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MICHIGAN PUBLIC ACT 381 OF 1996, AS AMENDED
WORK PLAN TO CONDUCT
MDEQ ELIGIBLE RESPONSE AND
DUE CARE ACTIVITIES
HAMLIN & ADAMS PROPERTIES, LLC
28-ACRE VACANT PROPERTY
NORTHEAST CORNER OF HAMLIN ROAD AND ADAMS ROAD
ROCHESTER HILLS, MICHIGAN

for

CITY OF ROCHESTER HILLS
BROWNFIELD REDEVELOPMENT AUTHORITY
ROCHESTER HILLS, MICHIGAN

FEBRUARY 12, 2008
rv4

Approved by MDEQ on:_____

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ACT 381 MDEQ ENVIRONMENTAL WORK PLAN
HAMLIN & ADAMS PROPERTIES, LLC
28-ACRE VACANT PROPERTY
NORTHEAST CORNER OF HAMLIN ROAD AND ADAMS ROAD
ROCHESTER HILLS, MICHIGAN

1.0 INTRODUCTION

AKT Peerless Environmental Services (AKT Peerless) has prepared this Act 381 Environmental Work Plan for MDEQ Eligible Response and Due Care Activities for the proposed Hamlin & Adams Properties, LLC Development located at the 28-Acre Vacant Property in the Northeast Corner of Hamlin Road and Adams Road, that includes (Parcel ID Numbers 15-29-101-022 & 15-29-101-023 hereinafter "the Property" or "the subject property"), in Rochester Hills, Michigan. See Figure 1 for a topographic site location map. The Rochester Hills Brownfield Redevelopment Authority (BRA) concurred with the provisions of the Brownfield Plan on September 28, 2006 and the City of Rochester Hills Council approved the Brownfield Plan on November 29, 2006. See Appendix A for the Brownfield Plan.

The current owner of the Property, Hamlin & Adams Properties, LLC (hereinafter referred to as the Developer) intends to redevelop the Property for use as a mixed use commercial and office development. The estimated cost of eligible activities subject to this Work Plan is $3,190,065. This Work Plan is being conducted in support of the total project investment of approximately $19.3 million. Construction is anticipated to begin in mid to late 2008 and will continue until estimated completion in the fourth quarter of 2017.

Based on the current site conditions, certain response and due care activities are necessary to prepare the Property for redevelopment. The following sections present site background information, current property conditions, the proposed response and due care activities, and the costs associated with the proposed activities.

1.1 ELIGIBLE PROPERTY INFORMATION

1.1.1 Location

The eligible property consists of two vacant parcels (Parcel ID Numbers 15-29-101-022 & 15-29-101-023), in Rochester Hills, Michigan (City) totaling approximately 28-acres. The Property is situated on the northeast corner of the intersection of Hamlin Road and Adams Road, and is located in northwest quarter (NW ¼) of Section 29 of Township 3 North (T. 3N.) Range 11 East (R. 11E.), Rochester Hills, Oakland County, Michigan. The Property is not improved and contains densely vegetated and wooded areas along the north, east, and south property boundaries. The central portion of the property consists of vacant land.

See Appendix A for the approved Brownfield Plan, which includes the legal description of the Property.

1.1.2 Current Ownership

Hamlin & Adams Properties, LLC currently owns the Property. Contact information is as follows:

Mr. Paul Aragona
37020 Garfield, Suite T-1
Clinton Township, MI 48036
Phone: 586-286-0334
Fax: 586-286-1215

Hamlin & Adams Properties, LLC purchased the property on October 27, 2005. AKT Peerless prepared a Category N Baseline Environmental Assessment (BEA), dated November 10, 2005, on behalf of Hamlin & Adams Properties, LLC for the Property. The Category N BEA was submitted to the MDEQ under disclosure. The Category N BEA was prepared in accordance with (1) Section 20126(1)(c) of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), 1994 Public Act (PA) 451, as

amended (Part 201), and (2) Michigan Department of Environmental Quality (MDEQ) *Instructions for Preparing and Disclosing Baseline Environmental Assessments and Section 7a Compliance Analysis*, dated March 11, 1999. Therefore, Hamlin & Adams Properties, LLC is not a liable party for the existing contamination at the Property.

1.1.3 Delinquent Taxes, Interest, and Penalties

No delinquent taxes, interest, or penalties are known to exist for the property.

1.1.4 Existing and Proposed Future Zoning For Each Eligible Property

The Property is zoned R-2 Residential. However, a Consent Judgment between Developer and the City case no. 04-060730-CZ dated April 19, 2006 for the Property allows the Developer to redevelop the Property for commercial retail and office use in accordance with the provisions of the Consent Judgment. A copy of the Consent Judgment is provided in Appendix B.

1.2 HISTORICAL USE OF EACH ELIGIBLE PROPERTY

The Property consisted of undeveloped land from at least 1940 until at the least the mid-1950's when the western parcel was used for slaughterhouse operations. Illegal dumping occurred on the Property, mostly on the eastern parcel from at least the 1950s until 1970's. The historical dumping area on the eastern parcel is known as the Christianson Landfill.

1.3 CURRENT USE OF EACH ELIGIBLE PROPERTY

In general, the site is level with adjacent properties and is located in a mixed commercial and residential area of Rochester Hills, Michigan. The Property is currently vacant, unimproved, and mostly covered with vegetation and wooded areas.

1.4 SUMMARY OF PROPOSED REDEVELOPMENT AND FUTURE USE FOR EACH ELIGIBLE PROPERTY

Supported by the City of Rochester Hills BRA, the Developer intends to redevelop the Property for use as a mixed-use commercial retail and office center. The redevelopment

project that is the basis of the Brownfield Redevelopment Plan will include approximately 168,000 square feet of new construction along with associated site amenities such as parking and landscaping. Proposed uses within the development will include pharmacy/drug store with one drive-thru lane; bank with two drive-thru lanes and one ATM lane; coffee shop with one drive-thru lane; restaurant; retail; and professional offices. Exact uses will be defined more fully as planning for the project continues and is formalized. The overall estimated investment for the portion of the project that is the basis for this plan is approximately $19.3 million. Remediation is anticipated to begin in June 2008, pending government approvals. Construction will begin after remediation activities. The Developer anticipates that it will take approximately 9 years to complete the build out of the entire project.

2.0 CURRENT PROPERTY CONDITIONS

2.1 PROPERTY ELIGIBILITY

The Property is an "Eligible Property" as defined by Act 381 because it has been previously utilized for commercial purposes and meets the definition of a "facility[1]" as defined by Act 381.

The property is considered an "Eligible Property" based on the definition contained within Section 2 (m) of Act 145 of the Michigan Public Acts of 2000 (Act 145, amends the Brownfield Redevelopment Financing Act, Public Act 381 of 1996) based on the following findings:

Based on AKT Peerless' review of this information and limited subsurface investigation activities, significant environmental liabilities exist across the subject property. A summary of findings and conclusions is provided below:

- Harding ESE conducted a subsurface investigation throughout the fenced area on the eastern part of the property in June 2002. The investigation was performed to further evaluate the drum burial area and groundwater

[1] Under Part 201, a "facility" is defined as "any area, place, or property where a hazardous substance in excess of the concentrations which satisfy the requirements of Section 20120a(1)(a). has been released, deposited, disposed of, or otherwise comes to be located," M.C.L. § 324.20101(1)(o). A "release" is defined to include "spilling" or "leaking" of a hazardous substance into the environment. In addition, a "release" includes the abandonment of containers or other closed receptacles containing hazardous substances, M.C.L. § 324.20101(1)(bb).

conditions. Laboratory analytical results indicate that concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), arsenic, cadmium, chromium, lead, silver, zinc, and polychlorinated biphenyls (PCBs) exceed MDEQ Generic Residential and Commercial Cleanup Criteria. Further, the analytical results suggest that these soils may be hazardous waste. The extent of contamination within the buried drum area has not been adequately defined for commercial or residential development. Based on these results, extensive soil contamination exists near and within the fenced-in area.

- During previous investigations at the subject property, concentrations of PCBs were detected in soil samples exceeding MDEQ Generic Residential Cleanup Criteria in the northwest part of the eastern portion. During AKT Peerless' limited subsurface investigation and test pit activities in October 2002, concentrations of PCBs were confirmed to exist in the northwestern part of the eastern portion.
- In June and July 2007, AKT Peerless conducted a subsurface investigation at the subject property to evaluate the existing contamination. AKT Peerless' subsurface investigation included: (1) the advancement of 12 soil borings to be converted to permanent monitoring wells throughout the subject property, (2) the advancement of 40 soil borings in the Area B location, (3) the advancement of 40 soil borings in the Area E location, (4) the completion of 51 test pits and 2 trenches (Areas A, C, D, and F), (5) the collection of 234 soil samples, (6) the completion of two groundwater sampling events, (7) the collection of 21 groundwater samples, and (8) the completion of three methane field screening events. Soil samples from Area E exceed their respective MDEQ Generic Commercial IV DWP, GSIP, GCP, PSIC, DC, SVIAI, and Csat Criteria. The groundwater samples from this area exceed their respective MDEQ Generic Commercial IV DW and GSI Criteria. Soil samples from Areas A, C, and D exceed their respective MDEQ Generic Commercial IV DWP, GSIP, and DC Criteria. The groundwater sample from Area C exceeds the MDEQ Generic Commercial IV DW Criteria. Based on methane field screening results, the methane gas was detected in two of the 12 monitoring wells at the subject property. The methane appears to be associated with the fill materials, and is limited to the eastern portion of the property.

