Technical Memorandum

September 20, 2022

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From	Sam Belisle, GHD/mg/MEM-6	**Ref. No.**	11223416-MEM-6
Subject	Vapor Intrusion Conceptual Site Model South Central Area RACER Trust PCC Validation Pontiac, Michigan		

1. Introduction

GHD is providing this memorandum on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust for the former PCC-Validation property in Pontiac, Michigan (Site). A Site location map is presented in Figure 1. The purpose of this memorandum is to present a concise vapor intrusion conceptual site model (CSM) for the south-central portion of the Site and the immediate adjoining off-site area south of the Site. This CSM was requested by U. S. EPA on February 7, 2022, to assess potential vapor intrusion concerns for the properties to the south of the Site. Per the terms of the Declaration of Restrictive Covenant (DRC) recorded on the deed for the Site, the owner must address the vapor intrusion to indoor air pathway at the Site. The CSM was developed based on Michigan Environment, Great Lakes, and Energy (EGLE) *Guidance Document for the Vapor Intrusion Pathway* (May 2013).

2. Site and Building Characteristics

The approximate portion of the Site included in the CSM is presented in Figure 2 and a close-up aerial that displays the types of surface cover in the CSM area is presented in Figure 3. The on-site portion included in the CSM has been recently redeveloped by the current Site owners, M1 Concourse, to include three non-residential garages and a paved parking lot. According to SME's Phase 4 – Building #16 report (June 18, 2020), the general construction of the garages consisted of a 6-inch-thick slab-on-grade foundation with no basements or crawl spaces. Each building has several HVAC units. Based on communication with M1 Concourse and the plans provided in the SME's Phase 4 – Building 16 report (June 19, 2020), the northern most nonresidential garage, referred to as Building #16, was constructed with an active-sub-slab depressurization system and a vapor barrier membrane beneath the building floor slab to mitigate potential vapor intrusion risks. M1 Concourse also confirmed that the middle nonresidential garage, Building #17, was constructed with a vapor barrier while the southernmost garage, Building #18, was not installed with a vapor barrier. The current DRC for the Site requires additional assessment to evaluate the potential for vapor intrusion and/or installing a presumptive mitigation system prior to building or occupying a structure on-site.

The area east of the new non-residential garages and paved parking lot is currently exposed soil. Based on the M1 Concourse Site plan available on their webpage, the area of exposed soil will be developed into an additional paved parking lot and a paved racetrack, which will be surrounded by grass.

Utilities present in the CSM area include municipal water, stormwater, sanitary sewer, gas, internet, and electricity. A detailed review of the utilities in the CSM footprint is provided in Section 4 andM1 Concourse as-built drawings with the utilities for this area are provided in Attachment A.

The off-site area included in this CSM includes the paved road South Boulevard West and corresponding right of way, four structures (101, 121, and two at 141 South Boulevard West), and a paved parking lot owned by M1 Concourse that is part of the Site (Figure 2). The four structures along South Boulevard West are located approximately 74 to 97 feet from the Site property boundary. The property profiles from the Oakland County Property Gateway for each structure were reviewed for building and construction details, and a confirmatory review of the area was completed with Google Earth Street View. Based on this review, it was determined that the two-story structures at 101 and 121 South Boulevard West each have a basement. The first structure at 141 South Boulevard West is a single-story slab-on-grade commercial building. Based on Google Earth, the second structure at 141 South Boulevard West is two-story building that may have crawl space or basement, but this could not be confirmed as the property profile from the Oakland County Property Gateway for the structure did not provide general construction style details.

3. Geology/Hydrogeology

3.1 Site Geology

The Site overburden geology consists of three principal units: fill material, clay/silt glacial deposit with discontinuous sand layers, and regionally extensive clay unit. Fill material is a generic term referring to reworked native soils and imported soils resulting from construction and reworking of the land over time. Fill and debris was encountered at the Site starting at the surface to a maximum depth of approximately 20 feet in some areas. Redevelopment of the Site since 2014 has resulted in more fill being placed. Clay/silt glacial deposits were encountered below the fill material, extending to the depth of investigation (approximately 60 feet below ground surface [bgs]). Stratigraphically isolated and discontinuous sand layers were encountered within this clay/silt glacial deposit. The clay/silt glacial deposits with intermittent sand seams extends across the Site and generally overlays a regionally extensive clay unit present to the maximum depth investigated at the Site. Details related to the overburden geology including subsurface stratigraphic data and geologic cross sections are provided on Figures 4 through 7. In Figure 5 – Cross Section AA-AA', a laterally continuous silty clay unit is encountered at 62 feet bgs, which equates to 893 feet AMSL. As stated in Ferris et al., 2003, a less permeable regionally extensive clay unit with glacial outwash deposits above and below is known to be present at an elevation of approximately 890 feet above mean sea level (AMSL). This suggests that the clay unit encountered during the investigations is the same less permeable regionally extensive clay unit cited in Ferris et al., 2003.

Of most interest for the CSM is Figure 7 – Cross Section CC-CC', which provides the overburden geology for the southernmost boundary of the Site, which is generally consistent with the Sitewide geology description detailed above.

In 2020, three off-site soil gas probes were installed in the right of way near the residence at 101 S. Boulevard West. Based on the stratigraphic and instrumentation logs, the off-site geology south of the Site boundary consists of 0.6 to 0.7 feet of topsoil, underlain by 0.7 to 2 ft of silty sand fill, and then silty clay to at least 7.5 ft below ground surface. The presence of clay in the right of way indicates there is a reduced potential for on-site impacts to migrate off-site to the south, as the clay's low permeability limits movements of subsurface vapors. The stratigraphic and instrumentation logs for the soil gas probes are provided in Attachment B.

3.2 Site Hydrogeological Settings

Groundwater is encountered at the Site from 1.5 to 15.5 feet bgs within the upper unit which is primarily comprised of sand and fill material with interbedded clay. Groundwater in this upper unit is not interconnected throughout the Site. A saturated lower unit is encountered from approximately 39 feet bgs to approximately 60 feet bgs and consists of poorly graded gravelly sand and silty sand. Historically, groundwater contours show a north or northwest generalized groundwater flow direction; however, the wells are not all within a contiguous saturated unit.

Due to the lack of connectivity between saturated units at the Site and general direction of groundwater flow to the north-northwest, it is not expected that impacted groundwater at the Site will migrate off-site to the south. Additionally, based on the groundwater sampling completed to date, there is no evidence of groundwater impacts along the southern boundary. Taking these Site-specific characteristics and investigation results into consideration, it is not expected that the Site utility lines will serve as potential preferential pathways to facilitate the migration of impacted groundwater or soil gas off-site to the south. This is further supported by the detailed review of the utilities within the footprint of the CSM that is presented in Section 4 and the Historical Investigation Results presented in Section 6.

4. Detailed Utility Review

A detailed review of the utility and sewer lines within the footprint of the northwest portion of the CSM was completed in accordance with the ESTCP published Protocol for Sewer/Utility Tunnel VI Investigations flow chart #1 and #2. The review focused on the northwest portion of the CSM, where the former monitoring well MW-74-08 was installed and where impacted groundwater has been historically present. Within this area there is a gas, sanitary, stormwater, and water main utility line (Figure 3). Each line was reviewed to determine its placement relative to impacted groundwater. Elevation data for each utility line was gathered from the M1 Concourse as-builts or approximated based on communication with M1. The highest groundwater elevation recorded during the most recent historical groundwater monitoring event in the impacted area was used to evaluate each line's potential to be below the groundwater table. That groundwater elevation was 945.27 feet above mean sea level (ft AMSL) at monitoring well MW-74-08 in May 2015.

Per discussion with M1 Concourse, the gas lines at the Site were buried approximately 3' below ground surface. The current ground surface elevations near the former monitoring well MW-74-08 range from 957 to 958 ft AMSL, which indicate the gas line is buried well above groundwater in the area. Based on the as-built drawings provided by M1 Concourse, in the northwest portion of the CSM the sanitary line is buried at an elevation of approximately 948 ft AMSL, the stormwater line is buried at an elevation of ranging between 949 to 952 ft AMSL, and the water main line is buried at an elevation ranging from 948 to 953 ft AMSL. All three lines are above the known groundwater elevation for the area.

ESTCP published Protocol flow chart #2 recommends that the next item to verify is whether any utility lines intersect a vadose zone with residual NAPL. The portion of the Site with LNAPL impacts is located northwest of the CSM and installation of new subsurface sewers or other utilities/structures are prohibited within this area, so this does not apply. Additionally, it is noted that RACER previously bulkheaded the historically present storm sewer lines located northwest of the CSM footprint near the LNAPL area to limit the potential for migration of impacts. Bulkheading activities were summarized in a Storm Sewer Bulkhead Completion Memorandum, dated September 12, 2014.

The last item in flow chart #2 of the ESTCP protocol requires verification that VOC impacted groundwater is not being discharged into the sewer lines, which also does not apply at this Site. According to flow chart #2 of the ESTCP protocol, the portion of the Site we are evaluating is considered lower risk. Returning to flow chart #1 in the ESTCP published protocol, it is recommended that buildings in close proximity to the impacted groundwater be evaluated with a standard VI Investigation.

As previously noted, the current DRC for the Site requires additional assessment to evaluate the potential for vapor intrusion and/or installing a presumptive mitigation system prior to building or occupying a structure on-site. Additionally, M1 has taken other proactive steps to protect Site users from VI. The as-built drawings for this area provided by M1 Concourse stated that that utility trenches were to be installed with migration dams at the property boundaries and watertight wrap/seals were to be installed on the sewer joints. M1 Concourse confirmed that one clay migration barrier was installed at the sanitary sewer along the property boundary. The location of the clay migration barrier is noted on Figure 3. It was also confirmed that all sewer (storm and sanitary) on-site were installed with watertight gasketed connections. While the sewer lines that are present within the area of the groundwater impacts are above the groundwater elevation, the M1 implemented activities provide additional protection.

In addition to a detailed review of the utility lines that travel through the impacted groundwater footprint, a brief review of the utilities that cross the southern boundary was completed. Based on the M1 Concourse

as-built drawings, five underground utility lines, including a storm sewer, sanitary sewer, gas line, and two watermain lines are located within the on-site portion of the CSM and travel off-Site to the south. A plan view of the five utility lines are displayed in Figure 3. The gas, sanitary, and storm sewer line that cross the Site boundary are also displayed in Figure 7 – Cross Section CC- CC'. The two water lines are not included on Figure 7 as their elevations could not be confirmed; however, the lines stub out shortly after crossing the southern Site boundary in an area with no known impacted groundwater and they are very unlikely to function as a preferential pathway. The storm sewer line is located above the historically encountered depth to water for that specific area and prior to exiting the Site it does not travel through an area with known impacted groundwater. The sanitary line that crosses the Site boundary is also located above historically encountered groundwater elevations and the line was installed with a clay migration barrier at the southern boundary. The gas line is installed 3' below ground surface and is close in proximity to SG-01-20 and SG-02-20, which did not demonstrate VOC impacts. Based on the information in this paragraph the lines are not believed to be current migration pathways for VOC impacted groundwater or soil gas.

Also within the VI CSM footprint there is a sanitary sewer, storm sewer, two watermain lines, and two gas lines that primarily run parallel to the southern Site boundary under South Boulevard. The utility lines along the VI CSM southern boundary represent possible preferential soil vapor migration pathways. However, based on the sampling results from the soil gas probes that did not show any exceedances of site-specific residential or nonresidential site-specific volatilization to indoor air criteria (SSVIAC) for four consecutive quarters, there are no Site-related vapor concentration exceedances at the Site boundary within the CSM area to migrate through these pathways.

The results of the soil gas probes are discussed in detail in Section 6.3. Groundwater monitoring well MW-90-12 was installed to 15 feet bgs in the vicinity of the southern Site boundary. Water level depths were collected in 2013 (9.02 ft. bgs), 2014 (11.20 ft. bgs), and 2015 (12.78 ft. bgs). MW-90-12 was sampled during four sampling events in 2012, 2013, 2014, and 2015 for VOCs. No VOC exceedances were detected in the groundwater samples. Therefore, no current migration pathways are present along the southern Site boundary.

5. Potential Sources from Historical Operations

The on-Site area included in the CSM lies within the footprint of the former Plant 3 and Plant 4 – Building 25 and the former operations are potential vapor sources for impacts observed in the CSM area. According to historical documentation, Plant 3 was first used by Wilson to manufacture motors and castings. After GM obtained Plant 3, operations included paint mixing, paint booths/ovens, a phosphate line, and hazardous waste storage. More recently, Plant 3 was referred to as the "Paint Shop", serving the entire complex. Plant processes included color painting; an 8-stage phosphate process located in the northeast corner; an electrode position paint operations (ELPO) dip tank centrally located along the western portion of the building; and paint storage and mixing operations in the basement along the south wall. The former Plant 4 - Buildings 25 was used for material storage until the early 1970s, at which time it was converted to a body shop. More recently, Plant 4 - Building 25 was utilized for welding operations. The locations of the historical operations for this area are presented on Figure 8.

6. Historical Investigation Results

The historical GHD groundwater, soil, and soil gas results collected in the CSM area were compared to the residential and nonresidential site-specific volatilization to indoor air criteria (SSVIAC), developed by EGLE for M1. A copy of the M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation (March 2020) letter provided by EGLE is included as Attachment C. Additionally, the data collected by SME, on behalf of M1 Concourse, presented in the Phase 4 and Phase 5 Vapor Intrusion Mitigation System Design reports (dated June 18, 2020 and September 30, 2020, respectively) was also reviewed for exceedances within the CSM area. A copy of the SME analytical summary tables and sampling location maps provided in the Phase 4 and Phase 5 reports are provided in Attachment D.

6.1 Groundwater

The presence of volatile organic compounds (VOCs) in groundwater in the CSM area is a potential vapor source. VOC impacts in groundwater above residential and non-residential SSVIAC were observed in the northwest portion of the CSM area at GHD monitoring wells MW74-08 and MW91-12. A groundwater exceedance was also noted at SME boring SB6-13, located approximately 70 feet northwest of MW74-08. The groundwater VOC impacts were delineated to the north, south, east, and west based on results from surrounding wells MW68-08, TMW81-08, MW90-12 MW88-12, TMW71-08, MW37-07, MW40-07, MW87-12 and MW84-12. The locations of the historical GHD wells and groundwater results are provided in Figure 9. These wells were abandoned prior to Site redevelopment, but six wells (MW-48-22R, MW-74-22R, MW-74D-22R, MW-88-22R, MW-90-22R, and MW-94-22R) in this area were reinstalled and sampled in April of 2022. The monitoring well reinstallation event and Site-wide groundwater sampling event has been summarized in a separate standalone report. The wells reinstalled in this area are presented in Figure 2 and Figure 3. The location of monitoring well MW-90-22R was shifted south from its prior location to further evaluate groundwater along the southern boundary. Based on the current data collected for the Site, it is believed the impacts from this groundwater plume that are exceeding SSVIAC are clearly defined and are not migrating off-site and thus do not pose a risk to off-site receptors. The risk to on-site receptors has been mitigated through the current DRC for the Site. GHD groundwater results completed prior to 2022 from the CSM area compared against the residential and non-residential M1 Concourse Phase 4 – Building 16 SSVIAC are presented in Table 1.

6.2 Soil

The presence of VOCs in soil in the CSM area is another potential vapor source. The soil VOC impacts in the CSM area are generally similar to those observed in groundwater; VOC impacts above SSVIAC were present in the northwest portion at MW74-08.

Beyond the known VOC impacted area in the northwest portion of CSM area, a sample collected at a depth of 7 to 9 ft bgs from TMW87-08, located along the southern perimeter of the Site, exceeded SSVIAC for trichloroethylene (TCE). The temporary well at this location did not produce water following installation, so a groundwater sample could not be collected. This temporary well is in the same location as the recent soil gas investigation completed along the southern boundary, discussed in detail in Section 5.3.

Additional soil samples were collected at borings east and west of TMW87-08, at BH47-07 and BH44-07, respectively. The samples collected at those locations did not detect VOCs above applicable SSVIAC. The locations of the historical soil borings and wells are provided in Figure 9. The GHD soil results for the CSM area compared against the residential and non-residential M1 Concourse Phase 4 – Building 16 Site SSVIAC are presented in Table 2.

6.3 Soil Gas

On behalf of M1 Concourse, SME completed supplemental characterization in 2020 of the on-site CSM area prior to redevelopment. A copy of the SME analytical results and maps of the sampling locations is provided in Attachment C. During that investigation, SME detected TCE in soil gas samples collected at sampling location, SG22/SG116, north of the Site boundary. Additional VOC detections were found in the planned footprint of the northernmost non-residential garage, referred to as Building #16, and in the same vicinity of the prior groundwater VOC exceedances. As previously noted in Section 2, the northern residential garage was installed with appropriate engineering controls to mitigate vapor intrusion risk. SME performed additional soil gas sampling west of SG22/SG116 at SG104-19, SG105-19, SG115, SG114, SG113, and SG112 and the results were below SSVIAC.

To evaluate if the TCE present in soil gas at SG22/SG116 was potentially migrating off-site to the south, GHD installed three soil gas probes (SG-01-20 through SG-03-20) to the south of SG22/SG116 along the southern property boundary in July 2020. During installation, the probes were screened between 4.5 to 6 feet bgs. At one sampling location, SG-03-20, TCE was detected above the residential and non-residential SSVIAC. In December 2020 five additional soil gas probes (SG-04-20 through SG-08-20) were installed, two on-Site and three off-Site in the right of way near the closest residence at 101 South Boulevard West. The sampling locations are presented in Figure 2 and Figure 3. Soil gas sampling at select on and off-site probes occurred in December 2020, March 2021, July 2021, and September 2021. The TCE exceedance of

SSVIAC at SG-03-20 was not confirmed with the four quarterly sampling events. No additional on or off-site VOC exceedances of the residential or non-residential SSVIAC were observed during the four consecutive quarterly sampling events. The TCE soil gas results from the July 2020 through September 2021 sampling events are presented in Figure 10. It should be noted that the off-site soil gas probes were only successfully sampled during two events, December 2020 and March 2021. It is suspected the soil (primarily clay) pore spaces were saturated or at least partially saturated, preventing the movement of vapors and causing a "vapor lock" when trying to collect soil gas samples. The GHD soil gas sampling results for this area compared against the residential and non-residential M1 Concourse Phase 4 – Building 16 SSVIAC are presented in Table 3.

7. Conclusions

GHD has evaluated the vapor intrusion pathway for the south-central portion of the Site relative to VOC impacts in groundwater, soil, and soil gas associated with the former PCC-Validation property. Based on multiple lines of evidence including the review of the on and off-site geology, underground utilities, groundwater flow direction, comparison of previously collected data to the SSVIAC, and the results of the recent soil gas sampling, GHD concludes that off-site vapor intrusion resulting from impacts associated with the Site is unlikely to occur and on-site risks are managed by the current DRC for the Site. At this time, no further work is warranted relative to vapor intrusion concerns along the south-central boundary.. The reinstallation acitiviries for the replacement wells was completed in April 2022. The site-wide sampling event including the sampling of the reinstalled monitoring wells was competed in April 2022. The site-wide groundwater sampling and reinstallation event was summarized and provided to the U.S. EPA in September 2022.

8. References

McHugh and Beckley. 2018. Investigation Protocol - Sewers and Utility Tunnels as Preferential Pathways for Volatile Organic Compound Migration into Buildings: Risk Factors and Investigation Protocol. Published by ESTCP.

Michigan Environment, Great Lakes, and Energy (EGLE), Remediation and Redevelopment Division, Guidance Document for the Vapor Intrusion Pathway, May 2013.

Ferris, J.G., Burt, E.M., Stramel, G.J., and Crosthwaite, E.G. 2003. Groundwater Resources of Southeastern Oakland County, Michigan. State of Michigan Department of Conservation Geological Survey Division.

SME, Vapor Intrusion Mitigation System Design – Revision 2, M1 Concourse Phase 4 – Building #16, June 18, 2020.

SME, Vapor Intrusion Mitigation System Design, M1 Concourse Phase 5 – Event Center, September 30, 2020.

Regards,

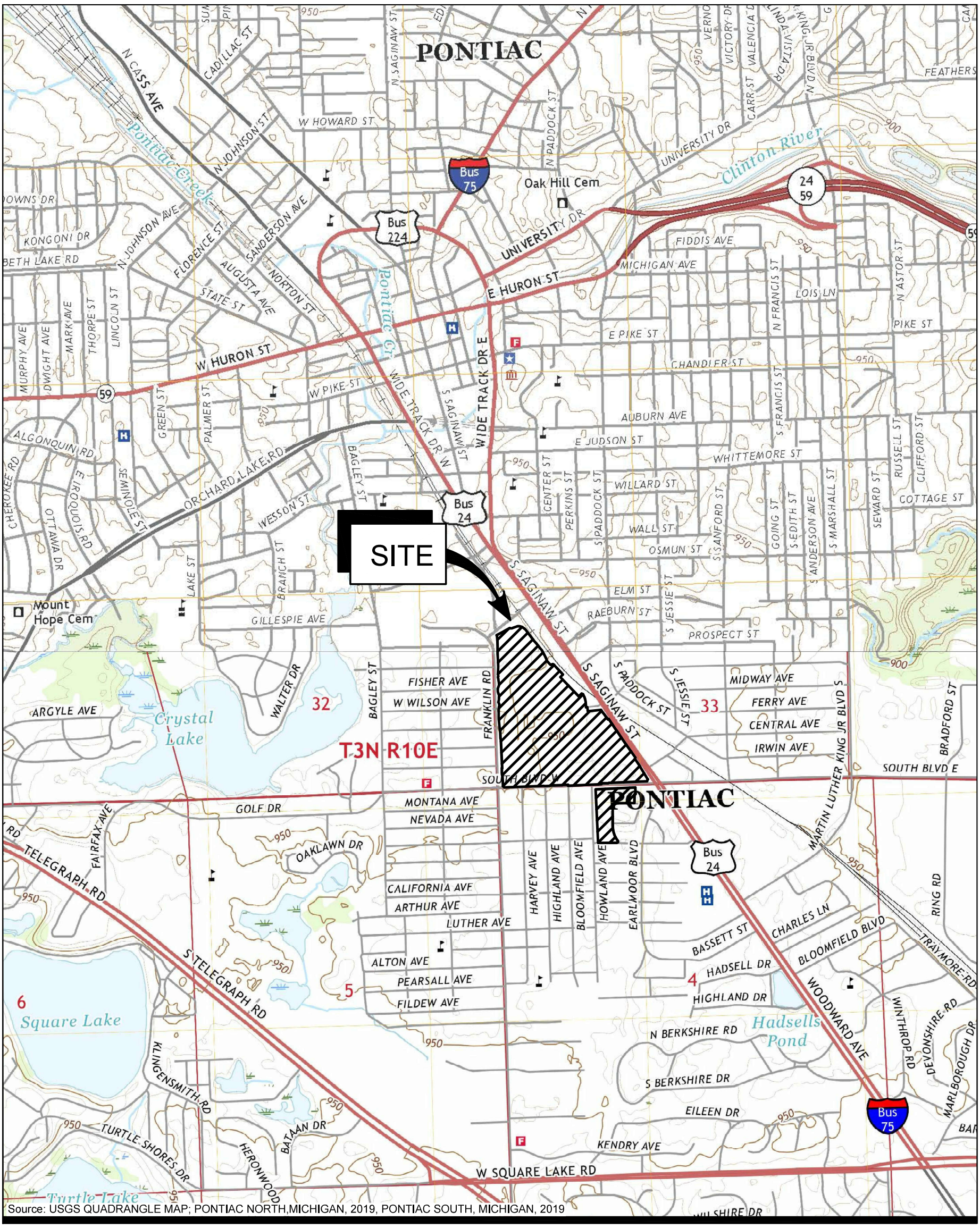
Thomas Kinney

Thomas M. Kinney, CPG
Project Manager

Encl: Figure 1: Site Location Map
Figure 2: Site Plan with Limits of CSM
Figure 3: Aerial of CSM Area
Figure 4: Cross Section Location Map

Figure 5: Cross Section AA'-AA'
Figure 6: Cross Section BB'-BB'
Figure 7: Cross Section CC'-CC
Figure 8: Historical Operations
Figure 9: Summary of GHD Historical Sampling Locations
Figure 10: TCE Soil Gas Sampling Results – July 2020 through September 2021
Table 1: Groundwater Analytical Results for CSM Area
Table 2: Soil Analytical Results for CSM Area
Table 3: Soil Gas Analytical Results for CSM Area
Attachment A: M1 Concourse As-Built Drawings
Attachment B: Instrumentation Logs for Soil Gas Probes
Attachment C: EGLE M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation-March 2020
Attachment D: SME Results for Phase 4 and 5 Area

Figures



Source: USGS QUADRANGLE MAP; PONTIAC NORTH,MICHIGAN, 2019, PONTIAC SOUTH, MICHIGAN, 2019

0 1000 2000 ft

1" = 2000 ft

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

Project No. **11223416**
Date **February 2022**

SITE LOCATION MAP

FIGURE 1

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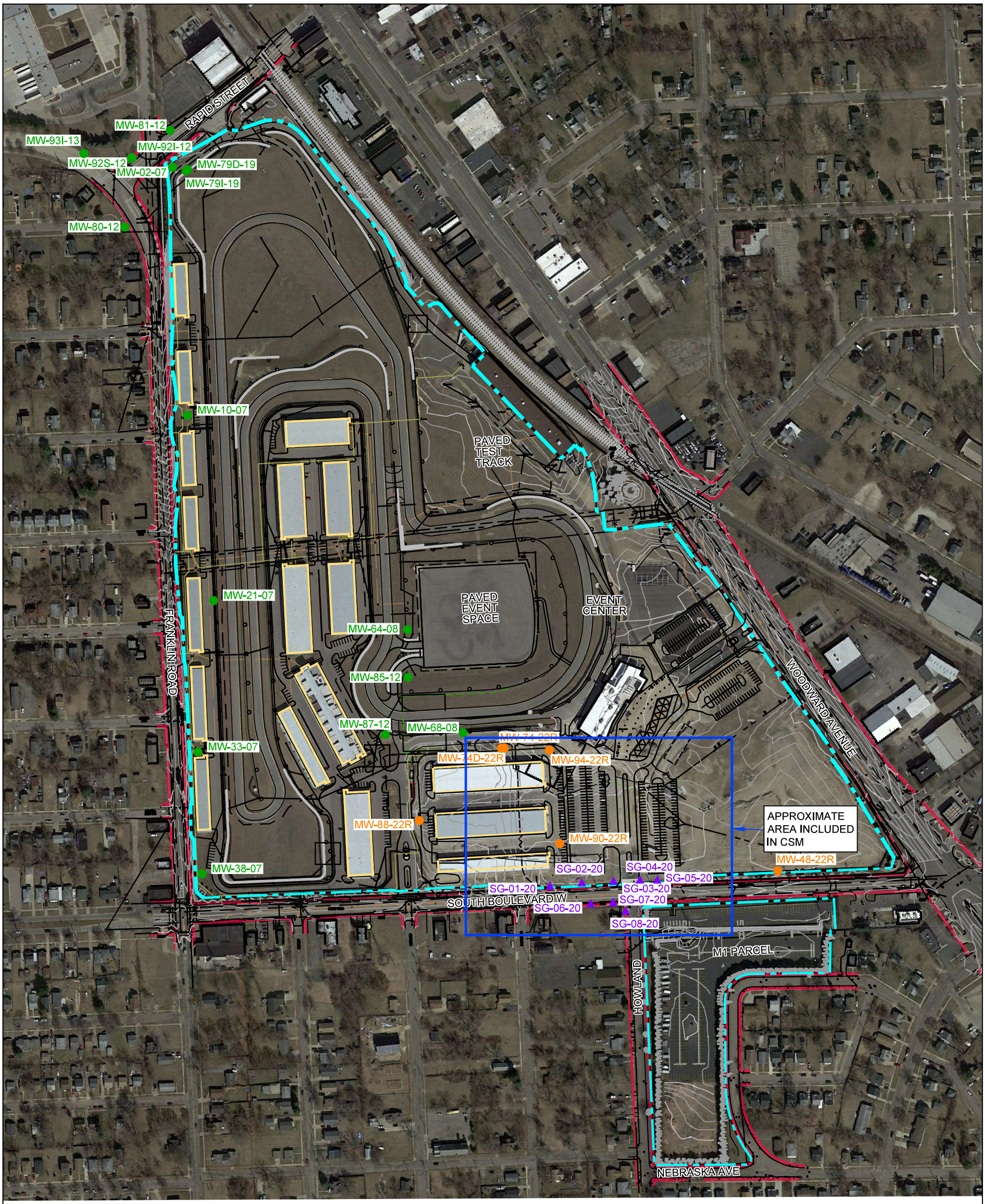

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW-80-12 ACTIVE MONITORING WELL LOCATION
- MW-90-22R NEW ACTIVE MONITORING WELL LOCATION - APRIL 2022
- SG-01-20 SOIL GAS PROBE LOCATION
- PRIVATE NON-RESIDENTIAL GARAGES

0 150 300 ft

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

SITE PLAN WITH LIMITS OF CSM

Project No. **11223416**
Date **May 2022**

FIGURE 2

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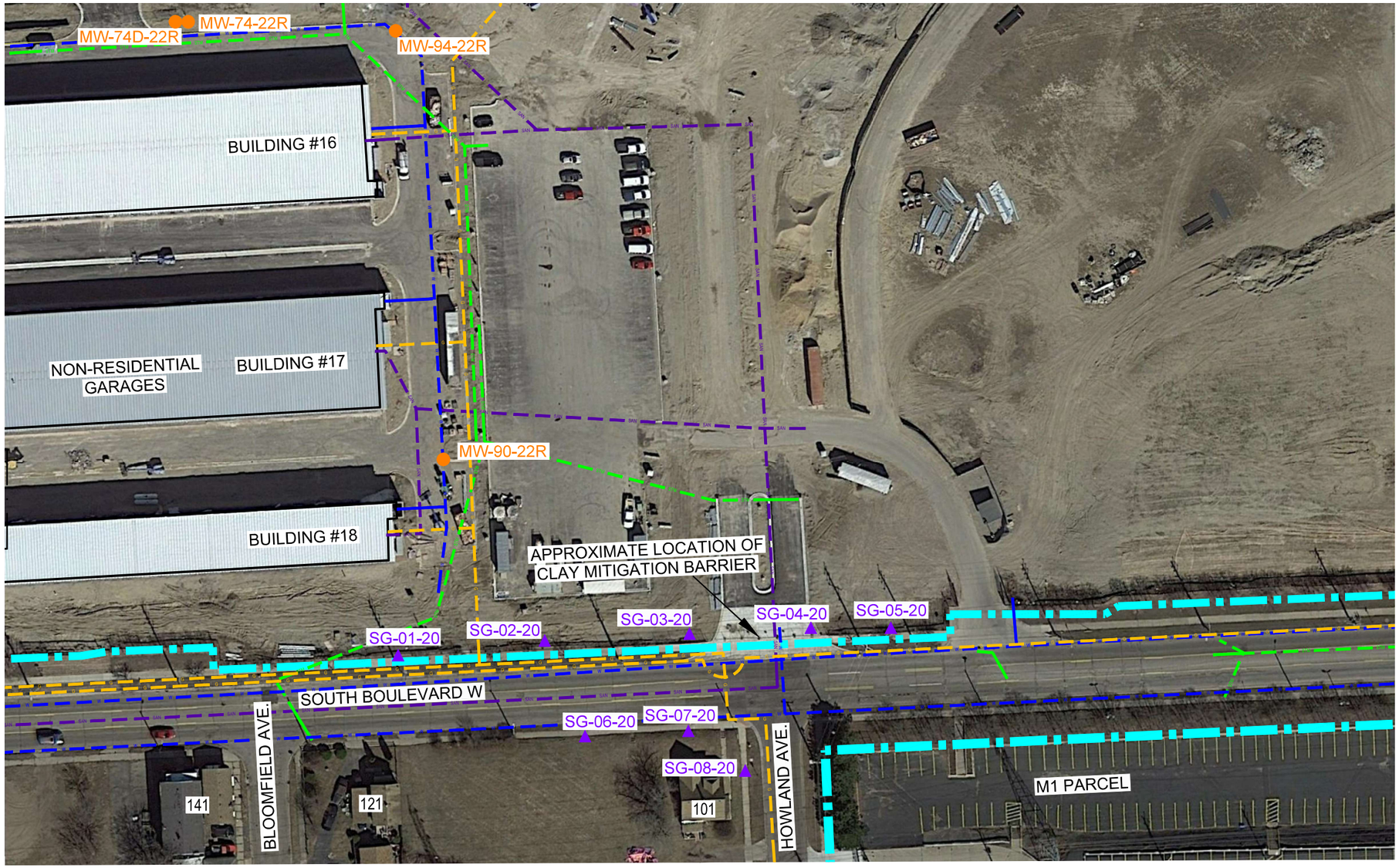

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- MW-90-22R — NEW ACTIVE MONITORING WELL LOCATION - APRIL 2022
- SG-01-20 — SOIL GAS PROBE LOCATION
- STORM SEWER LINE
- SANITARY SEWER LINE
- WATERMAIN LINE
- GAS LINE

NOTE:

1. UTILITY LINE LOCATIONS ARE APPROXIMATE BASED ON M1 CONCOURSE PROVIDED AS-BUILT DRAWINGS, M1 DEMOLITION PLANS AND CONSUMERS ENERGY GAS DISTRIBUTION MAP.

0 40 80 ft

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

AERIAL OF CSM AREA

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Date **May 2022**

FIGURE 3

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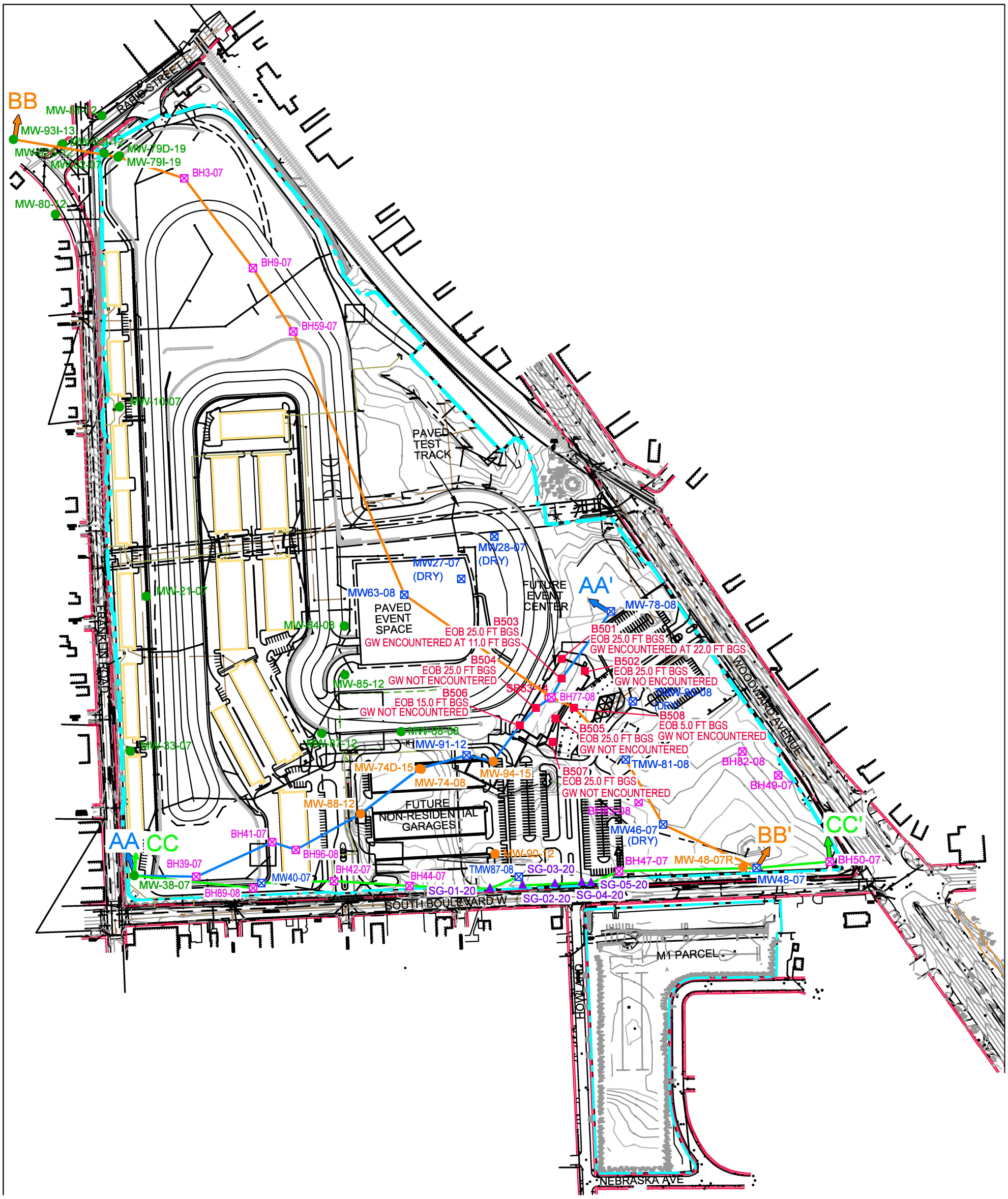

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW-80-12 ACTIVE MONITORING WELL LOCATION
- MW-90-12 PROPOSED MONITORING WELL LOCATION
- SG-01-20 SOIL GAS PROBE LOCATION
- TMW-81-08 FORMER PERMANENT OR TEMPORARY MONITORING WELL LOCATION
- SB3-14 SME GROUNDWATER SAMPLING LOCATION
- B501 SME APPROXIMATE 2020 GEOTECHNICAL BORING LOCATION
- PRIVATE NON-RESIDENTIAL GARAGES
- BH83-08 SOIL BORING WITH INSUFFICIENT WATER TO COLLECT GROUNDWATER SAMPLES

AA — AA' CROSS-SECTION LOCATION

NOTES:

EOB END OF BORING
BGS BELOW GROUND SURFACE
GW GROUNDWATER

0 150 300 ft

1" = 300 ft
Coordinate System:
MICHIGAN STATE
PLANE SOUTH FEET

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN
PHASE III INVESTIGATION

CROSS-SECTION LOCATION

Project No. 11223416
Date March 2022

FIGURE 4

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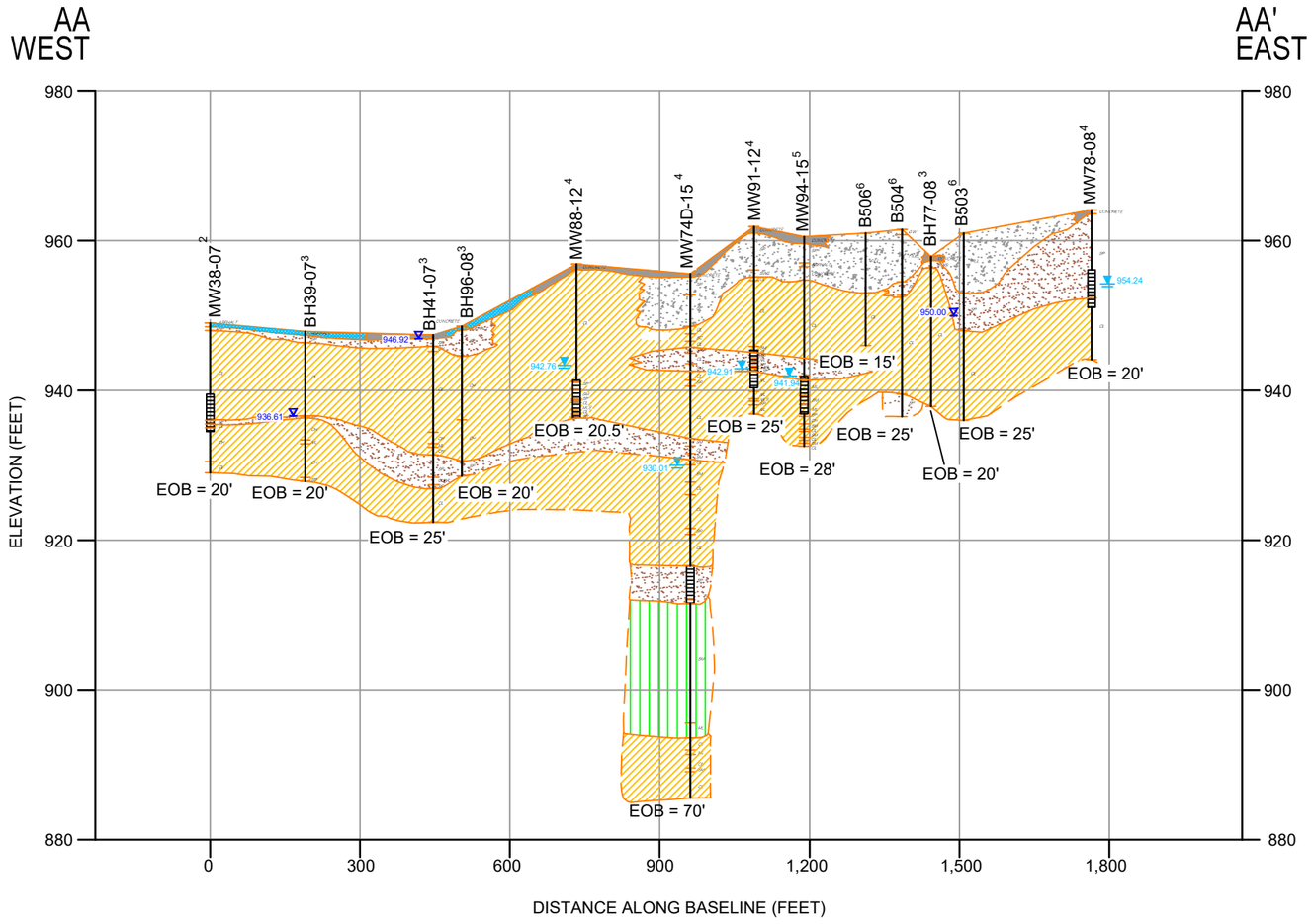

LEGEND

- CONCRETE
- ASPHALT
- SAND
- CLAY
- FILL
- SILT

MW38-07 — WELL ID
GROUND WELL
SCREEN INTERVAL
EOB = END OF BORING

GROUNDWATER LEVELS ON MONITORING WELLS

FIRST ENCOUNTERED WATER FOR SOIL BORINGS

NOTES:

1. IF NO WATER LEVEL IS INDICATED ON SOIL BORING, GROUNDWATER WAS NOT ENCOUNTERED DURING COMPLETION.
2. WELL WAS DRY DURING JUNE 2021 MONITORING EVENT.
3. SOIL BORING COMPLETED IN 2007 OR 2008.
4. WATER LEVEL RECORDED DURING MAY 2015 MONITORING EVENT.
5. WATER LEVEL RECORDED DURING MARCH 2015 MONITORING EVENT.
6. SOIL BORING COMPLETED IN 2020.

