



DRAKE Consulting Group, LLC

October 16, 2020

Wisconsin Department of Natural Resources
Remediation & Redevelopment Program
2300 N. Martin Luther King Drive
Milwaukee, WI

RE: Addendum to April 2019 Work Plan for the Former Amcast Site – Oliver Fiontar, LLC Brownfield Redevelopment Parcels in Cedarburg, Wisconsin: *Amcast North* - N37W5684 Hamilton Road Site: BRRTS #02-46-583164; Tax Key: 13-051-005-000 Non-SF Activity; *Amcast Central* – N39W5789 Hamilton Road Site: BRRTS #02-46-583162; Tax Key: 13-0505-21-09-000 Non-SF Activity; *Amcast South* – Johnson Avenue: BRRTS #02-46-583163; Tax Key: 13-050-21-08-000 Non-SF Activity. Drake Project No. J16001

Dear Sir or Madam:

On behalf of Oliver Fiontar, LLC, the current owner of the three land parcels (*Amcast North*, *Amcast Central* and *Amcast South*) referenced above which comprise approximately 8.4 +/- acres of the Former Amcast Superfund National Priorities List (SF NPL) site (which consists of over 20 acres) and as requested by the Wisconsin Department of Natural Resources (WDNR), Drake is providing the following information as an Addendum to the previously submitted *Work Plan for Additional Brownfield Redevelopment Related Soil, Groundwater and Vapor Assessment Activities at the Former Amcast Facility* (report dated April 19, 2019).

It is Drake's and Oliver Fiontar, LLC's belief that the April 9, 2019 Work Plan submittal provided information to describe how the additional activities proposed by Drake would further refine the conceptual site model developed by CH2M that was outlined in their 1,905 page Final Remedial Investigation (RI) Report dated May 1, 2015 and in their May 1, 2017 Remedial Alternatives Evaluation Report, especially as regards the *Amcast North*, *Amcast Central* and *Amcast South* parcels, which Oliver Fiontar, LLC owns. As the Department and the EPA is aware, the CH2M reports provided a detailed analysis of the nature, degree and extent of contamination at the *Amcast North*, *Amcast Central* and *Amcast South* locations as well as the contamination which was identified in the residential yards to the north and east of the *Amcast* facility, in *Wilshire Pond*, in the *Quarry* and within storm sewers in and around the former *Amcast* facility. These reports also

provided a comprehensive summary of all known historical investigations, assessments, and studies which have been completed previously in conjunction with the former Amcast facility.

Drake and Oliver Fiontar, LLC believe that the Remedial Alternatives Evaluation Report prepared by CH2M (May 2017) provided a more than sufficient foundation for the continuation of the evaluation of potential future remedial actions. Drake's proposed scope of work outlined in the April 2019 work plan was designed to permit an even more detailed analysis of potentially applicable remedial actions and/or the development of a pathway to closure for the Amcast North, Amcast Central and Amcast South parcels and the successful redevelopment of these parcels by Oliver Fiontar, LLC or others.

In an effort to continue moving the Amcast North, Amcast Central and Amcast South sites towards successful redevelopment and eventual closure, Drake is submitting this "Addendum to April 2019 Work Plan for the Former Amcast Site" for the WDNR's consideration. This addendum contains Drake's responses to the WDNR's request for additional information that was detailed in a letter dated August 27, 2019. The WDNR's questions are presented in italics with Drake's response provided below the questions.

WDNR Comments on proposed work plan activities:

The Plan is not an adequate site investigation work plan. The Plan proposes "...drilling and sampling of several hand auger borings and/or soil borings..." on the former Amcast parcels. It is unclear whether the proposed scope of work will result in a complete site investigation since the Plan does not describe how the proposed sampling relates to the current investigation results. A revised work plan must be provided that will propose specific field investigation activities intended to complete the site investigation as defined by Wis. Admin. Code ch. NR 716. The plan must be based on an assessment of all the available sampling data.

As indicated at the beginning of this correspondence, Drake is of the understanding that the site investigation phase associated with the historic release(s) from the Amcast North, Amcast Central and Amcast South has previously been completed and that a Final RI Report prepared by CH2M had already been submitted in May 2015 to both the EPA and WDNR, after which the May 2017 Remedial Alternatives Evaluation Report was also submitted to both EPA and WDNR. It is Drake's understanding that the EPA's and WDNR's comments with regard to the preliminary RI Report were incorporated by CH2M into its May 2015 Final RI Report and subsequent correspondence from EPA to CH2M (dated September 29, 2015) indicates the EPA had completed

its review of the final Amcast RI Report, approved of it and had instructed CH2M to provide both the EPA and the WDNR with copies of the final RI Report.

As previously indicated, Drake is of the belief that the CH2M Final RI Report met/meets the statutory requirements outlined in the NR 700 regulations, specifically the requirements contained in NR 716, with regard to the required investigative activities associated with the Amcast North, Amcast Central and Amcast South properties.