The Property qualifies as an eligible property because it has been previously used for illegal dumping purposes and it is a facility.

2.2 SUMMARY OF ENVIRONMENTAL CONDITIONS

The following environmental site assessments have been conducted on the eligible property.

2.2.1 U.S. Environmental Protection Agency Site Assessment, dated September 1984

In September 1984 The U.S. Environmental Protection Agency (EPA) conducted a site assessment for the Christianson Landfill site. The purpose of the site assessment was to assess the Christianson Landfill for a possible immediate removal.

The EPA reviewed analytical data from the Oakland County Health Department (OCHD). The EPA decided that the site was not an immediate or significant threat to public health, welfare, or the environment.

The EPA concluded that an immediate removal was not necessary. However, the EPA suggests to the MDNR a continuation of the investigation and possible long-term remedial actions.

2.2.2 Michigan Department of Natural Resources March 30, 1989 Letter

On March 30, 1989, the Michigan Department of Natural Resources (MDNR) released a letter in correspondence with the Christianson and Adams Road Dumpsite.

The MDNR identified the site as an unlicensed landfill, receiving domestic and industrial wastes (i.e. drums were uncovered and identified as liquid paint waste in 1985 during residential development, and solid waste was discovered during a February 1988 visit). The site was identified as being in violation of Act 245, P.A. of 1929 and Act 641, P.A. 1978.

The MDNR recommended: (1) immediate removal of all drums, (2) a hydro-geological investigation to address soil and groundwater contamination, and a geophysical survey to locate buried drums, (3) corrective action plan for remediation of soil and groundwater and removal of buried drums, and (4) securing the site to restrict unauthorized access and illegal dumping.

2.2.3 Michigan Department of Natural Resources December 2, 1991 Letter

On December 2, 1991, the MDNR released a letter in correspondence with the Christianson and Adams Road Dumpsite.

The MDNR identified hazardous levels of polychlorinated biphenyls (PCBs), benzene, toluene, xylenes, pesticides, phenols, polynuclear aromatics (PNAs), lead, chromium, cadmium, barium, selenium, silver, vanadium, zinc, and cyanide in soil. The MDNR also identified hazardous levels of 1,1-dichloroethylene (DCE), 1,1,1-trichloroethane (1,1,1-TCA), benzene, toluene, ethylbenzene, and xylenes (BTEX), bromoform, and the PCB arochlor 1254 in groundwater.

The MDNR came to a conclusion that the western 10 acres may be "de-listed" with a petition to "de-list", however it will be a costly remediation for the remaining 17.5 acres where illegal dumping had occurred.

2.2.4 O'Brien & Gere Soil and Groundwater Survey, dated November 1994

In November 1994 O'Brien & Gere Engineers, Inc. (O'Brien) conducted a draft soil and groundwater survey for the Christianson Dump Site, Rochester Hills, Michigan. The purpose of this soil and groundwater survey was to develop an efficient approach to remediate approximately 19-acres of the western portion of the subject property.

To aid in their findings O'Brien reviewed Ecology and Environment, Inc., Site Screening Investigation, dated 1984. Their conclusions were as follows:

- Two main water-bearing units are present at the subject property.
- Groundwater was found to be at approximately 4-feet below ground surface, and flowing northeast towards the Clinton River.

O'Brien's Investigation involved taking (1) 10 soil samples (5 from "far west" and 5 from "middle west") from a depth between 0-6-feet below ground surface, (2) 5 soil borings along eastern parcel boundary, (3) 7 soil borings near northern property boundary, (4) 2 test pits and 2 trenches, (5) installation of 1 nested pair of monitoring wells, (6) 9 groundwater samples from monitoring wells, and (7) laboratory analyses for Michigan

metals[2], volatile organic compounds (VOCs), PNAs, semi-volatile organic compounds (SVOCs), PCBs, and pesticides.

O'Brien submitted soil samples for laboratory analyses of select parameters including, VOCs, PNAs, PCBs, SVOCs, and Michigan metals. The results of the laboratory analyses of the soil samples are summarized in the table below:

Parameter	Criteria Exceeded	Sample Identification	Maximum Concentration (µg/kg)
Dieldrin	MDNR Drinking Water Criteria Type B	SS-6 (0-2 feet)	650
beta-BHC	MDNR Drinking Water Criteria Type B	TP1W	65
Lead	Site Background Level	TR1S	30.5
Zinc	Site Background Level	TR1BOTTOM-S	68
Arsenic	Site Specific Metal Concentrations	SB5 (10-14 feet)	25
Cadmium	Site Specific Metal Concentrations	SB8 (18-20 feet)	3.4

O'Brien submitted groundwater samples for laboratory analyses of select parameters including, VOCs, PNAs, PCBs, SVOCs, and Michigan metals. The results of the laboratory analyses indicated the presence of dieldrin exceeded the MDNR 20x drinking water Type B criteria in one surface sample. Beta-BHC was detected at two locations in one test pit above the MDNR 20x drinking water criteria Type B criteria. Lead and zinc were detected above site background at two sample locations from two trenches., concentrations of lead and zinc above Site Background Levels, and concentrations of arsenic and cadmium above Site Specific Metal Concentrations. In addition, laboratory analytical results of groundwater samples also indicated the presence of arsenic above Health Based Drinking Water Criteria Type B.

[2] Michigan metals: arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc.

2.2.5 O'Brien & Gere Drum Remnant Removal Interim Remedial Activities, dated March 1998

In March 1998 O'Brien conducted Drum Remnant Removal and Interim Activities to address contamination on the eastern parcel of the Christianson/Adams Road Site. In addition O'Brien submitted a "de-listing" request for the western parcels (previously separated into two parcels) in December 1997.

During O'Brien's remedial activities they removed approximately 60- yds^3 of drum remnants, which were disposed of at the Environmental Quality facility in Belleville, Michigan.

2.2.6 Michigan Department of Environmental Quality's October 19, 2000 Letter

On October 19, 2000, the Michigan Department of Environmental Quality (MDEQ) released a letter along with a field activity report in correspondence with the Christianson/Adams Dump Site.

During the MDEQ's August 22 and 23 site investigation they collected samples from monitoring wells MW4S, MW4D, MW5S, MW5D, MW7, and MW3. In addition monitoring wells MW1S, MW1D, MW2S, MW2D, and MW8 were extensively looked for. MW1 was found destroyed and the remaining monitoring wells could not be found most likely due do extremely dense vegetation. The samples that were taken were run for laboratory analysis for VOCs.

The laboratory analysis of groundwater indicated the presence of trichloroethylene in MW7 above MDEQ Generic Cleanup Criteria. All other results were not detected above laboratory method detection limits.

2.2.7 Snell Environmental Group, Inc. Final Construction Oversight Report, dated January 2001

Snell Environmental Group, Inc. (SEG), a subsidiary of DLZ Michigan, Inc. was retained by the MDEQ under their Level of Effort (LOE) contract to remove buried drums and

grossly contaminated soil from the subject property. Between April 1, 1999 and January 22, 2000, approximately 1317.92 tons of miscellaneous drums and drum remnants, 484,800 gallons of drum liquid and contents, and 1,000 tons of contaminated soil were removed and disposed. In addition, 33.88 tons of PCB contaminated soil was removed and disposed.

2.2.8 Harding ESE Technical Memorandum No. 1: Soil Sampling and Monitoring Well Installation Christianson and Adams Road Dump, dated November 7, 2002

Harding ESE conducted a subsurface investigation throughout the fenced area on the eastern part of the subject property in June 2002. The investigation was performed to further evaluate the drum burial area and groundwater conditions. In 1999 and early 2000 DLZ, under contract to the MDEQ, approximately 5,600 buried drums were removed from the portion of the property that was subsequently enclosed by a fence.

Laboratory analytical results indicate that concentrations of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), arsenic, cadmium, chromium, lead, silver, zinc, and polychlorinated biphenyls (PCBs) exceed MDEQ Generic Residential and Commercial Cleanup Criteria.

Further, the analytical results suggest that these soils may be hazardous waste. The extent of contamination within the buried drum area has not been adequately defined for commercial or residential development. Based on these results, extensive soil contamination exists near and within the fenced-in area.

2.2.9 AKT Peerless' Limited Subsurface Investigation, dated October 2002

AKT Peerless conducted a limited subsurface investigation including a geophysical survey in October 2002 to evaluate potential environmental impact associated with historical landfilling activities, and the potential presence of additional, buried drums.

During AKT Peerless' limited subsurface investigation and test pit activities in October 2002, concentrations of PCBs were confirmed to exist in the northwestern part of the

eastern parcel. In addition, buried 55-gallon drums, free phase liquids, and other debris were discovered in the southern part of the middle portion of the subject property. The discovery of these materials was made in an area that had previously received closure for residential use and was described as "clean".

The extent of the buried material has not been defined for commercial or residential development. Further, it is AKT Peerless' opinion that other buried drums and debris exist on the middle portion of the property. A report was not completed for this limited subsurface investigation.

2.2.10 AKT Peerless' Phase I Environmental Site Assessment, dated January 24, 2005

Hamlin\Adams Properties, LLC retained AKT Peerless to conduct a Phase I ESA Report of the subject property dated January 1, 2005. Based on its Phase I ESA, AKT Peerless identified the following recognized environmental conditions (RECs):

- The subject property has been operating as a landfill since at least the mid 1950s. The historical use of the subject property; typically included the dumping of household and slaughterhouse wastes, and illegal dumping of drums and waste containing a variety of chemicals including PCBs and paint like substances.
- The southern adjoining property has been operating as a landfill since at least the early 1960s until its closure in 1978.