HORIZONTAL
1" = 300 ft
0 150 300Ft
0 10 20Ft
1" = 20 ft
VERTICAL

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN
PHASE III INVESTIGATION

CROSS-SECTION AA-AA'

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Date **May 2022**

FIGURE 5

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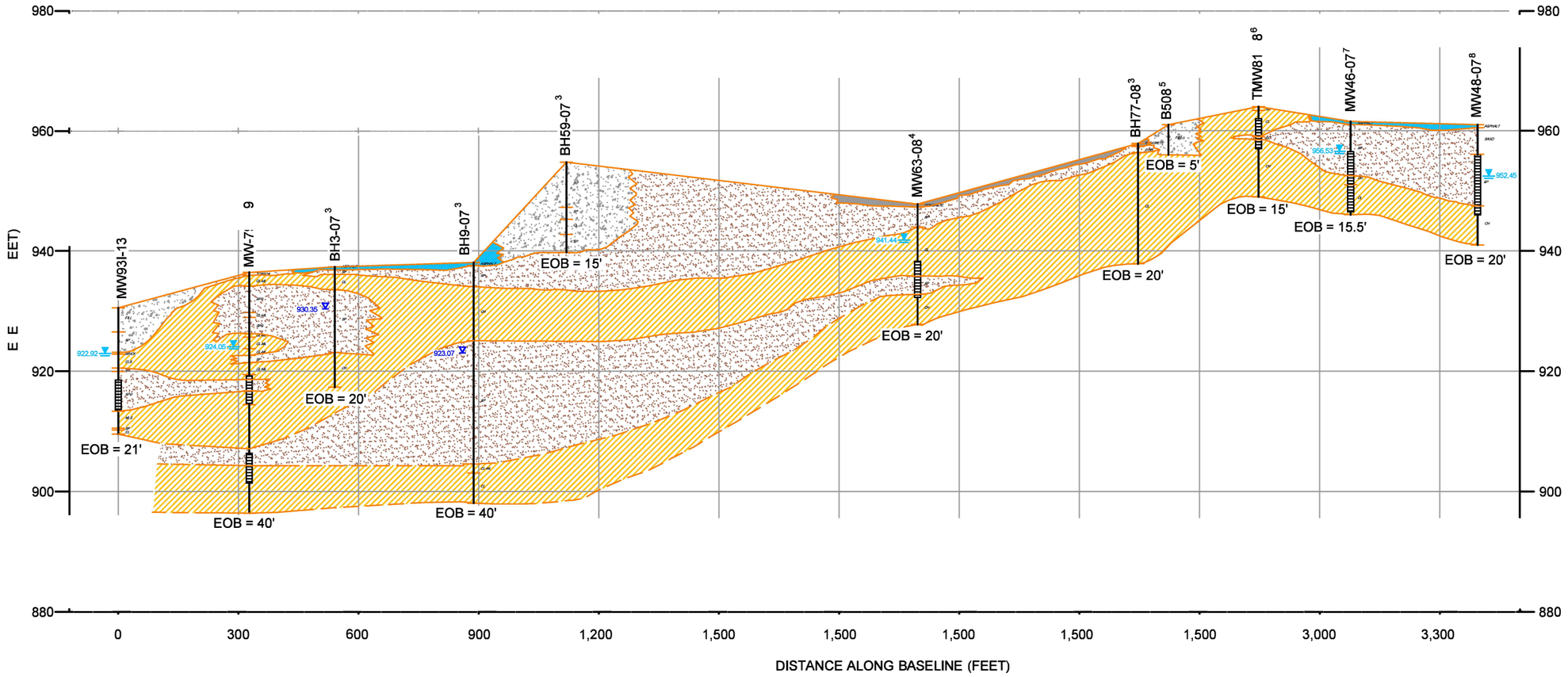
BB
NORTH

BB'
SOUTH



LEGEND

- CONCRETE
- ASPHALT
- SAND
- CLAY
- FILL
- SILT

W3 07 — WELL ID

GROUND WELL

— SCREEN INTERVAL

EOB = END OF BORING

GROUNDWATER LEVELS ON MONITORING WELLS

FIRST ENCOUNTERED WATER FOR SOIL BORINGS

NOTES:

1. IF NO WATER LEVEL IS INDICATED ON SOIL BORING, GROUNDWATER WAS NOT ENCOUNTERED DURING COMPLETION.
2. WELL WAS DRY DURING JUNE 2021 MONITORING EVENT.
3. SOIL BORING COMPLETED IN 2007 OR 2008.
4. WATER LEVEL RECORDED DURING MAY 2015 MONITORING EVENT.
5. SOIL BORING COMPLETED IN 2020.
6. TEMPORARY WELL INSTALLED IN 2008, REPORTED AS DRY DURING SAMPLING EVENT.
7. WATER LEVEL RECORDED DURING OCTOBER 2007 INSTALLATION.
8. WATER LEVEL RECORDED DURING MARCH 2013 MONITORING EVENT.

HORIZONTAL
1" = 300 ft

0 — 150 — 300Ft

0 — 15 — 30Ft

1" = 30 ft
VERTICAL

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN
PHASE III INVESTIGATION

CROSS-SECTION BB-BB'

Project No. **11223416**
Date **February 2022**

FIGURE 6

Date Source:GOOGLE EARTH (DIGITAL GLOBE 4/23/2019)

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\MEM-006\11223416-GHD-0000-MEM-EN-0104_DE-006.dwg
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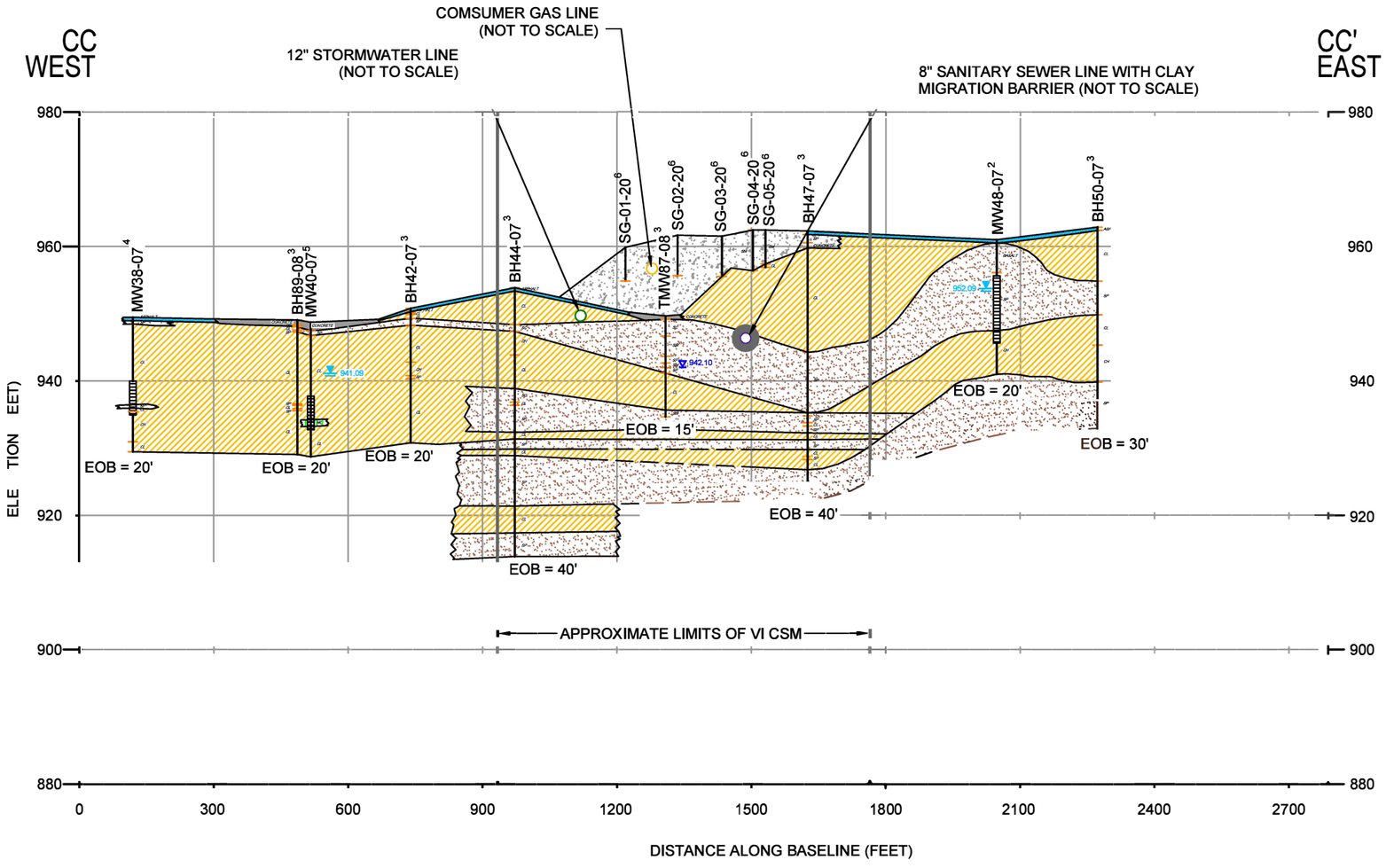


LEGEND

- CONCRETE
- ASPHALT
- SAND
- CLAY
- FILL
- SILT

W3 07 — WELL ID

GROUND WELL

SCREEN INTERVAL

EOB = END OF BORING

GROUNDWATER LEVELS ON MONITORING WELLS

FIRST ENCOUNTERED WATER FOR SOIL BORINGS

NOTES:

1. IF NO WATER LEVEL IS INDICATED ON SOIL BORING, GROUNDWATER WAS NOT ENCOUNTERED DURING COMPLETION.
2. WATER LEVEL RECORDED DURING MARCH 2013 MONITORING EVENT.
3. SOIL BORING COMPLETED IN 2007 OR 2008.
4. WELL WAS DRY DURING JUNE 2021 MONITORING EVENT.
5. WATER LEVEL RECORDED DURING MAY 2015 MONITORING EVENT.
6. SOIL GAS PROBE COMPLETED IN 2020.
7. GEOLOGY FOR SG-01-20, SG-02-20, AND SG-03-20 WAS INFERRED BASED ON HISTORICAL SURVEYS OF THE GROUND SURFACE ELEVATIONS.
8. UTILITY PLACEMENT FOR SANITARY, STORM SEWER, AND GAS LINE WAS APPOXIMATED BASED ON NEAREST REFERENCE ELEVATION PROVIDED FROM M1 CONCOURSE AS-BUILTS.
9. WATER LINES ARE PRESENT BUT NO DEPICTED. THEIR ELEVATIONS COULD NOT BE CONFIRMED.

HORIZONTAL
1" = 300 ft

0 150 300Ft

0 15 30Ft

1" = 30 ft
VERTICAL

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN
PHASE III INVESTIGATION

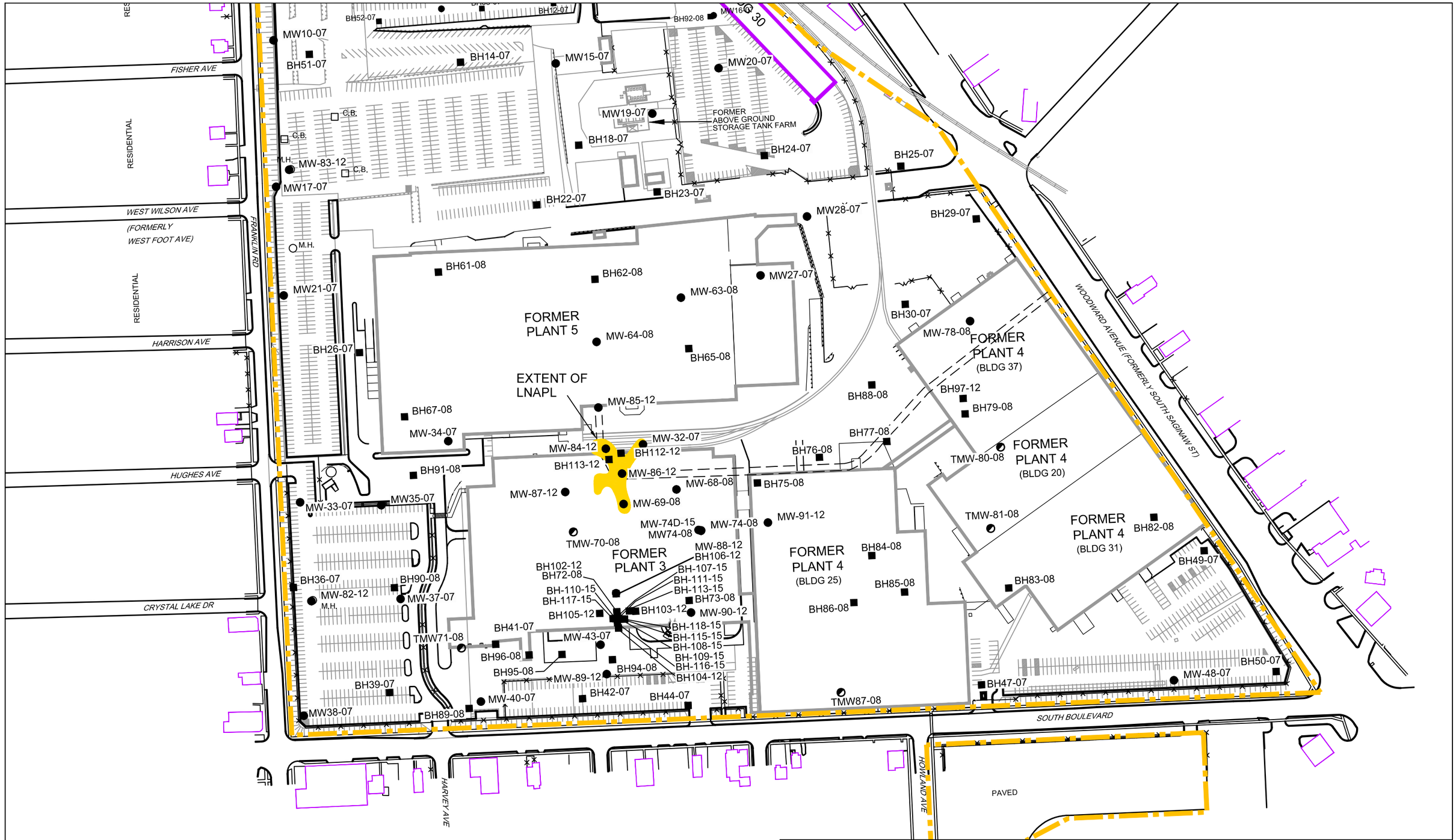
CROSS-SECTION CC-CC'

Project No. **11223416**
Date **May 2022**

FIGURE 7

Date Source:GOOGLE EARTH (DIGITAL GLOBE 4/23/2019)

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\MEM-006\11223416-GHD-0000-MEM-EN-0104_DE-006.dwg
Plot Date: 17 May 2022 4:44 PM



LEGEND

- BH-98-12 COMPLETED SOIL BORING LOCATION
- MW-88-12 COMPLETED MONITORING WELL LOCATION
- TMW-71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
- APPROXIMATE SITE BOUNDARY
- EXISTING STRUCTURE
- FORMER SITE STRUCTURE
- M.H. MANHOLE
- C.B. CATCH BASIN

0 100 200 ft

1" = 200 ft

Coordinate System:
<INSERT HERE>

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

HISTORICAL OPERATIONS

Project No. **11223416**
Date **March 2022**

FIGURE 8

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\MEM-006\11223416-GHD-0000-MEM-EN-0107_DE-006.dwg
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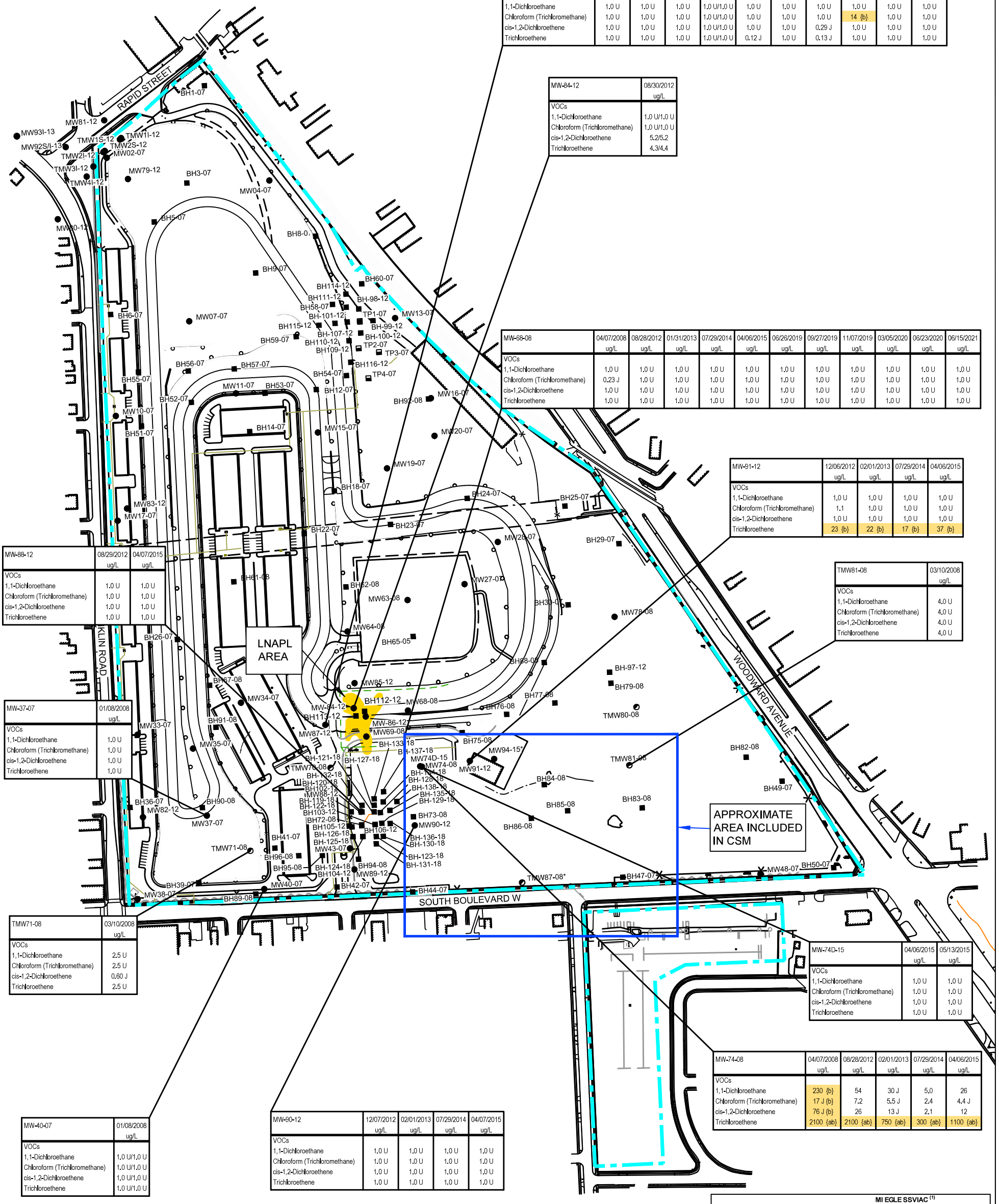

MW-87-12	08/30/2012 ug/L	01/31/2013 ug/L	07/29/2014 ug/L	04/07/2015 ug/L	06/26/2019 ug/L	09/27/2019 ug/L	11/07/2019 ug/L	03/05/2020 ug/L	06/23/2020 ug/L	06/15/2021 ug/L
VOCs										
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U/1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	1.0 U	1.0 U	1.0 U	1.0 U/1.0 U	1.0 U	1.0 U	1.0 U	14 {b}	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U/1.0 U	1.0 U	1.0 U	0.29 J	1.0 U	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U	1.0 U	1.0 U/1.0 U	0.12 J	1.0 U	0.13 J	1.0 U	1.0 U	1.0 U

MW-84-12	08/30/2012 ug/L
VOCs	
1,1-Dichloroethane	1.0 U/1.0 U
Chloroform (Trichloromethane)	1.0 U/1.0 U
cis-1,2-Dichloroethene	5.2/5.2
Trichloroethene	4.3/4.4

MW-68-08	04/07/2008 ug/L	08/28/2012 ug/L	01/31/2013 ug/L	07/29/2014 ug/L	04/06/2015 ug/L	06/26/2019 ug/L	09/27/2019 ug/L	11/07/2019 ug/L	03/05/2020 ug/L	06/23/2020 ug/L	06/15/2021 ug/L
VOCs											
1,1-Dichloroethane	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
Chloroform (Trichloromethane)	0.23 J	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
cis-1,2-Dichloroethene	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
Trichloroethene	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

MW-91-12	12/06/2012 ug/L	02/01/2013 ug/L	07/29/2014 ug/L	04/06/2015 ug/L
VOCs				
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	1.1	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	23 {b}	22 {b}	17 {b}	37 {b}

TMW81-08	03/10/2008 ug/L
VOCs	
1,1-Dichloroethane	4.0 U
Chloroform (Trichloromethane)	4.0 U
cis-1,2-Dichloroethene	4.0 U
Trichloroethene	4.0 U

MW-88-12	08/29/2012 ug/L	04/07/2015 ug/L
VOCs		
1,1-Dichloroethane	1.0 U	1.0 U
Chloroform (Trichloromethane)	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U

MW-37-07	01/08/2008 ug/L
VOCs	
1,1-Dichloroethane	1.0 U
Chloroform (Trichloromethane)	1.0 U
cis-1,2-Dichloroethene	1.0 U
Trichloroethene	1.0 U

MW-74D-15	04/06/2015 ug/L	05/13/2015 ug/L
VOCs		
1,1-Dichloroethane	1.0 U	1.0 U
Chloroform (Trichloromethane)	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U

TMW71-08	03/10/2008 ug/L
VOCs	
1,1-Dichloroethane	2.5 U
Chloroform (Trichloromethane)	2.5 U
cis-1,2-Dichloroethene	0.60 J
Trichloroethene	2.5 U

MW-74-08	04/07/2008 ug/L	08/28/2012 ug/L	02/01/2013 ug/L	07/29/2014 ug/L	04/06/2015 ug/L
VOCs					
1,1-Dichloroethane	230 {b}	54	30 J	5.0	26
Chloroform (Trichloromethane)	17 J {b}	7.2	5.5 J	2.4	4.4 J
cis-1,2-Dichloroethene	76 J {b}	26	13 J	2.1	12
Trichloroethene	2100 {ab}	2100 {ab}	750 {ab}	300 {ab}	1100 {ab}

MW-40-07	01/08/2008 ug/L
VOCs	
1,1-Dichloroethane	1.0 U/1.0 U
Chloroform (Trichloromethane)	1.0 U/1.0 U
cis-1,2-Dichloroethene	1.0 U/1.0 U
Trichloroethene	1.0 U/1.0 U

MW-90-12	12/07/2012 ug/L	02/01/2013 ug/L	07/29/2014 ug/L	04/07/2015 ug/L
VOCs				
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U	1.0 U	1.0 U

LEGEND

- TP1-07 COMPLETED TEST PIT LOCATION
- MW28-07 COMPLETED MONITORING WELL LOCATION
- TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
- BH8-07 COMPLETED SOIL BORING LOCATION
- APPROXIMATE SITE BOUNDARY

NOTE: * INDICATES WELL DID NOT HAVE SUFFICIENT WATER TO COLLECT SAMPLE

	MI EGLE SSVIAC (1) Table 1 - Nonresidential (2) GWNIC (a)	MI EGLE SSVIAC (1) Table 2 - Residential (3) GWNIC (b)
Volatile Organic Compounds (VOCs) (ug/L)		
1,1-Dichloroethane	2500	01
Chloroform (Trichloromethane)	280	9.2
cis-1,2-Dichloroethene	1100	58
Trichloroethene	98	7.5

NOTES:
(1) MI EGLE SSVIAC - Michigan Environment, Great Lakes, and Energy Site Specific Volatilization to Indoor Air Criteria
(2) Table 1 - Nonresidential SSVIAC - Restricted site-specific criteria that apply to a nonresidential structure < 50,000 ft2 with a slab-on-grade, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of sand
(3) Table 2 - Residential VIAC - Unrestricted site-specific criteria that apply to a residential house with a basement, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of sand

0 150 300 ft
1" = 300 ft

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

SITE MAP WITH HISTORICAL SAMPLING LOCATIONS PCC-VALIDATION

Project No. **11223416**
Date **April 2022**

FIGURE 9

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\MEM-006\11223416-GHD-0000-MEM-EN-0105_DE-006.dwg
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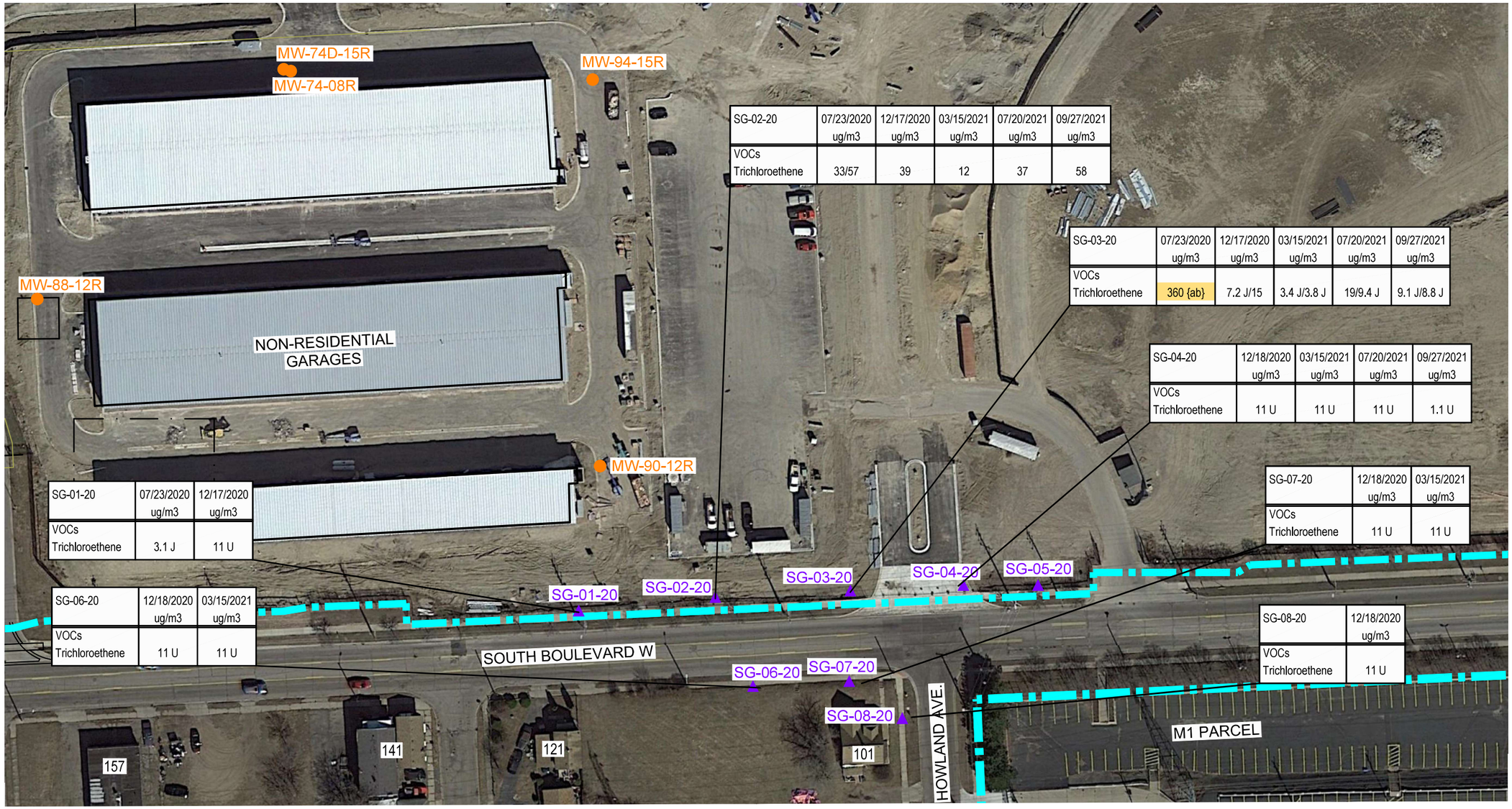

SG-01-20	07/23/2020 ug/m3	12/17/2020 ug/m3
VOCs Trichloroethene	3.1 J	11 U

SG-02-20	07/23/2020 ug/m3	12/17/2020 ug/m3	03/15/2021 ug/m3	07/20/2021 ug/m3	09/27/2021 ug/m3
VOCs Trichloroethene	33/57	39	12	37	58

SG-03-20	07/23/2020 ug/m3	12/17/2020 ug/m3	03/15/2021 ug/m3	07/20/2021 ug/m3	09/27/2021 ug/m3
VOCs Trichloroethene	360 {ab}	7.2 J/15	3.4 J/3.8 J	19/9.4 J	9.1 J/8.8 J

SG-04-20	12/18/2020 ug/m3	03/15/2021 ug/m3	07/20/2021 ug/m3	09/27/2021 ug/m3
VOCs Trichloroethene	11 U	11 U	11 U	1.1 U

SG-06-20	12/18/2020 ug/m3	03/15/2021 ug/m3
VOCs Trichloroethene	11 U	11 U

SG-07-20	12/18/2020 ug/m3	03/15/2021 ug/m3
VOCs Trichloroethene	11 U	11 U

SG-08-20	12/18/2020 ug/m3
VOCs Trichloroethene	11 U

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- RAILROAD
- MW-90-12R PROPOSED MONITORING WELL LOCATION
- SG-01-20 SOIL GAS PROBE LOCATION

	EGLE Site-Specific (1)	
	Residential Volatilization to Indoor Air Basement	NonResidential Volatilization to Indoor Air <50,000 ft², slab-on-grade
Trichloroethene (ug/m³)	67	67

Notes:

(1) EGLE Site-Specific Volatilization to Indoor Air Criteria (VIAC) for M1 Concourse Phase 4 - Building 16, March 2020.

U - Not detected at the associated reporting limit

J - Estimated concentration

0 40 80 ft

N

GHD

RACER
1 CONCOURSE DRIVE
PONTIAC, MICHIGAN

TCE SOIL GAS SAMPLING RESULTS
JULY 2020 THROUGH SEPTEMBER 2021

Project No. **11223416**
Date **August 2022**

FIGURE 10

Source: Image ©2021 Google (Imagery Date 3/19/2021)

Filename: N:\US\Detroit\Projects\563\11223416\Digital_Design\ACAD\Figures\MEM-006\11223416-GHD-0000-MEM-EN-0106_DE-006.dwg
Plot Date: 31 August 2022 11:02 AM

Tables

Table 1
Groundwater Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		EGLE Site Specific [1]		TMW81-08	MW-74-08	MW-74-08	MW-74-08	MW-74-08	MW-74-08	MW-74D-15	MW-74D-15
Sample Identification		**Table 2 - Residential**	**Table 1 - NonResidential**	**WG-17322-031008-MC-001**	**GW-17322-040708-CB-004**	**GW-17322-082812-DD-041**	**GW-17322-020113-DR-012**	**GW-17322-072914-DN-04**	**GW-17322-040615-DN-006**	**GW-17322-040615-DN-005**	**GW-17322-051315-EM-007**
Sample Date		**Volatilization to Indoor Air Basement a**	**Volatilization to Indoor Air <50,000 ft^2, slab-on-grade b**	**03/10/2008**	**04/07/2008**	**08/28/2012**	**02/01/2013**	**07/29/2014**	**04/06/2015**	**04/06/2015**	**05/13/2015**
Sample Type											
Volatile Organic Compounds (VOCs)	**Units**										
1,1,1-Trichloroethane	ug/L	11000 (EE) st	190000 (EE) st	4.0 U	1000	750	250	110	320	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	59 ca	1900 ca	4.0 UJ	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	9.9 nc	190 nc	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	81 ca	2500 ca	4.0 U	**230[a]**	54	30 J	5.0	26	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	200 nc	3900 nc	4.0 U	57 J	18	17 J	1.6	14	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L			20 U	380 U	25 U	5.0 U	5.0 U	25 U	5.0 U	5.0 U
1,2,4-Trimethylbenzene	ug/L	540 nc	10000 nc	4.0 U	77 U	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	3.6 ca	120 ca	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	25 ca	770 ca	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	380 nc	7400 nc	4.0 U	77 U	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
1,4-Dioxane	ug/L			--	--	--	--	120 UJ	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L			36 J	1900 U	120 U	25 U	25 UJ	120 U	25 UJ	25 U
2-Hexanone	ug/L			3.8 J	3800 U	250 U	50 U	50 U	250 U	50 UJ	50 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L			7.6 J	3800 U	250 U	50 U	50 U	250 U	50 U	50 U
Acetone	ug/L			180 J	1900 UJ	250 U	50 U	50 U	250 U	50 UJ	50 U
Benzene	ug/L	17 ca	520 ca	4.0 U	77 U	5.0 U	1.0 U	1.0 U	3.4 J	1.0 U	1.0 U
Bromodichloromethane	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Bromoform	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L			4.0 U	77 U	25 U	5.0 U	5.0 U	25 U	5.0 U	5.0 U
Carbon disulfide	ug/L			20 U	380 U	25 U	5.0 U	5.0 U	25 U	5.0 U	1.0 J
Carbon tetrachloride	ug/L			4.0 U	77 U	5.0 U	1.0 UJ	1.0 U	5.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	660 nc	13000 nc	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Chloroethane	ug/L	8000 nc	150000 nc	4.0 U	77 UJ	25 U	5.0 U	5.0 U	25 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	ug/L	9.2 ca	280 ca	4.0 U	**17 J[a]**	7.2	5.5 J	2.4	4.4 J	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	180 nc	3500 nc	4.0 UJ	77 UJ	25 U	5.0 U	5.0 U	25 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	58 nc	1100 nc	4.0 U	**76 J[a]**	26	13 J	2.1	12	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L			4.0 U	77 UJ	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1300 nc	25000 nc	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L			4.0 U	77 U	25 U	5.0 U	5.0 U	25 U	5.0 U	5.0 U
Dichlorodifluoromethane (CFC-12)	ug/L			4.0 U	77 U	25 U	5.0 U	5.0 U	25 U	5.0 U	5.0 U
Ethylbenzene	ug/L	55 ca	1700 ca	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	12 ca	380 ca	20 U	380 U	25 U	5.0 U	5.0 U	25 U	5.0 U	5.0 U
Methyl acetate	ug/L			40 U	770 U	50 U	10 U	10 U	50 U	10 U	10 U
Methyl cyclohexane	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	4900 ca	150000 ca	20 U	380 U	25 U	5.0 U	5.0 U	25 U	5.0 U	5.0 U
Methylene chloride	ug/L			20 U	380 U	25 U	5.0 U	5.0 U	25 U	5.0 UJ	5.0 U
Styrene	ug/L	680 ca	21000 ca	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	120 (EE) st	1600 (EE) st	4.0 U	77 UJ	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Toluene	ug/L	28000 nc	520000 (EE) st	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	240 nc	4600 nc	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L			4.0 U	77 UJ	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	7.5 (DD) dev	98 (DD) dev	4.0 U	**2100[ab]**	**2100[ab]**	**750[ab]**	**300[ab]**	**1100[ab]**	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L			4.0 U	77 UJ	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L			4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	1.1 (MM) mut	120 ca	4.0 U	77 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	1500 nc	28000 nc	8.0 U	150 U	15 U	3.0 U	3.0 U	15 U	3.0 U	3.0 U
Semi-Volatile Organic Compounds (SVOCs)											
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
2,4,5-Trichlorophenol	ug/L			--	9.0 U	5.0 U	5.0 U	--	--	--	--
2,4,6-Trichlorophenol	ug/L			--	7.2 U	5.0 U	4.0 U	--	--	--	--
2,4-Dichlorophenol	ug/L			--	3.6 U	10 U	10 U	--	--	--	--
2,4-Dimethylphenol	ug/L			--	3.6 U	5.0 U	5.0 U	--	--	--	--
2,4-Dinitrophenol	ug/L			--	9.0 U	5.0 U	5.0 U	--	--	--	--
2,4-Dinitrotoluene	ug/L			--	9.0 U	5.0 U	5.0 U	--	--	--	--
2,6-Dinitrotoluene	ug/L			--	9.0 U	5.0 U	5.0 U	--	--	--	--
2-Chloronaphthalene	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
2-Chlorophenol	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
2-Methylnaphthalene	ug/L	1600 nc	25000 (S) sol	--	0.36 U	5.0 U	5.0 U	--	--	--	--
2-Methylphenol	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
2-Nitroaniline	ug/L			--	3.6 U	20 U	20 U	--	--	--	--
2-Nitrophenol	ug/L			--	3.6 U	5.0 U	5.0 U	--	--	--	--
3,3'-Dichlorobenzidine	ug/L			--	1.8 U	5.0 U	1.0 U	--	--	--	--
3-Nitroaniline	ug/L			--	3.6 U	20 U	20 U	--	--	--	--