Based on a review of the available information in the WDNR file and the Bureau for Remediation and Redevelopment Tracking System (BRRTS) online database, a “notification of hazardous substance discharge” was reported to the WDNR on January 1, 1980. Amcast and WDNR have conducted multiple environmental investigations at and near the Former Amcast SF NPL site. As the Department is aware, historical data was provided to Drake from the WDNR files for the environmental media at the Amcast North and South Properties¹. Available records demonstrate site investigation activities and/or evaluation of potential remedial alternatives have occurred at the site for over 30 years.

The following presents a summary of the prior site investigation/remedial alternative evaluation work that has been completed at the SF NPL site (which includes the Amcast Brownfield Redevelopment properties) and which provided the basis for Drake’s proposed additional soil, groundwater and vapor assessment activities identified in its April 2019 submittal to the WDNR:

1. E&K Hazardous Waste Services, Inc. 1990. South Pond Investigation, Amcast Industrial Corporation. E&K Project #9763. November.
2. Strand Associates, Inc. 1992. *Cedar Creek PCB Investigation (Final Report)*. May.
3. Fox Environmental Services Inc. Investigation. 1992.
4. Geraghty & Miller, Inc. 1994. Site Assessment Report for the Amcast Industrial Corporation, Cedarburg, Wisconsin. Geraghty & Miller Site Assessment. May.
5. Sigma Environmental Services, Inc. 2001. *Report of a Phase I Environmental Site Assessment, Amcast Industrial Corporation, N39 W5789 Hamilton Road, Cedarburg, Wisconsin*. September.
6. Foth & Van Dyke. 2003. *Final Work Plan, Remedial Investigation Work Plan Amcast Industrial Corporation Cedarburg, Wisconsin*. June.

¹ Prior to Oliver Fiontar’s ownership (which began in 2018), the Amcast site was generally separated into two (2) parcels described as Amcast North and Amcast South. The three (3) parcel designation (Amcast North, Amcast Central and Amcast South) was not issued until the WDNR assigned the redevelopment site three (3) separate BRRTs IDs to the former Amcast property in September 2018. For the purposes of this submittal, when referencing other reports, Amcast South may also include what is now known as Amcast Central.

7. Foth & Van Dyke 2004a. *Technical Memorandum – Amcast Industrial Corporation – Preliminary Site Characterization Summary*. March 22.
8. Foth & Van Dyke. 2004b. *Amcast Industrial Corporation, Cedarburg, WI, Work Plan for Phase 2—Areas of Immediate Concern and Phase 3 – Additional Sampling for the RI/FS and Baseline Risk Assessment*. July 6.
9. ENSR. 2005. *Technical Memorandum. Phase 2—Areas of Immediate Concern. Amcast Industrial Corporations, Inc. Property N39 W5789 Hamilton Road. Cedarburg, WI.* ENSR Project No. 00244010. June.
10. ENSR. 2007. *Results of the Phase II Investigation Conducted at the Amcast Industrial Corporation Facility*. June.
11. CH2M Hill. 2009. *Amcast Industrial Site Work Plan*. October.
12. CH2M Hill. 2011. *Remedial Investigation/Feasibility Study Amcast Industrial Site Quality Assurance Project Plan*. September.
13. CH2M Hill. 2013. *Technical Memorandum for the Interim Deliverable for the Human Health Risk Assessment*. April.
14. CH2M Hill. 2015. *Final Remedial Investigation Report*. May.
15. CH2M Hill. 2017. *Remedial Alternatives Evaluation Report*. May.

Currently, the most comprehensive source of information regarding the previous investigations and assessments conducted at, and in the vicinity of, the former Amcast site is the *Final Remedial Investigation Report* (Final RI Report) dated May 1, 2015 which was prepared by CH2M for the EPA. As indicated previously, it is Drake's understanding that the EPA approved the Final R I Report on September 29, 2015 after CH2M incorporated both the EPA's and the WDNR's suggested revisions associated with the "draft" version of the RI Report that had been submitted prior to the issuance of the "final" RI Report. As the Department is aware, the April 2019 work plan submitted by Drake incorporated the data evaluated by Drake from prior investigations (which were referenced in the April 2019 submittal as previously directed by the WDNR) and presented a scope of work designed primarily to further refine the degree and extent of soil contamination defined in the Final RI Report and further assess current groundwater conditions and evaluate the potential for vapor issues so as to allow for the potential future implementation of a remedial alternative along the lines of the alternatives identified within CH2M's 2017 Remedial Alternative Evaluation Report.

We would like to take this opportunity to report to you that following the submittal of the April 2019 Work Plan, several data inconsistencies with regard to reported sample concentrations, specifically in relation to the sediment samples collected at the site (Table 6), were discovered by Drake to have been incorrectly reported and evaluated by CH2M in its Final RI Report (May 2015) and presumably relied upon during their evaluation of potentially applicable remedial

alternatives which was outlined in their May 2017 Remedial Alternatives Evaluation Report. In response to this discovery, Drake re-evaluated the existing data in relation to the additional sampling activities that may need to be completed as part of the additional brownfield redevelopment site activities. It is important to note that some of the historical data provided by others may not be of sufficient quality (at least in Drake's opinion) to be solely relied upon for future decision-making at the site, as some reports and data obtained from within the WDNR file (and other sources) did not contain associated laboratory analytical reports for cross-reference so as to evaluate the data for quality control/quality assurance purposes. To the extent that such data provides additional insight into past investigation, assessment and evaluation of the site, Drake anticipates it will continue incorporating such information into future submittals. However, Drake cautions the Department against any undue reliance on historical data sets that may contain incorrectly reported sample contaminant concentrations.

