCPC	DCC	SB-03-19 2.5-5'	SB-03-19 5-7.5'	SB-03-20 7.5-10'	SB-03-20 10-12.5'		
n-Butylbenzene	1,600	ID	120,000	2,500,000	ND	ND	100	91		
Ethylbenzene	1,500	360	140000 {C}	140000 {C}	ND	ND	160	ND		
Trichloroethylene	100	4,000 {X}	440,000	500,000 {C,DD}	ND	ND	ND	110 (1)		
1,2,4-Trimethylbenzene	2,100	570	110,000 {C}	110,000 {C}	ND	ND	240	74		
1,3,5-Trimethylbenzene	1,800	1,100	94,000 {C}	94,000 {C}	ND	ND	91	ND		
m&p-Xylene	5,600	700	150,000 {C}	150,000 {C}	ND	ND	730 (2)	ND		
o-Xylene	5,600	700	150,000 {C}	150,000 {C}	ND	ND	120	ND		

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per kilogram (ug/kg)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Drinking Water Protection Criteria (DWPC)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Groundwater Contact Protection Criteria (GCPC)
(4) = Direct Contact Criteria (DCC)
{C} = Value presented is a screening level based on the chemical specific generic soil saturation concentration (Csat) since the calcultated risk based criterion is greater than Csat.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
{DD} = Hazardous substance causes developmental effects.
ID = Insufficient data to develop criterion
ND = Not detected above Method Detection Limit (MDL).

Table 14. Source Area Soil Investigation Results - Village of Douglas - July 2003
Semi-Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	DWPC	GSI	GCPC	DCC	SB-03-13 10-12.5'	SB-03-13 35-37.5'	SB-03-14 30-32.5'	SB-03-14 40-42.5'	SB-03-15 5-7.5'	SB-03-15 10-12.5'
Benzo(a)anthracene	NLL	NLL	NLL	20,000	ND	ND	ND	ND	ND	ND
Benzo(g,h,I)perylene	NLL	NLL	NLL	2,500,000	ND	ND	ND	ND	ND	ND
Butylbenzyl phthalate	310,000 {C}	26,000 {X}	310,000 {C}	310,000 {C}	ND	ND	ND	ND	ND	ND
Chrysene	NLL	NLL	NLL	2,000,000	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	NLL	NLL	NLL	2,800,000	ND	**300**	ND	ND	ND	ND
Di-n-butyl phthalate	760,000 {C}	11,000	760,000 {C}	760,000 {C}	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	7400	7,600	10,000,000	1,100,000	ND	ND	ND	ND	ND	ND
Fluoranthene	730,000	5,500	730,000	4,600,000	ND	ND	ND	ND	**2400**	**180**
Ideno(1,2,3-cd)pyrene	NLL	NLL	NLL	20,000	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	57,000	ID	5,500,000	8,100,000	ND	ND	ND	ND	ND	ND
Phenanthrene	56,000	5,300	1,100,000	1,600,000	ND	ND	ND	ND	**1600**	**130**
Pyrene	480,000	ID	480,000	29,000,000	ND	ND	ND	ND	**2000**	**140**

Compound	Part 201 Criteria				Sample Location					
	DWPC	GSI	GCPC	DCC	SB-03-16 12.5-15'	SB-03-16 37.5-40'	SB-03-17 5-7.5'	SB-03-17 7.5-10'	SB-03-18 5-7.5'	SB-03-18 10-12.5'
Benzo(a)anthracene	NLL	NLL	NLL	20,000	ND	ND	ND	ND	ND	ND
Benzo(g,h,I)perylene	NLL	NLL	NLL	2,500,000	ND	ND	ND	ND	ND	ND
Butylbenzyl phthalate	310,000 {C}	26,000 {X}	310,000 {C}	310,000 {C}	ND	ND	ND	ND	ND	ND
Chrysene	NLL	NLL	NLL	2,000,000	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	NLL	NLL	NLL	2,800,000	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	760,000 {C}	11,000	760,000 {C}	760,000 {C}	ND	ND	ND	**160**	ND	ND
2,4-Dimethylphenol	7400	7,600	10,000,000	1,100,000	ND	ND	ND	ND	ND	ND
Fluoranthene	730,000	5,500	730,000	4,600,000	ND	ND	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	NLL	NLL	NLL	20,000	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	57,000	ID	5,500,000	8,100,000	ND	ND	ND	ND	ND	ND
Phenanthrene	56,000	5,300	1,100,000	1,600,000	ND	ND	ND	ND	ND	ND
Pyrene	480,000	ID	480,000	29,000,000	ND	ND	ND	ND	ND	ND

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per kilogram (ug/kg)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Drinking Water Protection Criteria (DWPC)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Groundwater Contact Protection Criteria (GCPC)
(4) = Direct Contact Criteria (DCC)
{C} = Value presented is a screening level based on the chemical specific generic soil saturation concentration (Csat) since the calcultated risk based criterion is greater than Csat.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ID = Insufficient data to develop criterion
ND = Not detected above Method Detection Limit (MDL).
NLL = Hazardous substance not likely to leach under most soil conditions.

Table 14. Source Area Soil Investigation Results - Village of Douglas - July 2003
Semi-Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	DWPC	GSI	GCPC	DCC	SB-03-19 2.5-5'	SB-03-19 5-7.5'	SB-03-20 7.5-10'	SB-03-20 10-12.5'		
Benzo(a)anthracene	NLL	NLL	NLL	20,000	ND	ND	**300**	ND		
Benzo(g,h,I)perylene	NLL	NLL	NLL	2,500,000	ND	ND	**450**	ND		
Butylbenzyl phthalate	310,000 {C}	26,000 {X}	310,000 {C}	310,000 {C}	ND	ND	**360**	ND		
Chrysene	NLL	NLL	NLL	2,000,000	ND	ND	**530**	ND		
bis(2-Ethylhexyl)phthalate	NLL	NLL	NLL	2,800,000	ND	ND	**4000**	**730**		
Di-n-butyl phthalate	760,000 {C}	11,000	760,000 {C}	760,000 {C}	ND	ND	ND	ND		
2,4-Dimethylphenol	7400	7,600	10,000,000	1,100,000	ND	ND	**930**	ND		
Fluoranthene	730,000	5,500	730,000	4,600,000	ND	ND	**930**	ND		
Ideno(1,2,3-cd)pyrene	NLL	NLL	NLL	20,000	ND	ND	**430**	ND		
2-Methylnaphthalene	57,000	ID	5,500,000	8,100,000	ND	ND	ND	**350**		
Phenanthrene	56,000	5,300	1,100,000	1,600,000	ND	ND	**710**	**220**		
Pyrene	480,000	ID	480,000	29,000,000	ND	ND	ND	ND		

Notes:

Compounds that were not detected in any sample are not listed.

All results reported in micrograms per kilogram (ug/kg)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Drinking Water Protection Criteria (DWPC)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Groundwater Contact Protection Criteria (GCPC)

(4) = Direct Contact Criteria (DCC)

{C} = Value presented is a screening level based on the chemical specific generic soil saturation concentration (Csat) since the calcultated risk based criterion is greater than Csat.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ID = Insufficient data to develop criterion

ND = Not detected above Method Detection Limit (MDL).

NLL = Hazardous substance not likely to leach under most soil conditions.

Table 15. Source Area Soil Investigation Results - Village of Douglas - July 2003
Total Metals

Compound	Part 201 Criteria					Sample Location					
	Background	DWPC	GSI	GCPC	DCC	SB-03-13 10-12.5'	SB-03-13 35-37.5'	SB-03-14 30-32.5'	SB-03-14 40-42.5'	SB-03-15 5-7.5'	SB-03-15 10-12.5'
Arsenic	5,800	23,000	70000 {X}	2,000,000	7,600	1,100	700	900	800	3,800	4,800
Barium	75,000	1,300,000	790,000 {G,X}	1,000,000,000 {D}	37,000,000	6,600	3,100	2,700	3,000	34,000	4,500
Cadmium	1,200	6,000	3,000 {G,X}	230,000,000	550,000	ND	ND	ND	ND	ND	ND
Chromium	18,000	1,000,000,000 {D}	3,500,000,000 {G,X}	1,000,000,000 {D}	790,000,000	2,700	2,600	ND	ND	11,000	2,900
Copper	32,000	5,800,000	120,000 {G}	1,000,000,000 {D}	20,000,000	3,700	ND	2,200	2,200	11,000	3,200
Hexavalent Chromium	18,000	30,000	3,300	140,000,000	2,500,000	ND	ND	ND	ND	ND	ND
Lead	21,000	700,000	2,500,000{G,M,X}	ID	400,000	ND	ND	ND	ND	9,000	ND
Manganese	440,000	1,000	72,000 {G,X}	180,000,000	25,000,000	80,000	53,000	32,000	51,000	200,000	73,000
Nickel	20,000	100,000	120,000 {G}	1,000,000,000	40,000,000	ND	ND	ND	ND	9,300	ND
Zinc	47,000	2,400,000	260,000 {G}	1,000,000,000	170,000,000	11,000	5,100	ND	ND	190,000	9,600

Compound	Part 201 Criteria					Sample Location					
	Background	DWPC	GSI	GCPC	DCC	SB-03-16 12.5-15'	SB-03-16 37.5-40'	SB-03-17 5-7.5'	SB-03-17 7.5-10'	SB-03-18 5-7.5'	SB-03-18 10-12.5'
Arsenic	5,800	23,000	70000 {X}	2,000,000	7,600	1,100	600	1,700	1,100	1,600	1,000
Barium	75,000	1,300,000	790,000 {G,X}	1,000,000,000 {D}	37,000,000	4,100	2,900	14,000	17,000	13,000	6,400
Cadmium	1,200	6,000	3,000 {G,X}	230,000,000	550,000	ND	ND	ND	ND	ND	ND
Chromium	18,000	1,000,000,000 {D}	3,500,000,000 {G,X}	1,000,000,000 {D}	790,000,000	ND	ND	4,700	6,900	4,000	3,500
Copper	32,000	5,800,000	120,000 {G}	1,000,000,000 {D}	20,000,000	2,600	ND	5,300	8,500	3,000	2,900
Hexavalent Chromium	18,000	30,000	3,300	140,000,000	2,500,000	ND	ND	ND	ND	ND	ND
Lead	21,000	700,000	2,500,000{G,M,X}	ID	400,000	ND	ND	ND	ND	ND	ND
Manganese	440,000	1,000	72,000 {G,X}	180,000,000	25,000,000	50,000	45,000	44,000	150,000	86,000	77,000
Nickel	20,000	100,000	120,000 {G}	1,000,000,000	40,000,000	ND	ND	5,000	8,400	ND	ND
Zinc	47,000	2,400,000	260,000 {G}	1,000,000,000	170,000,000	6,300	ND	17,000	23,000	9,100	8,300

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per kilogram (ug/kg)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Drinking Water Protection Criteria (DWPC)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Groundwater Contact Protection Criteria (GCPC)

(4) = Direct Contact Criteria (DCC)

Manganese Concentrations are below State Background.

{D} = Calculated criterion exceeds 100%, hence it is reduced to 100% or 1.0E+9 ppb.

{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.

A water hardness value of 260,000 ug/L, analyzed from location SW-10 at Kalamazoo Lake, was used to calculate the GSI criteria.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ID = Insufficient data to develop criterion

ND = Not detected above Method Detection Limit (MDL).

NLL = Hazardous substance not likely to leach under most soil conditions.

Table 15. Source Area Soil Investigation Results - Village of Douglas - July 2003
Total Metals

Compound	Part 201 Criteria					Sample Location					
	Background	DWPC	GSI	GCPC	DCC	SB-03-19 2.5-5'	SB-03-19 5-7.5'	SB-03-20 7.5-10'	SB-03-20 10-12.5'		
Arsenic	5,800	23,000	70000 {X}	2,000,000	7,600	1,700	1,000	3,500	1,200		
Barium	75,000	1,300,000	790,000 {G,X}	1,000,000,000 {D}	37,000,000	26,000	12,000	770,000	26,000		
Cadmium	1,200	6,000	3,000 {G,X}	230,000,000	550,000	ND	ND	7,400 (1,2)	ND		
Chromium	18,000	1,000,000,000 {D}	3,500,000,000 {G,X}	1,000,000,000 {D}	790,000,000	4,500	4,300	210,000	68,000		
Copper	32,000	5,800,000	120,000 {G}	1,000,000,000 {D}	20,000,000	3,500	3,900	54,000	47,000		
Hexavalent Chromium	18,000	30,000	3,300	140,000,000	2,500,000	930	ND	ND	ND		
Lead	21,000	700,000	2,500,000{G,M,X}	ID	400,000	5,100	ND	120,000	9,000		
Manganese	440,000	1,000	72,000 {G,X}	180,000,000	25,000,000	210,000	26,000	170,000	85,000		
Nickel	20,000	100,000	120,000 {G}	1,000,000,000	40,000,000	ND	ND	130,000 (1,2)	76,000		
Zinc	47,000	2,400,000	260,000 {G}	1,000,000,000	170,000,000	26,000	8,900	6,500,000 (1,2)	3,400,000 (1,2)		

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per kilogram (ug/kg)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration excceds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Drinking Water Protection Criteria (DWPC)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Groundwater Contact Protection Criteria (GCPC)
(4) = Direct Contact Criteria (DCC)
Manganese Concentrations are below State Background.
{D} = Calculated criterion exceeds 100%, hence it is reduced to 100% or 1.0E+9 ppb.
{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.
A water hardness value of 260,000 ug/L, analyzed from location SW-10 at Kalamazoo Lake, was used to calculate the GSI criteria.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ID = Insufficient data to develop criterion
ND = Not detected above Method Detection Limit (MDL).
NLL = Hazardous substance not likely to leach under most soil conditions.

Table 16. Source Groundwater Investigation Resu. .lage of Douglas - July 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-13 48-50'	SB-03-14 48-50'	SB-03-15 10-12'	SB-03-16 43-45'	SB-03-17 10-12'	SB-03-18 12-14'
1,1-Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	11	ND	ND	ND
1,2-Dichloroethane	5 {A}	360 {X}	9,600	19,000	ND	ND	ND	1.8	ND	ND
1,1-Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	2.9	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	110 (1)	1.1	44	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	ND	ND	ND	ND	ND
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	1.5	ND	12 (1)	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	2.5	1.9	ND	ND	ND	ND
1,1,1-Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	2.9	ND	32	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	1.4	330 (1,2)	ND	2,600 (1,2)	7.3 (1)	ND
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	23 (1,2)	ND	ND	ND
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-19 7-9'	SB-03-20 9-11'				
1,1-Dichloroethane	880	740	1,000,000	2,400,000	ND	ND				
1,2-Dichloroethane	5 {A}	360 {X}	9,600	19,000	ND	ND				
1,1-Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND				
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	1.2	4.7				
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	1.3				
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	26 (2)				
n-Propylbenzene	80	ID	ID	15,000	ND	2.7				
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND				
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	4.3				
1,1,1-Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND				
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	6.7 (1)				
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	15				
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	3.5				
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	1.9				
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	74 (2)				
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	19				

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 17. Source Groundwater Investigation Results - Village of Douglas - July 2003
Semi-Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-17 10-12'	SB-03-18 12-14'	SB-03-19 7-9'	SB-03-20 9-11'		
2,4-Dimethylphenol	370	380	NLV	520,000	ND	ND	ND	62		

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)
(4) = Groundwater Contact Criteria (GC)
ND = Not detected above Method Detection Limit (MDL).
NLV = Hazardous substance not likely to volatilize.

Table 18. Source Groundwater Investigation Results - Village of Douglas - July 2003
Total and Dissolved Metals

Compound - Total Metals	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-17 10-12'	SB-03-18 12-14'	SB-03-19 7-9'	SB-03-20 9-11'		
Arsenic	50 {A}	150 {X}	NLV	4,300	60 (1)	64 (1)	ND	2.2		
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	1,500 (2)	550	47	18		
Cadmium	5 {A}	2.5 {G,X}	NLV	190,000	5.5 (1,2)	3	ND	0.47		
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	270 (1,2)	200 (1,2)	ND	21		
Copper	1,000 {E}	20 {G}	NLV	7,400,000	330 (2)	160 (2)	3.5	13		
Hexavalent Chromium	100 {A}	11	NLV	460,000	8	ND	ND	8		
Lead	4 {L}	14 {G,X}	NLV	ID	160 (1,2)	90 (1,2)	ND	2.8		
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	21,000 (1,2)	7,800 (1,2)	61 (1)	520 (1)		
Nickel	100 {A}	120 {G}	NLV	74,000,000	430 (1,2)	190 (1,2)	6.3	100		
Selenium	50 {A}	5	NLV	970,000	ND	ND	2.9	ND		
Zinc	2,400	270 {G}	NLV	110,000,000	920 (2)	440 (2)	ND	940 (2)		

Compound - Dissolved Metals	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	SB-03-17 10-12'	SB-03-18 12-14'	SB-03-19 7-9'	SB-03-20 9-11'		
Arsenic	50 {A}	150 {X}	NLV	4,300	ND	ND	ND	2.3		
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	40	41	48	ND		
Copper	1,000 {E}	20 {G}	NLV	7,400,000	1.3	1.6	2.2	ND		
Hexavalent Chromium	100 {A}	11	NLV	460,000	ND	ND	ND	9		
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	620 (1)	940 (1)	54 (1)	500 (1)		
Mercury	2.0 {A}	0.0013	56 {S}	56 {S}	0.5 (2)	0.3 (2)	ND	ND		
Nickel	100 {A}	120 {G}	NLV	74,000,000	5.8	6.9	4.7	94		
Selenium	50 {A}	5	NLV	970,000	ND	ND	2.2	ND		

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section 20120a(5) of the act; Health based criterion for manganese is 860ug/L.

{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.

{L} = Criteria for lead are derived using a biologically based model, as allowed for under section 20120a(10) of the act.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

NA = Sample not analyzed for this criteria.

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volitalize under most conditions.

Table 19. Round 2 Surface Water Sampling Results - Village of Douglas - July 2003
Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6	SW-7
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	4.1
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	46	ND	ND	350 (1)	190 (1)	52	1.2
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	5.7 (1)	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	1.3	ND	ND	13	5.3	1.4	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	160 (1)	ND	ND	1,600 (1,2)	700 (1,2)	180 (1)	1.7
Vinyl Chloride	2 {A}	15	1,100	1,000	2.2 (1)	ND	ND	37 (1,2)	20 (1,2)	4.2 (1)	ND

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	SW-8	SW-9	SW-10	SW-11	SW-12	SW-13	
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND\	ND	
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	1.4	3.9	ND	ND	
Tetrachloroethene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND	
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	1.1	4.9	2.8	ND	ND	
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 20. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	MW-27	MW-28	MW-29	MW-30	MW-31	MW-32	MW-33
Bromodichloromethane	100 {A,W}	ID	4,800	14,000	ND	ND	ND	ND	ND	ND	2.5
sec-Butylbenzene	80	ID	ID	4,400	ND	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND	8.8
Dibromochloromethane	100 {A,W}	ID	14,000	18,000	ND	ND	ND	ND	ND	ND	1.1
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	67	110 (1)	ND	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	ND	ND	ND	ND	ND	ND
Isopropbenzene	800	ID	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene					ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	260	ID	ID	25,000 {S}	ND	ND	ND	ND	ND	ND	ND
Napthalene	520	13	31,000 {S}	31,000 {S}	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	ND	ND	ND	ND
Styrene	100 {A}	80	170,000	9,700	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	2	4,300 (1,2)	ND	ND	ND	ND
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)
(4) = Groundwater Contact Criteria (GC)
{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.
{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.
ID = Insufficient data to develop criterion.
{S} = Criterion defaults to the hazardous substance specific water quality solubility.
{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ND = Not detected above Method Detection Limit (MDL).

Table 20. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	MW-34S	MW-34D	MW-35	MW-36	MW-37S	MW-37D	MW-D-103
Bromodichloromethane	100 {A,W}	ID	4,800	14,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	80	ID	ID	4,400	ND	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100 {A,W}	ID	14,000	18,000	ND	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	1	4.6	ND	ND	6.3	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	94 (1,2)
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	1.9	ND	ND	ND	24	850 (1,2)
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	200 (1)
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	800	ID	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene					ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	260	ID	ID	25,000 {S}	ND	ND	ND	ND	ND	ND	ND
Napthalene	520	13	31,000 {S}	31,000 {S}	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	ND	ND	ND	ND
Styrene	100 {A}	80	170,000	9,700	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	2.9	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	2.9	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	8.9 (1)	ND	ND	2	60 (1)	13,000 (1,2)
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	3.3 (1)	ND
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND

Notes:
Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)
(4) = Groundwater Contact Criteria (GC)
{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.
{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.
ID = Insufficient data to develop criterion.
{S} = Criterion defaults to the hazardous substance specific water quality solubility.
{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ND = Not detected above Method Detection Limit (MDL).

Table 20. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	MW-106	MW-107	MW-301I	MW-301D	MW-302I	MW-303I	MW-303D
Bromodichloromethane	100 {A,W}	ID	4,800	14,000	ND	1.4	1.6	2.3	ND	ND	ND
sec-Butylbenzene	80	ID	ID	4,400	ND	ND	ND	ND	8.5	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	5.1	8.1	8.7	ND	ND	ND
Dibromochloromethane	100 {A,W}	ID	14,000	18,000	ND	ND	ND	1.2	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	160
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	1.4	1.2	ND	ND	2.1	ND	1,100 (1,2)
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	ND	ND	ND	620 (1,2)	ND	ND
Isopropylbenzene	800	ID	56,000 {S}	56,000 {S}	ND	ND	ND	ND	48	ND	ND
p-Isopropyltoluene					ND	ND	ND	ND	2.5	ND	ND
2-Methylnapthalene	260	ID	ID	25,000 {S}	ND	ND	ND	ND	85	ND	ND
Napthalene	520	13	31,000 {S}	31,000 {S}	ND	ND	ND	ND	190 (2)	ND	ND
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	ND	140 (1)	ND	ND
Styrene	100 {A}	80	170,000	9,700	ND	ND	ND	ND	1.3	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	110 (1,2)
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	8.1	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND	210 (1,2)
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	12 (1)	7.4 (1)	ND	ND	8.9 (1)	4.8	23,000 (1,2,3,4)
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	ND	ND	ND	1,000 (1,2)	ND	ND
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	ND	260 (1,2)	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	1,300 (1,2)	ND	ND
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	270 (1,2)	ND	ND

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.

ID = Insufficient data to develop criterion.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 20. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	MW-304I	MW-304D	MW-305I	MW-306I	MW-320I	MW-320D	MW-321I
Bromodichloromethane	100 {A,W}	ID	4,800	14,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	80	ID	ID	4,400	ND	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100 {A,W}	ID	14,000	18,000	ND	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	8.9 (1)	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	160 (1)	410 (1)	23	ND	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	800	ID	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene					ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	260	ID	ID	25,000 {S}	ND	ND	ND	ND	ND	ND	ND
Napthalene	520	13	31,000 {S}	31,000 {S}	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	ND	ND	ND	ND
Styrene	100 {A}	80	170,000	9,700	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	17 (1)	ND	ND	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	110	26	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	1,400 (1,2)	9,600 (1,2)	4,000 (1,2)	720 (1,2)	7.6 (1)	9.7 (1)	4.9
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)
(4) = Groundwater Contact Criteria (GC)
{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.
{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.
ID = Insufficient data to develop criterion.
{S} = Criterion defaults to the hazardous substance specific water quality solubility.
{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ND = Not detected above Method Detection Limit (MDL).

Table 20. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	MW-321D	MW-323I	MW-323D	MW-324R	MW-325S	MW-325I	MW-325D
Bromodichloromethane	100 {A,W}	ID	4,800	14,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	80	ID	ID	4,400	ND	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100 {A,W}	ID	14,000	18,000	ND	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	12	ND	8.1	220 (1)	ND	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	ND	ND	ND	ND	ND	ND
Isoproplbenzene	800	ID	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene					ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	260	ID	ID	25,000 {S}	ND	ND	ND	ND	ND	ND	ND
Napthalene	520	13	31,000 {S}	31,000 {S}	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	ND	ND	ND	ND
Styrene	100 {A}	80	170,000	9,700	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	770 (1,2)	ND	8.7 (1)	7,700 (1,2)	ND	ND	ND
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	1.2	ND	ND	ND	ND
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)
(4) = Groundwater Contact Criteria (GC)
{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.
{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.
ID = Insufficient data to develop criterion.
{S} = Criterion defaults to the hazardous substance specific water quality solubility.
{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ND = Not detected above Method Detection Limit (MDL).

Table 20. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	MW-03-01	MW-03-02	MW-03-03	MW-03-04	MW-03-05	MW-03-06	MW-03-07
Bromodichloromethane	100 {A,W}	ID	4,800	14,000	**2**	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	80	ID	ID	4,400	ND	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	**7.8**	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100 {A,W}	ID	14,000	18,000	**1.1**	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	**3.4**	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	ND	ND	ND	ND	ND	ND	ND
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	ND	ND	ND	ND	ND	ND
Isoproplbenzene	800	ID	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene					ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	260	ID	ID	25,000 {S}	ND	ND	ND	ND	ND	ND	ND
Napthalene	520	13	31,000 {S}	31,000 {S}	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	ND	ND	ND	ND
Styrene	100 {A}	80	170,000	9,700	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	ND	ND	**52 (1)**	ND	**3.3**	**1.5**	**1.1**
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	ND	ND	ND	ND

Notes:

Compounds that were not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

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ID = Insufficient data to develop criterion.

{S} = Criterion defaults to the hazardous substance specific water quality solubility.

{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ND = Not detected above Method Detection Limit (MDL).

Table 20. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	MW-03-08	MW-03-09	MW-03-10	MW-03-11	MW-03-12	MW-03-13	MW-03-14
Bromodichloromethane	100 {A,W}	ID	4,800	14,000	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	80	ID	ID	4,400	ND	ND	ND	ND	ND	ND	ND
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	100 {A,W}	ID	14,000	18,000	ND	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	ND
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	**4.5**	ND	**82 (1)**	**140 (1)**	**280 (1)**	ND	**3.4**
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	**1**	ND	ND	ND	ND	ND	ND
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	ND	ND	ND	**28**	ND	ND	ND
Isopropylbenzene	800	ID	56,000 {S}	56,000 {S}	ND	ND	ND	**1.8**	ND	ND	ND
p-Isopropyltoluene					ND	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	260	ID	ID	25,000 {S}	ND	ND	ND	ND	ND	ND	ND
Napthalene	520	13	31,000 {S}	31,000 {S}	ND	ND	ND	**7.8**	ND	ND	ND
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	**5.4**	ND	ND	ND
Styrene	100 {A}	80	170,000	9,700	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	ND
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND	ND
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	**180 (1)**	**2.2**	**360 (1,2)**	**140 (1)**	**8,200 (1,2)**	**13 (1)**	**20 (1)**
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	ND	ND	ND	**48 (2)**	ND	ND	ND
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	**12**	ND	ND	ND
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	**67 (2)**	ND	ND	ND
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	ND	ND	ND	**10 (2)**	ND	ND	ND

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
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ID = Insufficient data to develop criterion.
{S} = Criterion defaults to the hazardous substance specific water quality solubility.
{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ND = Not detected above Method Detection Limit (MDL).

Table 20. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Volatile Organic Compounds

Compound	Part 201 Criteria				Sample Location						
	RCDW	GSI	GVII	GC	RW-1	RW-2	RW-3	RW-4	RES-1	IRRIGATION WELL	
Bromodichloromethane	100 {A,W}	ID	4,800	14,000	ND	ND	ND	ND	2.2	ND	
sec-Butylbenzene	80	ID	ID	4,400	ND	ND	ND	ND	ND	ND	
Chloroform	100 {A,W}	170 {X}	28,000	150,000	ND	ND	ND	ND	8.2	7.4	
Dibromochloromethane	100 {A,W}	ID	14,000	18,000	ND	ND	ND	ND	1.2	1.1	
1,1 - Dichloroethane	880	740	1,000,000	2,400,000	ND	ND	ND	ND	ND	ND	
1,1 - Dichloroethylene	7 {A}	65 {X}	200	11,000	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethylene	70 {A}	620	93,000	200,000	2.8	11	1,800 (1,2)	1,600 (1,2)	ND	ND	
trans - 1,2 Dichloroethylene	100 {A}	1,500	85,000	200,000	ND	ND	ND	ND	ND	ND	
Ethylbenzene	74 {E}	18	110,000	170,000 {S}	1.2	ND	ND	ND	ND	ND	
Isoproplbenzene	800	ID	56,000 {S}	56,000 {S}	ND	ND	ND	ND	ND	ND	
p-Isopropyltoluene					ND	ND	ND	ND	ND	ND	
2-Methylnapthalene	260	ID	ID	25,000 {S}	ND	ND	ND	ND	ND	ND	
Napthalene	520	13	31,000 {S}	31,000 {S}	ND	ND	ND	ND	ND	ND	
n-Propylbenzene	80	ID	ID	15,000	ND	ND	ND	ND	ND	ND	
Styrene	100 {A}	80	170,000	9,700	ND	ND	ND	ND	ND	ND	
Tetrachloroethylene	5.0 {A}	45 {X}	25,000	12,000	ND	ND	ND	ND	ND	ND	
Toluene	790 {E}	140	530,000 {S}	530,000 {S}	ND	ND	ND	ND	ND	ND	
1,1,1 - Trichloroethane	200 {A}	200	660,000	1300000 {S}	ND	ND	62	55	ND	ND	
Trichloroethylene	5 {A}	200 {X}	15,000	22,000	65 (1)	27 (1)	9,900 (1,2)	9,000 (1,2)	ND	ND	
1,2,4-Trimethylbenzene	63 {E}	17	56,000 {S}	56,000 {S}	1.1	ND	ND	ND	ND	ND	
1,3,5-Trimethylbenzene	72 {E}	45	61,000 {S}	61,000 {S}	ND	ND	ND	ND	ND	ND	
Vinyl Chloride	2 {A}	15	1,100	1,000	ND	ND	ND	ND	ND	ND	
m&p-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	2.6	ND	ND	ND	ND	ND	
o-Xylene	280 {E}	35	190,000 {S}	190,000 {S}	1.3	ND	ND	ND	ND	ND	

Notes:

Compounds that were not detected in any of the samples are not listed.
All results reported in micrograms per liter (ug/L)
Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.
Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:
(1) = Residential and Commercial I Drinking water Criteria (RCDW)
(2) = Groundwater Surface Water Interface Criteria (GSI)
(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)
(4) = Groundwater Contact Criteria (GC)
{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.
{E} = Criterion is the aesthetic drinking water value, as required by section20120a(5) of the act.
ID = Insufficient data to develop criterion.
{S} = Criterion defaults to the hazardous substance specific water quality solubility.
{W} = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 100 ug/L.
{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).
ND = Not detected above Method Detection Limit (MDL).

Table 21. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Semi-Volatile Organic Compunds

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-302I	MW-303I	MW-303D	MW-304D	MW-306I	MW-324R
2-Methylnapthalene	260	940 {X}	ID	25,000 {S}	**27**	ND	ND	ND	ND	ND
Napthalene	520	13	31,000 {S}	31,000 {S}	**73 (2)**	ND	ND	ND	ND	ND

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-03-11	MW-03-12	MW-03-13	MW-03-14		
2-Methylnapthalene	260	940 {X}	ID	25,000 {S}	ND	ND	ND	ND		
Napthalene	520	13	31,000 {S}	31,000 {S}	**5.1**	ND	ND	ND		

Notes:

Compounds not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{S} = Criterion defaults to the hazardous substance-specific water solubility limit.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

ID = Insufficient data to develop criterion.

ND = Not detected above Method Detection Limit (MDL).

Table 22. Round 2 Groundwater Sampling Results - Village of Douglas - July 2003
Total Metals

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-302I	MW-303I	MW-303D	MW-304I	MW-304D	MW-306I
Arsenic	50 {A}	150 {X}	NLV	4,300	4.8	2.4	24	2.2	3.8	2.1
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	44	130	130	46	48	74
Cadmium	5 {A}	2.5{G,X}	NLV	190,000	ND	ND	ND	2.5	ND	ND
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	ND	ND	ND	10	ND	6.8
Copper	1,000 {E}	20 \{G}	NLV	7,400,000	ND	ND	ND	11	ND	ND
Hexavalent Chromium	100 {A}	11	NLV	460,000	ND	NA	ND	NA	NA	NA
Lead	4 {L}	14 {G,X}	NLV	ID	3.5	ND	ND	130 (1,2)	ND	ND
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	290 (1)	29	1,100 (1)	1,300 (1)	800 (1)	700 (1)
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	ND	ND	ND	ND
Zinc	2,400	270 {G}	NLV	110,000,000	30	59	19	3,100 (1,2)	26	39

Compound	Part 201 Criteria				Sample Location					
	RCDW	GSI	GVII	GC	MW-324R	MW-03-11	MW-03-12	MW-03-13	MW-03-14	
Arsenic	50 {A}	150 {X}	NLV	4,300	6.2	2.8	3.9	ND	5	
Barium	2,000 {A}	1,200 {G,X}	NLV	14,000,000	180	50	86	48	300	
Cadmium	5 {A}	2.5{G,X}	NLV	190,000	ND	ND	ND	ND	8.4 (1,2)	
Chromium	100 {A}	120 {G,X}	NLV	290,000,000	ND	ND	43	ND	410 (1,2)	
Copper	1,000 {E}	20 \{G}	NLV	7,400,000	ND	ND	ND	ND	12	
Hexavalent Chromium	100 {A}	11	NLV	460,000	ND	ND	33 (2)	ND	ND	
Lead	4 {L}	14 {G,X}	NLV	ID	ND	ND	ND	ND	37 (1,2)	
Manganese	50 {E{	3,600 {G,X}	NLV	9,100,000	97 (1)	51 (1)	550 (1)	310 (1)	250 (1)	
Nickel	100 {A}	120 {G}	NLV	74,000,000	ND	ND	ND	ND	200	
Zinc	2,400	270 {G}	NLV	110,000,000	670 (2)	270	300 (2)	3,100 (1,2)	6,500 (1,2)	

Notes:

Compounds not detected in any of the samples are not listed.

All results reported in micrograms per liter (ug/L)

Duplicate samples were collected for every 10 samples. For sample locations where a duplicate was collected, the higher value has been reported.

Shading indicates that concentration exceeds one or more P.A. 451, Part 201 Generic Cleanup Criteria for Groundwater, as follows:

(1) = Residential and Commercial I Drinking water Criteria (RCDW)

(2) = Groundwater Surface Water Interface Criteria (GSI)

(3) = Residential and Commercial I Groundwater Volatilization to Indoor Air Inhalation Criteria (GVII)

(4) = Groundwater Contact Criteria (GC)

{A} = Criterion is State of Michigan Drinking Water Standard established pursuant to Section 5 of the Safe Drinking Water Act, Act No. 399 of the Public Acts of 1976.

{E} = Criterion is the aesthetic drinking water value, as required by section 20120a(5) of the act.

{G} = Groundwater surface water interface criterion depends on the pH or water hardness, or both, of the receiving surface water.

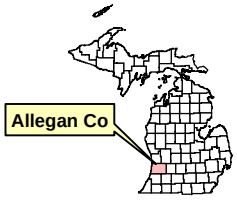
{L} = Criteria for lead are derived using a biologically based model, as allowed for under section 20120a(10) of the act.

{X} = The GSI criterion shown is not protective for surface water that is used as a drinking water source (Appropriate changes have been added to this table).

NA = Sample not analyzed for this criteria.

ND = Not detected above Method Detection Limit (MDL).

NLV = Hazardous substance is not likely to volitalize under most conditions.



N

0 4,000 Feet

Legend

Site Location

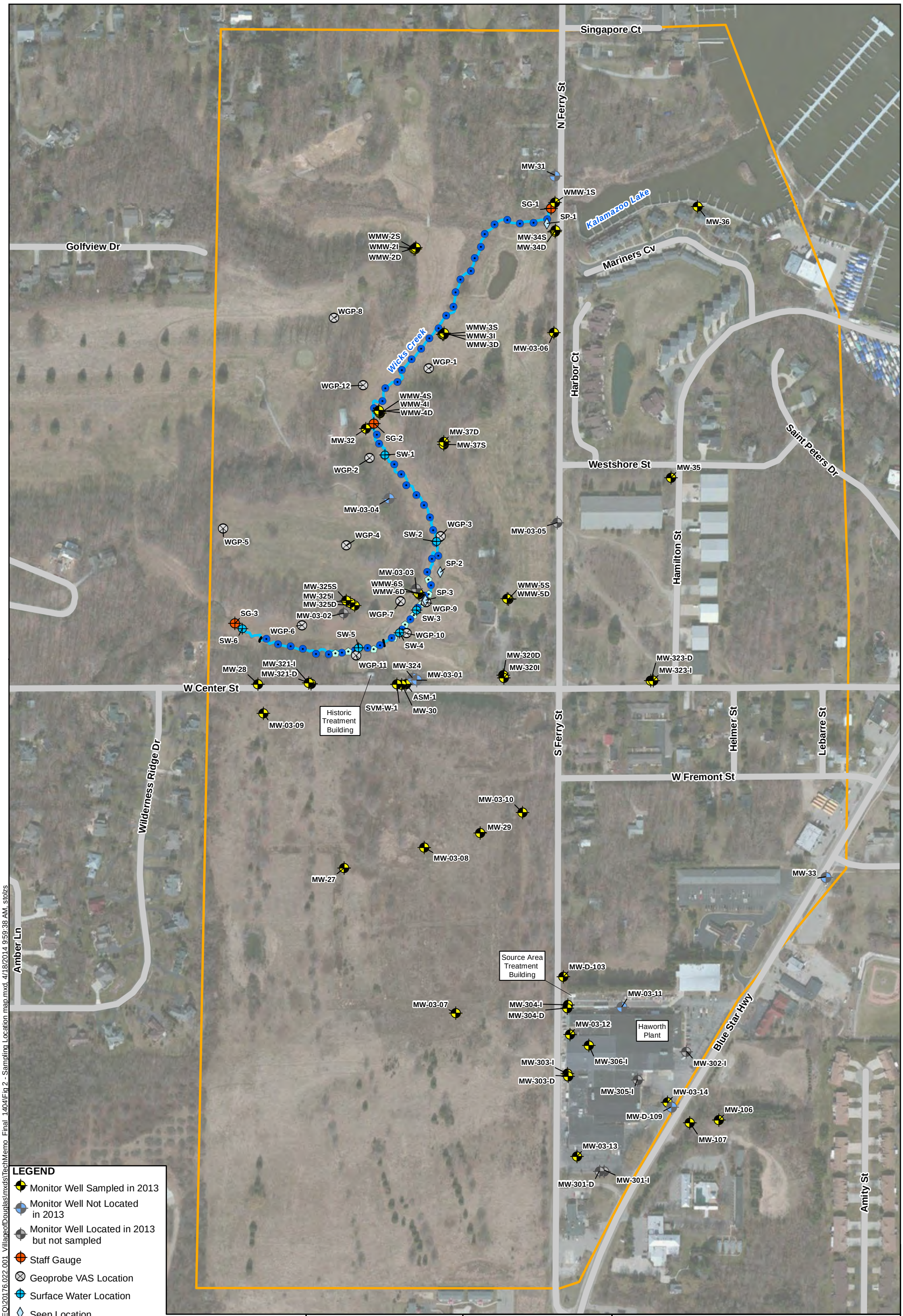
Figure: 1

WESTON SOLUTIONS

2501 Jolly Rd
Suite 100
Okemos, MI
48864

SITE LOCATION MAP
VILLAGE OF DOUGLAS SITE
Douglas, MI

Path: D:\GIS_Projects\MDEQ\20176.022.001_VillageofDouglas\mxds\TechMemo\Fig 1 - Site Location Map.mxd, 8/2/2013 10:29:20 AM, stolzs

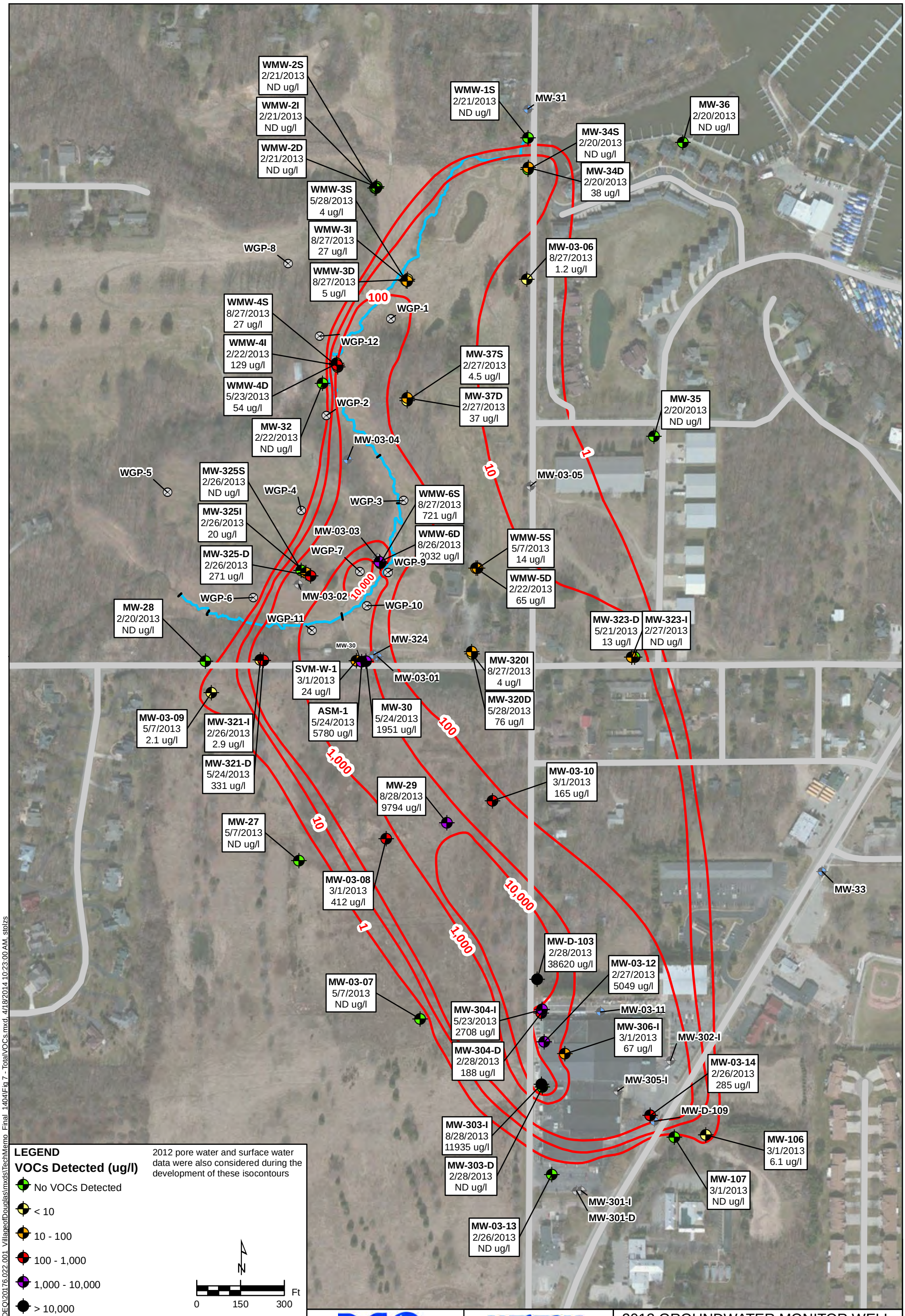


Prepared for:
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

Prepared by:
WESTON SOLUTIONS, INC.
2501 Jolly Road, Suite 100
Okemos, Michigan

SAMPLING LOCATION MAP
VILLAGE OF DOUGLAS SITE
Douglas, MI

SCALE:	DRAWN:	DATE:	
1:3,900	SS	4/18/2014	**Figure 2**



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REMEDIATION AND REDEVELOPMENT DIVISION