Table 1
Groundwater Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		EGLE Site Specific [1]		TMW81-08	MW-74-08	MW-74-08	MW-74-08	MW-74-08	MW-74-08	MW-74D-15	MW-74D-15
Sample Identification		**Table 2 - Residential**	**Table 1 - NonResidential**	**WG-17322-031008-MC-001**	**GW-17322-040708-CB-004**	**GW-17322-082812-DD-041**	**GW-17322-020113-DR-012**	**GW-17322-072914-DN-04**	**GW-17322-040615-DN-006**	**GW-17322-040615-DN-005**	**GW-17322-051315-EM-007**
Sample Date		**Volatilization to Indoor Air Basement**	**Volatilization to Indoor Air <50,000 ft^2, slab-on-grade**	**03/10/2008**	**04/07/2008**	**08/28/2012**	**02/01/2013**	**07/29/2014**	**04/06/2015**	**04/06/2015**	**05/13/2015**
Sample Type		**a**	**b**								
4,6-Dinitro-2-methylphenol	ug/L			--	9.0 U	20 U	20 U	--	--	--	--
4-Bromophenyl phenyl ether	ug/L			--	3.6 U	5.0 U	5.0 U	--	--	--	--
4-Chloro-3-methylphenol	ug/L			--	3.6 U	5.0 U	5.0 U	--	--	--	--
4-Chloroaniline	ug/L			--	3.6 U	20 U	10 U	--	--	--	--
4-Chlorophenyl phenyl ether	ug/L			--	3.6 U	5.0 U	5.0 U	--	--	--	--
4-Methylphenol	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
4-Nitroaniline	ug/L			--	3.6 U	20 U	20 U	--	--	--	--
4-Nitrophenol	ug/L			--	9.0 U	20 U	20 U	--	--	--	--
Acenaphthene	ug/L	3900 (S) sol	3900 (S) sol	--	0.66	5.0 U	5.0 U	--	--	--	--
Acenaphthylene	ug/L	65 (CC) nc	710 (CC) nc	--	0.36 U	5.0 U	5.0 U	--	--	--	--
Acetophenone	ug/L			--	1.8 U	1.0 U	1.0 U	--	--	--	--
Anthracene	ug/L	43 (S) sol	43 (S) sol	--	1.3	5.0 U	5.0 U	--	--	--	--
Atrazine	ug/L			--	1.8 U	10 U	3.0 U	--	--	--	--
Benzaldehyde	ug/L			--	1.8 U	1.0 U	1.0 U	--	--	--	--
Benzo(a)anthracene	ug/L	9.4 (S)(MM)sol	9.4 (S) sol	--	3.4	5.0 U	1.0 U	--	--	--	--
Benzo(a)pyrene	ug/L			--	3.3	5.0 U	1.0 U	--	--	--	--
Benzo(b)fluoranthene	ug/L			--	4.1	5.0 U	1.0 U	--	--	--	--
Benzo(g,h,i)perylene	ug/L			--	2.2	5.0 U	1.0 U	--	--	--	--
Benzo(k)fluoranthene	ug/L			--	1.7	5.0 U	1.0 U	--	--	--	--
Biphenyl (1,1-Biphenyl)	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
bis(2-Chloroethoxy)methane	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
bis(2-Chloroethyl)ether	ug/L			--	1.8 U	5.0 U	1.0 U	--	--	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L			--	0.90 J	5.0 U	5.0 U	--	--	--	--
Butyl benzylphthalate (BBP)	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
Caprolactam	ug/L			--	9.0 UJ	10 U	10 U	--	--	--	--
Carbazole	ug/L			--	0.97 J	10 U	10 U	--	--	--	--
Chrysene	ug/L			--	3.3	5.0 U	1.0 U	--	--	--	--
Dibenz(a,h)anthracene	ug/L			--	0.61	5.0 U	2.0 U	--	--	--	--
Dibenzofuran	ug/L			--	1.8 U	5.0 U	4.0 U	--	--	--	--
Diethyl phthalate	ug/L			--	1.8 U	20 U	5.0 U	--	--	--	--
Dimethyl phthalate	ug/L			--	1.8 U	20 U	5.0 U	--	--	--	--
Di-n-butylphthalate (DBP)	ug/L			--	0.73 J	5.0 U	5.0 U	--	--	--	--
Di-n-octyl phthalate (DnOP)	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
Fluoranthene	ug/L			--	8.4	5.0 U	1.0 U	--	--	--	--
Fluorene	ug/L	1700 (S) sol	1700 (S) sol	--	0.72	5.0 U	5.0 U	--	--	--	--
Hexachlorobenzene	ug/L			--	0.36 U	5.0 U	1.0 U	--	--	--	--
Hexachlorobutadiene	ug/L			--	1.8 U	5.0 U	1.0 U	--	--	--	--
Hexachlorocyclopentadiene	ug/L			--	9.0 U	20 U	5.0 U	--	--	--	--
Hexachloroethane	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L			--	2.0	5.0 U	2.0 U	--	--	--	--
Isophorone	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
Naphthalene	ug/L	92 ca	2900 ca	--	0.36 U	5.0 U	5.0 U	--	--	--	--
Nitrobenzene	ug/L			--	1.8 U	5.0 U	3.0 U	--	--	--	--
N-Nitrosodi-n-propylamine	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
N-Nitrosodiphenylamine	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
Pentachlorophenol	ug/L			--	9.0 U	20 U	1.0 U	--	--	--	--
Phenanthrene	ug/L	180 nc	1200 (S) sol	--	5.8	5.0 U	2.0 U	--	--	--	--
Phenol	ug/L			--	1.8 U	5.0 U	5.0 U	--	--	--	--
Pyrene	ug/L	140 (S) sol	140 (S) sol	--	6.3	5.0 U	5.0 U	--	--	--	--
Pyridine	ug/L			--	1.8 U	--	--	--	--	--	--
Metals											
Aluminum	ug/L			--	459	--	--	--	--	--	--
Antimony	ug/L			--	0.51 J	--	--	--	--	--	--
Arsenic	ug/L			--	5.0 U	--	--	--	--	--	--
Barium	ug/L			--	90.8 J	--	--	--	--	--	--
Beryllium	ug/L			--	1.0 U	--	--	--	--	--	--
Cadmium	ug/L			--	1.0 U	--	--	--	--	--	--
Calcium	ug/L			--	118000	--	--	--	--	--	--
Chromium	ug/L			--	2.4 J	--	--	--	--	--	--
Chromium III (trivalent)	ug/L			--	5 U	--	--	--	--	--	--
Chromium VI (hexavalent)	ug/L			--	10 U	--	--	--	--	--	--
Cobalt	ug/L			--	13.3	--	--	--	--	--	--
Copper	ug/L			--	4.1	--	--	--	--	--	--
Iron	ug/L			--	1250	--	--	--	--	--	--
Lead	ug/L			--	3.0 U	--	--	--	--	--	--
Magnesium	ug/L			--	29800	--	--	--	--	--	--
Manganese	ug/L			--	475	--	--	--	--	--	--
Mercury	ug/L	1.8 nc	34 nc	--	0.20 U	--	--	--	--	--	--
Nickel	ug/L			--	8.6 J	--	--	--	--	--	--
Potassium	ug/L			--	5990 J	--	--	--	--	--	--
Selenium	ug/L			--	5.0 U	--	--	--	--	--	--
Silver	ug/L			--	0.20 U	--	--	--	--	--	--

Table 1
Groundwater Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		EGLE Site Specific [1]		TMW81-08	MW-74-08	MW-74-08	MW-74-08	MW-74-08	MW-74-08	MW-74D-15	MW-74D-15
Sample Identification		Table 2 - Residential	Table 1 - NonResidential	WG-17322-031008-MC-001	GW-17322-040708-CB-004	GW-17322-082812-DD-041	GW-17322-020113-DR-012	GW-17322-072914-DN-04	GW-17322-040615-DN-006	GW-17322-040615-DN-005	GW-17322-051315-EM-007
Sample Date Sample Type		Volatilization to Indoor Air Basement a	Volatilization to Indoor Air <50,000 ft^2, slab-on-grade b	03/10/2008	04/07/2008	08/28/2012	02/01/2013	07/29/2014	04/06/2015	04/06/2015	05/13/2015
Sodium	ug/L			--	593000	--	--	--	--	--	--
Thallium	ug/L			--	1.0 U	--	--	--	--	--	--
Vanadium	ug/L			--	4.0 U	--	--	--	--	--	--
Zinc	ug/L			--	31.4	--	--	--	--	--	--
PCBs											
Aroclor-1016 (PCB-1016)	ug/L			--	0.10 U	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	ug/L			--	0.10 U	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	ug/L			--	0.10 U	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	ug/L			--	0.10 U	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	ug/L			--	0.10 U	--	--	--	--	--	--
Aroclor-1254 (PCB-1254)	ug/L			--	0.10 U	--	--	--	--	--	--
Aroclor-1260 (PCB-1260)	ug/L			--	0.10 U	--	--	--	--	--	--
Total PCBs	ug/L	0.031 (M) (CC) (J) ca	0.97 (CC) (J) ca	--	0.10 U	--	--	--	--	--	--
General Chemistry											
Cyanide (amenable)	ug/L			--	14	--	--	--	--	--	--
Field Parameters											
Conductivity, field	umhos/cm			--	4.08	--	--	--	--	--	--
Dissolved oxygen (DO), field	ug/L			--	12920	--	--	--	--	--	--
Oxidation reduction potential (ORP), field	millivolts			--	-27	--	--	--	--	--	--
pH, field	s.u.			--	7.71	--	--	--	--	--	--
Temperature, ambient	Deg F			--	50	--	--	--	--	--	--
Temperature, field	Deg C			--	15.5	--	--	--	--	--	--
Turbidity, field	NTU			--	40.9	--	--	--	--	--	--

Table 1
Groundwater Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		MW-90-12	MW-90-12	MW-90-12	MW-90-12	MW-91-12	MW-91-12	MW-91-12	MW-91-12
Sample Identification		**GW-17322-120712-CT-029**	**GW-17322-020113-DR-014**	**GW-17322-072914-DN-05**	**GW-17322-040715-DN-016**	**GW-17322-120612-CT-023**	**GW-17322-020113-DR-013**	**GW-17322-072914-DN-01**	**GW-17322-040615-DN-007**
Sample Date		**12/07/2012**	**02/01/2013**	**07/29/2014**	**04/07/2015**	**12/06/2012**	**02/01/2013**	**07/29/2014**	**04/06/2015**
Sample Type									
Volatile Organic Compounds (VOCs)	**Units**								
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	3.1	2.8	2.3	5.6
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	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	ug/L	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-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2,4-Trimethylbenzene	ug/L	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	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-Dibromoethane (Ethylene dibromide)	ug/L	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-Dichlorobenzene	ug/L	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-Dichloroethane	ug/L	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-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	ug/L	--	--	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	25 U	25 U	25 UJ	25 U	25 U	25 U	25 UJ	25 U
2-Hexanone	ug/L	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acetone	ug/L	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon disulfide	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	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-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Ethylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl acetate	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene chloride	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	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	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	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-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	**23[a]**	**22[a]**	**17[a]**	**37[a]**
Trichlorofluoromethane (CFC-11)	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	ug/L	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	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Semi-Volatile Organic Compounds (SVOCs)									
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2,4,5-Trichlorophenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2,4,6-Trichlorophenol	ug/L	--	4.0 U	--	--	--	4.0 U	--	--
2,4-Dichlorophenol	ug/L	--	10 U	--	--	--	10 U	--	--
2,4-Dimethylphenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2,4-Dinitrophenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2,4-Dinitrotoluene	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2,6-Dinitrotoluene	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2-Chloronaphthalene	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2-Chlorophenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2-Methylnaphthalene	ug/L	5.0 U	5.0 U	--	--	--	5.0 U	--	--
2-Methylphenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
2-Nitroaniline	ug/L	--	20 U	--	--	--	20 U	--	--
2-Nitrophenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
3,3'-Dichlorobenzidine	ug/L	--	1.0 U	--	--	--	1.0 U	--	--
3-Nitroaniline	ug/L	--	20 U	--	--	--	20 U	--	--

Table 1
Groundwater Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		MW-90-12	MW-90-12	MW-90-12	MW-90-12	MW-91-12	MW-91-12	MW-91-12	MW-91-12
Sample Identification		GW-17322-120712-CT-029	GW-17322-020113-DR-014	GW-17322-072914-DN-05	GW-17322-040715-DN-016	GW-17322-120612-CT-023	GW-17322-020113-DR-013	GW-17322-072914-DN-01	GW-17322-040615-DN-007
Sample Date		12/07/2012	02/01/2013	07/29/2014	04/07/2015	12/06/2012	02/01/2013	07/29/2014	04/06/2015
Sample Type									
4,6-Dinitro-2-methylphenol	ug/L	--	20 U	--	--	--	20 U	--	--
4-Bromophenyl phenyl ether	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
4-Chloro-3-methylphenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
4-Chloroaniline	ug/L	--	10 U	--	--	--	10 U	--	--
4-Chlorophenyl phenyl ether	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
4-Methylphenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
4-Nitroaniline	ug/L	--	20 U	--	--	--	20 U	--	--
4-Nitrophenol	ug/L	--	20 U	--	--	--	20 U	--	--
Acenaphthene	ug/L	5.0 U	5.0 U	--	--	--	5.0 U	--	--
Acenaphthylene	ug/L	5.0 U	5.0 U	--	--	--	5.0 U	--	--
Acetophenone	ug/L	--	1.0 U	--	--	--	1.0 U	--	--
Anthracene	ug/L	5.0 U	5.0 U	--	--	--	5.0 U	--	--
Atrazine	ug/L	--	3.0 U	--	--	--	3.0 U	--	--
Benzaldehyde	ug/L	--	1.0 U	--	--	--	1.0 U	--	--
Benzo(a)anthracene	ug/L	1.0 U	1.0 U	--	--	--	1.0 U	--	--
Benzo(a)pyrene	ug/L	0.58 J	1.0 U	--	--	--	1.0 U	--	--
Benzo(b)fluoranthene	ug/L	0.75 J	1.0 U	--	--	--	1.0 U	--	--
Benzo(g,h,i)perylene	ug/L	1.0 U	1.0 U	--	--	--	1.0 U	--	--
Benzo(k)fluoranthene	ug/L	1.0 U	1.0 U	--	--	--	1.0 U	--	--
Biphenyl (1,1-Biphenyl)	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
bis(2-Chloroethoxy)methane	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
bis(2-Chloroethyl)ether	ug/L	--	1.0 U	--	--	--	1.0 U	--	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Butyl benzylphthalate (BBP)	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Caprolactam	ug/L	--	10 U	--	--	--	10 U	--	--
Carbazole	ug/L	--	10 U	--	--	--	10 U	--	--
Chrysene	ug/L	1.0 U	1.0 U	--	--	--	1.0 U	--	--
Dibenz(a,h)anthracene	ug/L	2.0 U	2.0 U	--	--	--	2.0 U	--	--
Dibenzofuran	ug/L	--	4.0 U	--	--	--	4.0 U	--	--
Diethyl phthalate	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Dimethyl phthalate	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Di-n-butylphthalate (DBP)	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Di-n-octyl phthalate (DnOP)	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Fluoranthene	ug/L	1.2	1.0 U	--	--	--	1.0 U	--	--
Fluorene	ug/L	5.0 U	5.0 U	--	--	--	5.0 U	--	--
Hexachlorobenzene	ug/L	--	1.0 U	--	--	--	1.0 U	--	--
Hexachlorobutadiene	ug/L	--	1.0 U	--	--	--	1.0 U	--	--
Hexachlorocyclopentadiene	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Hexachloroethane	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Indeno(1,2,3-cd)pyrene	ug/L	5.0 U	2.0 U	--	--	--	2.0 U	--	--
Isophorone	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Naphthalene	ug/L	5.0 U	5.0 U	--	--	--	5.0 U	--	--
Nitrobenzene	ug/L	--	3.0 U	--	--	--	3.0 U	--	--
N-Nitrosodi-n-propylamine	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
N-Nitrosodiphenylamine	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Pentachlorophenol	ug/L	--	1.0 U	--	--	--	1.0 U	--	--
Phenanthrene	ug/L	2.0 U	2.0 U	--	--	--	2.0 U	--	--
Phenol	ug/L	--	5.0 U	--	--	--	5.0 U	--	--
Pyrene	ug/L	1.2 J	5.0 U	--	--	--	5.0 U	--	--
Pyridine	ug/L	--	--	--	--	--	--	--	--
Metals									
Aluminum	ug/L	--	--	--	--	--	--	--	--
Antimony	ug/L	--	--	--	--	--	--	--	--
Arsenic	ug/L	--	--	--	--	--	--	--	--
Barium	ug/L	--	--	--	--	--	--	--	--
Beryllium	ug/L	--	--	--	--	--	--	--	--
Cadmium	ug/L	--	--	--	--	--	--	--	--
Calcium	ug/L	--	--	--	--	--	--	--	--
Chromium	ug/L	--	--	--	--	--	--	--	--
Chromium III (trivalent)	ug/L	--	--	--	--	--	--	--	--
Chromium VI (hexavalent)	ug/L	--	--	--	--	--	--	--	--
Cobalt	ug/L	--	--	--	--	--	--	--	--
Copper	ug/L	--	--	--	--	--	--	--	--
Iron	ug/L	--	--	--	--	--	--	--	--
Lead	ug/L	--	--	--	--	--	--	--	--
Magnesium	ug/L	--	--	--	--	--	--	--	--
Manganese	ug/L	--	--	--	--	--	--	--	--
Mercury	ug/L	--	--	--	--	--	--	--	--
Nickel	ug/L	--	--	--	--	--	--	--	--
Potassium	ug/L	--	--	--	--	--	--	--	--
Selenium	ug/L	--	--	--	--	--	--	--	--
Silver	ug/L	--	--	--	--	--	--	--	--

Table 1
Groundwater Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		**MW-90-12**	**MW-90-12**	**MW-90-12**	**MW-90-12**	**MW-91-12**	**MW-91-12**	**MW-91-12**	**MW-91-12**
Sample Identification		**GW-17322-120712-CT-029**	**GW-17322-020113-DR-014**	**GW-17322-072914-DN-05**	**GW-17322-040715-DN-016**	**GW-17322-120612-CT-023**	**GW-17322-020113-DR-013**	**GW-17322-072914-DN-01**	**GW-17322-040615-DN-007**
Sample Date		**12/07/2012**	**02/01/2013**	**07/29/2014**	**04/07/2015**	**12/06/2012**	**02/01/2013**	**07/29/2014**	**04/06/2015**
Sample Type									
Sodium	ug/L	--	--	--	--	--	--	--	--
Thallium	ug/L	--	--	--	--	--	--	--	--
Vanadium	ug/L	--	--	--	--	--	--	--	--
Zinc	ug/L	--	--	--	--	--	--	--	--
PCBs									
Aroclor-1016 (PCB-1016)	ug/L	--	--	--	--	--	--	--	--
Aroclor-1221 (PCB-1221)	ug/L	--	--	--	--	--	--	--	--
Aroclor-1232 (PCB-1232)	ug/L	--	--	--	--	--	--	--	--
Aroclor-1242 (PCB-1242)	ug/L	--	--	--	--	--	--	--	--
Aroclor-1248 (PCB-1248)	ug/L	--	--	--	--	--	--	--	--
Aroclor-1254 (PCB-1254)	ug/L	--	--	--	--	--	--	--	--
Aroclor-1260 (PCB-1260)	ug/L	--	--	--	--	--	--	--	--
Total PCBs	ug/L	--	--	--	--	--	--	--	--
General Chemistry									
Cyanide (amenable)	ug/L	--	--	--	--	--	--	--	--
Field Parameters									
Conductivity, field	umhos/cm	--	--	--	--	--	--	--	--
Dissolved oxygen (DO), field	ug/L	--	--	--	--	--	--	--	--
Oxidation reduction potential (ORP), field	millivolts	--	--	--	--	--	--	--	--
pH, field	s.u.	--	--	--	--	--	--	--	--
Temperature, ambient	Deg F	--	--	--	--	--	--	--	--
Temperature, field	Deg C	--	--	--	--	--	--	--	--
Turbidity, field	NTU	--	--	--	--	--	--	--	--

Notes:
(1) EGLE Site-Specific Volatilization to Indoor Air Criteria (VIAC) for M1 Concourse Phase 4 - Building 16, March 2020.
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
Acceptable Air Values (AAV) endpoint basis used for SSVIAC: (ca) = Carcinogenetic; (nc) = Non-Carcinogenetic; (dev) = Developmental; (mut) = Mutagenic cancer; (st) = Short-term (i.e., less than chronic exposure).
(CC): Insufficient chemical-physical input parameters have been identified to allow the development of a health-based SSVIAC using standard methods. The health based SSVIAC for groundwater is developed based solely on the approach that the department uses for shallow groundwater. If groundwater detections are present, soil vapor may be the most appropriate media to evaluate risk posed from the VIAP.

(DD) - Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
(EE) - The acceptable air concentration (AAC) for the volatile hazardous substances is not derived using standard methods. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency

(J): Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.

(M) - The health based SSVIAC may be below target detection limits (TDL). In accordance with Sec. 20120a(10) when the TDL for a hazardous substance is greater than the developed health-based SSVIAC, the TDL is used to evaluate the risk posed from the pathway.

(MM) - Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based SSVIAC are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.

(S) - Calculated health-based SSVIAC exceeds the hazardous substance-specific water solubility limit; therefore, the water solubility limit is used to evaluate the risk posed from the pathway.

Table 2
Soil Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		EGLE[1]	Michigan Background Soil Survey[2]		EGLE Site Specific[3]		BH44-07 [4]	BH47-07	BH47-07	BH47-07	BH73-08	TMW81-08	BH83-08	BH84-08	BH84-08	BH85-08	BH86-08	TMW87-08	MW-74-08	MW-74-08
Sample Identification		Target Detection	Huron-Erie Lobe				SO-17322-120607-CB-128	SO-17322-100907-CB-009	SO-17322-100907-CB-010	SO-17322-100907-CB-011	SO-17322-031408-CB-067	SO-17322-030508-MC-BH8108	SO-17322-031208-CB-032	SO-17322-031208-CB-047	SO-17322-031208-CB-048	SO-17322-031308-CB-055	SO-17322-031208-CB-050	SO-17322-030608-MC-BH8708	SO-17322-031408-CB-063	SO-17322-031408-CB-065
Sample Date		Limit	Sand	Clay	Table 2 - Residential Volatilization to Indoor Air Basement	Table 1 - NonResidential Volatilization to Indoor Air <50,000 ft^2, slab-on-grade	12/06/2007	10/09/2007	10/09/2007	10/09/2007	03/14/2008	03/05/2008	03/12/2008	03/12/2008	03/12/2008 Duplicate	03/13/2008	03/12/2008	03/06/2008	03/14/2008	03/14/2008
Sample Type																				
Sample Depth					a	b	(0-2) ft BGS	(0-2) ft BGS	(8-10) ft BGS	(17.5-20) ft BGS	(8-10) ft BGS	(4-6) ft BGS	(10-12) ft BGS	(10-11.5) ft BGS	(10-11.5) ft BGS	(8-10) ft BGS	(8-10) ft BGS	(7-9) ft BGS	(0-2) ft BGS	(8-10) ft BGS
Volatile Organic Compounds (VOCs)	**Units**																			
1,1,1-Trichloroethane	ug/kg	50			450 (EE) st	7500 (EE) st	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 UJ	5.0 U	400	**1300 [a]**
1,1,2,2-Tetrachloroethane	ug/kg	50			2.7 (M) ca	77 ca	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
1,1,2-Trichloroethane	ug/kg	50			0.37 (M)nc	6.6 (M) nc	4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
1,1-Dichloroethane	ug/kg	50			2.6 (M) ca	74 ca	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	18 J	**74 J [a]**
1,1-Dichloroethene	ug/kg	50			12 (M) nc	220 nc	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	**110 [a]**	**260 [ab]**
1,2,4-Trichlorobenzene	ug/kg	250					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	230 U	5.0 U	260 U	460 U
1,2,4-Trimethylbenzene	ug/kg	100			150 nc	2600 nc	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	91 U	5.0 U	100 U	190 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/kg	10					9.2 U	--	--	8.3 U	9.1 U	8.2 U	11 U	7.4 U	8.3 U	8.1 U	230 UJ	9.9 U	260 U	460 U
1,2-Dibromoethane (Ethylene dibromide)	ug/kg	20			0.074 (M) ca	2.1 (M) ca	4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	230 U	5.0 U	260 U	460 U
1,2-Dichlorobenzene	ug/kg	100					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	0.28 J	4.2 U	4.1 U	91 U	5.0 U	100 U	190 U
1,2-Dichloroethane	ug/kg	50			0.82 (M) ca	23 (M) ca	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
1,2-Dichloropropane	ug/kg	50					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
1,3,5-Trimethylbenzene	ug/kg	100			100 nc	1800 nc	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	91 U	5.0 U	100 U	190 U
1,3-Dichlorobenzene	ug/kg	100					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	91 U	5.0 U	100 U	190 U
1,4-Dichlorobenzene	ug/kg	100					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	91 U	5.0 U	100 U	190 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/kg	750					9.6 J	--	--	17 U	18 U	3.1 J	3.4 J	15 U	17 U	16 U	690 U	20 U	790 UJ	1400 UJ
2-Hexanone	ug/kg	2500					18 UJ	--	--	17 U	18 U	16 U	21 U	15 U	17 U	16 U	2300 U	20 U	2600 UJ	4600 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/kg	2500					18 U	--	--	17 U	18 U	0.89 J	21 U	15 U	17 U	16 U	2300 U	20 U	2600 UJ	4600 U
Acetone	ug/kg	1000					33	--	--	17 U	18 U	16 UJ	20 J	15 U	17 U	16 U	690 U	20 UJ	790 UJ	1400 UJ
Benzene	ug/kg	50			1.7 (M) ca	47 (M) ca	0.55 J	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
Bromodichloromethane	ug/kg	100					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	91 UJ	5.0 U	100 UJ	190 UJ
Bromoform	ug/kg	100					4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	91 UJ	5.0 U	100 U	190 U
Bromomethane (Methyl bromide)	ug/kg	200					4.6 U	--	--	4.1 U	4.5 U	R	5.3 U	3.7 U	4.2 U	4.1 U	230 U	R	260 U	460 U
Carbon disulfide	ug/kg	250					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	230 U	5.0 U	260 U	460 U
Carbon tetrachloride	ug/kg	50					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 UJ	5.0 U	52 UJ	93 U
Chlorobenzene	ug/kg	50			82 nc	1400 nc	4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
Chloroethane	ug/kg	250			330 nc	5800 nc	4.6 U	--	--	4.1 U	4.5 U	R	5.3 U	3.7 U	4.2 U	4.1 U	230 U	R	260 UJ	460 UJ
Chloroform (Trichloromethane)	ug/kg	50			0.26 (M) ca	7.4 (M) ca	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
Chloromethane (Methyl chloride)	ug/kg	250			6.9 (M) nc	120 (M) nc	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	230 U	5.0 U	260 UJ	460 UJ
cis-1,2-Dichloroethene	ug/kg	50			2.1 (M) nc	37 (M) nc	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
cis-1,3-Dichloropropene	ug/kg						4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 UJ	5.0 U	52 U	93 U
Cyclohexane	ug/kg	500			320 (M) nc	5600 nc	9.2 U	--	--	8.3 U	9.1 U	8.2 U	11 U	7.4 U	8.3 U	8.1 U	1100 U	9.9 U	1300 UJ	2200 UJ
Dibromochloromethane	ug/kg	100					4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 UJ	5.0 U	52 U	93 U
Dichlorodifluoromethane (CFC-12)	ug/kg	250					4.6 U	--	--	4.1 U	4.5 UJ	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	91 U	5.0 U	100 UJ	190 U
Ethylbenzene	ug/kg	50			12 (M) ca	340 ca	4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
Isopropyl benzene	ug/kg	250			3.8 (M) ca	110 (M) ca	4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	230 U	5.0 U	260 U	460 U
Methyl acetate	ug/kg						R	--	--	8.3 U	9.1 U	R	11 U	7.4 U	8.3 U	8.1 U	1100 U	R	1300 U	2200 U
Methyl cyclohexane	ug/kg						9.2 U	--	--	8.3 U	9.1 U	8.2 U	11 U	7.4 U	8.3 U	8.1 U	1100 U	9.9 U	1300 UJ	2200 UJ
Methyl tert butyl ether (MTBE)	ug/kg	250			74 (M) ca	2100 ca	18 U	--	--	17 U	18 U	16 U	21 U	15 U	17 U	16 U	230 U	20 U	260 U	460 U
Methylene chloride	ug/kg	100					4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	230 U	5.0 U	260 U	460 U
Styrene	ug/kg	50			150 ca	4300 ca	4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 UJ	5.0 U	52 U	93 U
Tetrachloroethene	ug/kg	50			6.2 (EE) st	74 (EE) st	4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	33 J	93 U
Toluene	ug/kg	100			3700 nc	64000 (EE) st	0.36 J	--	--	4.1 U	4.5 U	1.0 J	5.3 U	0.21 J	4.2 U	4.1 U	91 U	0.37 J	100 U	190 U
trans-1,2-Dichloroethene	ug/kg	50			12 (M) nc	210 nc	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 U	5.0 U	52 U	93 U
trans-1,3-Dichloropropene	ug/kg						4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	46 UJ	5.0 U	52 U	93 U
Trichloroethene	ug/kg	50			0.33 (M)(DD)dev	4.0 (M)(DD)dev	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	0.47 J	4.2 U	4.1 U	22 J	**140 [ab]**	**1300 [ab]**	**7600 [ab]**
Trichlorofluoromethane (CFC-11)	ug/kg	100					4.6 UJ	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	91 U	5.0 U	100 UJ	190 U
Trifluorotrichloroethane (CFC-113)	ug/kg	250					4.6 U	--	--	4.1 U	4.5 U	R	5.3 U	3.7 U	4.2 U	4.1 U	230 U	R	260 U	460 U
Vinyl chloride	ug/kg	40			0.082 (MM)(M) mut	8.2 (M) ca	4.6 U	--	--	4.1 U	4.5 U	4.1 U	5.3 U	3.7 U	4.2 U	4.1 U	37 U	5.0 U	42 U	74 U
Xylenes (total)	ug/kg	150			280 nc	5000 nc	9.2 UJ	--	--	8.3 U	9.1 U	0.63 J	11 U	7.4 U	8.3 U	8.1 U	140 U	9.9 U	160 U	280 U
Semi-Volatile Organic Compounds (SVOCs)																				
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) ether)	ug/kg						120 U	--	--	110 U	120 U	110 U	120 U	110 U	110 U	110 U	110 U	120 U	110 U	--
2,4,5-Trichlorophenol	ug/kg	330					180 U	--	--	160 U	180 U	170 U	180 U	170 U	170 U	170 U	170 U	170 U	160 U	--
2,4,6-Trichlorophenol	ug/kg	330					180 U	--	--	160 U	180 U	170 U	180 U	170 U	170 U	170 U	170 U	170 U	160 U	--
2,4-Dichlorophenol	ug/kg	330					180 U	--	--	160 U	180 U	170 U	180 U	170 U	170 U	170 U	170 U	170 U	160 U	--
2,4-Dimethylphenol	ug/kg	330					180 U	--	--	160 U	180 U	170 U	180 U	170 U	170 U	170 U	170 U	170 U	160 U	--
2,4-Dinitrophenol	ug/kg						390 U	--	--	350 U	400 U	370 U	400 U	370 U	370 U	370 U	380 U	380 U	350 U	--
2,4-Dinitrotoluene	ug/kg	330					240 U	--	--	220 U	240 U	220 U	240 U	220 U	220 U	220 U	230 U	230 U	210 U	--
2,6-Dinitrotoluene	ug/kg	50					240 U	--	--	220 U	240 U	220 U	240 U	220 U	220 U	220 U	230 U	230 U	210 U	--
2-Chloronaphthalene	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
2-Chlorophenol	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
2-Methylnaphthalene	ug/kg	330			1700 nc	30000 nc	110	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--

Table 2
Soil Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		EGLE[1]	Michigan Background Soil Survey[2]		EGLE Site Specific[3]		BH44-07 [4]	BH47-07	BH47-07	BH47-07	BH73-08	TMW81-08	BH83-08	BH84-08	BH84-08	BH85-08	BH86-08	TMW87-08	MW-74-08	MW-74-08
Sample Identification		Target Detection	Huron-Erie Lobe				SO-17322-120607-CB-128	SO-17322-100907-CB-009	SO-17322-100907-CB-010	SO-17322-100907-CB-011	SO-17322-031408-CB-067	SO-17322-030508-MC-BH8108	SO-17322-031208-CB-032	SO-17322-031208-CB-047	SO-17322-031208-CB-048	SO-17322-031308-CB-055	SO-17322-031208-CB-050	SO-17322-030608-MC-BH8708	SO-17322-031408-CB-063	SO-17322-031408-CB-065
Sample Date		Limit	Sand	Clay	Table 2 - Residential Volatilization to Indoor Air Basement a	Table 1 - NonResidential Volatilization to Indoor Air <50,000 ft^2, slab-on-grade b	12/06/2007	10/09/2007	10/09/2007	10/09/2007	03/14/2008	03/05/2008	03/12/2008	03/12/2008	03/12/2008	03/13/2008	03/12/2008	03/06/2008	03/14/2008	03/14/2008
Sample Type															Duplicate					
Sample Depth							(0-2) ft BGS	(0-2) ft BGS	(8-10) ft BGS	(17.5-20) ft BGS	(8-10) ft BGS	(4-6) ft BGS	(10-12) ft BGS	(10-11.5) ft BGS	(10-11.5) ft BGS	(8-10) ft BGS	(8-10) ft BGS	(7-9) ft BGS	(0-2) ft BGS	(8-10) ft BGS
2-Methylphenol	ug/kg						240 U	--	--	220 U	240 U	220 U	240 U	220 U	220 U	220 U	230 U	230 U	210 U	--
2-Nitroaniline	ug/kg						240 U	--	--	220 U	240 U	220 U	240 U	220 U	220 U	220 U	230 U	230 U	210 U	--
2-Nitrophenol	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
3,3'-Dichlorobenzidine	ug/kg	2000					120 U	--	--	110 U	120 U	110 U	120 U	110 U	110 U	110 U	110 U	120 U	110 U	--
3-Nitroaniline	ug/kg						240 U	--	--	220 U	240 U	220 U	240 U	220 U	220 U	220 U	230 U	230 U	210 U	--
4,6-Dinitro-2-methylphenol	ug/kg	830					180 U	--	--	160 U	180 U	170 U	180 U	170 U	170 U	170 U	170 U	170 U	160 U	--
4-Bromophenyl phenyl ether	ug/kg						60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
4-Chloro-3-methylphenol	ug/kg	280					180 U	--	--	160 U	180 U	170 U	180 U	170 U	170 U	170 U	170 U	170 U	160 U	--
4-Chloroaniline	ug/kg						180 U	--	--	160 U	180 U	170 U	180 U	170 U	170 U	170 U	170 U	170 U	160 U	--
4-Chlorophenyl phenyl ether	ug/kg						60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
4-Methylphenol	ug/kg						240 U	--	--	220 U	240 U	220 U	240 U	220 U	220 U	220 U	230 U	230 U	210 U	--
4-Nitroaniline	ug/kg						240 U	--	--	220 U	240 U	220 U	240 U	220 U	220 U	220 U	230 U	230 U	210 U	--
4-Nitrophenol	ug/kg						390 U	--	--	350 U	400 U	370 U	400 U	370 U	370 U	370 U	380 U	380 U	350 U	--
Acenaphthene	ug/kg	330			200000 nc	3600000 nc	17	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Acenaphthylene	ug/kg	330			DATA	DATA	29	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Acetophenone	ug/kg	330					120 U	--	--	110 U	120 U	110 U	120 U	110 U	110 U	110 U	110 U	120 U	110 U	--
Anthracene	ug/kg	330			13000000 nc	220000000 nc	50	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Atrazine	ug/kg	50					240 U	--	--	220 U	240 U	220 U	240 U	220 U	220 U	220 U	230 U	230 U	210 U	--
Benzaldehyde	ug/kg						120 U	--	--	110 U	120 U	110 U	120 U	110 U	110 U	110 U	110 U	120 U	110 U	--
Benzo(a)anthracene	ug/kg	330			160000 (MM) mut	11000000 ca	180	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Benzo(a)pyrene	ug/kg	330					180	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Benzo(b)fluoranthene	ug/kg	330					260	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Benzo(g,h,i)perylene	ug/kg	330					140	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Benzo(k)fluoranthene	ug/kg	330					100	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Biphenyl (1,1-Biphenyl)	ug/kg						60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
bis(2-Chloroethoxy)methane	ug/kg						120 U	--	--	110 U	120 U	110 U	120 U	110 U	110 U	110 U	110 U	120 U	110 U	--
bis(2-Chloroethyl)ether	ug/kg	100					120 U	--	--	110 U	120 U	110 U	120 U	110 U	110 UJ	110 U	110 UJ	120 U	110 U	--
bis(2-Ethylhexyl)phthalate (DEHP)	ug/kg	330					60 U	--	--	54 U	61 U	28 J	140	26 J	56 U	56 U	57 U	30 J	53 U	--
Butyl benzylphthalate (BBP)	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Caprolactam	ug/kg	330					390 U	--	--	350 U	400 U	370 U	400 U	370 U	370 U	370 U	380 U	380 U	220 J	--
Carbazole	ug/kg	330					27 J	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Chrysene	ug/kg	330					230	--	--	7.2 U	8.1 U	8.8	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Dibenz(a,h)anthracene	ug/kg	330					38	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Dibenzofuran	ug/kg	330					34 J	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Diethyl phthalate	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Dimethyl phthalate	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Di-n-butylphthalate (DBP)	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Di-n-octyl phthalate (DnOP)	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Fluoranthene	ug/kg	330					410	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Fluorene	ug/kg	330			470000 nc	8300000 nc	23	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Hexachlorobenzene	ug/kg	330					8.0 U	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Hexachlorobutadiene	ug/kg	50					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Hexachlorocyclopentadiene	ug/kg	1000					390 U	--	--	350 U	400 U	370 U	400 U	370 U	370 U	370 U	380 U	380 U	350 U	--
Hexachloroethane	ug/kg	300					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Indeno(1,2,3-cd)pyrene	ug/kg	330					120	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Isophorone	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Naphthalene	ug/kg	330			67 (M) ca	1900 ca	76	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Nitrobenzene	ug/kg	330					120 U	--	--	110 U	120 U	110 U	120 U	110 U	110 U	110 U	110 U	120 U	110 U	--
N-Nitrosodi-n-propylamine	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
N-Nitrosodiphenylamine	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Pentachlorophenol	ug/kg	20					180 U	--	--	160 U	180 U	170 U	180 U	170 U	170 U	170 U	170 U	170 U	160 U	--
Phenanthrene	ug/kg	330			1700 nc	29000 nc	240	--	--	7.2 U	8.1 U	10	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Phenol	ug/kg	330					60 U	--	--	54 U	61 U	55 U	61 U	56 U	56 U	56 U	57 U	58 U	53 U	--
Pyrene	ug/kg	330			25000000 nc	440000000 nc	330	--	--	7.2 U	8.1 U	7.4 U	8.1 U	7.4 U	7.4 U	7.4 U	7.6 U	7.7 U	7.1 U	--
Pyridine	ug/kg	330					120 U	--	--	110 U	120 U	110 U	120 U	110 U	110 U	110 U	110 U	120 U	110 U	--

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PCC - Validation
Pontiac, Michigan