We'd also note that our discovery of the incorrectly reported data associated with several of the sediment samples within the storm sewer system will have the effect of significantly decreasing the perceived threat associated with the previously reported "higher than actual" contaminant concentrations at this site (especially as regards to releases to the on-site and surrounding storm sewer system) and lessening the potential future threat to the planned brownfield redevelopment of this site.

The following reports were evaluated and considered generally suitable by Drake to be used for decision-making purposes in this redevelopment work plan addendum:

- Foth & VanDyke, June 2003. Remedial Investigation Work Plan
 - Appendix A – Strand (1992). Twin City Testing, Table 3.
 - Appendix B – Geraghty & Miller (1993) for Fox Environmental (1992). Precision Analytical Lab, Inc.
 - Appendix C – Geraghty & Miller (1994). Savannah Laboratories, Inc.
- Foth & VanDyke, March 2004. Preliminary Site Characterization Summary, Tables 1, 3, 12 & 15.²
- ENSR, June 2007. Results of Phase II Investigation, Pace Analytical Services.
- CH2M Hill, May 2015. Final Remedial Investigation Report, Table C-1.³

With regard to the figures attached to this document, all historical sample locations are considered by Drake to be approximate.

² WDNR file did not provide laboratory analytical report, as such the sample summary data is reliant upon Foth & VanDyke reported values.

³ . WDNR file did not provide laboratory analytical report, as such the sample summary data is reliant upon CH2M reported values.

1. As required by Wis. Admin. Code § NR 716.09 (2) (f) .8, the work plan must include discussion of how the proposed sampling activities will relate to the results of the previous investigations. Explain how the newly obtained sampling data will be used to define the degree and extent of contamination on-site and choose remedial actions.

As discussed in the April 2019 work plan, Drake has proposed conducting additional subsurface assessment activities in the areas of identified impacts previously defined at the Amcast North, Amcast Central and Amcast South parcels where concentrations of polychlorinated biphenyls (PCBs) and polynuclear aromatic hydrocarbons (PAHs) were observed at the site. The planned scope of work Drake proposed is not associated with investigative activities to define the horizontal and vertical degree and extent of contamination (as that had already been accomplished by others and demonstrated via CH2M's submittal of their Final RI Report in May 2015) but rather to refine the proposed remedial alternatives which were identified within the CH2M Remedial Alternatives Evaluation Report which was submitted to the Department and the EPA in May 2017 and to provide additional information to guide the Developer of the site in their future decision-making with regard to appropriate safeguards they may choose to put in place to further protect human health and the environment during their planned brownfield redevelopment activities at the former Amcast site.

The Remedial Alternatives Evaluation Report prepared by CH2M (May 2017) for the U.S. EPA describes the soil remedial alternatives proposed for what they referred to as the "Amcast North" and "Amcast South" relative to their position along Hamilton Avenue. As previously indicated, CH2M's use of the term "Amcast South" by definition includes the portion of the site that the Department has identified as the "Amcast Central" parcel.

As described in the report, the remediation alternative that includes soil excavation, off-site disposal, backfill and site restoration (defined as "Alternative AMN-2" and "Alternative AMS-2") is considered to constitute the best remedy that meets all evaluation criteria as the most protective of human health and the environment, compliance with applicable or relevant and appropriate requirements (ARARs) as they relate to TSCA requirements, provides the least amount of residual risk and provides for the highest adequacy and reliability of controls.

Based on the data presented in CH2M's 2017 evaluation report, Drake is incorporating the Amcast North Alternative AMN-2 and Amcast South (and Central) Alternative AMS-2 in our evaluation of areas that may require further assessment within the proposed redevelopment plan for this site. Figures 4-1 and 4-3 (CH2M 2017) provide an illustration of the impacted areas within the Amcast

North, Amcast South (and Central) parcels that were proposed for soil excavation, treatment and disposal. It is Drake's understanding that the EPA is currently working (via the Superfund NPL process) to implement the proposed remedies identified as AMN-2 and Alternative AMS-2. It should be noted that EPA and CH2M are planning to conduct remedial effort to address contamination which has been identified within the existing storm sewer system network.

With regard to the historical investigation and remedial alternative analysis activities conducted at this site, the focus has been on the historical release of contaminants (including PCBs) from the former Amcast industrial facility and other potential nearby sources. Although other constituents were analyzed historically by others, the purpose of the additional brownfield redevelopment assessment and remedial alternative evaluation activities will include additional PCB evaluation based on the PCB data obtained and summarized by others.