Prepared by:
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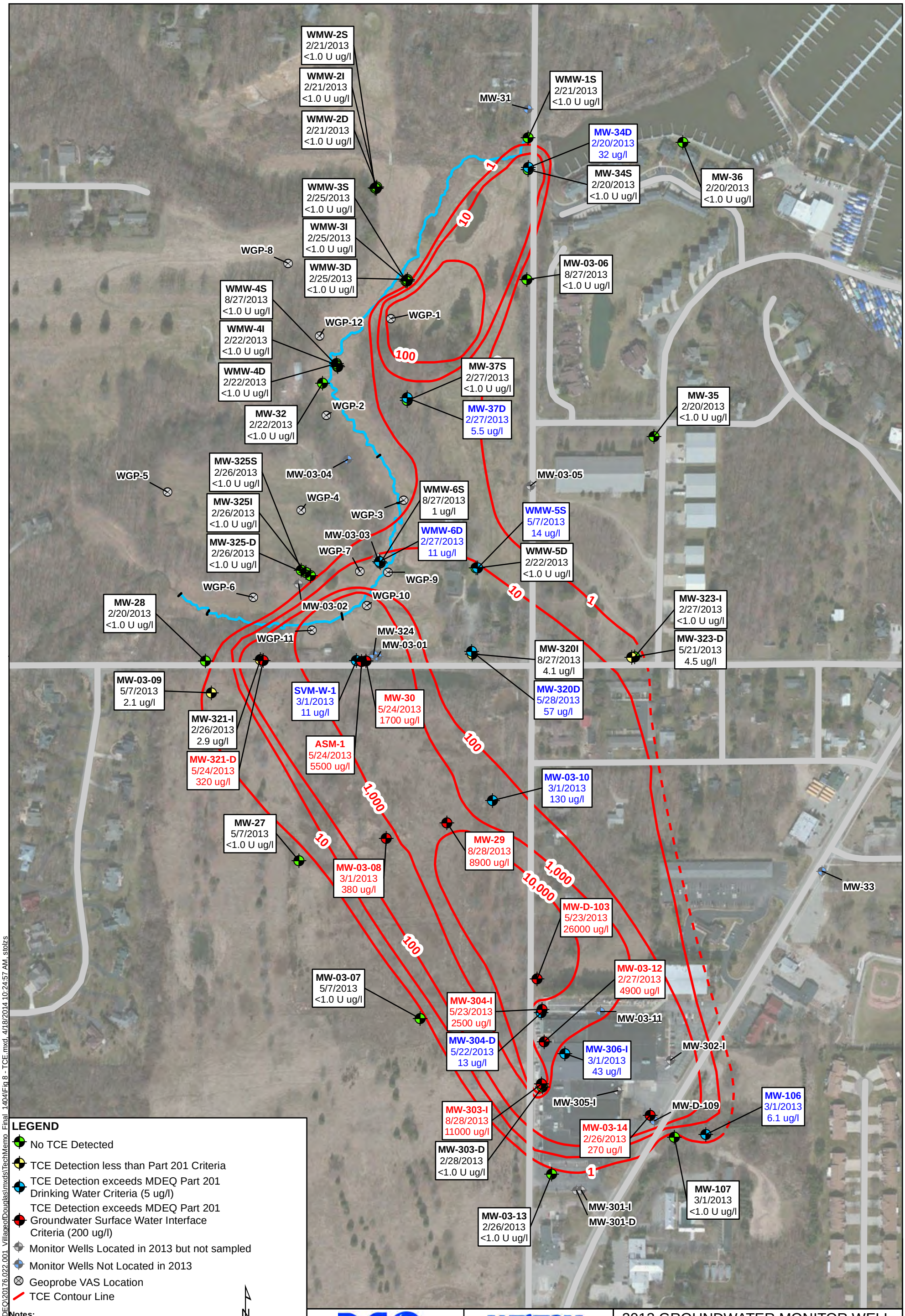
Okemos, Michigan

2013 GROUNDWATER MONITOR WELL RESULTS - TOTAL VOCs
VILLAGE OF DOUGLAS SITE
Douglas, MI

SCALE:	DRAWN:	DATE:	
1:3,600	SS	4/18/2014	**Figure 7**

Path: D:\GIS_Projects\MDEQ\20176.022.001_VillageofDouglas\mxds\TechMemo_Final_1404\Fig 7 - TotalVOCs.mxd, 4/18/2014 10:23:00 AM, stolzs



Notes:
- * SVM-W-1 and MW-306I not used for contouring
- 2012 pore water and surface water data were also considered during the development of these isocontours
- 2012 VAS Data also used for contouring (See Figure 6 for VAS Data)
- ug/l = micrograms per liter
- U = Analyte not detected above the indicated reporting limit
- Source of Imagery: ArcGIS/Bing Map Service March/April 2012

Prepared for:
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

Prepared by:
WESTON SOLUTIONS, INC.
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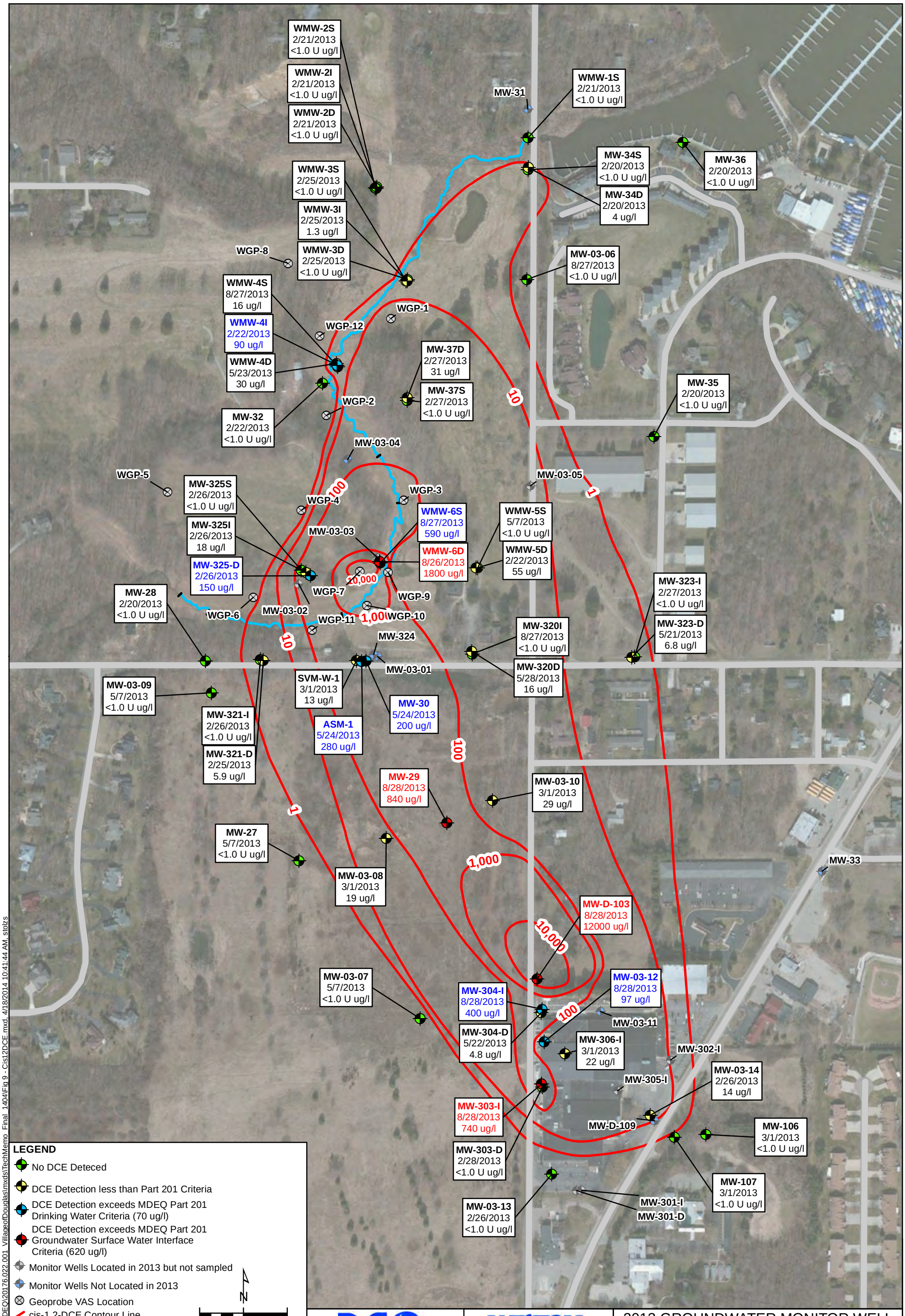
2013 GROUNDWATER MONITOR WELL RESULTS - TRICHLOROETHENE VILLAGE OF DOUGLAS SITE
Douglas, MI

SCALE:	DRAWN:	DATE:	
1:3,600	SS	4/18/2014	**Figure 8**

Path: D:\GIS_Projects\MDEQ\20176.022.001_VillageofDouglas\mxds\TechMemo_Final_1404\Fig 8 - TCE.mxd, 4/18/2014 10:24:57 AM, stolzs



Notes:
* SVM-W-1 not used for contouring
- 2012 VAS Data also used for contouring (See Figure 6 for VAS Data)
- 2012 pore water and surface water data were also considered during the development of these isocontours
- ug/l = micrograms per liter
- U = Analyte not detected above the indicated reporting limit
- Source of Imagery: ArcGIS/Bing Map Service March/April 2012

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REMEDIATION AND REDEVELOPMENT DIVISION

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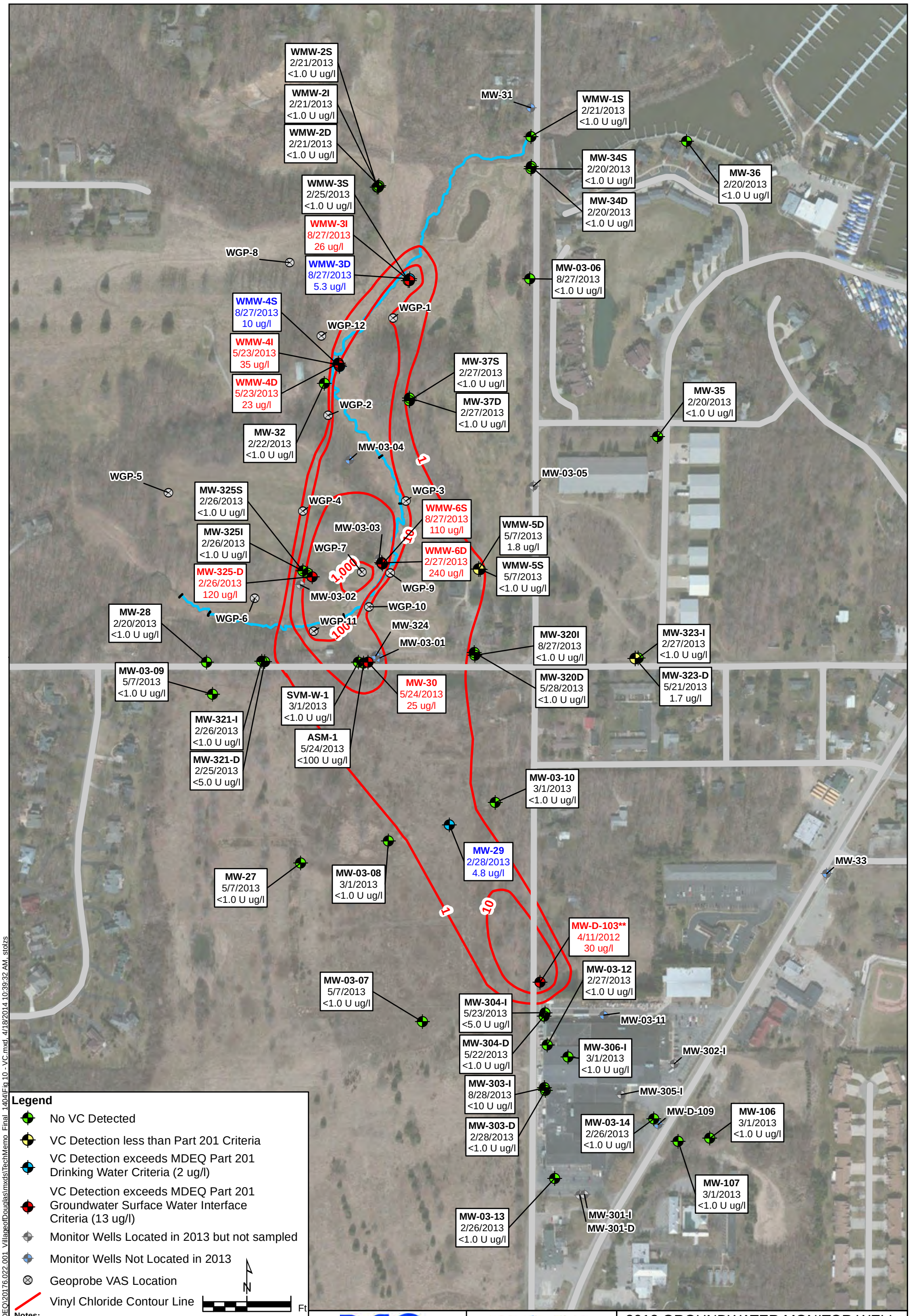
2013 GROUNDWATER MONITOR WELL RESULTS - CIS-1,2-DICHLOROETHENE VILLAGE OF DOUGLAS SITE
Douglas, MI

SCALE:	DRAWN:	DATE:	
1:3,600	SS	4/18/2014	**Figure 9**

Path: D:\GIS_Projects\MDEQ\20176.022.001_VillageofDouglas\mxds\TechMemo_Final_1404\Fig 9 - Cis12DCE.mxd, 4/18/2014 10:41:44 AM, stolzs



Notes:
* SVM-W-1 not used for contouring
** Used April 2012 data for contouring MW-D-103
- 2012 VAS Data used for contouring (See Figure 6 for VAS Data)
- 2012 pore water and surface water data were also considered during the development of these isocontours
- ug/l = micrograms per liter
- U = Analyte not detected above the indicated reporting limit
- Source of Imagery: ArcGIS/Bing Map Service March/April 2012

Prepared for:
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

Prepared by:
WESTON SOLUTIONS, INC.
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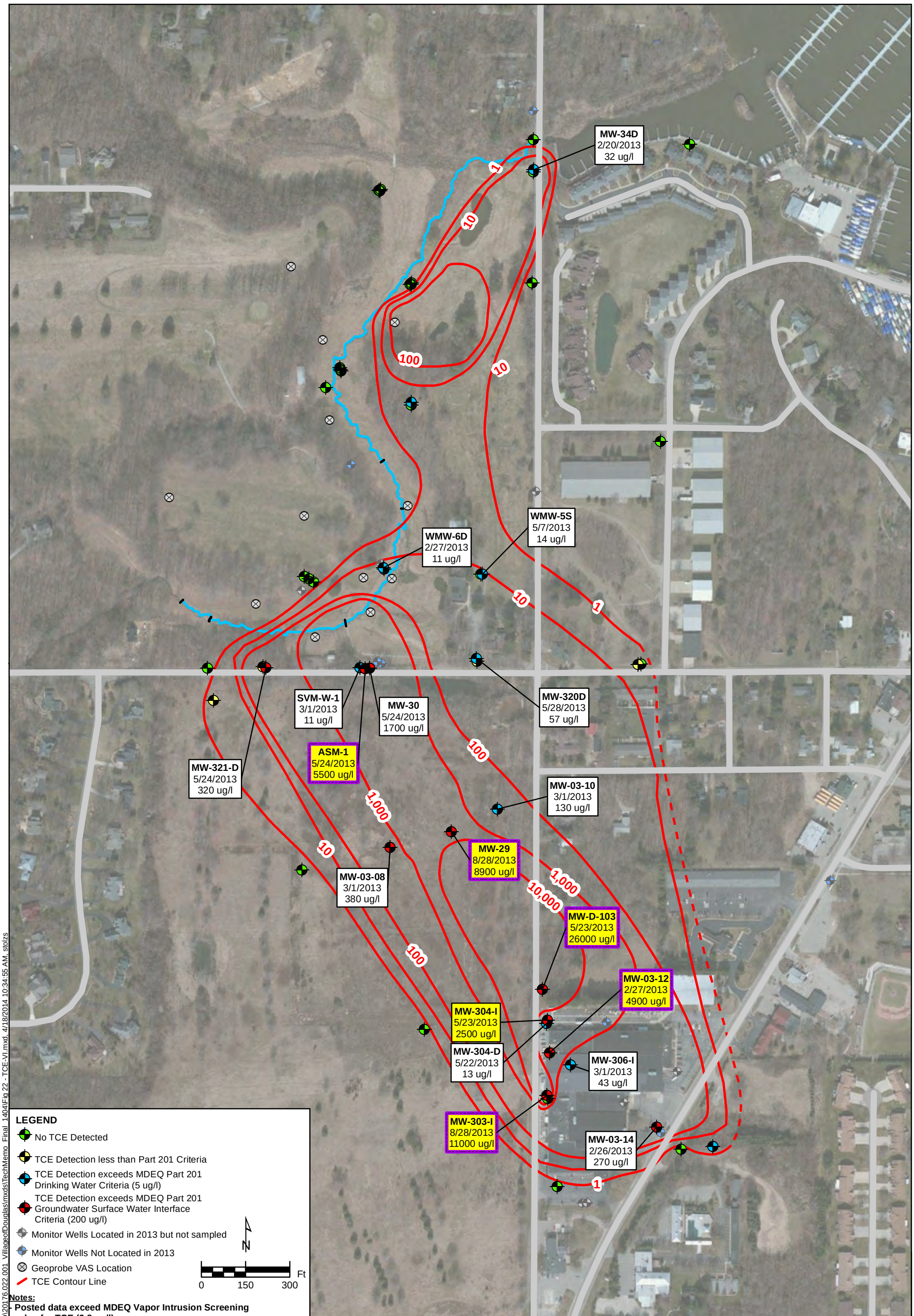
Okemos, Michigan

2013 GROUNDWATER MONITOR WELL RESULTS - VINYL CHLORIDE VILLAGE OF DOUGLAS SITE
Douglas, MI

SCALE:	DRAWN:	DATE:	
1:3,600	SS	4/18/2014	**Figure 10**

Path: D:\GIS_Projects\MDEQ\20176.022.001_VillageofDouglas\mxds\TechMemo_Final_1404\Fig 10 - VC.mxd, 4/18/2014 10:39:32 AM, stolzs



LEGEND

- No TCE Detected
- TCE Detection less than Part 201 Criteria
- TCE Detection exceeds MDEQ Part 201 Drinking Water Criteria (5 ug/l)
- TCE Detection exceeds MDEQ Part 201 Groundwater Surface Water Interface Criteria (200 ug/l)
- Monitor Wells Located in 2013 but not sampled
- Monitor Wells Not Located in 2013
- Geoprobe VAS Location
- TCE Contour Line

Notes:

- **Posted data exceed MDEQ Vapor Intrusion Screening value for TCE (9.8 ug/l)**
- Results with Yellow fill exceed MDEQ Part 201 Residential Volatilization to indoor air criteria (2,200 ug/l)
- Results with Purple border exceed MDEQ Part 201 Non-Residential Volatilization to indoor air criteria (4,900 ug/l)
- * SVM-W-1 and MW-306I not used for contouring
- 2012 VAS Data also used for contouring (See Figure 6 for VAS Data)
- ug/l = micrograms per liter
- U = Analyte not detected above the indicated reporting limit
- Source of Imagery: ArcGIS/Bing Map Service March/April 2012

Path: D:\GIS_Projects\MDEQ\20176.022.001_VillageofDouglas\mxds\TechMemo_Final_1404\Fig 22 - TCE-VI.mxd, 4/18/2014 10:34:55 AM, stolzs

Prepared for:
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REMEDIATION AND REDEVELOPMENT DIVISION

Prepared by:
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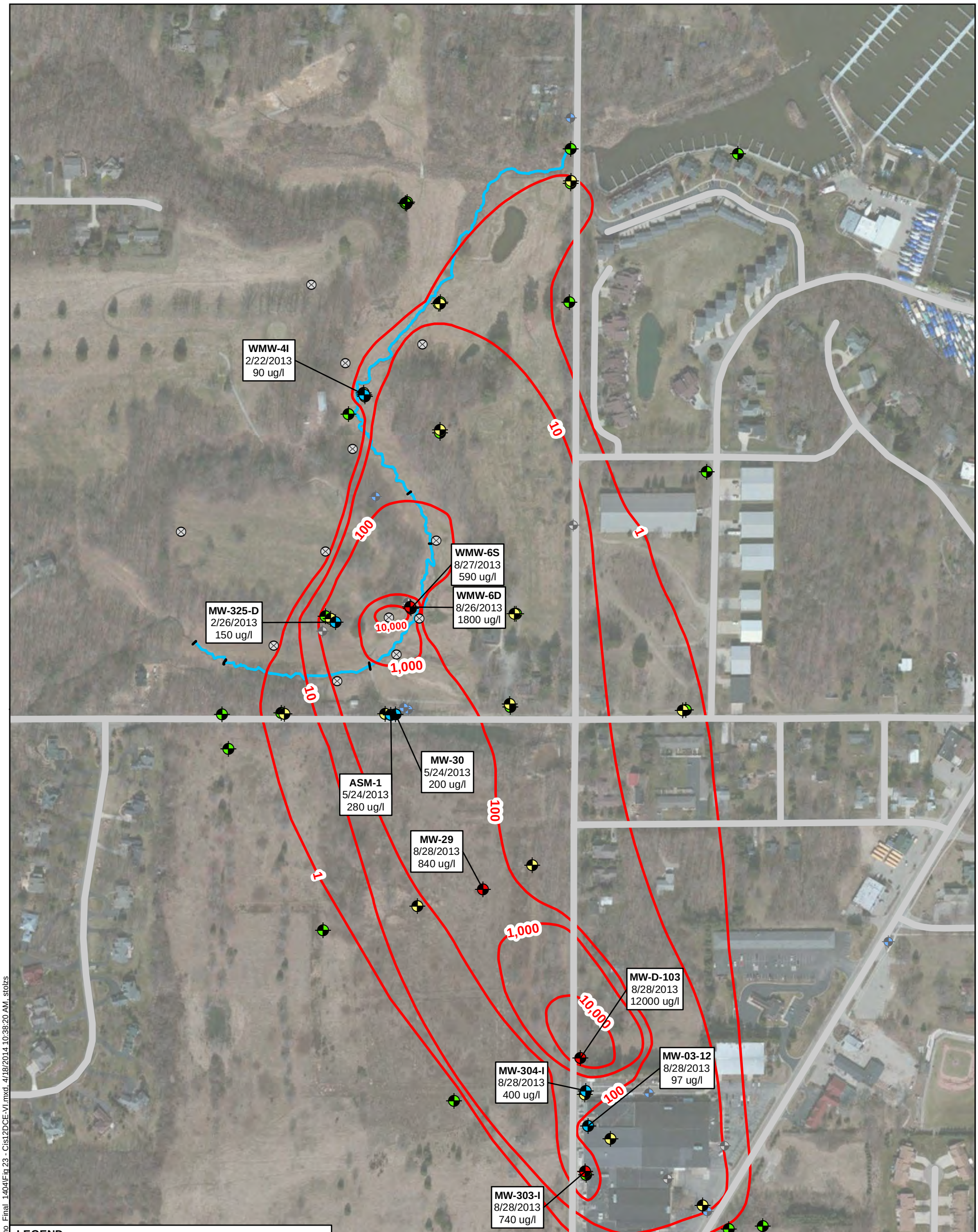
2013 GROUNDWATER RESULTS EXCEEDING VAPOR INTRUSION SCREENING LEVELS
TRICHLOROETHENE
VILLAGE OF DOUGLAS SITE
Douglas, MI

SCALE:	DRAWN:	DATE:	
1:3,600	SS	4/18/2014	**Figure 22**



LEGEND

- No DCE Deteced
- DCE Detection less than Part 201 Criteria
- DCE Detection exceeds MDEQ Part 201 Drinking Water Criteria (70 ug/l)
- DCE Detection exceeds MDEQ Part 201 Groundwater Surface Water Interface Criteria (620 ug/l)
- Monitor Wells Located in 2013 but not sampled
- Monitor Wells Not Located in 2013
- Geoprobe VAS Location
- cis-1,2-DCE Contour Line

N

0 150 300 Ft

Notes:

- Posted data exceed MDEQ Vapor Intrusion Screening value for DCE (83 ug/l)

* SVM-W-1 not used for contouring

- 2012 VAS Data also used for contouring (See Figure 6 for VAS Data)
- ug/l = micrograms per liter
- U = Analyte not detected above the indicated reporting limit
- Source of Imagery: ArcGIS/Bing Map Service March/April 2012

Prepared for:
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

Prepared by:
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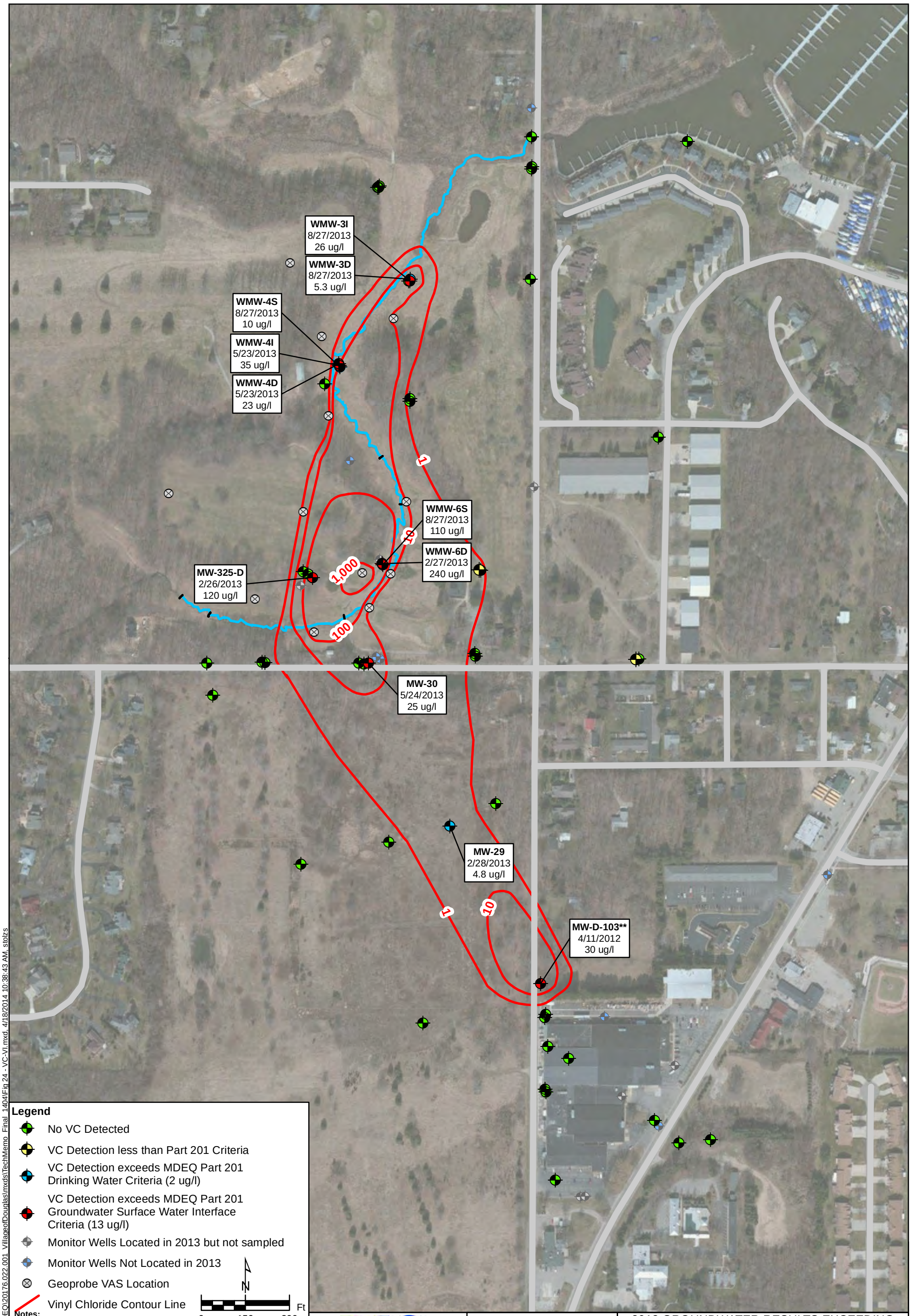
Okemos, Michigan

2013 GROUNDWATER RESULTS EXCEEDING VAPOR INTRUSION SCREENING LEVELS
CIS-1,2-DICHLOROETHENE
VILLAGE OF DOUGLAS SITE
Douglas, MI

SCALE:	DRAWN:	DATE:	
1:3,600	SS	4/18/2014	**Figure 23**

Path: D:\GIS_Projects\MDEQ\20176.022.001_VillageofDouglas\mxds\TechMemo_Final_1404\Fig 23 - Cis12DCE-VI.mxd, 4/18/2014 10:38:20 AM, stolzs



Notes:
- **Posted data exceed MDEQ Vapor Intrusion Screening value for VC (2.8 ug/l)**
- * SVM-W-1 not used for contouring
- ** Used April 2012 data for contouring MW-D-103
- 2012 VAS Data used for contouring (See Figure 6 for VAS Data)
- ug/l = micrograms per liter
- U = Analyte not detected above the indicated reporting limit
- Source of Imagery: ArcGIS/Bing Map Service March/April 2012

Prepared for:
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

Prepared by:
WESTON SOLUTIONS, INC.
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2013 GROUNDWATER RESULTS EXCEEDING VAPOR INTRUSION SCREENING LEVELS
VINYL CHLORIDE
VILLAGE OF DOUGLAS SITE
Douglas, MI

SCALE:	DRAWN:	DATE:	
1:3,600	SS	4/18/2014	**Figure 24**

Path: D:\GIS_Projects\MDEQ\20176.022.001_VillageofDouglas\mxds\TechMemo_Final_1404\Fig 24 - VC-VI.mxd, 4/18/2014 10:38:43 AM, stolzs

Table 1
Monitor Well and Staff Gauge Water Level Elevation Summary
Village of Douglas Site
Douglas, Michigan

Location ID	Northing[1]	Easting[1]	Top of Casing Elevation (ft-msl)[2]	Ground Elevation (ft-msl)[2]	Screen Interval (ft-msl)[2]			Total Depth from TOC July 2003	Total Depth from TOC Nov. 2007	Depth to Water November 2007	GWE November 2007	Depth to Water May 2008	GWE May 2008	Depth to Water December 2008	GWE December 2008	Depth to Water May 2009	GWE May 2009	Depth to Water April 2012	GWE April 2012	Total Depth from TOC February 2013	Depth to Water February 2013	GWE February 2013
Monitor Wells																						
ASM-1	NA	NA	NA	NA	NA	-	NA	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-D-103	421095.77	12626903.17	650.78	NA	599.78	-	594.78	56.00	55.93	41.82	608.96	41.62	609.16	39.85	610.93	37.74	613.04	40.73	610.05	56.35	42.44	608.34
MW-106	420563.35	12627481.48	NA	NA	NA	-	NA	31.66	NA	27.34	NA	25.84	NA	24.10	NA	21.01	NA	26.13	NA	31.94	26.60	NA
MW-107	420553.78	12627373.10	NA	NA	NA	-	NA	11.98	NA	6.33	NA	4.20	NA	2.80	NA	3.53	NA	4.92	NA	12.25	3.84	NA
MW-D-109-R^	NA	NA	NA	NA	NA	-	NA	19.55	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-01^	NA	NA	NA	NA	NA	-	NA	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-02	NA	NA	NA	NA	NA	-	NA	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-03	NA	NA	588.24	NA	NA	-	NA	8.41	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-04^	NA	NA	NA	NA	NA	-	NA	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-05	NA	NA	NA	NA	NA	-	NA	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-06	NA	NA	NA	NA	NA	-	NA	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-07	420960.28	12626502.76	647.77	NA	NA	-	NA	49.37	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-08	421577.06	12626386.24	626.74	NA	NA	-	NA	37.53	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-09	422076.37	12625787.57	619.32	NA	NA	-	NA	36.51	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-10	421707.48	12626750.85	628.76	NA	NA	-	NA	40.81	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-11^	NA	NA	648.08	NA	NA	-	NA	50.15	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-03-12	420881.51	12626927.60	647.44	NA	NA	-	NA	44.75	44.77	38.35	609.09	38.09	609.35	35.80	611.64	34.13	613.31	36.79	610.65	-	NM	-
MW-03-13	420427.58	12626953.21	646.31	NA	NA	-	NA	12.52	12.45	7.93	638.38	4.53	641.78	3.91	642.40	3.69	642.62	5.00	641.31	-	NM	-
MW-03-14	420629.49	12627290.72	645.38	NA	NA	-	NA	10.26	-	DRY	-	NM	-	NM	-	NM	-	NM	-	17.85	13.83	631.55
MW-301D	420359.40	12627087.36	648.35	648.50	603.75	-	598.75	49.60	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-301I	420359.53	1262708.09	648.03	648.51	612.83	-	607.83	40.20	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-302I	420826.64	12627397.27	647.28	647.68	609.78	-	604.78	42.50	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-303D	420731.66	12626912.16	644.57	645.06	596.97	-	591.97	52.60	52.55	33.28	611.29	32.91	611.66	NM	-	NM	-	32.43	612.14	52.50	33.80	610.77
MW-303I	420743.98	12626910.46	644.49	645.04	610.19	-	605.19	39.30	-	NM	-	NM	-	NM	-	NM	-	NM	-	39.30	34.50	609.99
MW-304D	420991.75	12626920.39	648.75	649.26	591.25	-	586.25	62.50	62.51	39.23	609.52	38.93	609.82	36.70	612.05	35.19	613.56	34.72	614.03	62.35	39.66	609.09
MW-304I	420985.55	12626921.30	648.58	649.13	607.98	-	602.98	45.60	45.58	39.05	609.53	38.99	609.59	36.76	611.82	33.87	614.71	37.79	610.79	44.90	39.50	609.08
MW-305I	420715.24	12627214.37	642.31	642.76	610.21	-	605.21	37.10	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-306I	420840.04	12626998.19	644.68	645.19	608.08	-	603.08	41.60	41.62	34.35	610.33	34.25	610.43	32.33	612.35	29.95	614.73	33.26	611.42	41.58	34.92	609.76
MW-320D	422220.04	12626680.47	615.75	613.19	581.35	-	576.35	39.40	39.21	14.21	601.54	13.85	601.90	13.30	602.45	12.09	603.66	13.39	602.36	39.40	14.40	601.35
MW-320I	422220.04	12626676.47	616.13	612.97	596.63	-	591.63	24.50	24.52	14.60	601.53	14.30	601.83	13.71	602.42	12.54	603.59	13.82	602.31	25.50	14.80	601.33
MW-321D	422184.44	12625967.97	614.82	613.15	591.22	-	586.22	28.60	28.65	17.20	597.62	16.39	598.43	16.26	598.56	15.02	599.80	16.32	598.50	28.65	17.23	597.59
MW-321I	422184.24	12625964.27	615.18	613.40	596.48	-	591.48	23.70	-	NM	-	NM	-	NM	-	NM	-	NM	-	23.70	17.65	597.53
MW-323D	422199.44	12627236.57	627.60	625.78	594.10	-	589.10	38.50	38.43	22.88	604.72	22.65	604.95	21.60	606.00	19.97	607.63	22.05	605.55	-	23.35	604.25
MW-323I	422197.94	12627227.37	627.33	625.77	603.33	-	598.33	29.00	28.88	22.66	604.67	22.49	604.84	21.38	605.95	19.77	607.56	21.82	605.51	-	23.12	604.21
MW-324-R^	NA	NA	NA	NA	NA	-	NA	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-324D^	422213.55	12626344.32	NA	NA	NA	-	NA	31.54	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-325D	422489.70	12626118.75	619.69	620.08	577.19	-	572.19	47.50	47.37	30.16	589.53	29.53	590.16	29.22	590.47	28.49	591.20	29.51	590.18	49.50	29.40	590.29
MW-325I	422495.52	12626111.17	619.93	620.22	NA	-	NA	40.90	40.97	30.41	589.52	29.83	590.10	29.48	590.45	28.06	591.87	29.75	590.18	40.95	29.70	590.23
MW-325S	422498.26	12626103.65	619.96	620.32	NA	-	NA	47.89	34.35	30.45	589.51	29.41	590.55	29.35	590.61	28.02	591.94	29.41	590.55	34.40	29.80	590.16
MW-27	421493.89	12626094.67	631.35	628.34	603.05	-	598.05	33.30	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-28	422175.10	12625765.42	619.66	616.58	594.36	-	589.36	30.30	30.33	21.05	598.61	20.24	599.42	20.10	599.56	18.79	600.87	20.15	599.51	30.40	21.14	598.52
MW-29	421623.88	12626601.04	630.49	627.11	595.69	-	590.69	39.80	42.27	26.75	603.74	26.27	604.22	25.40	605.09	23.36	607.13	25.65	604.84	**	NM	-
MW-30	422187.00	12626318.72	605.50	605.99	585.50	-	580.50	25.00	31.52	8.22	597.28	5.14	600.36	4.76	600.74	3.15	602.35	3.75	601.75	-	NM	-
MW-31^	424075.06	12626871.46	585.77	586.43	575.77	-	570.77	15.00	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-32*	423139.72	12626167.98	584.41	584.60	577.68	-	572.68	11.50	11.48	1.07	583.34	0.45	583.96	0.40	584.01	0.02	584.39	0.55	583.86	-	NM	-
MW-33^	421489.93	12627918.92	644.29	644.55	605.89	-	600.89	43.40	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	NM	-
MW-34S	423877.34	12626871.55	586.03	586.61	578.53	-	573.53	12.50	12.42	5.61	580.42	4.95	581.08	4.58	581.45	4.57	581.46	5.35	580.68	12.60	4.72	581.31
MW-34D*	423879.47	12626871.46	585.64	586.40	554.32	-	549.32	36.40	36.89	3.88	581.76	2.86	582.78	2.78	582.86	1.65	583.99	2.77	582.87	37.03	3.52	582.12
MW-35*	422953.84	12627303.55	620.71	620.90	612.28	-	607.28	13.70	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	WL at top of casing	NA
MW-36	423961.73	12627402.59	585.99	586.50	575.99	-	570.99	15.00	-	NM	-	NM	-	NM	-	NM	-	NM	-	15.85	7.79	578.20
MW-37S*	423086.42	12626457.63	619.20	619.10	585.00	-	580.00	39.20	38.80	29.41	589.79	29.20	590.00	28.91	590.29	28.35	590.85	28.94	590.26	38.92	29.18	590.02
MW-37D*	423091.45	12626457.34	618.98	619.10	565.92	-	560.92	58.00	57.40	29.58	589.40	29.33	589.65	28.96	590.02	28.40	590.58	29.00	589.98	57.40	29.35	589.63
WMW-1S*	423977.18	12626872.97	584.85	585.20	570.20	-	565.20	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	20.00	3.95	580.90
WMW-2S*	423805.28	12626348.24	585.04	585.30	575.30	-	570.30	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	15.00	1.34	583.70
WMW-2I*	423804.53	12626352.82	584.97	585.20	557.20	-	552.20	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	35.00	1.40	583.57
WMW-2D*	423809.48	12626354.76	585.05	585.30	535.30	-	530.30	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	55.00	1.65	583.40
WMW-3S*	423486.69	12626454.43	582.47	582.70	572.70	-	567.70	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	10.00	0.90	581.57
WMW-3I*	423486.61	12626459.01	582.41	582.70	556.70	-	551.70	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	31.00	Artesian	NA
WMW-3D*	423491.90	12626459.53	582.48	582.70	540.70	-	535.70	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	47.00	Artesian	NA
WMW-4S*	423193.60	12626220.93	583.76	584.00	579.00	-	574.00	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	10.00	1.02	582.74
WMW-4I*	423198.24	12626218.49	583.62	583.80	562.80	-	557.80	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	26.00	Artesian	NA
WMW-4D*	423204.52	12626216.86	583.54	583.80	546.80	-	541.80	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	42.00	Artesian	NA
WMW-5S[3]*	422502.65	12626699.36	621.10	621.30	596.30	-	591.30	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	30.00	21.05	600.05
WMW-5D[3]*	422502.89	12626694.89	620.98	621.20	571.20	-	566.20	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	55.00	23.25	597.73
WMW-6S*	422520.69	12626366.35	588.09	588.50	581.50	-	576.50	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	12.00	Artesian	NA
WMW-6D*	422524.64	12626363.49	588.37	588.70	566.70	-	561.70	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	27.00	Artesian	NA
Staff Gauges																						
SG-1*	423956.54	12626856.93	579.45	-	-	-	-	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	1.32	578.13
SG-2*	423155.57	12626199.12	583.83	-	-	-	-	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	1.72	582.11
SG-3*	422411.06	12625681.38	593.64	-	-	-	-	-	-	NM	-	NM	-	NM	-	NM	-	NM	-	-	2.60	591.04