Sample Location		EGLE[1]	Michigan Background Soil Survey[2]		EGLE Site Specific[3]		BH44-07 [4]	BH47-07	BH47-07	BH47-07	BH73-08	TMW81-08	BH83-08	BH84-08	BH84-08	BH85-08	BH86-08	TMW87-08	MW-74-08	MW-74-08
Sample Identification		Target Detection	Huron-Erie Lobe				SO-17322-120607-CB-128	SO-17322-100907-CB-009	SO-17322-100907-CB-010	SO-17322-100907-CB-011	SO-17322-031408-CB-067	SO-17322-030508-MC-BH8108	SO-17322-031208-CB-032	SO-17322-031208-CB-047	SO-17322-031208-CB-048	SO-17322-031308-CB-055	SO-17322-031208-CB-050	SO-17322-030608-MC-BH8708	SO-17322-031408-CB-063	SO-17322-031408-CB-065
Sample Date		Limit	Sand	Clay	Table 2 - Residential Volatilization to Indoor Air Basement a	Table 1 - NonResidential Volatilization to Indoor Air <50,000 ft², slab-on-grade b	12/06/2007	10/09/2007	10/09/2007	10/09/2007	03/14/2008	03/05/2008	03/12/2008	03/12/2008	03/12/2008	03/13/2008	03/12/2008	03/06/2008	03/14/2008	03/14/2008
Sample Type															Duplicate					
Sample Depth							(0-2) ft BGS	(0-2) ft BGS	(8-10) ft BGS	(17.5-20) ft BGS	(8-10) ft BGS	(4-6) ft BGS	(10-12) ft BGS	(10-11.5) ft BGS	(10-11.5) ft BGS	(8-10) ft BGS	(8-10) ft BGS	(7-9) ft BGS	(0-2) ft BGS	(8-10) ft BGS
Metals																				
Aluminum	ug/kg	1000	8233000	16014000			5300000	--	--	3020000	5200000	6070000	10400000	5490000	5930000	6220000	4840000	4140000	1600000	--
Antimony	ug/kg	1000	8700	11500			460 J	--	--	74 J	45 J	47 J	140 J	64 J	67 J	180 UJ	R	51 J	170 UJ	--
Arsenic	ug/kg	2000	22800	22800			2000	4300	4100	11100	5600 J	3800 J	5200 J	4600 J	5000 J	4400 J	970 J	4200 J	2700 J	--
Barium	ug/kg	1000	172000	172000			92500 J	--	--	13900	28800	65600	83900	38100	38400	41100	38200	20400	6900	--
Beryllium	ug/kg	500	780	1000			190 UJ	--	--	170 U	190 U	320	1100	400 U	430 U	180 U	320 U	210	170 U	--
Cadmium	ug/kg	200	2000	2000			470	--	--	180	120 U	310	170 U	300	330	120 U	140 U	420	85 U	--
Calcium	ug/kg						7860000	--	--	53600000 J	86200000 J	101000000	2240000	57400000	73100000	71700000 J	95400000	93800000	39500000 J	--
Chromium	ug/kg	2000	30400	55600			12400 J	--	--	6500 J	8900 J	12100	18400	9700	10700	11300 J	9400	13600	3600 J	--
Chromium III (trivalent)	ug/kg	2000					10000 J	--	--	6000 J	8500	12100	18400	9700	10700	10700	9100	13600	430 U	--
Chromium VI (hexavalent)	ug/kg	2000					2400	--	--	860 U	350 J	890 U	970 U	890 U	890 U	550 J	300 J	920 U	4100	--
Cobalt	ug/kg	500	17900	26800			5800 J	--	--	5800 J	5800	4000	7200	5300	6400	6200	2200	5000	2200	--
Copper	ug/kg	1000	23500	46900			30400	--	--	20900 J	16600 J	11600	13400	12600	14300	12700 J	6800	15400	5100 J	--
Iron	ug/kg	5000	21359000	34311000			31900000	--	--	12000000	13400000	9780000	29300000	11000000	12700000	12500000	5980000	10800000	4370000	--
Lead	ug/kg	10000	24100	26200			78200	--	--	9000	6800 J	6400	9900	4200	5100	5500 J	3900	5400	2900 J	--
Lead - coarse fraction	ug/kg						139000	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead - fine fraction	ug/kg						237000	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead - total (calculated by fine/coarse fraction)	ug/kg						175000	--	--	--	--	--	--	--	--	--	--	--	--	--
Magnesium	ug/kg	4000	15008000	36049000			2410000 J	--	--	8530000 J	15700000 J	16500000	2210000	15400000	19400000	14500000 J	17300000	12100000	7430000 J	--
Manganese	ug/kg	1000	873000	935000			327000	--	--	334000	340000	222000	230000	338000	290000	277000	150000	365000 J	138000	--
Mercury	ug/kg	50	120	500	22 nc	390 nc	170	--	--	28 J	24 J	44 U	37 J	20 J	63	45 U	21 J	46 U	43 U	--
Nickel	ug/kg	1000	30000	43400			10300	--	--	12900 J	15000 J	11600 J	15400	14400	14800	15300 J	8000	13400	5500 J	--
Potassium	ug/kg						754000	--	--	555000	1110000	1280000	861000	1140000	1220000	1210000	668000	727000	239000 J	--
Selenium	ug/kg	200	1300	1200			160 J	--	--	100 J	450	890 J	900 J	340 J	360 J	320	300 J	1400 J	150 J	--
Silver	ug/kg	100	1200	1400			160	--	--	72 J	97 U	55 J	40 J	89 U	89 U	89 U	37 J	92 U	85 U	--
Sodium	ug/kg	10000	487000	519000			937000	--	--	108000 U	131000 U	323000	1850000	88900 U	108000	89000 U	105000	115000	85300 U	--
Thallium	ug/kg	500	2700	1700			160	--	--	260	240	110	110 U	160	170	150	120 U	200	67 J	--
Vanadium	ug/kg	1000	38500	59600			12800	--	--	11400 J	14400 J	14300	44600	14000	15700	14800 J	8200	12500	6100 J	--
Zinc	ug/kg	1000	85800	102000			92400	--	--	63400 J	43500	20400 J	43100 J	35400 J	37400 J	31200	21400 J	29700	17100	--
PCBs																				
Aroclor-1016 (PCB-1016)	ug/kg						39 U	--	--	35 U	40 U	37 U	40 U	37 U	37 U	37 U	38 U	38 U	35 U	--
Aroclor-1221 (PCB-1221)	ug/kg						39 U	--	--	35 U	40 U	37 U	40 U	37 U	37 U	37 U	38 U	38 U	35 U	--
Aroclor-1232 (PCB-1232)	ug/kg						39 U	--	--	35 U	40 U	37 U	40 U	37 U	37 U	37 U	38 U	38 U	35 U	--
Aroclor-1242 (PCB-1242)	ug/kg						39 U	--	--	35 U	40 U	37 U	40 U	37 U	37 U	37 U	38 U	38 U	35 U	--
Aroclor-1248 (PCB-1248)	ug/kg						39 U	--	--	35 U	40 U	37 U	40 U	37 U	37 U	37 U	38 U	38 U	35 U	--
Aroclor-1254 (PCB-1254)	ug/kg						39 U	--	--	35 U	40 U	37 U	40 U	37 U	37 U	37 U	38 U	38 U	35 U	--
Aroclor-1260 (PCB-1260)	ug/kg						39 U	--	--	35 U	40 U	37 U	40 U	37 U	37 U	37 U	38 U	38 U	35 U	--
Total PCBs	ug/kg	330			DATA	DATA	39 U	--	--	35 U	40 U	37 U	40 U	37 U	37 U	37 U	38 U	38 U	35 U	--
General Chemistry																				
Cyanide (total)	ug/kg	100					240 U	--	--	220 U	240 U	1200	240 U	220 U	220 U	220 U	230 U	210 J	210 U	--
Total solids	%						98.9 D 83.8 D 98.6	91.0	86.6	93.0	82.6	90.4	82.5	90.0	90.0	89.8	87.6	86.5	93.8	86.2

Notes:
(1) EGLE Remediation and Redevelopment Division, EGLE Published List of Target Detection Limits Designated Analytical Methods, March 2016.
(2) EGLE 2005 Michigan Background Soil Survey (MBSS), Huron-Erie Lobe, 2015 Update. Values selected using EGLE's Soil Background and Use of the 2005 Michigan Background Soil Survey reference guide, dated September 2019.
(3) EGLE Site-Specific Volatilization to Indoor Air Criteria (VIAC) for M1 Concourse Phase 4 - Building 16, March 2020.
(4) Soil sample was compared to the clay Huron-Erie MBSS values after soil type was verified via soil boring. Remaining soil sample results were compared to the lower of the sand/clay MBSS values to be conservative.
Acceptable Air Values (AAV) endpoint basis used for SSVIAC: (ca) = Carcinogenetic; (nc) = Non-Carcinogenetic; (dev) = Developmental; (mut) = Mutagenic cancer; (st) = Short-term (i.e., less than chronic exposure).
U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.
R - Rejected.
DATA - Insufficient physical chemical parameters to calculate a health based SSVIAC for specified media. If detections are present in specified media, health- based soil vapor SSVIAC should be used to evaluate risk.
(DD) - Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
(EE) - The acceptable air concentration (AAC) for the volatile hazardous substances is not derived using standard methods. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or EGLE's Air Quality Division acute initial threshold screening level (ITSL).
(M) - The health based SSVIAC may be below target detection limits (TDL). In accordance with Sec. 20120a(10) when the TDL for a hazardous substance is greater than the developed health-based SSVIAC, the TDL is used to evaluate the risk posed from the pathway.
(MM) - Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based SSVIAC are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
(NR) - The hazardous substance has not been previously evaluated by the Remediation and Redevelopment Division Toxicology Unit. The identification, collection, and evaluation of toxicological literature and chemical-physical data cannot be completed within the timeframe requested.

Table 3
Soil Gas Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		EGLE Site Specific [1]		SG-01-20	SG-01-20	SG-02-20	SG-02-20	SG-02-20	SG-02-20	SG-02-20	SG-02-20	SG-03-20
Sample Identification		**Table 2 - Residential**	**Table 1 - NonResidential**	**SG-17322-072320-DA-003**	**SG-17322-121720-SK-003**	**SG-17322-072320-DA-002**	**SG-17322-072320-DA-001**	**SG-17322-121720-SK-002**	**SG-11223416-031521-SK-004**	**SG-11223416-072021-SK-001**	**SG-11223416-092721-SK-002**	**SG-17322-072320-DA-004**
Sample Date		**Volatilization to Indoor Air**	**Volatilization to Indoor Air**	**07/23/2020**	**12/17/2020**	**07/23/2020**	**07/23/2020**	**12/17/2020**	**03/15/2021**	**07/20/2021**	**09/27/2021**	**07/23/2020**
Sample Type		**Basement a**	**<50.000 ft². slab-on-grade b**				**Duplicate**					
Volatile Organic Compounds (VOCs)	**Units**											
1,1,1-Trichloroethane	ug/m3	170000 (EE) st	230000 (EE) st	5.7 J	11 U	7.1 J	12	6.3 J	4.5 J	12	15	32 J
1,1,2,2-Tetrachloroethane	ug/m3	15 ca	34 ca	14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	55 U
1,1,2-Trichloroethane	ug/m3	7.0 nc	10 nc	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	44 U
1,1-Dichloroethane	ug/m3	530 ca	1200 ca	8.1 U	8.1 U	1.6 J	2.1 J	8.1 U	8.1 U	8.1 U	8.1 U	32 U
1,1-Dichloroethene	ug/m3	7000 nc	10000 nc	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	32 U
1,2,4-Trichlorobenzene	ug/m3			150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	590 U
1,2,4-Trimethylbenzene	ug/m3	2100 nc	3100 nc	4.2 JB	9.8 U	3.9 JB	6.7 JB	9.8 U	9.8 U	9.8 U	9.8 U	7.1 JB
1,2-Dibromoethane (Ethylene dibromide)	ug/m3	1.4 ca	3.3 ca	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	61 U
1,2-Dichlorobenzene	ug/m3			12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	48 U
1,2-Dichloroethane	ug/m3	33 ca	77 ca	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	32 U
1,2-Dichloropropane	ug/m3			9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	37 U
1,2-Dichlorotetrafluoroethane (CFC 114)	ug/m3			14 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	56 U
1,3,5-Trimethylbenzene	ug/m3	2100 nc	3100 nc	0.94 J	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	39 U
1,3-Dichlorobenzene	ug/m3			12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	48 U
1,4-Dichlorobenzene	ug/m3			12 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	48 U
1,4-Dioxane	ug/m3			180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	720 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/m3			170	29 U	11 J	15 J	29 U	29 U	29 U	23 J	120 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/m3			20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	82 U
Acetone	ug/m3			100 J	120 U	75 J	86 J	120 U	22 J	120 U	120 U	480 U
Benzene	ug/m3	110 ca	260 ca	4.1 J	6.4 U	3.1 J	4.1 J	6.4 U	6.4 U	6.4 U	6.4 U	5.2 J
Benzyl chloride	ug/m3			41 U	41 U	41 U	41 U	41 U	41 U	41 U	41 U	170 U
Bromodichloromethane	ug/m3			13 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	54 U
Bromoform	ug/m3			21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	83 U
Bromomethane (Methyl bromide)	ug/m3			7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	31 U
Carbon disulfide	ug/m3			10 J	16 U	6.9 J	8.9 J	5.2 J	5.2 J	5.7 J	4.9 J	19 J
Carbon tetrachloride	ug/m3			13 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	50 U
Chlorobenzene	ug/m3	1700 nc	2600 nc	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	37 U
Chloroethane	ug/m3	140000 nc	200000 nc	21 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	84 U
Chloroform (Trichloromethane)	ug/m3	37 ca	87 ca	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	39 U
Chloromethane (Methyl chloride)	ug/m3	3100 nc	4600 nc	1.2 J	10 U	1.4 J	10 U	10 U	10 U	10 U	10 U	41 U
cis-1,2-Dichloroethene	ug/m3	280 nc	410 nc	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	9.0 J
cis-1,3-Dichloropropene	ug/m3			9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	36 U
Cyclohexane	ug/m3	210000 nc	310000 nc	3.0 J	17 U	5.0 J	6.6 J	17 U	21	17 U	17 U	7.5 J
Dibromochloromethane	ug/m3			17 U	17 U	17 U	17 U	17 U	17 U	17 U	17 U	68 U
Dichlorodifluoromethane (CFC-12)	ug/m3			25 U	25 U	3.5 J	4.3 J	3.0 J	3.4 J	25 U	25 U	99 U
Ethylbenzene	ug/m3	340 ca	800 ca	3.7 JB	1.7 J	3.9 JB	4.0 JB	1.9 J	3.1 J	8.7 U	8.7 U	10 JB
Hexachlorobutadiene	ug/m3			210 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	850 U
Hexane	ug/m3	24000 nc	36000 nc	31	28 U	14 J	15 J	28 U	28 U	28 U	28 U	96 J
Isopropyl alcohol	ug/m3	7000 nc	10000 nc	120 U	120 U	120 U	3.8 J	120 U	4.4 J	120 U	120 U	490 U
Isopropyl benzene	ug/m3	81 ca	190 ca	39 U	39 U	39 U	39 U	39 U	39 U	39 U	39 U	160 U
m&p-Xylenes	ug/m3			9.5 J	35 U	9.7 J	11 J	35 U	8.7 J	35 U	35 U	11 J
Methyl tert butyl ether (MTBE)	ug/m3	3300 ca	7700 ca	36 U	36 U	36 U	36 U	36 U	36 U	36 U	36 U	140 U
Methylene chloride	ug/m3			17 U	17 U	17 U	17 U	17 U	17 U	17 U	17 U	69 U
Naphthalene	ug/m3	25 ca	59 ca	26 U	26 U	26 U	26 U	26 U	26 U	26 U	26 U	100 U
o-Xylene	ug/m3			4.6 JB	2.1 J	4.3 JB	5.4 JB	1.0 J	2.9 J	5.9 J	8.7 U	9.7 JB
Styrene	ug/m3	1500 ca	3500 ca	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	2.4 JB	8.5 U	8.5 U	34 U
Tetrachloroethene	ug/m3	1400 (EE) st	1400 (EE) st	14 U	14 U	14 U	14 U	14 U	14 U	14 U	3.0 J	8.0 J
Tetrahydrofuran	ug/m3			150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	590 U
Toluene	ug/m3	170000 nc	250000 (EE) st	13 B	7.5 U	8.2 B	10 B	2.1 J	5.2 J	4.7 J	7.5 U	13 JB
trans-1,2-Dichloroethene	ug/m3	2800 nc	4100 nc	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	32 U
trans-1,3-Dichloropropene	ug/m3			9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	36 U
Trichloroethene	ug/m3	67 (DD) dev	67 (DD) dev	3.1 J	11 U	33	57	39	12	37	58	36[ab]
Trichlorofluoromethane (CFC-11)	ug/m3			870	590	240	380	250	380	470	410	5200
Trifluorotrichloroethane (CFC-113)	ug/m3			15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	61 U
Vinyl acetate	ug/m3			180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	700 U
Vinyl bromide (Bromoethene)	ug/m3			8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	35 U
Vinyl chloride	ug/m3	54 (MM) mut	450 ca	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	20 U

Notes:
[1]EGLE Site-Specific Volatilization to Indoor Air Criteria (VIAC) for M1 Concourse Phase 4 - Building 16, March 20
U - Not detected at the associated reporting limit.
J - Estimated concentration.
B - Result detected in associated method blank.

Acceptable Air Values (AAV) endpoint basis used for SSVIAC: (ca) = Carcinogenetic; (nc) = Non-Carcinogenetic; (dev) = Developmental; (mut) = Mutagenic cancer; (st) = Short-term (i.e., less than chronic exposure).

(DD) - Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may oc
full-term exposure.

Table 3
Soil Gas Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		EGLE Site Specific [1]		SG-01-20	SG-01-20	SG-02-20	SG-02-20	SG-02-20	SG-02-20	SG-02-20	SG-02-20	SG-03-20
Sample Identification		Table 2 - Residential	Table 1 - NonResidential	SG-17322-072320-DA-001	SG-17322-121720-SK-001	SG-17322-072320-DA-002	SG-17322-072320-DA-003	SG-17322-121720-SK-002	SG-11223416-031521-SK-004	SG-11223416-072021-SK-001	SG-11223416-092721-SK-002	SG-17322-072320-DA-004
Sample Date		Volatilization to Indoor Air	Volatilization to Indoor Air	07/23/2020	12/17/2020	07/23/2020	07/23/2020	12/17/2020	03/15/2021	07/20/2021	09/27/2021	07/23/2020
Sample Type		Basement	<50.000 ft^2. slab-on-grade				Duplicate					
	Units	a	b									

(EE) - The acceptable air concentration (AAC) for the volatile hazardous substances is not derived using standard methods. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk l Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or EGLE's Air Quality Division acute initial threshold screening level (ITSL).

(MM) - Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based SSVIAC are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.

Table 3
Soil Gas Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-04-20	SG-04-20	SG-04-20	SG-04-20
Sample Identification		SG-17322-121720-SK-003	SG-17322-121720-SK-004	SG-11223416-031521-SK-002	SG-11223416-031521-SK-003	SG-11223416-072021-SK-002	SG-11223416-072021-SK-003	SG-11223416-092721-SK-003	SG-11223416-092721-SK-004	SG-17322-121820-SK-005	SG-11223416-031521-SK-001	SG-11223416-072021-SK-004	SG-11223416-092721-SK-001
Sample Date		12/17/2020	12/17/2020	03/15/2021	03/15/2021	07/20/2021	07/20/2021	09/27/2021	09/27/2021	12/18/2020	03/15/2021	07/20/2021	09/27/2021
Sample Type			Duplicate		Duplicate		Duplicate		Duplicate				
Volatile Organic Compounds (VOCs)	**Units**												
1,1,1-Trichloroethane	ug/m3	25	31	12 J	12 J	50	32	25	27	9.3 J	10 J	18	1.9
1,1,2,2-Tetrachloroethane	ug/m3	14 U	14 U	21 U	21 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	1.4 U
1,1,2-Trichloroethane	ug/m3	11 U	11 U	16 U	16 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	1.1 U
1,1-Dichloroethane	ug/m3	8.2 U	8.2 U	12 U	12 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	0.81 U
1,1-Dichloroethene	ug/m3	8.0 U	8.0 U	12 U	12 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	0.79 U
1,2,4-Trichlorobenzene	ug/m3	150 U	150 U	220 U	220 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	15 U
1,2,4-Trimethylbenzene	ug/m3	9.9 U	9.9 U	15 U	15 U	4.1 J	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	0.98 U
1,2-Dibromoethane (Ethylene dibromide)	ug/m3	16 U	16 U	23 U	23 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	1.5 U
1,2-Dichlorobenzene	ug/m3	12 U	12 U	18 U	18 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	1.2 U
1,2-Dichloroethane	ug/m3	8.2 U	8.2 U	12 U	12 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	0.81 U
1,2-Dichloropropane	ug/m3	9.3 U	9.3 U	14 U	14 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	0.92 U
1,2-Dichlorotetrafluoroethane (CFC 114)	ug/m3	14 U	14 U	21 U	21 U	14 U	14 U	14 U	14 U	14 U	14 U	14 U	1.4 U
1,3,5-Trimethylbenzene	ug/m3	9.9 U	9.9 U	15 U	15 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	0.98 U
1,3-Dichlorobenzene	ug/m3	12 U	12 U	18 U	18 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	1.2 U
1,4-Dichlorobenzene	ug/m3	12 U	12 U	18 U	18 U	12 U	12 U	12 U	12 U	12 U	12 U	12 U	1.2 U
1,4-Dioxane	ug/m3	180 U	180 U	270 U	270 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	18 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/m3	30 U	30 U	44 U	44 U	18 J	29 U	35	69	29 U	29 U	17 J	2.9 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/m3	21 U	21 U	31 U	31 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	2.0 U
Acetone	ug/m3	120 U	120 U	34 J	180 U	120 U	120 U	120 U	120 U	120 U	24 J	120 U	12 U
Benzene	ug/m3	6.5 U	6.5 U	9.6 U	9.6 U	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U	6.4 U	0.64 U
Benzyl chloride	ug/m3	42 U	42 U	62 U	62 U	41 U	41 U	41 U	41 U	41 U	41 U	41 U	4.1 U
Bromodichloromethane	ug/m3	14 U	14 U	20 U	20 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	1.3 U
Bromoform	ug/m3	21 U	21 U	31 U	31 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	2.1 U
Bromomethane (Methyl bromide)	ug/m3	7.8 U	7.8 U	12 U	12 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	7.8 U	0.78 U
Carbon disulfide	ug/m3	16 U	16 U	23 U	23 U	16 U	16 U	16 U	16 U	16 U	16 U	16 U	1.6 U
Carbon tetrachloride	ug/m3	13 U	13 U	19 U	19 U	13 U	13 U	13 U	13 U	13 U	13 U	13 U	1.3 U
Chlorobenzene	ug/m3	9.3 U	9.3 U	14 U	14 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U	0.92 U
Chloroethane	ug/m3	21 U	21 U	32 U	32 U	21 U	21 U	21 U	21 U	21 U	21 U	21 U	2.1 U
Chloroform (Trichloromethane)	ug/m3	9.9 U	9.9 U	15 U	15 U	9.8 U	2.5 J	9.8 U	9.8 U	9.8 U	9.8 U	9.8 U	0.98 U
Chloromethane (Methyl chloride)	ug/m3	10 U	10 U	15 U	15 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1.0 U
cis-1,2-Dichloroethene	ug/m3	8.0 U	8.0 U	12 U	12 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	0.79 U
cis-1,3-Dichloropropene	ug/m3	9.2 U	9.2 U	14 U	14 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	0.91 U
Cyclohexane	ug/m3	17 U	17 U	7.1 J	6.5 J	17 U	17 U	17 U	17 U	17 U	17 U	17 U	1.7 U
Dibromochloromethane	ug/m3	17 U	17 U	26 U	26 U	17 U	17 U	17 U	17 U	17 U	17 U	17 U	1.7 U
Dichlorodifluoromethane (CFC-12)	ug/m3	8.7 J	8.6 J	4.5 J	5.8 J	6.1 J	25 U	25 U	25 U	3.4 J	3.3 J	25 U	2.5 U
Ethylbenzene	ug/m3	8.8 U	2.7 J	4.1 J	2.2 J	8.7 U	8.7 U	8.7 U	8.7 U	2.1 J	2.5 J	8.7 U	0.87 U
Hexachlorobutadiene	ug/m3	220 U	220 U	320 U	320 U	210 U	210 U	210 U	210 U	210 U	210 U	210 U	21 U
Hexane	ug/m3	28 U	28 U	42 U	42 U	28 U	28 U	28 U	28 U	28 U	28 U	28 U	2.8 U
Isopropyl alcohol	ug/m3	120 U	120 U	180 U	180 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	12 U
Isopropyl benzene	ug/m3	40 U	40 U	59 U	59 U	39 U	39 U	39 U	39 U	39 U	39 U	39 U	3.9 U
m&p-Xylenes	ug/m3	35 U	35 U	14 J	7.2 J	35 U	35 U	35 U	35 U	35 U	9.5 J	35 U	3.5 U
Methyl tert butyl ether (MTBE)	ug/m3	36 U	36 U	54 U	54 U	36 U	36 U	36 U	36 U	36 U	36 U	36 U	3.6 U
Methylene chloride	ug/m3	18 U	18 U	26 U	26 U	17 U	17 U	17 U	17 U	17 U	17 U	17 U	1.7 U
Naphthalene	ug/m3	26 U	26 U	39 U	39 U	26 U	26 U	26 U	26 U	26 U	26 U	26 U	2.6 U
o-Xylene	ug/m3	8.8 U	2.7 J	4.1 J	2.6 J	7.0 J	8.7 U	8.7 U	8.7 U	3.1 J	1.5 J	8.7 U	0.87 U
Styrene	ug/m3	8.6 U	8.6 U	1.9 J	2.3 J	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	8.5 U	0.85 U
Tetrachloroethene	ug/m3	14 U	3.3 J	20 U	20 U	15	4.8 J	6.2 J	5.7 J	14 U	14 U	14 U	1.4 U
Tetrahydrofuran	ug/m3	150 U	150 U	220 U	220 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	15 U
Toluene	ug/m3	3.1 J	2.5 J	2.6 J	2.8 J	3.9 J	7.5 U	7.5 U	7.5 U	1.3 J	7.5 U	7.5 U	0.75 U
trans-1,2-Dichloroethene	ug/m3	8.0 U	8.0 U	12 U	12 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U	0.79 U
trans-1,3-Dichloropropene	ug/m3	9.2 U	9.2 U	14 U	14 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U	0.91 U
Trichloroethene	ug/m3	7.2 J	15	3.4 J	3.8 J	19	9.4 J	9.1 J	8.8 J	11 U	11 U	11 U	1.1 U
Trichlorofluoromethane (CFC-11)	ug/m3	5500	5700	2600	2600	5000	4300	3500	3600	100	90	130	16
Trifluorotrichloroethane (CFC-113)	ug/m3	15 U	15 U	23 U	23 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	1.5 U
Vinyl acetate	ug/m3	180 U	180 U	260 U	260 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	18 U
Vinyl bromide (Bromoethene)	ug/m3	8.8 U	8.8 U	13 U	13 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U	0.87 U
Vinyl chloride	ug/m3	5.2 U	5.2 U	7.7 U	7.7 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U	0.51 U

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Table 3
Soil Gas Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-03-20	SG-04-20	SG-04-20	SG-04-20	SG-04-20
Sample Identification		SG-17322-121720-SK-003	SG-17322-121720-SK-004	SG-11223416-031521-SK-002	SG-11223416-031521-SK-003	SG-11223416-072021-SK-002	SG-11223416-072021-SK-003	SG-11223416-092721-SK-003	SG-11223416-092721-SK-004	SG-17322-121820-SK-005	SG-11223416-031521-SK-001	SG-11223416-072021-SK-004	SG-11223416-092721-SK-001
Sample Date		12/17/2020	12/17/2020	03/15/2021	03/15/2021	07/20/2021	07/20/2021	09/27/2021	09/27/2021	12/18/2020	03/15/2021	07/20/2021	09/27/2021
Sample Type			Duplicate		Duplicate		Duplicate		Duplicate				
	Units												
level (MRL) develop													

Table 3
Soil Gas Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		SG-06-20	SG-06-20	SG-07-20	SG-07-20	SG-08-20
Sample Identification		SG-17322-121820-SK-006	SG-11223416-031521-SK-006	SG-17322-121820-SK-007	SG-11223416-031521-SK-005	SG-17322-121820-SK-008
Sample Date		12/18/2020	03/15/2021	12/18/2020	03/15/2021	12/18/2020
Sample Type						
	Units					
Volatile Organic Compounds (VOCs)						
1,1,1-Trichloroethane	ug/m3	11 U	2.5 J	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	ug/m3	14 U	14 U	14 U	14 U	14 U
1,1,2-Trichloroethane	ug/m3	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	ug/m3	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U
1,1-Dichloroethene	ug/m3	7.9 U	7.9 U	0.51 J	7.9 U	7.9 U
1,2,4-Trichlorobenzene	ug/m3	2.5 J	150 U	150 U	150 U	150 U
1,2,4-Trimethylbenzene	ug/m3	9.8 U	12	9.8 U	1.1 J	9.8 U
1,2-Dibromoethane (Ethylene dibromide)	ug/m3	15 U	15 U	15 U	15 U	15 U
1,2-Dichlorobenzene	ug/m3	12 U	12 U	12 U	12 U	12 U
1,2-Dichloroethane	ug/m3	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U
1,2-Dichloropropane	ug/m3	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U
1,2-Dichlorotetrafluoroethane (CFC 114)	ug/m3	14 U	14 U	14 U	14 U	14 U
1,3,5-Trimethylbenzene	ug/m3	9.8 U	5.0 J	9.8 U	9.8 U	9.8 U
1,3-Dichlorobenzene	ug/m3	12 U	12 U	12 U	12 U	12 U
1,4-Dichlorobenzene	ug/m3	12 U	12 U	12 U	12 U	12 U
1,4-Dioxane	ug/m3	180 U	180 U	180 U	180 U	180 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/m3	29 U	22 J	29 U	29 U	29 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/m3	20 U	20 U	20 U	20 U	20 U
Acetone	ug/m3	120 U	400	120 U	52 J	120 U
Benzene	ug/m3	11	5.4 J	9.4	6.4 U	7.6
Benzyl chloride	ug/m3	41 U	41 U	41 U	41 U	41 U
Bromodichloromethane	ug/m3	13 U	13 U	13 U	13 U	13 U
Bromoform	ug/m3	21 U	21 U	21 U	21 U	21 U
Bromomethane (Methyl bromide)	ug/m3	7.8 U	3.4 J	7.8 U	7.8 U	7.8 U
Carbon disulfide	ug/m3	29	33	51	16 U	9.2 J
Carbon tetrachloride	ug/m3	13 U	1.7 J	13 U	13 U	13 U
Chlorobenzene	ug/m3	9.2 U	9.2 U	9.2 U	9.2 U	9.2 U
Chloroethane	ug/m3	21 U	21 U	21 U	21 U	21 U
Chloroform (Trichloromethane)	ug/m3	9.8 U	9.7 U	9.8 U	9.8 U	9.8 U
Chloromethane (Methyl chloride)	ug/m3	1.3 J	6.3 J	10 U	10 U	10 U
cis-1,2-Dichloroethene	ug/m3	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
cis-1,3-Dichloropropene	ug/m3	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Cyclohexane	ug/m3	3.4 J	32	4.6 J	8.0 J	6.4 J
Dibromochloromethane	ug/m3	17 U	17 U	17 U	17 U	17 U
Dichlorodifluoromethane (CFC-12)	ug/m3	25 U	24 J	25 U	5.7 J	25 U
Ethylbenzene	ug/m3	8.9	21	8.0 J	8.3 J	4.8 J
Hexachlorobutadiene	ug/m3	210 U	210 U	210 U	210 U	210 U
Hexane	ug/m3	23 J	51	23 J	4.7 J	38
Isopropyl alcohol	ug/m3	120 U	46 J	120 U	10 J	120 U
Isopropyl benzene	ug/m3	39 U	2.3 J	39 U	39 U	39 U
m&p-Xylenes	ug/m3	10 J	72	7.9 J	32 J	4.2 J
Methyl tert butyl ether (MTBE)	ug/m3	36 U	36 U	36 U	36 U	36 U
Methylene chloride	ug/m3	17 U	54	17 U	4.8 J	17 U
Naphthalene	ug/m3	26 U	26 U	26 U	26 U	26 U
o-Xylene	ug/m3	6.5 J	26	3.3 J	11	1.4 J
Styrene	ug/m3	8.5 U	3.7 JB	8.5 U	3.1 JB	8.5 U
Tetrachloroethene	ug/m3	14 U	3.5 J	14 U	14 U	14 U
Tetrahydrofuran	ug/m3	150 U	150 U	150 U	150 U	150 U
Toluene	ug/m3	35	18	38	4.2 J	15
trans-1,2-Dichloroethene	ug/m3	7.9 U	7.9 U	7.9 U	7.9 U	7.9 U
trans-1,3-Dichloropropene	ug/m3	9.1 U	9.1 U	9.1 U	9.1 U	9.1 U
Trichloroethene	ug/m3	11 U	11 U	11 U	11 U	11 U
Trichlorofluoromethane (CFC-11)	ug/m3	11 U	150	11 U	170	11 U
Trifluorotrichloroethane (CFC-113)	ug/m3	15 U	15 U	15 U	15 U	15 U
Vinyl acetate	ug/m3	180 U	180 U	180 U	180 U	180 U
Vinyl bromide (Bromoethene)	ug/m3	8.7 U	8.7 U	8.7 U	8.7 U	8.7 U
Vinyl chloride	ug/m3	5.1 U	5.1 U	5.1 U	5.1 U	5.1 U

Table 3
Soil Gas Analytical Results for CSM Area
PCC - Validation
Pontiac, Michigan

Sample Location		SG-06-20	SG-06-20	SG-07-20	SG-07-20	SG-08-20
Sample Identification		SG-17322-121820-SK-006	SG-11223416-031521-SK-006	SG-17322-121820-SK-007	SG-11223416-031521-SK-005	SG-17322-121820-SK-008
Sample Date		12/18/2020	03/15/2021	12/18/2020	03/15/2021	12/18/2020
Sample Type						
	Units					

Attachments

Attachment A

M1 Concourse As-Built Drawings

GENERAL UTILITY NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PONTIAC AND OAKLAND COUNTY WATER RESOURCES COMMISSIONER.
2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND/OR OBTAIN ANY INFORMATION NECESSARY REGARDING THE PRESENCE OF UNDERGROUND UTILITIES, WHICH MIGHT AFFECT THIS JOB.
3. ALL TRENCHES UNDER OR WITHIN THREE (3) FEET OR THE FORTY-FIVE (45) DEGREE ZONE OF INFLUENCE LINE OF EXISTING AND/OR PROPOSED PAVEMENT, BUILDING PAD OR DRIVE APPROACH SHALL BE BACKFILLED WITH SAND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF MAXIMUM UNIT WEIGHT (ASTM D-1557). ALL OTHER TRENCHES TO BE COMPACTED TO 90% OR BETTER.
4. WHENEVER EXISTING MANHOLES OR SEWER PIPE ARE TO BE TAPPED, DRILL HOLES 4" CENTER TO CENTER, AROUND PERIPHERY OF OPENING TO CREATE A PLANE OF WEAKNESS JOINT BEFORE BREAKING SECTION OUT.
5. EXACT GRADES AND DEPTHS OF UTILITIES ARE TO BE CHECKED CLOSELY WITH THE FIELD ENGINEER PRIOR TO INSTALLATION.
6. REFER TO CITY OF PONTIAC AND OAKLAND COUNTY WRC STANDARD DETAIL SHEETS FOR ADDITIONAL INFORMATION.
7. UTILITY TRENCHES SHALL BE CONSTRUCTED IN A MANNER THAT PROHIBITS CONTAMINATION FROM MIGRATING OFFSITE. CONTRACTOR SHALL INSTALL MIGRATION DAMS ACROSS THE TRENCHES WHERE THE UTILITY TRENCHES MEET THE PROPERTY BOUNDARIES.
8. WATER TIGHT WRAP/SEALS SHALL BE INSTALLED ON ALL SEWERS JOINTS WHERE PERMANENT GROUNDWATER IS ENCOUNTERED. REFER TO "DUE CARE PLAN FOR CONSTRUCTION."

WATER MAIN NOTES:

1. ALL ON-SITE WATERMAINS, FIRE SUPPRESSION LINES AND DOMESTIC LEADS ARE PRIVATE. THE PUBLIC/PRIVATE JURISDICTION DIVISION OCCURS BETWEEN THE RIGHT-OF-WAY AND THE METER VAULT, SEE DETAIL SHEET C-7.8.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER (OCWRC).
3. EXPLORATORY EXCAVATION MAY BE NECESSARY TO VERIFY THE STUB SIZE OF WATER MAINS AT THE PROPOSED CONNECTIONS PRIOR TO FINAL APPROVALS. OCWRC WATER MAINTENANCE CAN AND WILL FIELD VERIFY THE VALVE SIZES BY EXERCISING THOSE VALVES.
4. REFER TO THE OCWRC WATER MAIN STANDARD DETAILS SHEETS FOR ADDITIONAL INFORMATION.
5. ALL NECESSARY CITY OF PONTIAC APPROVALS SHALL BE OBTAINED AS A CONDITION OF FINAL COUNTY APPROVAL.
6. OCWRC PERMIT IS REQUIRED.
7. OCWRC SERVICE CONNECTION PERMIT IS REQUIRED.
8. ALL PRIVATE GATE WELL LIDS SHALL SAY "WATER" ONLY.
9. ALL HYDRANTS SHALL BE PAINTED "RED" IN COLOR TO INDICATE "PRIVATE".

WATERMAIN BASIS OF DESIGN

INITIAL WATERMAIN	
Car Condominiums (Buildings 16-18)	
Units	86
Unit Factor	0.25 per unit
REU	21.5
Population (P) (3.2 PEOPLE/REU)	69 People
Average Flow (150 GPCPD)	10,350 G.P.D.
	0.016 C.F.S.
	0.010 M.G.D.
Design Max. Flow = (2*avg)	20,700 G.P.D.
Peak Flow (G.D.P.)	0.032 C.F.S.
Peak Flow (C.F.S.)	0.021 M.G.D.

ULTIMATE WATERMAIN	
Car Condominiums (Buildings 16-18)	
Units	86
Unit Factor	0.25 per unit
REU	21.5
Banquet Hall	10800 sf
Unit Factor	0.5 per 1000/sf
REU	5.4
Restaurant	11000 sf
Assume 12 seats per 1000 sf	132 seats
Unit Factor	0.13 per seat
REU	17.2
Total REU	44.1
Population (P) (3.2 PEOPLE/REU)	141 People
Average Flow (150 GPCPD)	21,150 G.P.D.
	0.033 C.F.S.
	0.021 M.G.D.
Design Max. Flow = (2*avg)	42,300 G.P.D.
Peak Flow (G.D.P.)	0.065 C.F.S.
Peak Flow (C.F.S.)	0.042 M.G.D.