Please note that Drake has revised all PCB units formerly reported by others in micrograms per kilogram (ug/kg) to milligrams per kilogram (mg/kg) to better evaluate the concentrations as they relate to Wisc. Ad. Code (WAC) ch. NR 720 established clean-up standards outlined in the WDNR's spreadsheet for soil residual contaminant levels (RCL) that are protective of the direct-contact pathway and groundwater quality (December 2018) and the Toxic Substance and Control Act (TSCA) disposal levels of 50 mg/kg for total PCBs.

Drake's proposed sampling activities in relation to the historical sample results is discussed below. The WDNR's soil RCL for non-industrial and industrial sites with direct contact for total PCBs are 0.234 mg/kg and 0.967 mg/kg, respectively. The protection of groundwater performance standard to address the soil to groundwater pathway for total PCBs in soil is 0.0094 mg/kg. The standards established by the U.S. EPA and the WDNR will be used to guide the additional brownfield redevelopment site assessment and the refinement of the remedial alternative evaluation activities conducted by Drake (and possibly others) at the site.

Summary of historical soil site investigation and sampling activities

Based on the data provided in the WDNR files and reports by others, a total of 80 soil boring/surface samples were obtained from the Amcast North and Amcast South properties (which included the Amcast Central parcel). A total of 34 soil borings/surface samples were installed/obtained on the Amcast North property from approximately October 2003 to September 2011 and 46 soil borings/surface samples were installed on the Amcast South/Central property from approximately December 1990 to September 2011. Select soil samples were submitted for analysis of PCBs, PAHs, metals and/or volatile organic compounds (VOCs).

Amcast North – Summary of historical soil analytical for total PCBs

Based on the laboratory analytical data provided, the highest concentrations of total PCBs were observed in the upper 2 feet of the soil column and occur on the grounds surrounding the building (for example, grassy or asphalt paved areas). Total PCBs were observed to be above the NR 720 Non-Industrial Direct Contact value of 0.234 mg/kg in 18 of the 34 soil borings installed at the Amcast North property. The historical total PCB concentrations for the soil samples collected at the Amcast North property are shown in Figures 3-1 and 3-2 of Appendix A. Table 1.1.N in Appendix B presents a summary of the historical total PCB concentrations reported by others.

The highest concentration of total PCBs detected in the soil at the Amcast North property was observed in the soil sample collected from soil boring FVMW-27 [1-3 feet (below ground surface (bgs))] at a concentration of 690 mg/kg. Soil boring FVMW-27 was installed by Foth & Van Dyke in approximately 2003 in the asphalt parking lot along the northern property boundary. Two soil borings [AMN-SO07 (12 mg/kg) and FVSS-21 (8.6 mg/kg)] were subsequently installed to the east and west of FVMW-27 and one (1) off-site soil boring [FVSS-22 (24 mg/kg)] was installed in the residential yard to the north of FVMW-27. Based on the results of the adjacent soil borings, the highest concentration of total PCBs in the soil appears to be limited to generally within the vicinity of FVMW-27. The soils within the vicinity of FVMW-27 are being considered for soil excavation and disposal by CH2M and the U.S. EPA as part of their planned remedial alternative implementation process.

Of the 34 soil borings installed on the Amcast North property, 14 soil borings were collected from below the former Amcast North foundry building (B-01 through B-14) at depths of 2 feet bgs and 8 feet bgs.⁴ A total of 18 soil samples were collected from the exterior “surface” (defined as less than or equal to 2 feet bgs), and 13 soil samples were collected from the “subsurface” (greater than 2 feet bgs). Concentrations of total PCBs detected below the former foundry building were reported to range from 0.018 mg/kg to 0.640 mg/kg. Twelve of the 28 soil samples collected from below the former foundry facility and submitted for analysis of PCBs exceed the WAC NR 720 soil to groundwater pathway value of 0.0094 mg/kg for groundwater. Three soil samples demonstrated an exceedance above the non-industrial direct contact value of 0.234 mg/kg, however only one (1) of the three (3) soil samples (B-02) was collected from the shallow subsurface (2 feet bgs). Soil boring B-02 is located in the basement of the former foundry. As part of the current brownfield redevelopment plan, this area of the site is expected to remain

⁴ ENSR_Results of Phase II Investigation June 2007_Pace Analytical Services 882693

capped via the existing concrete and the future use of this area will be the floor slab of the planned parking garage. None of the soil samples collected from below the former foundry facility exceeded the industrial direct contact value for total PCBs.

The remaining soil borings installed at the Amcast North site demonstrated concentrations of total PCBs ranging from below levels of detection to 33 mg/kg. Of the 18 soil borings demonstrating direct contact exceedances, 15 are being considered for soil excavation and off-site disposal by CH2M and U.S. EPA (the exception being B-02, B-11 and B-13 that will remain capped). Please refer to Figure 4-1 for the proposed soil excavation activities being considered by CH2M and the EPA at the Amcast North parcel.

Amcast North – Summary of historical soil analytical for other compounds

An analysis of VOC concentrations in prior samples obtained at the site and none of the detected VOC concentrations in soil samples exceed its respective NR 720 RCL for individual VOC compounds.