AKT Peerless recommended conducting a limited subsurface investigation to evaluate this concern associated with the subject property.

2.2.11 AKT Peerless' Limited Subsurface Investigation, dated January 24, 2005

On December 10, 2004, AKT Peerless conducted a limited subsurface investigation of the subject property to address the recognized environmental conditions identified in previous environmental investigations, and AKT Peerless' Phase I ESA. AKT Peerless' limited subsurface investigation is consistent with federal and state programs and ASTM standard methods. To evaluate the recognized environmental conditions identified at the subject property, AKT Peerless (1) hand-augered 10 soil borings, and (2) collected 13 soil

samples and one groundwater sample for laboratory analysis. AKT Peerless performed a qualitative evaluation of all soil samples collected during drilling and a quantitative analysis (laboratory analysis) of the 13 discrete soil samples and one groundwater sample.

Soil and groundwater samples were submitted for select laboratory analyses of volatile organic compounds (VOCs), polynuclear aromatics (PNAs), polychlorinated biphenyls (PCBs), and Michigan metals.

Soil Analytical Results

Laboratory analytical results indicate target parameter concentrations of PCBs were detected above laboratory method detection limit in two samples. However, target parameter concentrations were not detected above applicable MDEQ Generic Residential Cleanup Criteria in either soil sample.

It should be noted that the concentration of PCBs found in B-3 (0-1) was detected above Direct Contact Criteria for the Toxic Substance Control Act (TSCA).

Groundwater Analytical Results

Laboratory analytical results indicate target parameter concentrations of barium, chromium, zinc, and chloromethane were detected above laboratory method detection limits. However, target parameter concentrations were not detected above the applicable MDEQ Residential Generic Cleanup Criteria in the groundwater sample.

Conclusion

Based on laboratory analytical results for this subsurface investigation, target parameter concentrations were not detected in soil or groundwater at the subject property above applicable MDEQ Generic Residential Cleanup Criteria. However, it should be noted that the concentration of PCBs found in B-3 (0-1) was detected above Direct Contact Criteria for the TSCA but below the Part 201 criterion for Direct Contact.

Analytical results from previous subsurface investigations show that target parameter concentrations were detected above the applicable MDEQ Generic Residential Cleanup Criteria. Therefore, the subject property meets the definition of a "facility", as defined in

Part 201 of Natural Resources and Environmental Protection Act (NREPA), Michigan Public Act (PA) 451, 1994, as amended.

2.2.12 AKT Peerless' Supplemental Investigative Data letter report dated March 10, 2005

On February 12, 2005, AKT Peerless conducted a geophysical survey of the subject property. The geophysical survey was conducted using a G-858 Cesium magnetometer.

Prior to the survey, AKT Peerless established a grid at the property. The grid consisted of 22 north-south survey lines at intervals of 50-feet. Stations at each line were set at 20-feet intervals. It should be noted that the survey grid did not encompass the eastern fenced portion of the subject property. The grid was terminated at approximately 25-feet west of the west fence boundary.

The geophysical survey consisted of "walking" each line and obtaining a magnetometer reading at each station. Survey readings and station locations were stored in the survey instrument's datalogger. A total of 1060 readings were recorded during the magnetometer survey. During the survey, any observed surface debris, specifically metallic debris, was noted.

Upon completion of the survey, the magnetometer survey data was imported into Surfer 8 ™ software for evaluation. Three-dimensional plots were generated using the survey data to identify potential "anomalous" areas that could indicate the presence of buried materials. The results of the magnetometer survey identified several anomalies at the subject property that required further investigation.

Based on the identification of several anomalous areas at the subject property, AKT Peerless implemented a test pit investigation to identify the source of the anomalies. On February 15, 2005, AKT Peerless retained Parks Development & Installation, Inc (Parks). of Milford, Michigan to excavate test pits at the subject property. At the direction of AKT Peerless, Parks excavated 24 test pits at the subject property. Test pits were

excavated in areas identified as "anomalous" during the geophysical survey and also in areas that appeared to be visually disturbed.

The results of the test pits indicated the presence of buried materials in previously unidentified areas, specifically in the north central and south central portion of the subject property. The test pits also indicated that buried materials, historically identified within the fenced area, extend outside the fence to the west.

As part of test pit activities, AKT Peerless collected a total of four soil samples from test pits that were visually identified to be disturbed and/or containing debris. The soil samples were submitted, under chain of custody, to Midwest Analytical Services, Inc. (Midwest) of Ferndale, Michigan. The soil samples were analyzed for:

- Volatile Organic Compounds (VOCs),
- Polynuclear Aromatic Hydrocarbons (PNAs), and
- Michigan Metals (arsenic, barium cadmium, chromium, copper, lead, selenium, silver, zinc, and mercury).

The laboratory analyzed the samples for (1) VOCs in accordance with USEPA Method 8260; (2) PNAs in accordance with USEPA Method 8270C, (3) arsenic, barium cadmium, chromium, copper, lead, selenium, silver, and zinc in accordance with USEPA Method 6010B, and (4) mercury in accordance with USEPA Method 7471A.
Laboratory analytical results for the submitted soil samples were compared to the following applicable MDEQ Generic Cleanup Criteria.

- Statewide Default Background Level
- Residential & Commercial I Drinking Water Protection, Surface Water Interface Protection, and Soil Direct Contact Criteria
- Industrial & Commercial II, III, & IV Drinking Water and Surface Water Interface Protection Criteria
- Commercial III and IV Soil Direct Contact Criteria

The following is a summary of laboratory analytical results exceeding applicable MDEQ Generic Cleanup Criteria and the corresponding test pit locations of the soil samples submitted.

- **Xylenes** were detected in TP-2 exceeding MDEQ Generic Residential, Commercial, and Industrial Surface Water Interface Protection Criteria.
- **Arsenic** was detected in TP-2 and TP-16b exceeding MDEQ Statewide Default Background Levels but below Part 201 Generic Cleanup Criteria.
- **Barium** was detected in TP-3-1 and TP-21 exceeding MDEQ Statewide Default Background Levels but below Part 201 Generic Cleanup Criteria.
- **Cadmium** was detected in TP-16b and TP-21 exceeding MDEQ Statewide Default Background Levels and Generic Residential, Commercial, and Industrial Drinking Water Protection Criteria.
- **Chromium** was detected in all test pit locations exceeding MDEQ Generic Residential, Commercial, and Industrial Drinking Water and Surface Water Interface Protection Criteria.
- **Copper** was detected in TP-16b and TP-21 exceeding MDEQ Statewide Default Background Levels but below Part 201 Generic Cleanup Criteria.
- **Lead (fine fraction)** was detected in all test pit locations exceeding MDEQ Statewide Default Background Levels, Generic Residential & Commercial I, II, III, and IV Soil Direct Contact Criteria.
- **Lead (coarse fraction)** in all test pit locations exceeding MDEQ Statewide Default Background Levels but below Part 201 Generic Cleanup Criteria.
- **Mercury** in TP-16b and TP-21 exceeding MDEQ Statewide Default Background Levels, Residential, Commercial, and Industrial Surface Water Interface Protection Criteria.
- **Selenium** in TP-16b exceeding MDEQ Statewide Default Background Levels, Residential, Commercial, and Industrial Surface Water Interface Protection Criteria.
- **Silver** in TP-16b exceeding MDEQ Statewide Default Background Levels, Residential, Commercial, and Industrial Surface Water Interface Protection Criteria.
- **Zinc** in all test pit locations exceeding MDEQ Statewide Default Background Levels but below Part 201 Generic Cleanup Criteria.

Several constituents were detected at concentrations exceeding Part 201 Generic Drinking Water Protection Criteria (DWPC) and Groundwater to Surface Water Interface Protection Criteria (GSIPC).

Based on laboratory analytical results, target parameter concentrations were detected in soil samples extracted at the subject property above applicable MDEQ Generic Cleanup Criteria.

2.2.13 2008AKT Peerless' Additional Assessment Report dated October 9, 2007

In June and July 2007, AKT Peerless conducted a subsurface investigation at the subject property to further investigate and delineate the existing contamination previously identified. AKT Peerless' subsurface investigation included: (1) the advancement of 12 soil borings to be converted to permanent monitoring wells throughout the subject property, (2) the advancement of 40 soil borings in the Area B location, (3) the advancement of 40 soil borings in the Area E location, (4) the completion of 51 test pits and 2 trenches (Areas A, C, D, and F), (5) the collection of 234 soil samples, (6) the completion of two groundwater sampling events, (7) the collection of 21 groundwater samples, and (8) the completion of three methane field screening events.

Soil samples from Area E exceed their respective MDEQ Generic Commercial IV DWP, GSIP, GCP, PSIC, DC, SVIAI, and Csat Criteria. The groundwater samples from this area exceed their respective MDEQ Generic Commercial IV DW and GSI Criteria.

Soil samples from Areas A, C, and D exceed their respective MDEQ Generic Commercial IV DWP, GSIP, and DC Criteria. The groundwater sample from Area C exceeds the MDEQ Generic Commercial IV DW Criteria.