STORM STRUCTURES			STORM STRUCTURES		
CB	2	(4' DIA./2' SUMP) RIM = 957.30 957.23; 12" E 950.10 950.33; 15" W 949.30 949.46	CB	11	(4' DIA./2' SUMP) RIM = 953.45 953.56; 8" E 949.63 949.66; 12" W 945.36 946.31
CB	3	(4' DIA./2' SUMP) RIM = 957.40 957.74; 12" E 951.01 951.10; 12" W 951.01 951.10	CB	12	(4' DIA./0' SUMP) RIM = 956.30 956.30; 15" E 952.04; 15" S 946.61 946.22
CB	4	(4' DIA./2' SUMP) RIM = 957.80 957.55; 12" SE 951.64 951.55; 12" W 951.44 951.30	CB	13	(4' DIA./2' SUMP) RIM = 956.00 956.24; 15" SE 949.69 949.46; 12" NW 947.89 947.70
CB	5	(4' DIA./2' SUMP) RIM = 956.80 956.74; 12" S 951.93 952.19; 12" E 952.80 953.29; 12" NW 951.93 952.19	CB	15	(4' DIA./2' SUMP) RIM = 958.10 958.08; 12" W 953.00 953.73
CB	6	(4' DIA./2' SUMP) RIM = 956.80 956.40; 12" S 952.34 952.65; 12" N 952.34 952.65	EX	123	(4' DIA./2' SUMP) RIM = 951.54 951.63; 15" E 945.80 946.08; 12" S 947.02 946.98; 18" W 944.32 944.38
CB	7	(4' DIA./2' SUMP) RIM = 957.50 957.39; 12" N 953.10 952.99	EX	153	(4' DIA./2' SUMP) RIM = 948.31 948.36; 15" N 944.00 X; 12" E 944.30 947.25; 18" SW 942.31 941.18
MH	8	(4' DIA./0' SUMP) RIM = 957.75 957.63; 15" E 953.24 952.78; 10" SE 951.07 950.63; 10" NE 951.22 950.63; 15" NW 950.64 950.98			
EX	10	(4' DIA./2' SUMP) RIM = 955.50 955.17; 15" SE 947.50 947.44; 12" N 947.32 947.34			

STORM CLEANOUTS	
25	C.O. IN BOX RIM. 957.87 8" W 955.32
26	C.O. IN BOX RIM. 957.95 6" W 955.36
50	C.O. IN BOX RIM. 958.30 10" E 951.50 10" SW 951.50
51	C.O. IN BOX RIM. 958.30 8" E 952.50 10" W 952.50
52	C.O. IN BOX RIM. 958.30 8" E 953.50 8" W 953.50
53	C.O. IN BOX RIM. 958.30 8" W 954.50
60	C.O. IN BOX RIM. 958.30 10" E 951.46 10" NW 951.46

STORM CLEANOUTS	
61	C.O. IN BOX RIM. 958.30 8" E 952.46 10" W 952.46
62	C.O. IN BOX RIM. 958.30 8" E 950.46 8" W 953.46
63	C.O. IN BOX RIM. 958.30 8" W 954.46
70	C.O. IN BOX RIM. 956.50 8" E 950.22 8" W 950.22
71	C.O. IN BOX RIM. 956.62 6" E 951.17 8" W 951.17
72	C.O. IN BOX RIM. 957.04 8" E 952.39 8" W 952.39
73	C.O. IN BOX RIM. 957.46 8" W 953.61

HYDRANTS	
a	HYDRANT ASSEMBLY F.G. = 957.53
b	HYDRANT ASSEMBLY F.G. = 959.00
c	HYDRANT ASSEMBLY F.G. = 957.86
d	HYDRANT ASSEMBLY F.G. = 959.14

WATER MAIN STRUCTURES	
e	8" GV IN WELL RIM = 957.58 957.65
f	8" GV IN WELL RIM = 958.31 958.22
g	6" VALVE IN BOX RIM = 958.34
h	2" STOP BOX RIM = 958.34
i	6" VALVE IN BOX RIM = 958.15
j	2" STOP BOX RIM = 958.14
k	6" VALVE IN BOX RIM = 958.35
l	2" STOP BOX RIM = 958.35
m	3" STOP BOX RIM = 958.35

SANITARY STRUCTURES	
B	MH (4' DIA.) RIM = 957.79 957.78; 8" W 948.89 948.87; 6" S 948.89 948.93; 8" E 948.79 948.86

SANITARY CLEANOUTS	
C	C.O. IN BOX RIM. 958.25 6" W 949.57 6" SE 949.57
D	C.O. IN BOX RIM. 958.18 6" W 950.17 6" N 950.17
F	C.O. IN BOX RIM. 958.57 6" W 949.44 6" E 949.44
G	C.O. IN BOX RIM. 958.40 8" E 950.07 6" W 950.07
H	C.O. IN BOX RIM. 959.70 6" SE 951.22 6" NW 951.22
I	C.O. IN BOX RIM. 959.50 6" SE 952.43 6" N 952.43

GRAPHIC SCALE

−40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

- IRON FOUND
- IRON SET
- NAIL FOUND
- NAIL & CAP SET
- % BRASS PLUG SET
- MONUMENT FOUND
- MONUMENT SET
- SEC. CORNER FOUND
- R RECORDED
- M MEASURED
- C CALCULATED

EXISTING	PROPOSED
ELEC, PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE	
UNDERGROUND CABLE TV, CATV PEDESTAL	
TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE	
ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE	
GAS MAIN, VALVE & GAS LINE MARKER	
WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE	
SANITARY SEWER, CLEANOUT & MANHOLE	
STORM SEWER, CLEANOUT & MANHOLE	
COMBINED SEWER & MANHOLE	
SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN	
POST INDICATOR VALVE	
WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF	
MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE	
UNIDENTIFIED STRUCTURE	
956.06 SPOT ELEVATION	671.31
670 CONTOUR LINE	671
FENCE	
GUARD RAIL	
STREET LIGHT	
SIGN	
CONCRETE	STD DUTY / HEAVY DUTY / R.O.W. ONLY
ASPHALT	STD DUTY / HEAVY DUTY / R.C.&C. ASPHALT
GRAVEL	

N

No.	BY	CHK	DESCRIPTION	DATE
1	DSK	JBT	FEB. OCWRC REVIEW/EMAIL DATED 10/01/19	10/29/19
2	DSK	JBT	FEB. LETTER DATED 9/26/19 RED SET	10/29/19
3	DSK	JBT	PER OCWRC REVIEW DATED 12/6/19	12/9/19
4	DSK	JBT	ADDENDUM No.1	1/10/2020
5	DSK	JBT	BLUE-N.No.3	1/29/2020
6	DSK	JBT	BLUE-N.No.2	2/3/2020
7	DSK	JBT	PER CITY REVIEW, DATED 2/24/20 - NO CHANGES	2/24/20
8	DSK	JBT	BLUE-N.No.1	4/30/2020

REVISIONS

CAUTION!!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE UTILITIES COMPANIES CONCERNED FOR ESTABLISHING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

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website: www.peainc.com

M1 CONCOURSE, LLC
230 DANES STREET, SUITE 300
BIRMINGHAM, MICHIGAN 48009

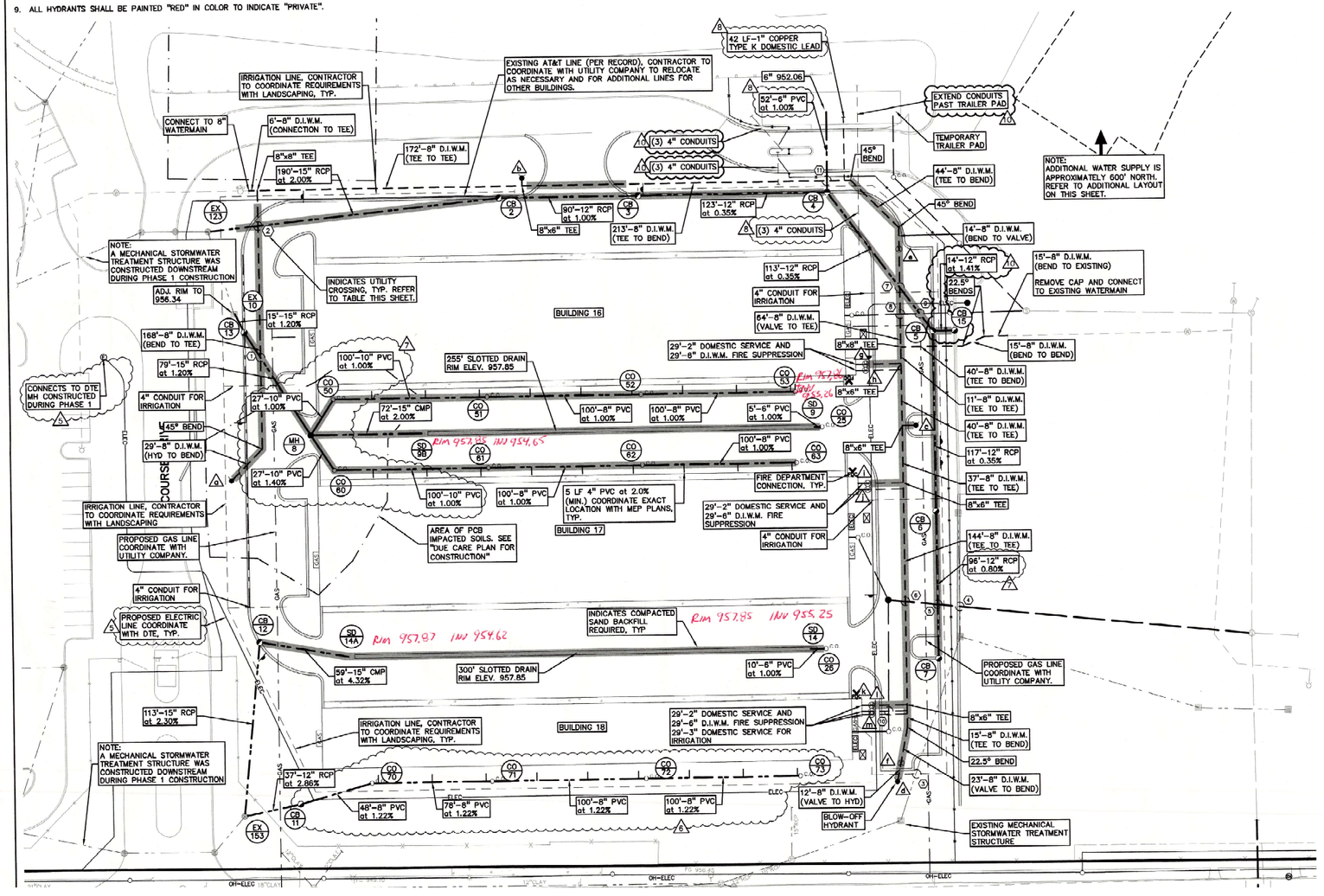
UTILITY PLAN
M1 CONCOURSE - PHASE 4
45369 WOODWARD AVENUE
CITY OF PONTIAC, MICHIGAN

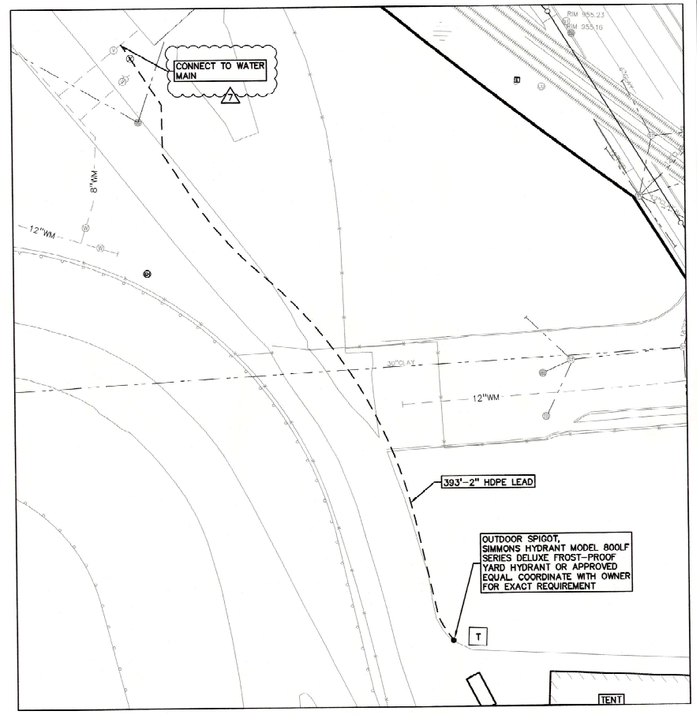
DES. DSK | DN. DSK | SUR. KTR | P.M. JBT
S:\PROJECTS\2013\2013139 M1 CONCOURSE - #4\Dwg\Construction\Phase 4\M1C-4 01-13139.dwg

ORIGINAL ISSUE DATE:
AUGUST 20, 2019

PEA JOB NO. 2013-139

SCALE: 1" = 40'



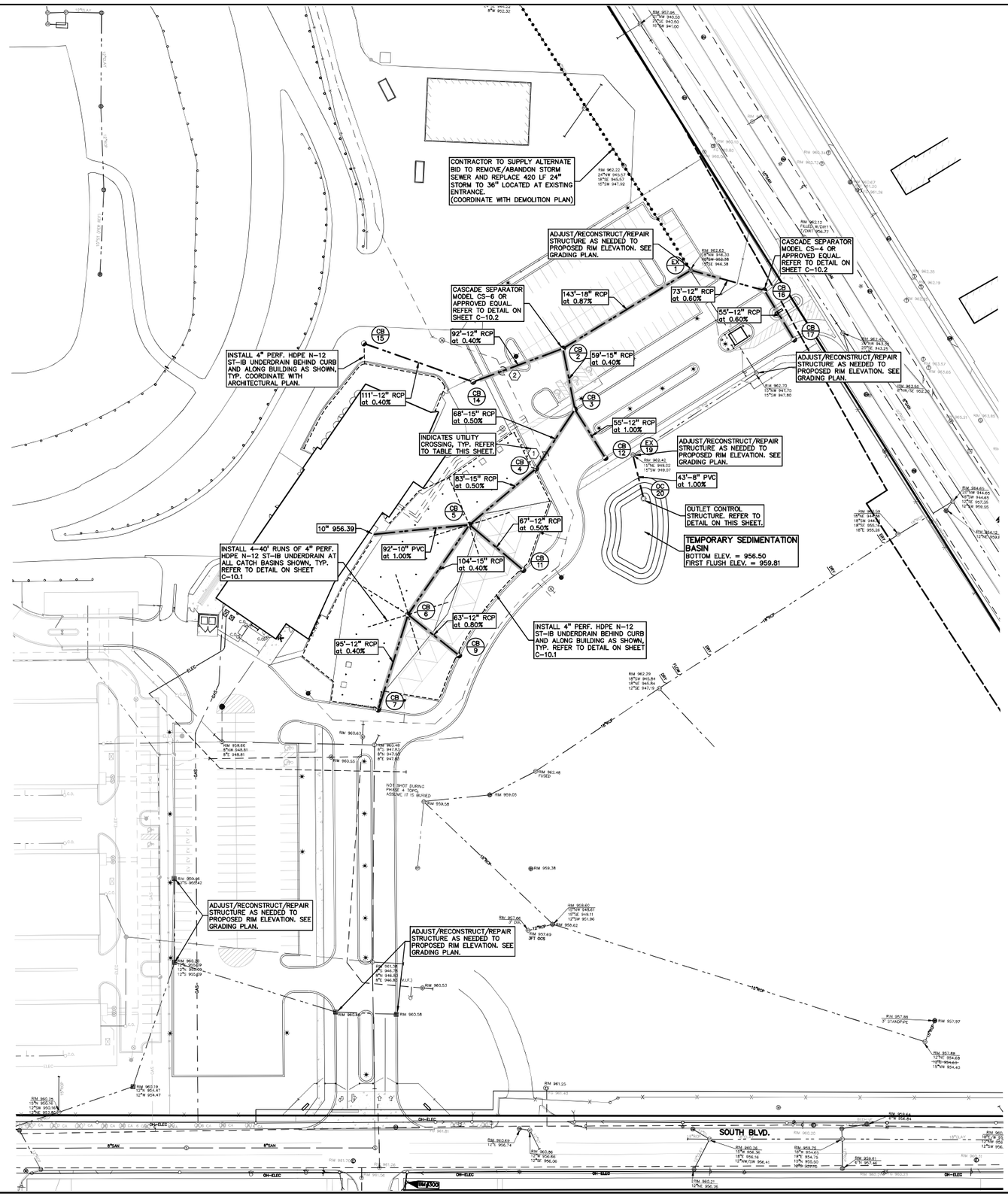


WATER SERVICE FOR NEW TENT AREA

CROSSING	CROSSING PIPE 1			CROSSING PIPE 2			Clearance	NOTES
1	15 " ST	B/P=	949.73	8 " WM	T/P=	948.23	1.50	DIP WATER MAIN
2	15 " ST	T/P=	947.59	8 " WM	B/P=	950.95	3.36	
3	12 " ST	B/P=	954.46	8 " WM	T/P=	952.96	1.50	DIP WATER MAIN
4	8 " SAN	T/P=	949.15	12 " ST	B/P=	954.71	5.56	
5	8 " SAN	T/P=	949.26	12 " ST	B/P=	952.59	3.33	
6	8 " SAN	T/P=	949.43	8 " WM	B/P=	951.44	2.01	
7	12 " ST	B/P=	951.64	8 " WM	T/P=	950.14	1.50	DIP WATER MAIN
8	6 " SAN	B/P=	949.71	8 " WM	T/P=	948.21	1.50	DIP WATER MAIN
9	6 " SAN	T/P=	950.19	12 " ST	B/P=	951.71	1.52	
10	6 " SAN	T/P=	950.54	6 " WM	B/P=	952.04	1.50	
11	6 " ST	T/P=	952.23	6 " WM	B/P=	953.08	0.85	

STORM SEWER QUANTITIES:	
4" PVC PIPE	90 LF
6" PVC PIPE	67 LF
8" PVC PIPE	715 LF
10" PVC PIPE	254 LF
12" RCP CL-IV PIPE	576 LF
15" RCP CL-IV PIPE	397 LF
15" CMP SLOTTED DRAIN	555 LF
15" CMP PIPE	131 LF
4' DIA. CATCH BASIN	9 EA.
4' DIA. MANHOLE	1 EA.

WATER MAIN QUANTITIES:	
8" D.I.W.M. CLASS 54	1062 LF
8" GATE VALVE AND WELL	2 EA.
6" VALVE IN BOX	3 EA.
1" SHUT OFF VALVE	1 EA.
2" SHUT OFF VALVE	4 EA.
3" SHUT OFF VALVE	1 EA.
STANDARD HYDRANT ASSEMBLY	4 EA.
6" D.I.W.M. CLASS 54 (FIRE)	87 LF
1" COPPER TYPE K	42 LF
2" COPPER TYPE K	87 LF



STORM STRUCTURES		
CB	2	(6' DIA./2' SUMP) RIM = 961.00 15"S S 953.45 12" SW 953.95 18" NE 953.25
CB	3	(4' DIA./2' SUMP) RIM = 961.39 15" SW 953.68 12" SE 956.68 15" N 953.68
CB	4	(4' DIA./2' SUMP) RIM = 959.80 15" SW 954.02 15" NE 954.02
CB	5	(4' DIA./2' SUMP) RIM = 959.60 15" SW 954.44 12" SE 955.34 10" W 955.47 15" NE 954.44
CB	6	(4' DIA./2' SUMP) RIM = 959.50 12" S 955.06 12" SE 955.26 15" NE 954.86
CB	7	(4' DIA./2' SUMP) RIM = 959.60 12" N 955.44
CB	9	(4' DIA./2' SUMP) RIM = 960.19 12" NW 955.76
CB	11	(4' DIA./2' SUMP) RIM = 960.18 12" NW 955.68
CB	12	(4' DIA./2' SUMP) RIM = 961.41 12" NW 957.23
CB	14	(4' DIA./2' SUMP) RIM = 959.60 12" W 954.31 12" NE 954.31
CB	15	(2' DIA./2' SUMP) RIM = 959.00 12" E 954.76
CB	16	(4' DIA./2' SUMP) RIM = 962.70 12" SE 957.94 12" W 957.94
CB	17	(4' DIA./2' SUMP) RIM = 962.80 12" NW 958.27

NOTE:
CONTRACTOR TO VERIFY ALL QUANTITIES. ANY DEVIATIONS TO THE PLAN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF PEA, INC. FOR VERIFICATION, PRIOR TO BIDDING.

STORM SEWER QUANTITIES:

4" UNDERDRAIN	1350 LF
8" PVC SDR 26 PIPE	43 LF
10" PVC SDR 26 PIPE	92 LF
12" RCP CL-IV PIPE	611 LF
15" RCP CL-IV PIPE	315 LF
18" RCP CL-IV PIPE	143 LF
15" CMP PIPE	131 LF
2' DIA. INLET	1 EA.
3' DIA. OUTLET STRUCTURE	1 EA.
4' DIA. CATCH BASIN	10 EA.
4' DIA. CASCADE UNIT	1 EA.
6' DIA. CASCADE UNIT	1 EA.
TAP EXISTING STRUCTURE	1 EA.

PREMIUM TRENCH BACKFILL NOTE:
ALL UTILITIES UNDER PAVEMENT OR WITHIN 3' OF THE EDGE OF PAVEMENT (OR WITHIN THE 45° LINE OF INFLUENCE OF PAVEMENT) SHALL HAVE M.D.O.T. CLASS II GRANULAR BACKFILL COMPACTED TO 95% MAX. DRY DENSITY (ASTM D-1557).

Sedimentation Pond

Contributing Area (A): 4.6 Ac.
Coefficient of Runoff (C): 0.50

Storage Volume Required:

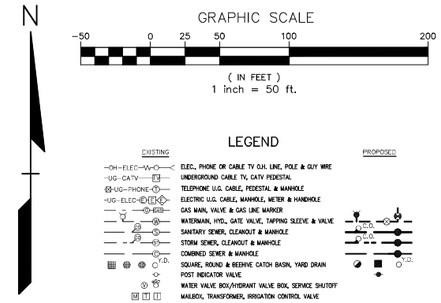
Vr = (4320)(A)(C) = **9893** **CF**

Sedimentation Pond

CONTOUR	AREA	VOLUME	CUMM	Storage Elev
				9,893 cf
956.5	0			
957	2,814	469	469	-
958	2,814	2,814	2,814	-
959	3,935	3,375	6,189	-
960	5,215	4,575	10,764	**959.81**

Sedimentation Pond #1 Standpipe Design

Bottom of Pond: 956.50
Storage Elev.: 959.81
Head over Orifice (Hw): 3.31 ft
Median Surface Area (Am): 2,989 s.f. (Vr / Hw)
Area of Orifice (A): 0.0125 s.f.
A = (0.3888 * Am * Hw^0.5) / 172800
Restriction Hole Dia.: 1 in
Restriction Hole Area: 0.0055 s.f.
Number of Restriction Holes 2
Total Restriction Hole Area: 0.0109 s.f.
Restricted Flow: 0.099 cfs
Q = A * ((0.62 * (2 * G * Hw)^0.5)



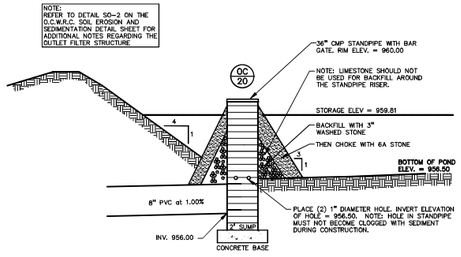
GENERAL UTILITY NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF PONTIAC.
2. ALL TRENCHES UNDER OR WITHIN THREE (3) FEET OR THE FORTY-FIVE (45) DEGREE ZONE OF INFLUENCE LINE OF EXISTING AND/OR PROPOSED PAVEMENT, BUILDING PAD OR DRIVE APPROACH SHALL BE BACKFILLED WITH SAND COMPACTED TO AT LEAST NINETY-FIVE (95) PERCENT OF MAXIMUM UNIT WEIGHT (ASTM D-1557). ALL OTHER TRENCHES TO BE COMPACTED TO 90% OR BETTER.
3. WHENEVER EXISTING MANHOLES OR SEWER PIPE ARE TO BE TAPPED, DRILL HOLES 4" CENTER TO CENTER, AROUND PERIPHERY OF OPENING TO CREATE A PLANE OF WEAKNESS JOINT BEFORE BREAKING SECTION OUT.
4. THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING UTILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING. THE DESIGN ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN. CONTRACTOR TO FIELD VERIFY UTILITIES.
5. THE CONTRACTOR MUST COORDINATE TO ENSURE ALL REQUIRED PIPES, CONDUITS, CABLES AND SLEEVES ARE PROPERLY PLACED FOR THE INSTALLATION OF GAS, ELECTRIC, PHONE, CABLE, IRRIGATION, ETC. IN SUCH A MANNER THAT WILL FACILITATE THEIR PROPER INSTALLATION PRIOR TO THE PLACEMENT OF THE PROPOSED PAVEMENT AND LANDSCAPING.
6. PIPE LENGTHS INDICATED ARE FROM CENTER OF STRUCTURE AND TO END OF FLARED END SECTION UNLESS NOTED OTHERWISE.

STORM SEWER NOTES:

1. ALL STORM SEWER 12" DIAMETER OR LARGER SHALL BE REINFORCED CONCRETE PIPE (RCP C-76) CLASS IV WITH MODIFIED TONGUE AND GROOVE JOINT WITH RUBBER GASKETS UNLESS SPECIFIED OTHERWISE (ASTM C-443).
2. ALL STORM SEWER LEADS SHALL BE CONSTRUCTED AT 1.00% MINIMUM SLOPE.
3. ALL STORM SEWER 10" OR LESS AND/OR LEADS SHALL BE PVC SDR 26.
4. JOINTS FOR P.V.C. PIPE SHALL BE ELASTOMERIC (RUBBER GASKET) AS SPECIFIED IN A.S.T.M. DESIGNATION D-3212.

NOTE:
REFER TO DETAIL SO-2 ON THE O.C.W.R.C. SOIL EROSION AND SEDIMENTATION DETAIL SHEET FOR ADDITIONAL NOTES REGARDING THE OUTLET FILTER STRUCTURE



TEMPORARY SEDIMENTATION OUTLET FILTER DETAIL
NOT TO SCALE

REVISIONS			
NO.	BY	Chk.	DESCRIPTION	DATE
A	DSK	DNH	BULLETIN NO.1	7/7/20
1	DSK	DNH	PER WATER REVIEW, DATED 7/14/20	7/21/20
2	DSK	DNH	PER FIRE MARSHAL REVIEW, DATED 7/8/20	7/10/20
3	DSK	KP	PER CITY REVIEW DATED 6/22/2020	6/25/20
4	DSK	DNH	PER RCWRC REVIEW, DATED 6/9/20	6/15/20
5	DSK	DNH	PER RCWRC REVIEW, DATED 6/09/20	6/11/20

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

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CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.

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website: www.peainc.com

M1 CONCOURSE, LLC
280 DAINES STREET, SUITE 300
BIRMINGHAM, MICHIGAN 48009

STORM SEWER PLAN
M1 CONCOURSE - PHASE 5A
PART OF SOUTHWEST 1/4 OF SECTION 21, T.3N., R.10E.
CITY OF PONTIAC, MICHIGAN

DES.	DSK	DN.		SUR.		K.T.R.	P.M.	J.B.T.

S:\PROJECTS\2013\2013139\DWG\CONSTRUCTION\PHASE 4A\X-BASE4A-13139.DWG

ORIGINAL ISSUE DATE:
JUNE 1, 2020

PEA JOB NO. 2013-139

SCALE: 1" = 50'

DRAWING NUMBER:
C-7.0

XREF: S:\PROJECTS\2013\2013139\DWG\TOPOBASE-PH4-13139.DWG
XREF: S:\PROJECTS\2013\2013139\DWG\CONSTRUCTION\PHASE 4A\X-BASE4A-13139.DWG
XREF: S:\PROJECTS\2013\2013139\DWG\CONSTRUCTION\PHASE 4A\X-BASE-13139.DWG
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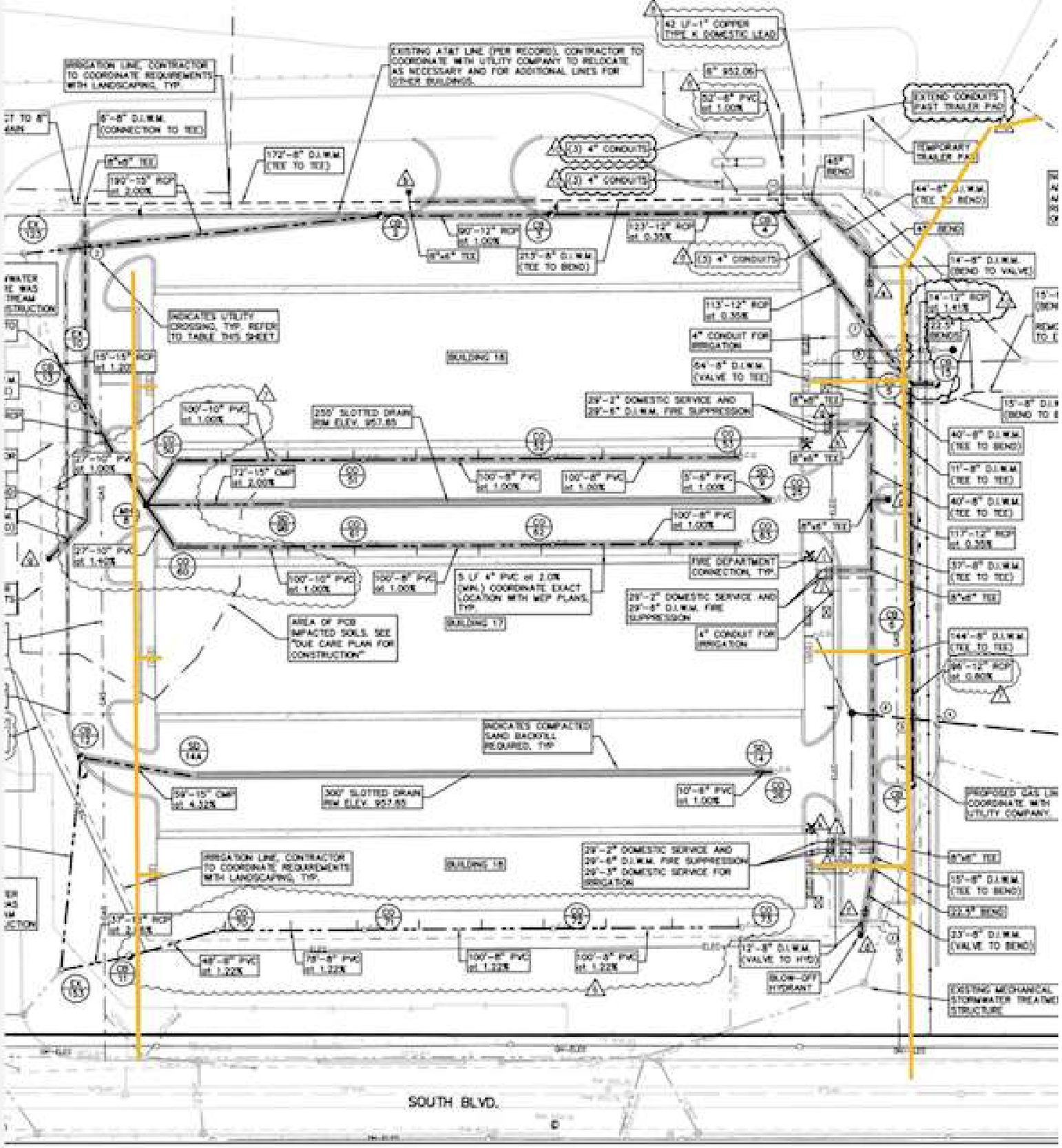

42 LF-1" COPPER TYPE K DOMESTIC LEAD
EXISTING AT&T LINE (PER RECORD). CONTRACTOR TO COORDINATE WITH UTILITY COMPANY TO RELOCATE AS NECESSARY AND FOR ADDITIONAL LINES FOR OTHER BUILDINGS.
IRRIGATION LINE. CONTRACTOR TO COORDINATE REQUIREMENTS WITH LANDSCAPING, TYP.
6"-8" D.I.W.M. (CONNECTION TO TEE)
8"x8" TEE
199'-12" RCP slt. 2.00%
172'-8" D.I.W.M. (TEE TO TEE)
(3) 4" CONDUITS
(3) 4" CONDUITS
8" 952.06
52'-8" PVC slt. 1.00%
EXTEND CONDUITS PAST TRAILER PAD
TEMPORARY TRAILER PAD
45° BEND
64'-8" D.I.W.M. (TEE TO BEND)
8" BEND
14'-8" D.I.W.M. (BEND TO VALVE)
24'-12" RCP slt. 1.41%
22.5° BENDS
15'-8" D.I.W.M. (BEND TO B
INDICATES UTILITY CROSSING TYP. REFER TO TABLE THIS SHEET
BUILDING 18
113'-12" RCP slt. 0.35%
4" CONDUIT FOR IRRIGATION
64'-8" D.I.W.M. (VALVE TO TEE)
29'-2" DOMESTIC SERVICE AND 29'-8" D.I.W.M. FIRE SUPPRESSION
8"x8" TEE
40'-8" D.I.W.M. (TEE TO BEND)
11'-8" D.I.W.M. (TEE TO TEE)
40'-8" D.I.W.M. (TEE TO TEE)
117'-12" RCP slt. 0.35%
57'-8" D.I.W.M. (TEE TO TEE)
8"x8" TEE
144'-8" D.I.W.M. (TEE TO TEE)
90'-12" RCP slt. 0.80%
15'-19" RCP slt. 1.00%
100'-10" PVC slt. 1.00%
250' SLOTTED DRAIN RIM ELEV. 957.65
72'-15" CMP slt. 2.00%
100'-8" PVC slt. 1.00%
100'-8" PVC slt. 1.00%
5'-8" PVC slt. 1.00%
100'-8" PVC slt. 1.00%
8"x8" TEE
27'-10" PVC slt. 1.00%
27'-10" PVC slt. 1.10%
100'-10" PVC slt. 1.00%
100'-8" PVC slt. 1.00%
5' LF 4" PVC at 2.0% (MIN.) COORDINATE EXACT LOCATION WITH MEP PLANS, TYP.
BUILDING 17
FIRE DEPARTMENT CONNECTION, TYP.
29'-2" DOMESTIC SERVICE AND 29'-8" D.I.W.M. FIRE SUPPRESSION
4" CONDUIT FOR IRRIGATION
AREA OF PCB IMPACTED SOILS. SEE "DUE CARE PLAN FOR CONSTRUCTION"
INDICATES COMPACTED SAND BACKFILL REQUIRED, TYP.
59'-15" CMP slt. 4.32%
300' SLOTTED DRAIN RIM ELEV. 957.65
10'-8" PVC slt. 1.00%
PROPOSED GAS LINE COORDINATE WITH UTILITY COMPANY.
IRRIGATION LINE. CONTRACTOR TO COORDINATE REQUIREMENTS WITH LANDSCAPING, TYP.
BUILDING 18
29'-2" DOMESTIC SERVICE AND 29'-8" D.I.W.M. FIRE SUPPRESSION 29'-3" DOMESTIC SERVICE FOR IRRIGATION
8"x8" TEE
15'-8" D.I.W.M. (TEE TO BEND)
22.5° BEND
23'-8" D.I.W.M. (VALVE TO BEND)
37'-8" PVC slt. 1.22%
78'-8" PVC slt. 1.22%
100'-8" PVC slt. 1.22%
100'-8" PVC slt. 1.22%
12'-8" D.I.W.M. (VALVE TO HYD)
BLOW-OFF HYDRANT
EXISTING MECHANICAL STORMWATER TREATME STRUCTURE
SOUTH BLVD.

Attachment B

Instrumentation Logs for Soil Gas Probes

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PCC-Validation
PROJECT NUMBER: 017322A
CLIENT: RACER
LOCATION: Pontiac, Michigan

HOLE DESIGNATION: SG-04-2020
DATE COMPLETED: December 15, 2020
DRILLING METHOD: Hand Auger/Geoprobe
FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SOIL PROBE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE	SAMPLE PID (ppm)
	GROUND SURFACE	TBD						
0	SM - silty sand, trace clay, with fine to coarse gravel (fill), compact, f.g., poorly graded, moist, brown		CONCRETE; PORTLAND GROUT					
1								
2								
3			TEFLON-LINED POLYETHYLENE TUBING; BENSEAL BENTONITE CHIPS	1		100		0.8
4	- trace fine gravel, orangish brown from 4.20 to 6.00ft BGS							
5			GLASS BEADS SCREEN					0.7
6	END OF BOREHOLE @ 6.00ft BGS	6.00						
7								
8								
9								

WELL DETAILS
Screened interval:
5.00 to 5.50ft BGS
Length: 0.5ft
Diameter: 0.4in
Material: Stainless Steel
Seal:
1.50 to 4.50ft BGS
Material: BENSEAL BENTONITE CHIPS
Sand Pack:
4.50 to 6.00ft BGS
Material: GLASS BEADS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PCC-Validation
PROJECT NUMBER: 017322A
CLIENT: RACER
LOCATION: Pontiac, Michigan

HOLE DESIGNATION: SG-05-2020
DATE COMPLETED: December 15, 2020
DRILLING METHOD: Hand Auger/Geoprobe
FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SOIL PROBE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE	SAMPLE PID (ppm)
	GROUND SURFACE	TBD						
0	SM - silty sand with fine to coarse gravel (fill), compact, f.g., poorly graded, moist, brown		CONCRETE; PORTLAND GROUT; TEFLON-LINED POLYETHYLENE TUBING; BENSEAL BENTONITE CHIPS; SCREEN; GLASS BEADS					
1								
2				1		100		7.8
3	- trace fine gravel, orangish brown from 3.50 to 5.00ft BGS							
4								
5	CL - clay/silty clay, stiff, low plasticity, moist, brown	5.00						1.5
6	END OF BOREHOLE @ 5.80ft BGS	5.80						
7								
8								
9								

WELL DETAILS
Screened interval:
4.50 to 5.00ft BGS
Length: 0.5ft
Diameter: 0.4in
Material: Stainless Steel
Seal:
1.50 to 4.00ft BGS
Material: BENSEAL BENTONITE CHIPS
Sand Pack:
4.00 to 5.80ft BGS
Material: GLASS BEADS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PCC-Validation
PROJECT NUMBER: 017322A
CLIENT: RACER
LOCATION: Pontiac, Michigan

HOLE DESIGNATION: SG-06-2020
DATE COMPLETED: December 15, 2020
DRILLING METHOD: Hand Auger/Geoprobe
FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SOIL PROBE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE	SAMPLE PID (ppm)
	GROUND SURFACE	TBD						
0	TOPSOIL		CONCRETE					
	SM - silty sand, trace clay, fine gravels (fill), compact, f.g., poorly graded, moist, brown	0.60	PORTLAND GROUT					
1								
	CL - silty clay, trace sand, with fine gravels, stiff, low plasticity, dry to moist, brown	1.30						
2				1		100		0.3
3			TEFLON-LINED POLYETHYLENE TUBING					
			BENSEAL BENTONITE CHIPS					
4								
5								0.2
			GLASS BEADS					
6	END OF BOREHOLE @ 6.00ft BGS	6.00	SCREEN					
7								
8								
9								

WELL DETAILS
Screened interval:
5.50 to 6.00ft BGS
Length: 0.5ft
Diameter: 0.4in
Material: Stainless Steel
Seal:
1.50 to 5.00ft BGS
Material: BENSEAL BENTONITE CHIPS
Sand Pack:
5.00 to 6.00ft BGS
Material: GLASS BEADS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PCC-Validation
PROJECT NUMBER: 017322A
CLIENT: RACER
LOCATION: Pontiac, Michigan

HOLE DESIGNATION: SG-07-2020
DATE COMPLETED: December 15, 2020
DRILLING METHOD: Hand Auger/Geoprobe
FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SOIL PROBE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE	SAMPLE PID (ppm)
	GROUND SURFACE	TBD						
0	TOPSOIL		CONCRETE					
	CL - silty clay, trace sand (fill), stiff, low plasticity, moist, brown	0.70						
1	SM - silty sand (fill), trace clay, compact, f.g., poorly graded, moist, light brown	1.00	PORTLAND GROUT					
2								
				1		100		0.6
3	CL - silty clay, trace sand, trace fine gravel, stiff, low plasticity, dry to moist, brown	3.00	TEFLON-LINED POLYETHYLENE TUBING BENSEAL BENTONITE CHIPS					
4								
5								0.6
6			SCREEN GLASS BEADS					
7		7.50						
8	END OF BOREHOLE @ 7.50ft BGS		WELL DETAILS Screened interval: 5.50 to 6.00ft BGS Length: 0.5ft Diameter: 0.4in Material: Stainless Steel Seal: 1.50 to 5.00ft BGS Material: BENSEAL BENTONITE CHIPS Sand Pack: 5.00 to 7.50ft BGS Material: GLASS BEADS					
9								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: PCC-Validation
PROJECT NUMBER: 017322A
CLIENT: RACER
LOCATION: Pontiac, Michigan

HOLE DESIGNATION: SG-08-2020
DATE COMPLETED: December 15, 2020
DRILLING METHOD: Hand Auger/Geoprobe
FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SOIL PROBE	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE	SAMPLE PID (ppm)
	GROUND SURFACE	TBD						
	TOPSOIL		CONCRETE					
	SM - silty sand, trace fine gravel, compact, f.g., poorly graded, moist, reddish brown	0.60	PORTLAND GROUT					
	CL - silty clay, trace fine gravel, trace sand, stiff, low plasticity, moist, brown	1.40	TEFLON-LINED POLYETHYLENE TUBING BENSEAL BENTONITE CHIPS	1		100		0.7
			GLASS BEADS SCREEN					0.8
	END OF BOREHOLE @ 5.90ft BGS	5.90						

WELL DETAILS
Screened interval:
5.00 to 5.50ft BGS
Length: 0.5ft
Diameter: 0.4in
Material: Stainless Steel
Seal:
1.50 to 4.50ft BGS
Material: BENSEAL BENTONITE CHIPS
Sand Pack:
4.50 to 5.90ft BGS
Material: GLASS BEADS

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

Attachment C

EGLE M1 Concourse Phase 4 – Building 16 Site Specific Criteria Evaluation March 2020

TO: Matt Williams, Vapor Intrusion Specialist, RRD

FROM: Shane Morrison, Senior Toxicologist, RRD

DATE: March 6, 2020

SUBJECT: M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation

The following site-specific volatilization to indoor air criteria (VIAC) are the Michigan Department of Environment, Great Lakes, and Energy's (EGLE's) determination of values that reflect best available information regarding the toxicity and exposure risks posed by the hazardous substances present at the facility. These values are based upon the information provided with the request to develop site-specific VIAC for this facility. These values may be used provided it is documented that the conditions used to develop the site-specific criteria are met at the facility. Other values may be developed by a person consistent with the statutory provisions for development of site-specific criteria and provided for EGLE review and approval.