The highest concentrations of total PAHs at Amcast North are generally limited to the top five (5) to six (6) feet of soil and predominately occur on the northern (AMN-SO05), southern (AMN-SO09) and eastern (FVSS-31) corners of the property, and the presence of such PAHs is not uncommon in surficial soils within urban areas such as the one the former Amcast site lies within.

The only metal compound detected in Amcast North soil above NR 720 direct contact RCLs was arsenic, which was detected within the range of naturally occurring values. As such, no additional investigation or assessment activities relating to arsenic or other metals is being proposed at this time. Tables 1.2.N through 1.4.N in Appendix B present a summary of the historical VOC, PAH and metal analyses reported by others for the Amcast North property.

Amcast South – Summary of historical soil analytical for total PCBs

According to the summary provided in the Final RI Report prepared by CH2M, “the data reported from previous investigations provide a relatively well-defined picture of soil contamination at the Amcast South property. Therefore, a limited and focused soil investigation was conducted in 2011 to collect data to support the human health risk assessment, to refine the nature and extent of contamination, and to fill data gaps...”. The historical total PCB concentrations for the soil samples collected at the Amcast South/Central property are shown in Figures 3-6 and 3-7 of Appendix A. Table 1.1.S in Appendix B presents a summary of the historical total PCB concentrations reported by others.

A summary of Drake's interpretation of the historical soil sample results for the Amcast South/Central property as they relate to Drake's proposed assessment activities is discussed below:

Based on the laboratory analytical data provided, the highest concentrations of total PCBs were observed in the deeper subsurface samples collected from below the 2 foot depth of the soil column and generally located within a former disposal area along the southeastern portion of the property (generally within the eastern portion of the parcel currently identified as the "Amcast South" parcel. The western portion of this parcel formerly housed a farmhouse and outbuildings which were not considered to be "industrial" uses). Soil boring GMSB-14 collected at 11-13 feet bgs demonstrated the highest concentration of total PCBs at 280 mg/kg. Soil boring GMSB-14 was installed by Geraghty & Miller in approximately 1993 in the former disposal area located just south of the asphalt parking lot on the Amcast Central property (within the eastern portion of the Amcast South parcel as described above). With the exception of soil boring GMSB-14, detected concentrations of total PCBs ranged from 0.067 mg/kg to 11 mg/kg in the shallow soil samples and from 0.034 mg/kg to 45 mg/kg in the deeper subsurface soil samples.

Total PCBs were observed to be above the NR 720 Non-Industrial Direct Contact value of 0.234 mg/kg in 17 of the 46 soil borings installed at the Amcast South/Central property and nine (9) soil borings exhibited a concentration above the NR 720 soil to groundwater pathway of 0.0094 mg/kg. A total of 19 soil borings analyzed for total PCBs did not exhibit a concentration above NR 720 standards all of which are located outside or on the approximate perimeter of the former disposal area.

Drake understands that soil in the vicinity of all 17 soil borings demonstrating direct contact exceedances are being considered for soil excavation and off-site disposal by CH2M and EPA as part of their planned remedial activities at the site. Please refer to Figure 4-3 for the proposed soil excavation activities being considered at the Amcast South/Central parcel.

Amcast South – Summary of historical soil analytical for other compounds

As described in the April 2019 work plan, the spatial distribution of PAHs in surface and subsurface soils roughly correlates with the distribution of PCBs, except that the highest concentrations of PAHs are found in surface soil, whereas the highest concentrations of PCBs are found at depth in the former disposal area. The observance of PAHs within the surficial soils of this urban area is not unexpected given the site's proximity to a railroad right of way, and major surface roads in the vicinity of the site. VOCs were not detected in soil samples at Amcast South,

and RCL exceedances for metal constituents were limited to arsenic and lead. Tables 1.2.S through 1.4.S in Appendix B present a summary of the historical VOC, PAH and metal analyses reported by others for the Amcast South/Central property.

Historical storm sewer sediment sampling

As discussed in the April 2019 work plan, sediment samples were collected from storm sewers and catch basins on the Amcast North and Amcast Central/South properties and/or storm sewers and catch basins believed to be in connection with the Amcast sewer lines as indicated in Figure 1-6 (CH2M 2015). In an effort to characterize flow direction and connectivity, dye testing, lamping, and visual inspections have been performed, as well as consultations with the City of Cedarburg, which provided current and historical as-built drawings and geographic information system files. Historical storm sewer sediment samples were collected in 2003, 2005, and 2007, although not at the same locations during each sampling event. The sample results are summarized in Tables 2.1.N, 2.1.S, 2.2.S and 2.3.S of Appendix B. Figures 4-6 and 4-7 (CH2M 2017) depict the approximate locations of the historic storm sewer sediment sample locations.