Notes:
[1] Michigan State Plane Coordinate System; NAD 83; Michigan South Zone
[2] USGS Datum (ft-msl)2 - feet above mean sea level
[3] Well abandoned in May 2013
* Location and Elevations Surveyed/Re-Surveyed by Williams & Works, February 2013 (Michigan State Plane Coordinate System; NAD 83; Michigan South Zone
**Depth to water not obtained on February 19, 2013. Depth to water on February 28, 2013 was measured at 25.76 ft below TOC. This well mistakenly identified as MW-UNK on that date.
^Wells that have not been located as of 05/30/2013
- No Data
FT - Foot; feet
GWE - Groundwater Elevation
NA - Not Available/Applicable
NM - Not Measured
TOC - Top of casing
WL - Water level

Table 2
Summary of Water Quality Parameters - 2012 Pore Water Samples
Village of Douglas Site
Douglas, MI

Pore Water Sample Location	Stream Condition	Temperature (degrees Celsius)	Specific Conductivity (µs/cm)	pH	ORP (Millivolts)	Dissolved Oxygen (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
WPW-1	Static	10.49	639	7.17	-9.80	3.88	6.4	2.8	ND
WPW-2	Losing	10.77	1305	7.69	-107.40	0.79	1.2	1.5	ND
WPW-3	Static	11.03	814	6.79	-79.90	0.77	1.4	1.3	ND
WPW-4	Static	11.77	573	7.16	-93.50	0.46	ND	6.9	2.0
WPW-5	Static	11.84	581	7.32	-69.00	0.92	9.9	4.6	1.4
WPW-6	Static	13.72	574	7.39	-100.60	1.11	12	5.6	ND
WPW-7	Static	12.64	590	7.06	-80.30	0.42	5.2	2.7	ND
WPW-8	Static	13.14	554	7.15	-81.60	0.65	7.5	3.5	ND
WPW-9	Static	13.68	589	7.57	-135.80	0.33	8.6	5.5	1.0
WPW-10	Static	13.58	638	7.39	-138.60	0.26	3.7	2.6	1.4
WPW-11	Static	14.35	562	7.20	-86.90	2.79	16	6.4	ND
WPW-12	Static	13.54	561	7.49	-89.40	0.95	7.9	4.6	2.4
WPW-13	Static	13.17	582	7.56	-81.10	0.36	20	8.9	ND
WPW-14	Static	13.17	616	7.80	-120.00	0.30	ND	3.0	9.5
WPW-15	Static	13.60	628	7.42	-129.30	0.22	8.3	5.8	2.5
WPW-16	Static	10.83	816	7.20	-65.60	1.13	1.4	2.1	2.2
WPW-17	Static	10.76	627	6.80	-49.00	0.81	11 / 12	5.1 / 5.5	ND / ND
WPW-18	Static	10.49	608	6.98	-54.60	0.55	18	11	1.8
WPW-19	Static	10.76	584	7.30	-101.00	0.52	ND	1.8	3.9
WPW-20	Static	10.53	616	7.43	-86.40	0.47	22	42	16
WPW-21	Static	10.76	688	7.47	-100.60	0.56	13	7.4	5.1
WPW-22	Static	10.95	747	6.97	-82.70	0.45	ND	1.0	2.6
WPW-23	Static	10.66	645	7.13	-28.40	0.51	ND	ND	ND
WPW-24	Static	11.05	571	7.34	-76.20	0.43	17 / 17	9.5 / 9.9	6.0 / 5.6
WPW-25	Static	10.77	606	7.34	-97.3	0.49	15	10	2.2
WPW-26	Static	10.93	587	7.22	-82.00	1.42	31	15	2.5
WPW-27	Losing	10.95	681	7.12	-97.60	0.33	2.4	4.1	2.5
WPW-28	Static	11.11	614	6.98	-89.10	0.44	ND	ND	ND
WPW-29	Static	11.01	594	7.06	-93.90	0.31	ND	ND	ND
WPW-30	Static	10.56	689	7.08	-104.80	0.28	19 / 22	9.0 / 10	ND / ND
WPW-31	Static	11.04	617	7.34	-92.9	0.27	33	21	3.5
WPW-32	Static	11.67	592	6.76	-63.70	0.35	ND	ND	ND
WPW-33	Static	10.60	1138	7.76	-94.9	1.11	17	13	3.9
WPW-34	Static	11.05	749	7.15	-90.70	0.61	ND	ND	ND
WPW-35	Gaining	11.17	749	6.96	-87.00	0.54	4.7	2.6	ND
WPW-36	Gaining	12.61	788	7.13	-88.30	0.45	ND	ND	ND
WPW-37	Gaining	12.93	673	7.17	-88.40	0.40	ND	ND	ND

Table 2
Summary of Water Quality Parameters - 2012 Pore Water Samples
Village of Douglas Site
Douglas, MI

Pore Water Sample Location	Stream Condition	Temperature (degrees Celsius)	Specific Conductivity (µs/cm)	pH	ORP (Millivolts)	Dissolved Oxygen (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	Vinyl Chloride (µg/L)
WPW-38	Static	13.41	653	7.40	-92.80	0.41	5.8	660	320
WQM-1	--	11.78	610	7.74	-91.60	1.20	--	--	--
WPW-39	Static	13.09	807	7.25	-78.60	0.35	ND	ND	ND
WQM-2	--	11.86	613	7.77	-88.20	1.34	--	--	--
WPW-40	Static	12.49	869	7.41	-54.30	0.26	ND / ND	ND / ND	ND / ND
WQM-3	--	12.19	592	7.83	-56.70	1.18	--	--	--
WPW-41	Static	12.15	747	7.06	-50.00	0.42	ND	ND	ND
WQM-4	--	11.98	584	7.74	-62.30	1.19	--	--	--
WPW-42	Static	12.48	643	7.52	-65.60	0.37	ND	ND	ND
WQM-5	--	12.20	580	7.76	-55.00	1.10	--	--	--
WPW-43	Static	13.05	787	7.63	-59.10	0.36	1500	3100	260
WQM-6	Spring	13.02	598	7.34	-39.90	2.82	--	--	--
WPW-44	Static	13.07	906	7.35	-62.80	0.25	ND	400	690
WPW-45	Static	12.43	1080	7.24	-62.40	0.22	ND	1800	840
WQM-7	--	11.91	504	7.89	-77.10	9.25	--	--	--
WPW-46	Static	12.61	967	7.32	-56.40	0.35	ND	2100	2800
WQM-8	--	11.63	469	7.93	-69.70	9.34	--	--	--
WPW-47	Static	12.10	763	7.31	-51.10	0.38	ND	980	1200
WQM-9	--	11.50	302	7.90	-63.30	9.26	--	--	--
WPW-48	--	11.67	778	7.60	-54.60	0.64	2800	1000	20
WQM-10	--	11.44	283	7.93	-54.80	9.46	--	--	--
WPW-49	Gaining	13.18	578	7.16	-37.30	0.42	ND	26	44
WPW-50	Static	11.72	476	7.63	-52.20	0.70	310	22	ND
WPW-51	Gaining	9.75	216	7.80	-107.40	1.77	ND	ND	ND
WPW-52	--	9.01	679	7.09	-52.90	0.91	ND	ND	ND
WPW-53	Static	8.83	331	7.36	-61.50	0.92	ND	1.3	ND
WPW-54	Static	9.20	400	6.87	-42.00	0.95	ND / ND	ND / ND	ND / ND

Notes:
Field readings collected with a YSI 556
ND = Not Detected
µg/L = Micrograms per liter
µs/cm = Microsiemens per centimeter
mg/L = Milligrams per liter
-- = Not Measured

Table 3
Vertical Hydraulic Gradients Measured in Well Clusters
February 2013
Village of Douglas Site
Douglas, Michigan

Well	Top of Screen Elevation (ft. AMSL)	Middle of Screen Elevation	Groundwater Elevation (ft. AMSL) 02/19/13	Head Difference (ft.)	Vertical Gradient (ft.)	Direction
WMW-2S	575.30	572.80	583.70	0.13	0.0072	Downward
WMW-2I	557.20	554.70	583.57			
WMW-2I	557.20	554.70	583.57	0.17	0.0078	Downward
WMW-2D	535.30	532.80	583.40			
WMW-2S	575.30	572.80	583.70	0.30	0.0075	Downward
WMW-2D	535.30	532.80	583.40			
WMW-3S	572.70	570.20	581.57	NA	NA	Upward
WMW-3I	556.70	554.20	Artesian			
WMW-3I	556.70	551.70	Artesian	NA	NA	Upward
WMW-3D	540.70	535.70	Artesian			
WMW-3S	572.70	567.70	581.57	NA	NA	Upward
WMW-3D	540.70	535.70	Artesian			
WMW-4S	579.00	574.00	582.74	NA	NA	Upward
WMW-4I	562.80	557.80	Artesian			
WMW-4I	562.80	557.80	Artesian	NA	NA	Upward
WMW-4D	546.80	541.80	Artesian			
WMW-4S	579.00	574.00	582.74	NA	NA	Upward
WMW-4D	546.80	541.80	Artesian			
WMW-5S	596.30	591.30	600.05	2.32	0.0924	Downward
WMW-5D	571.20	566.20	597.73			
WMW-6S	581.50	576.50	Artesian	NA	NA	Upward
WMW-6D	566.70	561.70	Artesian			

Notes:

ft. AMSL - feet above mean sea level

NA - Not calculated due to artesian conditions.

Groundwater elevation differences of 0.05 ft or less are considered within the margin of error and the gradient is considered flat.

Table 4
Summary of Detected VOCs - 2012 Surface Water and Seep Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	SP-1		SP-2		SP-3	
Sample Date			4/11/2012	9/6/2012	4/11/2012	9/6/2012	4/11/2012	9/6/2012
Field Sample ID			SP-1	SP-1	SP-2	SP-2	SP-3	SP-3
Lab Sample ID			AB94196	AC03618	AB94199	AC03621	AB94200	AC03622
VOCs (ug/L)								
1,1-Dichloroethane	880	740	**6.3**	**6.7**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	< 1.0 U	< 1.0 U	**1.6**	< 1.0 U	**1.2**	**52**
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.4**
Trichloroethylene (TCE)	5	200	**2.1**	**1.1**	**3.4**	**3.8**	**3.2**	**140**
Vinyl chloride	2	13	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**9.9**
Total VOCs	NA	NA	**8.4**	**7.8**	**5.0**	**3.8**	**4.4**	**203**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

Bold= detected above the laboratory detection limit

* Only Detected Analytes are Shown

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 4
Summary of Detected VOCs - 2012 Surface Water and Seep Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	SW-1		SW-2		SW-3			
Sample Date			4/11/2012	9/6/2012	4/11/2012	9/6/2012	4/11/2012	4/11/2012	9/6/2012	9/6/2012
Field Sample ID			SW-1	SW-1	SW-2	SW-2	SW-3	SW-3-DP	SW-3	SW-3-DP
Lab Sample ID			AB94197	AC03619	AB94198	AC03620	AB94201	AB94202	AC03623	AC03624
VOCs (ug/L)								Field Duplicate		Field Duplicate
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**24**	**22**	**37**	**35**	**51**	**52**	**58**	**57**
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	**1.0**	< 1.0 U	**1.4**	**1.0**	**1.9**	**1.5**	**1.6**	**1.6**
Trichloroethylene (TCE)	5	200	**56**	**54**	**81**	**86**	**120**	**140**	**160**	**160**
Vinyl chloride	2	13	**3.9**	**2.6**	**6.0**	**5.2**	**9.8**	**10**	**12**	**11**
Total VOCs	NA	NA	**85**	**79**	**125**	**127**	**183**	**204**	**232**	**230**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

Bold= detected above the laboratory detection limit

* Only Detected Analytes are Shown

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 4
Summary of Detected VOCs - 2012 Surface Water and Seep Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	SW-4		SW-5		SW-6	
Sample Date			4/11/2012	9/6/2012	4/11/2012	9/6/2012	4/11/2012	9/6/2012
Field Sample ID			SW-4	SW-4	SW-5	SW-5	SW-6	SW-6
Lab Sample ID			AB94203	AC03625	AB94204	AC03626	AB94205	AC03627
VOCs (ug/L)								
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**54**	**61**	**24**	**35**	< 1.0 U	< 1.0 U
Tetrachloroethylene (PCE)	5	60	< 1.0 U	**0.9**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	**1.5**	**1.9**	**1.1**	**1.9**	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**150**	**190**	**96**	**140**	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	**11**	**14**	**3.1**	**4.6**	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**217**	**268**	**124**	**182**	ND	ND

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

Bold= detected above the laboratory detection limit

* Only Detected Analytes are Shown

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 5
Summary of Detected VOCs - 2012 Pore Water Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WPW-1	WPW-2	WPW-3	WPW-4	WPW-5	WPW-6	WPW-7	WPW-8
Sample Date			10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012
Field Sample ID			WPW-1	WPW-2	WPW-3	WPW-4	WPW-5	WPW-6	WPW-7	WPW-8
Lab Sample ID			AC06511	AC06512	AC06513	AC06514	AC06515	AC06516	AC06517	AC06518
VOCs (ug/L)										
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**2.8**	**1.5**	**1.3**	**6.9**	**4.6**	**5.6**	**2.7**	**3.5**
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	< 1.0 U	**3.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**6.4**	**1.2**	**1.4**	< 1.0 U	**9.9**	**12**	**5.2**	**7.5**
Vinyl chloride	2	13	< 1.0 U	< 1.0 U	< 1.0 U	**2.0**	**1.4**	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**9.2**	**2.7**	**2.7**	**12**	**16**	**18**	**7.9**	**11**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

* Only Detected Analytes shown

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

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VOC= Volatile Organic Compound

Table 5
Summary of Detected VOCs - 2012 Pore Water Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WPW-9	WPW-10	WPW-11	WPW-12	WPW-13	WPW-14	WPW-15	WPW-16
Sample Date			10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/10/2012
Field Sample ID			WPW-9	WPW-10	WPW-11	WPW-12	WPW-13	WPW-14	WPW-15	WPW-16
Lab Sample ID			AC06519	AC06520	AC06521	AC06522	AC06523	AC06524	AC06525	AC06526
VOCs (ug/L)										
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**5.5**	**2.6**	**6.4**	**4.6**	**8.9**	**3.0**	**5.8**	**2.1**
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**8.6**	**3.7**	**16**	**7.9**	**20**	< 1.0 U	**8.3**	**1.4**
Vinyl chloride	2	13	**1.0**	**1.4**	< 1.0 U	**2.4**	< 1.0 U	**9.5**	**2.5**	**2.2**
Total VOCs	NA	NA	**15**	**7.7**	**22**	**15**	**29**	**13**	**17**	**5.7**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

* Only Detected Analytes shown

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VOC= Volatile Organic Compound

Table 5
Summary of Detected VOCs - 2012 Pore Water Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WPW-17		WPW-18	WPW-19	WPW-20	WPW-21	WPW-22	WPW-23
Sample Date			10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012
Field Sample ID			WPW-17	WPW-17-DUP	WPW-18	WPW-19	WPW-20	WPW-21	WPW-22	WPW-23
Lab Sample ID			AC06527	AC06533	AC06528	AC06529	AC06530	AC06531	AC06532	AC06534
VOCs (ug/L)				Field Duplicate						
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.5**	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**5.1**	**5.5**	**11**	**1.8**	**42**	**7.4**	**1.0**	< 1.0 U
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**11**	**12**	**18**	< 1.0 U	**22**	**13**	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	< 1.0 U	< 1.0 U	**1.8**	**3.9**	**16**	**5.1**	**2.6**	< 1.0 U
Total VOCs	NA	NA	**16**	**18**	**31**	**5.7**	**82**	**26**	**3.6**	**ND**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

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VOC= Volatile Organic Compound

Table 5
Summary of Detected VOCs - 2012 Pore Water Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WPW-24		WPW-25	WPW-26	WPW-27	WPW-28	WPW-29
Sample Date			10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012
Field Sample ID			WPW-24	WPW-24-DUP	WPW-25	WPW-26	WPW-27	WPW-28	WPW-29
Lab Sample ID			AC06535	AC06536	AC06537	AC06538	AC06539	AC06540	AC06541
VOCs (ug/L)				Field Duplicate					
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**9.5**	**9.9**	**10**	**15**	**4.1**	< 1.0 U	< 1.0 U
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**17**	**17**	**15**	**31**	**2.4**	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	**6.0**	**5.6**	**2.2**	**2.5**	**2.5**	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**33**	**33**	**27**	**49**	**9.0**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

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Table 5
Summary of Detected VOCs - 2012 Pore Water Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WPW-30		WPW-31	WPW-32	WPW-33	WPW-34	WPW-35	WPW-36
Sample Date			10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012
Field Sample ID			WPW-30	WPW-30-DUP	WPW-31	WPW-32	WPW-33	WPW-34	WPW-35	WPW-36
Lab Sample ID			AC06542	AC06543	AC06544	AC06545	AC06546	AC06547	AC06548	AC06549
VOCs (ug/L)				Field Duplicate						
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**9.0**	**10**	**21**	< 1.0 U	**13**	< 1.0 U	**2.6**	< 1.0 U
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.7**	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	**1.0**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**19**	**22**	**33**	< 1.0 U	**17**	< 1.0 U	**4.7**	< 1.0 U
Vinyl chloride	2	13	< 1.0 U	< 1.0 U	**3.5**	< 1.0 U	**3.9**	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**28**	**32**	**59**	**ND**	**36**	**ND**	**7.3**	**ND**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

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Table 5
Summary of Detected VOCs - 2012 Pore Water Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WPW-37	WPW-38	WPW-39	WPW-40		WPW-41	WPW-42	WPW-43
Sample Date			10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012
Field Sample ID			WPW-37	WPW-38	WPW-39	WPW-40	WPW-40-DUP	WPW-41	WPW-42	WPW-43
Lab Sample ID			AC06550	AC06551	AC06552	AC06553	AC06554	AC06555	AC06556	AC06557
VOCs (ug/L)							Field Duplicate			
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	**4.5**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**15**
1,1-Dichloroethylene	7	130	< 1.0 U	**1.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**32**
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	< 1.0 U	**660**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**3,100**
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	**47**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**200**
Trichloroethylene (TCE)	5	200	< 1.0 U	**5.8**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1,500**
Vinyl chloride	2	13	< 1.0 U	**320**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**260**
Total VOCs	NA	NA	**ND**	**1,038**	**ND**	**ND**	**ND**	**ND**	**ND**	**5,107**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

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Table 5
Summary of Detected VOCs - 2012 Pore Water Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WPW-44	WPW-45	WPW-46	WPW-47	WPW-48	WPW-49	WPW-50	WPW-51
Sample Date			10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/11/2012	10/12/2012
Field Sample ID			WPW-44	WPW-45	WPW-46	WPW-47	WPW-48	WPW-49	WPW-50	WPW-51
Lab Sample ID			AC06558	AC06559	AC06560	AC06561	AC06562	AC06563	AC06564	AC06565
VOCs (ug/L)										
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4.3**	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	**4.9**	**8.1**	**17**	**8.4**	**10**	**1.1**	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	**10**	**7.2**	**2.4**	**7.3**	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**3.0**	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**400**	**1,800**	**2,100**	**980**	**1,000**	**26**	**22**	< 1.0 U
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**14**	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	**3.9**	**110**	**74**	**29**	**96**	< 1.0 U	**3.2**	< 1.0 U
Trichloroethylene (TCE)	5	200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**2,800**	< 1.0 U	**310**	< 1.0 U
Vinyl chloride	2	13	**690**	**840**	**2,800**	**1,200**	**20**	**44**	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**1,099**	**2,768**	**4,998**	**2,220**	**3,952**	**71**	**338**	**ND**

Notes:

Analyte concentration exceeds the standard for:

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	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

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Table 5
Summary of Detected VOCs - 2012 Pore Water Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WPW-52	WPW-53	WPW-54	
Sample Date			10/12/2012	10/12/2012	10/12/2012	10/12/2012
Field Sample ID			WPW-52	WPW-53	WPW-54	WPW-54-DUP
Lab Sample ID			AC06566	AC06567	AC06568	AC06569
VOCs (ug/L)						Field Duplicate
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	< 1.0 U	**1.3**	< 1.0 U	< 1.0 U
Tetrachloroethylene (PCE)	5	60	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**ND**	**1.3**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

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NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 6
Summary of Detected VOCs - 2012 Vertical Aquifer Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WGP-1			WGP-2		
Sample Date			12/3/2012	12/3/2012	12/3/2012	11/26/2012	11/26/2012	11/26/2012
Field Sample ID			WGP-1(5-9')	WGP-1 (15-19')	WGP-1 (25-29)	WGP-2(6-10')	WGP-2 (16-20')	WGP-2 (26-30')
Lab Sample ID			AC09076	AC09075	AC09074	AC08724	AC08723	AC08722
Sample Depth			5-9'	15-19'	25-29'	6-10'	16-20'	26-30'
VOCs (ug/L)								
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	**3.8**	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	< 1.0 U	**3.8**	**39**	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	**2.0**	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**1.1**	**26**	**110**	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	< 1.0 U	< 1.0 U	**10**	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**1.1**	**30**	**165**	**ND**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

*** Only Detected Analytes shown**

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 6
Summary of Detected VOCs - 2012 Vertical Aquifer Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WGP-3			WGP-4			
Sample Date			11/30/2012	11/30/2012	11/30/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012
Field Sample ID			WGP-3 (16-20')	WGP-3 (24-28')	WGP-3 (24-28')-Dup	WGP-4 (30-34')	WGP-4 (40-44')	WGP-4 (50-54')	WGP-4 (60-64')
Lab Sample ID			AC09073	AC09072	AC09077	AC08826	AC08825	AC08824	AC08823
Sample Depth			16-20'	24-28'	24-28'	30-34'	40-44'	50-54'	60-64'
VOCs (ug/L)					Field Duplicate				
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**180**	**260**	**290**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	**1.5**	**1.3**	**1.2**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	**20**	**11**	**11**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**202**	**272**	**302**	**ND**	**ND**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

*** Only Detected Analytes shown**

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 6
Summary of Detected VOCs - 2012 Vertical Aquifer Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WGP-5			WGP-6			
Sample Date			11/27/2012	11/27/2012	11/27/2012	11/28/2012	11/28/2012	11/28/2012	11/28/2012
Field Sample ID			WGP-5 (31-35')	WGP-5 (41-45')	WGP-5 (51-55')	WGP-6 (3-7)	WGP-6 (10-14')	WGP-6 (10-14')-Dup	WGP-6 (18-22')
Lab Sample ID			AC08794	AC08793	AC08792	AC08830	AC08828	AC08829	AC08827
Sample Depth			31-35'	41-45'	51-55'	3-7'	10-14'	10-14'	18-22'
VOCs (ug/L)								Field Duplicate	
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

*** Only Detected Analytes shown**

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 6
Summary of Detected VOCs - 2012 Vertical Aquifer Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WGP-7			WGP-8			
Sample Date			11/26/2012	11/26/2012	11/26/2012	11/20/2012	11/20/2012	11/20/2012	11/20/2012
Field Sample ID			WGP-7 (11-15')	WGP-7 (11-15')-Dup	WGP-7 (19-23')	WGP-8 (41-45')	WGP-8 (51-55')	WGP-8 (61-65')	WGP-8 (71-75')
Lab Sample ID			AC08726	AC08727	AC08725	AC08682	AC08681	AC08680	AC08679
Sample Depth			11-15'	11-15'	19-23'	41-45'	51-55'	61-65'	71-75'
VOCs (ug/L)				Field Duplicate					
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	**7.1**	**7.6**	**42**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	**4.6**	**5.0**	**39**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**1,700**	**1,800**	**15,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	**140**	**150**	**380**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**1.9**	**1.8**	**7.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	**1,200**	**1,200**	**860**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**3,054**	**3,164**	**16,328**	**ND**	**ND**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

*** Only Detected Analytes shown**

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 6
Summary of Detected VOCs - 2012 Vertical Aquifer Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WGP-9			WGP-10	
Sample Date			11/29/2012	11/29/2012	11/29/2012	11/29/2012	11/29/2012
Field Sample ID			WGP-9 (6-10')	WGP-9 (20-24')	WGP-9 (29-33')	WGP-10 (6-10')	WGP-10 (16-20')
Lab Sample ID			AC08958	AC08957	AC08956	AC08955	AC08954
Sample Depth			6-10'	20-24'	29-33'	6-10'	16-20'
VOCs (ug/L)							
1,1,1-Trichloroethane	200	89	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U
1,1-Dichloroethane	880	740	**1.5**	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U
1,1-Dichloroethylene	7	130	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U
Carbon disulfide	800	1E+10	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U
cis-1,2-Dichloroethylene	70	620	**50**	**23**	< 1.0 U	**22**	**1,100**
trans-1,2-Dichloroethylene	100	1500	**13**	**4.2**	< 1.0 U	**4.1**	**260**
Trichloroethylene (TCE)	5	200	**3.2**	**2.7**	< 1.0 U	**150**	**7,600**
Vinyl chloride	2	13	< 1.0 U	**1.3**	< 1.0 U	< 1.0 U	< 50 U
Total VOCs	NA	NA	**68**	**31**	**ND**	**176**	**8,960**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

*** Only Detected Analytes shown**

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 6
Summary of Detected VOCs - 2012 Vertical Aquifer Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WGP-11		WGP-12		
Sample Date			11/29/2012	11/29/2012	11/26/2012	11/26/2012	11/26/2012
Field Sample ID			WGP-11 (6-10')	WGP-11 (13-17')	WGP-12 (4-8')	WGP-12 (14-18')	WGP-12 (24-28')
Lab Sample ID			AC08953	AC08952	AC08721	AC08720	AC08719
Sample Depth			6-10'	13-17'	4-8'	14-18'	24-28'
VOCs (ug/L)							
1,1,1-Trichloroethane	200	89	< 10 U	< 50 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	< 10 U	< 50 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	< 10 U	< 50 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	800	1E+10	< 10 U	**54**	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethylene	70	620	**730**	**500**	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1500	**11**	**56**	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	**39**	**3,300**	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	**470**	< 50 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	**1,250**	**3,910**	**ND**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

*** Only Detected Analytes shown**

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	ASM-1		MW-03-06	MW-03-07	MW-03-08	MW-03-09	MW-03-10			MW-03-12			
Sample Date					4/10/2012	5/24/2013	8/27/2013	5/7/2013	3/1/2013	5/7/2013	4/10/2012	3/1/2013	3/1/2013	4/11/2012	2/27/2013	5/24/2013	8/28/2013
Field Sample ID					ASM-1	ASM-1	MW-03-06	MW-03-07	MW-UNK-1/ MW-03-08	MW-03-09	MW-29/MW-03-10	MW-UNK-3/ MW-03-10	MW-UNK-3-DUP/ MW-03-10-DUP	MW-03-12	MW-03-12	MW-03-12	MW-03-12
Lab Sample ID					AB94183	1305230-11	1308396-15	1305058-04	AC12298	1305058-06	AB94162	AC12295	AC12296	AB94186	AC12120	1305230-07	1308396-20
VOCs (ug/L)													Field Duplicate				
1,1,1-Trichloroethane	200	89	660,000	17,000	**31**	< 100 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**72**	< 100 U	**41**
1,1-Dichloroethane	880	740	100,000	4,300	**21**	< 100 U	**1.2**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 100 U	< 20 U
1,1-Dichloroethylene	7	130	200	370	**23**	< 100 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**7**	< 100 U	< 20 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 2000 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 2000 U	< 400 U
cis-1,2-Dichloroethylene	70	620	93,000	83	**250**	**280**	< 1.0 U	< 1.0 U	**19**	< 1.0 U	**35**	**29**	**28**	**6.6**	**63**	< 100 U	**97**
Tetrachloroethylene (PCE)	5	60	25,000	94	**23**	< 100 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1**	**6.6**	< 100 U	< 20 U
Toluene	790	270	530,000	36,000	< 1.0 U	< 100 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 100 U	< 20 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	**44**	< 100 U	< 1.0 U	< 1.0 U	**13**	< 1.0 U	**2.1**	**6.2**	**5.9**	< 1.0 U	< 1.0 U	< 100 U	< 20 U
Trichloroethylene (TCE)	5	200	2,200	9.8	**5,680**	**5,500**	< 1.0 U	< 1.0 U	**380**	**2.1**	**84**	**130**	**130**	**52**	**4,900**	**2,100**	**2,608**
Vinyl chloride	2	13	1,100	2.8	**4**	< 100 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**3.3**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 100 U	< 20 U
Total VOCs	NA	NA	NA	NA	**5,996**	**5,780**	**1.2**	**ND**	**412**	**ND**	**124**	**165**	**164**	**60**	**5,049**	**2,100**	**2,738**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

* Only Detected Analytes shown

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

The Field Sample ID under the Station Name MW-03-10 for 4/10/2012 is believed to have been mislabeled.

Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	MW-03-13		MW-03-14	MW-106		MW-107		MW-27		MW-28		MW-29	
Sample Date					4/11/2012	2/26/2013	2/26/2013	4/11/2012	3/1/2013	4/11/2012	3/1/2013	5/7/2013	8/28/2013	4/10/2012	2/20/2013	2/28/2013	8/28/2013
Field Sample ID					MW-03-13	MW-03-13	MW-03-14	MW-106	MW-106	MW-107	MW-107	MW-27	MW-27	MW-28	MW-28	MW-29	MW-29
Lab Sample ID					AB94168	AC12113	AC12112	AB94185	AC12293	AB94167	AC12294	1305058-05	1308396-24	AB94193	AC11980	AC12290	1308396-23
VOCs (ug/L)																	
1,1,1-Trichloroethane	200	89	660,000	17,000	< 1.0 U	< 1.0 U	**1.4**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**42**	**54**
1,1-Dichloroethane	880	740	100,000	4,300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**26**	< 50 U
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**27**	< 50 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 1000 U
cis-1,2-Dichloroethylene	70	620	93,000	83	< 1.0 U	< 1.0 U	**14**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**490**	**840**
Tetrachloroethylene (PCE)	5	60	29,000	94	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**11**	< 50 U
Toluene	790	270	530,000	36,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 50 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**57**	< 50 U
Trichloroethylene (TCE)	5	200	2,200	9.8	< 1.0 U	< 1.0 U	**270**	< 1.0 U	**6.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**7,600**	**8,900**
Vinyl chloride	2	13	1,100	2.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4.8**	< 50 U
Total VOCs	NA	NA	NA	NA	**ND**	**ND**	**285**	**ND**	**6.1**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**8,258**	**9,794**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

* Only Detected Analytes shown

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

The Field Sample ID under the Station Name MW-03-10 for 4/10/2012 is believed to have been mislabeled.

Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	MW-30			MW-32		MW-34S		MW-34D			MW-35	MW-36
Sample Date					4/10/2012	5/24/2013	5/24/2013	4/10/2012	2/22/2013	4/10/2012	2/20/2013	4/10/2012	2/20/2013	8/27/2013	2/20/2013	2/20/2013
Field Sample ID					MW-30	MW-30	MW-30-Dup	MW-32	MW-32	MW-34s	MW-34s	MW-34D	MW-34d	MW-34d	MW-35	MW-36
Lab Sample ID					AB94163	1305230-09	1305230-10	AB94164	AC11989	AB94176	AC11977	AB94165	AC11976	1308396-16	AC11978	AC11979
VOCs (ug/L)						Field Duplicate										
1,1,1-Trichloroethane	200	89	660,000	17,000	< 200 U	**3.9**	**3.5**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.8**	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	100,000	4,300	< 200 U	**3**	**2.6**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	200	370	< 200 U	**6.2**	**6.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 4000 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
cis-1,2-Dichloroethylene	70	620	98,000	83	**240**	**200**	**180**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4**	**1.8**	< 1.0 U	< 1.0 U
Tetrachloroethylene (PCE)	5	60	25,000	94	< 200 U	**2.9**	**2.3**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	530,000	36,000	< 200 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	< 200 U	**9.8**	**7.6**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	2,200	9.8	**3,100**	**1,700**	**1,500**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**32**	**21**	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	1,100	2.8	< 200 U	**25**	**26**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	NA	NA	**3,340**	**1,951**	**1,728**	**ND**	**ND**	**ND**	**ND**	**ND**	**38**	**23**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

* Only Detected Analytes shown

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

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VOC= Volatile Organic Compound

The Field Sample ID under the Station Name MW-03-10 for 4/10/2012 is believed to have been mislabeled.

Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	MW-37S		MW-37D		MW-303I			MW-303D			
Sample Date					4/10/2012	2/27/2013	4/10/2012	2/27/2013	2/28/2013	2/28/2013	8/28/2013	4/11/2012	2/28/2013	5/28/2013	8/28/2013
Field Sample ID					MW-37s	MW-37s	MW-37D	MW-37d	MW-303I	MW-303I-DUP	MW-303I	MW-303D	MW-303d	MW-303d	MW-303d
Lab Sample ID					AB94177	AC12117	AB94166	AC12118	AC12288	AC12289	1308396-19	AB94187	AC12287	1305234-02	1308396-18
VOCs (ug/L)										Field Duplicate					
1,1,1-Trichloroethane	200	89	650,000	17,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**14**	**13**	**120**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	100,000	4,300	**4.6**	**3.3**	< 1.0 U	< 1.0 U	**80**	**78**	**51**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1**	**1**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 200 U	< 20 U	< 20 U	< 20 U	< 20 U
cis-1,2-Dichloroethylene	70	620	93,000	83	< 1.0 U	< 1.0 U	< 1.0 U	**31**	**68**	**67**	**740**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethylene (PCE)	5	60	25,000	94	**1.2**	**1.2**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**24**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	530,000	36,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.4**	**1.5**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	2,200	9.8	< 1.0 U	< 1.0 U	**1.6**	**5.5**	**1,300**	**1,300**	**11,000**	**10**	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	1,100	2.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	NA	NA	**5.8**	**4.5**	**1.6**	**37**	**1,464**	**1,461**	**11,935**	**10**	**ND**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

* Only Detected Analytes shown

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

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VOC= Volatile Organic Compound

The Field Sample ID under the Station Name MW-03-10 for 4/10/2012 is believed to have been mislabeled.

Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	MW-304I				MW-304D				MW-306I		
Sample Date					4/11/2012	2/27/2013	5/23/2013	8/28/2013	4/11/2012	2/28/2013	5/22/2013	8/28/2013	4/11/2012	3/1/2013	3/1/2013
Field Sample ID					MW-304i	MW-304I	MW-304I	MW-304I	MW-304D	MW-304d	MW-304d	MW-304d	MW-306i	MW-306I	MW-306I-DUP
Lab Sample ID					AB94169	AC12121	1305230-02	1308396-21	AB94188	AC12286	1305202-13	1308396-22	AB94170	AC12291	AC12292
VOCs (ug/L)															Field Duplicate
1,1,1-Trichloroethane	200	89	650,000	17,000	**2.8**	< 5.0 U	**11**	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	100,000	4,300	< 1.0 U	< 5.0 U	< 5 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 5.0 U	< 5 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 100 U	< 100 U	< 400 U	< 20 U	**180**	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
cis-1,2-Dichloroethylene	70	620	93,000	83	**140**	**45**	**190**	**400**	**18**	**3.4**	**4.8**	**1.7**	**12**	**22**	**23**
Tetrachloroethylene (PCE)	5	60	25,000	94	**2.3**	< 5.0 U	**6.5**	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**2.3**	**1.9**	**1.8**
Toluene	790	270	530,000	36,000	< 1.0 U	< 5.0 U	< 5 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1**	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	**1.2**	< 5.0 U	< 5 U	< 20 U	**1.2**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	2,200	9.8	**730**	**250**	**2,500**	**2,000**	**41**	**4.7**	**13**	**4.3**	**150**	**43**	**43**
Vinyl chloride	2	13	1,100	2.8	< 1.0 U	< 5.0 U	< 5 U	< 20 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	NA	NA	**876**	**295**	**2,708**	**2,400**	**60**	**188**	**18**	**6**	**165**	**67**	**68**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

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Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	MW-320I			MW-320D			MW-321I		MW-321D		
Sample Date					4/10/2012	2/21/2013	8/27/2013	4/10/2012	2/25/2013	5/28/2013	2/26/2013	2/26/2013	4/10/2012	2/25/2013	5/24/2013
Field Sample ID					MW-320i	MW-320I	MW-320I	MW-320D	MW-320d	MW-320d	MW-321I	MW-321I-Dup	MW-321D	MW-321d	MW-321d
Lab Sample ID					AB94171	AC11986	1308396-17	AB94189	AC12105	1305234-03	AC12107	AC12114	AB94190	AC12106	1305230-08
VOCs (ug/L)												Field Duplicate			
1,1,1-Trichloroethane	200	89	650,000	17,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5 U
1,1-Dichloroethane	880	740	100,000	4,300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.1**	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5 U
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 100 U	< 100 U
cis-1,2-Dichloroethylene	70	620	93,000	83	< 1.0 U	< 1.0 U	< 1.0 U	**1.8**	**16**	**16**	< 1.0 U	< 1.0 U	**5.6**	**5.9**	**5.3**
Tetrachloroethylene (PCE)	5	60	25,000	94	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5 U
Toluene	790	270	530,000	36,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**2.7**	**2.3**	< 1.0 U	< 1.0 U	**4.1**	**5**	**5.6**
Trichloroethylene (TCE)	5	200	2,200	9.8	**8.3**	**3**	**4.1**	**8.2**	**47**	**57**	**2.9**	**1.5**	**260**	**300**	**320**
Vinyl chloride	2	13	1,100	2.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 5 U
Total VOCs	NA	NA	NA	NA	**8.3**	**3**	**4**	**10**	**66**	**76**	**2.9**	**1.5**	**270**	**311**	**331**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

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VOC= Volatile Organic Compound

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Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	MW-323I		MW-323D			MW-325S			MW-325I		
Sample Date					4/10/2012	2/27/2013	4/10/2012	2/27/2013	5/21/2013	4/10/2012	2/26/2013	5/22/2013	4/10/2012	2/26/2013	5/22/2013
Field Sample ID					MW-323i	MW-323-I	MW-323D	MW-323-d	MW-323d	MW-325s	MW-325s	MW-325s	MW-325i	MW-325I	MW-325I
Lab Sample ID					AB94173	AC12115	AB94191	AC12116	1305202-06	AB94175	AC12108	1305202-07	AB94174	AC12109	1305202-08
VOCs (ug/L)															
1,1,1-Trichloroethane	200	89	650,000	17,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	100,000	4,300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
cis-1,2-Dichloroethylene	70	620	93,000	83	< 1.0 U	< 1.0 U	**5.2**	**5.8**	**6.8**	< 1.0 U	< 1.0 U	< 1.0 U	**35**	**18**	**13**
Tetrachloroethylene (PCE)	5	60	25,000	94	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	530,000	36,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4.8**	**2.4**	**1.6**
Trichloroethylene (TCE)	5	200	2,200	9.8	< 1.0 U	< 1.0 U	**3.9**	**4**	**4.5**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	1,100	2.8	< 1.0 U	< 1.0 U	**1.4**	**1.4**	**1.7**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	NA	NA	**ND**	**ND**	**11**	**11**	**13**	**ND**	**ND**	**ND**	**40**	**20**	**15**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

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Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	MW-325D			MW-D-103				SVM-W-1	WMW-1S		
Sample Date					4/10/2012	2/26/2013	5/22/2013	4/11/2012	2/28/2013	5/23/2013	8/28/2013	3/1/2013	2/21/2013	5/21/2013	8/26/2013
Field Sample ID					MW-325D	MW-325d	MW-325d	MW-D-103	MW-D-103	MW-D-103	MW-D-103	SVM-W-1	WMW-1s	WMW-1S	WMW-1s
Lab Sample ID					AB94192	AC12110	1305202-09	AB94184	AC12285	1305230-06	1308396-25	AC12297	AC11981	1305202-02	1308396-02
VOCs (ug/L)															
1,1,1-Trichloroethane	200	89	650,000	17,000	< 1.0 U	< 1.0 U	< 1.0 U	**3.7**	< 100 U	< 200 U	< 200 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	100,000	4,300	**1.5**	**1.3**	< 1.0 U	**110**	**260**	**240**	**220**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 1.0 U	< 1.0 U	**180**	**260**	**220**	**190**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 20 U	< 20 U	< 20 U	< 2000 U	< 4000 U	< 4000 U	< 20 U	< 20 U	< 20 U	< 20 U
cis-1,2-Dichloroethylene	70	620	93,000	83	**190**	**150**	**80**	**7,400**	**12,000**	**11,000**	**12,000**	**13**	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethylene (PCE)	5	60	25,000	94	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 100 U	< 200 U	< 200 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	530,000	36,000	< 1.0 U	< 1.0 U	< 1.0 U	**4.8**	< 100 U	< 200 U	< 200 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	**1**	< 1.0 U	< 1.0 U	**600**	**1,100**	**870**	**800**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	2,200	9.8	**6.2**	< 1.0 U	< 1.0 U	**8,200**	**25,000**	**26,000**	**21,000**	**11**	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	1,100	2.8	< 1.0 U	**120**	**60**	**30**	< 100 U	< 200 U	< 200 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	NA	NA	**199**	**271**	**140**	**16,529**	**38,620**	**38,330**	**34,210**	**24**	**ND**	**ND**	**ND**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

* Only Detected Analytes shown

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

The Field Sample ID under the Station Name MW-03-10 for 4/10/2012 is believed to have been mislabeled.

Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	WMW-2S			WMW-2I			WMW-2D			WMW-3S		
Sample Date					2/21/2013	5/21/2013	8/26/2013	2/21/2013	5/21/2013	8/26/2013	2/21/2013	5/21/2013	8/26/2013	2/25/2013	5/28/2013	8/27/2013
Field Sample ID					WMW-2s	WMW-2S	WMW-2s	WMW-2I	WMW-2I	WMW-2I	WMW-2d	WMW-2d	WMW-2d	WMW-3s	WMW-3s	WMW-3s
Lab Sample ID					AC11984	1305202-03	1308396-05	AC11983	1305202-04	1308396-04	AC11982	1305202-05	1308396-03	AC12102	1305234-04	1308396-11
VOCs (ug/L)																
1,1,1-Trichloroethane	200	89	660,000	17,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	100,000	4,300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
cis-1,2-Dichloroethylene	70	620	98,000	83	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethylene (PCE)	5	60	25,000	94	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	530,000	36,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4.3**	**1.1**
trans-1,2-Dichloroethylene	100	1,500	85,000	360	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethylene (TCE)	5	200	2,200	9.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	1,100	2.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Total VOCs	NA	NA	NA	NA	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**4**	**1**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

* Only Detected Analytes shown

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

The Field Sample ID under the Station Name MW-03-10 for 4/10/2012 is believed to have been mislabeled.

Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	WMW-3I			WMW-3D				WMW-4S			WMW-4I		
Sample Date					2/25/2013	5/28/2013	8/27/2013	2/25/2013	5/28/2013	8/27/2013	8/27/2013	2/22/2013	5/23/2013	8/27/2013	2/22/2013	5/23/2013	8/27/2013
Field Sample ID					WMW-3I	WMW-3I	WMW-3I	WMW-3d	WMW-3d	WMW-3d	WMW-3d-Dup	WMW-4s	WMW-4S	WMW-4s	WMW-4I	WMW-4I	WMW-4I
Lab Sample ID					AC12103	1305234-05	1308396-12	AC12104	1305234-06	1308396-13	1308396-14	AC11988	1305230-03	1308396-08	AC11991	1305230-04	1308396-09
VOCs (ug/L)											Field Duplicate						
1,1,1-Trichloroethane	200	89	660,000	17,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	880	740	100,000	4,300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.2**	< 1.0 U	< 1.0 U
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1**	< 1.0 U	< 1.0 U
2-Propanone (acetone)	730	1,700	7,000,000,000	8,200,000	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
cis-1,2-Dichloroethylene	70	620	93,000	83	**1.3**	< 1.0 U	**1.3**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**16**	**90**	**66**	**66**
Tetrachloroethylene (PCE)	5	60	29,000	94	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	790	270	530,000	36,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1**	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**4.4**	**2.6**	**2.5**
Trichloroethylene (TCE)	5	200	2,200	9.8	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	2	13	1,100	2.8	**24**	**18**	**26**	**3.5**	**3.4**	**5.3**	**4.4**	< 1.0 U	< 1.0 U	**10**	**32**	**35**	**24**
Total VOCs	NA	NA	NA	NA	**25**	**18**	**27**	**3.5**	**3**	**5**	**4**	**ND**	**0**	**27**	**129**	**104**	**93**

Notes:

Analyte concentration exceeds the standard for:

MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)

MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)

MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)

MDEQ Vapor Intrusion Screening Level (2013-05)

* Only Detected Analytes shown

Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

NA= Criteria Not Established

ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

The Field Sample ID under the Station Name MW-03-10 for 4/10/2012 is believed to have been mislabeled.

Table 7
Summary of Detected VOCs - 2012 and 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Part 201 - #01 - Residential Drinking Water (2012-09-28)	Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	Part 201 - #04 - Residential Groundwater Volatilization to Indoor Air (2012-09-28)	Vapor Intrusion Groundwater Screening Levels (2013-05)	WMW-4D			WMW-5S		WMW-5D		WMW-6S				WMW-6D		
Sample Date					2/22/2013	5/23/2013	8/27/2013	2/21/2013	5/7/2013	2/22/2013	5/7/2013	2/26/2013	5/22/2013	5/22/2013	8/27/2013	2/27/2013	5/22/2013	8/26/2013
Field Sample ID					WMW-4d	WMW-4d	WMW-4d	WMW-5s	WMW-5s	WMW-5d	WMW-5d	WMW-6s	WMW-6s	WMW-6s-Dup	WMW-6s	WMW-6d	WMW-6d	WMW-6d
Lab Sample ID					AC11990	1305230-05	1308396-10	AC11985	1305058-03	AC11987	1305058-02	AC12111	1305202-10	1305202-11	1308396-07	AC12119	1305202-12	1308396-06
VOCs (ug/L)														Field Duplicate				
1,1,1-Trichloroethane	200	89	660,000	17,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U
1,1-Dichloroethane	880	740	100,000	4,300	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**3.5**	**2.8**	**2.3**	**2.3**	**2.3**	**2.4**	**5.7**	< 10 U	**4.2**
1,1-Dichloroethylene	7	130	200	370	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**1.3**	**3**	< 10 U	**2.5**
2-Propanone (acetone)	730	1,700	1,000,000,000	8,200,000	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 200 U	< 20 U
cis-1,2-Dichloroethylene	70	620	93,000	83	**26**	**30**	**29**	< 1.0 U	< 1.0 U	**55**	**46**	**160**	**200**	**190**	**590**	**1,600**	**1,500**	**1,800**
Tetrachloroethylene (PCE)	5	60	25,000	94	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U
Toluene	790	270	538,000	36,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 1.0 U
trans-1,2-Dichloroethylene	100	1,500	85,000	360	< 1.0 U	**1.1**	< 1.0 U	< 1.0 U	< 1.0 U	**5.4**	**5.2**	**22**	**21**	**20**	**16**	**38**	**30**	**18**
Trichloroethylene (TCE)	5	200	2,200	9.8	< 1.0 U	< 1.0 U	< 1.0 U	**11**	**14**	< 1.0 U	< 1.0 U	< 1.0 U	**1**	**1**	**1**	**11**	< 10 U	**6.8**
Vinyl chloride	2	13	1,100	2.8	**17**	**23**	**14**	< 1.0 U	< 1.0 U	**1.5**	**1.8**	**16**	**63**	**59**	**110**	**240**	**220**	**200**
Total VOCs	NA	NA	NA	NA	**43**	**54**	**43**	**11**	**14**	**65**	**56**	**200**	**287**	**272**	**721**	**1,898**	**1,750**	**2,032**

Notes:

Analyte concentration exceeds the standard for:

- MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)
- MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)
- MDEQ Part 201 - #04 - Vapor Intrusion Criteria (2012-09-28)
- MDEQ Vapor Intrusion Screening Level (2013-05)

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Bold= Detected above the laboratory detection limit

MDEQ= Michigan Department of Environmental Quality

ug/L= Micrograms per liter

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ND= None Detected

U= Analyte was not detected at the indicated laboratory detection limit

VOC= Volatile Organic Compound

The Field Sample ID under the Station Name MW-03-10 for 4/10/2012 is believed to have been mislabeled.

Weston Solutions, Inc.

Table 8
Summary of Natural Attenuation and Field Parameters - 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Reporting Units	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	ASM-1	MW-03-06	MW-03-12			MW-27	MW-29	MW-30		MW-34D	MW-303I	MW-303D			MW-304I		
Sample Date				5/24/2013	8/27/2013	2/27/2013	5/24/2013	8/28/2013	8/28/2013	8/28/2013	5/24/2013	5/24/2013	8/27/2013	8/28/2013	2/28/2013	5/28/2013	8/28/2013	2/27/2013	5/23/2013	8/28/2013
Field Sample ID				ASM-1	MW-03-06	MW-03-12	MW-03-12	MW-03-12	MW-27	MW-29	MW-30	MW-30-Dup	MW-34d	MW-303I	MW-303d	MW-303d	MW-303d	MW-304I	MW-304I	MW-304I
Lab Sample ID				1305230-11	1308396-15	AC12120	1305230-07	1308396-20	1308396-24	1308396-23	1305230-09	1305230-10	1308396-16	1308396-19	AC12287	1305234-02	1308396-18	AC12121	1305230-02	1308396-21
Field Parameters																				
Dissolved Oxygen	mg/l	NCE	NCE	**1.05**	--	**8.19**	**1.09**	**0.7**	**0.93**	**0.99**	**2.39**	--	**5.23**	**7.09**	--	**1.1**	**0.74**	**11.62**	**1.87**	**1.48**
ORP	mV	NCE	NCE	**-47.1**	--	**30.1**	**-82.3**	**-86**	**-84.3**	**-66.9**	**-91.2**	--	**-66.1**	**-49.1**	--	**-102.9**	**-85.6**	**49.9**	**87.4**	**-74.1**
Metals																				
Total Iron	ug/l	300	1E+10	**32**	**230**	**240**	**2800**	**630**	--	**1300**	**3700**	**3900**	**1100**	**6000**	**1400**	**1600**	**1300**	**71**	**260**	**290**
Dissolved Iron	ug/l	300	1E+10	<20 U	< 20 U	**22**	**290**	**120**	--	**98**	**2500**	**2400**	< 20 U	**21**	**520**	**460**	**470**	< 20 U	**57**	**120**
Total Manganese	ug/l	50	4100	**330**	< 5.0 U	< 5.0 U	**88**	**150**	--	**2300**	**350**	**370**	**25**	**160**	**37**	**45**	**37**	< 5.0 U	**160**	**180**
Dissolved Manganese	ug/l	50	4100	**320**	< 5.0 U	< 5.0 U	**79**	**140**	--	**730**	**350**	**330**	< 5.0 U	**14**	**24**	**24**	**23**	< 5.0 U	**130**	**170**
Other Analyses																				
Alkalinity (as CaCO3)	mg/l	NCE	NCE	**270**	**300**	**200**	**210**	**200**	**150**	**260**	**190**	**190**	**260**	**340**	**160**	**170**	**160**	**230**	**280**	**320**
Ammonia	mg N/L	NCE	NCE	**0.09**	< 0.01 U	**0.04**	**0.09**	**0.05**	--	**0.09**	**0.21**	**0.2**	< 0.01 U	< 0.01 U	**0.09**	**0.1**	**0.1**	< 0.01 U	**0.35**	**0.07**
Nitrate + Nitrite	mg N/L	NCE	NCE	**0.59**	**1.0**	**0.12**	**0.025**	**0.052**	--	**0.074**	**0.38**	**0.37**	**2.8**	**8.6**	< 0.01 U	**0.045**	**1.2**	**2.6**	**2.9**	**3.4**
Total Kjeldahl Nitrogen	mg N/L	NCE	NCE	**0.29**	**0.16**	**0.18**	**0.33**	**0.17**	--	**0.28**	**1.3**	**1.2**	**0.23**	**0.47**	**0.21**	**0.24**	**0.2**	**0.25**	**0.66**	**0.31**
Sulfate	mg/l	NCE	NCE	**29**	**30**	**37**	**34**	**32**	**36**	**23**	**33**	**32**	**27**	**30**	**39**	**35**	**31**	**34**	**29**	**33**
Sulfide	mg/l	NCE	NCE	**0.0072 J**	< 0.02 U	**0.023**	**0.1**	**0.022**	**0.032**	**0.0063 J**	**0.038**	**0.03**	< 0.02 U	**0.057**	**0.047**	**0.029**	**0.023**	< 0.02 U	< 0.02 U	< 0.02 U
Ethane	mg/l	NCE	NCE	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Ethylene	mg/l	NCE	NCE	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Methane	mg/l	NCE	NCE	**0.01**	< 0.01 U	< 0.005 U	**0.055**	**0.05**	< 0.01 U	**0.033**	**0.015**	**0.014**	< 0.01 U	< 0.01 U	**0.017**	**0.013**	**0.016**	< 0.005 U	**0.015**	**0.022**
Carbon Dioxide	mg/l	NCE	NCE	**23**	**32**	**16**	**18**	**19**	**5.8**	**28**	**18**	**18**	**16**	**33**	**9.0**	**11**	**7.5**	**3.3**	**35**	**40**
TOC	mg/l	NCE	NCE	**1.7**	**1.3**	**1.5**	**1.7**	**1.3**	--	**2.7**	**10**	**10**	**0.7**	**5.1**	**0.7**	**0.7**	< 0.5 U	**2.4**	**3.0**	**2.8**
DOC	mg/l	NCE	NCE	**3.8**	**1.5**	**2.5**	**2.0**	**2.5**	--	**2.7**	**9.7**	**9.5**	**1.0**	**5.4**	**0.9**	**1.7**	**0.7**	**2.6**	**3.1**	**4.9**
COD	mg/l	NCE	NCE	< 5.0 U	< 5.0 U	**7.7**	**6.2**	< 5.0 U	--	< 5.0 U	**77**	**77**	< 5.0 U	**13**	< 5.0 U	< 5.0 U	< 5.0 U	**10**	**7.0**	< 5.0 U
BOD, (5-Day)	mg/l	NCE	NCE	< 2.0 U	--	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	**9.8**	**9.9**	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chloride	mg/l	NCE	NCE	**140**	**200**	**110**	**99**	**110**	**3.7**	**180**	**97**	**96**	**130**	**110**	**120**	**110**	**110**	**140**	**99**	**130**

* Only Detected Analytes shown
NCE= No Criteria Established
BOD= Biochemical Oxygen Demand
COD= Chemical Oxygen Demand
DOC= Dissolved Organic Carbon
ORP= Oxidation Reduction Potential
J= Analyte was positively identified. Value is an estimate.
MDEQ= Michigan Department of Environmental Quality
ug/L= Micrograms per liter
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Table 8
Summary of Natural Attenuation and Field Parameters - 2013 Monitor Well Samples
Village of Douglas Site
Douglas, Michigan

Station Name	Reporting Units	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	MW-304D			MW-320I	MW-320D	MW-321D		MW-323D		MW-325S		MW-325I		MW-325D	
Sample Date				2/28/2013	5/22/2013	8/28/2013	8/27/2013	5/28/2013	2/25/2013	5/24/2013	2/27/2013	5/21/2013	2/26/2013	5/22/2013	2/26/2013	5/22/2013	2/26/2013	5/22/2013
Field Sample ID				MW-304d	MW-304d	MW-304d	MW-320I	MW-320d	MW-321d	MW-321d	MW-323-d	MW-323d	MW-325s	MW-325s	MW-325I	MW-325I	MW-325d	MW-325d
Lab Sample ID				AC12286	1305202-13	1308396-22	1308396-17	1305234-03	AC12106	1305230-08	AC12116	1305202-06	AC12108	1305202-07	AC12109	1305202-08	AC12110	1305202-09
Field Parameters																		
Dissolved Oxygen	mg/l	NCE	NCE	--	0.72	0.8	6.47	1.47	1.2	0.95	1.68	0.8	--	10.02	--	0.65	--	0.99
ORP	mV	NCE	NCE	--	-167.2	-136.7	-56	104.1	-40.9	47.7	85	139	--	288.7	--	-159.7	--	-149.5
Metals																		
Total Iron	ug/l	300	1E+10	9800	2800	7100	11000	3600	21	34	210	190	110	120	13000	18000	6500	7200
Dissolved Iron	ug/l	300	1E+10	48	400	270	< 20 U	35	< 20 U	<20 U	20	29	< 20 U	<20 U	5400	5000	6100	6500
Total Manganese	ug/l	50	4100	88	37	300	170	130	< 5.0 U	<5 U	38	44	< 5.0 U	<5.0 U	220	230	210	230
Dissolved Manganese	ug/l	50	4100	23	20	78	< 5.0 U	49	< 5.0 U	<5 U	34	40	< 5.0 U	<5.0 U	150	140	210	240
Other Analyses																		
Alkalinity (as CaCO3)	mg/l	NCE	NCE	140	140	130	190	220	150	170	280	300	210	200	180	220	250	260
Ammonia	mg N/L	NCE	NCE	0.14	0.13	0.13	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	0.82	0.59	0.73	0.7
Nitrate + Nitrite	mg N/L	NCE	NCE	0.21	0.15	0.029	2.1	1.0	0.05	0.13	1.2	1.4	0.1	0.085	< 0.01 U	0.017	0.03	0.042
Total Kjeldahl Nitrogen	mg N/L	NCE	NCE	0.28	0.3	0.51	0.16	0.11	< 0.1 U	< 0.1 U	0.21	0.19	< 0.1 U	< 0.1 U	0.99	0.8	0.9	0.88
Sulfate	mg/l	NCE	NCE	28	25	19	13	33	37	39	40	37	19	24	47	37	77	88
Sulfide	mg/l	NCE	NCE	0.19	0.13	0.13	0.017 J	0.016 J	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	0.048	0.047	0.025	0.014 J
Ethane	mg/l	NCE	NCE	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Ethylene	mg/l	NCE	NCE	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	0.022	< 0.01 U
Methane	mg/l	NCE	NCE	0.045	0.037	0.023	< 0.01 U	< 0.01 U	< 0.005 U	< 0.01 U	< 0.005 U	0.012	< 0.005 U	0.016	0.035	0.023	0.49	0.17
Carbon Dioxide	mg/l	NCE	NCE	< 2.0 U	2.5	2.5	5.8	14	5.8	5.0	16	17	13	11	16	18	20	22
TOC	mg/l	NCE	NCE	1.1	1.4	2.6	1.1	1.4	0.6	< 0.5 U	1.4	1.8	0.6	1.0	2.8	2.7	3.3	3.2
DOC	mg/l	NCE	NCE	2.3	4.0	2.3	1.9	1.6	0.7	2.7	2.4	1.8	1.7	1.1	2.7	3.8	3.3	3.5
COD	mg/l	NCE	NCE	6.0	< 5.0 U	6.9	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	7.3	< 5.0 U	< 5.0 U	< 5.0 U	7.8	6.7	13	5.4
BOD, (5-Day)	mg/l	NCE	NCE	< 2.0 U	< 2.0 U	2.1	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U
Chloride	mg/l	NCE	NCE	100	120	68	48	63	7.8	7.6	130	120	2.3	3.1	10	6.4	11	11

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Station Name	Reporting Units	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	MW-D-103			SVM-W-1	WMW-1S			WMW-2S			WMW-2I			WMW-2D		
Sample Date				2/28/2013	5/23/2013	8/28/2013	3/1/2013	2/21/2013	5/21/2013	8/26/2013	2/21/2013	5/21/2013	8/26/2013	2/21/2013	5/21/2013	8/26/2013	2/21/2013	5/21/2013	8/26/2013
Field Sample ID				MW-D-103	MW-D-103	MW-D-103	SVM-W-1	WMW-1s	WMW-1S	WMW-1s	WMW-2s	WMW-2S	WMW-2s	WMW-2I	WMW-2I	WMW-2I	WMW-2d	WMW-2d	WMW-2d
Lab Sample ID				AC12285	1305230-06	1308396-25	AC12297	AC11981	1305202-02	1308396-02	AC11984	1305202-03	1308396-05	AC11983	1305202-04	1308396-04	AC11982	1305202-05	1308396-03
Field Parameters																			
Dissolved Oxygen	mg/l	NCE	NCE	--	1.08	0.99	--	0.49	0.88	1.5	1.57	2.96	6.18	9.6	6.12	9.04	0.58	0.63	1.13
ORP	mV	NCE	NCE	--	-127.7	-100.5	--	-108.7	-111	-75.1	30.1	57	-14.6	23.8	93.6	-10	-21.7	101.3	-31.7
Metals																			
Total Iron	ug/l	300	1E+10	1300	1600	--	30	4000	5000	7100	410	390	180	30	47	94	22	300	380
Dissolved Iron	ug/l	300	1E+10	1200	1200	--	< 20 U	2700	3000	2800	33	200	< 20 U	< 20 U	<20 U	< 20 U	20	<20 U	< 20 U
Total Manganese	ug/l	50	4100	43	47	--	8.2	250	270	310	110	18	6.2	< 5.0 U	<5.0 U	< 5.0 U	130	140	130
Dissolved Manganese	ug/l	50	4100	42	41	--	5.3	210	240	240	100	18	5.1	< 5.0 U	<5.0 U	< 5.0 U	120	120	120
Other Analyses																			
Alkalinity (as CaCO3)	mg/l	NCE	NCE	210	230	200	300	270	290	270	200	200	190	210	220	210	210	230	200
Ammonia	mg N/L	NCE	NCE	0.16	0.15	0.16	< 0.01 U	0.19	0.32	0.21	0.02	0.01	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	0.03	0.03	0.02
Nitrate + Nitrite	mg N/L	NCE	NCE	0.03	0.45	0.028	2.0	< 0.01 U	< 0.01 U	0.028	0.02	0.082	0.26	0.79	1.1	0.63	0.82	1.2	0.68
Total Kjeldahl Nitrogen	mg N/L	NCE	NCE	0.36	0.37	0.42	< 0.1 U	0.5	0.69	0.59	0.3	0.21	0.15	0.1	< 0.1 U	< 0.1 U	0.2	0.13	0.11
Sulfate	mg/l	NCE	NCE	35	28	31	28	24	20	26	30	29	23	28	25	26	31	28	33
Sulfide	mg/l	NCE	NCE	0.0066 J	0.063	0.038	0.0066 J	0.024	0.025	0.052	0.0084 J	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	0.022
Ethane	mg/l	NCE	NCE	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Ethylene	mg/l	NCE	NCE	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Methane	mg/l	NCE	NCE	0.13	0.083	0.084	0.007	0.052	0.35	0.23	< 0.005 U	0.031	0.029	< 0.005 U	0.019	< 0.01 U	< 0.005 U	0.011	< 0.01 U
Carbon Dioxide	mg/l	NCE	NCE	21	16	17	37	32	37	29	41	29	19	11	11	13	9.4	9.2	8.3
TOC	mg/l	NCE	NCE	2.2	2.2	2.3	1.4	3.7	4.7	3.7	4.7	3.9	2.1	0.8	1.3	< 0.5 U	1.2	1.5	0.8
DOC	mg/l	NCE	NCE	3.4	4.5	4.4	2.1	7.2	6.0	5.3	4.5	3.6	2.4	1.8	2.9	0.8	1.4	1.4	1.2
COD	mg/l	NCE	NCE	20	16	14	7.3	8.0	5.0	6.5	16	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U
BOD, (5-Day)	mg/l	NCE	NCE	< 2.0 U	< 2.0 U	< 2.0 U	< 4.0 U	< 2.0 U	< 2.0 U	--	1.7 J	< 2.0 U	--	< 2.0 U	< 2.0 U	--	< 2.0 U	< 2.0 U	--
Chloride	mg/l	NCE	NCE	140	140	140	35	37	48	48	4.0	5.0	4.4	11	14	13	13	14	14

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Table 8
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Village of Douglas Site
Douglas, Michigan

Station Name	Reporting Units	MDEQ Part 201 - #01 - Residential Drinking Water (2012-09-28)	MDEQ Part 201 - #03 - Groundwater Surface Water Interface (2012-09-28)	WMW-3S			WMW-3I			WMW-3D				WMW-4S			WMW-4I		
Sample Date				2/25/2013	5/28/2013	8/27/2013	2/25/2013	5/28/2013	8/27/2013	2/25/2013	5/28/2013	8/27/2013	8/27/2013	2/22/2013	5/23/2013	8/27/2013	2/22/2013	5/23/2013	8/27/2013
Field Sample ID				WMW-3s	WMW-3s	WMW-3s	WMW-3I	WMW-3I	WMW-3I	WMW-3d	WMW-3d	WMW-3d	WMW-3d-Dup	WMW-4s	WMW-4S	WMW-4s	WMW-4I	WMW-4I	WMW-4I
Lab Sample ID				AC12102	1305234-04	1308396-11	AC12103	1305234-05	1308396-12	AC12104	1305234-06	1308396-13	1308396-14	AC11988	1305230-03	1308396-08	AC11991	1305230-04	1308396-09
Field Parameters																			
Dissolved Oxygen	mg/l	NCE	NCE	**3.1**	**0.97**	**0.98**	**1.9**	**0.89**	**1.15**	**1.38**	**0.8**	**0.74**	--	**7.3**	**2.26**	**1.27**	**1.34**	**1.11**	**0.95**
ORP	mV	NCE	NCE	**-22.4**	**-119.3**	**-112.7**	**-133.5**	**-121.2**	**-120.3**	**-131.6**	**-139.1**	**-142**	--	**-44**	**-35.4**	**-169.7**	**-117.8**	**-134.2**	**-167.9**
Metals																			
Total Iron	ug/l	300	1E+10	**1600**	**9900**	**8900**	**3300**	**3400**	**3300**	**800**	**1100**	**1200**	**1100**	**5000**	**7500**	**5800**	**800**	**700**	**640**
Dissolved Iron	ug/l	300	1E+10	**1600**	**9800**	**9400**	**3100**	**3500**	**3500**	**790**	**1100**	**1100**	**1100**	**4500**	**6700**	**5400**	**790**	**720**	**590**
Total Manganese	ug/l	50	4100	**250**	**270**	**250**	**210**	**190**	**210**	**43**	**47**	**47**	**46**	**610**	**570**	**460**	**160**	**120**	**110**
Dissolved Manganese	ug/l	50	4100	**260**	**270**	**260**	**210**	**200**	**230**	**44**	**46**	**47**	**47**	**600**	**580**	**440**	**140**	**110**	**120**
Other Analyses																			
Alkalinity (as CaCO3)	mg/l	NCE	NCE	**320**	**290**	**280**	**190**	**200**	**190**	**150**	**180**	**150**	**150**	**270**	**290**	**220**	**180**	**190**	**180**
Ammonia	mg N/L	NCE	NCE	**10**	**14**	**10**	**2.8**	**2.6**	**2.7**	**0.86**	**0.84**	**0.84**	**0.84**	**5.3**	**5.7**	**5.8**	**0.86**	**0.81**	**0.78**
Nitrate + Nitrite	mg N/L	NCE	NCE	**0.02**	**0.062**	**0.37**	< 0.01 U	**0.066**	**0.028**	**0.03**	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	**0.012**	**0.036**	**0.01**	**0.016**	< 0.01 U
Total Kjeldahl Nitrogen	mg N/L	NCE	NCE	**10**	**10**	**10**	**2.9**	**2.8**	**2.9**	**0.93**	**0.94**	**0.89**	**0.88**	**6.4**	**6.4**	**6.2**	**1.09**	**0.97**	**0.88**
Sulfate	mg/l	NCE	NCE	**18**	**13**	**6.0**	**7.7**	**8.0**	**3.0**	**8.5**	**9.0**	**5.0**	**6.0**	**15**	**13**	**8.0**	**19**	**12**	**17**
Sulfide	mg/l	NCE	NCE	< 0.02 U	**0.096**	**0.055**	**0.034**	**0.032**	**0.031**	**0.021**	**0.03**	**0.027**	**0.037**	**0.011 J**	**0.053**	**0.82**	**0.31**	**0.27**	**0.26**
Ethane	mg/l	NCE	NCE	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Ethylene	mg/l	NCE	NCE	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Methane	mg/l	NCE	NCE	**7.2**	**15**	**15**	**5.6**	**3.9**	**3.8**	**1.6**	**0.72**	**0.67**	**0.6**	**5.2**	**10**	**9.9**	**0.11**	**0.74**	**0.4**
Carbon Dioxide	mg/l	NCE	NCE	**88**	**77**	**67**	**30**	**30**	**27**	**8.3**	**8.2**	**6.7**	**5.8**	**120**	**110**	**91**	**8.2**	**11**	**12**
TOC	mg/l	NCE	NCE	**6.3**	**7.1**	**5.6**	**3.3**	**2.4**	**2.2**	**1.6**	**1.2**	**1.0**	**1.0**	**10**	**9.8**	**7.7**	**4.1**	**1.8**	**1.3**
DOC	mg/l	NCE	NCE	**6.9**	**8.1**	**5.8**	**4.2**	**2.7**	**2.4**	**1.8**	**1.5**	**1.2**	**1.2**	**10**	**11**	**8.0**	**3.8**	**3.6**	**1.6**
COD	mg/l	NCE	NCE	**20**	**25**	**20**	**10**	**5.4**	< 5.0 U	< 5.0 U	**11**	< 5.0 U	< 5.0 U	**28**	**33**	**25**	**15**	< 5.0 U	< 5.0 U
BOD, (5-Day)	mg/l	NCE	NCE	**6.7**	**28**	**35**	**3.2**	**4.3**	--	< 2.0 U	< 2.0 U	--	--	**5.8**	**28**	**22**	**6.7**	< 2.0 U	--
Chloride	mg/l	NCE	NCE	**11**	**10**	**8.6**	**43**	**46**	**44**	**20**	**21**	**21**	**21**	**34**	**33**	**46**	**63**	**56**	**69**

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Sample Date				2/22/2013	5/23/2013	8/27/2013	2/21/2013	2/22/2013	2/26/2013	5/22/2013	5/22/2013	8/27/2013	2/27/2013	5/22/2013	8/26/2013
Field Sample ID				WMW-4d	WMW-4d	WMW-4d	WMW-5s	WMW-5d	WMW-6s	WMW-6s	WMW-6s-Dup	WMW-6s	WMW-6d	WMW-6d	WMW-6d
Lab Sample ID				AC11990	1305230-05	1308396-10	AC11985	AC11987	AC12111	1305202-10	1305202-11	1308396-07	AC12119	1305202-12	1308396-06
Field Parameters															
Dissolved Oxygen	mg/l	NCE	NCE	**1.7**	**0.9**	**0.81**	**5.15**	**5.09**	--	**0.77**	--	**1.29**	**1.96**	**0.77**	**0.91**
ORP	mV	NCE	NCE	**-136.5**	**-144.5**	**-156**	**31**	**-13.5**	--	**-136**	--	**-120.9**	**-140.9**	**-173**	**-99.7**
Metals															
Total Iron	ug/l	300	1E+10	**800**	**890**	**750**	**22**	**25**	**510**	**460**	**470**	**560**	**1600**	**2500**	**2300**
Dissolved Iron	ug/l	300	1E+10	**770**	**690**	**590**	< 20 U	< 20 U	**420**	**400**	**420**	**420**	**1500**	**2200**	**2100**
Total Manganese	ug/l	50	4100	**80**	**82**	**72**	**28**	**50**	**52**	**45**	**46**	**45**	**64**	**59**	**55**
Dissolved Manganese	ug/l	50	4100	**80**	**67**	**76**	**30**	**48**	**52**	**47**	**48**	**50**	**65**	**59**	**55**
Other Analyses															
Alkalinity (as CaCO3)	mg/l	NCE	NCE	**180**	**190**	**170**	**230**	**220**	**180**	**200**	**200**	**200**	**190**	**200**	**190**
Ammonia	mg N/L	NCE	NCE	**0.71**	**0.73**	**0.73**	< 0.01 U	**0.22**	**0.4**	**0.39**	**0.4**	**0.44**	**0.84**	**0.86**	**0.85**
Nitrate + Nitrite	mg N/L	NCE	NCE	< 0.01 U	**0.16**	< 0.01 U	**2.0**	**0.02**	**0.09**	**0.011**	**0.012**	< 0.01 U	**0.06**	**0.026**	**0.016**
Total Kjeldahl Nitrogen	mg N/L	NCE	NCE	**0.8**	**0.81**	**0.82**	**0.1**	**0.3**	**0.48**	**0.5**	**0.5**	**0.53**	**0.9**	**0.92**	**0.91**
Sulfate	mg/l	NCE	NCE	**14**	**10**	**9.0**	**28**	**50**	**18**	**17**	**16**	**12**	**10**	**8.0**	**5.0**
Sulfide	mg/l	NCE	NCE	**0.042**	**0.12**	**0.11**	< 0.02 U	< 0.02 U	**0.11**	**0.091**	**0.1**	**0.065**	**0.02**	**0.032**	**0.022**
Ethane	mg/l	NCE	NCE	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Ethylene	mg/l	NCE	NCE	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	**0.013**	< 0.01 U	< 0.01 U	**0.016**
Methane	mg/l	NCE	NCE	**0.15**	**0.26**	**0.28**	< 0.005 U	< 0.005 U	**0.26**	**0.28**	**0.24**	**0.3**	**0.77**	**0.84**	**1.0**
Carbon Dioxide	mg/l	NCE	NCE	**9.0**	**10**	**6.7**	**16**	**2.5**	**7.3**	**7.5**	**8.3**	**9.2**	**9.8**	**12**	**12**
TOC	mg/l	NCE	NCE	**2.3**	**1.9**	**1.6**	**0.9**	**1.8**	**2.1**	**1.6**	**1.6**	**1.3**	**1.6**	**1.9**	**1.3**
DOC	mg/l	NCE	NCE	**2.6**	**3.1**	**3.7**	**1.1**	**2.8**	**3.0**	**1.7**	**1.8**	**1.6**	**1.9**	**2.1**	**1.7**
COD	mg/l	NCE	NCE	< 5.0 U	< 5.0 U	< 5.0 U	< 5.0 U	**8.9**	**9.7**	< 5.0 U	< 5.0 U	< 5.0 U	**9.9**	**6.5**	< 5.0 U
BOD, (5-Day)	mg/l	NCE	NCE	**1.1 J**	< 2.0 U	--	< 2.0 U	**2.8**	< 2.0 U	< 2.0 U	< 2.0 U	--	< 2.0 U	< 2.0 U	--
Chloride	mg/l	NCE	NCE	**34**	**35**	**35**	**82**	**58**	**22**	**26**	**26**	**27**	**24**	**23**	**23**

* Only Detected Analytes shown
NCE= No Criteria Established
BOD= Biochemical Oxygen Demand
COD= Chemical Oxygen Demand
DOC= Dissolved Organic Carbon
ORP= Oxidation Reduction Potential
J= Analyte was positively identified. Value is an estimate.
MDEQ= Michigan Department of Environmental Quality
ug/L= Micrograms per liter
mg/L= Milligrams per liter
mg N/L= Milligrams nitrogen per liter
mV= Millivolts
NA= Criteria Not Established
TOC= Total Organic Carbon
U= Analyte was not detected at the indicated laboratory detection limit.
-- = Not Analyzed

MDEQ SGSL = 1,200 µg/m³ TCE - Non-Res >
(Viss)

(70 = Res)

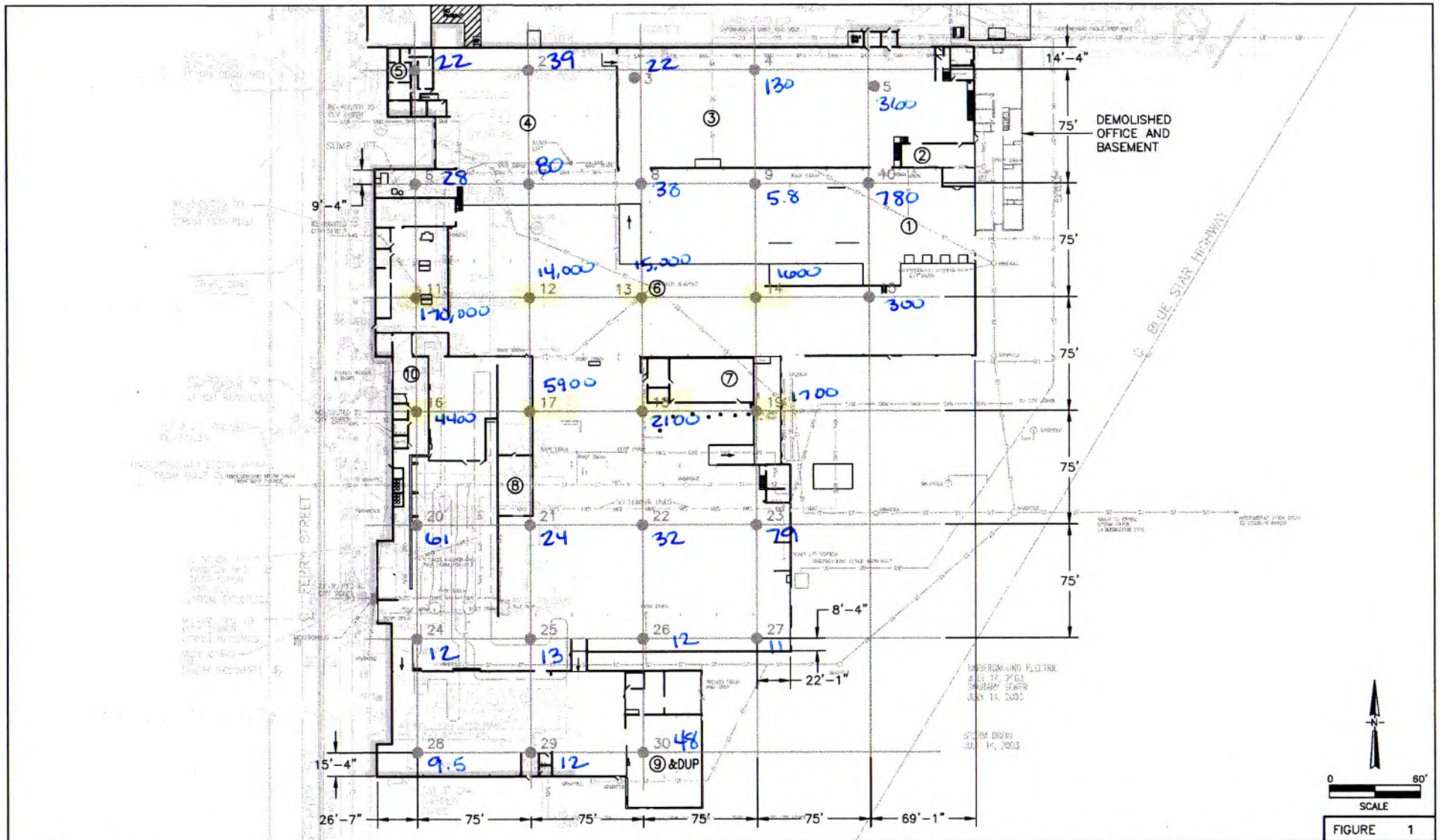


FIGURE 1

LEGEND

- SUB-SLAB SAMPLE LOCATION (JULY 1, 2015)
- ⑦ INDOOR AIR SAMPLE LOCATION (JUNE 29-30, 2015)

WESTON SOLUTIONS

2501 Jolly Rd.
Suite 100
Okemos, Michigan
48864

SUB-SLAB AND INDOOR AIR SAMPLE LOCATION MAP
VILLAGE OF DOUGLAS SITE
Douglas, Michigan

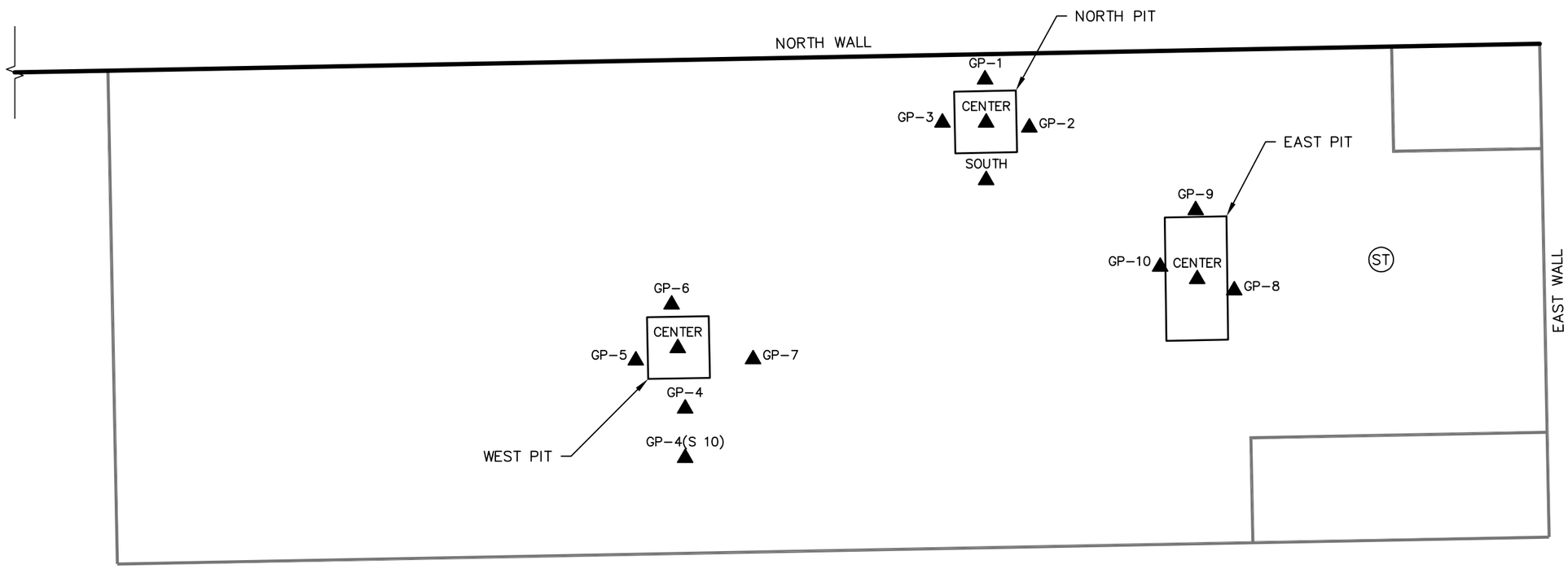
J:\DOUGLAS-weston.dwg, 7/20/2015 9:37:51 AM

SITE LAYOUT MAP

CADD Review RMK	ERM®	**HAWORTH DOUGLAS PLANT** 200 BLUE STAR HIGHWAY DOUGLAS, MICHIGAN	CHK'D BY: CO
DRAWN BY: GML			0317523
Date Drawn/Rev'd 07/24/15		Environmental Resources Management	FIGURE 1

R:\Cadd\CIntA-D\Buckman MacDonald\0317523\0317523-01.dwg, SITE LAYOUT MAP, 9/28/2015 9:54:58 AM, GML