Correspondence transmitting these values to the submitter/consultant as part of a report, review, or other request must incorporate the appropriate sections of the volatilization to indoor air pathway (VIAP) model document language. As indicated in this document, when groundwater volatilization to indoor air inhalation criteria (GVIIC) and soil volatilization to indoor air inhalation criteria (SVIIC) are not applicable, the correspondence must include language indicating the requirement to satisfy the site-specific VIAC for all three media i.e., groundwater, soil, and soil gas. In addition, all of the following site-specific VIAC tables must be copied into the correspondence or letter as part of your response to the submitter/consultant.

Unrestricted residential site-specific criteria were included in the evaluation based on information provided and EGLE's residential conceptual site model. Exceedance of the site-specific unrestricted residential criteria will require restrictions or institutional controls for closure or aid in the determination of off-site migration.

Nonresidential site-specific criteria may be adjusted for some hazardous substances to reflect a reasonable maximum worker exposure of 12-hour per day; however, if a person does not exceed the provided nonresidential site-specific criteria, no adjustment is necessary.

The site-specific criteria were generated using the United States Department of Agriculture (USDA) soil type of sand. Other site-specific criteria can be generated using a different soil type by providing soil characterization results from department approved methods on soils collected at the site.

Additional hazardous substances were included in the site-specific evaluation that were not explicitly requested. These hazardous substances may be components of recent petroleum. The preemptive site-specific evaluation of these substances was provided to limit the potential need for future resubmittal for this facility.

Please contact me at MorrisonS5@michigan.gov or 517-284-5063 if you require any clarification of these comments and criterion or have additional questions.

cc: Eric Wildfang, Toxicology Unit Supervisor, RRD
Paul Owens, District Supervisor, RRD
Cheryl Wilson, Assistant District Supervisor, RRD
Kevin Wojciechowski, Senior Environmental Quality Analyst, RRD

. Nonresidential Volatilization to Indoor Air Criteria (VIAC). The following are _____ site-specific criteria that apply to a nonresidential structure **0 000** ^{2} with a _____, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of _____.

83329	Acenaphthene	3,900 (S) sol	3.6E+06 nc	11,000 nc
208968	Acenaphthylene	710 (CC) nc	DATA	11,000 nc
994058	t-Amyl methyl ether (TAME)	34,000 nc	600 nc	3,200 nc
120127	Anthracene	43 (S) sol	2.2E+08 nc	51,000 nc
71432	Benzene	520 ca	47 (M) ca	260 ca
56553	Benzo(a)anthracene	9.4 (S) sol	1.1E+07 ca	33 ca
75650	t-Butyl alcohol	4.0E+06 nc	57,000 nc	3,700 nc
104518	n-Butylbenzene	12,000 (S) sol	9,800 nc	10,000 nc
135988	sec-Butylbenzene	18,000 (S) sol	66,000 (C) nc (49,000)	20 nc
98066	t-Butylbenzene	31 nc	11 (M) nc	20 nc
108907	Chlorobenzene	13,000 nc	1,400 nc	2,600 nc
75003	Chloroethane	1.5E+05 nc	5,800 nc	2.0E+05 nc
67663	Chloroform	280 ca	7.4 (M) ca	87 ca
74873	Chloromethane	3,500 nc	120 (M) nc	4,600 nc
110827	Cyclohexane	25,000 nc	5,600 nc	3.1E+05 nc
75343	1,1-Dichloroethane	2,500 ca	74 ca	1,200 ca
107062	1,2-Dichloroethane	770 ca	23 (M) ca	77 ca
75354	1,1-Dichloroethylene	3,900 nc	220 nc	10,000 nc
156592	cis-1,2-Dichloroethylene	1,100 nc	37 (M) nc	410 nc
156605	trans-1,2-Dichloroethylene	4,600 nc	210 nc	4,100 nc
60297	Diethyl ether	4.2E+05 nc	6,200 nc	51,000 nc
108203	Diisopropyl ether	1.3E+05 (DD) dev	2,300 (DD) dev	23,000 (DD) dev
64175	Ethanol	9.7E+08 (EE) st	1.6E+07 (EE) st	6.3E+05 (EE) st
637923	Ethyl-tert-butyl ether (ETBE)	580 (CC) nc	DATA	19,000 nc
100414	Ethylbenzene	1,700 ca	340 ca	800 ca
106934	Ethylene dibromide	120 ca	2.1 (M) ca	3.3 ca

. Nonresidential Volatilization to Indoor Air Criteria (VIAC). The following are _____ site-specific criteria that apply to a nonresidential structure **0 000** ^{2} with a _____, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of _____.

86737	Fluorene	1,700 (S) sol	8.3E+06 nc	7,200 nc
142825	n-Heptane	3,400 (S) (GW) sol	2,300 nc	1.8E+05 nc
110543	n-Hexane	1,000 (GW) nc	440 nc	36,000 nc
67630	Isopropyl alcohol	1.1E+07 nc	1.7E+05 nc	10,000 nc
98828	Isopropyl benzene	380 ca	110 (M) ca	190 ca
Varies	Mercury (Total)	34 nc	390 nc	15 nc
1634044	Methyl-tert-butyl ether (MTBE)	1.5E+05 ca	2,100 ca	7,700 ca
96377	Methylcyclopentane	1,200 nc	510 (M) nc	36,000 nc
91576	2-Methylnaphthalene	25,000 (S) sol	30,000 nc	510 nc
91203	Naphthalene	2,900 ca	1,900 ca	59 ca
109660	Pentane	1,400 (GW) nc	630 (M) nc	51,000 nc
85018	Phenanthrene	1,200 (S) sol	29,000 nc	5.1 nc
1336363	Polychlorinated biphenyls (PCBs)	0.97 (CC) (J) ca	DATA	20 (J) ca
103651	n-Propylbenzene	52,000 (S) (DD) sol	21,000 (DD) dev	33,000 (DD) dev
129000	Pyrene	140 (S) sol	4.4E+08 nc	5,100 nc
100425	Styrene	21,000 ca	4,300 ca	3,500 ca
630206	1,1,1,2-Tetrachloroethane	2,600 ca	91 (M) ca	270 ca
79345	1,1,2,2-Tetrachloroethane	1,900 ca	77 ca	34 ca
127184	Tetrachloroethylene	1,600 (EE) st	74 (EE) st	1,400 (EE) st
108883	Toluene	5.2E+05 (EE) st	64,000 (EE) st	2.5E+05 (EE) st
71556	1,1,1-Trichloroethane	1.9E+05 (EE) st	7,500 (EE) st	2.3E+05 (EE) st
79005	1,1,2-Trichloroethane	190 nc	6.6 (M) nc	10 nc
79016	Trichloroethylene	98 (DD) dev	4.0 (M) (DD) dev	67 (DD) dev
540841	2,2,4-Trimethyl pentane	2,400 (S) (GW) sol	2,200 (M) nc	1.8E+05 nc
526738	1,2,3-Trimethylbenzene	19,000 (JT) nc	4,800 (JT) nc	3,100 (JT) nc
95636	1,2,4-Trimethylbenzene	10,000 (JT) nc	2,600 (JT) nc	3,100 (JT) nc

. Nonresidential Volatilization to Indoor Air Criteria (VIAC). The following are _____ site-specific criteria that apply to a nonresidential structure **0 000** ^{2} with a _____, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of _____.

108678	1,3,5-Trimethylbenzene	7,400 (JT) nc	1,800 (JT) nc	3,100 (JT) nc
75014	Vinyl chloride	120 ca	8.2 (M) ca	450 ca
1330207	Xylenes	28,000 (J) nc	5,000 (J) nc	11,000 (J) nc

2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are _____ site-specific criteria that apply to a residential house with a _____, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of _____.

83329	Acenaphthene	3,900 (S) sol	2.0E+05 nc	7,300 nc
208968	Acenaphthylene	65 (CC) nc	DATA	7,300 nc
994058	t-Amyl methyl ether (TAME)	1,800 nc	34 (M) nc	2,200 nc
120127	Anthracene	43 (S) sol	1.3E+07 nc	35,000 nc
71432	Benzene	17 ca	1.7 (M) ca	110 ca
56553	Benzo(a)anthracene	9.4 (S) (MM) sol	1.6E+05 (MM) mut	5.8 (MM) mut
75650	t-Butyl alcohol	1.8E+05 nc	3,200 nc	2,500 nc
104518	n-Butylbenzene	970 nc	550 nc	7,000 nc
135988	sec-Butylbenzene	3,700 nc	3,800 nc	14 nc
98066	t-Butylbenzene	1.6 nc	0.64 (M) nc	14 nc
108907	Chlorobenzene	660 nc	82 nc	1,700 nc
75003	Chloroethane	8,000 nc	330 nc	1.4E+05 nc
67663	Chloroform	9.2 ca	0.26 (M) ca	37 ca
74873	Chloromethane	180 nc	6.9 (M) nc	3,100 nc
110827	Cyclohexane	1,300 nc	320 (M) nc	2.1E+05 nc
75343	1,1-Dichloroethane	81 ca	2.6 (M) ca	530 ca
107062	1,2-Dichloroethane	25 ca	0.82 (M) ca	33 ca
75354	1,1-Dichloroethylene	200 nc	12 (M) nc	7,000 nc
156592	cis-1,2-Dichloroethylene	58 nc	2.1 (M) nc	280 nc
156605	trans-1,2-Dichloroethylene	240 nc	12 (M) nc	2,800 nc
60297	Diethyl ether	22,000 nc	350 nc	35,000 nc
108203	Diisopropyl ether	9,700 (DD) dev	190 (M) (DD) dev	23,000 (DD) dev
64175	Ethanol	6.7E+07 (EE) st	1.3E+06 (EE) st	6.3E+05 (EE) st
637923	Ethyl-tert-butyl ether (ETBE)	22 (CC) nc	DATA	13,000 nc
100414	Ethylbenzene	55 ca	12 (M) ca	340 ca
106934	Ethylene dibromide	3.6 ca	7.4E-02 (M) ca	1.4 ca

2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are _____ site-specific criteria that apply to a residential house with a _____, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of _____.

86737	Fluorene	1,700 (S) sol	4.7E+05 nc	4,900 nc
142825	n-Heptane	150 (GW) nc	130 nc	1.2E+05 nc
110543	n-Hexane	29 (GW) nc	25 nc	24,000 nc
67630	Isopropyl alcohol	5.3E+05 nc	9,800 nc	7,000 nc
98828	Isopropyl benzene	12 ca	3.8 (M) ca	81 ca
Varies	Mercury (Total)	1.8 nc	22 nc	10 nc
1634044	Methyl-tert-butyl ether (MTBE)	4,900 ca	74 (M) ca	3,300 ca
96377	Methylcyclopentane	62 nc	29 (M) nc	24,000 nc
91576	2-Methylnaphthalene	1,600 nc	1,700 nc	350 nc
91203	Naphthalene	92 ca	67 (M) ca	25 ca
109660	Pentane	40 (M) (GW) nc	36 (M) nc	35,000 nc
85018	Phenanthrene	180 nc	1,700 nc	3.5 nc
1336363	Polychlorinated biphenyls (PCBs)	3.1E-02 (M) (CC) (J) ca	DATA	8.5 (J) ca
103651	n-Propylbenzene	5,000 (DD) dev	1,800 (DD) dev	33,000 (DD) dev
129000	Pyrene	140 (S) sol	2.5E+07 nc	3,500 nc
100425	Styrene	680 ca	150 ca	1,500 ca
630206	1,1,1,2-Tetrachloroethane	85 ca	3.2 (M) ca	110 ca
79345	1,1,2,2-Tetrachloroethane	59 ca	2.7 (M) ca	15 ca
127184	Tetrachloroethylene	120 (EE) st	6.2 (M) (EE) st	1,400 (EE) st
108883	Toluene	28,000 nc	3,700 nc	1.7E+05 nc
71556	1,1,1-Trichloroethane	11,000 (EE) st	450 (EE) st	1.7E+05 (EE) st
79005	1,1,2-Trichloroethane	9.9 nc	0.37 (M) nc	7.0 nc
79016	Trichloroethylene	7.5 (DD) dev	0.33 (M) (DD) dev	67 (DD) dev
540841	2,2,4-Trimethyl pentane	160 (GW) nc	130 (M) nc	1.2E+05 nc
526738	1,2,3-Trimethylbenzene	980 (JT) nc	270 (JT) nc	2,100 (JT) nc
95636	1,2,4-Trimethylbenzene	540 (JT) nc	150 (JT) nc	2,100 (JT) nc

2. Residential Volatilization to Indoor Air Criteria (VIAC). The following are _____ site-specific criteria that apply to a residential house with a _____, the depth to groundwater submitted for this site (i.e. 15 ft), and USDA soil type of _____.

108678	1,3,5-Trimethylbenzene	380 (JT) nc	100 (JT) nc	2,100 (JT) nc
75014	Vinyl chloride	1.1 (MM) mut	8.2E-02 (MM) (M) mut	54 (MM) mut
1330207	Xylenes	1,500 (J) nc	280 (J) nc	7,600 (J) nc

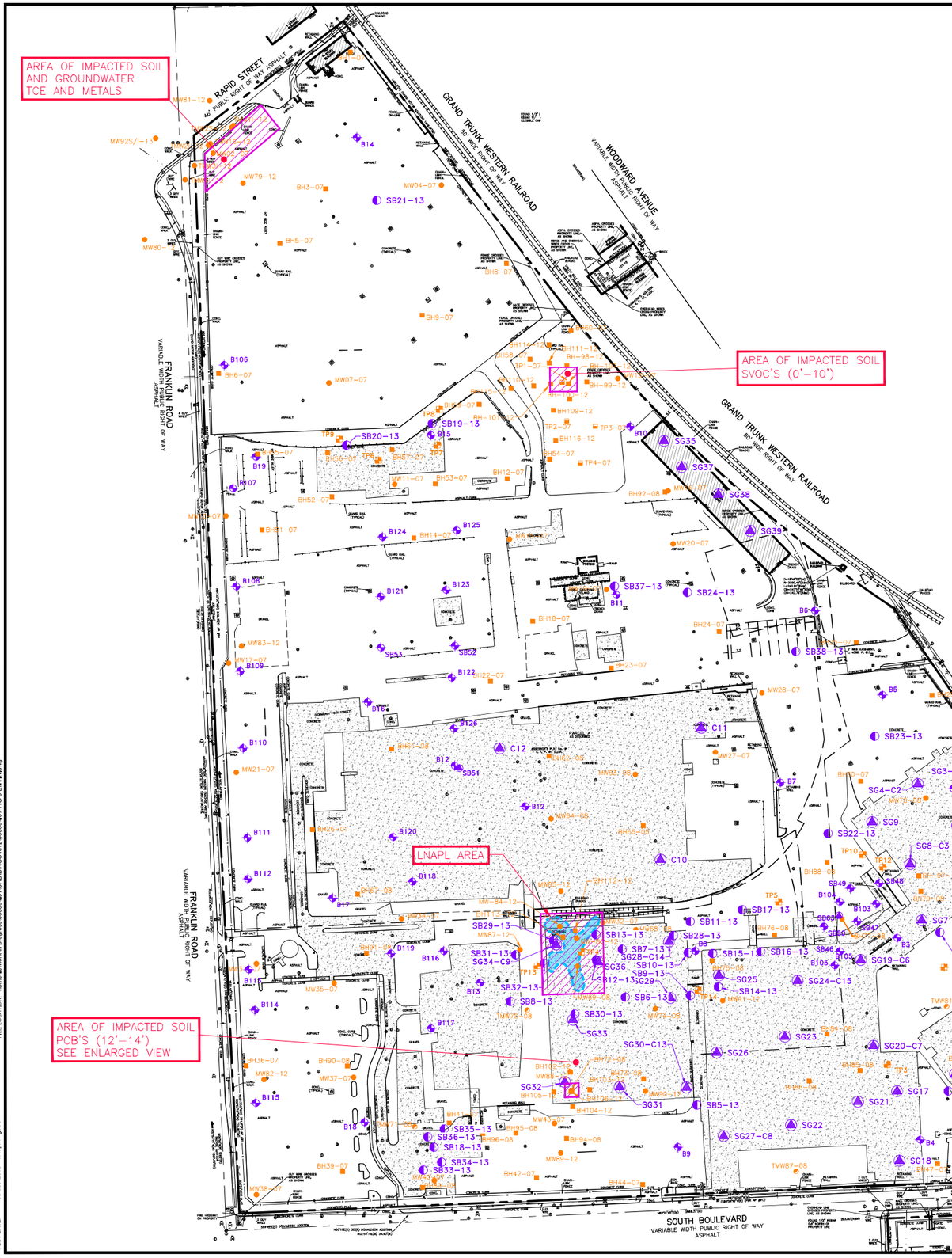
**Soil gas site-specific volatilization to indoor air (SSVIAC) are applicable for all depths.

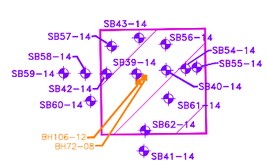
- Acceptable Air Values (AAV) endpoint basis used for SSVIAC: ( ) = Carcinogenetic; ( ) = Non-Carcinogenetic; ( ) = Developmental; ( ) = Mutagenic cancer; ( ) = Short-term (i.e., less than chronic exposure).
- Footnote ( ): Acceptable air concentrations (AAC) cannot be adjusted to a 12-hour exposure time for hazardous substance.
- Footnote : Health-based groundwater SSVIAC are not available due to insufficient toxicological data. Dissolved-phase methane in groundwater is not explosive; however, if liberated and allowed to accumulate in an enclosed structure the principle health and safety concerns are explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable groundwater concentration is the flammability and explosivity screening level ( ) of 10,000 µg/L.
- Footnote : The health-based SSVIAC exceeds the chemical-specific soil saturation screening level ( ). The person proposing or implementing response activity must document whether additional response activity is required to control non aqueous phase liquid ( ) to protect against risks associated with NAPL by using methods appropriate for the NAPL present.
- Footnote : Insufficient chemical-physical input parameters have been identified to allow the development of a health-based SSVIAC using standard methods. The health based SSVIAC for groundwater is developed based solely on the approach that the department uses for shallow groundwater. If groundwater detections are present, soil vapor may be the most appropriate media to evaluate risk posed from the VIAP.
- Footnote : Insufficient physical chemical parameters to calculate a health based SSVIAC for specified media. If detections are present in specified media, health-based soil vapor SSVIAC should be used to evaluate risk.
- Footnote : Hazardous substance causes developmental effects. Residential SSVIAC are protective of both prenatal exposure using a pregnant female receptor and postnatal exposure using a child receptor. Nonresidential SSVIAC are protective of prenatal exposure using a pregnant female receptor. Prenatal developmental effects may occur after an acute (i.e. short-term) or full-term exposure.
- Footnote : The acceptable air concentration ( ) for the volatile hazardous substances is not derived using standard methods. The hazardous substance may cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The AAC for these hazardous substances is the acute or intermediate minimum risk level (MRL) developed by the Agency for Toxic Substances and Disease Registry (ATSDR), a United States Environmental Protection Agency Integrated Risk Information System (IRIS) acute reference concentration, or EGLE's Air Quality Division acute initial threshold screening level (ITSL).
- Footnote : The AAC for the volatile hazardous substances are based on toxicity values that have been identified to have the potential to cause adverse human health effects for less than chronic exposures (i.e. short-term or acute). The short-term exposure for shallow groundwater health based SSVIAC are based on modification of the standard methods by the department to develop applicable shallow groundwater values.
- Footnote : Health-based SSVIAC for soil vapor are not available due to insufficient toxicological data. The soil vapor value addresses the health and safety concerns of explosive, flammable, and asphyxiant properties of gas phase methane. The acceptable soil vapor concentration is derived based on 25% of the lower explosive level ( ) for methane.
- Footnote : The calculated health based SSVIAC for a hazardous substance based upon shallow groundwater is considered protective when it is greater than the calculated value for groundwater.
- Footnote : Requires further evaluation to determine the appropriate media to sample.
- Footnote : Hazardous substance may be present in several isomer forms. Isomer-specific concentrations must be added together for comparison to criteria.
- Footnote : Hazardous substance may be present in several isomer forms. The health-based SSVIAC may be used for the individual isomer provided that it is the sole isomer detected; however, when multiple isomers are detected in a medium, the isomer-specific concentrations must be added together and compared to the most restrictive health-based SSVIAC of the detected isomers.
- Footnote : The health based SSVIAC may be below target detection limits ( ). In accordance with Sec. 20120a(10) when the TDL for a hazardous substance is greater than the developed health-based SSVIAC, the TDL is used to evaluate the risk posed from the pathway.
- Footnote : Hazardous substance is a carcinogen with a mutagenic mode of action. The cancer potency values used in calculating health-based SSVIAC are modified using age-dependent adjustment factors for those carcinogenic chemicals identified as mutagenic.
- Footnote : The hazardous substance does not meet the department's definition of a volatile; therefore, no health based SSVIAC were developed.
- Footnote : The hazardous substance has not been previously evaluated by the Remediation and Redevelopment Division Toxicology Unit. The identification, collection, and evaluation of toxicological literature and chemical-physical data cannot be completed within the timeframe requested.
- Footnote : Calculated health-based SSVIAC exceeds the hazardous substance-specific water solubility limit; therefore, the water solubility limit is used to evaluate the risk posed from the pathway.
- Footnote : The Remediation and Redevelopment Division Toxicology Unit has not identified an inhalation toxicity value for the hazardous substance.

Attachment D

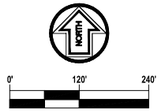
SME Results for Phase 4 and 5 Areas

(Attachment previously provided and has been omitted to minimize file size. Attachment can be resupplied upon request)





ENLARGED VIEW
SCALE: 1"=20'



GRAPHIC SCALE: 1" = 120'

LEGEND

SB	ENVIRONMENTAL BORING LOCATION (SME, 2013)
TP	TEST PIT LOCATION (SME, 2013)
B	GEOTECH BORING LOCATION (SME, 2013, 2014)
SG	SUB-SLAB VAPOR IMPLANT LOCATION (SME, 2013)
SG-C	CONCRETE SAMPLE LOCATION (SME, 2013)
TP1-07	TEST PIT LOCATION (CRA, 2007)
MW28-07	MONITORING WELL LOCATION (CRA, 2007)
TMW71-08	TEMPORARY MONITORING WELL LOCATION (CRA, 2008)
BH8-07	ENVIRONMENTAL SOIL BORING LOCATION (CRA, 2007)
E	ELECTRIC MANHOLE
	ELECTRIC PANEL
	ELECTRIC BOX
	UTILITY POLE
GL	GAS LINE MARKER
GV	GAS VALVE
	LIGHT POLE WITH STREET LAMP
T	TELEPHONE MANHOLE
	RAIL ROAD CROSSING SIGNAL
	TRAFFIC SIGNAL POLE
	TRAFFIC SIGNAL CONTROL BOX
	CLEANOUT
S	SANITARY MANHOLE
	ROUND CATCH BASIN
	SQUARE CATCH BASIN
D	STORM DRAIN MANHOLE
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
	POST INDICATOR VALVE
W	WATER GATE MANHOLE
WM	WATER METER
WV	WATER VALVE
	MONITOR WELL
M	UNKNOWN MANHOLE
	BOLLARD
	FIBER OPTIC MARKER
	LIGHTPOST/LAMP POST
	LIGHT POLE BASE
	SINGLE POST SIGN
	DOUBLE POST SIGN
	PARCEL BOUNDARY LINE
	EASEMENT (AS NOTED)
	EASEMENT CENTERLINE
	RIGHT-OF-WAY
	BUILDING
	BUILDING OVERHANG
	CURB (AS NOTED)
	EDGE OF CONCRETE (CONC.)
	EDGE OF ASPHALT (ASPH.)
	EDGE OF BRICK
	EDGE OF GRAVEL
	FENCE (AS NOTED)
	WALL (AS NOTED)
	OVERHEAD UTILITY LINE
	LIGHT NON-AQUEOUS PHASE LIQUID
	PROPOSED DEED RESTRICTION AREA

NOTE:
DRAWING INFORMATION TAKEN FROM AN ALTA SURVEY PREPARED BY KEM-TECH & ASSOCIATES, DATED JULY 29, 2013, JOB# 13-02059.

sme
www.sme-usa.com
Indiana
Michigan
Ohio

Soil and Materials Engineers, Inc.

Detroit
The Kramer Building
43980 Plymouth Oaks Boulevard
Plymouth, MI 48170-2584
ph (734) 454-9900
fax (734) 454-0629

SEAL

PROJECT NAME
M1 CONCOURSE

FACILITY NAME & LOCATION
M1 CONCOURSE
DETROIT, MICHIGAN

SHEET NAME
BORING AND WELL LOCATION DIAGRAM

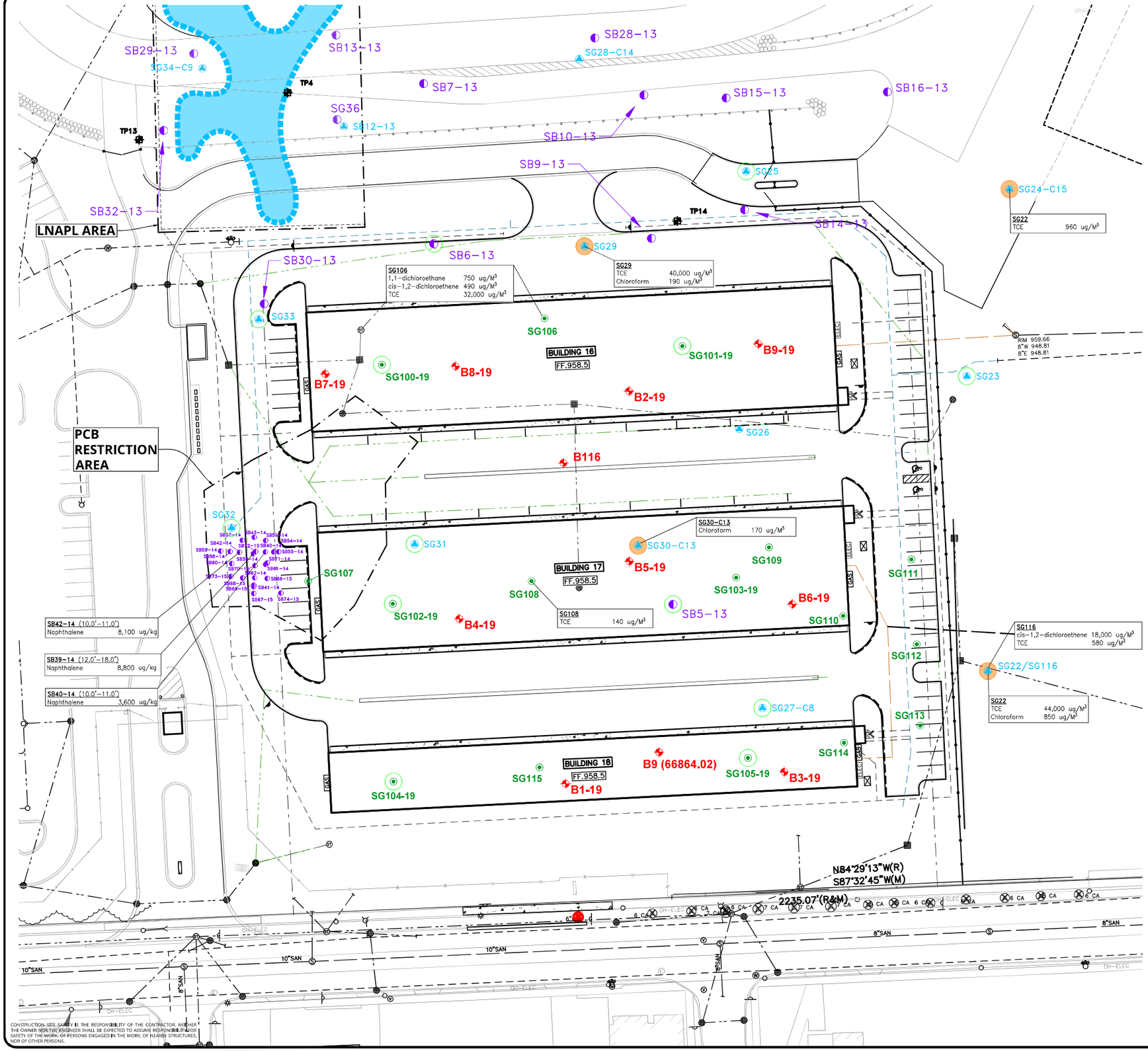
REVISIONS

REV	ISSUED FOR	DATE	BY
1	OWNER REVIEW	10-17-14	LJ

SME PROJECT NO.
066864.01
PROJECT MANAGER
LJ
DESIGNED BY
JL
DRAWN BY
SRG
CHECKED BY
LJ
DRAWING SCALE
AS NOTED
DATE
09-16-13
FILE NAME
066864.01- ENVIR
SHEET NO.
Figure 3

© 2013
NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR CONSENT OF SOIL AND MATERIALS ENGINEERS, INC.

PLOT DATE: Feb 03, 2015 - 1:48pm - good
FILE LOCATION: I:\Smetwork in progress\066864.01\CAD\DWGS\rev2\066864.01-FIG 3 ENVIR.dwg



CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF NEARBY STRUCTURES, NOR OF OTHER PERSONS.

GRAPHIC SCALE: 1" = 30'

LEGEND

B	GEOTECHNICAL BORING LOCATION (SME, 2019)
SB	ENVIRONMENTAL BORING LOCATION (SME, 2013–2015)
TP	TEST PIT LOCATION (SME, 2013)
B	GEOTECH BORING LOCATION (SME, 2013 AND 2014)
SG	SOIL GAS IMPLANT LOCATION (SME, 2013)
	APPROXIMATE SOIL GAS SAMPLE LOCATION (SME, 2019 AND 2020)
SG-C	CONCRETE SAMPLE LOCATION (SME, 2013)
TP1-07	TEST PIT LOCATION (CRA, 2007)
MW28-07	MONITORING WELL LOCATION (CRA, 2007-2012)
TMW71-08	TEMPORARY MONITORING WELL LOCATION (CRA, 2008)
BH8-07	ENVIRONMENTAL SOIL BORING LOCATION (CRA, 2007)
	SAMPLE RESULT EXCEEDES VAPOR INTRUSION SCREENING LEVEL/CRITERIA
	SAMPLE RESULT BELOW VAPOR INTRUSION SCREENING LEVEL/CRITERIA
	PETROLEUM PRODUCT AREA

NOTE:
DRAWING INFORMATION TAKEN FROM AN ALTA SURVEY PREPARED BY KEM-TECH & ASSOCIATES, DATED JULY 29, 2013, JOB# 13-02059.

SME
www.sme-usa.com

Orientation

Scale

Project
M1 CONCOURSE PHASE 4 DEVELOPMENT

Project Location
PONTIAC, MICHIGAN

Sheet Name
BUILDING 16 AREA SAMPLE LOCATION AND RESULTS SUMMARY DIAGRAM

Engineer's Seal

Revisions

REV	ISSUED FOR	DATE	BY

Date
3-30-2020

SME Project No.
082458.00

Project Manager:

Technician:

CADD:

Checked By:

Sheet No.
ATT A
FIGURE 2

DRAWING NOTE: SCALE DEPICTED IS MEANT FOR 24" X 36" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA.

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PLOT DATE: Mar 30, 2020 - 2:29pm - jbikke
FILE LOCATION: \\Sme-inc\cpc\WIP\082458.00\CAD\DWGS\Env\rev4\082458.00-BLD-ATT A.dwg

LEGEND

SB	ENVIRONMENTAL BORING LOCATION (SME, 2013–2014)
TP1–07	TEST PIT LOCATION (CRA, 2007)
MW28–07	MONITORING WELL LOCATION (CRA, 2007)
TMW71–08	TEMPORARY MONITORING WELL LOCATION (CRA, 2008)
BH8–07	ENVIRONMENTAL SOIL BORING LOCATION (CRA, 2007)
	PARCEL BOUNDARY LINE
	LIGHT NON–AQUEOUS PHASE LIQUID
	SME SOIL SAMPLE ANALYTICAL RESULTS EXCEEDING ONE OR MORE PART 201 RESIDENTIAL CRITERIA
690	ANALYTE CONCENTRATION IN µg/kg
*	CONCENTRATION IS THE GREATER OF THE DUPLICATE SAMPLES

SB8–13	
5'–6'	
9–4–13	
Trichloroethene	8,600

SB10–13	
2'–3'	
9–4–13	
Arsenic	16,000
Iron	54,000,000
Mercury	240
Selenium	1,400
Zinc	180,000

SB17–13	
1'–2'	
9–5–13	
Arsenic	6,400
Iron	17,000,000
Calculated Lead	880,000
Fine Fraction Lead	406,000
Coarse Fraction Lead	917,000
Mercury	280
Selenium	690

SB22–13	
2.5'–3.5'	
9–6–13	
2–Methylnaphthalene	18,000
Phenanthrene	5,600
Arsenic	14,000
Selenium	2,500

SB36–13*	
5'–6'	
9–18–13	
Selenium	510

SB34–13	
5'–6'	
9–18–13	
Selenium	610

SB18–13	
9'–10'	
9–5–13	
n–Butylbenzene	12,000
sec–Butylbenzene	2,100
Ethylbenzene	13,000
Naphthalene	16,000
n–Propylbenzene	15,000
1,2,3–Trimethylbenzene	26,000
1,2,4–Trimethylbenzene	120,000
1,3,5–Trimethylbenzene	38,000
Xylenes	72,000
2–Methylnaphthalene	28,000

SB39–14	
10'–11'	
7–16–14	
PCBs	40,000

SB39–14	
12'–13'	
7–16–14	
n–Butylbenzene	2,500
Naphthalene	8,800
2–Methylnaphthalene	36,000
PCBs	26,000

SB42–14	
10'–11'	
7–16–14	
n–Butylbenzene	2,100
Naphthalene	8,100
2–Methylnaphthalene	29,000
PCBs	11,000

SB40–14	
10'–11'	
7–16–14	
Naphthalene	3,600
2–Methylnaphthalene	13,000

SB1–13	
2'–4'	
9–4–13	
Aluminum	8,600,000
Arsenic	7,200
Iron	17,000,000
Selenium	450

SB4–13	
2'–3'	
9–4–13	
Arsenic	16,000

SOUTH BOULEVARD
VARIABLE WIDTH PUBLIC RIGHT OF WAY
ASPHALT

NORTH

0' 200' 400'

GRAPHIC SCALE: 1" = 200'

NOTE:
DRAWING INFORMATION TAKEN FROM AN ALTA SURVEY PREPARED BY KEM–TECH & ASSOCIATES, DATED JULY 29, 2013, JOB# 13–02059.

No.	Revision Date

CRITERIA EXCEEDANCES IN SOIL
FORMER PONTIAC VALIDATION CENTER (PARCEL A)
SOUTHERN PORTION
PONTIAC, MICHIGAN

Date	09-12-14
Drawn By	SRG/GM
Designed By	JH
Scale	1" = 200'
Project	066864.01

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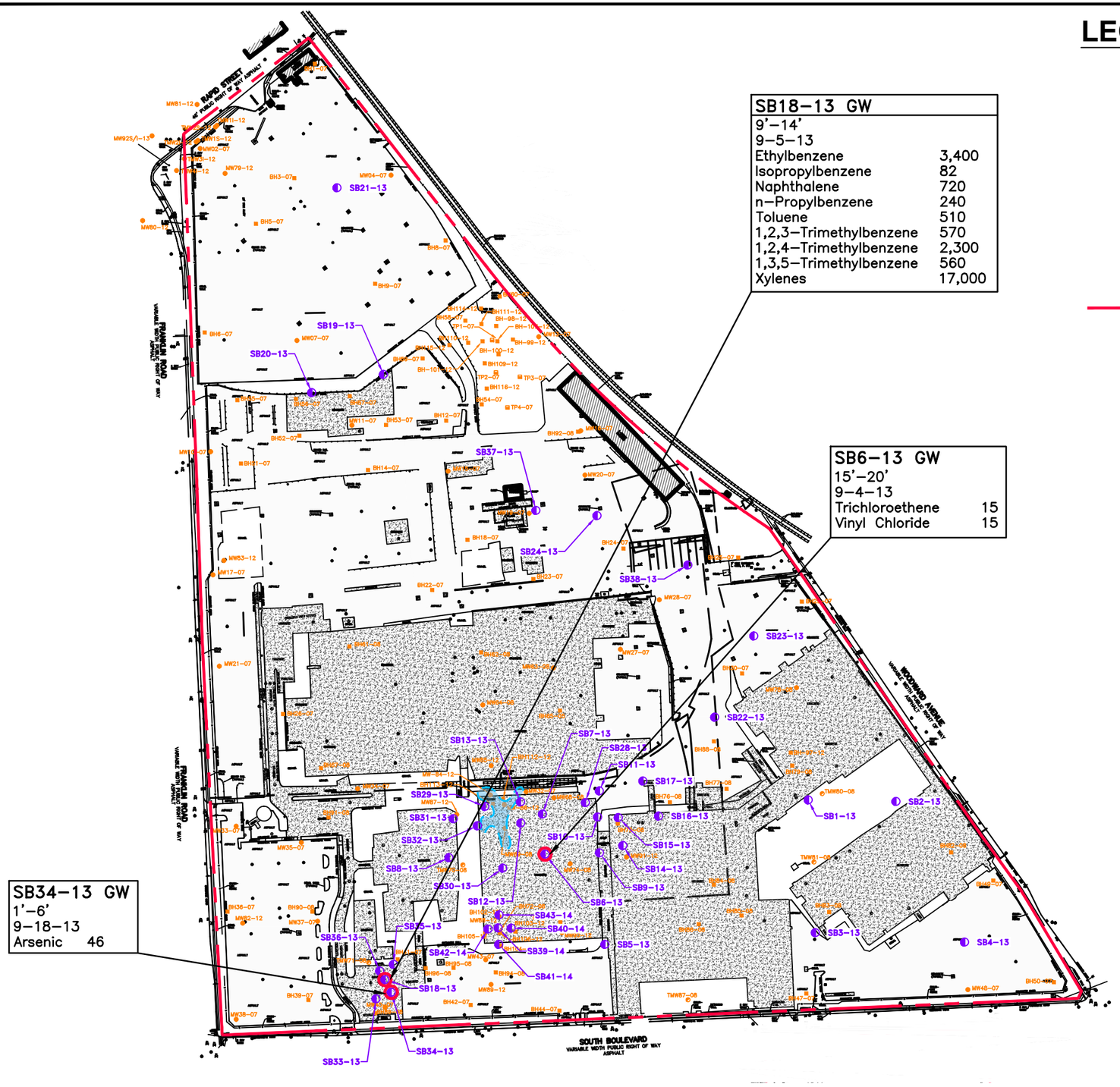
Figure No. 5



LEGEND

- SB — ENVIRONMENTAL BORING LOCATION (SME, 2013–2014)
- TP1–07 — TEST PIT LOCATION (CRA, 2007)
- MW28–07 — MONITORING WELL LOCATION (CRA, 2007)
- TMW71–08 — TEMPORARY MONITORING WELL LOCATION (CRA, 2008)
- BH8–07 — ENVIRONMENTAL SOIL BORING LOCATION (CRA, 2007)
- PARCEL BOUNDARY LINE
- LIGHT NON–AQUEOUS PHASE LIQUID
- SME GROUNDWATER SAMPLE ANALYTICAL RESULTS EXCEEDING ONE OR MORE PART 201 RESIDENTIAL CRITERIA
- 15 — ANALYTE CONCENTRATION IN µg/L

NORTH

0' 300' 600'

GRAPHIC SCALE: 1" = 300'

NOTE:
DRAWING INFORMATION TAKEN FROM AN ALTA SURVEY PREPARED BY KEM–TECH & ASSOCIATES, DATED JULY 29, 2013, JOB# 13–02059.