The following table summarizes each area, and the respective MDEQ Generic Commercial IV Criteria exceeded in soil samples:

Parameter	DWP	GSIP	GC	SVI AI	VSI C	PSI	DC
Area A	-	☑	-	-	-	-	-
Area B	-	-	-	-	-	-	-
Area C	☑	☑	-	-	-	-	☑
Area D	-	☑	-	-	-	-	-
Area E	☑	☑	☑	☑	-	☑	☑
Area F	-	-	-	-	-	-	-

The following table summarizes each area matched against their respective MDEQ Generic Commercial IV Criteria where they were exceeded in groundwater samples:

Parameter	DW	GSIP	GDC	GVIAI
Area A	-	-	-	-
Area B	☑	-	-	-
Area C	-	☑	-	-
Area D	-	-	-	-
Area E	☑	☑	-	-
Area F	-	-	-	-

It should be noted that where contamination exceeds the Commercial IV Criteria, the Generic Residential Cleanup Criteria are also exceeded.

Based on methane field screening results, the methane gas was detected in two of the 12 monitoring wells at the subject property. The methane appears to be associated with the fill materials, and is limited to the eastern portion of the property.

3.0 ENVIRONMENTAL MDEQ ELIGIBLE RESPONSE AND DUE CARE ACTIVITIES

Previous subsurface investigative activities by AKT Peerless and others identified the subject property as a facility. Several compounds exceed applicable Part 201 Residential and Commercial Generic Risk Based Screening Levels (RBSLs). In addition, several areas of buried waste materials have been identified at the subject property. Therefore, AKT Peerless recommends Response and Due Care activities to be conducted prior to and during site redevelopment. AKT Peerless has identified areas where contaminated soil will be disturbed and can not be relocated during redevelopment and thus will require off-site disposal. Additionally, due care measures to address direct contact and indoor air exposure pathways are being proposed. The areas are as follows:

- Area A, contaminated soil and fill material that will be removed to prevent exacerbation.
- Area C, contaminated soil and fill material that will be removed to prevent exacerbation.
- Area D, contaminated soil and fill material that will be removed to prevent exacerbation.

- Area E, contaminated soil and fill material that will be removed to prevent exacerbation.
- Area E, contaminated soil and fill to be managed in-place by encapsulation.
- Presumptive remedies on buildings to be constructed on the eastern portion of the property to prevent indoor air exposures and potentially explosive conditions.

3.1 HEALTH AND SAFETY PLAN

A site-specific Health and Safety Plan (HASP) will be completed for worker protection during redevelopment activities at the site. The HASP will comply with appropriate guidelines including the following:

- Michigan Occupational Safety and Health Act.
- Section 111(c)(6) of CERCLA.
- Occupational Safety and Health Administration requirements 29 CFR 1910 and 1926
- Standard Operating Safety Guide Manual (revised November 1984) by the Office of Emergency and Remedial Response.
- Occupation Safety and Health guidance manual for Hazardous Waste Site Activities (NIOSH/OSHA/USCG/EPA, DHHS [NIOSH] Publication No. 85-115, October 1985).

Utilities will be installed in areas that have been remediated. No utilities will be installed in the encapsulated soil area. Therefore, it is not anticipated that municipal employees will not come in contact with contaminated materials. However, as part of the Health and Safety Plan, a Municipal Worker Figure will be prepared to aid City first responders and field staff in determining the potential risks associated with individual remediation areas (Areas A, C, D, and E) of the property.

3.2 RESPONSE AND DUE CARE ACTIVITIES

3.2.1 Scope of Work

The following scope of work outlines the tasks to be performed at the subject property as part of the proposed response and due care activities. Figure 2 depicts the locations of the proposed response and due care activities.

3.2.1.1 Air Monitoring

AKT Peerless will retain a contractor to conduct air monitoring during soil removal activities. The air monitoring is based on the results of the baseline air sampling conducted as part of the Additional Assessment work conducted. The remediation activities air quality monitoring program will consist of:

1. Polychlorinated biphenyls, volatile organic compounds, metals (including mercury) concentration measurements at four (4) air monitoring locations. Three stations will be located downwind of onsite work activities and one station will be located upwind of onsite work activities.

2. Polychlorinated biphenyls (PCB) measurements will be in accordance with the *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air Second Addition Compendium Method TO-4A Determination of Pesticides and Polychlorinated Biphenyls In Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD).* Measurements for a subset of the full list of PCB identified in Method TO-4A may be performed based on MDEQ-AQD review of the site specific chemicals of concern.

3. Volatile organic compounds (VOCs) measurements with *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air Second Addition Compendium Method TO-15 Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially Prepared Canisters and Analyzed by Gas Chromatography / Mass Spectrometry (GC/MS).* Measurements for a subset of the full list of VOC identified in Method TO-15 may be performed based on MDEQ-AQD review of the site specific chemicals of concern.

4. Metals (Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Pb, Sb, Se, Ti, V, Zn) measurements in accordance with the USEPA Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method), 40 CFR 50 Appendix B. Measurements for a subset of the full list of metals may be performed based on MDEQ-AQD review of the site specific chemicals of concern.

5. Mercury measurements in accordance with NIOSH Manual of Analytical Methods 6009 (Hopcalite /Cold vapor AA).

6. An identical set of measurements at the northeast air monitoring location with collocated air sampling instruments during the monitoring activities.

7. On-site meteorological measurements (i.e., wind speed, wind direction, barometric pressure, temperature, relative humidity) for use in analyzing the air

monitoring results. The location of the samplers will vary based on weather conditions and the area of the property being remediated.

8. Continuous real-time aerosol concentration measurements: a) At four (4) locations on every day that material handling activities occur. b) That are representative of short-term (one-minute average) and individual work day average air quality impacts produced by the material handling activities that occur over a 10-hour work day for a site remediation period of approximately 30 days.

9. The measurement of selected metals air quality concentrations every day that material handling activities occur that are representative of work hour average air quality impacts (i.e., the 10-hour average impacts produced as a result of work hour activities over a site remediation period of approximately 30 days).

10. The measurement of PCB and VOC air quality concentrations every day that material handling activities occur in the area of the site contaminated with these chemicals that are representative of work hour average air quality impacts (i.e., the 10-hour average impacts produced as a result of work hour activities over a contaminated area remediation period of approximately 10 days).

Real-Time Aerosols

The four (4) real-time aerosol monitors will be positioned at the beginning of each monitoring event (based on observed and predicted prevailing winds) so that all of the units are downwind of the remediation and cleanup activities being performed for that day. Where winds are variable or calm, the four (4) real-time aerosol monitors will be positioned to monitor nearby residential population pollutant exposures that have the potential to exist north of the site. The daily monitoring event locations of the four (4) real-time aerosol analyzers will be determined by the equipment operator based on work day specific remediation and cleanup activities and observed meteorological influences.

Action Levels

Appropriate "Action Levels" approved by the MDEQ-AQD will be applied to the work day average (10-hour average) air pollutant concentrations measured at the specified air monitoring locations.

Data Reporting

At the end of each monitoring event, the continuous real-time aerosol measurements will be retrieved from the monitoring instruments and submitted to the appropriate site contact (i.e., at the beginning of the next work day).

When real-time aerosol measurements at any of the four monitors exceeds 500 ug/m^3 for more than a one minute averaging period, an alarm will turn on at the monitoring station. The alarm is a red light that is visible by workers at the site. When an alarm is activated, the site contact will be immediately notified by verbal communication (so that the remediation and cleanup activities can be stopped and appropriate modifications implemented). This communication will also be provided in writing to establish a record of the condition (i.e., the appropriate project representative will be provided the written notifications with the submittal of the work day aerosol measurement results).

Should a condition exist when real-time aerosol measurements exceed 500 ug/m^3 for more than a one minute averaging period, the impacted instrument will be closely monitored to establish when the level of dust at the site perimeter drops below 500 ug/m^3 for a minimum of 10 minutes. When this Action Level has been cleared, the site contact will be immediately notified by verbal communication that the remediation and cleanup activities can resumed.

The real-time aerosol monitors will be equipped with remote alarms to notify the site operator when one minute average 500 ug/m^3 exceedances occur.

Analytical data obtained from the PCB, VOCs and metals sampler operations will be submitted to an appropriate project representative within approximately three days of each associated monitoring event.

The data recorded by the on-site portable meteorological measurement equipment will be periodically reported to the site contact as determined to be appropriate.

3.2.1.2 Dust Emission Response

During remediation activities, fugitive dust will be monitored as indicated in the Air Monitoring Plan. Additionally, periodic perimeter monitoring will be conducted using a real-time dust monitor. In the event that dust emissions exceed the regulatory limits, dust control measures such as applying water will be implemented and additional readings will be taken to ensure compliance.

3.2.1.3 Soil Removal Area A

AKT Peerless will retain an excavation subcontractor to excavate approximately 600 cubic yards (yds^3) of contaminated soil and fill. During redevelopment soil in this area will be graded for construction and excavated for installation of foundations, utilities, and improvements. The soil may not be relocated to another portion of the property as similarly impacted areas will also be disturbed during redevelopment. Moving the soil to unimpacted areas would be considered exacerbation. Additionally, relocation would constitute a use of the substances and the developer prepared a Category N BEA. Therefore, to comply with due care, the contaminated soil that will be generated during redevelopment will require off-site disposal.

3.2.1.4 Soil Removal Area C

AKT Peerless will retain an excavation subcontractor to excavate approximately 2,600 yds^3 and 19,500 yds^3 of contaminated soil and fill from two locations within Area C. During redevelopment soil in this area will be graded for construction and excavated for installation of foundations, utilities, and improvements. The soil may not be relocated to another portion of the property as similarly impacted areas will also be disturbed during redevelopment. Additionally, relocation would constitute a use of the substances and the developer prepared a Category N BEA. Therefore, to comply with due care, the contaminated soil that will be generated during redevelopment will require off-site disposal.