SITE PITS AND BORING LOCATION MAP



LEGEND

ST STORM WATER CATCH BASIN

GP-7 ▲ GEOPROBE SOIL BORING LOCATION

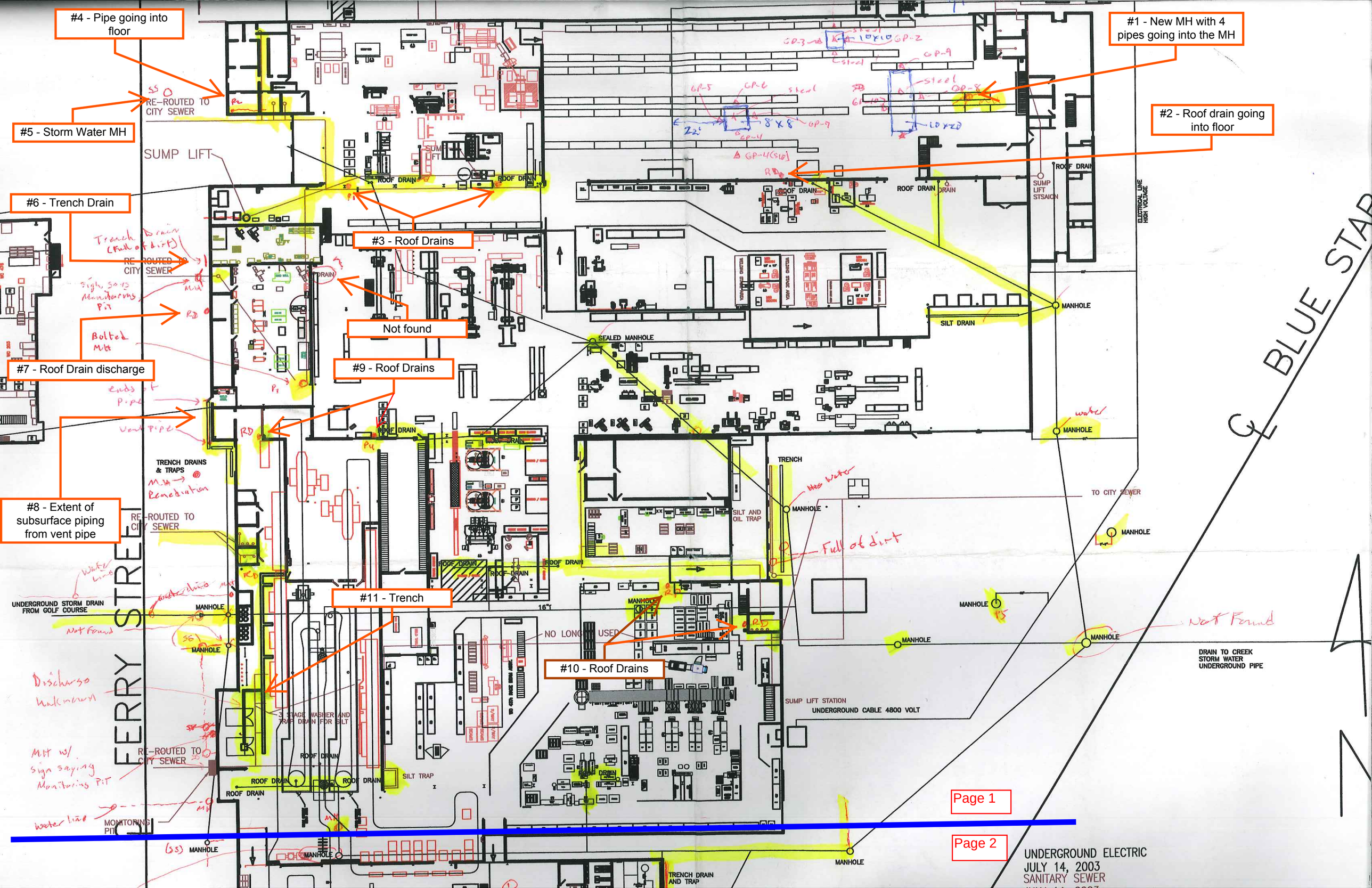
N

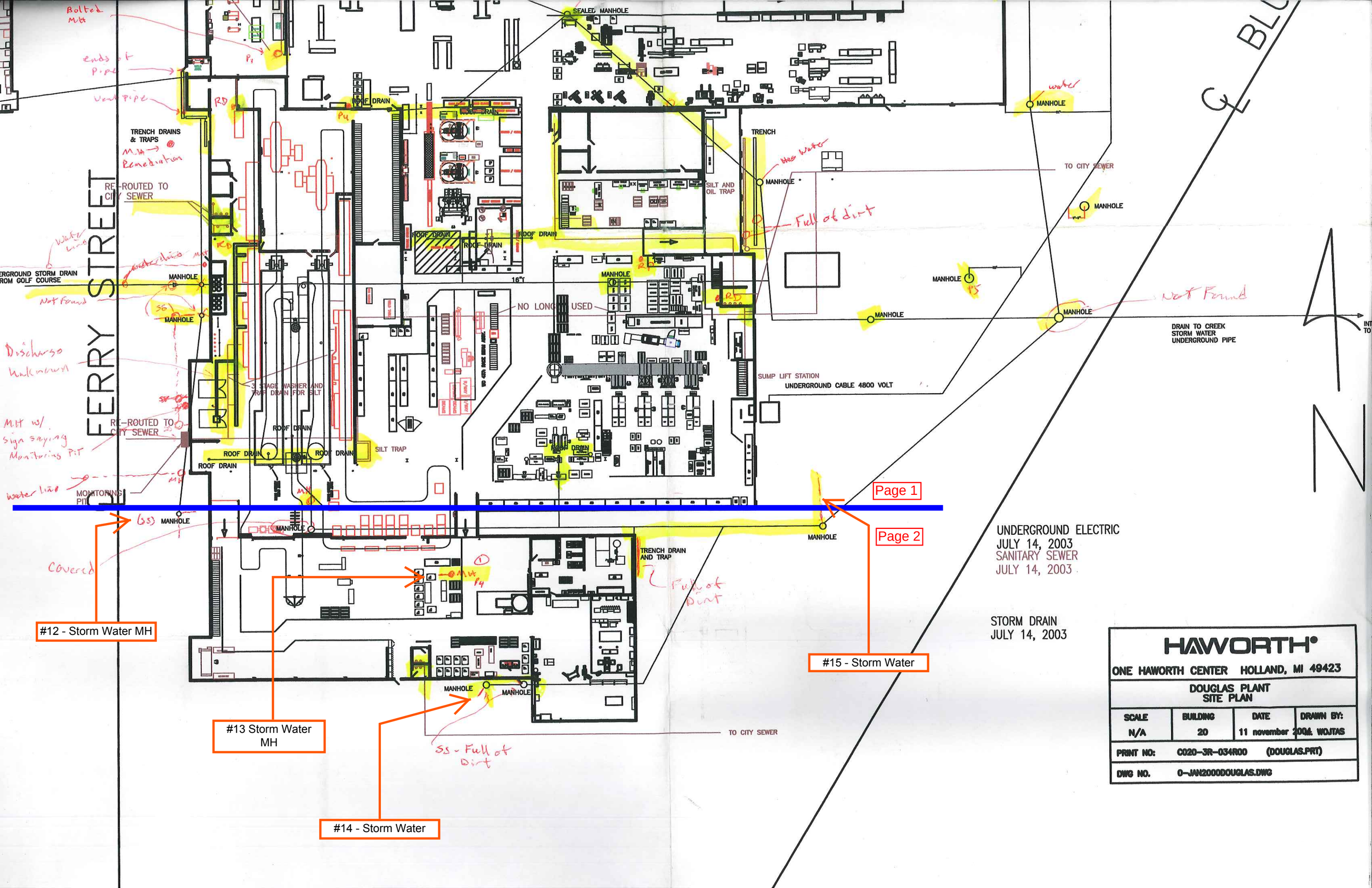
0 20 40

SCALE (IN FEET)

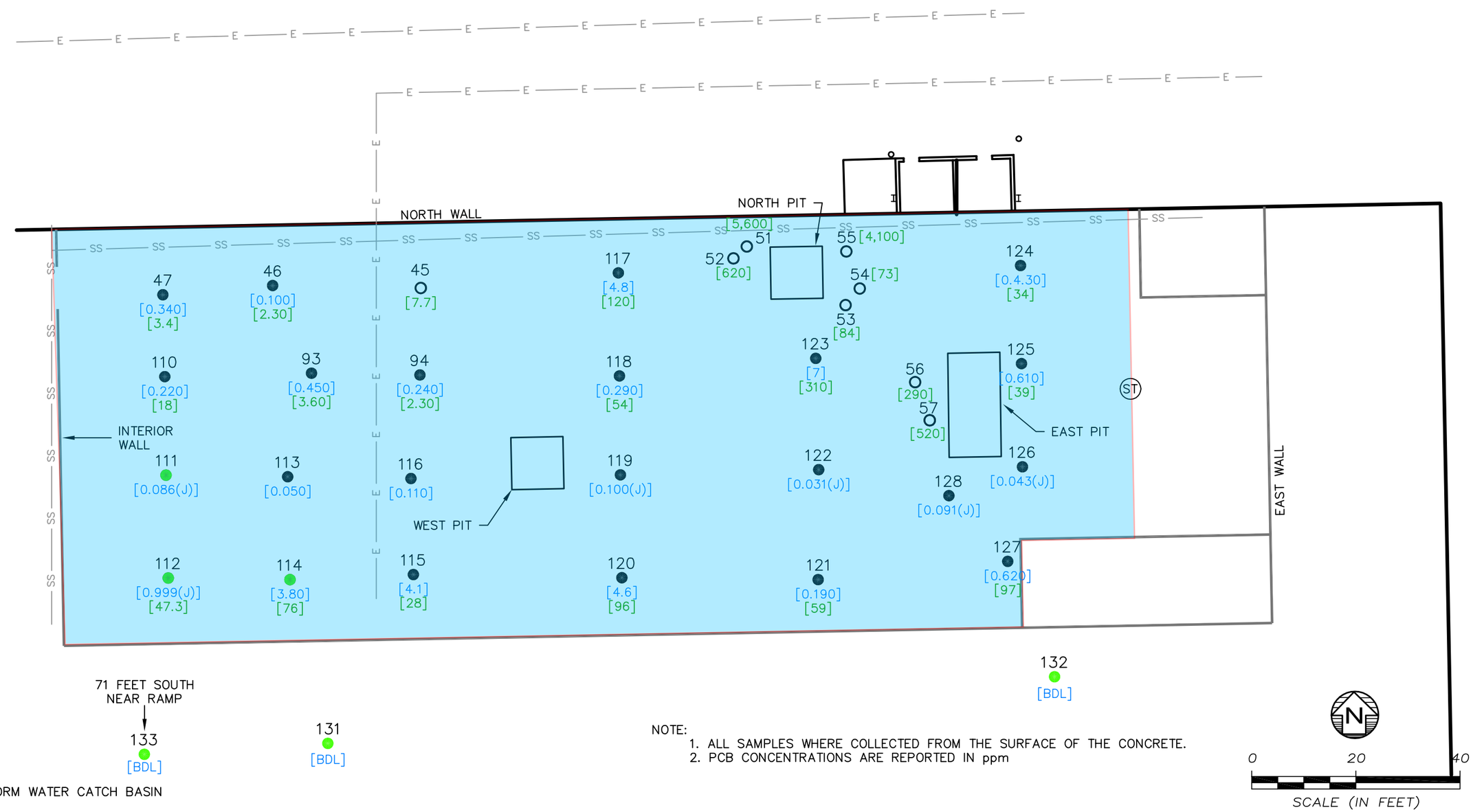
Drawn By GML	ERM®	HAWORTH DOUGLAS PLANT 200 BLUE STAR HIGHWAY DOUGLAS, MICHIGAN	CHK'D DRR
CADD Review RMK			0317523
Date Drawn/Rev'd 09/28/15		Environmental Resources Management	FIGURE 2

R:\Cadd\ClntA-D\Buckman MacDonald\0317523\0317523-01.dwg, SITE PIT-BORING LOCATION, 9/29/2015 9:01:55 AM, GML


#4 - Pipe going into floor
#1 - New MH with 4 pipes going into the MH
#5 - Storm Water MH
#2 - Roof drain going into floor
#6 - Trench Drain
#3 - Roof Drains
Not found
#7 - Roof Drain discharge
#9 - Roof Drains
#8 - Extent of subsurface piping from vent pipe
#11 - Trench
#10 - Roof Drains
Page 1
Page 2
RE-ROUTED TO CITY SEWER
SUMP LIFT
ROOF DRAIN
SUMP LIFT STSAION
ELECTRICAL LINE HIGH VOLTAGE
MANHOLE
SILT DRAIN
SEALED MANHOLE
TRENCH DRAINS & TRAPS
TRENCH
SILT AND OIL TRAP
TO CITY SEWER
UNDERGROUND STORM DRAIN FROM GOLF COURSE
NO LONGER USED
DRAIN TO CREEK STORM WATER UNDERGROUND PIPE
SUMP LIFT STATION
UNDERGROUND CABLE 4800 VOLT
3 STAGE WASHER AND TRAP DRAIN FOR SILT
SILT TRAP
MONITORING PIT
TRENCH DRAIN AND TRAP
FERRY STREET
BLUE STAR
UNDERGROUND ELECTRIC
JULY 14, 2003
SANITARY SEWER


FERRY STREET
SEALED MANHOLE
ROOF DRAIN
TRENCH DRAINS & TRAPS
RE-ROUTED TO CITY SEWER
UNDERGROUND STORM DRAIN FROM GOLF COURSE
MANHOLE
16"
NO LONGER USED
3 STAGE WASHER AND TRAP DRAIN FOR SILT
SILT TRAP
SILT AND OIL TRAP
TRENCH
TO CITY SEWER
SUMP LIFT STATION
UNDERGROUND CABLE 4800 VOLT
DRAIN TO CREEK STORM WATER UNDERGROUND PIPE
MONITORING PIT
TRENCH DRAIN AND TRAP
Page 1
Page 2
#12 - Storm Water MH
#13 Storm Water MH
#14 - Storm Water
#15 - Storm Water
UNDERGROUND ELECTRIC
JULY 14, 2003
SANITARY SEWER
JULY 14, 2003
STORM DRAIN
JULY 14, 2003
HAWORTH
ONE HAWORTH CENTER HOLLAND, MI 49423
DOUGLAS PLANT SITE PLAN
SCALE N/A
BUILDING 20
DATE 11 november 2004
DRAWN BY: WOJTAS
PRINT NO: C020-3R-034R00 (DOUGLAS.PRT)
DWG NO. 0-JAN2000DOUGLAS.DWG

EAST ROOM – CONCRETE RESULTS



NOTE:
1. ALL SAMPLES WHERE COLLECTED FROM THE SURFACE OF THE CONCRETE.
2. PCB CONCENTRATIONS ARE REPORTED IN ppm

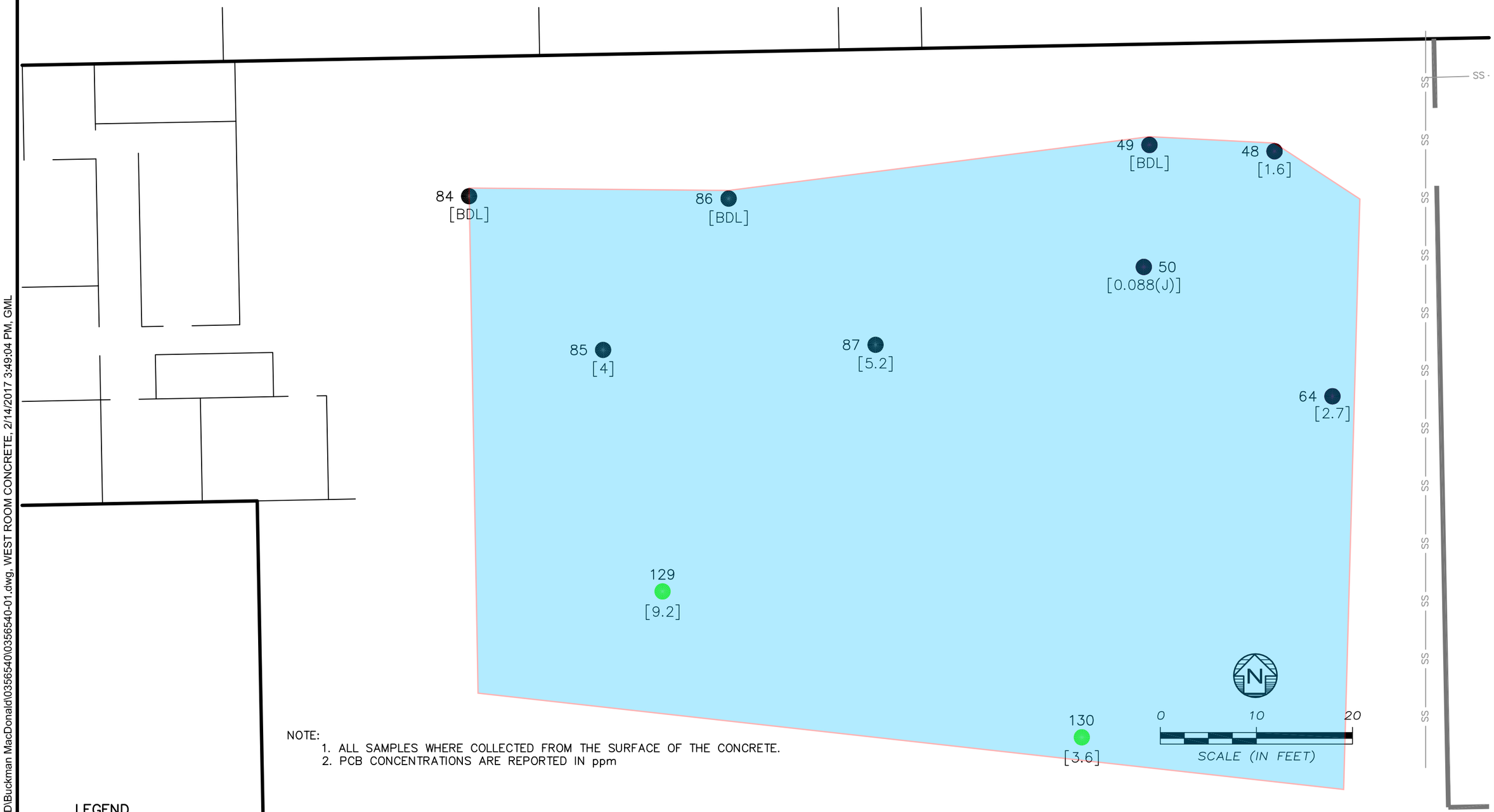
LEGEND

- (ST) STORM WATER CATCH BASIN
- ○ AUGUST 2016 CONCRETE SAMPLE LOCATION
- ● DECEMBER 2016 CONCRETE SAMPLE LOCATION
- ● JAN. 2017 CONCRETE SAMPLE LOCATION
- [0.100] SURFACE CONCRETE RESULTS
- [2.30] LOWER CONCRETE LAYER RESULTS

Drawn By GML	ERM®	FORMER CHASE MANUFACTURING PROPERTY 200 BLUE STAR HIGHWAY DOUGLAS, MICHIGAN	CHK'D DRR
CADD Review RMK			0356540
Date Drawn/Rev'd 9/28/15–12/22/16		Environmental Resources Management	FIGURE 2B

F:\Team\DMMV\CIntA-D\Buckman MacDonald\0356540\0356540-01.dwg, EAST ROOM CONCRETE, 2/14/2017 3:54:22 PM, GML

WEST ROOM – CONCRETE RESULTS



NOTE:
1. ALL SAMPLES WHERE COLLECTED FROM THE SURFACE OF THE CONCRETE.
2. PCB CONCENTRATIONS ARE REPORTED IN ppm

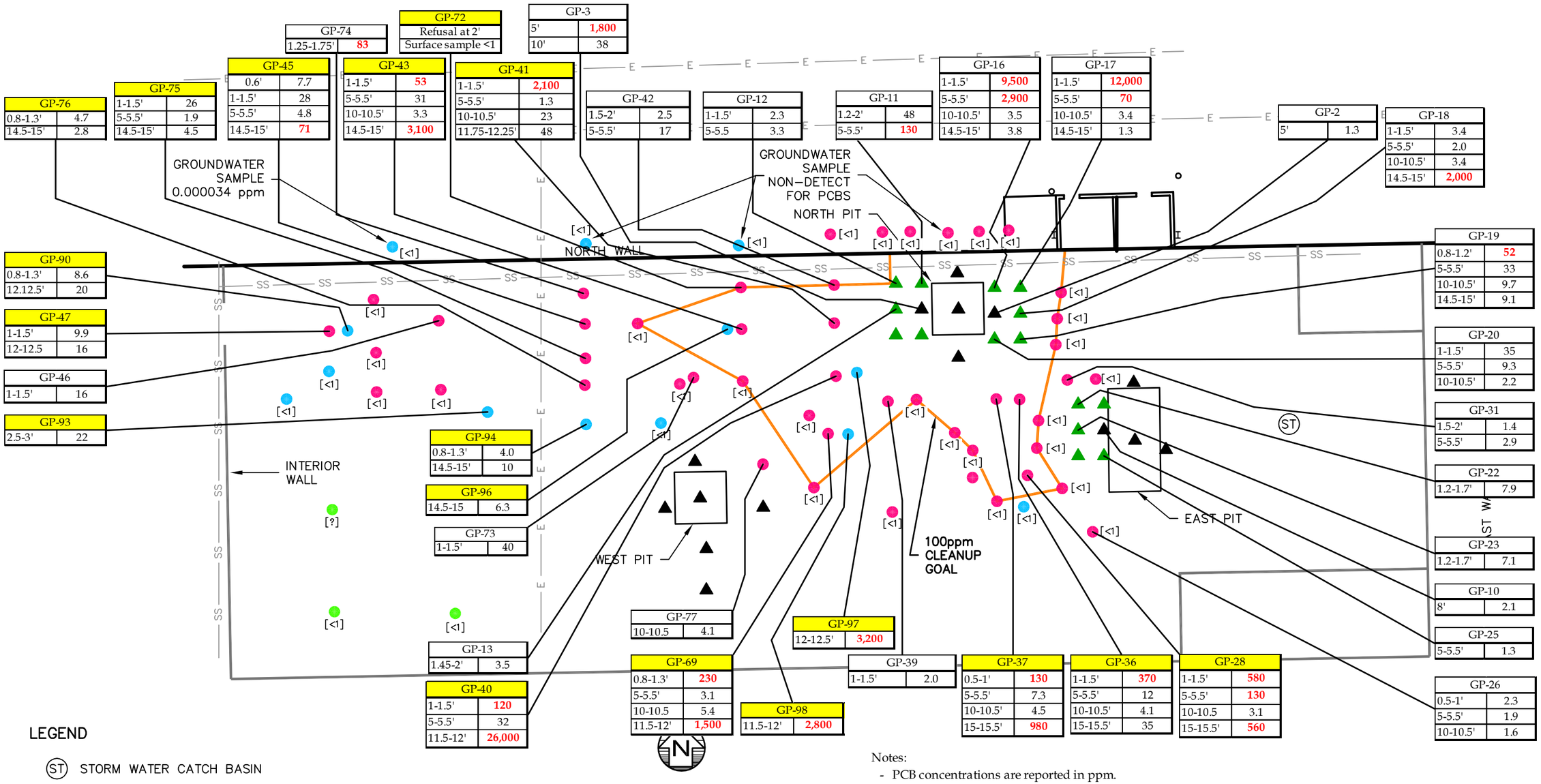
LEGEND

- ● NOV.–DEC. CONCRETE SAMPLE LOCATION
- ● JAN. 2017 CONCRETE SAMPLE LOCATION
- [4] RESULTS
- [BDL] BELOW DETECTABLE LIMITS

Drawn By GML	ERM®	FORMER CHASE MANUFACTURING PROPERTY 200 BLUE STAR HIGHWAY DOUGLAS, MICHIGAN	CHK'D AD
CADD Review RMK			0356540
Date Drawn/Rev'd 9/28/15–12/22/16		Environmental Resources Management	FIGURE 3B

F:\Team\DMMV\ClntA-D\Buckman MacDonald\0356540\0356540-01.dwg, WEST ROOM CONCRETE, 2/14/2017 3:49:04 PM, GML

EAST ROOM – SOIL RESULTS



LEGEND

- (ST) STORM WATER CATCH BASIN
- ▲ SEPTEMBER 2015 GEOPROBE SOIL BORING LOCATION
- ▲ DECEMBER 2015 GEOPROBE SOIL BORING LOCATION
- ● AUGUST 2016 GEOPROBE SOIL BORING LOCATION
- ● NOV.–DEC. 2016 GEOPROBE SOIL BORING LOCATION
- ● JANUARY 2017 GEOPROBE SOIL BORING LOCATION
- [<1] RESULTS ARE LESS THAN 1 mg/kg FOR ALL SAMPLES COLLECTED AT THIS LOCATION

Notes:

- PCB concentrations are reported in ppm.
- Samples analyzed using EPA Method 8082 and concentrations shown are the sum of Aroclor 1248 and Aroclor 1254.
- Red colored values exceed the referenced >50 ppm TSCA standard.
- Yellow highlights represent boring locations where refusal was encountered and the drill rig was unable to advance.

Drawn By GML	ERM®	FORMER CHASE MANUFACTURING PROPERTY 200 BLUE STAR HIGHWAY DOUGLAS, MICHIGAN	CHK'D DRR
CADD Review RMK			0356540
Date Drawn/Rev'd 9/28/15–12/22/16		Environmental Resources Management	FIGURE 2A

F:\Team\DMMV\CintA-D\Buckman MacDonald\0356540\0356540-01.dwg, EAST ROOM SOIL, 2/14/2017 3:59:00 PM, GML

SOURCE: USGS QUADRANGLE MAP; SAUGATUCK, MICHIGAN, 2017

0 1000 2000ft

HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

SITE LOCATION

FIGURE 1

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE008.dwg

LEGEND

AREA

Source: GOOGLE EARTH (DIGITAL GLOBE 9/9/2017)

0 50 100ft

Coordinate System:
STATE PLANE
MI-NAD83

HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

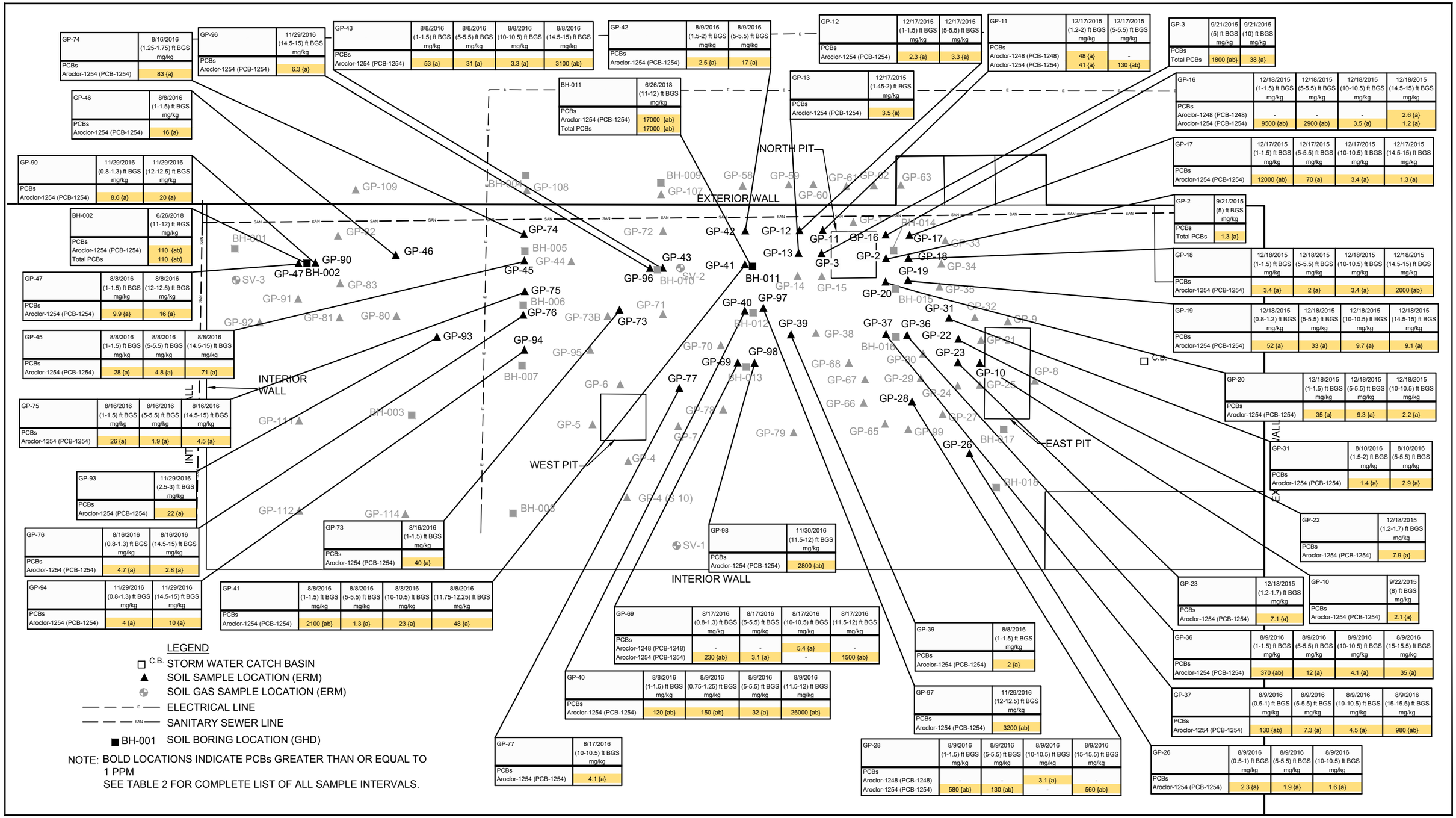
11152042-02

Jul 31, 2018

SITE MAP WITH EAST AND WEST ROOM LOCATIONS

FIGURE 2

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE007.dwg



GP-74	8/16/2016 (1.25-1.75) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	83 {a}

GP-96	11/29/2016 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	6.3 {a}

GP-43	8/8/2016 (1-1.5) ft BGS mg/kg	8/8/2016 (5-5.5) ft BGS mg/kg	8/8/2016 (10-10.5) ft BGS mg/kg	8/8/2016 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	53 {a}	31 {a}	3.3 {a}	3100 {ab}

GP-42	8/9/2016 (1.5-2) ft BGS mg/kg	8/9/2016 (5-5.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	2.5 {a}	17 {a}

GP-12	12/17/2015 (1-1.5) ft BGS mg/kg	12/17/2015 (5-5.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	2.3 {a}	3.3 {a}

GP-11	12/17/2015 (1.2-2) ft BGS mg/kg	12/17/2015 (5-5.5) ft BGS mg/kg
PCBs Aroclor-1248 (PCB-1248)	48 {a}	-
Aroclor-1254 (PCB-1254)	41 {a}	130 {ab}

GP-3	9/21/2015 (5) ft BGS mg/kg	9/21/2015 (10) ft BGS mg/kg
PCBs Total PCBs	1800 {ab}	38 {a}

GP-46	8/8/2016 (1-1.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	16 {a}

BH-011	6/26/2018 (11-12) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	17000 {ab}
Total PCBs	17000 {ab}

GP-13	12/17/2015 (1.45-2) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	3.5 {a}

GP-16	12/18/2015 (1-1.5) ft BGS mg/kg	12/18/2015 (5-5.5) ft BGS mg/kg	12/18/2015 (10-10.5) ft BGS mg/kg	12/18/2015 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1248 (PCB-1248)	-	-	-	2.6 {a}
Aroclor-1254 (PCB-1254)	9500 {ab}	2900 {ab}	3.5 {a}	1.2 {a}

GP-90	11/29/2016 (0.8-1.3) ft BGS mg/kg	11/29/2016 (12-12.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	8.6 {a}	20 {a}

GP-17	12/17/2015 (1-1.5) ft BGS mg/kg	12/17/2015 (5-5.5) ft BGS mg/kg	12/17/2015 (10-10.5) ft BGS mg/kg	12/17/2015 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	12000 {ab}	70 {a}	3.4 {a}	1.3 {a}

BH-002	6/26/2018 (11-12) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	110 {ab}
Total PCBs	110 {ab}

GP-2	9/21/2015 (5) ft BGS mg/kg
PCBs Total PCBs	1.3 {a}

GP-47	8/8/2016 (1-1.5) ft BGS mg/kg	8/8/2016 (12-12.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	9.9 {a}	16 {a}

GP-18	12/18/2015 (1-1.5) ft BGS mg/kg	12/18/2015 (5-5.5) ft BGS mg/kg	12/18/2015 (10-10.5) ft BGS mg/kg	12/18/2015 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	3.4 {a}	2 {a}	3.4 {a}	2000 {ab}

GP-19	12/18/2015 (0.8-1.2) ft BGS mg/kg	12/18/2015 (5-5.5) ft BGS mg/kg	12/18/2015 (10-10.5) ft BGS mg/kg	12/18/2015 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	52 {a}	33 {a}	9.7 {a}	9.1 {a}

GP-45	8/8/2016 (1-1.5) ft BGS mg/kg	8/8/2016 (5-5.5) ft BGS mg/kg	8/8/2016 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	28 {a}	4.8 {a}	71 {a}

GP-20	12/18/2015 (1-1.5) ft BGS mg/kg	12/18/2015 (5-5.5) ft BGS mg/kg	12/18/2015 (10-10.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	35 {a}	9.3 {a}	2.2 {a}

GP-75	8/16/2016 (1-1.5) ft BGS mg/kg	8/16/2016 (5-5.5) ft BGS mg/kg	8/16/2016 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	26 {a}	1.9 {a}	4.5 {a}

GP-31	8/10/2016 (1.5-2) ft BGS mg/kg	8/10/2016 (5-5.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	1.4 {a}	2.9 {a}

GP-93	11/29/2016 (2.5-3) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	22 {a}

GP-22	12/18/2015 (1.2-1.7) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	7.9 {a}

GP-76	8/16/2016 (0.8-1.3) ft BGS mg/kg	8/16/2016 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	4.7 {a}	2.8 {a}

GP-73	8/16/2016 (1-1.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	40 {a}

GP-98	11/30/2016 (11.5-12) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	2800 {ab}

GP-23	12/18/2015 (1.2-1.7) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	7.1 {a}

GP-10	9/22/2015 (8) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	2.1 {a}

GP-94	11/29/2016 (0.8-1.3) ft BGS mg/kg	11/29/2016 (14.5-15) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	4 {a}	10 {a}

GP-41	8/8/2016 (1-1.5) ft BGS mg/kg	8/8/2016 (5-5.5) ft BGS mg/kg	8/8/2016 (10-10.5) ft BGS mg/kg	8/8/2016 (11.75-12.25) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	2100 {ab}	1.3 {a}	23 {a}	48 {a}

GP-69	8/17/2016 (0.8-1.3) ft BGS mg/kg	8/17/2016 (5-5.5) ft BGS mg/kg	8/17/2016 (10-10.5) ft BGS mg/kg	8/17/2016 (11.5-12) ft BGS mg/kg
PCBs Aroclor-1248 (PCB-1248)	-	-	5.4 {a}	-
Aroclor-1254 (PCB-1254)	230 {ab}	3.1 {a}	-	1500 {ab}

GP-39	8/8/2016 (1-1.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	2 {a}

GP-36	8/9/2016 (1-1.5) ft BGS mg/kg	8/9/2016 (5-5.5) ft BGS mg/kg	8/9/2016 (10-10.5) ft BGS mg/kg	8/9/2016 (15-15.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	370 {ab}	12 {a}	4.1 {a}	35 {a}

GP-40	8/8/2016 (1-1.5) ft BGS mg/kg	8/9/2016 (0.75-1.25) ft BGS mg/kg	8/9/2016 (5-5.5) ft BGS mg/kg	8/9/2016 (11.5-12) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	120 {ab}	150 {ab}	32 {a}	26000 {ab}

GP-97	11/29/2016 (12-12.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	3200 {ab}

GP-37	8/9/2016 (0.5-1) ft BGS mg/kg	8/9/2016 (5-5.5) ft BGS mg/kg	8/9/2016 (10-10.5) ft BGS mg/kg	8/9/2016 (15-15.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	130 {ab}	7.3 {a}	4.5 {a}	980 {ab}

GP-77	8/17/2016 (10-10.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	4.1 {a}

GP-28	8/9/2016 (1-1.5) ft BGS mg/kg	8/9/2016 (5-5.5) ft BGS mg/kg	8/9/2016 (10-10.5) ft BGS mg/kg	8/9/2016 (15-15.5) ft BGS mg/kg
PCBs Aroclor-1248 (PCB-1248)	-	-	3.1 {a}	-
Aroclor-1254 (PCB-1254)	580 {ab}	130 {ab}	-	560 {ab}

GP-26	8/9/2016 (0.5-1) ft BGS mg/kg	8/9/2016 (5-5.5) ft BGS mg/kg	8/9/2016 (10-10.5) ft BGS mg/kg
PCBs Aroclor-1254 (PCB-1254)	2.3 {a}	1.9 {a}	1.6 {a}

LEGEND

- C.B. STORM WATER CATCH BASIN
- ▲ SOIL SAMPLE LOCATION (ERM)
- SOIL GAS SAMPLE LOCATION (ERM)
- E ELECTRICAL LINE
- SAN SANITARY SEWER LINE
- ■ BH-001 SOIL BORING LOCATION (GHD)

NOTE: BOLD LOCATIONS INDICATE PCBs GREATER THAN OR EQUAL TO 1 PPM
SEE TABLE 2 FOR COMPLETE LIST OF ALL SAMPLE INTERVALS.

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 10 20ft

Coordinate System:
STATE PLANE
MI-NAD83

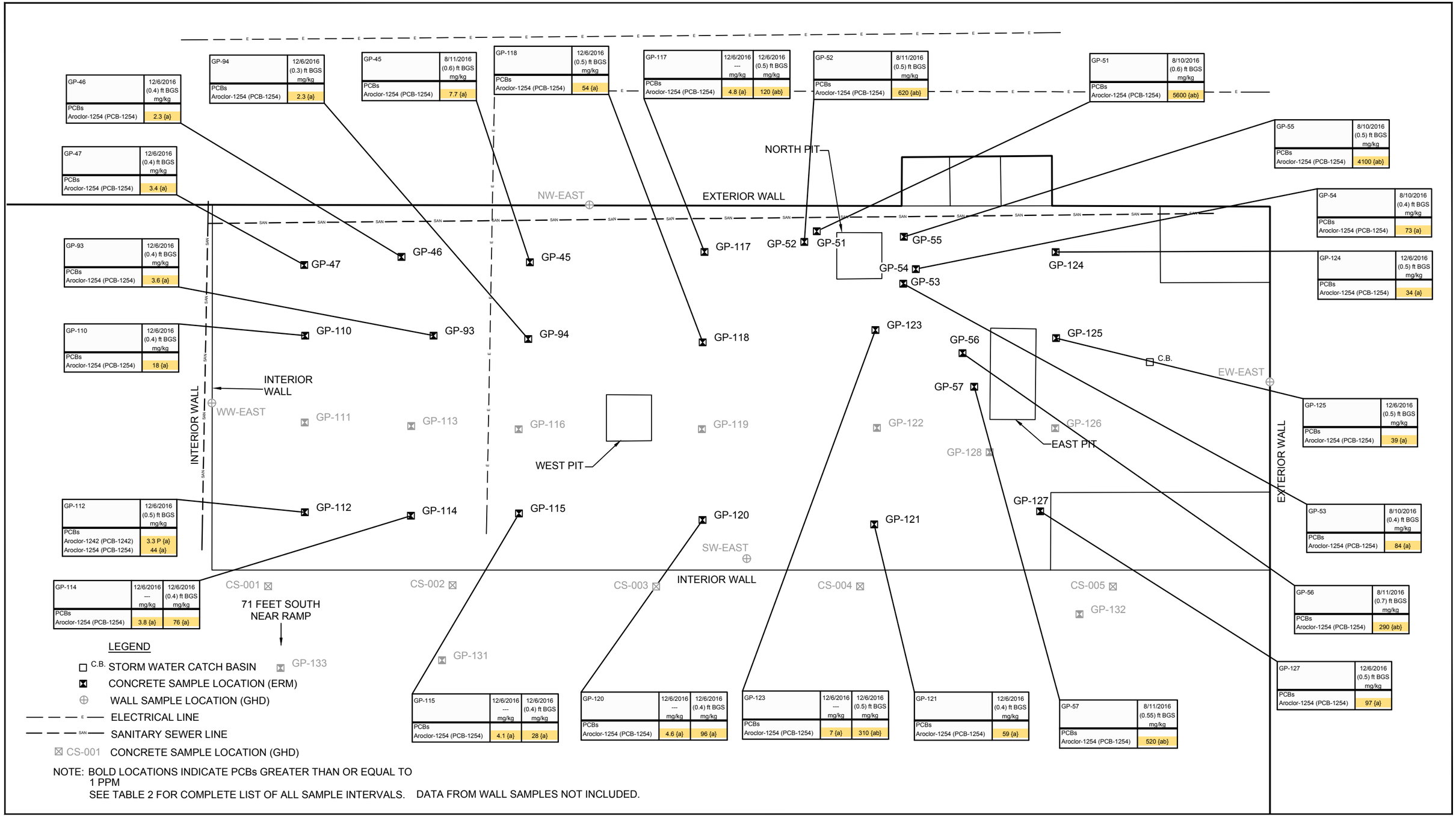
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

EAST ROOM PCB SOIL SAMPLE LOCATIONS AND RESULTS

FIGURE 3

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE003.dwg



Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 10 20ft

Coordinate System:
STATE PLANE
MI-NAD83

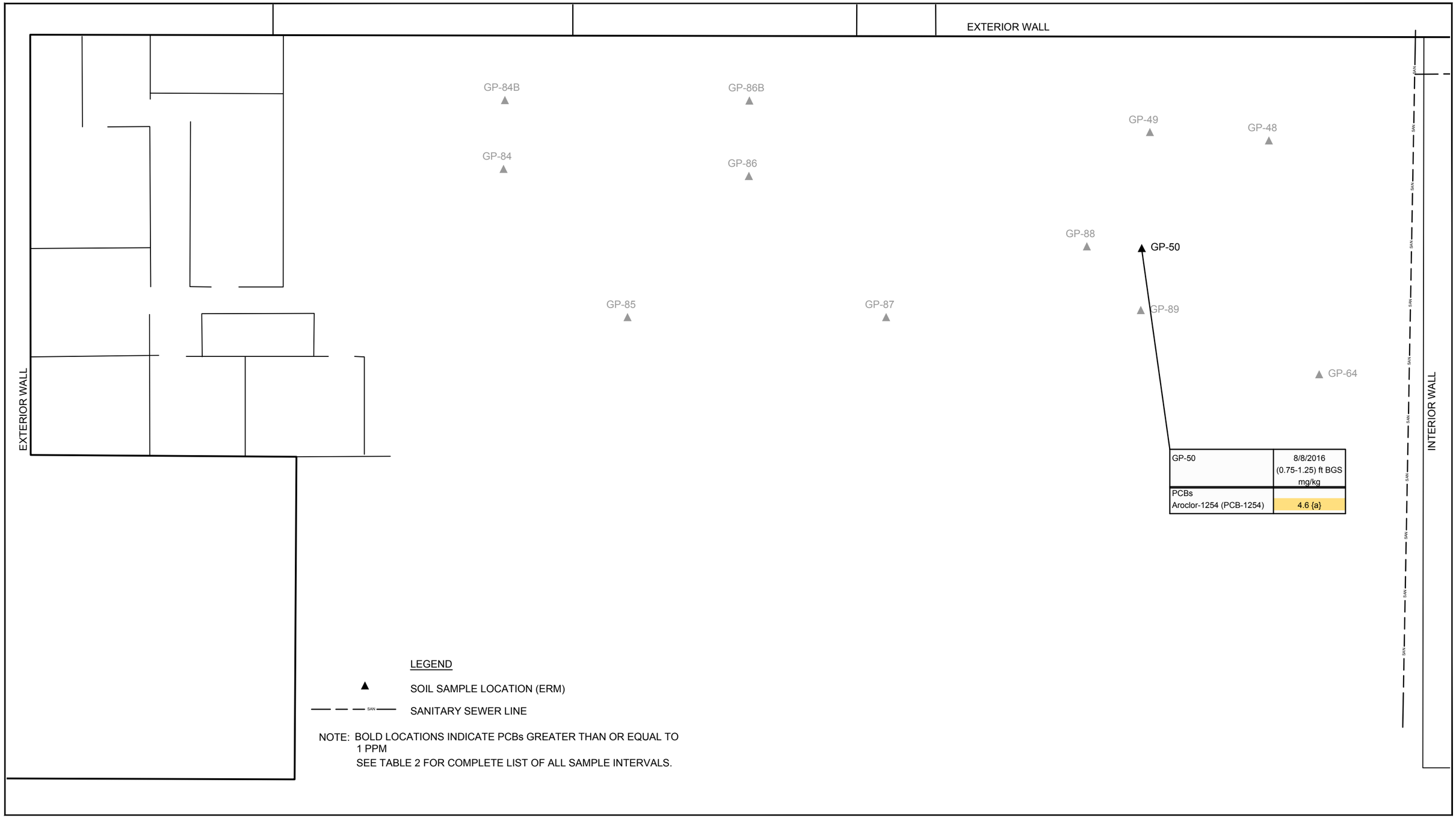
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

EAST ROOM PCB CONCRETE SAMPLE LOCATIONS AND RESULTS

FIGURE 4

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE004.dwg



GP-50	8/8/2016 (0.75-1.25) ft BGS mg/kg
PCBs	
Aroclor-1254 (PCB-1254)	4.6 {a}

NOTE: BOLD LOCATIONS INDICATE PCBs GREATER THAN OR EQUAL TO 1 PPM
SEE TABLE 2 FOR COMPLETE LIST OF ALL SAMPLE INTERVALS.