No.	Revision Date

CRITERIA EXCEEDANCES IN GROUNDWATER
FORMER PONTIAC VALIDATION CENTER (PARCEL A)
SOUTHERN PORTION
PONTIAC, MICHIGAN

Date	09-12-14
Drawn By	SRG/GM
Designed By	JH
Scale	1" = 300'
Project	066864.01

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Figure No. 6

TABLE 1
SOIL ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 4 – BUILDING #16
Pontiac, Michigan
SME Project No. 082458.00.002

Constituent	CAS Number	Residential Drinking Water Protection Criteria	Nonresidential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Direct Contact Criteria	Nonresidential Direct Contact Criteria	Site Specific Non-Residential Volatilization to Indoor Air Criteria	Sample Identification	SB5-13	SB6-13	SB6-13	SB9-13	SB14-13	SB14-13	SB30-13	SB39-14	SB39-14	SB39-14
								Depth	(0.5' - 1.5')	(3' - 4')	(10' - 11')	(1.5' - 2.5')	(2' - 3')	(9' - 10')	(2' - 3')	(10' - 11')	(12' - 13')	(14' - 15')
								Collect Date	9/4/2013	9/4/2013	9/4/2013	9/4/2013	9/5/2013	9/5/2013	9/18/2013	7/16/2014	7/16/2014	7/16/2014
VOCs																		
n-Butylbenzene	104-51-8	**1,600**	4,600	ID	2,500,000	8,000,000	9,800		<260	<50	**380**	<50	<50	<50	<53	NE	**2,500**	NE
sec-Butylbenzene	135-98-8	1,600	4,600	ID	2,500,000	8,000,000	66,000		<260	<50	<300	<50	<50	<50	<53	NE	**960**	NE
Naphthalene	91-20-3	35,000	100,000	**730**	16,000,000	52,000,000	**1,900**		<330	<330	<330	<330	<330	<330	<330	NE	**8,800**	NE
n-Propylbenzene	103-65-1	1,600	4,600	ID	2,500,000	8,000,000	21,000		<260	<100	<300	<100	<100	<100	<100	NE	**540**	NE
Other VOCs	CS	CS	CS	CS	CS	CS	CS		<RL	<RL	<RL	<RL	<RL	<RL	<RL	NE	<RL	NE
SVOCs																		
2-Methylnaphthalene	91-57-6	57,000	170,000	**4,200**	8,100,000	26,000,000	**30,000**		<330	<330	<330	<330	<330	<330	<330	NE	**36,000**	NE
Other SVOCs	CS	CS	CS	CS	CS	CS	CS		<RL	NE	<RL	NE	NE	NE	NE	NE	NE	NE
PCBs																		
PCBs, Total	1336-36-3	NA	NA	NA	**4,000**	**16,000**	DATA		NE	NE	NE	NE	NE	NE	NE	**40,000**	**26,000**	<330
Metals																		
Aluminum	7429-90-5	*6,900,000*	*6,900,000*	NA	50,000,000	370,000,000	NA		**2,600,000**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Arsenic	7440-38-2	*5,800*	*5,800*	5,800	7,600	37,000	NA		**4,000**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Barium	7440-39-3	1,300,000	1,300,000	440,000*	37,000,000	130,000,000	NA		**14,000**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Cadmium	7440-43-9	6,000	6,000	3,600*	550,000	2,100,000	NA		**97**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Chromium, Total ^^	16065-83-1	1,000,000,000	1,000,000,000	2,900,000,000*	790,000,000	1,000,000,000	NA		**6,500**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Chromium VI	18540-29-9	30,000	30,000	3,300	2,500,000	9,200,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Copper	7440-50-8	5,800,000	5,800,000	75,000*	20,000,000	73,000,000	NA		**7,100**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Iron	7439-89-6	*12,000,000*	*12,000,000*	NA	160,000,000	580,000,000	NA		**6,400,000**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead	7439-92-1	700,000	700,000	2,800,000*	400,000	900,000	NA		**5,100**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead, Total (Calculated)	7439-92-1	700,000	700,000	2,800,000*	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead, Coarse Fraction	7439-92-1	NA	NA	NA	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead, Fine Fraction	7439-92-1	NA	NA	NA	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Manganese	7439-96-5	*440,000*	*440,000*	*440,000*	25,000,000	90,000,000	NA		**280,000**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Mercury, Total	7439-97-6	1,700	1,700	*130*	160,000	580,000	390		<50	NE	NE	NE	NE	NE	NE	NE	NE	NE
Selenium	7782-49-2	4,000	4,000	*410*	2,600,000	9,600,000	NA		**330**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Silver	7440-22-4	4,500	13,000	*1,000*	2,500,000	9,000,000	NA		<100	NE	NE	NE	NE	NE	NE	NE	NE	NE
Sodium	17341-25-2	2,500,000	7,000,000	NA	1,000,000,000	1,000,000,000	NA		**170,000**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Vanadium	7440-62-2	72,000	990,000	430,000	750,000	5,500,000	NA		**22,000**	NE	NE	NE	NE	NE	NE	NE	NE	NE
Zinc	7440-66-6	2,400,000	5,000,000	170,000*	170,000,000	630,000,000	NA		**23,000**	NE	NE	NE	NE	NE	NE	NE	NE	NE

Notes:
1. Concentrations reported in micrograms per kilogram (ug/kg).
2. Criteria taken from RRD Operational Memorandum No. 1, Table 2. Soil: Residential Part 201 Generic Cleanup Criteria and Screening levels, dated December 30, 2013 and EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
3. Results above laboratory reporting limits shown in BOLD. Results exceeding one or more criteria are shaded, as are the criteria.
4. VOCs = Volatile Organic Compounds; SVOCs = Semivolatile Organic Compounds; PCBs = Polychlorinate Biphenyls; Other VOCs and Other SVOCs = Refer to the analytical report for the full list of VOC and SVOC analytes.
5. CS - Criterion is specific to individual constituent; <RL - Analytical result was below laboratory reporting limit(s); ID - Insufficient data to develop criteria; NA = Not applicable; NE - Not evaluated; NLL - Not likely to leach; NLV - Not likely to volatilize.
6. * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardess value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies not protected as a drinking water source.
7. *Italicized* = the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
8. Concentrations were also compared to and found to be below Infinite Source Volatile Soil Inhalation Criteria, Finite VSIC for 2 and 5 Meter Source Thickness, Particulate Soil Inhalation Criteria, and Soil Saturation Concentration Screening Levels.
9. ^^ = Total chromium was compared to trivalent chromium criteria. Valance specifc testing was completed on other samples in the sample set and results for hexavalent chromium were below reporting limits.
10. DATA - EGLE identified insufficient physical chemical parameters to calculate a health based SSVIAC for specified media.

TABLE 1
SOIL ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 4 – BUILDING #16
Pontiac, Michigan
SME Project No. 082458.00.002

Constituent	CAS Number	Residential Drinking Water Protection Criteria	Nonresidential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Direct Contact Criteria	Nonresidential Direct Contact Criteria	Site Specific Non-Residential Volatilization to Indoor Air Criteria	Sample Identification	SB40-14	SB40-14	SB40-14	SB41-14	SB41-14	SB42-14	SB42-14	SB42-14	SB43-14	SB43-14
								Depth	(10' - 11')	(12' - 13')	(14' - 15')	(10' - 11')	(12' - 13')	(10' - 11')	(12' - 13')	(14' - 15')	(10' - 11')	(12' - 13')
								Collect Date	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014
VOCs																		
n-Butylbenzene	104-51-8	**1,600**	4,600	ID	2,500,000	8,000,000	9,800		**870**	NE	NE	NE	NE	**2,100**	NE	NE	NE	NE
sec-Butylbenzene	135-98-8	1,600	4,600	ID	2,500,000	8,000,000	66,000		**330**	NE	NE	NE	NE	**730**	NE	NE	NE	NE
Naphthalene	91-20-3	35,000	100,000	**730**	16,000,000	52,000,000	**1,900**		**3,600**	NE	NE	NE	NE	**8,100**	NE	NE	NE	NE
n-Propylbenzene	103-65-1	1,600	4,600	ID	2,500,000	8,000,000	21,000		**180**	NE	NE	NE	NE	**440**	NE	NE	NE	NE
Other VOCs	CS	CS	CS	CS	CS	CS	CS		<RL	<RL	NE	NE	NE	<RL	NE	NE	NE	NE
SVOCs																		
2-Methylnaphthalene	91-57-6	57,000	170,000	**4,200**	8,100,000	26,000,000	30,000		**13,000**	NE	NE	NE	NE	**29,000**	NE	NE	NE	NE
Other SVOCs	CS	CS	CS	CS	CS	CS	CS		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
PCBs																		
PCBs, Total	1336-36-3	NA	NA	NA	**4,000**	**16,000**	DATA		NE	**4,000**	<330	<330	<330	**11,000**	**660**	<330	<330	<330
Metals																		
Aluminum	7429-90-5	6,900,000	*6,900,000*	NA	50,000,000	370,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Arsenic	7440-38-2	*5,800*	*5,800*	5,800	7,600	37,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Barium	7440-39-3	1,300,000	1,300,000	440,000*	37,000,000	130,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Cadmium	7440-43-9	6,000	6,000	3,600*	550,000	2,100,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Chromium, Total ^^	16065-83-1	1,000,000,000	1,000,000,000	2,900,000,000*	790,000,000	1,000,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Chromium VI	18540-29-9	30,000	30,000	3,300	2,500,000	9,200,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Copper	7440-50-8	5,800,000	5,800,000	75,000*	20,000,000	73,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Iron	7439-89-6	*12,000,000*	*12,000,000*	NA	160,000,000	580,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead	7439-92-1	700,000	700,000	2,800,000*	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead, Total (Calculated)	7439-92-1	700,000	700,000	2,800,000*	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead, Coarse Fraction	7439-92-1	NA	NA	NA	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Lead, Fine Fraction	7439-92-1	NA	NA	NA	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Manganese	7439-96-5	*440,000*	*440,000*	*440,000*	25,000,000	90,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Mercury, Total	7439-97-6	1,700	1,700	*130*	160,000	580,000	390		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Selenium	7782-49-2	4,000	4,000	*410*	2,600,000	9,600,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Silver	7440-22-4	4,500	13,000	*1,000*	2,500,000	9,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Sodium	17341-25-2	2,500,000	7,000,000	NA	1,000,000,000	1,000,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Vanadium	7440-62-2	72,000	990,000	430,000	750,000	5,500,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Zinc	7440-66-6	2,400,000	5,000,000	170,000*	170,000,000	630,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Notes:
1. Concentrations reported in micrograms per kilogram (ug/kg).
2. Criteria taken from RRD Operational Memorandum No. 1, Table 2. Soil: Residential Part 201 Generic Cleanup Criteria and Screening levels, dated December 30, 2013 and EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
3. Results above laboratory reporting limits shown in BOLD. Results exceeding one or more criteria are shaded, as are the criteria.
4. VOCs = Volatile Organic Compounds; SVOCs = Semivolatile Organic Compounds; PCBs = Polychlorinate Biphenyls; Other VOCs and Other SVOCs = Refer to the analytical report for the full list of VOC and SVOC analytes.
5. CS - Criterion is specific to individual constituent; <RL - Analytical result was below laboratory reporting limit(s); ID - Insufficient data to develop criteria; NA = Not applicable; NE - Not evaluated; NLL - Not likely to leach; NLV - Not likely to volatilize.
6. * = GSI Protection was calculated for the indicated metals using the EGLE spreadsheet for calculating GSI. A default water hardess value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies not protected as a drinking water source.
7. *Italicized* = the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
8. Concentrations were also compared to and found to be below Infinite Source Volatile Soil Inhalation Criteria, Finite VSIC for 2 and 5 Meter Source Thickness, Particulate Soil Inhalation Criteria, and Soil Saturation Concentration Screening Levels.
9. ^^ = Total chromium was compared to trivalent chromium criteria. Valance specifc testing was completed on other samples in the sample set and results for hexavalent chromium were below reporting limits.
10. DATA - EGLE identified insufficient physical chemical parameters to calculate a health based SSVIAC for specified media.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 4 – BUILDING #16
Pontiac, Michigan
SME Project No. 082458.00.002

Constituent	CAS Number	Residential & Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Site Specific Non-Residential Volatilization to Indoor Air Criteria	Sample Identification	SB5-13 GW	SB6-13 GW
					Depth	(9' - 14')	(15' - 20')
					Collect Date	9/4/2013	9/4/2013
VOCs							
Chloroethane	75-00-3	430	1,100	150,000		<5.0	**77**
1,1-Dichloroethane	75-34-3	880	740	2,500		<1.0	**260**
cis-1,2-Dichloroethylene	156-59-2	70	620	1,100		<1.0	**35**
1,1-Dichloroethylene	75-35-4	7.0	130	3,900		<1.0	**1.6**
1,1,1-Trichloroethane	71-55-6	200	89	190,000		<1.0	**13**
Trichloroethylene	79-01-6	**5.0**	200	98		<1.0	**15**
Vinyl chloride	75-01-4	**2.0**	**13**	120		<1.0	**15**
Other VOCs	CS	CS	CS	CS		<RL	<RL
SVOCs							
2-Methylnaphthalene	91-57-6	260	**19**	25,000		<5.0	<5.0
Other SVOCs	CS	CS	CS	CS		<RL	<RL
Metals							
Arsenic	7440-38-2	10	10	NA		NE	NE
Barium	7440-39-3	2,000	670*	NA		NE	NE
Cadmium	7440-43-9	5.0	3.0*	NA		NE	NE
Chromium, Total	16065-83-1	100	11	NA		NE	NE
Copper	7440-50-8	1,000	13*	NA		NE	NE
Lead	7439-92-1	4.0	16*	34		NE	NE
Mercury, Total	7439-97-6	2.0	0.0013	NA		NE	NE
Selenium	7782-49-2	50	5.0	NA		NE	NE
Silver	7440-22-4	34	0.2	NA		NE	NE
Zinc	7440-66-6	2,400	170*	NA		NE	NE
Pesticides, Chlorinated							
Hexachlorobutadiene (C-46)	87-68-3	15	0.053	NA		<5	<5

Notes:
1. Concentrations reported in micrograms per liter (ug/L).
2. Criteria taken from RRD Operational Memorandum No. 1, Table 1. Groundwater: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening levels, dated December 30, 2013 and EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Vapor Intrusion Criteria Evaluation.
3. Results above laboratory reporting limits shown in BOLD. Results exceeding one or more criteria are shaded, as are the criteria.
4. VOCs = Volatile Organic Compounds; SVOCs = Semivolatile Organic Compounds; Other VOCs and Other SVOCs = Refer to the analytical report for the full list of VOC and SVOC analytes.
5. CS - Criterion is specific to individual constituent; <RL - Analytical result was below laboratory reporting limit(s); ID - Insufficient data to develop criteria; NA = Not applicable; NE - Not evaluated; NLV - Not likely to volatilize.
6. * = GSI Protection was calculated for the indicated metals using the EGLE spreadsheet for calculating GSI. A default water hardess value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies not protected as a drinking water source.
7. *Italicized* = the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
9. Concentrations were also compared to and found to be below Water Solubility, Flammability and Explosivity Screening Levels, and Acute Inhalation Screening Levels.

TABLE 3A
SOIL GAS ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 4 – BUILDING #16
Pontiac, Michigan
SME Project No. 082458.00.002

Constituent	Chemical Abstract Service Number	Nonresidential Volatilization to Indoor Air Criteria (VIAC)	Sample Identification	SG22	SG23	SG24-C15	SG25	SG26	SG27	SG/SB28	SG29	SG30	SG31	SG32	SG33
			Depth	0.5-1'	0.5-1'	0.5-1'	0.5-1'	0.5-1'	0.5-1'	5.5-6'	0.5-1'	0.5-1'	0.5-1'	0.5-1'	5-6'
			Collect Date	9/11/13	9/11/13	9/11/13	9/11/13	9/11/13	9/11/13	9/23/13	9/11/2013	9/11/13	9/11/13	9/11/13	9/11/13
VOCs															
Acetone	67-64-1	NA		**1,200**	**930**	**6,200**	**5,400**	**250**	**3,800**	**55**	<230	**93**	<RL	**66**	<RL
Benzene	71-43-2	260		<RL	<8.3	<RL	<RL	<1.7	<RL	**33**	<1.7	**10**	**8.2**	**7.1**	<RL
2-Butanone	78-93-3	NA		<RL	<39	<RL	<RL	<7.8	<RL	**9.4**	<270	<7.8	<RL	<RL	<RL
Carbon Disulfide	5873-93-8	NA		<RL	<41	<RL	<RL	<8.2	<RL	**36**	<290	<8.2	<RL	<RL	<RL
Chloroform	67-66-3	**87**		**850**	<13	<RL	<RL	<2.6	<RL	<RL	**190**	**170**	<RL	<RL	<RL
Cyclohexane	110-82-7	310,000		<RL	<8.9	<RL	<RL	<1.8	<RL	**20**	<63	**3.2**	**6.1**	**5.6**	<RL
1,1-Dichloroethene	75-35-4	10,000		**77**	<11	<RL	<RL	<11	<RL	<RL	<11	<11	<11	<11	<RL
Dichlorodifluoromethane	75-71-8	NA		<RL	<6.2	<RL	<RL	**4.6**	<RL	<RL	<43	**12**	<RL	<RL	<RL
trans-1,2-dichloroethylene	156-60-5	4,100		**360**	<10	<RL	<RL	<10	<RL	<RL	<76	<10	<RL	<RL	<RL
Ethylbenzene	100-41-4	800		<RL	<5.6	<RL	<RL	**2.5**	<RL	**14**	<40	**6.0**	<RL	**7.0**	<RL
n-Heptane	142-82-5	180,000		<RL	<2.2	<RL	<RL	<2.2	<RL	**84**	<76	**2.8**	<RL	**2.4**	<RL
n-Hexane	110-54-3	36,000		<RL	<9.3	<RL	<RL	**1.9**	<RL	**61**	**2,100**	**1,000**	<RL	**530**	<RL
2-Hexanone	591-78-6	NA		<RL	<4.6	<RL	<RL	<4.6	<RL	<RL	<76	<4.6	<RL	<RL	<RL
2-Methylnaphthalene	93-04-9	510		<RL	<71	<RL	<RL	<14	<RL	<RL	<500	<14	<RL	<RL	<RL
Naphthalene	91-20-3	59		**39**	**11**	<RL	<RL	**3.3**	**21**	<RL	<51	<1.9	<RL	<RL	<RL
Tetrachloroethylene	127-18-4	1,400		<RL	**320**	<RL	**240**	<2.5	<RL	**3.9**	**100**	**7.1**	**34**	**210**	<RL
Toluene	108-88-3	250,000		<RL	**280**	<RL	<RL	**4.4**	**20**	**140**	**58**	**120**	**49**	**73**	<RL
Trichlorofluoromethane	75-69-4	NA		**54**	**97**	**380**	<RL	**560**	**39**	**210**	<53	**20**	**33**	**89**	<RL
1,1,1-trichloroethane	71-55-6	230,000		<RL	<14	<RL	<RL	**6.3**	<RL	**8**	**26,000**	**390**	**18**	<RL	<RL
Trichloroethylene	79-01-6	**67**		**44,000**	**15**	**960**	<RL	<2.0	<RL	**13**	**40,000**	**5.5**	**2.4**	**2.4**	<RL
1,2,4-Trimethylbenzene	95-63-6	3,100		<RL	**25**	<RL	<RL	**5.6**	<RL	**13**	<45	**8.7**	**16**	**9.9**	<RL
1,3,5-Trimethylbenzene	108-67-8	3,100		<RL	<6.4	<RL	<RL	**2.0**	<RL	**6.5**	<45	**2**	**3.3**	**1.9**	<RL
Xylenes, Total	1330-20-7	11,000		<RL	**17**	**160**	<RL	**19**	<RL	**55**	<120	**34**	**66**	**46**	<RL
Other Analyzed VOCs	CS	CS		<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Notes:

1. Only constituents measured at concentrations above their respective Method Reporting Limit (RL) in at least on sample are listed.
2. Concentrations are reported in micrograms per cubic meter ($\mu g/m^3$).
3. VIAC from EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
4. Results exceeding laboratory reporting limits are **bold**.
5. Results exceeding VIAC are shaded orange, as are the criteria exceeded.
6. VOCs -Volatile Organic Compounds. Refer to the analytical report for the full list of VOC constituents.
7. CS - Criterion is specific to individual constituent.
8. <RL - concentrations of all non-listed constituents were below their respective Method Reporting Limits.
9. NA - No criteria available.

TABLE 3A
SOIL GAS ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 4 – BUILDING #16
Pontiac, Michigan
SME Project No. 082458.00.002

Constituent	Chemical Abstract Service Number	Nonresidential Volatilization to Indoor Air Criteria (VIAC)	Sample Identification	SG-100-19	SG101-19	SG102-19	SGDUP1	SG104-19	SG105-19
			Depth	3'-3.5'	6'-6.5'	3'-3.5'	SG102-19	7'-7.5'	6'-6.5'
			Collect Date	10/29/19	10/29/19	10/29/19	10/29/19	10/29/19	10/29/19
VOCs									
Acetone	67-64-1	NA		**96**	<57	<57	<57	**180**	<57
Benzene	71-43-2	260		<19	<19	<19	<19	<19	**28**
Carbon Disulfide	5873-93-8	NA		<37	<37	**38**	<37	<37	**94**
Chloroform	67-66-3	87		**32**	<5.9	**25**	**25**	<5.9	<5.9
Cyclohexane	110-82-7	310,000		<41	<41	**47**	**48**	<41	**42**
1,1-Dichloroethene	75-35-4	10,000		<41	<41	<41	<41	<41	<41
Dichlorodifluoromethane	75-71-8	NA		<30	**58**	**40**	**38**	<30	<30
n-Heptane	142-82-5	180,000		<49	<49	**91**	**89**	<49	**73**
n-Hexane	110-54-3	36,000		<42	<42	**210**	**210**	<42	**120**
Tetrachloroethylene	127-18-4	1,400		**140**	<41	**66**	**70**	<41	<41
Toluene	108-88-3	250,000		<23	<23	**34**	**34**	<23	**72**
Trichlorofluoromethane	75-69-4	NA		**140**	**840**	**550**	**550**	**62**	**66**
Trichloroethylene	79-01-6	67		**7.9**	**6.5**	**8.3**	**8.6**	**5.5**	**3.9**
Other Analyzed VOCs	CS	CS		<RL	<RL	<RL	<RL	<RL	<RL

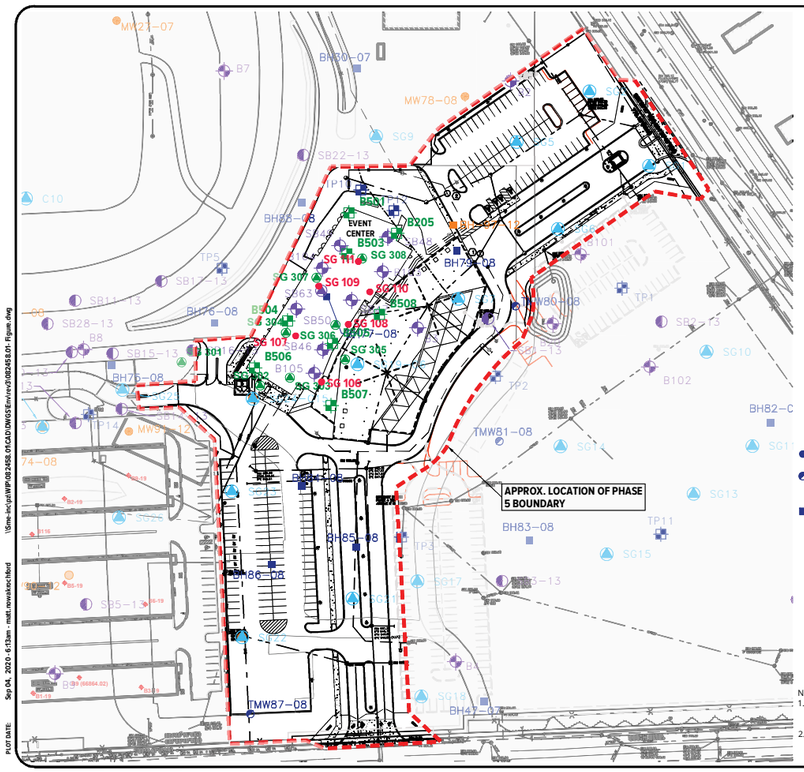
Notes:

1. Only constituents measured at concentrations above their respective Method Reporting Limit (RL) in at least on sample are listed.
2. Concentrations are reported in micrograms per cubic meter ($\mu g/m^3$).
3. VIAC from EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
4. Results exceeding laboratory reporting limits are **bold.**
5. Results exceeding VIAC are shaded orange, as are the criteria exceeded.
6. VOCs **-**Volatile Organic Compounds. Refer to the analytical report for the full list of VOC constituents.
7. CS **-** Criterion is specific to individual constituent.
8. <RL **-** concentrations of all non-listed constituents were below their respective Method Reporting Limits.
9. NA **-** No criteria available.

TABLE 3B
SUMMARY OF ANALYTICAL RESULTS - SOIL GAS
M1 CONCOURSE
PHASE 4 - BUILDING #16
PONTIAC, MICHGIAN
SME Project No. 082458.00.002

Constituent	Chemical Abstract Service Number	Nonresidential Volatilization to Indoor Air Criteria (VIAC)	Chemical Analytical Results Sample Identification Depth (feet) Date Collected										
			SG106	SG107	SG108	SG109	SG110	SG111	SG112	SG113	SG114	SG115	SG116
			5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	4.5-5
			1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20	1/21/20
VOCs													
Benzene	71-43-2	260	<21	**35**	<19	<19	<19	**30**	**21**	<19	<38	<19	<19
1,3 Butadiene	106-99-0	NA	<14	<0.66	<0.66	<0.66	**6.6**	**7.3**	**17**	**1.4**	<26	<0.66	<1.5
Carbon Disulfide	75-15-0	NA	<240	<37	<37	<37	**46**	**82**	**40**	<37	<420	<37	**56**
Carbon Tetrachloride	56-23-5	NA	<16	<7.5	<7.5	<7.5	<7.5	<7.5	<7.5	<7.5	<29	**16**	<7.5
Chloroethane	75-00-3	200,000	**63**	<16	<16	<16	<16	<16	<16	<16	<47	<16	<16
Cyclohexane	110-82-7	310,000	<91	<41	<41	<41	**68**	**110**	**83**	<41	<160	<41	<41
Dichlorodifluoromethane	75-71-8	NA	<380	**160**	<30	<30	<30	<30	<30	<30	<670	<30	<39
1,1-Dichloroethane	75-34-3	**77**	**750**	<24	<24	<24	<24	<24	<24	<24	<47	<24	<24
1,1-Dichloroethene	75-35-4	10,000	**470**	<24	<24	<24	<24	<24	<24	<24	<48	<24	**120**
cis-1,2-Dichloroethene	156-59-2	**410**	**490**	<24	<24	<24	<24	<24	<24	<24	<47	<24	**18,000**
trans-1,2-Dichloroethene	156-60-5	4,100	<26	<24	<24	<24	<24	<24	<24	<24	<47	<24	350
n-Heptane	142-82-5	180,000	<49	<49	<49	**110**	**300**	**210**	**160**	<49	<78	<49	<49
n-Hexane	110-54-3	36,000	<93	<42	<42	**55**	**880**	**380**	**290**	<42	<170	<42	<42
Tetrachloroethene	127-18-4	1,400	**130**	<41	<41	<41	<41	<41	<41	<41	<81	<41	<41
Tetrahydrofuran	109-99-9	NA	<31	<3.5	**47**	<3.5	<3.5	<3.5	<3.5	<3.5	<55	<3.5	<3.5
Toluene	108-88-3	250,000	<40	<23	<23	<23	<23	**100**	**59**	<23	<71	<23	<23
1,1,1-Trichloroethane	71-55-6	230,000	**2,800**	<33	<33	<33	<33	<33	<33	<33	<100	<33	<33
Trichloroethene	79-01-6	**67**	**32,000**	**3.0**	**140**	**49**	**4.9**	**2.6**	**23**	**31**	<25	<1.6	**580**
Trichlorofluoromethane	75-69-4	NA	<37	**130**	<34	<34	<34	<34	**65**	**1,200**	**10,000**	<34	<34
Vinyl Chloride	75-01-4	450	<26	<15	<15	<15	<15	<15	<15	<15	<46	<15	**140**
Xylenes	1330-20-7	11,000	<340	<100	<100	<100	<100	**110**	<100	<100	<610	<100	<100
Other VOCs	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

Notes:
1. Only constituents measured at concentrations above their respective Method Reporting Limit (RL) in at least on sample are listed.
2. Concentrations are reported in micrograms per cubic meter (µg/m3).
3. VIAC from EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
4. Results exceeding laboratory reporting limits are bold.
5. Results exceeding Proposed Part 201 Screening Levels are shaded orange, as are the criteria exceeded. Results exceeding RIASL are shaded blue.
6. VOCs -Volatile Organic Compounds. Refer to the analytical report for the full list of VOC constituents.
7. CS - Criterion is specific to individual constituent.
8. <RL - concentrations of all non-listed constituents were below their respective Method Reporting Limits.
9. NA - No criteria available.



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Project
M1 CONCOURSE PHASE 5 - EVENT CENTER

Project Location
PONTIAC, MICHIGAN

Sheet Name
PHASE 5 SOIL BORING AND SOIL GAS SAMPLE LOCATION DIAGRAM

No.	Revision Date

Date	9/4/20
CADD	SRP/GUS
Designer	SB
Scale	AS NOTED
Project	082458.01
Figure No.	4A

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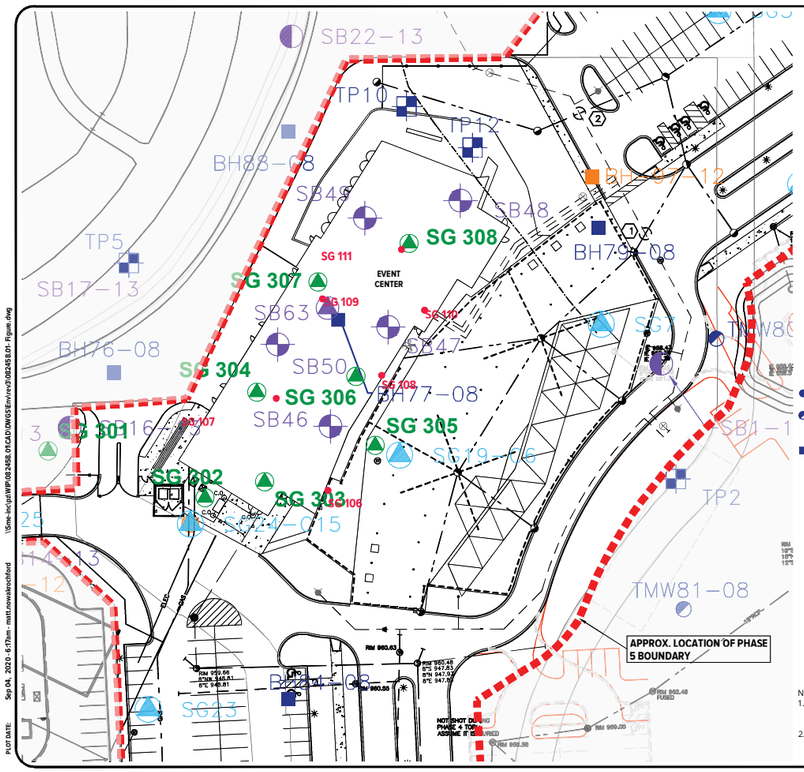

LEGEND

SB	ENVIRONMENTAL BORING LOCATION (SME, 2013–2015)
TP	TEST PIT LOCATION (SME, 2013)
SG	SOIL GAS IMPLANT LOCATION (SME, 2013)
SG	APPROXIMATE SOIL GAS SAMPLE LOCATION (SME, 2014)
SG	APPROXIMATE SOIL GAS SAMPLE LOCATION (SME, 2019 AND 2020)
MW28-07	MONITORING WELL LOCATION (CRA, 2007–2012)
TMW71-08	TEMPORARY MONITORING WELL LOCATION (CRA, 2008)
BH8-07	ENVIRONMENTAL SOIL BORING LOCATION (CRA, 2007)

NOTE:
1. BASE DRAWING INFORMATION PROVIDED FROM A CAD FILE TITLED "X-BASE5A-13139" PROVIDED TO SME BY PEA ON JUNE 5TH, 2020.
2. PHASE 5 BOUNDARY LOCATION PROVIDED BY A PDF PREPARED BY PEA, TITLED PROPOSED OVERALL SITE PLAN M1 CONCOURSE - PHASE 5A, DATED JUNE 1, 2020.

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Project
M1 CONCOURSE PHASE 5 - EVENT CENTER

Project Location
PONTIAC, MICHIGAN

Sheet Name
EVENT CENTER ENVIRONMENTAL SOIL BORING AND SOIL GAS SAMPLE LOCATION DIAGRAM

No.	Revision Date

Date	9/4/20
CADD	SRP/GUS
Designer	SB
Scale	AS NOTED
Project	082458.01
Figure No.	4B

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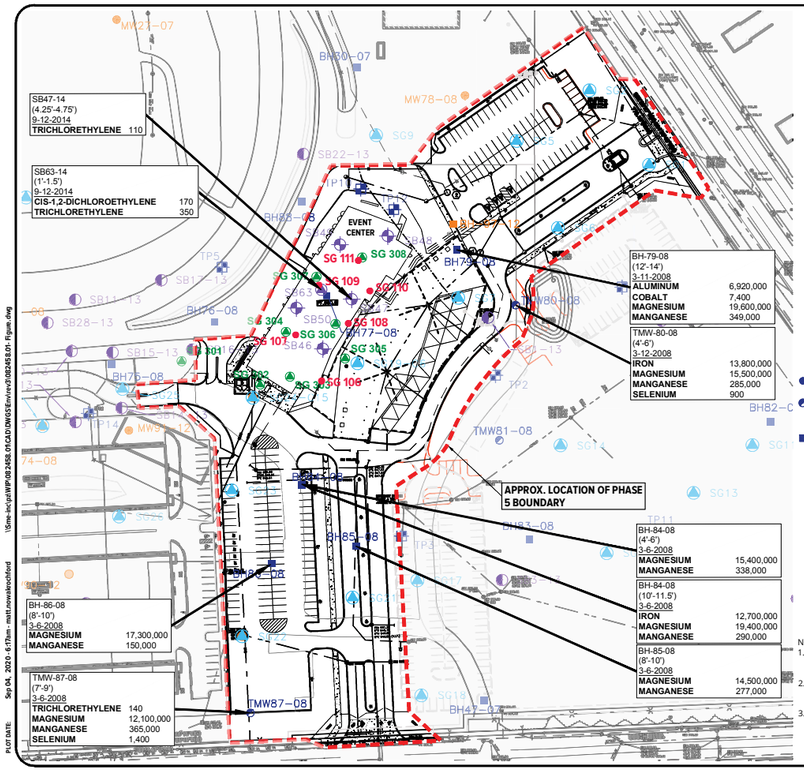
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9-12-2014
TRICHLORETHYLENE 110
SB63-14
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9-12-2014
CIS-1,2-DICHLOROETHYLENE 170
TRICHLORETHYLENE 350
BH-79-08
(12'-14')
3-11-2008
ALUMINUM 6,920,000
COBALT 7,400
MAGNESIUM 19,600,000
MANGANESE 349,000
TMW-80-08
(4'-6')
3-12-2008
IRON 13,800,000
MAGNESIUM 15,500,000
MANGANESE 285,000
SELENIUM 900
APPROX. LOCATION OF PHASE 5 BOUNDARY
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(4'-6')
3-6-2008
MAGNESIUM 15,400,000
MANGANESE 338,000
BH-84-08
(10'-11.5')
3-6-2008
IRON 12,700,000
MAGNESIUM 19,400,000
MANGANESE 290,000
BH-85-08
(8'-10')
3-6-2008
MAGNESIUM 14,500,000
MANGANESE 277,000
BH-86-08
(8'-10')
3-6-2008
MAGNESIUM 17,300,000
MANGANESE 150,000
TMW-87-08
(7'-9')
3-6-2008
TRICHLORETHYLENE 140
MAGNESIUM 12,100,000
MANGANESE 365,000
SELENIUM 1,400
EVENT CENTER
MW21-07
BH30-07
MW78-08
BH75-08
BH76-08
BH77-08
BH79-08
BH80-08
BH81-08
BH82-C
BH83-08
BH85-08
BH86-08
TMW81-08
TMW87-08
SG 111
SG 308.2
SG 109
SG 110
SG 108
SG 306
SG 305
SG 107
SG 106
SG 304
SG 301
SG 302
SG 303
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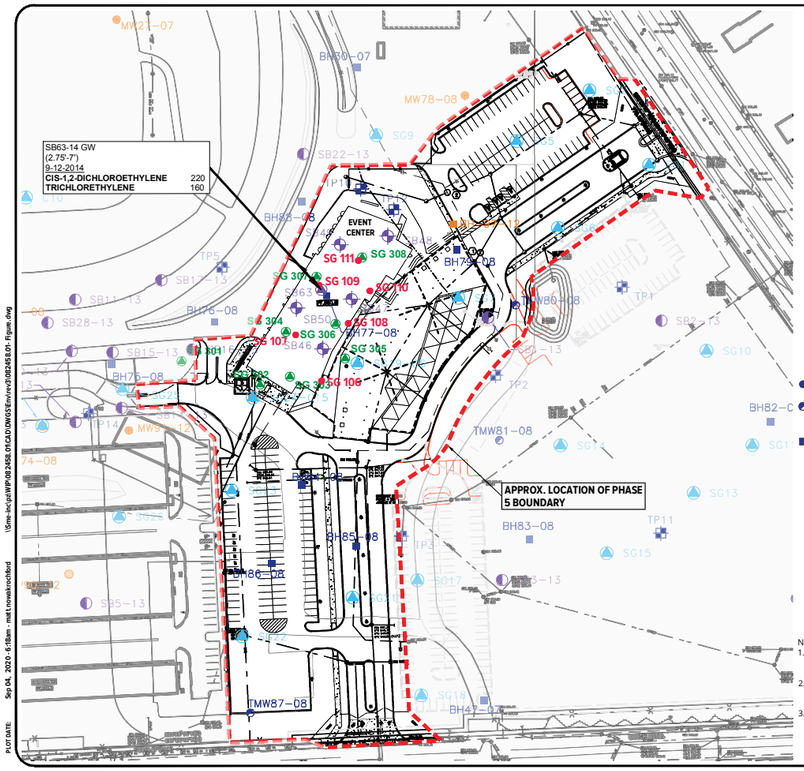
SG 326
SG 327
SG 328
SG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9-12-2014
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TRICHLOROETHYLENE 160
EVENT CENTER
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BH80-07
MW78-08
SB22-13
BH85-08
BH86-08
BH78-08
TMW86-08
TMW77-08
BH76-08
MW81-12
TMW87-08
BH42-08
TMW81-08
BH82-08
BH83-08
SB35-13
SB28-13
SB15-13
SB11-13
SB2-13
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SG 131
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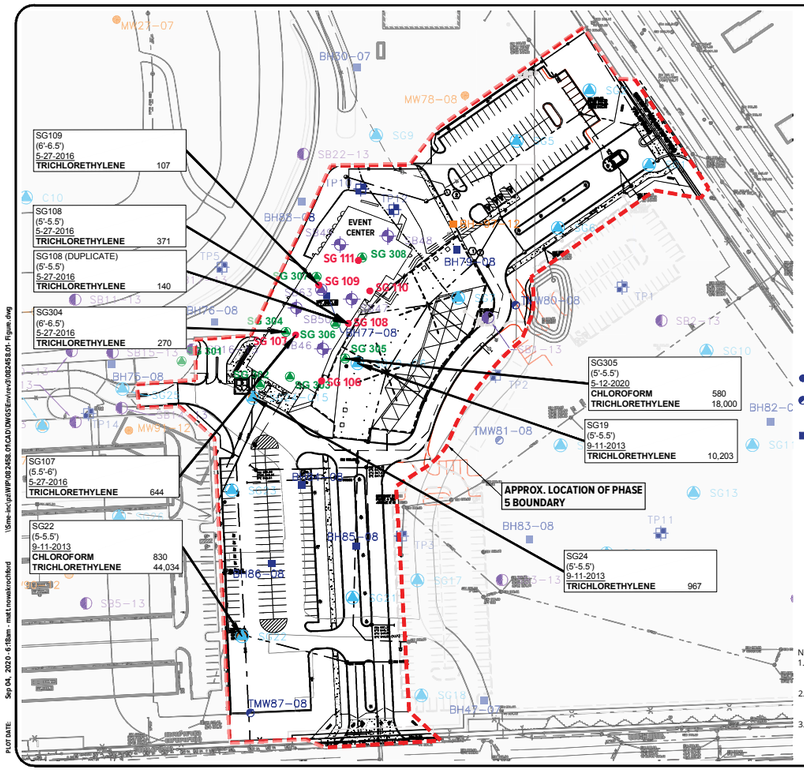

LEGEND

- SB — ENVIRONMENTAL BORING LOCATION (SME, 2013–2015)
- TP — TEST PIT LOCATION (SME, 2013)
- SG — SOIL GAS IMPLANT LOCATION (SME, 2013)
- SG — APPROXIMATE SOIL GAS SAMPLE LOCATION (SME, 2014)
- SG — APPROXIMATE SOIL GAS SAMPLE LOCATION (SME, 2019 AND 2020)
- MW28–07 — MONITORING WELL LOCATION (CRA, 2007–2012)
- TMW71–08 — TEMPORARY MONITORING WELL LOCATION (CRA, 2008)
- BH8–07 — ENVIRONMENTAL SOIL BORING LOCATION (CRA, 2007)

NOTE:
1. BASE DRAWING INFORMATION PROVIDED FROM A CAD FILE TITLED "X-BASE5A-13139" PROVIDED TO SME BY PEA ON JUNE 5TH, 2020.
2. PHASE 5 BOUNDARY LOCATION PROVIDED BY A PDF PREPARED BY PEA, TITLED PROPOSED OVERALL SITE PLAN M1 CONCOURSE - PHASE 5A, DATED JUNE 1, 2020.
3. CONCENTRATIONS ARE SHOWN IN MICROGRAMS PER CUBIC METER (µg/m³) AND EXCEED SITE-SPECIFIC VOLATILIZATION TO INDOOR AIR CRITERIA.