3.2.1.5 Soil Removal Area D

AKT Peerless will retain an excavation subcontractor to excavate approximately 3,500 yds^3 of contaminated soil and fill. During redevelopment soil in this area will be graded

for construction and excavated for installation of property improvements. The soil may not be relocated to another portion of the property as similarly impacted areas will also be disturbed during redevelopment. Additionally, relocation would constitute a use of the substances and the developer prepared a Category N BEA. Therefore, to comply with due care, the contaminated soil that will be generated during redevelopment will require off-site disposal.

3.2.1.6 Soil Removal Area E

AKT Peerless will retain an excavation subcontractor to excavate approximately 8,400 yds^3 of contaminated soil and fill. During redevelopment soil in this area will be graded for construction and excavated for installation of foundations, utilities, and improvements. In the event that nuisance odors are encountered, measures such as minimizing the exposed working areas of the excavation and odor masking will be implemented to reduce the impact to adjoining properties. The best way to minimize odors is to complete the work in as few days as necessary. The soil may not be relocated to another portion of the property as similarly impacted areas will also be disturbed during redevelopment. Additionally, relocation would constitute a use of the substances and the developer prepared a Category N BEA. Therefore, to comply with due care, the contaminated soil that will be generated during redevelopment will require off-site disposal.

3.2.1.7 Soil Management in Place Area E

The eastern portion of Area E contains VOC, SVOC, PCB, and Metals contamination that are commingled. Due to the cost associated with PCB disposal and the potential for release and atmospheric dispersion during excavation, this area of contamination will be encapsulated and managed in place by placing a cover over the soil and a barrier wall along the sides exposed during the removal referenced in Section 3.2.1.6.

<u>Clay Walls</u>

Subsequent to the removal of contaminated material described in Section 3.2.1.6, the exposed eastern wall that defines the PCB contaminated area will be covered with a

minimum of 2 feet of 10^{-7} cm/sec hydraulic conductivity clay that will be keyed two (2) feet into the native material. The clay will be compacted to 95% based on the optimum moisture content. A barrier wall will be installed along the northern and eastern boundaries of the PCB contaminated area that will tie into the barrier described above and will also be keyed two (2) feet into the native material and will use the same clay specifications. In order to minimize the potential of migration of soil gas from this area to the proposed buildings, the sides that are not exposed during the soil removal described in Section 3.2.1.4 will be trenched and backfilled with clay to provide an additional barrier.

NOTE: Shoring or trench boxes will be used to ensure slope stability during the installation and compaction of the clay walls. The clay fill material will be placed in approximately 8-inch lifts and compacted with a vibratory compactor. Geotechnical testing will be performed on clay fill material before construction and on-site inspections will be conducted during construction to ensure proper compaction. Before installation of the clay barrier wall, the minimum technical engineering standards for installing the barrier wall will be based on consultation with the City's engineering department.

Cover

The cover will consist of 2 feet of compacted clay and a flexible membrane liner (FML). The FML will be seamed, if necessary, to create a continuous barrier along the cover. Additionally, once encapsulated, the area will be paved.

Operations and Maintenance

A determination of O & M requirements will be made based on the final construction, however, at a minimum, routine inspection of the area and repairs to the cover and paving will be required. As the cover will be under paving, it is not anticipated that any significant cost will exist for repair and that any maintenance will be similar to that of any paved parking area.

The approach of contaminated soil removal and encapsulation of the PCB contamination is the most cost effective and safest method for handling the contamination while providing more protection to the community than encapsulating the entire area or disturbing all of the material.

A deed restriction will be necessary to ensure that this area remains encapsulated and that ongoing operation and maintenance (O & M) activities are conducted.

3.2.1.8 Presumptive Remedies

The two buildings closest to the proposed area to be managed in place will be constructed using a combined vapor barrier and venting system that will prevent potential exposure to volatile chemicals. Additionally, although methane has not been found extensively across the property, the system will be protective of risks associated with methane, if present. Based on the results of the Additional Assessment recently conducted, which included methane screening of over 90 borings and 50 test pits, the contingent methane assessment was determined not to be necessary. No methane was detected that was identified as having migrated from the adjoining landfill property to the south. The two locations (monitor wells AKT-8 and AKT-9) in which methane was detected are located in the area of PCB, VOC, and SVOC contamination in Area E. The methane is likely associated with the breakdown of these chemicals and not due to the presence of municipal waste material. The presumptive remedy will also protect the buildings from other VOCs detected in soil in Area E. During the work proposed in Area E a significant amount of the source material will be removed and the remainder will be encapsulated as described above. Therefore, the use of a presumptive remedy at the two proposed building locations is appropriate to address any potential soil gas intrusion issue. All other proposed buildings are located further than 500 feet from the encapsulated soil.

3.2.1.9 Storm water Management

The proposed storm water management system is designed to comply with due care obligations. The storm water system is intended to restrict storm water from infiltrating through the ground and migrating to the encapsulated contaminated soil. Uncontrolled

storm water infiltration could damage the encapsulation system and further contaminated groundwater.

The proposed system will consist of complete underground storm water detention. The system includes:

- A corrugated steel pipe (CSP) system for detention in areas where there is not any contamination (western portion of property).
- In areas of contamination (eastern portion of the property), the underground pipe is proposed to be rubber jointed reinforced concrete pipe (RCP).
- In the northeast corner of the site, a smaller underground detention system with rubber jointed RCP

The CSP is made from Aluminized Steel Type 2 and is fabricated from steel coated with commercially pure aluminum for superior corrosion resistance. It provides a minimum service life of 75 years or more. Reinforced Concrete Pipe (per ASTM C 76) with rubber jointed gaskets (per ASTM C 443) to provide flexible water-tight joints per the standard of industry. The piping with RCP will be tested in-place using a low pressure air test.

Under normal (clean) site conditions, the estimated cost for a storm-tech chamber – stone bottom system that would allow for infiltration of stormwater is estimated to be $650,000. The cost for the proposed underground detention system is $1,403,100. Therefore, the total stormwater costs to comply with due care obligations is $753,100.

Figure 4 presents a conceptual plan for the storm water detention system. This plan is based on 24 acres of drainage at a run-off coefficient of 0.75, storing for the 10-year storm event. The final plan will depend upon final city permitting.

3.2.1.10 Site Control

In order to be protective of workers and residents, the excavation areas will be fenced or barricaded to minimize potential for unauthorized access to contaminated soil. Additionally, a gravel mat will be constructed along the truck route leaving the property to minimize tracking of dirt and potentially impacted soil from the property.

During soil excavation and removal activities the truck routes will be as follows:

Site Arrival

- The trucks will initially use the entrance ramps on M-59 at the Adams Road interchange.
- The trucks will proceed north on Adams Road to Hamlin Road.
- Turn right (east) on Hamlin Road to enter the site. All trucks will be staged on site while waiting to be loaded or completion of shipping papers.

Site Departure

- The trucks leave the site onto Hamlin Road and proceed west toward Adams.
- The trucks will turn left (south) onto Adams Road and proceed to the M-59 interchange.
- The trucks will access M-59 from Adams Road and procedure to their destination.

3.2.1.11 Dewatering

The potential for water in excavations exists, particularly in Area E. In the event that groundwater is encountered in sufficient quantities to require dewatering, the water will be containerized in frac tanks. Once containerized, the water will be sampled to determine whether or not disposal is necessary or if the water can be discharged to the POTW under a permit. In the event that groundwater is encountered in a quantity that is too large to containerize, alternate methods for direct dewatering and disposal will be evaluated.

3.2.1.12 Response to Unforeseen Conditions

Given that the site is a brownfield site and that contaminated fill material of various compositions has been identified in various locations, the potential exists for unforeseen waste types to be encountered. In the event that contamination is identified that is not consistent with the waste identified to date, a contingent has been developed to address this occurrence. Any waste not previously identified will be containerized or left in place pending laboratory analysis. Based on the results of the analysis, appropriate response or due care actions will be implemented in accordance with Part 201.

3.2.1.13 Deed Restriction

After final excavation and encapsulation a legal survey of the PCB encapsulation area will be undertaken and a deed restriction filed to assure future owners and operator are

aware of the restrictions for operating the site. The deed restriction will include a land use restriction limiting use of the site to commercial. The deed restriction will be filed with the Oakland County Register of Deeds.

3.2.2 Laboratory Analyses

AKT Peerless will collect verification samples from the excavated areas following the "Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria (S3TM)". The purpose of the sampling is to verify that contamination has been removed from the respective areas prior to additional site redevelopment activities to ensure that due care obligations not to exacerbate have been addressed. The laboratory will conduct analyses using Michigan Department of Environmental Quality (MDEQ) and/or U.S. Environmental Protection Agency (EPA) approved analytical methods.

3.2.3 Methodologies and Quality Control

All soil samples will be collected in laboratory supplied containers and stored following United States Environmental Protection Agency (USEPA) Publication SW-846 Method 5035/ASTM D4547-91, final version of March 26, 1998, *Testing Methods for Evaluating Solid Waste*. This publication includes guidelines for the *Soil Sample Collection and Methanol Preservation for Volatile Analysis*. The samples will be transported to a laboratory under chain-of-custody documentation in an ice-cooled container. Groundwater samples will be field filtered (for metals only) and preserved using laboratory supplied containers.