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 5 10ft

Coordinate System:
STATE PLANE
MI-NAD83

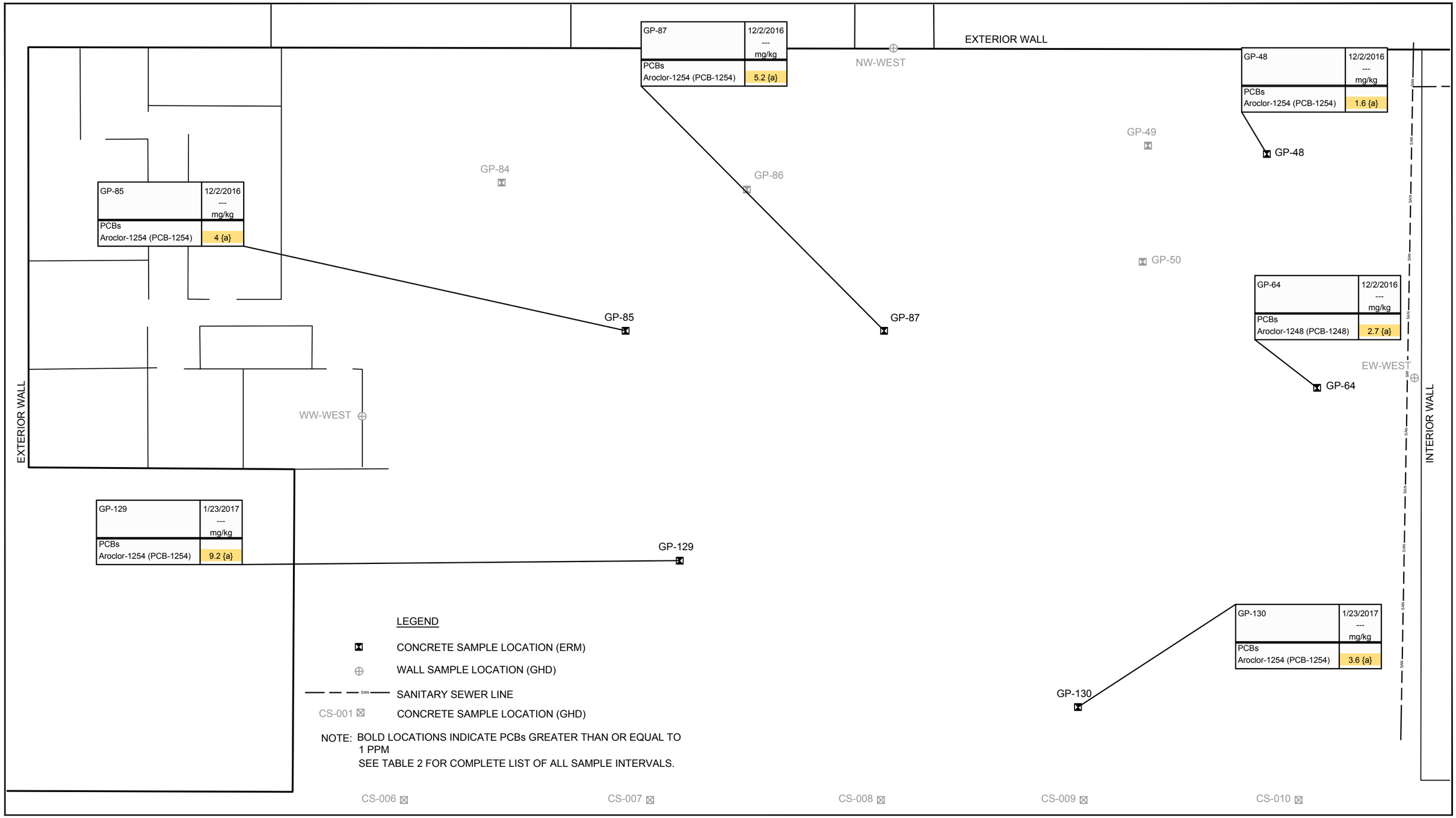
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

WEST ROOM PCB SOIL SAMPLE LOCATONS AND RESULTS

FIGURE 5

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE005.dwg



Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 5 10ft

Coordinate System:
STATE PLANE
MI-NAD83

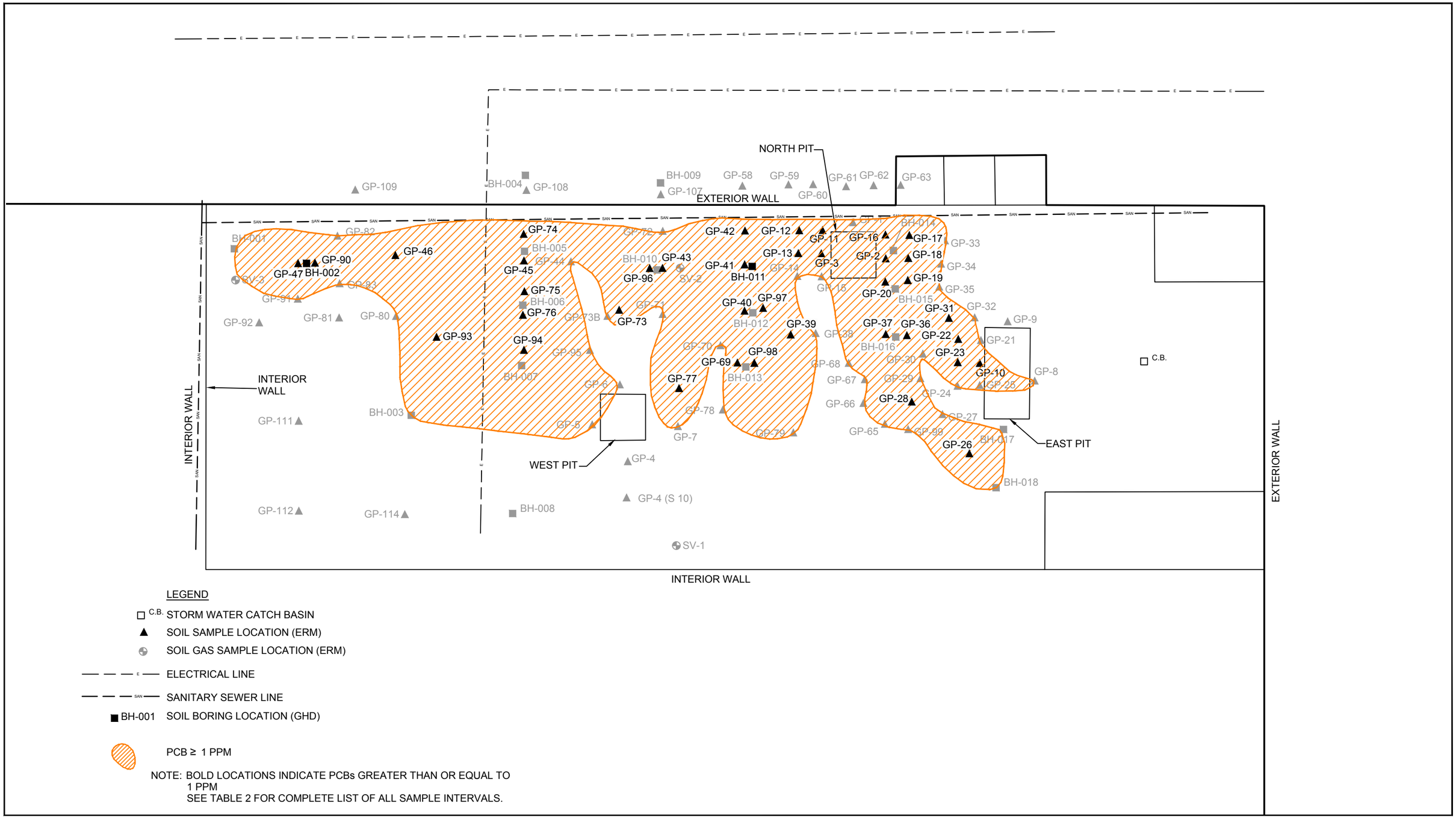
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

WEST ROOM PCB CONCRETE SAMPLE LOCATIONS AND RESULTS

FIGURE 6

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE006.dwg



LEGEND

- C.B. STORM WATER CATCH BASIN
- ▲ SOIL SAMPLE LOCATION (ERM)
- SOIL GAS SAMPLE LOCATION (ERM)
- ELECTRICAL LINE
- SANITARY SEWER LINE
- ■ BH-001 SOIL BORING LOCATION (GHD)
- PCB ≥ 1 PPM

NOTE: BOLD LOCATIONS INDICATE PCBs GREATER THAN OR EQUAL TO 1 PPM
SEE TABLE 2 FOR COMPLETE LIST OF ALL SAMPLE INTERVALS.

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 10 20ft

Coordinate System:
STATE PLANE
MI-NAD83

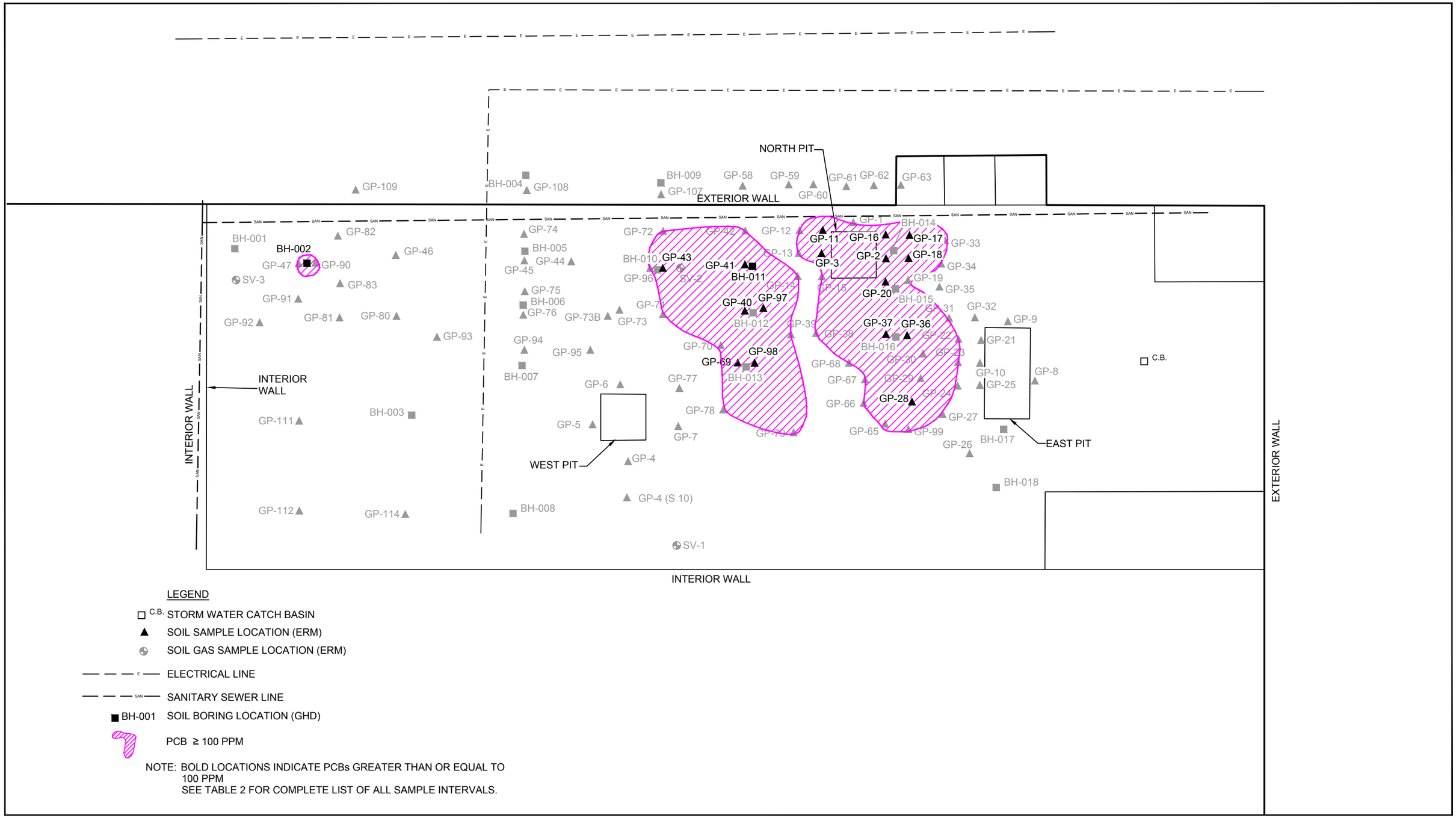
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

EAST ROOM SOIL DELIINEATION TO 1 PPM

FIGURE 7

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE010.dwg



LEGEND

- C.B. STORM WATER CATCH BASIN
- ▲ SOIL SAMPLE LOCATION (ERM)
- SOIL GAS SAMPLE LOCATION (ERM)
- ELECTRICAL LINE
- SANITARY SEWER LINE
- BH-001 SOIL BORING LOCATION (GHD)
- PCB ≥ 100 PPM

NOTE: BOLD LOCATIONS INDICATE PCBs GREATER THAN OR EQUAL TO 100 PPM
SEE TABLE 2 FOR COMPLETE LIST OF ALL SAMPLE INTERVALS.

Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 10 20ft

Coordinate System:
STATE PLANE
MI-NAD83

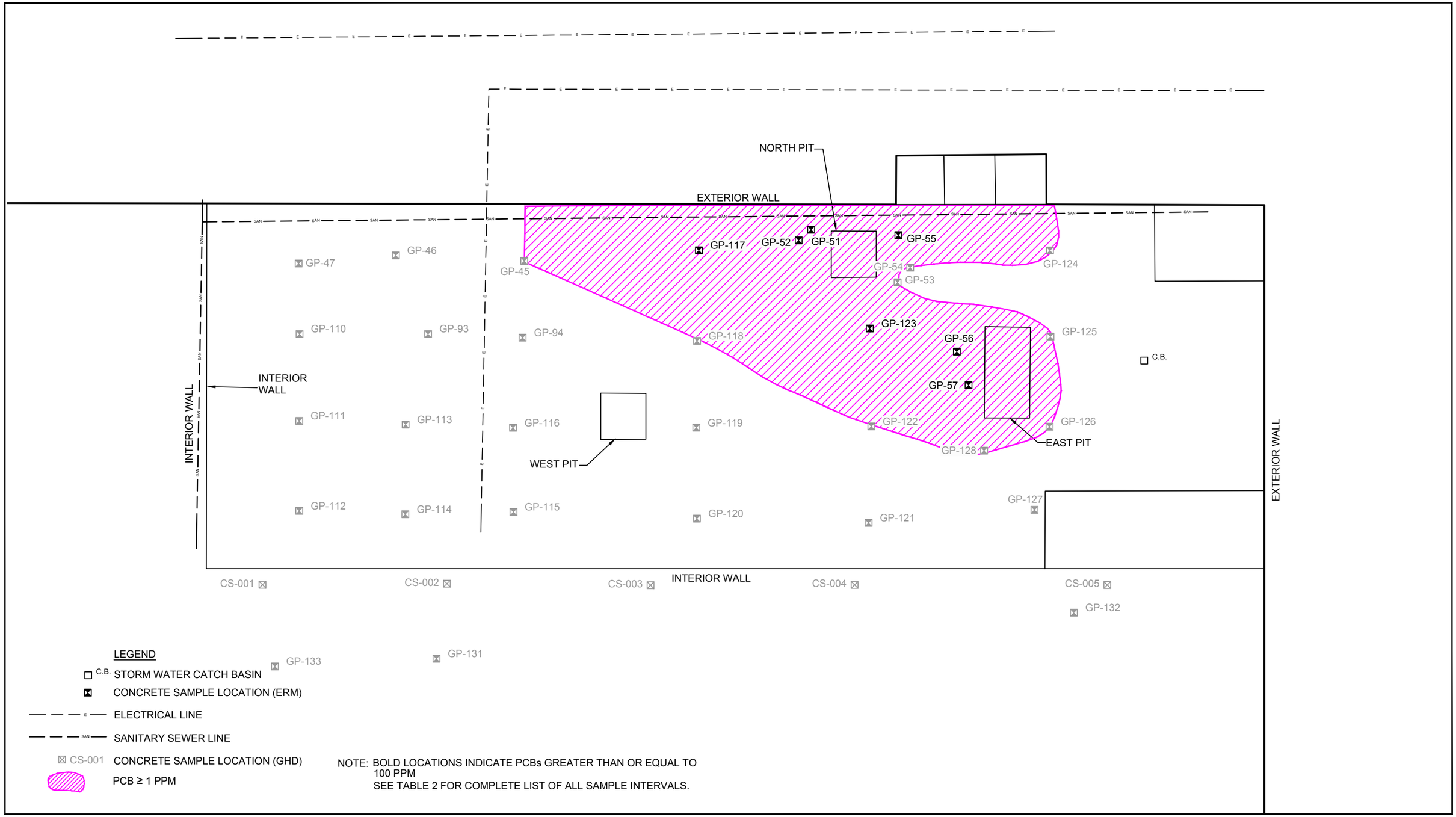
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

EAST ROOM SOIL DELINEATION TO 100 PPM

FIGURE 8

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE009.dwg



Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 10 20ft

Coordinate System:
STATE PLANE
MI-NAD83

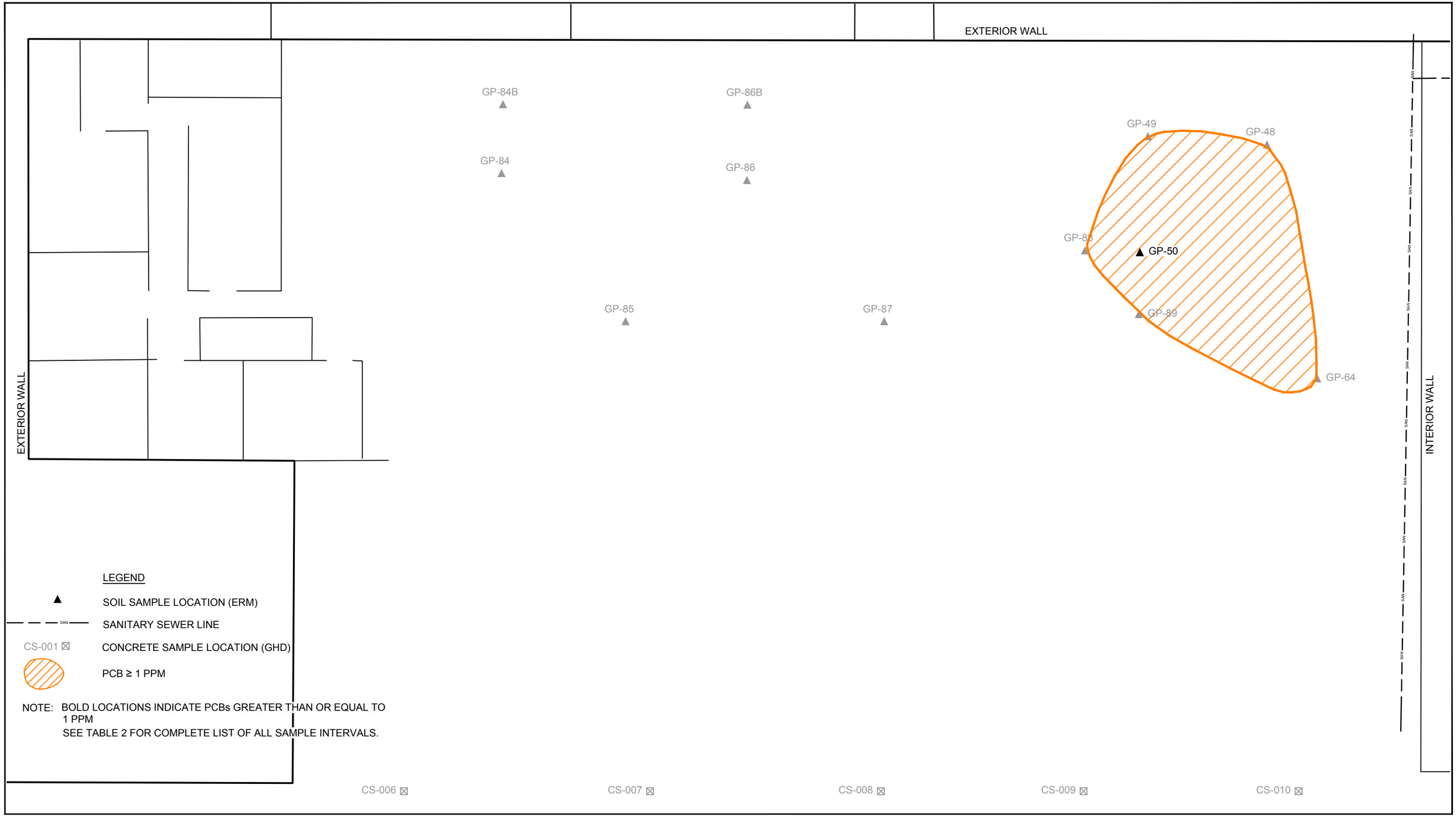
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

EAST ROOM CONCRETE DELINEATION TO 100 PPM

FIGURE 9

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE011.dwg



Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 5 10ft

Coordinate System:
STATE PLANE
MI-NAD83

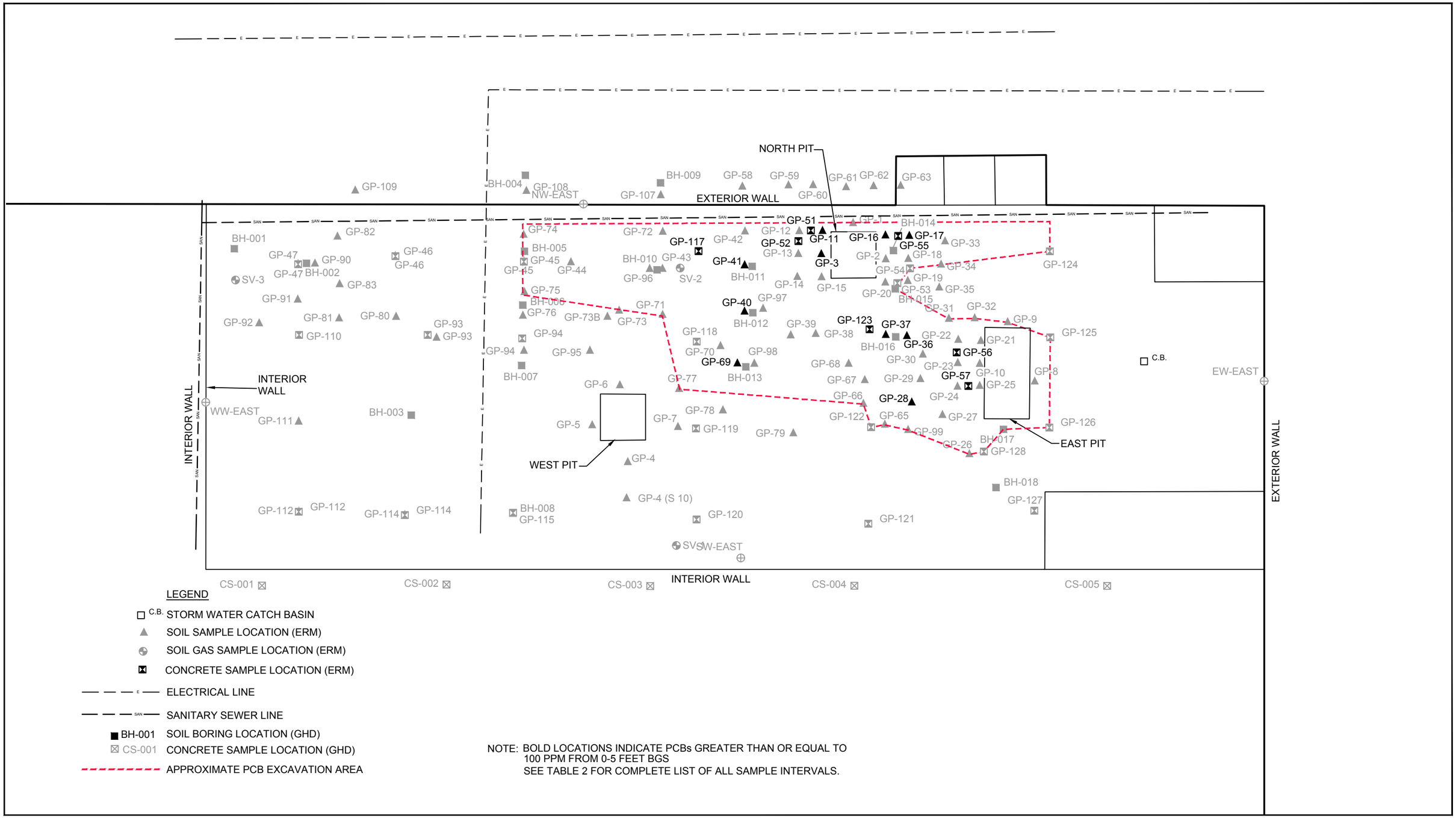
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

WEST ROOM SOIL DELINEATION TO 1 PPM

FIGURE 10

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE012.dwg



Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 10 20ft

Coordinate System:
STATE PLANE
MI-NAD83

HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

EAST ROOM EXCAVATION BOUNDARIES (5 FEET BGS)

FIGURE 11

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE013.dwg

Source: GOOGLE EARTH (DIGITAL GLOBE 9/9/2017)

0 15 30ft

Coordinate System:
STATE PLANE
MI-NAD83

LEGEND

AREA

EPOXY BOUNDARIES

HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

EAST AND WEST ROOM EPOXY BOUNDARIES

FIGURE 12

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE014.dwg

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**BH-002**	**BH-003**	**BH-003**	**BH-003**	**BH-003**	**BH-003**	**BH-004**	**BH-004**	**BH-004**	**BH-009**	**BH-009**
Sample Date:				**6/26/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**
Sample Depth:				**(11-12) ft BGS**	**(1-2) ft BGS**	**(4-5) ft BGS**	**(9-10) ft BGS**	**(14-15) ft BGS**	**(19-20) ft BGS**	**(9-10) ft BGS**	**(14-15) ft BGS**	**(19-20) ft BGS**	**(9-10) ft BGS**	**(14-15) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	5.3 U	0.055 U	0.054 U	0.064 U	0.06 U	0.058 U	0.057 U	0.064 U	0.052 U	0.06 U	0.062 U
Aroclor-1221 (PCB-1221)	mg/kg	1	100	5.3 U	0.055 U	0.054 U	0.064 U	0.06 U	0.058 U	0.057 U	0.064 U	0.052 U	0.06 U	0.062 U
Aroclor-1232 (PCB-1232)	mg/kg	1	100	5.3 U	0.055 U	0.054 U	0.064 U	0.06 U	0.058 U	0.057 U	0.064 U	0.052 U	0.06 U	0.062 U
Aroclor-1242 (PCB-1242)	mg/kg	1	100	5.3 U	0.055 U	0.054 U	0.064 U	0.06 U	0.058 U	0.057 U	0.064 U	0.052 U	0.06 U	0.062 U
Aroclor-1248 (PCB-1248)	mg/kg	1	100	5.3 U	0.055 U	0.054 U	0.064 U	0.06 U	0.058 U	0.057 U	0.064 U	0.052 U	0.06 U	0.062 U
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**110[ab]**	0.055 U	0.054 U	0.064 U	0.06 U	0.058 U	0.057 U	0.064 U	0.052 U	0.06 U	0.062 U
Aroclor-1260 (PCB-1260)	mg/kg	1	100	5.3 U	0.055 U	0.054 U	0.064 U	0.06 U	0.058 U	0.057 U	0.064 U	0.052 U	0.06 U	0.062 U
Total PCBs	mg/kg	1	100	**110[ab]**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**BH-009**	**BH-010**	**BH-011**	**BH-017**	**BH-017**	**BH-017**	**BH-017**	**BH-018**	**BH-018**	**BH-018**	**BH-018**
Sample Date:				**6/26/2018**	**6/27/2018**	**6/26/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**	**6/27/2018**
Sample Depth:				**(19-20) ft BGS**	**(19-20) ft BGS**	**(11-12) ft BGS**	**(1-2) ft BGS**	**(4-5) ft BGS**	**(9-10) ft BGS**	**(9-10) ft BGS**	**(1-2) ft BGS**	**(4-5) ft BGS**	**(9-10) ft BGS**	**(14-15) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units									**Duplicate**				
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	0.055 U	0.05 U	1100 U	0.051 U	0.056 U	0.06 U	0.061 U	0.057 U	0.049 U	0.059 U	0.06 U
Aroclor-1221 (PCB-1221)	mg/kg	1	100	0.055 U	0.05 U	1100 U	0.051 U	0.056 U	0.06 U	0.061 U	0.057 U	0.049 U	0.059 U	0.06 U
Aroclor-1232 (PCB-1232)	mg/kg	1	100	0.055 U	0.05 U	1100 U	0.051 U	0.056 U	0.06 U	0.061 U	0.057 U	0.049 U	0.059 U	0.06 U
Aroclor-1242 (PCB-1242)	mg/kg	1	100	0.055 U	0.05 U	1100 U	0.051 U	0.056 U	0.06 U	0.061 U	0.057 U	0.049 U	0.059 U	0.06 U
Aroclor-1248 (PCB-1248)	mg/kg	1	100	0.055 U	0.05 U	1100 U	0.051 U	0.16	0.06 U	0.061 U	0.057 U	0.049 U	0.059 U	0.06 U
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.055 U	0.05 U	**17000[ab]**	0.46	0.056 U	0.28	0.24	0.3	0.049 U	0.059 U	0.06 U
Aroclor-1260 (PCB-1260)	mg/kg	1	100	0.055 U	0.05 U	1100 U	0.051 U	0.056 U	0.06 U	0.061 U	0.057 U	0.049 U	0.059 U	0.06 U
Total PCBs	mg/kg	1	100	ND	ND	**17000[ab]**	0.46	0.16	0.28	0.24	0.3	ND	ND	ND

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**BH-018**	**GP-1**	**GP-1**	**GP-1**	**GP-2**	**GP-2**	**GP-2**	**GP-3**	**GP-3**	**GP-3**	**GP-4**
Sample Date:				**6/27/2018**	**9/21/2015**	**9/21/2015**	**9/21/2015**	**9/21/2015**	**9/21/2015**	**9/21/2015**	**9/21/2015**	**9/21/2015**	**9/21/2015**	**9/21/2015**
Sample Depth:				**(19-20) ft BGS**	**(5) ft BGS**	**(8) ft BGS**	**(15) ft BGS**	**(5) ft BGS**	**(8) ft BGS**	**(15) ft BGS**	**(5) ft BGS**	**(10) ft BGS**	**(15) ft BGS**	**(3) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	0.059 U	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	0.059 U	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	0.059 U	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	0.059 U	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	0.059 U	--	--	--	--	--	--	--	--	--	--
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.059 U	--	--	--	--	--	--	--	--	--	--
Aroclor-1260 (PCB-1260)	mg/kg	1	100	0.059 U	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	ND	BDL	BDL	BDL	**1.3[a]**	BDL	BDL	**1800[ab]**	**38[a]**	BDL	0.16