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Project
M1 CONCOURSE PHASE 5 - EVENT CENTER

Project Location
PONTIAC, MICHIGAN

Sheet Name
CRITERIA EXCEEDANCES IN SOIL GAS

No.	Revision Date

Date	9/4/20
CADD	SRP/GUS
Designer	SB
Scale	AS NOTED
Project	082458.01
Figure No.	7

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PLOT DATE: Sep 04, 2020 - 6:18am - mat.t.nowakowski
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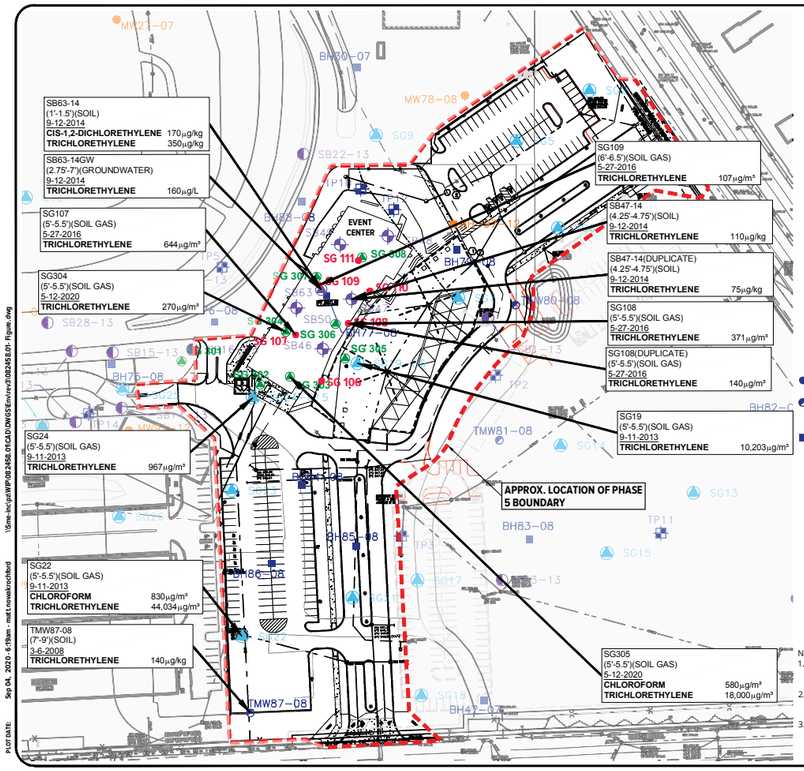
SB63-14
(11'-11.5')(SOIL)
9-12-2014
CIS-1,2-DICHLORETHYLENE 170µg/kg
TRICHLORETHYLENE 350µg/kg
SB63-14GW
(2.75'-7')(GROUNDWATER)
9-12-2014
TRICHLORETHYLENE 160µg/L
SG107
(5'-5.5')(SOIL GAS)
5-27-2016
TRICHLORETHYLENE 644µg/m³
SG304
(5'-5.5')(SOIL GAS)
5-12-2020
TRICHLORETHYLENE 270µg/m³
SG24
(6'-5.5')(SOIL GAS)
9-11-2013
TRICHLORETHYLENE 967µg/m³
SG22
(5'-5.5')(SOIL GAS)
9-11-2013
CHLOROFORM 830µg/m³
TRICHLORETHYLENE 44,034µg/m³
TMW87-08
(7'-9')(SOIL)
3-6-2008
TRICHLORETHYLENE 140µg/kg
SG109
(6'-6.5')(SOIL GAS)
5-27-2016
TRICHLORETHYLENE 107µg/m³
SB47-14
(4.25'-4.75')(SOIL)
9-12-2014
TRICHLORETHYLENE 110µg/kg
SB47-14(DUPLICATE)
(4.25'-4.75')(SOIL)
9-12-2014
TRICHLORETHYLENE 75µg/kg
SG108
(5'-5.5')(SOIL GAS)
5-27-2016
TRICHLORETHYLENE 371µg/m³
SG108(DUPLICATE)
(5'-5.5')(SOIL GAS)
5-27-2016
TRICHLORETHYLENE 140µg/m³
SG19
(5'-5.5')(SOIL GAS)
9-11-2013
TRICHLORETHYLENE 10,203µg/m³
SG305
(5'-5.5')(SOIL GAS)
5-12-2020
CHLOROFORM 580µg/m³
TRICHLORETHYLENE 18,000µg/m³
APPROX. LOCATION OF PHASE 5 BOUNDARY
EVENT CENTER
MW21-07
BH30-07
MW78-08
BH85-08
BH86-08
BH83-08
TMW81-08
TMW87-08
BH47-07
BH82-08
SG 111
SG 109
SG 306
SG 305
SG 107
SG 108
SG 308.2
SG 310
SG 309
SG 301
SG 302
SG 303
SG 304
SG 312
SG 313
SG 314
SG 315
SG 316
SG 317
SG 318
SG 319
SG 320
SG 321
SG 322
SG 323
SG 324
SG 325
SG 326
SG 327
SG 328
SG 329
SG 330
SG 331
SG

TABLE 1
SOIL ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 5 – EVENT CENTER
Pontiac, Michigan
SME Project No. 082458.01

Constituent	CAS Number	Residential Drinking Water Protection Criteria	Nonresidential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Direct Contact Criteria	Nonresidential Direct Contact Criteria	Site Specific Non-Residential Volatilization to Indoor Air Criteria	Sample Identification	BH-79-08	TMW80-08	BH84-08	BH84-08	BH85-08	BH86-08	TMW87-08	BH97-12
								Depth	(12' - 14')	(4' - 6')	(4' - 6')	(10' - 11.5')	(8' - 10')	(8' - 10')	(7' - 9')	(12' - 14')
								Collect Date	03/11/08	03/12/08	03/06/08	03/06/08	03/06/08	03/06/08	03/06/08	08/21/12
VOCs																
sec-Butylbenzene	135-98-8	1,600	4,600	ID	2,500,000	8,000,000	66,000		<44	<4,4	<4,1	<4,2	<4,1	<46	<5	<35
cis-1,2-Dichloroethylene	156-59-2	1,400	1,400	12,000	2,500,000	8,000,000	**50**		<44	<4,4	<4,1	<4,2	<4,1	<46	<5	<35
Trichloroethylene	79-01-6	**100**	**100**	4,000	32,000,000	100,000,000	**50**		<44	<4,4	<4,1	<4,2	<4,1	<46	**140**	<35
1,2,4-Trimethylbenzene	95-63-6	2,100	2,100	570	32,000,000	100,000,000	2,600		**260**	<4,4	<4,1	<4,2	<4,1	<91	<100	<35
1,3,5-Trimethylbenzene	108-67-8	1,800	1,800	1,100	32,000,000	100,000,000	2,600		**230**	<4,4	<4,1	<4,2	<4,1	<91	<100	<35
Xylenes	1330-20-7	5,800	5,800	820	410,000,000	1,000,000,000	5,000		<92	<8,6	<8,3	<8,3	<8,1	<1140	<150	<100
Other VOCs	CS	CS	CS	CS	CS	CS	CS		<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
SVOCs																
Benzo(a)anthracene	56-55-3	NLL	NLL	NLL	20,000	80,000	11,000,000		NE	<330	<330	<330	<330	<330	NE	NE
Benzo(b)fluoranthene	205-99-2	NLL	NLL	NLL	20,000	80,000	NA		NE	<330	<330	<330	<330	<330	NE	NE
Fluoranthene	206-44-0	730,000	730,000	5,500	46,000,000	130,000,000	NA		NE	<330	<330	<330	<330	<330	NE	NE
Phenanthrene	85-01-8	56,000	160,000	2,100	1,800,000	5,200,000	29,000		NE	<330	<330	<330	<330	<330	NE	NE
Pyrene	129-00-0	480,000	480,000	ID	28,000,000	84,000,000	440,000,000		NE	<330	<330	<330	<330	<330	NE	NE
All other SVOCs	CS	CS	CS	CS	CS	CS	CS		NE	<330	<330	<330	<330	<330	NE	NE
Metals																
Aluminum	7429-90-5	*6,900,000*	*6,900,000*	NA	50,000,000	370,000,000	NA		**6,920,000**	**6,710,000**	**5,490,000**	**5,930,000**	**6,220,000**	**4,840,000**	**4,140,000**	NE
Antimony	7440-36-0	*4,300*	*4,300*	94,000	180,000	670,000	NA		**57**	**34**	**64**	**67**	**180**	NE	**51**	NE
Arsenic	7440-38-2	*5,800*	*5,800*	5,800	7,600	37,000	NA		**5,000**	**4,000**	**4,600**	**5,000**	**4,400**	**970**	**4,200**	NE
Barium	7440-39-3	*1,300,000*	*1,300,000*	440,000	37,000,000	130,000,000	NA		**39,300**	**44,000**	**38,100**	**38,400**	**41,100**	**38,200**	**20,400**	NE
Beryllium	7440-41-7	*51,000*	*51,000*	160,000	410,000	1,600,000	NA		**330**	**390**	**400**	<430	<180	<320	**210**	NE
Cadmium	7440-43-9	*10,000*	*6,000*	3,600	550,000	2,100,000	NA		**280**	**390**	**300**	**330**	<120	<140	**420**	NE
Chromium, Total**	7440-47-3	*1,000,000,000*	*1,000,000,000*	*1,000,000,000*	790,000,000	1,000,000,000	NA		**13,700**	**12,900**	**9,700**	**10,700**	**11,300**	**9,400**	**13,600**	NE
Chromium III**	16065-83-1	*1,000,000,000*	*1,000,000,000*	*1,000,000,000*	790,000,000	1,000,000,000	NA		**13,200**	**12,400**	**9,700**	**10,700**	**10,700**	**9,100**	**13,600**	NE
Chromium VI**	18540-29-9	*30,000*	*30,000*	3,300	2,500,000	9,200,000	NA		**470**	**490**	890	<890	**650**	**300**	<920	NE
Cobalt	7440-48-4	*6,800*	*6,800*	*6,800*	2,600,000	9,000,000	NA		**7,400**	**6,000**	**5,300**	**6,400**	**6,200**	**2,200**	**5,000**	NE
Copper	7440-50-8	*5,800,000*	*5,800,000*	75,000	20,000,000	73,000,000	NA		**13,700**	**14,700**	**12,600**	**14,300**	**12,700**	**6,800**	**15,400**	NE
Iron	7439-89-6	12,000,000	12,000,000	NA	160,000,000	580,000,000	NA		**1,350,000**	**13,800,000**	**11,000,000**	**12,700,000**	**1,250,000**	**5,980,000**	**10,800,000**	NE
Lead	7439-92-1	700,000	700,000	5,100,000	400,000	900,000	NA		**6,100**	**6,800**	**4,200**	**5,100**	**5,500**	**3,900**	**5,400**	NE
Magnesium	7439-95-4	8,000,000	22,000,000	NA	1,000,000,000	1,000,000,000	NA		**19,600,000**	**15,500,000**	**15,400,000**	**19,400,000**	**14,600,000**	**17,300,000**	**12,100,000**	NE
Manganese	7439-96-5	440,000	440,000	56,000	25,000,000	90,000,000	NA		**349,000**	**285,000**	**338,000**	**290,000**	**277,000**	**150,000**	**365,000**	NE
Mercury	7439-97-6	1,700	1,700	130	160,000	580,000	390		**21**	<45	**20**	**63**	<45	**21**	<46	NE
Nickel	7440-02-0	*100,000*	*100,000*	76,000	40,000,000	150,000,000	NA		**18,000**	**16,200**	**14,400**	**14,800**	**15,300**	**9,000**	**13,400**	NE
Selenium	7782-49-2	4,000	4,000	*410*	2,600,000	9,600,000	NA		**390**	**900**	**340**	**360**	**320**	**300**	**1,400**	NE
Silver	7440-22-4	4,500	13,000	*1,000*	2,500,000	9,000,000	NA		<89	<91	<89	<89	<89	**37**	<92	NE
Sodium	7440-23-5	4,600,000	7,000,000	*NA*	1,000,000,000	1,000,000,000	NA		**627,000**	**121,000**	**88,900**	**108,000**	**89,000**	**105,000**	**115,000**	NE
Thallium	7440-28-0	2,300	2,300	4,200	35,000	130,000	NA		**180**	**180**	**160**	**170**	**150**	<120	**200**	NE
Vanadium	7440-62-2	72,000	990,000	430,000	750,000	5,500,000	NA		**18,400**	**16,200**	**14,000**	**15,700**	**14,800**	**8,200**	**12,500**	NE
Zinc	7440-66-6	2,400,000	5,000,000	170,000	170,000,000	630,000,000	NA		**33,400**	**34,800**	**35,400**	**37,400**	**31,200**	**21,400**	**29,700**	NE

Notes:

1. Concentrations reported in micrograms per kilogram (ug/kg).
2. Criteria taken from RRD Operational Memorandum No. 1, Table 2, Soil: Residential Part 201 Generic Cleanup Criteria and Screening levels, dated December 30, 2013 and EGLE's March 6, 2020 M1 Concourse Phase 4 – Building 16 Site-Specific Criteria Evaluation.
3. Results above laboratory reporting limits shown in BOLD. Results exceeding one or more criteria are shaded, as are the criteria.
4. VOCs = Volatile Organic Compounds; SVOCs = Semivolatile Organic Compounds; PCBs = Polychlorinate Biphenyls; Other VOCs and Other SVOCs = Refer to the analytical report for the full list of VOC and SVOC analytes.
5. CS – Criterion is specific to individual constituent; <RL – Analytical result was below laboratory reporting limit(s); ID - Insufficient data to develop criteria; NA = Not applicable; NE - Not evaluated; NLL - Not likely to leach; NLV – Not likely to volatilize.
6. * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardess value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies not protected as a drinking water source.
7. *Italicized* = the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
8. Concentrations were also compared to and found to be below Infinite Source Volatile Soil Inhalation Criteria, Finite VSIC for 2 and 5 Meter Source Thickness, Particulate Soil Inhalation Criteria, and Soil Saturation Concentration Screening Levels.
9. ^^ = Total chromium was compared to trivalent chromium criteria. Valance specifc testing was completed on other samples in the sample set and results for hexavalent chromium were below reporting limits.

TABLE 1
SOIL ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 5 – EVENT CENTER
Pontiac, Michigan
SME Project No. 082458.01

Constituent	CAS Number	Residential Drinking Water Protection Criteria	Nonresidential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Direct Contact Criteria	Nonresidential Direct Contact Criteria	Site Specific Non-Residential Volatilization to Indoor Air Criteria	Sample Identification	BH97-12	SB1-13	SB46-14	SB47-14	SB47-14	SB47-14 DUPLICATE	SB49-14	SB49-14
								Depth	(18' - 20')	(2' - 4')	(4.5' - 6')	(0.5' - 1')	(4.25' - 4.75')	(4.25' - 4.75')	(2' - 2.5')	(3.5' - 4')
								Collect Date	08/21/12	09/04/13	9/12/2014	9/12/2014	9/12/2014	9/12/2014	9/12/2014	9/12/2014
VOCs																
cis-1,2-dichloroethylene	156-59-2	1,400	1,400	12,000	2,500,000	8,000,000	**50**		<35	<50	<50	<50	<50	<50	<50	<50
Trichloroethylene	79-01-6	**100**	**100**	4,000	32,000,000	100,000,000	**50**		<35	<54	<50	<50	**110**	**75**	<100	<100
Other VOCs	CS	CS	CS	CS	CS	CS	CS		<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
SVOCs																
All SVOCs	CS	CS	CS	CS	CS	CS	CS		NE	<RL	NE	NE	NE	NE	NE	NE
Metals																
Aluminum	7429-90-5	*6,900,000*	*6,900,000*	NA	50,000,000	370,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Antimony	7440-36-0	*4,300*	*4,300*	94,000	180,000	670,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Arsenic	7440-38-2	*5,800*	*5,800*	5,800	7,600	37,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Barium	7440-39-3	*1,300,000*	*1,300,000*	440,000	37,000,000	130,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Beryllium	7440-41-7	*51,000*	*51,000*	160,000	410,000	1,600,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Cadmium	7440-43-9	*10,000*	*6,000*	3,600	350,000	2,100,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Chromium, Total**	7440-47-3		*1,000,000,000*	*1,000,000,000*	790,000,000	1,000,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Chromium III**	16065-83-1	*1,000,000,000*	*1,000,000,000*	*1,000,000,000*	790,000,000	1,000,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Chromium VI**	18540-29-9	*30,000*	*30,000*	3,300	2,500,000	9,200,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Cobalt	7440-48-4	*6,800*	*6,800*	6,800	2,600,000	9,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Copper	7440-50-8	*5,800,000*	*5,800,000*	75,000	20,000,000	73,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Iron	7439-89-6	12,000,000	12,000,000	NA	160,000,000	580,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Lead	7439-92-1	700,000	700,000	5,100,000	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Lead, Total (Calculated)	7439-92-1	700,000	700,000	5,100,000	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Lead, Coarse Fraction	7439-92-1	NA	700,000	NA	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Lead, Fine Fraction	7439-92-1	NA	700,000	NA	400,000	900,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Magnesium	7439-95-4	8,000,000	22,000,000	NA	1,000,000,000	1,000,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Manganese	7439-96-5	440,000	440,000	56,000	25,000,000	90,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Mercury	7439-97-6	1,700	1,700	130	160,000	580,000	390		NE	NE	NE	NE	NE	NE	NE	NE
Nickel	7440-02-0	*100,000*	*100,000*	*76,000*	40,000,000	150,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Selenium	7782-49-2	4,000	4,000	*410*	2,600,000	9,600,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Silver	7440-22-4	4,500	13,000	*1,000*	2,500,000	9,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Sodium	7440-23-5	4,600,000	7,000,000	*NA*	1,000,000,000	1,000,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Thallium	7440-28-0	2,300	2,300	4,200	35,000	130,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Vanadium	7440-62-2	72,000	990,000	430,000	750,000	5,500,000	NA		NE	NE	NE	NE	NE	NE	NE	NE
Zinc	7440-66-6	2,400,000	5,000,000	170,000	170,000,000	630,000,000	NA		NE	NE	NE	NE	NE	NE	NE	NE

Notes:
1. Concentrations reported in micrograms per kilogram (ug/kg).
2. Criteria taken from RRD Operational Memorandum No. 1, Table 2, Soil: Residential Part 201 Generic Cleanup Criteria and Screening levels, dated December 30, 2013 and EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
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5. CS - Criterion is specific to individual constituent; <RL - Analytical result was below laboratory reporting limit(s); ID - Insufficient data to develop criteria; NA = Not applicable; NE - Not evaluated; NLL - Not likely to leach; NLV - Not likely to volatilize.
6. * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardess value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies not protected as a drinking water source.
7. *Italicized* = the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
8. Concentrations were also compared to and found to be below Infinite Source Volatile Soil Inhalation Criteria, Finite VSIC for 2 and 5 Meter Source Thickness, Particulate Soil Inhalation Criteria, and Soil Saturation Concentration Screening Levels.
9. ^^ = Total chromium was compared to trivalent chromium criteria. Valance specifc testing was completed on other samples in the sample set and results for hexavalent chromium were below reporting limits.

TABLE 1
SOIL ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 5 – EVENT CENTER
Pontiac, Michigan
SME Project No. 082458.01

Constituent	CAS Number	Residential Drinking Water Protection Criteria	Nonresidential Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Residential Direct Contact Criteria	Nonresidential Direct Contact Criteria	Site Specific Non-Residential Volatilization to Indoor Air Criteria	Sample Identification	SB50-14	SB63-14
								Depth	(3' - 3.5')	(1' - 1.5')
								Collect Date	9/12/2014	9/12/2014
VOCs										
cis-1,2-dichloroethylene	156-59-2	1,400	1,400	12,000	2,500,000	8,000,000	**50**		<50	**170**
Trichloroethylene	79-01-6	**100**	**100**	4,000	32,000,000	100,000,000	**50**		<100	**350**
Other VOCs	CS	CS	CS	CS	CS	CS	CS		<RL	<RL
SVOCs										
All SVOCs	CS	CS	CS	CS	CS	CS	CS		NE	NE
Metals										
Aluminum	7429-90-5	*6,900,000*	*6,900,000*	NA	50,000,000	370,000,000	NA		NE	NE
Antimony	7440-36-0	*4,300*	*4,300*	94,000	180,000	670,000	NA		NE	NE
Arsenic	7440-38-2	*5,800*	*5,800*	5,800	7,600	37,000	NA		NE	NE
Barium	7440-39-3	*1,300,000*	*1,300,000*	440,000	37,000,000	130,000,000	NA		NE	NE
Beryllium	7440-41-7	*51,000*	*51,000*	160,000	410,000	1,600,000	NA		NE	NE
Cadmium	7440-43-9	*10,000*	*6,000*	3,600	550,000	2,100,000	NA		NE	NE
Chromium, Total**	7440-47-3		*1,000,000,000*	*1,000,000,000*	790,000,000	1,000,000,000	NA		NE	NE
Chromium III**	16065-83-1	*1,000,000,000*	*1,000,000,000*	*1,000,000,000*	790,000,000	1,000,000,000	NA		NE	NE
Chromium VI**	18540-29-9	*30,000*	*30,000*	3,300	2,500,000	9,200,000	NA		NE	NE
Cobalt	7440-48-4	*6,800*	*6,800*	6,800	2,600,000	9,000,000	NA		NE	NE
Copper	7440-50-8	*5,800,000*	*5,800,000*	75,000	20,000,000	73,000,000	NA		NE	NE
Iron	7439-89-6	12,000,000	12,000,000	NA	160,000,000	580,000,000	NA		NE	NE
Lead	7439-92-1	700,000	700,000	5,100,000	400,000	900,000	NA		NE	NE
Lead, Total (Calculated)	7439-92-1	700,000	700,000	5,100,000	400,000	900,000	NA		NE	NE
Lead, Coarse Fraction	7439-92-1	NA	700,000	NA	400,000	900,000	NA		NE	NE
Lead, Fine Fraction	7439-92-1	NA	700,000	NA	400,000	900,000	NA		NE	NE
Magnesium	7439-95-4	8,000,000	22,000,000	NA	1,000,000,000	1,000,000,000	NA		NE	NE
Manganese	7439-96-5	440,000	440,000	56,000	25,000,000	90,000,000	NA		NE	NE
Mercury	7439-97-6	1,700	1,700	130	160,000	580,000	390		NE	NE
Nickel	7440-02-0	*100,000*	*100,000*	*76,000*	40,000,000	150,000,000	NA		NE	NE
Selenium	7782-49-2	4,000	4,000	*410*	2,600,000	9,600,000	NA		NE	NE
Silver	7440-22-4	4,500	13,000	*1,000*	2,500,000	9,000,000	NA		NE	NE
Sodium	7440-23-5	4,600,000	7,000,000	*NA*	1,000,000,000	1,000,000,000	NA		NE	NE
Thallium	7440-28-0	2,300	2,300	4,200	35,000	130,000	NA		NE	NE
Vanadium	7440-62-2	72,000	990,000	430,000	750,000	5,500,000	NA		NE	NE
Zinc	7440-66-6	2,400,000	5,000,000	170,000	170,000,000	630,000,000	NA		NE	NE

Notes:
1. Concentrations reported in micrograms per kilogram (ug/kg).
2. Criteria taken from RRD Operational Memorandum No. 1, Table 2, Soil: Residential Part 201 Generic Cleanup Criteria and Screening levels, dated December 30, 2013 and EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
3. Results above laboratory reporting limits shown in BOLD. Results exceeding one or more criteria are shaded, as are the criteria.
4. VOCs = Volatile Organic Compounds; SVOCs = Semivolatile Organic Compounds; PCBs = Polychlorinate Biphenyls; Other VOCs and Other SVOCs = Refer to the analytical report for the full list of VOC and SVOC analytes.
5. CS - Criterion is specific to individual constituent; <RL - Analytical result was below laboratory reporting limit(s); ID - Insufficient data to develop criteria; NA = Not applicable; NE - Not evaluated; NLL - Not likely to leach; NLV - Not likely to volatilize.
6. * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardess value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies not protected as a drinking water source.
7. *Italicized* = the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
8. Concentrations were also compared to and found to be below Infinite Source Volatile Soil Inhalation Criteria, Finite VSIC for 2 and 5 Meter Source Thickness, Particulate Soil Inhalation Criteria, and Soil Saturation Concentration Screening Levels.
9. ^^ = Total chromium was compared to trivalent chromium criteria. Valance specifc testing was completed on other samples in the sample set and results for hexavalent chromium were below reporting limits.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 5 - EVENT CENTER
Pontiac, Michigan
SME Project No. 082458.01

Constituent	CAS Number	Residential & Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Site Specific Non-Residential Volatilization to Indoor Air Criteria	Sample Identification	SB63-14 GW
					Depth	(2.75' - 7')
					Collect Date	09/12/14
VOCs						
cis-1,2-Dichloroethylene	156-59-2	**70**	620	1,100		**220**
trans-1,2-Dichloroethylene	156-60-5	100	1,500	4,600		**8,3**
Toluene	108-88-3	790	270	520,000		**1,6**
Trichloroethylene	79-01-6	**5,0**	200	**98**		**160**
Vinyl chloride	75-01-4	2.0	13	120		**1,7**
Other VOCs	CS	CS	CS	CS		<RL
SVOCs						
2-Methylnaphthalene	91-57-6	260	19	25,000		<5,0
Other SVOCs	CS	CS	CS	CS		<RL
Metals						
Arsenic	7440-38-2	10	10	NA		NE
Barium	7440-39-3	2,000	670*	NA		NE
Cadmium	7440-43-9	5.0	3.0*	NA		NE
Chromium, Total	16065-83-1	100	11	NA		NE
Copper	7440-50-8	1,000	13*	NA		NE
Lead	7439-92-1	4.0	16*	NA		NE
Mercury, Total	7439-97-6	2.0	0,0013	34		NE
Selenium	7782-49-2	50	5,0	NA		NE
Silver	7440-22-4	34	0,2	NA		NE
Zinc	7440-66-6	2,400	170*	NA		NE

Notes:
1. Concentrations reported in micrograms per liter (ug/L).
2. Criteria taken from RRD Operational Memorandum No. 1, Table 1, Groundwater: Residential and Non-Residential Part 201 Generic Cleanup Criteria and Screening levels, dated December 30, 2013 and EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Vapor Intrusion Criteria Evaluation.
3. Results above laboratory reporting limits shown in BOLD. Results exceeding one or more criteria are shaded, as are the criteria.
4. VOCs = Volatile Organic Compounds; SVOCs = Semivolatile Organic Compounds; Other VOCs and Other SVOCs = Refer to the analytical report for the full list of VOC and SVOC analytes.
5. CS - Criterion is specific to individual constituent; <RL - Analytical result was below laboratory reporting limit(s); ID - Insufficient data to develop criteria; NA = Not applicable; NE - Not evaluated;
6. * = GSI Protection was calculated for the indicated metals using the EGLE spreadsheet for calculating GSI. A default water hardess value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies not protected as a drinking water source.
7. *Italicized* = the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
9. Concentrations were also compared to and found to be below Water Solubility, Flammability and Explosivity Screening Levels, and Acute Inhalation Screening Levels.

TABLE 3
DEEP SOIL GAS ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 5 - EVENT CENTER
PONTIAC, MICHIGAN
SME PROJECT NO.: 082458.01

Analyte (refer to report for full analyte list)	Nonresidential Volatilization to Indoor Air Criteria (VIAC)	Soil Gas Well ID	SG1	SG2	SG5	SG6	SG7	SG8	SG19	SG20	SG21	SG22	SG23	SG24
		Depth Interval (ft.)	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'	5' - 5.5'
		Date	09/11/13	09/11/13	09/11/13	09/11/13	09/11/13	09/11/13	09/11/13	09/11/13	09/11/13	09/11/13	09/11/13	09/11/13
TO-15 VOCs														
Acetone	NA		**64**	**7,378**	**64**	**7,378**	**64**	**7,378**	<224	**1,285**	**6,188**	**1,166**	**928**	**6,188**
Benzene	260		<1	<61	<1	<61	<1	<61	<54	<32	<32	<32	<8	<32
2-Butanone	NA		**4**	<289	**4**	<289	**4**	<289	<263	<156	<156	<156	<38	<156
Carbon Disulfide	NA		<8	<302	<8	<302	<8	<302	<274	<165	<165	<165	<40	<165
Chloroethane	200,000		<7	<243	<7	<243	<7	<243	<219	<132	<132	<132	<32	<132
Chloroform	87		<2	<98	<2	<98	<2	<98	<88	<54	<54	**830**	<13	<54
Cyclohexane	310,000		<9	<65	<9	<65	<9	<65	<58	<34	<34	<34	<9	<34
1,1-Dichloroethane	1,200		<1	<77	<1	<77	<1	<77	<69	<41	<41	<41	<11	<41
1,1-Dichloroethene	10,000		<1	<38	<1	<38	<1	<38	<35	<21	<21	**75**	<5	<21
cis-1,2-Dichloroethene	410		<2	<79	<2	<79	<2	<79	<71	<44	<44	<44	<11	<44
trans-1,2-Dichloroethene	4,100		<1	<380	<1	<380	<1	<380	<345	<206	<206	**364**	<51	<206
Ethylbenzene	800		<2	<42	<2	<42	<2	<42	<38	<23	<23	<23	<6	<23
n-Heptane	180,000		<1	<82	<1	<82	<1	<82	<74	<45	<45	<45	<11	<45
n-Hexane	36,000		**6**	<70	**6**	<70	**6**	<70	<63	<39	<39	<39	<10	<39
4-Methyl-2-pentanone	NA		<2	<78	<2	<78	<2	<78	<70	<41	<41	<41	<11	<41
Propylene	NA		<4	<163	<4	<163	<4	<163	<148	<89	<89	**206**	<22	<89
Styrene	3,500		<2	<81	<2	<81	<2	<81	<72	<43	<43	<43	<11	<43
Tetrachloroethene	1,400		**5**	<75	**5**	<75	**5**	<75	<59	<41	<35	<35	**319**	<35
Toluene	250,000		**2**	<117	**2**	<117	**2**	<117	<106	<41	<64	<45	**283**	<106
1,1,1-Trichloroethane	230,000		<2	<104	<2	<104	<2	<104	<93	<55	<55	<55	<14	<55
Trichloroethene	67		<2	<52	<2	<52	<2	<52	**10,203**	<28	<28	**44,034**	**15**	**967**
Trichlorofluoromethane	NA		**9**	<56	**9**	<56	**9**	<56	<51	**52**	**618**	**53**	**96**	**382**
1,1,2-Trichlorotrifluoroethane	NA		**7**	<74	**7**	<74	**7**	<74	<67	<40	<40	<40	<10	<40
1,2,4-Trimethylbenzene	3,100		<2	<47	<2	<47	<2	<47	<43	<26	<29	<26	**25**	<26
1,3,5-Trimethylbenzene	3,100		<2	<47	<2	<47	<2	<47	<43	<26	<26	<26	<6	<26
Vinyl Chloride	450		<4	<49	<4	<49	<4	<49	<44	<26	<26	<26	<7	<26
Xylenes, Total	11,000		<5	<122	<5	<122	<5	<122	<113	<65	<65	<65	**17**	**156**

Notes:
1. Concentrations are reported in micrograms per cubic meter (µg/m3).
2. VIAC from EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
3. Results exceeding laboratory reporting limits are bold.
4. Results exceeding VIAC are shaded orange, as are the criteria exceeded.
5. VOCs -Volatile Organic Compounds. Refer to the analytical report for the full list of VOC constituents.
6. NA - No criteria available.

TABLE 3
DEEP SOIL GAS ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 5 - EVENT CENTER
PONTIAC, MICHIGAN
SME PROJECT NO.: 082458.01

Analyte (refer to report for full analyte list)	Nonresidential Volatilization to Indoor Air Criteria (VIAC)	Soil Gas Well ID	SG106	SG107	SG108	SG108 Duplicate #1	SG109	SG110	SG111
		Depth Interval (ft.)	6.5' - 7'	5.5' - 6'	5' - 5.5'	5' - 5.5'	6' - 6.5'	6' - 6.5'	6.5' - 7'
		Date	05/27/16	05/27/16	05/27/16	05/27/16	05/27/16	05/27/16	05/27/16
TO-15 VOCs									
Acetone	NA		<126	<57	**62**	<57	<57	<62	<57
Benzene	260		**41**	<19	<19	<19	**38**	**41**	<19
1,3-Butadiene	NA		**8**	<1	<1	<1	<1	<2	<1
2-Butanone	NA		<48	<36	<36	<36	<36	<38	<36
Carbon Disulfide	NA		<95	<29	**31**	<22	**40**	<47	<29
Cyclohexane	310,000		**89**	**165**	**62**	<41	**127**	**193**	**127**
cis-1,2-Dichloroethene	410		<24	**119**	**186**	**71**	**36**	<24	<24
trans-1,2-Dichloroethene	4,100		<24	<24	**59**	<24	<24	<24	<24
n-Heptane	180,000		**3,772**	**492**	**115**	<49	**148**	**320**	**492**
n-Hexane	36,000		**986**	**774**	**239**	**95**	**915**	**634**	**845**
Tetrachloroethene	1,400		<41	<41	<41	<41	<41	<41	<41
Toluene	250,000		**28**	<23	**29**	<23	**72**	**128**	<23
1,1,1-Trichloroethane	230,000		<33	<33	**40**	<33	**87**	<33	<33
Trichloroethene	67		**20**	**644**	**371**	**140**	**107**	**26**	**6**
Trichlorofluoromethane	NA		**124**	<34	**899**	**320**	**112**	**79**	<34
Vinyl Chloride	450		<15	**28**	<15	<15	**28**	<15	<15
Xylenes, Total	11,000		<200	<104	<104	<104	<104	**126**	<104
Various VOCs	CS		<RL	<RL	<RL	<RL	<RL	<RL	<RL

Notes:
1. Concentrations are reported in micrograms per cubic meter (µg/m3).
2. VIAC from EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
3. Results exceeding laboratory reporting limits are bold.
4. Results exceeding VIAC are shaded orange, as are the criteria exceeded.
5. VOCs -Volatile Organic Compounds. Refer to the analytical report for the full list of VOC constituents.
6. NA - No criteria available.

TABLE 3
DEEP SOIL GAS ANALYTICAL RESULTS
M1 CONCOURSE
PHASE 5 - EVENT CENTER
PONTIAC, MICHIGAN
SME PROJECT NO.: 082458.01

Analyte (refer to report for full analyte list)	Nonresidential Volatilization to Indoor Air Criteria (VIAC)	Soil Gas Well ID	SG301	SG302	SG303	SG304	SG305	SG307	SG308
		Depth Interval (ft.)	5'-5.5'	5'-5.5'	5'-5.5'	5'-5.5'	5'-5.5'	5'-5.5'	5'-5.5'
		Date	05/12/20	05/12/20	05/12/20	05/12/20	05/12/20	05/12/20	05/12/20
TO-15 VOCs									
Acetone	NA		<57	<57	<57	<57	<1,400	<57	<57
Benzene	260		**73**	<19	<19	<19	<24	<19	<19
1,3-Butadiene	NA		<0.66	<0.66	<0.66	<0.66	<16	<0.66	<0.66
Carbon Tetrachloride	NA		<7.5	<7.5	**14**	<7.5	<18	<7.5	<7.5
Chloroethane	200,000		<16	<16	<16	**18**	<30	<16	<16
Cyclohexane	310,000		<41	<41	<41	**190**	<100	<41	<41
1,1-Dichloroethane	1,200		<24	<24	<24	<24	<30	<24	<24
1,1-Dichloroethene	10,000		<24	<24	<24	<24	<30	<24	<24
cis-1,2-Dichloroethene	410		<24	<24	<24	**130**	**580**	<24	<24
trans-1,2-Dichloroethene	4,100		<24	<24	<24	**36**	**420**	<24	<24
Ethylbenzene	800		<52	<52	<52	**81**	<390	<52	<52
n-Heptane	180,000		<49	<49	<49	**580**	<49	<49	<49
n-Hexane	36,000		<42	<42	<42	**450**	<110	**47**	<42
Tetrachloroethene	1,400		<41	<41	<41	<41	<51	<41	<41
Tetrahydrofuran	NA		**5.7**	<3.5	<3.5	<3.5	<35	<3.5	<3.5
Toluene	250,000		**40**	<23	<23	<23	<45	<23	<23
1,1,1-Trichloroethane	230,000		<33	<33	<33	<33	<85	<33	<33
1,1,2-Trichloroethane	10		<6.5	<6.5	<6.5	<6.5	<41	<6.5	<6.5
Trichloroethene	67		**2.6**	<1.6	**2**	**270**	**18,000**	**24**	**7.2**
Trichlorofluoromethane	NA		<34	<34	**71**	<34	**220**	<34	**81**
1,1,2-Trichlorotrifluoroethane	NA		<46	<46	<46	<46	<46	<46	<46
Vinyl Chloride	450		<15	<15	<15	**33**	<29	**23**	<15
Xylenes, Total	11,000		<100	<100	<100	**420**	<380	<100	<100
Other VOCs Analyzed	CS		<RL	<RL	<RL	<RL	<RL	<RL	<RL

Notes:
1. Concentrations are reported in micrograms per cubic meter (µg/m3).
2. VIAC from EGLE's March 6, 2020 M1 Concourse Phase 4 - Building 16 Site-Specific Criteria Evaluation.
3. Results exceeding laboratory reporting limits are bold.
4. Results exceeding VIAC are shaded orange, as are the criteria exceeded.
5. VOCs -Volatile Organic Compounds. Refer to the analytical report for the full list of VOC constituents.
6. NA - No criteria available.