AKT Peerless proposes to collect various QA/QC samples for the purpose verifying that the data obtained is representative of actual site conditions. Duplicate and blank samples collected as part of this investigation will be obtained using procedures outlined in Attachment No. 5 of MDEQ Operational Memorandum No. 2 dated October 22, 2204 (and effective February 15, 2005). Based on these requirements, AKT Peerless will collect the following types of QA/QC samples:

Summary of QA/QC Sampling Procedures Employed During Investigation					
	Duplicate Samples		Blank Samples		
QA/QC Sample Type	**Replicate**	**MS/MSD**	**Field**	**Equipment**	**Trip**
MDEQ Recommended Number of QA/QC Samples	1 per matrix [1] and analytical group [2] per day.	1 per 20 or fewer samples per matrix and analytical group, at least 1 per day.	1 per 20 or fewer samples per matrix and analytical group, at least 1 per day.	1 per 10 or fewer samples per matrix and analytical group, at least 1 per day.	1 per every volatile organic sample shipping container.
MDEQ Recommended QA/QC Sample Collection Factors	Consists of one sample divided into two or more portions and analyzed by the same laboratory.	Samples were collected at critical locations, but not from field blank sampling points.	Containers filled with deionized water in area where sample handling and preservation occur.	Collected deionized water that was ran through sampling equipment.	Container filled with deionized water before sampling performed and travels to project site.

(1) A sample matrix is defined as soil, groundwater, surface water, sediment, or drinking water, etc.

(2) An analytical group is defined as VOCs, BNAs, PCBs, metals, etc.

3.2.4 Report

After completing the Due Care and Additional Response Activities, a report documenting the work conducted will be prepared.

3.3 ADDITIONAL RESPONSE ACTIVITIES

No ongoing groundwater sampling is proposed, therefore the 12 groundwater monitor wells installed as part of the additional assessment will be properly abandoned as a due care measure, unless required to be left in-place by other MDEQ or USEPA.

4.0 SCHEDULE AND COSTS

The following subsections present the proposed schedule and costs of MDEQ eligible activities required to complete the Hamlin & Adams Properties, LLC development project and the associated costs.

4.1 SCHEDULE OF ACTIVITIES

Project activities will commence upon the Rochester Brownfield Redevelopment Authority and MDEQ approval of the Act 381 Work Plan. It is anticipated depending

upon receipt of government approvals that all eligible activities as identified in this Work Plan will be completed by August 2008 with the exception of the presumptive remedies, which will be completed as the proposed buildings are constructed.

4.2 ESTIMATED COSTS

See Section 5.1 below for estimated costs and other project funding details.

5.0 PROJECT COSTS AND FUNDING

The following subsections present the total estimated project costs and the source and uses of funds.

5.1 TOTAL ESTIMATED PROJECT COSTS

The total cost of the Eligible Activities (including revolving fund, admin. costs and contingencies) contained in the Brownfield Plan is approximately $4.59 million.

The total costs of MDEQ eligible activities included in this Work Plan equal **$3,190,065**. Taxes levied for school operating purposes eligible for capture under this Work Plan equal **$1,761,830**. See Table 1 for an itemization of MDEQ eligible activity costs

5.2 SOURCES AND USES OF FUNDS

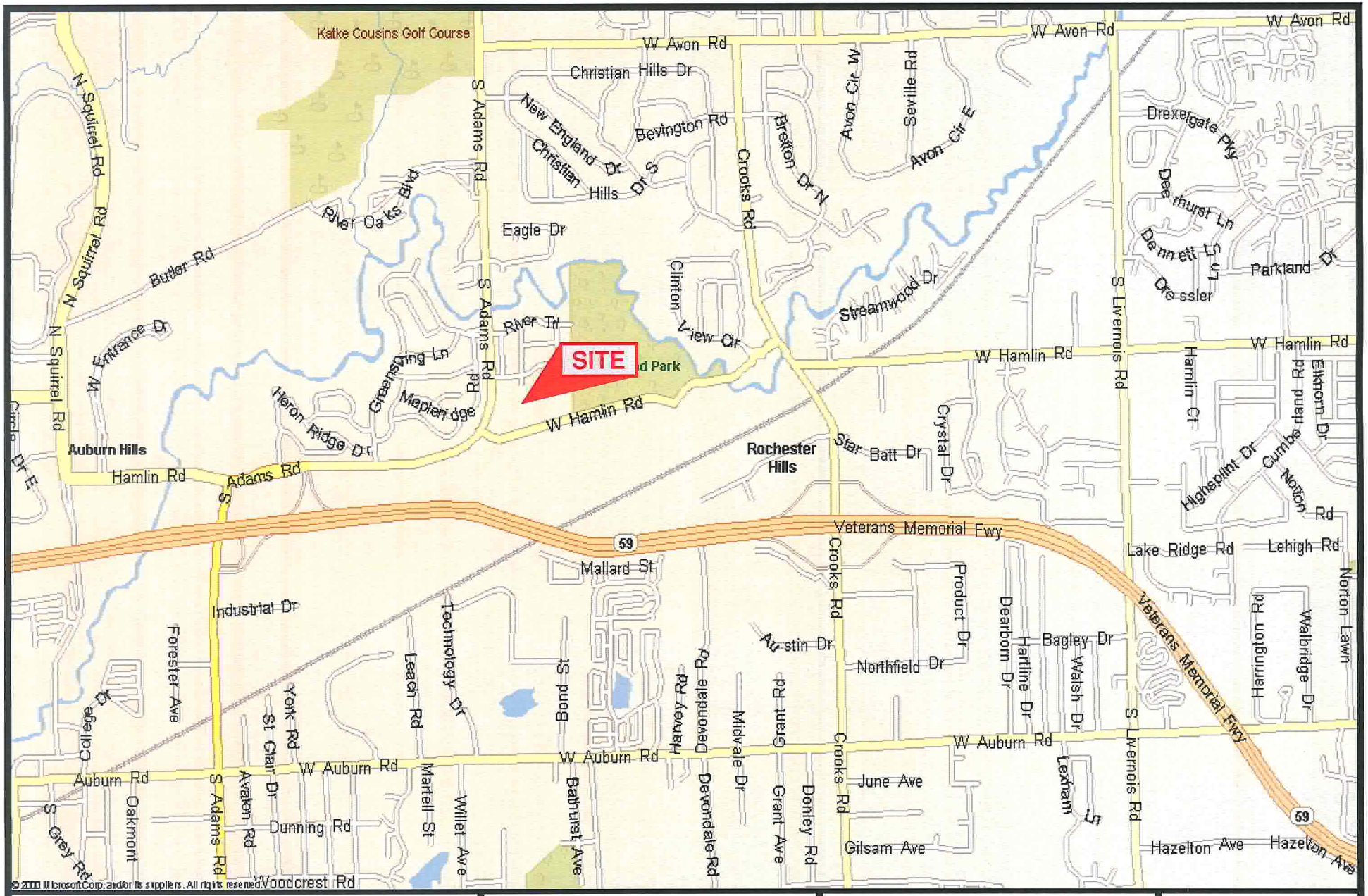
The Developer and future tenants shall invest approximately $19.3 million in personal and real property improvements on the Property. Redevelopment of the Property is expected to initially generate incremental taxable value in 2008 with the first significant increase in taxable value of approximately $9.3 million beginning in 2009. It is estimated that the Authority will capture the 2008 through 2022 tax increment revenues, generated by the increase in taxable value, resulting from redevelopment of the Property.

The Developer shall finance all costs of eligible activities contained in the Brownfield Plan. There will be no advances by the City related to this Plan.

6.0 LIMITATIONS

This work plan is based on the previous investigations conducted at the site and the known site conditions at the time of completion of the work plan. It is possible that conditions may vary.