As described by CH2M in its May 2015 Final RI Report, total PCB sample concentrations from storm sewer locations on the Amcast North property range in concentration from 0.64 mg/kg to 19 mg/kg. The stormwater from Amcast North is believed to be directed into one of two storm sewer mains that trend northwest-southeast along Wilshire Drive or through the residential yards. The storm sewers flow into the Wilshire Pond and eventually discharge to Cedar Creek. The storm sewers and catch basins within the Amcast North building are also connected to the sewer line that runs along the former drainage ditch. The storm sewer sediment sample collected from CB-9 (also known as FVSTM-02S) exhibited the highest concentration of total PCBs observed at the Amcast North property (19 mg/kg). The storm sewer sample location CB-9/FVSTM-02S is located on the northeast side of the building and is connected to the storm sewer system in the former industrial building. None of the historical storm sewer sediment samples collected from the Amcast North property exhibited concentrations which exceed the TSCA disposal and clean-up value of 50 mg/kg.

Total PCB sample concentrations from storm sewer locations on the Amcast Central/South property range in concentration from 0.18 mg/kg to 23,000 mg/kg. The stormwater in the lines at Amcast South appear to generally coalesce at either the south or eastern portion of the site, extend under the railroad embankment, and discharge to Quarry Pond. The north and south sides of the former Quonset building area on the Amcast South property contain relatively higher total PCB concentrations in sewer sediment than the areas farther away from the building. The highest concentrations of total PCBs observed in the historical samples collected from the Amcast

Central/South property were identified at FVSS-05A (also known as FVSTM-11 and CB-02), FVSTM-29S (also known as CB-03), ENSTM-47S and ENSTM-49S range from 66 mg/kg to 23,000 mg/kg, with concentrations appearing to decrease downgradient/downstream from the Quonset building. Each of the four (4) storm sediment samples identified above exceed the TSCA disposal and clean-up value of 50 mg/kg and will require proper handling and disposal for redevelopment purposes. Drake understands that the planned remedial activities to be undertaken by the EPA and CH2M will address the presence of contaminated sediment which may remain within the storm sewer system at the Amcast Central and Amcast South parcels.

According to the information presented in the Foth & VanDyke Preliminary Site Characterization Summary (March 2004), the sediment sample collected from FVSS-05A was also analyzed for PAHs and metals. Based on the summary tables provided in their report (Tables 12 and 15 of Foth & VanDyke 2004), several PAH compounds were observed to exceed their NR 720 direct contact values, specifically benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene. In addition, arsenic was detected at a level above the NR 720 industrial direct contact value of 3 mg/kg at a concentration of 4.5 mg/kg.

Proposed additional assessment activities

The additional activities outlined in Drake's prior submittal and within this Addendum are designed to permit Drake to assess the current conditions at the site and provide additional information in support of the refinement of the remedial alternative to be implemented and to provide additional data to assist in the planned brownfield redevelopment of the site. . A total of 32 additional shallow soil samples are being proposed for the Amcast brownfield redevelopment site. The shallow soil samples are anticipated to be analyzed for total PCBs and/or PAHs based on their location relative to previously installed borings. Soil samples will be collected using a decontaminated stainless-steel trowel, shovel or hand auger in accordance with the procedures described in Appendix C.

Fifteen soil samples are proposed for the Amcast North property in the areas designated on the revised Figure 1-2.Rev. Eight of the 15 proposed soil samples for the Amcast North property will be installed adjacent to the proposed excavation areas defined in Figure 4-1. These shallow soil samples aim to further define the extent of the proposed soil excavation boundaries. Three soil samples (previously not accessible due to safety concerns) are proposed to be installed in the subsurface of the former Amcast industrial building. Two companion soil samples are proposed for the northern portion of the site adjacent to off-site soil borings FVSS-23 and FVSS-24, as

limited on-site soil data exists for this area. One soil boring is also proposed to be installed within the former loading dock area (which was previously appears to have not been accessible).

Seventeen soil samples are proposed for the Amcast South and Central property in the areas designated on revised Figure 1-3.Rev. Four shallow soil samples will be collected from the northern portion of the site in the general vicinity of the existing commercial building (this former corporate office building is anticipated to be re-used in the near future as an office facility and is not suspected to have been a source of contamination identified on the Amcast Central or Amcast South parcels). These soil samples are anticipated to be reflective of shallow on-site conditions west of the former foundry where native soils are generally proposed to remain in place. Three soil samples will be installed within the area of the former foundry to evaluate the impact, if any, of the former foundry on the shallow soils in that area. (Note: the soil sample collected to the east of the former foundry, adjacent to FVSS-06 will also be analyzed for lead). Six soil samples will be collected around the area of the former Quonset hut and three (3) soil borings will be installed along the southwestern portion of the site adjacent to Johnson Avenue (this area of the site was historically utilized as a parking area or greenspace and no industrial manufacturing/foundry activities occurred in this area) . The last two (2) soil samples are to be collected west of the proposed soil excavation area to further delineate the extent of shallow soil contamination west of the former disposal area.