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-4 (S 10)**	**GP-4 (S 10)**	**GP-4 (S 10)**	**GP-5**	**GP-5**	**GP-5**	**GP-6**	**GP-6**	**GP-6**	**GP-7**	**GP-7**
Sample Date:				**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/21/2015**	**9/21/2015**	**9/21/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**
Sample Depth:				**(5) ft BGS**	**(8) ft BGS**	**(15) ft BGS**	**(5) ft BGS**	**(8) ft BGS**	**(15) ft BGS**	**(5) ft BGS**	**(8) ft BGS**	**(15) ft BGS**	**(5) ft BGS**	**(8) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	--	BDL	BDL	BDL	BDL	BDL	0.34	BDL	BDL	0.098	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	--	BDL	BDL	0.082	BDL	BDL	0.15	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	BDL	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-7**	**GP-8**	**GP-8**	**GP-8**	**GP-9**	**GP-9**	**GP-9**	**GP-10**	**GP-10**	**GP-10**	**GP-11**
Sample Date:				**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**9/22/2015**	**12/17/2015**
Sample Depth:				**(15) ft BGS**	**(5) ft BGS**	**(8) ft BGS**	**(15) ft BGS**	**(5) ft BGS**	**(8) ft BGS**	**(15) ft BGS**	**(5) ft BGS**	**(8) ft BGS**	**(15) ft BGS**	**(1.2-2) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**48[a]**
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.11	**2.1[a]**	0.27	**41[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-11**	**GP-11**	**GP-11**	**GP-12**	**GP-12**	**GP-12**	**GP-12**	**GP-13**	**GP-13**	**GP-13**	**GP-13**
Sample Date:				**12/17/2015**	**12/18/2015**	**12/18/2015**	**12/17/2015**	**12/17/2015**	**12/18/2015**	**12/18/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**
Sample Depth:				**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1.45-2) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**130[ab]**	BDL	BDL	**2.3[a]**	**3.3[a]**	BDL	BDL	**3.5[a]**	0.46	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-14**	**GP-14**	**GP-14**	**GP-14**	**GP-15**	**GP-15**	**GP-15**	**GP-15**	**GP-16**	**GP-16**	**GP-16**
Sample Date:				**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**
Sample Depth:				**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(2.3-2.8) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.29	BDL	BDL	BDL	0.26	BDL	BDL	BDL	**9500[ab]**	**2900[ab]**	**3.5[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-16**	**GP-17**	**GP-17**	**GP-17**	**GP-17**	**GP-18**	**GP-18**	**GP-18**	**GP-18**	**GP-19**	**GP-19**
Sample Date:				**12/18/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/17/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**
Sample Depth:				**(14.5-15) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(0.8-1.2) ft BGS**	**(5-5.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	**2.6[a]**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**1.2[a]**	**12000[ab]**	**70[a]**	**3.4[a]**	**1.3[a]**	**3.4[a]**	**2[a]**	**3.4[a]**	**2000[ab]**	**52[a]**	**33[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-19**	**GP-19**	**GP-20**	**GP-20**	**GP-20**	**GP-21**	**GP-21**	**GP-21**	**GP-21**	**GP-22**	**GP-22**
Sample Date:				**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**
Sample Depth:				**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(1.2-1.7) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1.2-1.7) ft BGS**	**(5-5.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**9.7[a]**	**9.1[a]**	**35[a]**	**9.3[a]**	**2.2[a]**	0.37	BDL	BDL	BDL	**7.9[a]**	0.25
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-22**	**GP-22**	**GP-23**	**GP-23**	**GP-23**	**GP-23**	**GP-24**	**GP-24**	**GP-24**	**GP-24**	**GP-25**
Sample Date:				**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**	**12/18/2015**
Sample Depth:				**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1.2-1.7) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1-1.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.2	BDL	**7.1[a]**	BDL	0.31	BDL	0.16	BDL	BDL	BDL	0.096
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-25**	**GP-25**	**GP-25**	**GP-26**	**GP-26**	**GP-26**	**GP-26**	**GP-26**	**GP-27**	**GP-28**	**GP-28**
Sample Date:				**12/18/2015**	**12/18/2015**	**12/18/2015**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**
Sample Depth:				**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(0.5-1) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.5-1) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	0.88	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.41	BDL	BDL	**2.3[a]**	**1.9[a]**	**1.6[a]**	BDL	BDL	0.85	**580[ab]**	**130[ab]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-28**	**GP-28**	**GP-29**	**GP-29**	**GP-29**	**GP-29**	**GP-29**	**GP-30**	**GP-30**	**GP-30**	**GP-30**
Sample Date:				**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**
Sample Depth:				**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1.1-1.6) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	**3.1[a]**	BDL	0.58	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	**560[ab]**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-30**	**GP-31**	**GP-31**	**GP-31**	**GP-31**	**GP-31**	**GP-32**	**GP-32**	**GP-32**	**GP-32**	**GP-32**
Sample Date:				**8/9/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**
Sample Depth:				**(19.5-20) ft BGS**	**(1.5-2) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1.5-2) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	**1.4[a]**	**2.9[a]**	BDL	BDL	BDL	0.34	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-33**	**GP-33**	**GP-33**	**GP-33**	**GP-33**	**GP-34**	**GP-34**	**GP-34**	**GP-34**	**GP-34**	**GP-34**
Sample Date:				**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**
Sample Depth:				**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1.25-1.75) ft BGS**	**(5-5.5) ft BGS**	**(7.5-8) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-35**	**GP-35**	**GP-35**	**GP-35**	**GP-35**	**GP-36**	**GP-36**	**GP-36**	**GP-36**	**GP-37**	**GP-37**
Sample Date:				**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**
Sample Depth:				**(1.25-1.75) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(0.5-1) ft BGS**	**(5-5.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.45	BDL	BDL	BDL	BDL	**370[ab]**	**12[a]**	**4.1[a]**	**35[a]**	**130[ab]**	**7.3[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-37**	**GP-37**	**GP-38**	**GP-38**	**GP-38**	**GP-38**	**GP-38**	**GP-39**	**GP-39**	**GP-39**	**GP-39**
Sample Date:				**8/9/2016**	**8/9/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**
Sample Depth:				**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.25) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**4.5[a]**	**980[ab]**	0.73	BDL	BDL	BDL	BDL	**2[a]**	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-39**	**GP-40**	**GP-40**	**GP-40**	**GP-40**	**GP-40**	**GP-41**	**GP-41**	**GP-41**	**GP-41**	**GP-42**
Sample Date:				**8/8/2016**	**8/8/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/9/2016**
Sample Depth:				**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(0.75-1.25) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(11.5-12) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(11.75-12.25) ft BGS**	**(1.5-2) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3.9 U	24 U	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	**120[ab]**	**150[ab]**	**32[a]**	0.22	**26000[ab]**	**2100[ab]**	**1.3[a]**	**23[a]**	**48[a]**	**2.5[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-42**	**GP-42**	**GP-42**	**GP-42**	**GP-43**	**GP-43**	**GP-43**	**GP-43**	**GP-44**	**GP-44**	**GP-44**
Sample Date:				**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**
Sample Depth:				**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	3.8 U	BDL	460 U	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**17[a]**	BDL	BDL	BDL	**53[a]**	**31[a]**	**3.3[a]**	**3100[ab]**	0.19	0.79	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-44**	**GP-44**	**GP-45**	**GP-45**	**GP-45**	**GP-45**	**GP-46**	**GP-46**	**GP-46**	**GP-46**	**GP-46**
Sample Date:				**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**
Sample Depth:				**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	1.9 U	BDL	8.7 U	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	**28[a]**	**4.8[a]**	BDL	**71[a]**	**16[a]**	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**
Sample Location:				**GP-47**	**GP-47**	**GP-47**	**GP-47**	**GP-48**	**GP-48**	**GP-48**	**GP-48**	**GP-48**	**GP-49**	**GP-49**
Sample Date:				**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**
Sample Depth:				**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(12-12.5) ft BGS**	**(0.5-1) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(2-2.5) ft BGS**	**(5-5.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**9.9[a]**	0.27	BDL	**16[a]**	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-49**	**GP-49**	**GP-49**	**GP-50**	**GP-50**	**GP-50**	**GP-50**	**GP-50**	**GP-58**	**GP-58**	**GP-58**
Sample Date:				**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**
Sample Depth:				**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.75-1.25) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.25-0.75) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	2 U	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	**4.6[a]**	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-58**	**GP-58**	**GP-59**	**GP-59**	**GP-59**	**GP-59**	**GP-59**	**GP-60**	**GP-60**	**GP-60**	**GP-60**
Sample Date:				**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**	**8/9/2016**
Sample Depth:				**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.25-0.75) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.25-0.75) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-60**	**GP-61**	**GP-61**	**GP-61**	**GP-61**	**GP-61**	**GP-62**	**GP-62**	**GP-62**	**GP-62**	**GP-62**
Sample Date:				**8/9/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**
Sample Depth:				**(19.5-20) ft BGS**	**(0.25-0.75) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**EAST**
Sample Location:				**GP-63**	**GP-63**	**GP-63**	**GP-63**	**GP-63**	**GP-64**	**GP-64**	**GP-64**	**GP-64**	**GP-64**	**GP-65**
Sample Date:				**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/8/2016**	**8/16/2016**
Sample Depth:				**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(2-2.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-65**	**GP-65**	**GP-65**	**GP-65**	**GP-66**	**GP-66**	**GP-66**	**GP-66**	**GP-66**	**GP-67**	**GP-67**
Sample Date:				**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**
Sample Depth:				**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(16-16.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-67**	**GP-67**	**GP-67**	**GP-68**	**GP-68**	**GP-68**	**GP-68**	**GP-68**	**GP-69**	**GP-69**	**GP-69**
Sample Date:				**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**
Sample Depth:				**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.8-1.3) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**5.4[a]**
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**230[ab]**	**3.1[a]**	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-69**	**GP-70**	**GP-70**	**GP-70**	**GP-70**	**GP-70**	**GP-71**	**GP-71**	**GP-71**	**GP-71**	**GP-71**
Sample Date:				**8/17/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**
Sample Depth:				**(11.5-12) ft BGS**	**(1.75-2.25) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**1500[ab]**	BDL	BDL	BDL	BDL	BDL	0.29	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-72**	**GP-73**	**GP-73B**	**GP-73B**	**GP-73B**	**GP-73B**	**GP-74**	**GP-74**	**GP-74**	**GP-74**	**GP-74**
Sample Date:				**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**
Sample Depth:				**(1-1.5) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1.25-1.75) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	0.21	BDL	BDL	BDL	BDL	BDL	BDL	0.24	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	**40[a]**	BDL	BDL	BDL	BDL	**83[a]**	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-75**	**GP-75**	**GP-75**	**GP-75**	**GP-76**	**GP-76**	**GP-76**	**GP-76**	**GP-77**	**GP-77**	**GP-77**
Sample Date:				**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/16/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**
Sample Depth:				**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(0.8-1.3) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(0.9-1.4) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**26[a]**	**1.9[a]**	BDL	**4.5[a]**	**4.7[a]**	BDL	0.62	**2.8[a]**	BDL	BDL	**4.1[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-77**	**GP-77**	**GP-78**	**GP-78**	**GP-78**	**GP-78**	**GP-78**	**GP-79**	**GP-79**	**GP-79**	**GP-79**
Sample Date:				**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**
Sample Depth:				**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	0.96	0.36	BDL	BDL	BDL	0.68	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-79**	**GP-80**	**GP-80**	**GP-80**	**GP-80**	**GP-80**	**GP-81**	**GP-81**	**GP-81**	**GP-81**	**GP-81**
Sample Date:				**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**
Sample Depth:				**(19.5-20) ft BGS**	**(0.8-1.3) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.9-1.4) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**WEST**
Sample Location:				**GP-82**	**GP-82**	**GP-82**	**GP-82**	**GP-82**	**GP-83**	**GP-83**	**GP-83**	**GP-83**	**GP-83**	**GP-84**
Sample Date:				**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**8/16/2016**	**8/16/2016**	**8/17/2016**	**8/17/2016**	**8/17/2016**	**11/28/2016**
Sample Depth:				**(1-1.5) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(0.9-1.4) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.6-1.1) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.096 J
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**
Sample Location:				**GP-84**	**GP-84B**	**GP-84B**	**GP-85**	**GP-85**	**GP-84**	**GP-84**	**GP-84B**	**GP-84B**	**GP-85**	**GP-85**
Sample Date:				**11/28/2016**	**11/29/2016**	**11/29/2016**	**11/28/2016**	**11/29/2016**	**11/28/2016**	**11/28/2016**	**11/29/2016**	**11/29/2016**	**11/28/2016**	**11/29/2016**
Sample Depth:				**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(0.85-1.35) ft BGS**	**(5-5.5) ft BGS**	**(0.6-1.1) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(0.85-1.35) ft BGS**	**(5-5.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	0.096 J	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**
Sample Location:				**GP-85**	**GP-85**	**GP-86**	**GP-86**	**GP-86B**	**GP-86B**	**GP-87**	**GP-87**	**GP-87**	**GP-87**	**GP-88**
Sample Date:				**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**
Sample Depth:				**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(0.6-1.1) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(0.75-1.25) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(0.8-1.3) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**EAST**	**EAST**
Sample Location:				**GP-88**	**GP-88**	**GP-88**	**GP-88**	**GP-89**	**GP-89**	**GP-89**	**GP-89**	**GP-89**	**GP-90**	**GP-90**
Sample Date:				**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**
Sample Depth:				**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.7-1.2) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.8-1.3) ft BGS**	**(12-12.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**8.6[a]**	**20[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-91**	**GP-92**	**GP-92**	**GP-92**	**GP-92**	**GP-92**	**GP-93**	**GP-93**	**GP-93**	**GP-94**	**GP-94**
Sample Date:				**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**
Sample Depth:				**(3) ft BGS**	**(0.95-1.45) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(2.5-3) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(0.8-1.3) ft BGS**	**(5-5.5) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.63	BDL	BDL	BDL	BDL	BDL	**22[a]**	BDL	0.59	**4[a]**	0.29
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Table 2

Summary of Soil Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-94**	**GP-94**	**GP-95**	**GP-95**	**GP-95**	**GP-95**	**GP-95**	**GP-96**	**GP-97**	**GP-98**	**GP-99**
Sample Date:				**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/29/2016**	**11/30/2016**	**11/29/2016**
Sample Depth:				**(10-10.5) ft BGS**	**(14.5-15) ft BGS**	**(0.9-1.4) ft BGS**	**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(14.5-15) ft BGS**	**(12-12.5) ft BGS**	**(11.5-12) ft BGS**	**(0.7-1.2) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	**10[a]**	0.61	BDL	BDL	BDL	BDL	**6.3[a]**	**3200[ab]**	**2800[ab]**	0.35
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-99**	**GP-99**	**GP-99**	**GP-99**	**GP-107**	**GP-107**	**GP-107**	**GP-108**	**GP-108**	**GP-108**	**GP-109**
Sample Date:				**11/29/2016**	**11/30/2016**	**11/30/2016**	**11/30/2016**	**12/1/2016**	**12/1/2016**	**12/1/2016**	**12/1/2016**	**12/1/2016**	**12/1/2016**	**12/1/2016**
Sample Depth:				**(5-5.5) ft BGS**	**(10-10.5) ft BGS**	**(15-15.5) ft BGS**	**(19.5-20) ft BGS**	**(0.6-1.1) ft BGS**	**(5-5.5) ft BGS**	**(8-8.5) ft BGS**	**(0.6-1.1) ft BGS**	**(5-5.5) ft BGS**	**(8-8.5) ft BGS**	**(0.5-1) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.061 J
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-109**	**GP-109**	**GP-111**	**GP-112**	**GP-112**	**GP-112**	**GP-112**	**GP-114**	**GP-114**	**GP-114**	**GP-114**
Sample Date:				**12/1/2016**	**12/1/2016**	**1/20/2017**	**1/20/2017**	**1/20/2017**	**1/20/2017**	**1/20/2017**	**1/20/2017**	**1/20/2017**	**1/20/2017**	**1/20/2017**
Sample Depth:				**(5-5.5) ft BGS**	**(8-8.5) ft BGS**	**-**	**-**	**(5) ft BGS**	**(10) ft BGS**	**(15) ft BGS**	**-**	**(5) ft BGS**	**(10) ft BGS**	**(15) ft BGS**
Matrix		**a**	**b**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
	Units													
PCBs														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.45	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--

Notes:
1. ERM data based on ERM's 2017 Draft PCB Cleanup Plan and Application for Risk-Based Cleanup and Disposal Approval. No laboratory analytical reports were provided by ERM.
2. GHD laboratory analytical reports are provided in Appendix C.
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Table 3

Summary of Concrete Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**WEST**	**WEST**	**WEST**	**WEST**	**WEST**	**EAST**	**EAST**
Sample Location:				**CS-001**	**CS-002**	**CS-003**	**CS-004**	**CS-005**	**CS-006**	**CS-007**	**CS-008**	**CS-009**	**CS-010**	**East Wall**	**North Wall**
Sample Date:				**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**
Sample Depth:				**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Sample Type:		**a**	**b**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**
PCBs	**Units**														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 U	0.098 U	0.5 U
Aroclor-1221 (PCB-1221)	mg/kg	1	100	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 U	0.098 U	0.5 U
Aroclor-1232 (PCB-1232)	mg/kg	1	100	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 U	0.098 U	0.5 U
Aroclor-1242 (PCB-1242)	mg/kg	1	100	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 U	0.098 U	0.5 U
Aroclor-1248 (PCB-1248)	mg/kg	1	100	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 U	0.098 U	0.5 U
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 U	**1.1[a]**	**4.1[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	0.12 U	0.11 U	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 U	0.098 U	0.5 U
Total PCBs	mg/kg	1	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	**1.1[a]**	**4.1[a]**

Area				**EAST**	**EAST**	**WEST**	**WEST**	**WEST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**WEST**	**WEST**
Sample Location:				**North Wall (Dup)**	**West Wall**	**East Wall**	**North Wall**	**West Wall**	**GP-45**	**GP-46**	**GP-46**	**GP-47**	**GP-47**	**GP-48**	**GP-49**
Sample Date:				**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**6/25/2018**	**8/11/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/2/2016**	**12/2/2016**
Sample Depth:				**-**	**-**	**-**	**-**	**-**	**(0.6) ft BGS**	**-**	**(0.4) ft BGS**	**-**	**(0.4) ft BGS**	**-**	**-**
Sample Type:		**a**	**b**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**
PCBs	**Units**														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	0.5 U	0.099 U	0.099 U	0.098 U	0.098 U	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	0.5 U	0.099 U	0.099 U	0.098 U	0.098 U	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	0.5 U	0.099 U	0.099 U	0.098 U	0.098 U	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	0.5 U	0.099 U	0.099 U	0.098 U	0.098 U	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	0.5 U	0.099 U	0.099 U	0.098 U	0.098 U	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**3.5[a]**	0.42	0.22	0.6	0.15	**7.7[a]**	0.1	**2.3[a]**	0.34	**3.4[a]**	**1.6[a]**	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	0.5 U	0.099 U	0.099 U	0.098 U	0.098 U	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	**3.5[a]**	0.42	0.22	0.6	0.15	--	--	--	--	--	--	--

Area				**WEST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**WEST**	**WEST**	**WEST**	**WEST**
Sample Location:				**GP-50**	**GP-51**	**GP-52**	**GP-53**	**GP-54**	**GP-55**	**GP-56**	**GP-57**	**GP-64**	**GP-84**	**GP-85**	**GP-86**
Sample Date:				**12/2/2016**	**8/10/2016**	**8/11/2016**	**8/10/2016**	**8/10/2016**	**8/10/2016**	**8/11/2016**	**8/11/2016**	**12/2/2016**	**12/2/2016**	**12/2/2016**	**12/2/2016**
Sample Depth:				**-**	**(0.6) ft BGS**	**(0.5) ft BGS**	**(0.4) ft BGS**	**(0.4) ft BGS**	**(0.5) ft BGS**	**(0.7) ft BGS**	**(0.55) ft BGS**	**-**	**-**	**-**	**-**
Sample Type:		**a**	**b**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**
PCBs	**Units**														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**2.7[a]**	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	0.088 J	**5600[ab]**	**620[ab]**	**84[a]**	**73[a]**	**4100[ab]**	**290[ab]**	**520[ab]**	BDL	BDL	**4[a]**	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--

Area				**WEST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-87**	**GP-93**	**GP-93**	**GP-94**	**GP-94**	**GP-110**	**GP-110**	**GP-111**	**GP-112**	**GP-112**	**GP-113**	**GP-114**
Sample Date:				**12/2/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**
Sample Depth:				**-**	**-**	**(0.4) ft BGS**	**-**	**(0.3) ft BGS**	**-**	**(0.4) ft BGS**	**-**	**-**	**(0.5) ft BGS**	**-**	**-**
Sample Type:		**a**	**b**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**
PCBs	**Units**														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	0.089 J	**3.3 P[a]**	BDL	BDL
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**5.2[a]**	0.45	**3.6[a]**	0.24	**2.3[a]**	0.22	**18[a]**	0.086 J	0.91	**44[a]**	0.05 J	**3.8[a]**
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--

Table 3

Summary of Concrete Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-114**	**GP-115**	**GP-115**	**GP-116**	**GP-117**	**GP-117**	**GP-118**	**GP-118**	**GP-119**	**GP-120**	**GP-120**	**GP-121**
Sample Date:				**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**
Sample Depth:				**(0.4) ft BGS**	**-**	**(0.4) ft BGS**	**-**	**-**	**(0.5) ft BGS**	**-**	**(0.5) ft BGS**	**-**	**-**	**(0.4) ft BGS**	**-**
Sample Type:		**a**	**b**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**
PCBs	**Units**														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**76[a]**	**4.1[a]**	**28[a]**	0.11	**4.8[a]**	**120[ab]**	0.29	**54[a]**	0.1 J	**4.6[a]**	**96[a]**	0.19
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--

Area				**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-121**	**GP-122**	**GP-123**	**GP-123**	**GP-124**	**GP-124**	**GP-125**	**GP-125**	**GP-126**	**GP-127**	**GP-127**	**GP-128**
Sample Date:				**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**	**12/6/2016**
Sample Depth:				**(0.4) ft BGS**	**-**	**-**	**(0.5) ft BGS**	**-**	**(0.5) ft BGS**	**-**	**(0.5) ft BGS**	**-**	**-**	**(0.5) ft BGS**	**-**
Sample Type:		**a**	**b**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**
PCBs	**Units**														
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**59[a]**	0.031 JP	**7[a]**	**310[ab]**	0.43	**34[a]**	0.61	**39[a]**	0.043 J	0.62	**97[a]**	0.091 J
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--	--	--	--	--	--	--	--

Area				**WEST**	**WEST**	**EAST**	**EAST**	**EAST**
Sample Location:				**GP-129**	**GP-130**	**GP-131**	**GP-132**	**GP-133**
Sample Date:				**1/23/2017**	**1/23/2017**	**1/23/2017**	**1/23/2017**	**1/23/2017**
Sample Depth:				**-**	**-**	**-**	**-**	**-**
Sample Type:		**a**	**b**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**
PCBs	**Units**							
Aroclor-1016 (PCB-1016)	mg/kg	1	100	--	--	--	--	--
Aroclor-1221 (PCB-1221)	mg/kg	1	100	--	--	--	--	--
Aroclor-1232 (PCB-1232)	mg/kg	1	100	--	--	--	--	--
Aroclor-1242 (PCB-1242)	mg/kg	1	100	--	--	--	--	--
Aroclor-1248 (PCB-1248)	mg/kg	1	100	BDL	BDL	BDL	BDL	BDL
Aroclor-1254 (PCB-1254)	mg/kg	1	100	**9.2[a]**	**3.6[a]**	BDL	BDL	BDL
Aroclor-1260 (PCB-1260)	mg/kg	1	100	--	--	--	--	--
Total PCBs	mg/kg	1	100	--	--	--	--	--

Notes:
1. ERM data based on ERM's 2017 Draft PCB Cleanup Plan and Application for Risk-Based Cleanup and Disposal Approval. No laboratory analytical reports were provided by ERM.
2. GHD laboratory analytical reports are provided in Appendix C.
U - Not detected at the associated reporting limit.
J - Estimated concentration.

Table 4

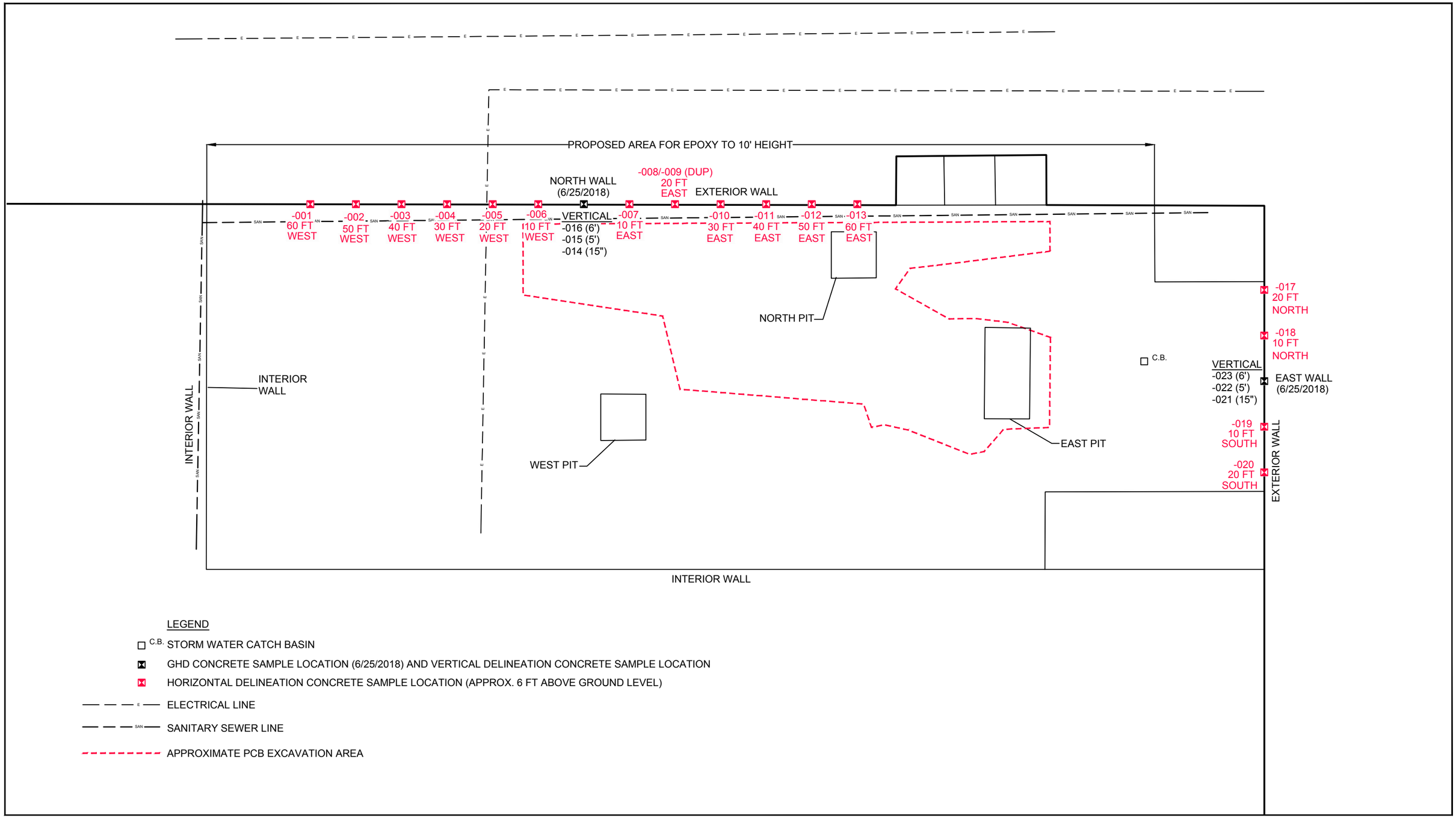
Summary of Other Sample Results (Groundwater, Soil Gas and Wipe Samples)
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Wipe Sample Results		
Area		**EAST**
Sample Location:		**SW-EAST**
Sample Date:		**6/25/2018**
Matrix		**Wipe**
PCBs	**Units**	
Aroclor-1016 (PCB-1016)	ug/wipe	0.50 U
Aroclor-1221 (PCB-1221)	ug/wipe	0.50 U
Aroclor-1232 (PCB-1232)	ug/wipe	0.50 U
Aroclor-1242 (PCB-1242)	ug/wipe	0.50 U
Aroclor-1248 (PCB-1248)	ug/wipe	0.50 U
Aroclor-1254 (PCB-1254)	ug/wipe	0.38 J
Aroclor-1260 (PCB-1260)	ug/wipe	0.50 U
Total PCBs	ug/wipe	0.38 J

Groundwater Sample Results					
Area		**EAST**	**EAST**	**EAST**	**EAST**
Sample Location:		**GP-61**	**GP-107**	**GP-108**	**GP-109**
Sample Date:		**August 2016**	**Nov./Dec. 2016**	**Nov./Dec. 2016**	**Nov./Dec. 2016**
Matrix		**Groundwater**	**Groundwater**	**Groundwater**	**Groundwater**
PCBs	**Units**				
Total PCBs	ug/L	ND	ND	ND	ND

Soil Gas Sample Results				
Area		**EAST**	**EAST**	**EAST**
Sample Location:		**SV-1**	**SV-2**	**SV-3**
Sample Date:		**Nov./Dec. 2016**	**Nov./Dec. 2016**	**Nov./Dec. 2016**
Matrix		**Soil Gas**	**Soil Gas**	**Soil Gas**
PCBs	**Units**			
Total PCBs	ug/m3	ND	ND	ND

Notes:
1. ERM data based on ERM's 2017 Draft PCB Cleanup Plan and Application for Risk-Based Cleanup and Disposal Approval. Laboratory reports were not provided by ERM.
2. GHD laboratory analytical reports are provided in Appendix C.
U - Not detected at the associated reporting limit.
J - Estimated concentration.



Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date [unknown], Accessed: 2018

0 10 20ft

Coordinate System:
STATE PLANE
MI-NAD83

HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-03
Sep 10, 2018

SITE MAP WITH CONCRETE WALL SAMPLE LOCATIONS

FIGURE 1

CAD File: I:\drawings\11150000s\11152042\11152042-CORR\11152042-03(ADDE001)\11152042-03(ADDE001)GN\11152042-03(ADDE001)GN-DE001.dwg

Table 1

Sample Analysis Summary
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area	Location Description*	Sample ID	Collection Date (mm/dd/yy)	Sample Type	Interval	QAQC	Analysis
North Wall	60 Feet West	S-11152042-081618-SK-001	8/16/20108	Concrete	(6) Feet AGS	--	PCBs
North Wall	50 Feet West	S-11152042-081618-SK-002	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	40 Feet West	S-11152042-081618-SK-003	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	30 Feet West	S-11152042-081618-SK-004	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	20 Feet West	S-11152042-081618-SK-005	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	10 Feet West	S-11152042-081618-SK-006	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	10 Feet East	S-11152042-081618-SK-007	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	20 Feet East	S-11152042-081618-SK-008	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	20 Feet East	S-11152042-081618-SK-009	8/16/2018	Concrete	(6) Feet AGS	Duplicate	PCBs
North Wall	30 Feet East	S-11152042-081618-SK-010	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	40 Feet East	S-11152042-081618-SK-011	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	50 Feet East	S-11152042-081618-SK-012	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	60 Feet East	S-11152042-081618-SK-013	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
North Wall	Vertical	S-11152042-081618-SK-014	8/16/2018	Concrete	(15) Inches AGS	--	PCBs
North Wall	Vertical	S-11152042-081618-SK-015	8/16/2018	Concrete	(5) Feet AGS	--	PCBs
North Wall	Vertical	S-11152042-081618-SK-016	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
East Wall	20 Feet North	S-11152042-081618-SK-017	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
East Wall	10 Feet North	S-11152042-081618-SK-018	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
East Wall	10 Feet South	S-11152042-081618-SK-019	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
East Wall	20 Feet South	S-11152042-081618-SK-020	8/16/2018	Concrete	(6) Feet AGS	--	PCBs
East Wall	Vertical	S-11152042-081618-SK-021	8/16/2018	Concrete	(15) Inches AGS	--	PCBs
East Wall	Vertical	S-11152042-081618-SK-022	8/16/2018	Concrete	(5) Feet AGS	--	PCBs
East Wall	Vertical	S-11152042-081618-SK-023	8/16/2018	Concrete	(6) Feet AGS	--	PCBs

Notes:
AGS - Above ground surface
* - Indicates the distance (horizontal or vertical) along the indicated wall

Table 2

Summary of Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area			**East Wall**	**East Wall**	**East Wall**	**East Wall**	**East Wall**	**East Wall**	**East Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**
Sample Location:			**10 Feet North**	**10 Feet South**	**20 Feet North**	**20 Feet South**	**Vertical**	**Vertical**	**Vertical**	**10 Feet East**	**10 Feet West**	**20 Feet East**	**20 Feet East**	**20 Feet West**
Sample Date:			**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**
Sample Depth:			**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(15) Inches AGL**	**(5) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**
Sample Type:			**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete Duplicate**	**Concrete**
PCBs	**Units**	**Criteria in ppm**												
Aroclor-1016 (PCB-1016)	mg/kg	1	0.099 U	0.099 U	0.1 U	0.1 U	0.099 U	0.099 U	0.099 U	0.98 U	0.49 U	0.97 U	0.98 U	0.5 U
Aroclor-1221 (PCB-1221)	mg/kg	1	0.099 U	0.099 U	0.1 U	0.1 U	0.099 U	0.099 U	0.099 U	0.98 U	0.49 U	0.97 U	0.98 U	0.5 U
Aroclor-1232 (PCB-1232)	mg/kg	1	0.099 U	0.099 U	0.1 U	0.1 U	0.099 U	0.099 U	0.099 U	0.98 U	0.49 U	0.97 U	0.98 U	0.5 U
Aroclor-1242 (PCB-1242)	mg/kg	1	0.099 U	0.099 U	0.1 U	0.1 U	0.099 U	0.099 U	0.099 U	0.98 U	0.49 U	0.97 U	0.98 U	0.5 U
Aroclor-1248 (PCB-1248)	mg/kg	1	0.099 U	0.099 U	0.1 U	0.1 U	0.099 U	0.099 U	0.099 U	0.98 U	**4.5**	0.97 U	0.98 U	**5**
Aroclor-1254 (PCB-1254)	mg/kg	1	0.3 p	0.53 p	0.61	0.6 p	0.48 p	0.42 p	0.61 p	**15**	0.49 U	**8.3**	**5.9**	0.5 U
Aroclor-1260 (PCB-1260)	mg/kg	1	0.099 U	0.099 U	0.1 U	0.1 U	0.099 U	0.099 U	0.099 UF2	0.98 U	0.49 U	0.97 U	0.98 U	0.5 U

Notes:
U - Indicates the analyte was analyzed for but not detected.
FT AGL -Feet Above ground level
Lab qualifers: p, F1 and F2

p - The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
F1 - MS and/or MSD Recovery is outside acceptance limits.
F2 - MS/MSD RPD exceeds control limits

Table 2

Summary of Analytical Results
Former Douglas Michigan Facility
200 Blue Star Highway
Douglas, Michigan 49406

Area			**North Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**	**North Wall**
Sample Location:			**30 Feet East**	**30 Feet West**	**40 Feet East**	**40 Feet West**	**50 Feet East**	**50 Feet West**	**60 Feet East**	**60 Feet West**	**Vertical**	**Vertical**	**Vertical**
Sample Date:			**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**	**8/16/2018**
Sample Depth:			**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(6) FT AGL**	**(15) Inches AGL**	**(5) FT AGL**	**(6) ft AGS**
Sample Type:			**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**	**Concrete**
PCBs	**Units**	**Criteria in ppm**											
Aroclor-1016 (PCB-1016)	mg/kg	1	0.49 U	0.1 U	0.5 U	0.51 U	0.5 U	0.1 U	0.5 UF1F2	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1221 (PCB-1221)	mg/kg	1	0.49 U	0.1 U	0.5 U	0.51 U	0.5 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1232 (PCB-1232)	mg/kg	1	0.49 U	0.1 U	0.5 U	0.51 U	0.5 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1242 (PCB-1242)	mg/kg	1	0.49 U	0.1 U	0.5 U	0.51 U	0.5 U	0.1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1248 (PCB-1248)	mg/kg	1	0.49 U	0.1 U	0.5 U	0.51 U	0.5 U	0.1 U	**8.1**	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor-1254 (PCB-1254)	mg/kg	1	**5**	0.89 p	**2.5**	**2.3**	**5.9**	**1.9**	0.5 U	**7.2**	**3.3**	**2.7**	**2.5**
Aroclor-1260 (PCB-1260)	mg/kg	1	0.49 U	0.1 U	0.5 U	0.51 U	0.5 U	0.1 U	0.5 UF1	0.5 U	0.5 U	0.5 U	0.5 U

Notes:
U - Indicates the analyte was analyzed for but not detected.
FT AGL -Feet Above ground level
Lab qualifers: p, F1 and F2

p - The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
F1 - MS and/or MSD Recovery is outside acceptance limits.
F2 - MS/MSD RPD exceeds control limits

SOURCE: USGS QUADRANGLE MAP; SAUGATUCK, MICHIGAN, 2017

0 1000 2000ft

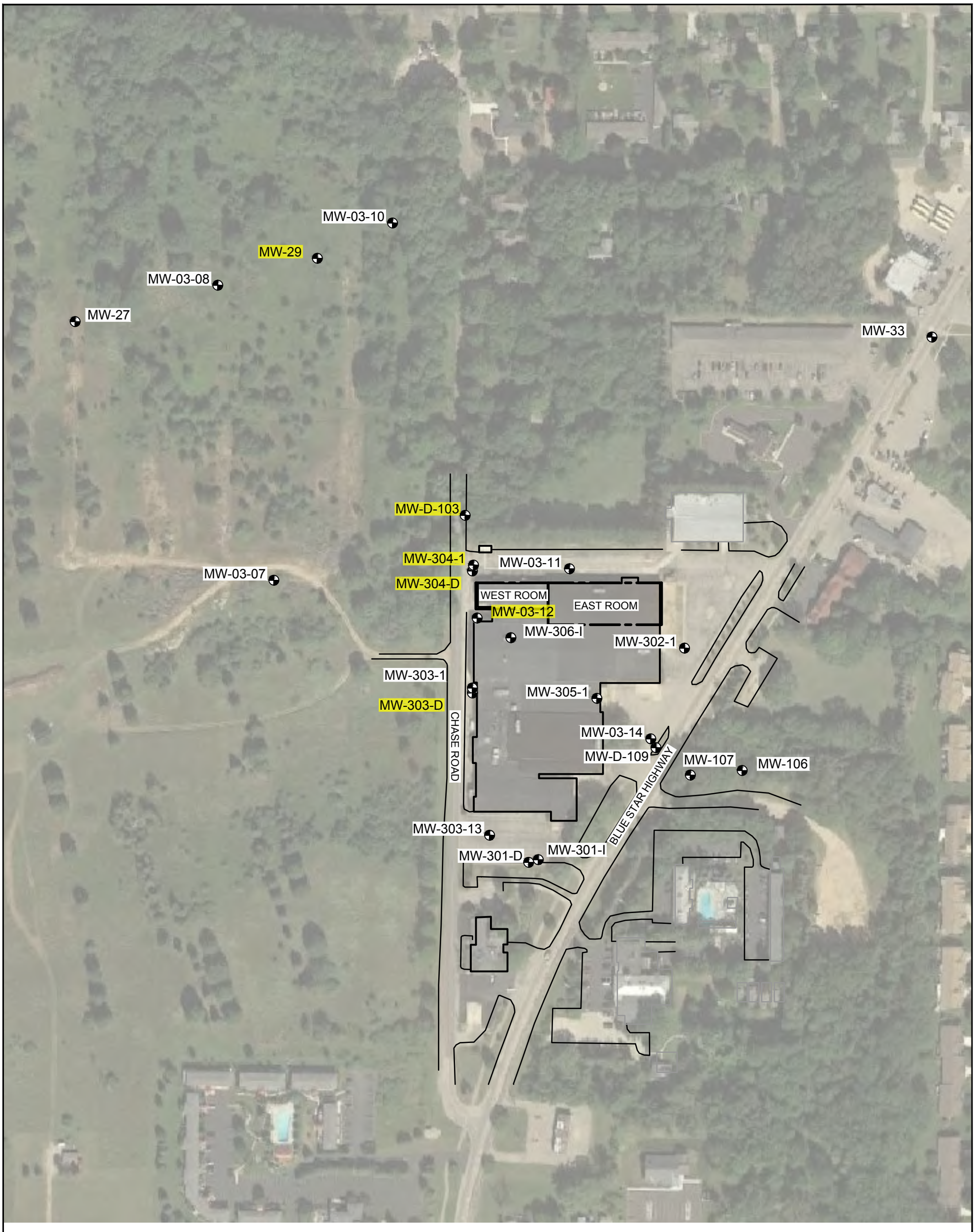
HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-02
Jul 31, 2018

SITE LOCATION

FIGURE 1

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-02(001)GN-DE008.dwg



NOTE: WELL LOCATIONS FROM WESTON SOLUTIONS FIGURE 2

LEGEND

AREA

MW-D-103 INDICATES WELL SAMPLED

MW-03-07 MONITORING WELL

Source: GOOGLE EARTH (DIGITAL GLOBE 9/9/2017)

0 100 200ft

Coordinate System:
STATE PLANE
MI-NAD83

HAWORTH
200 BLUE STAR HIGHWAY
DOUGLAS, MICHIGAN

11152042-04

Mar 12, 2019

SITE MAP MONITORING WELL LOCATIONS

FIGURE 2

CAD File: I:\drawings\11150000s\11152042\11152042-REPORTS\11152042-04(001)\11152042-04(001)GN-DE001.dwg

Table 1

Sample Analysis Summary
Former Douglas Facility
Douglas, Michigan

Sample ID	Location Description	Collection Date (mm/dd/yy)	Sample Type	Matrix Code	QA/QC	Parent ID	Analysis
Rinsate-11152042-012319-JY-001	NA	1/23/2019	Groundwater	WG	Rinsate		VOCs, PCBs
TB-11152042-012319	NA	1/23/2019	Groundwater	WG	TB		VOCs
GW-11152042-012319-JY-001	MW-29	1/23/2019	Groundwater	WG			VOCs, PCBs
GW-11152042-012319-JY-002	MW-D-103	1/23/2019	Groundwater	WG			VOCs, PCBs
GW-11152042-012319-JY-003	MW304I	1/23/2019	Groundwater	WG			VOCs, PCBs
GW-11152042-012319-JY-004	MW-304I	1/23/2019	Groundwater	WG	Duplicate	- JY-003	VOCs, PCBs
GW-11152042-012319-JY-005	MW-304D	1/23/2019	Groundwater	WG			VOCs, PCBs
GW-11152042-012319-JY-006	MW-3-12	1/23/2019	Groundwater	WG	MS/MSD		VOCs, PCBs
GW-11152042-012419-JY-007	MW-303D	1/24/2019	Groundwater	WG			VOCs, PCBs

Notes:
QA/QC - Quality Assurance/Quality Control
Parent ID - Orignal sample from which a duplicate sample was collected from.
WG - Groundwater Sample
VOCs - Volatile organic compounds
PCBs - Polychlorinated biphenyls

Table 2

Summary of Groundwater Analytical Results
Former Douglas Facility
Douglas, Michigan

Sample Location:		**MDEQ Generic Groundwater Cleanup Criteria: Residential and Nonresidential** [1]					**MW-29**	**MW-303D**	**MW-304D**	**MW-304I**	**MW-304I**	**MW-3-12**	**MW-D-103**
Sample Identification:		Residential	Non-Residential	Groundwater	Residential Groundwater	Non-Residential Groundwater	**1/23/2019**	**1/24/2019**	**1/23/2019**	**1/23/2019**	**1/23/2019**	**1/23/2019**	**1/23/2019**
Sample Type:		Drinking Water	Drinking Water	Surface Water	Volatilization to	Volatilization to					**Duplicate**		
Sample Depth:				Interface	Indoor Air Inhalation	Indoor Air Inhalation							
		a	**b**	**c**	**d**	**e**							
Polychlorinated Biphenyls (PCBs)	**Units**												
Aroclor-1016 (PCB-1016)	ug/L	0.5	0.5	0.2	45	45	0.097 U	0.095 U	0.095 U	0.099 U	0.098 U	0.095 U	0.095 U
Aroclor-1221 (PCB-1221)	ug/L	0.5	0.5	0.2	45	45	0.097 U	0.095 U	0.095 U	0.099 U	0.098 U	0.095 U	0.095 U
Aroclor-1232 (PCB-1232)	ug/L	0.5	0.5	0.2	45	45	0.097 U	0.095 U	0.095 U	0.099 U	0.098 U	0.095 U	0.095 U
Aroclor-1242 (PCB-1242)	ug/L	0.5	0.5	0.2	45	45	0.097 U	0.095 U	0.095 U	0.099 U	0.098 U	0.095 U	0.095 U
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.2	45	45	0.097 U	0.095 U	0.095 U	0.099 U	0.098 U	0.095 U	0.095 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.2	45	45	0.097 U	0.095 U	0.095 U	0.099 U	0.098 U	0.095 U	0.095 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.2	45	45	0.097 U	0.095 U	0.095 U	0.099 U	0.098 U	0.095 U	0.095 U
Total PCBs	ug/L	0.5	0.5	0.2	45	45	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds (VOCs)													
1,1,1-Trichloroethane	ug/L	200	200	89	660000	1300000	200 U	1.0 U	2.0 U	**250 J[abc]**	**290 J[abc]**	2.8 J	1000 U
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	78	12000	77000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,1,2-Trichloroethane	ug/L	5	5	330	17000	110000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,1-Dichloroethane	ug/L	880	2500	740	1000000	2300000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,1-Dichloroethene	ug/L	7	7	130	200	1300	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,2,4-Trichlorobenzene	ug/L	70	70	99	300000	300000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.2	NA	220	1200	400 U	2.0 U	4.0 U	2000 U	2000 U	16 U	2000 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05	0.05	5.7	2400	15000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,2-Dichlorobenzene	ug/L	600	600	13	160000	160000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,2-Dichloroethane	ug/L	5	5	360	9600	59000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,2-Dichloropropane	ug/L	5	5	230	16000	36000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,3-Dichlorobenzene	ug/L	6.6	19	28	18000	41000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
1,4-Dichlorobenzene	ug/L	75	75	17	16000	74000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	2200	240000000	240000000	2000 U	10 U	20 U	10000 U	10000 U	80 U	10000 U
2-Hexanone	ug/L	1000	2900	ID	4200000	8700000	2000 U	10 U	20 U	10000 U	10000 U	80 U	10000 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	ID	20000000	20000000	2000 U	10 U	20 U	10000 U	10000 U	80 U	10000 U
Acetone	ug/L	730	2100	1700	1000000000	1000000000	2000 U	10 U	20 U	10000 U	10000 U	80 U	10000 U
Benzene	ug/L	5	5	200	5600	35000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Bromodichloromethane	ug/L	80	80	ID	4800	37000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Bromoform	ug/L	80	80	ID	470000	3100000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Bromomethane (Methyl bromide)	ug/L	10	29	5	4000	9000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Carbon disulfide	ug/L	800	2300	ID	250000	550000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Carbon tetrachloride	ug/L	5	5	38	370	2400	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Chlorobenzene	ug/L	100	100	25	210000	470000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Chloroethane	ug/L	430	1700	1100	5700000	5700000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Chloroform (Trichloromethane)	ug/L	80	80	350	28000	180000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Chloromethane (Methyl chloride)	ug/L	260	1100	ID	8600	45000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
cis-1,2-Dichloroethene	ug/L	70	70	620	93000	210000	**1700[abc]**	0.25 J	1.7 J	**1100[abc]**	**1200[abc]**	5.7 J	**9100[abc]**
cis-1,3-Dichloropropene	ug/L	NA	NA	NA	NA	NA	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Cyclohexane	ug/L	NA	NA	NA	NA	NA	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Dibromochloromethane	ug/L	80	80	ID	14000	110000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	ID	220000	300000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Ethylbenzene	ug/L	74	74	18	110000	170000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Isopropyl benzene	ug/L	800	2300	28	56000	56000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Methyl acetate	ug/L	NA	NA	NA	NA	NA	2000 U	10 U	20 U	10000 U	10000 U	80 U	10000 U
Methyl cyclohexane	ug/L	NA	NA	NA	NA	NA	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Methyl tert butyl ether (MTBE)	ug/L	40	40	7100	47000000	47000000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Methylene chloride	ug/L	5	5	1500	220000	1400000	1000 U	5.0 U	10 U	5000 U	5000 U	40 U	5000 U
Styrene	ug/L	100	100	80	170000	310000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Tetrachloroethene	ug/L	5	5	60	25000	170000	200 U	1.0 U	2.0 U	1000 U	1000 U	1.2 J	1000 U
Toluene	ug/L	790	790	270	530000	530000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
trans-1,2-Dichloroethene	ug/L	100	100	1500	85000	200000	94 J	1.0 U	0.42 J	1000 U	1000 U	8.0 U	**660 J[ab]**
trans-1,3-Dichloropropene	ug/L	NA	NA	NA	NA	NA	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Trichloroethene	ug/L	5	5	200	2200	4900	**5000[abcde]**	**6.1[ab]**	**47[ab]**	**25000[abcde]**	**27000[abcde]**	**140[ab]**	**23000[abcde]**
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300	NA	1100000	1100000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Trifluorotrichloroethane (CFC-113)	ug/L	170000	170000	32	170000	170000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Vinyl chloride	ug/L	2	2	13	1100	13000	200 U	1.0 U	2.0 U	1000 U	1000 U	8.0 U	1000 U
Xylenes (total)	ug/L	280	280	49	190000	190000	400 U	2.0 U	4.0 U	2000 U	2000 U	16 U	2000 U

Notes:
-- Not analyzed.
ug/L - Microgram per liter.
[1] MDEQ (Michigan) Generic groundwater cleanup criteria, administrative rule R 299.44 effective December 30, 2013, pursuant to Part 201 of 1994 PA 451 as amended (Part 201 Groundwater Criteria).
NA - Criteria not available.
U - Not present at or above the associated value.
ID - Insufficient data to develop criterion.
2.6[ab] Indicates a concentration exceedance of Part 201 Cleanup Criteria.
J - Indicates an estimated value.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

For DEQ Use Only
ITS #_____
Site ID #_____
Category Code: _____

NOTICE OF MIGRATION OF CONTAMINATION

(Under the authority of Part 201, Natural Resources and Environmental Protection Act, 1994 Act 451, as amended, (NREPA) and the Rules promulgated thereunder)

An owner or operator of property that is a facility, and/or who is subject to MCL 324.20114, and who has reason to believe that a hazardous substance is emanating from, has emanated from, or is likely to be emanating from the property and migrating beyond the boundaries of the property that he or she owns or operates is required under R 299.5522 and R 299.51017(1) to notify the Michigan Department of Environmental Quality ("DEQ") and affected property owners, unless he or she is exempt from MCL 324.20107a (see MCL 324.20107a(4) for exemptions), or unless he or she has provided the notice required by MCL 324.21309a.