FIGURES



AKTPEERLESS environmental services

FARMINGTON DETROIT SAGINAW LANSING

WWW.AKTPEERLESS.COM

SCALED PROPERTY LOCATION MAP

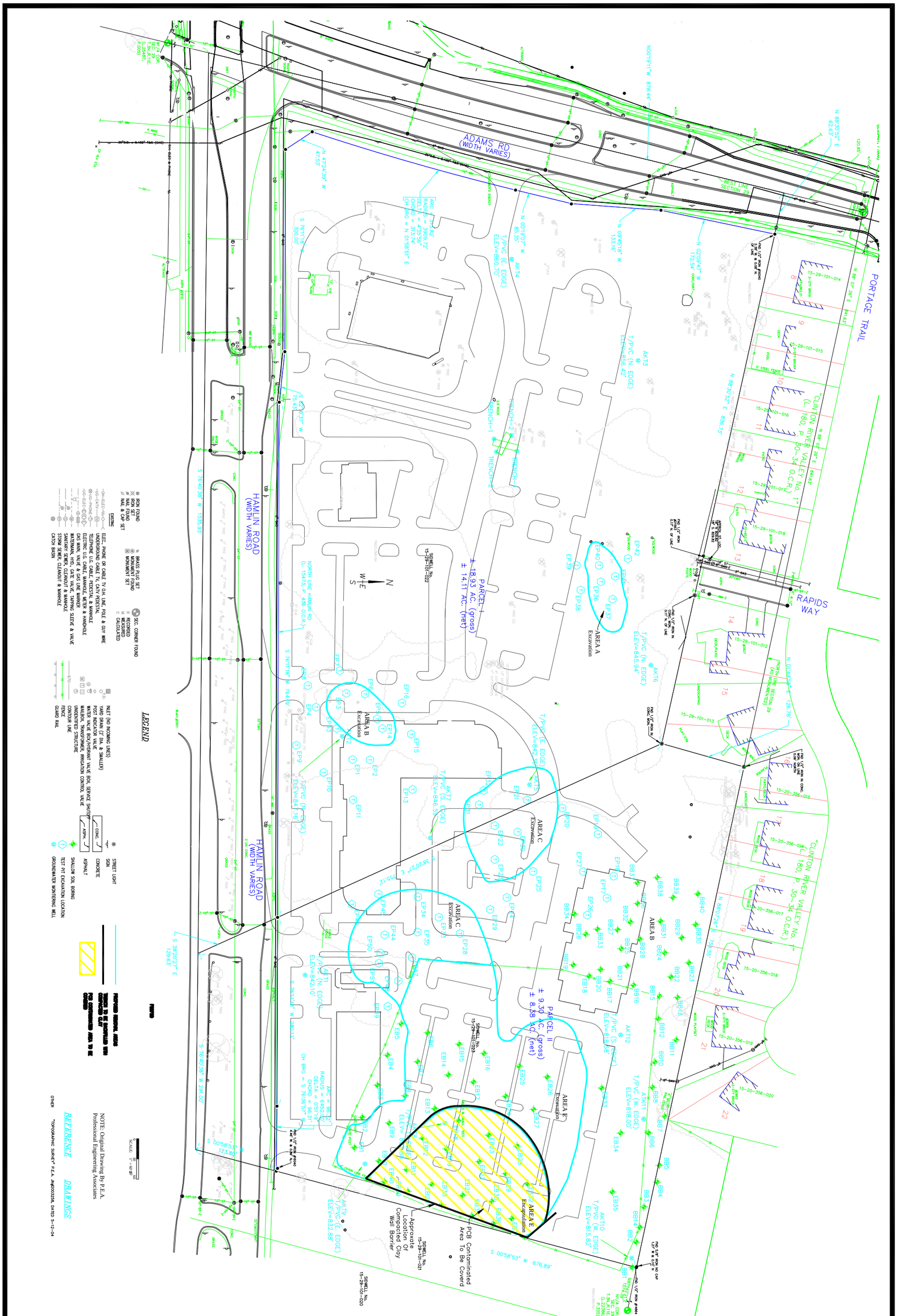
HAMLIN & ADAMS PROPERTIES, LLC
ROCHESTER, MICHIGAN
PROJECT NUMBER : 3679F2-10-20

LEGEND

N
W E
S

DRAWN BY: KHE
DATE: 10-9-07

FIGURE 1



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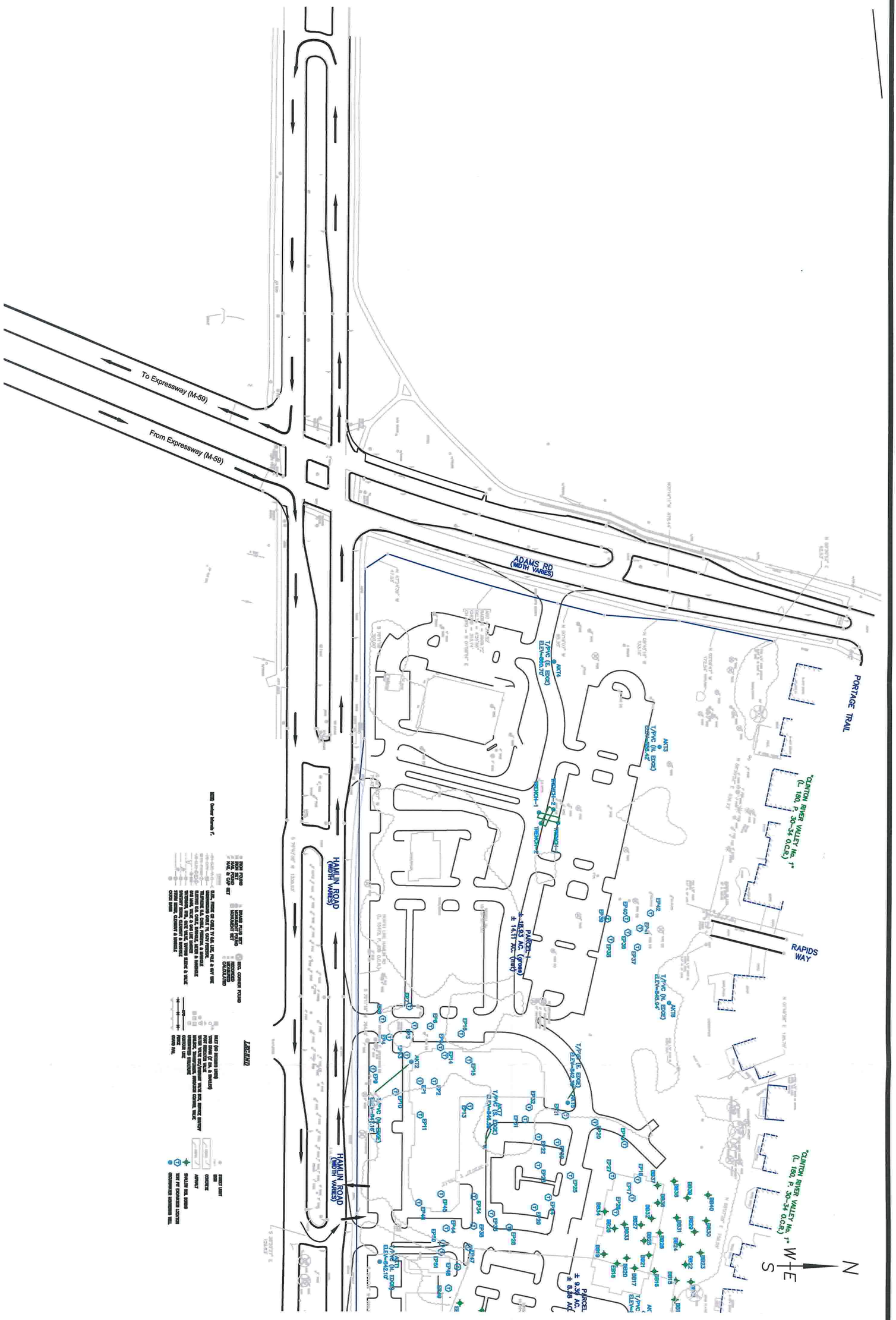
PROPOSED RESPONSE DUE CARE ACTIVITIES MAP

HAMLIN & ADAMS PROPERTIES, LLC
ROCHESTER, MICHIGAN
PROJECT NUMBER : 3679F2-10-20

DRAWN BY: KHE
DATE: 10-9-07

FIGURE 2



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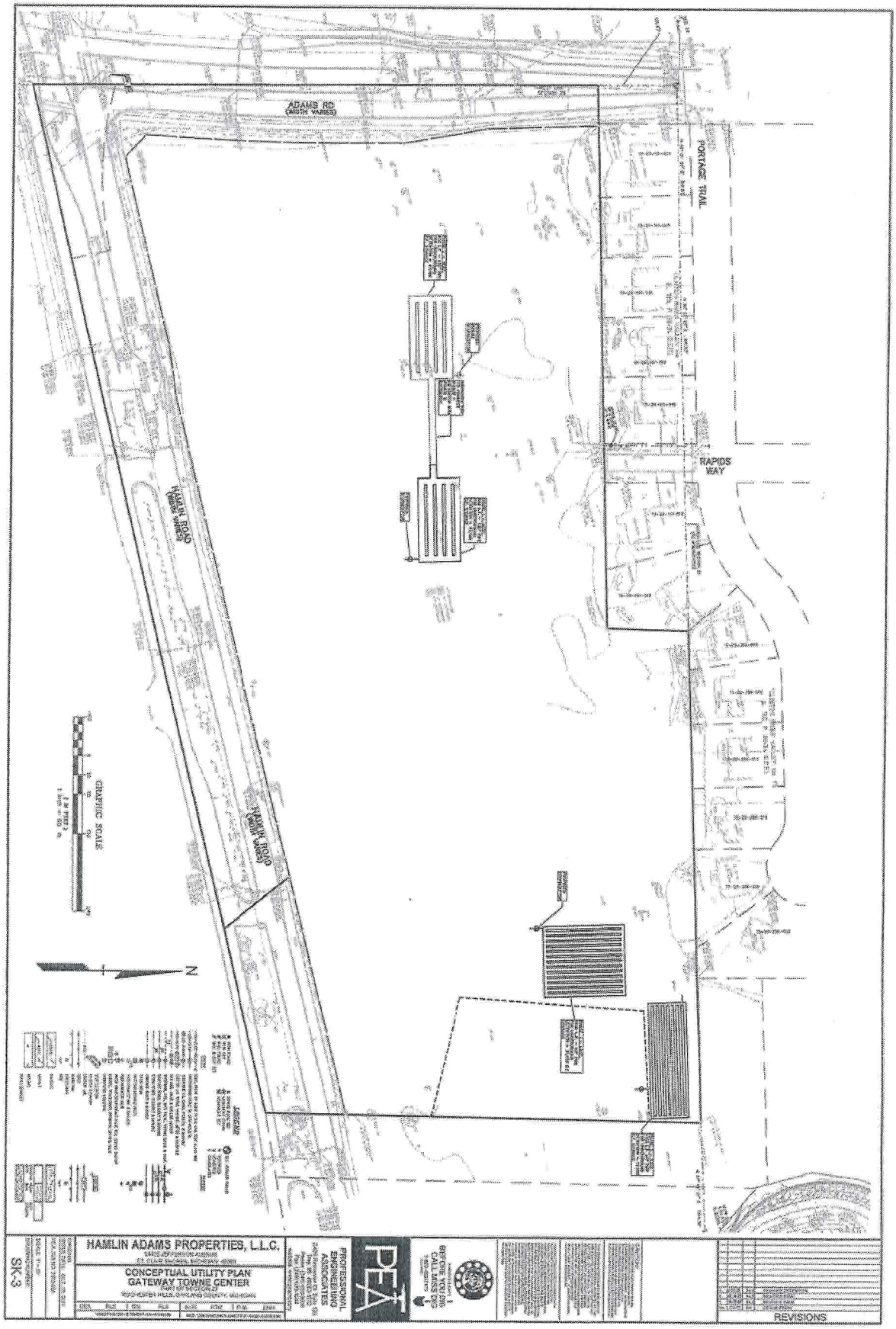
PROPOSED TRUCK ROUTE PLAN