In response to the WDNR's comment above regarding an asserted requirement within a work plan to permit a responsible party to "...choose remedial actions", Drake would again assert that the degree and extent of contamination at the Amcast North, Amcast Central and Amcast South parcels have been sufficiently investigated and the historic investigatory work at this site provides more than enough basis for the evaluation and future selection and implementation of a preferred remedial alternative. We also would note that selection of a remedial action does not appear to us to be a required element to be provided within a NR 716 "work plan". Following receipt of WDNR approval of the above-described activities which includes the collection of samples from 32 additional locations, Drake will proceed to conduct the work and will provide a summary of the additional assessment results to the WDNR, as well as to the EPA for their review and comment.

2. *The DNR cannot determine the adequacy of proposed field investigation activities if it is not clear how available data was assessed to develop the scope of work. It is recommended that all available data, including newly collected groundwater sampling data, is displayed on maps and that iso-concentration maps are included in the revised work plan to document known site conditions and to justify proposed sampling activities. These figures will be required as part of the site investigation report as outlined in Wis. Admin. Code§ NR 716.15 (4).*

Drake understands that iso-concentrations diagrams are required as part of the site investigation report but notes that such diagrams are not a required element of a NR 716 work plan. Drake's review of the CH2M Final RI Report leads us to conclude that the information required to be contained within a site investigation report was properly submitted within CH2M's Final RI Report and the Department's request to provide such information within a supplemental assessment work plan only further delays the proposed assessment activities. To the extent that they are required to comply with NR 700 regulations, iso-concentration diagrams will be provided within future submittals and will be provided in support of the planned future brownfield redevelopment of this site and within any future closure submittal request.

As the Department is aware, historical groundwater data was described extensively within the April 2019 work plan. The following presents a summary of the historical groundwater data as it relates to the recent groundwater sampling conducted by Drake from 2018 to 2019. Tables 3.1.N through 3.4.4 and 3.1.S through 3.4.S in Appendix B present a summary of the historical and recent groundwater analytical results.

According to the information provided in the WDNR files, four (4) monitoring wells were installed at the Amcast North property (AMNMW-01, FVMW-26, FVMW-27 and FVMW-28⁵), eight (8) monitoring wells were installed on the Amcast Central/South property (GMMW-1 through GMMW-7 and FVMW-20) and three (3) monitoring wells were installed off-site to the east of the Amcast Central/South property (FVMW-21⁶, FVMW-22⁷ and AMSMW-01). Select groundwater samples were submitted for analysis of PCBs, PAHs, metals and/or volatile organic compounds (VOCs) by others from approximately December 2003 to September 2011. Drake resumed groundwater sampling activities from existing wells at the site in November 2018 in an effort to better ascertain current site conditions.

The three (3) monitoring wells sampled at Amcast North have historically had groundwater concentrations of chromium, lead, arsenic, bis(2-ethylhexyl)phthalate, and/or total PCBs that exceed their respective Wisc. Ad. Code ch. NR 140 Enforcement Standard (ES). Arsenic has been shown to occur naturally in the soil in Southeast Wisconsin, as such this contaminant is not considered to be a contaminant of concern at this property. The results of the recent groundwater

⁵ Based on historical information, monitoring well FVMW-28 has never been able to be sampled as it is consistently dry.

⁶ Based on historical information, monitoring well FVMW-21 has not been sampled since 2007 as it has consistently been dry.

⁷ Based on historical information, monitoring well FVMW-22 has never been able to be sampled as it is consistently dry.

sampling data collected from the wells at the Amcast North property indicate that concentrations of total chromium and total lead exceed their respective NR 140 ES values in monitoring well AMNMW-01 in the groundwater sample collected in November 2018 and total chromium in November 2019. Monitoring well FVMW-27 exhibited a concentration of total PCBs above the ES in the sample collected in November 2018. No other NR 140 ES values were exceeded in the groundwater samples collected by Drake.

Historical groundwater from well samples at Amcast South/Central contained concentrations that exceed their respective NR 140 ES for metals, bromodichloromethane, bis(2-ethylhexyl)phthalate, and/or PCBs in seven (7) of the ten (10) monitoring wells sampled by others. Groundwater concentrations of metals detected above the ES include lead, arsenic and manganese detected at GMMW-4. PAH constituents detected above the ES in the Amcast Central/South wells include benzo(a)pyrene, benzo(b)fluoranthene, bis(2-ethylhexyl)phthalate and chrysene, which were detected at GMMW-4. Bromodichloromethane was historically detected above the NR 140 ES in monitoring wells GMMW-1 through GMMW-4. Concentrations of total PCBs were observed above the NR 140 ES in monitoring wells GMMW-3 and GMMW-7 and off-site monitoring wells AMS-MW01 and FVMW-21.

Based on the recent groundwater data collected by Drake, concentrations of arsenic exceed the NR 140 ES of 10 ug/L in the groundwater samples collected from monitoring wells GMMW-3, GMMW-4, GMMW-5 and off-site monitoring well AMSMW-01. Lead was also detected above the ES in the samples collected from GMMW-4, GMMW-5 and off-site monitoring well AMSMW-01. Several PAHs were also observed to be above the ES in the samples collected from GMMW-1, GMMW-3, GMMW-4, FVMW-20 and off-site monitoring well AMSMW-01. Bromodichloromethane was detected above the ES in the sample collected from GMMW-1 in November 2018 but not in the sample collected in November 2019. Concentrations of total PCBs were observed above the NR 140 ES (0.03 ug/L) in monitoring wells GMMW-3 and off-site monitoring well AMSMW-01.