The notice must be provided within 45 days after the owner or operator has reason to believe that hazardous substances have migrated, or are likely to have migrated, to or beyond the boundary of his or her property (see R 299.51017 and R 299.5522 for exceptions). If a person is required to provide additional notice as a result of the changes in R 299.51017 that took effect on December 21, 2002, then that additional notice shall be provided not later than September 21, 2003.

Use of this form is mandatory for the notice required by R 299.51017(1) and may also be used by parties subject to MCL 324.20114 to provide notice required by R 299.5522. This form may also be used to provide notice to affected property owners as required by those rules.

If a person holds a permit for an oil and gas well under Part 615, Supervisor of Wells, of the NREPA and there is a release from the oil and gas exploration or production activities, that person shall give notice to the DEQ and to the owner of the surface rights of the property.

If a person holds an easement and there is a release from the easement holder's activities, that person shall provide notice to the DEQ and to the grantor of the easement, or the grantor's successor in interest, if any.

Completing this notice in no way relieves a person who is subject to MCL 324.20114 from the responsibility to undertake required response activities.

This notice must be sent to the DEQ office that serves the county in which the property is located. A list of DEQ offices is attached. The DEQ will not prepare acknowledgement of receipt of these notices. The sender is responsible for sending the report using a method that provides proof of delivery if such proof is desired. Please label the outside of the envelope "Migration Notice."

THIS NOTICE IS PROVIDED PURSUANT TO: **R 299.5522** ☐ **R 299.51017** ☐
(check both, if applicable)

Please provide the following information as completely as possible.

1. Name and location of the property that hazardous substances are emanating from:

   Name: HAWORTH, INC.
   Address: 200 WASHINGTON ROAD
   Location:
   City/County: [redacted]

2. Status relative to the property:
   (Check one or both, as applicable.)

   Owner ☐
   Operator ☐

Please provide any additional ID numbers associated with the property (e.g., EPA ID No., BEA No., etc.)

MIT270011521

3. Name, address and telephone number of the property owner or operator submitting the notice:
   Name: HAWORTH, INC.
   Address: ONE HAWORTH CENTER
   City/State: HOLLAND MI 49423
   Telephone number: 616-393-3000

4. Name, address and telephone number of a contact person familiar with the content of the notice:
   Name: JAMES KOZMINSKI
   Address: ONE HAWORTH CENTER
   City/State: HOLLAND MI 49423
   Telephone: 616-393-1535

5. If this Notice is provided pursuant to R 299.51017, provide the address and other location information for the *adjacent* property onto which contamination has migrated. If this Notice is provided pursuant to R 299.5522, provide the address and other location information for *each* property onto which contamination has migrated.

Address: 121 Ferry St. Notified? No [redacted] Yes [redacted] Date: [redacted]
City/State: Douglas MI
Property Tax ID number: [redacted]
Other:

Address: Blue Star Hwy. Notified? No [redacted] Yes [redacted] Date: [redacted]
City/State: Douglas MI
Property Tax ID number: [redacted]
Other:

Address: 160 Blue Star Hwy. Notified? No [redacted] Yes [redacted] Date: [redacted]
City/State: Douglas MI
Property Tax ID number: [redacted]
Other:

Address: Ferry St. Notified? No [redacted] Yes [redacted] Date: [redacted]
City/State: Douglas MI
Property Tax ID number: [redacted]
Other:

Address: 333 Blue Star Hwy. Notified? No [redacted] Yes [redacted] Date: [redacted]
City/State: Douglas MI
Property Tax ID number: [redacted]
Other:

Address: Ferry St. Notified? No [redacted] Yes [redacted] Date: 09/19/03
City/State: Douglas MI
Property Tax ID number: [redacted]
Other:

(Attach additional pages as needed) **NA**

6. Complete the Table on Page 3 of this Form for each hazardous substance which has migrated, or is likely to have migrated, beyond the property boundary at a concentration that exceeds a Generic Residential Cleanup Criterion developed by the DEQ pursuant to MCL 324.20120a(1). Complete and attach additional copies of Page 3, if necessary, to list all hazardous substances that must be reported. Include a scaled map or drawing that shows the location of sampling points identified on the Table on Page 3.

[redacted]

7. Provide a summary of the information which shows that contamination is emanating from, or has emanated from, and is present beyond the boundary of the source property at a concentration which exceeds that allowed by MCL 324.20120a(1)(a). This summary shall identify the environmental media affected, specific hazardous substances, and the concentrations of those hazardous substances in all affected environmental media at the property boundary and in any sample locations beyond the property boundary. The summary shall also describe the basis for the conclusion that the contamination is emanating, has emanated, or is present beyond the boundary of the source property, including whether the conclusion is based on groundwater analytical data or fate and transport modeling, both, or neither.

MDEQ RECEIVED THE MOST CURRENT SUMMARY REPORT IN OCTOBER, 2002. TITLE: *GROUNDWATER INVESTIGATION REPORT FOR THE VILLAGE OF DOUGLAS SITE* (DOUGLAS MI) PREPARED BY WESTON SOLUTIONS OF MI (OKEMOS MI). THE REPORT PROVIDES ALL OF THE DETAILS REQUESTED HERE. COPIES OF ALL RELEVANT INFORMATION ARE AVAILABLE UPON REQUEST FROM MDEQ-KALAMAZOO DISTRICT OFFICE [REMEDIATION & REDEVELORMENT DIVISION (269)567-3500].

8. If the person making this notice has reason to believe that a migrating hazardous substance has affected, or is likely to affect, a private or public water supply, then that water supply must be identified here:

[redacted]

	YES	NO
9. Is this notice being submitted within the timeframes established under R 299.5522 and/or R 299.51017, as applicable?	[redacted]	[redacted]
10. Is this notice in addition to a notice submitted prior to *December 21, 2002?* (R 299.51017(4)(c))	[redacted]	[redacted]
11. Is this notice related to an oil and gas well permit (R 299.51017(2))?	[redacted]	[redacted]
12. Is this notice related to an easement (R 299.51017(3))? (NOTE: All easement grantors *must* receive this notice.)	[redacted]	[redacted]
13. Has a surface water been affected (R 299.51017(1) and R 299.5522(2))? (If yes, please identify the affected surface water body.)	[redacted]	[redacted]

10/02 REPORT (CITED ABOVE) INDICATES DETECTABLE VOC CONTAMINANTS FROM SURFACE WATER SAMPLES COLLECTED FROM KALAMAZOO LAKE AND WICKS CREEK.

CERTIFICATION:

With my signature below, I certify that I am the owner of the facility or that I am legally authorized to execute this notice on behalf of the owner or operator named on this form, and that to the best of my knowledge and belief the above representations are complete and accurate. I understand that intentionally submitting false information to the DEQ is a felony and may result in fines up to $25,000 for each violation.

Signature James D. Kozminski Date 09/22/03
(Owner or person legally authorized to bind the person making this report)

Name James D. Kozminski, P.E. Title Project Engineer- Environmental

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

NOTICE OF MIGRATION OF CONTAMINATION

(Under the authority of Part 201, Natural Resources and Environmental Protection Act, 1994 Act 451, as amended, (NREPA) and the Rules promulgated thereunder)

See Item 6 on Page 2 of this Form for instructions to be used in completing this Table. Attach additional pages if necessary. The information to be included in each column of the Table is:

Column A Name of hazardous substance.
Column B Chemical Abstract Service (CAS) Number for the hazardous substance.
Column C Sample location for Column C (relate to label on map).
Column D Maximum hazardous substance concentration measured on the property, expressed parts per billion (e.g, ug/L or ug/Kg). Report maximum concentration separately for each environmental medium.
Column E Environmental medium in which concentration reported in Column C was measured (e.g., soil or groundwater).
Column F Distance from point of maximum measured concentration (Column D) to property boundary, in direction of contaminant migration, if direction is known or can reasonably be inferred. If direction is unknown, list distance to nearest property boundary.
Column G Direction of contaminant migration, if known.
Column H Sample location for Column I (relate to label on map).
Column I Concentration closest to property boundary, if known. If a concentration lower than the maximum concentration reported in Column C has been measured at a point closer to the property boundary in the direction of contaminant migration, use Column I to list the concentration that was measured closest to the property boundary in the direction of contaminant migration.
Column J Environmental medium for measurement reported in Column I, if applicable.

A Hazardous Substance	B CAS Number	C Maximum Concentration	D Sample Location for "C"	E Environmental Medium for "C"	F Distance to Property Boundary	G Direction of Migration	H Sample Location for "I"	I Boundary Concentration	J Environmental Medium for "I"
Trichloroethene	79016	81,000	MW 303	GW	20'	NW	MW 304	4800	GW
1,1 Dichloroethene	75354	240	MW D103	GW	20'	NW		NA	
cis 1,2 dichloroethene	156592	3000	MW 303	GW	20'	NW	MW 304	230	GW
Vinyl Chloride	75014	53	MW D103	GW	20'	NW		NA	
1,1,1 Trichloroethane	71556	710	MW 303	GW	20'	NW	MW 304	57	GW
Tetrachloroethene	127184	370	MW 303	GW	20'	NW	MW 304	14	GW

Total Number Samples Collected: See 10/02 report

Total Number of Samples Exceeding Criteria: See 10/02 report

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

NOTICE OF MIGRATION OF CONTAMINATION

(Under the authority of Part 201, Natural Resources and Environmental Protection Act, 1994 Act 451, as amended, (NREPA) and the Rules promulgated thereunder)

A Hazardous Substance	B CAS Number	C Maximum Concentration	D Sample Location for "C"	E Environmental Medium for "C"	F Distance to Property Boundary	G Direction of Migration	H Sample Location for "I"	I Boundary Concentration	J Environmental Medium for "I"
Chlorobenzene	108907	80	MW 303	GW	20'	NW		NA	
Trans 1, 2 Dichloroethene	156605	24	MW D103	GW	20'	NW		NA	
Ethylbenzene	100414	950	MW 302	GW	50'	E		NA	
Xylene	1330207	2460	MW 302	GW	50'	E		NA	
n-Propylbenzene	98828	170	MW 302	GW	50'	E		NA	
1,3,5 Trimethylbenzene	108678	280	MW 302	GW	50'	E		NA	
1,2,4 Trimethylbenzene	95636	1100	MW 302	GW	50'	E		NA	

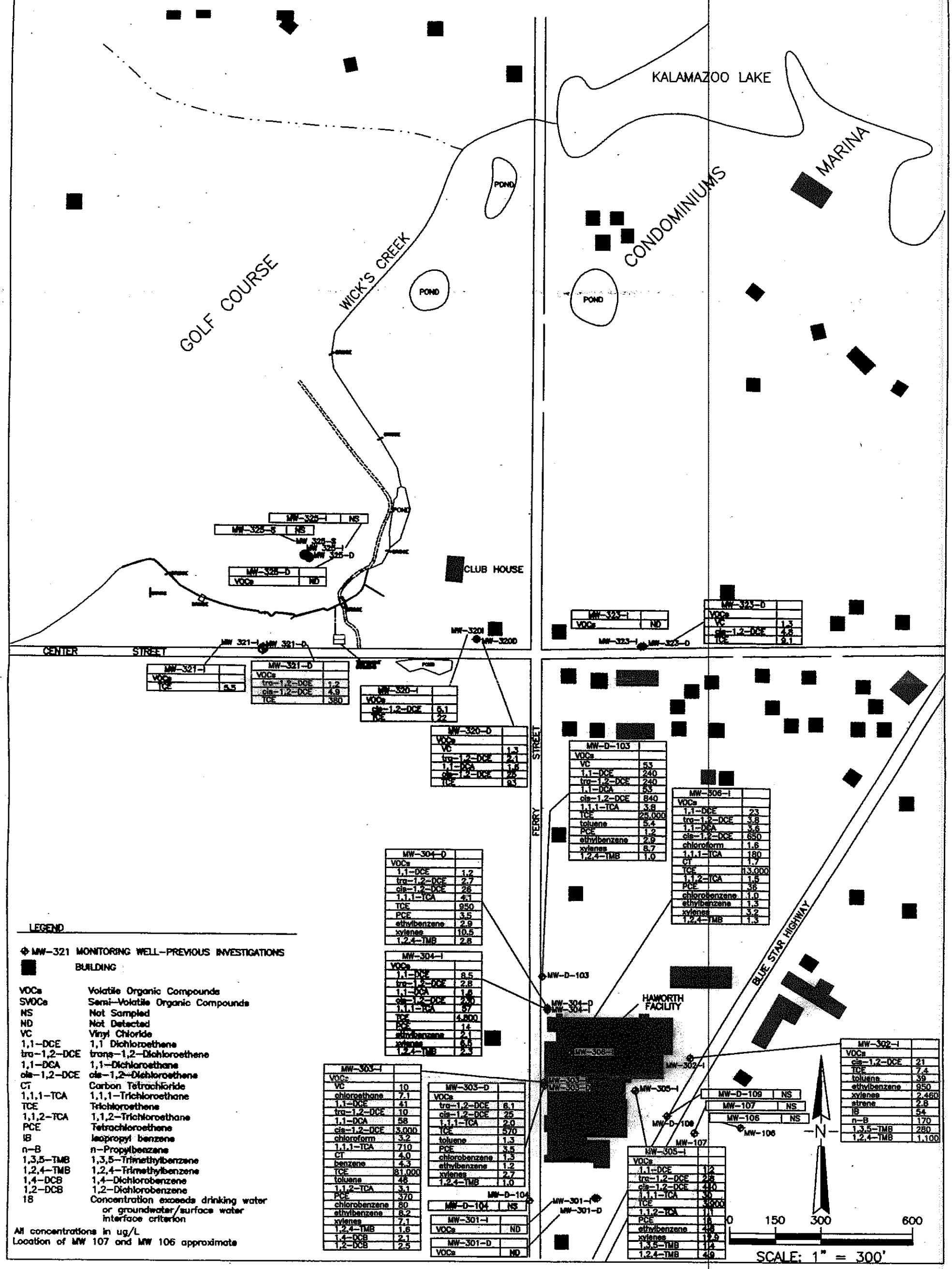


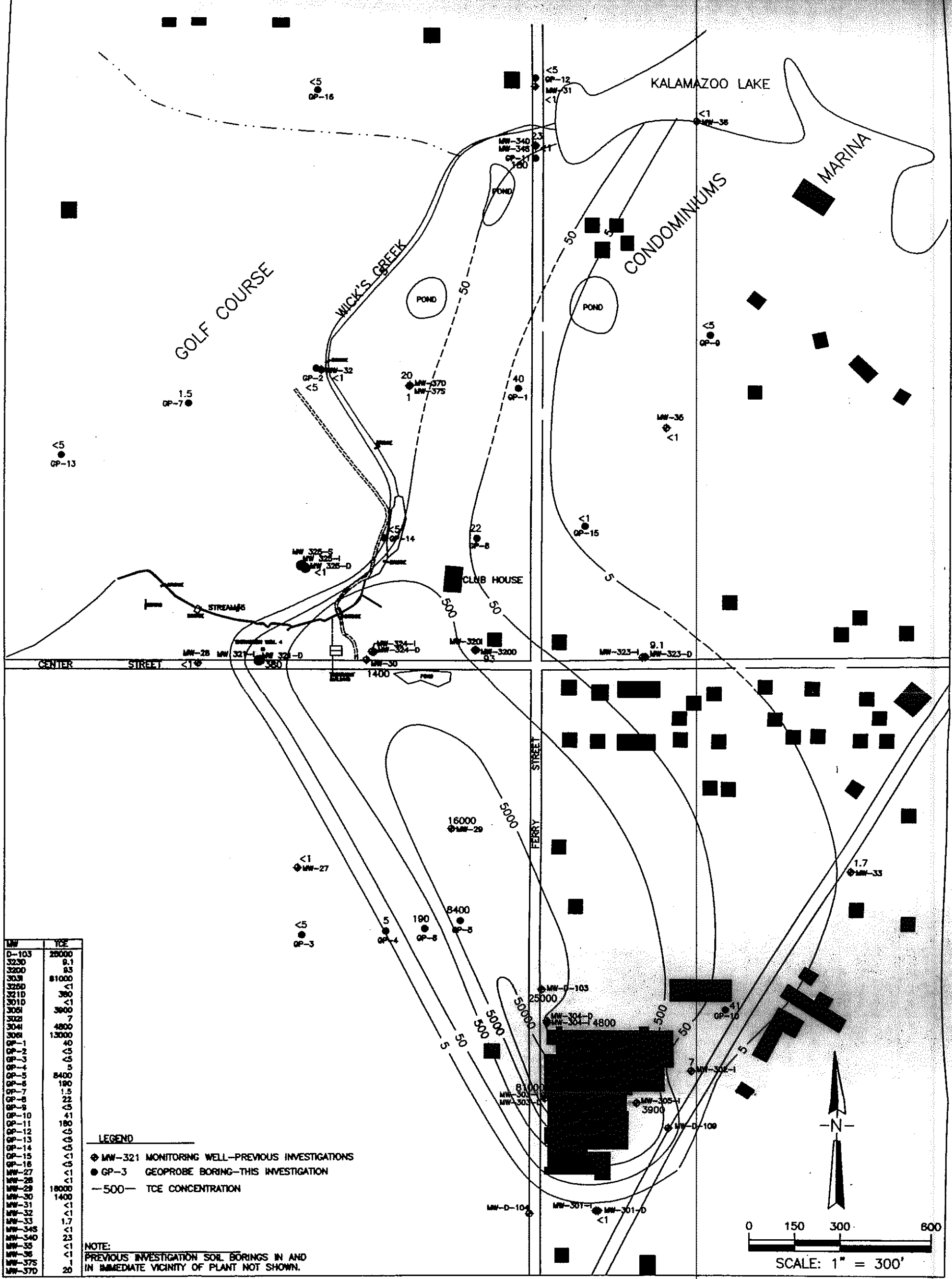
FIGURE: 5-3

File Path and Name: K:\20083004.022\Figures\GWAnalytical11-01.dwg	Designed by: Weskshore Consulting	Drawn By: CEK	Checked by: Mike Pozniak	Approved by: Mike Pozniak

WESTON SOLUTIONS

2501 Jolly Rd. Suite 100
Okemos, Michigan
48864

MONITORING WELL RESULTS - NOVEMBER 2001
VILLAGE OF DOUGLAS SITE
Douglas, Michigan



MW	TCE
D-103	25000
323D	9.1
320D	93
303I	81000
325D	<1
321D	380
301D	<1
305I	3900
302I	7
304I	4800
306I	13000
GP-1	40
GP-2	<5
GP-3	<5
GP-4	5
GP-5	8400
GP-6	190
GP-7	1.5
GP-8	22
GP-9	<5
GP-10	41
GP-11	180
GP-12	<5
GP-13	<5
GP-14	<5
GP-15	<1
GP-16	<5
MW-27	<1
MW-28	<1
MW-29	16000
MW-30	1400
MW-31	<1
MW-32	<1
MW-33	1.7
MW-34S	<1
MW-34D	23
MW-35	<1
MW-36	<1
MW-37S	1
MW-37D	20

LEGEND

◆ MW-321 MONITORING WELL—PREVIOUS INVESTIGATIONS

● GP-3 GEOPROBE BORING—THIS INVESTIGATION

—500— TCE CONCENTRATION

NOTE:
PREVIOUS INVESTIGATION SOIL BORINGS IN AND IN IMMEDIATE VICINITY OF PLANT NOT SHOWN.

FIGURE: 6-1

File Path and Name: K:\20082004.022\Figures\GW TCE(Fig6-1).dwg	Designed by: Westshore Consulting	Drawn By: KRB	Checked by: Mike Pozniak	Approved by: Mike Pozniak

WESTON SOLUTIONS

2501 Jolly Rd. Suite 100
Okemos, Michigan
48864

MAXIMUM GROUNDWATER
TCE CONTOUR MAP
VILLAGE OF DOUGLAS SITE
Douglas, Michigan

Appendix B

PM ENVIRONMENTAL Environmental & Engineering Services

Surface Barrier Inspection Form
200 Blue Star Highway, City of the Village of Douglas, Michigan

Instructions:

The inspection of the exposure barriers must be conducted at the intervals identified below which are specific to the type of barrier in place. Each inspection must include a walkthrough of the subject property to document the condition of the surface cover present, whether repairs are needed to ensure that dermal contact with underlying soils does not occur and that particulates are contained, and to document the actions taken to repair or replace the surface cover, including the timeline for repair replacement following identification of an issue. Records of the inspections must be maintained by the City of the Village of Douglas for the duration that it owns and/or operates at the subject property.

The surface cover on the subject property consists of the components depicted on the map on Page 3, including 1) areas of asphalt and concrete pavement (driveways, building foundation, parking lot areas, and sidewalks), 2) areas of seeded topsoil (grass).

These areas should be inspected for the following conditions with the results recorded on the inspection log included on Page 2:

Paved Surface Cover Areas: On an annual basis, inspect and record the condition of paved surface cover areas, including the concrete building foundation, areas of asphalt pavement, and areas of concrete pavement, for pitting or cracks greater than 1.0" through which impacted subsurface soils could be readily accessed. If the building is demolished, the concrete floor slab in the east room of the northern portion of the building must be coated with epoxy. The epoxy coating must also be inspected annually.

If such conditions are identified, the pitting or cracks must be repaired with an equivalent surface cover (asphalt or concrete, or a commercially available asphalt or concrete patch/sealant, or epoxy coating in applicable areas) within 14 days of discovery. Records of any repairs must be included on the attached log included on Page 2.

Non-paved Surface Cover Areas: On an annual basis, inspect and record the condition of non-paved surface cover areas, including grass areas and landscaping, for patches of exposed soils greater than six inches in diameter, indicating that the integrity of the surface cover is incomplete.

Similar to the paved inspection, if such conditions are identified, the patches must be repaired with an equivalent surface cover (6" of seeded topsoil) within 14 days of discovery. Records of any repairs must be included on the attached log included on Page 2.

If repair/replacement of paved and non-paved surface cover areas is not feasible within the required 14 day timeframe, the area(s) must be temporarily covered with anchored plastic sheeting, anchored landscaping fabric, or anchored plywood, as appropriate until a permanent repair/replacement is installed. Records of any temporary repairs or surface cover installation must be included on the attached log included on Page 2.

Provide further description and comments, if necessary, on a separate sheet of paper and attach to this sheet. **Any item that receives "yes" as an answer must be described and addressed.**

Surface Barrier Inspection Form
200 Blue Star Highway, City of the Village of Douglas, Michigan

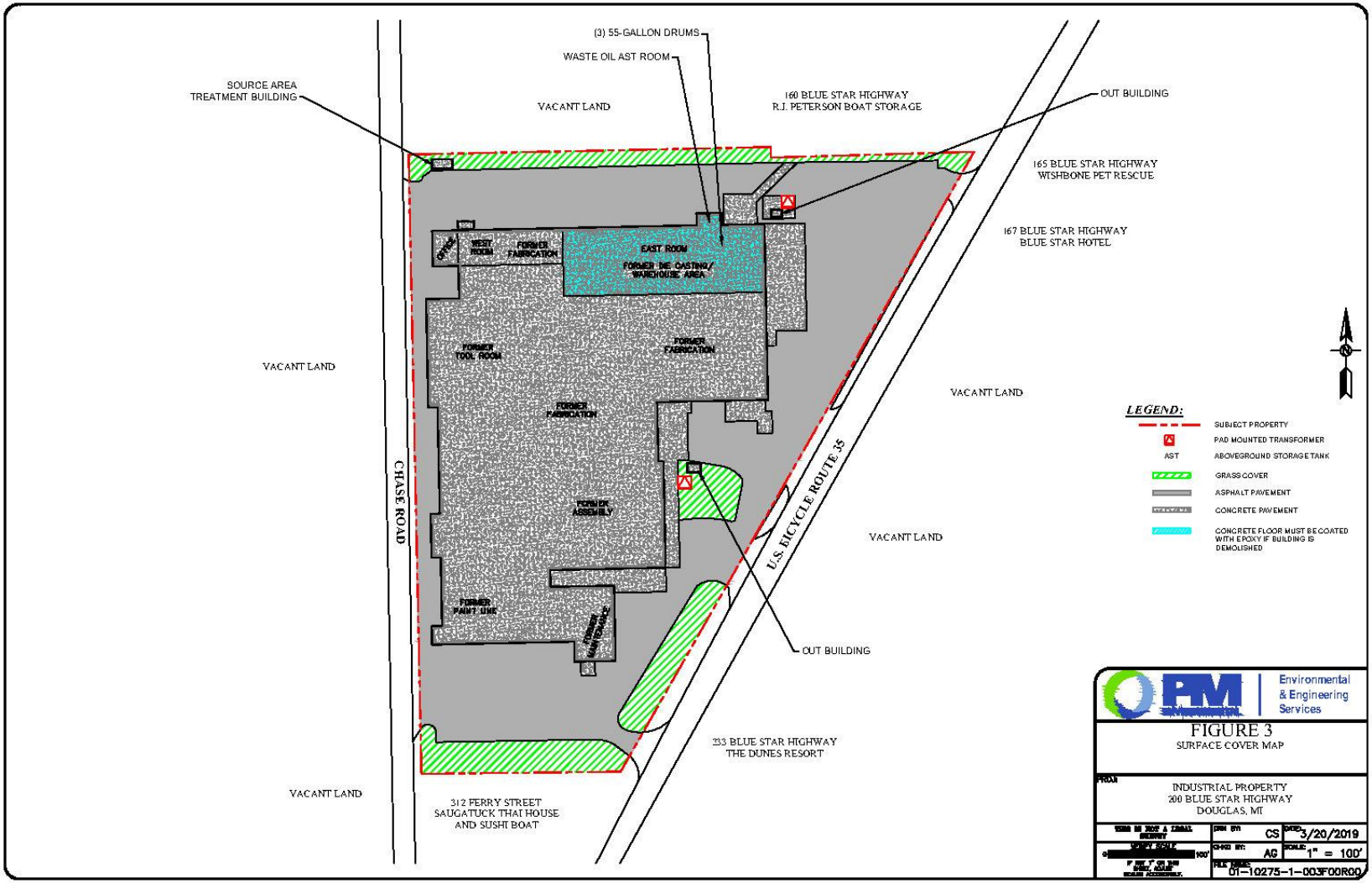
Dermal Contact Exposure Barrier Type	Y	N	Date of Inspection, Description & Comments, Summary of Actions Taken
Areas of Pavement or Building Foundation Cover			
Are any pavement/building foundation exposure barriers pitted, cracked, or damaged (0.5" or greater) such that underlying soils are exposed?			
Do any pavement/building foundation exposure barriers contain significant cracking (0.5" or greater) such that underlying soils are exposed?			
Are any other pavement/building foundation exposure barrier conditions present that affect their integrity such that underlying soils are exposed?			
If the concrete floor slab in the northern portion of the building has been coated with epoxy, has the epoxy coating been damaged?			
Non-Paved Surface Cover			
Is vegetative cover, or other landscaping missing or damaged (6" diameter or greater) such that underlying soils are exposed?			
Are conditions apparent that indicate that the thickness of non-paved exposure barriers (6" for grass areas) has been significantly reduced (i.e., erosion, surface depressions, etc.)?			

Additional Remarks:

Date: _____ **Signature:** _____

Surface Barrier Inspection Form
200 Blue Star Highway, City of the Village of Douglas, Michigan

Map of Subject Property Surface Barrier Areas



Appendix C

PM ENVIRONMENTAL Environmental & Engineering Services

MODEL DOCUMENT – NOTICE TO EASEMENT HOLDERS AND UTILITY COMPANIES

Date

Addressee
Addressee Title
Address Line 1
Address Line 2

RE: Notice to Easement Holders and Utility Companies Servicing the Property Located at 200 Blue Star Highway, City of the Village of Douglas, Michigan

Dear Addressee:

The City of the Village of Douglas is providing written notice to easement holders and public utilities that serve the above-referenced property to satisfy the reporting requirements for due care obligations under Rule 1013 of Section 20107a of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994 (Part 201), as amended.

The subject property is a "facility" as specified in Section 20120a(1)(a) or (17) in Part 201 based on the analytical results of soil and groundwater samples collected during subsurface investigations above the Michigan Department of Environmental Quality (MDEQ) Part 201 Residential and Nonresidential Soil Volatilization to Indoor Air Inhalation (SVII), Groundwater Volatilization to Indoor Air Inhalation (GVII), and/or Direct Contact (DC) cleanup criteria. PCB concentrations detected in soil samples and surficial concrete floor samples also exceeded Toxic Substance Control Act (TSCA) cleanup standards. Additionally, concentrations of VOCs were detected in soil, groundwater, and soil gas samples above Michigan Department of Environmental Quality (MDEQ)/Michigan Department of Health and Human Services (MDHHS) Residential and Nonresidential Recommended Interim Action Screening Levels.

All contractors who may work sub-grade on the subject site, including excavation contractors and utility employees, are advised to take appropriate safety precautions when working on the property. 40-Hour hazardous materials safety training, personal protection equipment, and site safety plans may be necessary if working subsurface at the subject site. Additional documentation concerning the existing subsurface contamination is available upon request.

Please contact us at (XXX) XXX-XXXX if you have any questions or require any additional information.

Sincerely,

Name
Title

MODEL DOCUMENT – NOTICE TO CONSTRUCTION AND UTILITY CONTRACTORS

Date

Addressee
Addressee Title
Address Line 1
Address Line 2

RE: Notice to Construction and Utility Contractors Working at the Property Located at 200 Blue Star Highway, City of the Village of Douglas, Michigan

Dear Addressee:

The City of the Village of Douglas is providing written notice to construction and utility contractors working at the above-referenced property to satisfy the reporting requirements for due care obligations under Rule 1013 of Section 20107a of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994, as amended (Part 201).

The subject property is a "facility" as specified in Section 20120a(1)(a) or (17) in Part 201 based on the analytical results of soil and groundwater samples collected during subsurface investigations above the Michigan Department of Environmental Quality (MDEQ) Part 201 Residential and Nonresidential Soil Volatilization to Indoor Air Inhalation (SVII), Groundwater Volatilization to Indoor Air Inhalation (GVII), and/or Direct Contact (DC) cleanup criteria. PCB concentrations detected in soil samples and surficial concrete floor samples also exceeded Toxic Substance Control Act (TSCA) cleanup standards. Additionally, concentrations of VOCs were detected in soil, groundwater, and soil gas samples above Michigan Department of Environmental Quality (MDEQ)/Michigan Department of Health and Human Services (MDHHS) Residential and Nonresidential Recommended Interim Action Screening Levels.

All contractors who may work sub-grade on the subject site, including excavation contractors and utility employees, are advised to take appropriate safety precautions when working on the property. 40-Hour hazardous materials safety training, personal protection equipment, and site safety plans may be necessary if working subsurface at the subject site. Additional documentation concerning the existing subsurface contamination is available upon request.

Please contact us at (XXX) XXX-XXXX if you have any questions or require any additional information.

Sincerely,

Name
Title

Appendix D

PM ENVIRONMENTAL Environmental & Engineering Services

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
REMEDIATION AND REDEVELOPMENT DIVISION

For DEQ Use Only
ITS # _____
Site ID #_____
Category Code: _____

NOTICE OF MIGRATION OF CONTAMINATION (FORM EQP4482 REV. 4/16)

(Under the authority of Part 201, Natural Resources and Environmental Protection Act, 1994 Act 451, as amended, (NREPA) and the Rules promulgated thereunder)

An owner or operator of property that is a facility, and/or who is subject to MCL324.20107a, and who has reason to believe that a hazardous substance is emanating from, has emanated from, or is likely to be emanating from the property and migrating beyond the boundaries of the property that he or she owns or operates is required under R 299.51017(1) and MCL 324.20114(1)(b)(ii) & (iii) to notify the Michigan Department of Environmental Quality (DEQ) and affected property owners. Submission of this notice does not fulfill the notification requirements of MCL 324.21309a.

The notice must be provided within 45 days (MCL 324.20107a) or within 30 days (MCL 324.20114) after the owner or operator has reason to believe that hazardous substances have migrated, or are likely to have migrated, to or beyond the boundary of his or her property (see R 299.51017 for exceptions that apply to parties subject to MCL 324.20107a).

Use of this form is mandatory for the notice required by R 299.51017(1) and may also be used by parties subject to MCL 324.20114(1)(b)(ii) & (iii). This form may also be used to provide notice to affected property owners as required by those rules.

If a person holds a permit for an oil and gas well under Part 615, Supervisor of Wells, of the NREPA and there is a release from the oil and gas exploration or production activities, that person shall give notice to the DEQ and to the owner of the surface rights of the property.

If a person holds an easement and there is a release from the easement holder's activities, that person shall provide notice to the DEQ and to the grantor of the easement, or the grantor's successor in interest, if any.

Completing this notice in no way relieves a person who is subject to MCL 324.20114 from the responsibility to undertake required response activities.

This notice must be sent to the DEQ office that serves the county in which the property is located. A list of DEQ offices is available at www.michigan.gov/deqduecare, or by calling the Remediation and Redevelopment Division's Lansing office at 517-284-5187. The DEQ will not prepare acknowledgement of receipt of these notices. The sender is responsible for sending the report using a method that provides proof of delivery if such proof is desired. Please label the outside of the envelope "Migration Notice." Additional guidelines for the compliance with the requirements of R 299.51017(1) or MCL 324.20114(1)(b)(ii) & (iii) are available at www.michigan.gov/deqduecare.

THIS NOTICE IS PROVIDED PURSUANT TO: **R 299.51017** ☐ **MCL 324.20114(1)** ☐
(check both, if applicable)

Please provide the following information as completely as possible.

1. Name and location of the property that hazardous substances are emanating from:

   Name:
   Address:
   Location:
   City/County:
   Property Tax Identification Number, or if applicable, the ward and item number:

   Lattidue (decimal degrees): Longitude (decimal degrees):

   Reference Point for Latitude and Longitude:
   Center of Site: ☐ Main/front door: ☐ Front gate/main entrance: ☐ Other: ☐

   Collection Method: Survey: ☐ Interpolation: ☐ GPS: ☐

2. Status relative to the property:
   (Check one or both, as applicable.)

   Owner ☐
   Operator ☐

2. Provide any additional ID numbers associated with the property (e.g., EPA ID No., BEA No., Part 213 facility ID No., etc.):

3. Name, address, and telephone number of the property owner, operator, or other party submitting the notice:
   Name:
   Address:
   City/State:
   Telephone Number:

4. Name, address and telephone number of a contact person familiar with the content of the notice:
   Name:
   Address:
   City/State:
   Telephone Number:

5. If this Notice is provided pursuant to R 299.51017, provide the address and other location information for the *adjacent* property(s) onto which contamination is migrating, has migrated, or is likely to migrate.

   If this Notice is provided pursuant to MCL Section 324.20114(1), provide the address and other location information for *each* property onto which contamination has migrated. Notice should be sent to the property owner of record. If the impacted property is owned by the State of Michigan, notice should be sent to the department managing the property (e.g., a prison, state park, etc.). Notices to the Michigan Department of Transportation (MDOT) for state owned roadways should be sent to Contaminated Site Specialist, Environmental Services Section, MDOT-Bureau of Development, 425 W. Ottawa Street, P.O. Box 30050, Lansing, MI 48909. If the impacted property is owned by the State of Michigan, notice should be sent to the department managing the property (i.e. a prison, state park, etc.).

Address: Notified? No ☐ Yes ☐ Date:
City/State:
Property Tax ID number:
Other:

Address: Notified? No ☐ Yes ☐ Date:
City/State:
Property Tax ID number:
Other:

Address: Notified? No ☐ Yes ☐ Date:
City/State:
Property Tax ID number:
Other:

Address: Notified? No ☐ Yes ☐ Date:
City/State:
Property Tax ID number:
Other:

Address: Notified? No ☐ Yes ☐ Date:
City/State:
Property Tax ID number:
Other:

(Attach additional pages as needed)

6. Complete the Table on Page 3 of this Form for each hazardous substance which has migrated, or is likely to have migrated, beyond the property boundary at a concentration that exceeds a Generic Residential Cleanup Criterion developed by the DEQ pursuant to MCL 324.20120a(1). Complete and attach additional copies of Page 3, if necessary, to list all hazardous substances that must be reported. Include a scaled map or drawing that shows the location of sampling points identified on the Table on Page 3, the property boundaries, and the adjacent property owners if providing notice pursuant to R 299.1017(1) or all impacted property owners if providing notice pursuant to MCL 324.20114(1).

7. Provide a summary of the information which shows that contamination is emanating from, or has emanated from, and is present beyond the boundary of the source property at a concentration which exceeds the generic residential criteria developed by the DEQ pursuant to MCL 324.20120a(1)(a). This summary shall identify the environmental media affected, specific hazardous substances, and the concentrations of those hazardous substances in all affected environmental media at the property boundary and in any sample locations beyond the property boundary. The summary shall also describe the basis for the conclusion that the contamination is emanating, has emanated, or is present beyond the boundary of the source property, including whether the conclusion is based on groundwater analytical data or fate and transport modeling, both, or neither.

8. If the person making this notice has reason to believe that a migrating hazardous substance has affected, or is likely to affect, a private or public water supply, then that water supply must be identified here:

	YES	NO
9. Is this notice being submitted within the timeframes established under R 299.51017 and/or MCL 324.20114(1), as applicable?	☐	☐
10. Is this notice in addition to a notice that was submitted prior to *December 21, 2002?* (R 299.51017(4)(c))	☐	☐
11. Is this notice related to an oil and gas well permit (R 299.51017(2))? Permit #:	☐	☐
12. Is this notice related to an easement (R 299.51017(3))? (NOTE: All easement grantors *must* receive this notice.)	☐	☐
13. Has surface water been affected (R 299.51017(1)? (If yes, please identify the affected surface water body.)	☐	☐

CERTIFICATION:

With my signature below, I certify that I am the owner of the facility or that I am legally authorized to execute this notice on behalf of the owner or operator named on this form, and that to the best of my knowledge and belief the above representations are complete and accurate. I understand that intentionally submitting false information to the DEQ is a felony and may result in fines up to $25,000 for each violation.

Signature _____ Date _____
(Owner or person legally authorized to bind the person making this report)

Name (Typed or Printed) _____

Title (Typed or Printed) _____

See Item 6 on Page 3 of this Form for instructions to be used in completing this table. Attach additional pages if necessary. The information to be included in each column of the table is:

Column A Name of hazardous substance.
Column B Chemical Abstract Service (CAS) Number for the hazardous substance.
Column C Maximum hazardous substance concentration measured on the property, expressed in parts per billion (e.g., ug/L or ug/Kg). Report maximum concentration separately for each environmental medium.
Column D Sample location for Column C (relate to label on map).
Column E Environmental medium in which concentration reported in Column C was measured (e.g., soil or groundwater).
Column F Distance from point of maximum measured concentration (Column D) to property boundary, in direction of contaminant migration, if direction is known or can reasonably be inferred. If direction is unknown, list distance to nearest property boundary.
Column G Direction of contaminant migration, if known.
Column H Concentration closest to property boundary, if known. If a concentration lower than the maximum concentration reported in Column C has been measured at a point closer to the property boundary in the direction of contaminant migration, use Column I to list the concentration that was measured closest to the property boundary in the direction of contaminant migration.
Column I Sample location for Column H (relate to label on map).
Column J Environmental medium for measurement reported in Column H, if applicable.

A Hazardous Substance	B CAS Number	C Maximum Concentration	D Sample Location for "C"	E Environmental Medium for "C"	F Distance to Property Boundary	G Direction of Migration	H Boundary Concentration	I Sample Location for "H"	J Environmental Medium for "H"

Total Number Samples Collected: _____ Total Number of Samples Exceeding Criteria: _____

A scaled map or drawing showing these locations and the property boundaries must be submitted with this Notice