HAMLIN & ADAMS PROPERTIES, LLC
ROCHESTER, MICHIGAN
PROJECT NUMBER : 3679F2-10-20

DRAWN BY: KHE
DATE: 2/15/08

0 80 160
SCALE: 1" = 160'±0

FIGURE 3



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PRELIMINARY STORM WATER DETENTION PLAN

HAMLIN & ADAMS PROPERTIES, LLC
ROCHESTER, MICHIGAN
PROJECT NUMBER : 3679F2-10-20

DRAWN BY: KHE
DATE: 3/20/08

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NOT TO SCALE

FIGURE 4

TABLES

TABLE 1
ESTIMATED ELIGIBLE ACTIVITIES COSTS
RESPONSE AND DUE CARE

TASK		COST
ACT 381 ENVIRONMENTAL WORK PLAN FOR ELIGIBLE ACTIVITIES	$	10,000
Subtotal Act 381 Workplan:	***$***	***10,000***
AKT PEERLESS RESPONSE AND DUE CARE ACTIVITIES		
Professional Services		
Project Management	$	13,340
Health and Safety Plan Preparation	$	2,000
Field Activities		
- Area A	$	1,125
- Area C	$	16,500
- Area D	$	3,000
- Area E	$	15,000
- Presumptive Remedy	$	4,500
- Cover System	$	3,000
Field Supplies and Expenses	$	8,200
Final Report Preparation	$	10,000
Subtotal Professional Services:	***$***	***76,665***
Project Costs		
Site Control	$	50,000
Dewatering	$	75,000
Unforseen Conditions	$	50,000
Laboratory Subcontractor		
- Area A	$	1,500
- Area C	$	12,600
- Area D	$	6,300
- Area E	$	8,400
Subtotal Laboratory:	***$***	***28,800***
Subcontractor Services		
- Stormwater Management	$	753,100
-Air Monitoring	$	150,000
- Soil Excavation, transportation, disposal, and backfill	$	1,195,500
- Presumptive Remedy	$	192,500
- Cover System	$	90,000
- Geotechnical Oversight for Clay Material Inspection	$	12,000
Subtotal Subcontractor Services:	***$***	***2,393,100***
Subtotal Project and Professional Services Costs:	**$**	**2,673,565**
15%Contingency	***$***	***401,035***
TOTAL:	**$**	**3,190,065**

AREA A RESPONSE ACTIVITIES

ACTIVITY			COST
Professional Services			
Project Management:	Includes retention of subcontractors (i.e. excavator, laboratory), landfill approval, assignment and oversight of field staff, and review of data Assume 8 hours at $115/hour	$	920
Field Activities:	Oversight of excavation activities; collection of VSR samples. Assume 1.5 days field time at $750/day	$	1,125
Project Costs			
Excavator Subcontractor:	Mobilization and demobilization, excavation of 600 cubic yards transportation, disposal, and backfill @ $30 per yard.	$	18,000
Laboratory Subcontractor:	Analysis of up to 10 VSR Samples* for Metals	$	1,500
Field Supplies and Expenses:	Mileage reimbursement, field equipment (PID) @ $200 per day	$	400
	Total Estimated Cost:	**$**	**21,945**

Notes: * Laboratory analytical costs are as follows:

VOCs -	$85.00 per sample
SVOCs	$150.00 per sample
Metals -	$115.00 per sample
PCBs -	$70.00 per sample

AREA C RESPONSE ACTIVITIES

ACTIVITY			COST
Professional Services			
Project Management:	Includes retention of subcontractors (i.e. excavator, laboratory), landfill approval, assignment and oversight of field staff, and review of data Assume 40 hours at $115/hour	$	4,600
Field Activities:	Oversight of excavation activities; collection of VSR samples. Assume 22 days field time at $750/day	$	16,500
Project Costs			
Excavator Subcontractor:	Mobilization and demobilization, excavation of 22100 cubic yards transportation, disposal, and backfill @ $30 per yard.	$	663,000
Laboratory Subcontractor:	Analysis of up to 30 VSR Samples* for VOCs, SVOCs, PCBs, and Metals	$	12,600
Field Supplies and Expenses:	Mileage reimbursement, field equipment (PID) @ $200 per day	$	4,000
	Total Estimated Cost:	**$**	**700,700**

Notes: * Laboratory analytical costs are as follows:

VOCs -	$85.00 per sample
SVOCs	$150.00 per sample
Metals -	$115.00 per sample
PCBs -	$70.00 per sample

AREA D RESPONSE ACTIVITIES

ACTIVITY			**COST**
Professional Services			
Project Management:	Includes retention of subcontractors (i.e. excavator, laboratory), landfill approval, assignment and oversight of field staff, and review of data Assume 16 hours at $115/hour	$	1,840
Field Activities:	Oversight of excavation activities; collection of VSR samples. Assume 4 days field time at $750/day	$	3,000
Project Costs			
Excavator Subcontractor:	Mobilization and demobilization, excavation of 3,500 cubic yards transportation, disposal, and backfill @ $30 per yard.	$	105,000
Laboratory Subcontractor:	Analysis of up to 15 VSR Samples* for VOCs, SVOCs, PCBs, and Metals	$	6,300
Field Supplies and Expenses:	Mileage reimbursement, field equipment (PID) @ $200 per day	$	800
	Total Estimated Cost:	**$**	**116,940**

Notes: * Laboratory analytical costs are as follows:

VOCs -	$85.00 per sample
SVOCs	$150.00 per sample
Metals -	$115.00 per sample
PCBs -	$70.00 per sample

AREA E RESPONSE ACTIVITIES

ACTIVITY			COST
Professional Services			
Project Management:	Includes retention of subcontractors (i.e. excavator, laboratory), landfill approval, assignment and oversight of field staff, and review of data Assume 20 hours at $115/hour	$	2,300
Field Activities:	Oversight of excavation activities; collection of VSR samples. Oversight of installation of barrier wall. Assume 20 days field time at $750/day	$	15,000
Project Costs			
Excavator Subcontractor:	Mobilization and demobilization, excavation of 8,400 cubic yards transportation, disposal, and backfill @ $30 per yard.	$	252,000
	Excavation of trench around remainder of fill and backfilling with clay Assumes material will require hazardous disposal @175 per yard for 900 yards (440 ft long by 3 ft wide by 15 ft deep)	$	157,500
Geotechnical Testing (Laboratory and Field)			
	Material Testing Services at $600/day	$	6,000
	Initial Material Testing and Reporting	$	1,500
Laboratory Subcontractor:	Analysis of up to 20 VSR Samples* for VOCs, SVOCs, PCBs, and Metals	$	8,400
Field Supplies and Expenses:	Mileage reimbursement, field equipment (PID) @ $200 per day	$	2,000
	Total Estimated Cost:	**$**	**444,700**

Notes: * Laboratory analytical costs are as follows:

VOCs -	$85.00 per sample
SVOCs	$150.00 per sample
Metals -	$115.00 per sample
PCBs -	$70.00 per sample

PRESUMPTIVE REMEDY

ACTIVITY			COST
Professional Services			
Project Management:	Includes retention of subcontractors, assignment and oversight of field staff, meetings with contractor Assume 32 hours at $115/hour	$	1,840
Field Activities:	Oversight and documentation of installation Assume 120 hours field time at $75/hour	$	4,500
Project Costs			
Contractor	Mobilization and demobilization, installation of barrier system Assume $5 per square foot under 143,000 square feet of building	$	192,500
Field Supplies and Expenses:	Mileage reimbursement, field supplies @ $100 per day	$	600
	Total Estimated Cost:	**$**	**199,440**

COVER SYSTEM

ACTIVITY			COST
Professional Services			
Project Management:	Includes retention of subcontractors, assignment and oversight of field staff, meetings with contractor Assume 16 hours at $115/hour	$	1,840
Field Activities:	Oversight and documentation of installation Assume 40 hours field time at $75/hour	$	3,000
Geotechnical Testing (Laboratory and Field)			
	Material Testing Services at $600/day	$	3,000
	Initial Material Testing and Reporting	$	1,500
Project Costs			
Contractor	Mobilization and demobilization, installation of cover system Assume $4 per square foot over 22,500 square feet	$	90,000
Field Supplies and Expenses:	Mileage reimbursement, field supplies @ $100 per day	$	400
	Total Estimated Cost:	**$**	**99,740**

Appendix A

Brownfield Plan