Storm Sewer PCB migration mitigation efforts conducted by Drake

Continued efforts to prevent, mitigate and/or halt the migration of contamination beyond the boundaries of the lands owned by Oliver Fiontar, LLC, especially as regards the WDNR's concern with potential releases from the on-site sewer system by performing such tasks as re-routing downspouts away from areas of concern, checking on previously placed open manhole cover barrier materials (3.5 mil plastic sheeting which was emplaced in an effort to prevent or reduce the amount of water entering the on-site sewer system) and completing visual checks of observable

site features to assess any potential threats of contaminant intrusion was completed in August 2018 with continued monitoring of the integrity of the protective barrier being performed typically on a weekly basis.

September 2020 storm sewer sediment sampling at Amcast Central/South

On September 14-15, 2020 Drake obtained storm sewer sediment samples from the accessible storm sewer locations on the Amcast Central/South property. Prior to collection, the protective barrier material was removed from the storm sewer location and any accumulated material upon the surface of the protective barrier material was placed into a 55-gallon drum for future disposal. Ten storm sewer sediment samples were collected with a hand-auger or hand scoop sampling device and transferred to the appropriate laboratory container and submitted for analysis of total PCBs, PAHs and Resource Conservation and Recovery Act (RCRA) metals. Drake noted that during sample collection, none of the catch basins where sediment samples were obtained exhibited pooled water or wet conditions. Following the collection of the sediment samples, a protective barrier material was emplaced over the catch basins.

Based on the laboratory analytical results, concentrations of total PCBs ranged from 0.19 mg/kg to 3,150 mg/kg. The highest concentrations observed in the sediment samples collected by Drake are analogous to the historical storm sewer sediment samples collected by others. The four (4) catch basin samples that had historically demonstrated the highest exceedances of total PCBs at the site (FVSS-05A/FVSTM-11/ CB-02), FVSTM-29S/CB-03, ENSTM-47S and ENSTM-49S) also exhibited concentrations of total PCBs above 50 mg/kg and ranged in concentration from 124 mg/kg to 3,150 mg/kg. The remaining six (6) sediment samples appear to have either decreased or remain generally within the same order of magnitude as compared to their previously reported concentrations suggesting the catch basins have remained relatively stable since the last sampling event conducted in 2003, 2005 and 2007. Table 2.1.S in Appendix B presents a summary of the PCB results from the storm sewer sediment samples collected by Drake at the Amcast Central/South property. A copy of the complete laboratory analytical report and chain of custody is included in Appendix D.

The laboratory analytical results for PAHs in the sediments collected from the storm sewers at the Amcast Central/South property indicate that several samples demonstrated exceedances of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene above their respective direct contact values, while concentrations of benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene and naphthalene were observed to exceed their respective NR 720 soil to groundwater pathway values.

Table 2.2.S in Appendix B presents a summary of the PAH results from the storm sewer sediment samples collected by Drake at the Amcast Central/South property.

The results from the RCRA metals analysis in the sediment samples collected by Drake exhibited concentrations of arsenic, cadmium, total chromium and lead above their respective Background Threshold Values (BTV). Arsenic was detected above the BTV of 8 mg/kg in the sediment sample collected from ENSTM-10s/FVSTM-10 at 10.2 mg/kg. The arsenic value of 10.2 mg/kg detected at ENSTM-10S/FVSTM-10 was noted with a “J” flag qualifier by the laboratory. The J flag means that the estimated contaminant concentration is above the adjusted MDL and below the adjusted reporting limit. As the concentration is below the adjusted reporting limit, the concentration is estimated only. Table 2.3.S in Appendix B presents a summary of the RCRA metals analysis performed on the storm sewer sediment samples collected at the Amcast Central/South property.

It is anticipated that storm sewer sediment samples will be collected from the Amcast North property following completion of the demolition activities which are currently in progress.

3. *Wis. Admin. Code § NR 716.09 (2) (f) .2 requires that if sample locations cannot be specified in advance within a work plan, that a description of the strategy that will be used to determine these locations in the field be provided.*

Drake provided a description of the strategy to determine the sample locations in the field by way of incorporating figures from prior reports to identify the anticipated excavation area boundaries which were to be further delineated during its planned assessment activities. As a result of the Department’s request for this addendum, we have prepared the attached diagrams to provide a further description of the planned locations of the sampling points. Please refer to Item No. 2 above and revised Figures 1-2.Rev. and 1-3.Rev. for a depiction of the proposed soil sample locations. As is general practice, Drake may elect to conduct either additional sampling or reduce the number of samples as field conditions dictate.

Following Departmental review of these responses and receipt of approval to proceed, Drake intends to conduct the proposed assessment activities as soon as practicable. If you have any questions regarding the contents of this addendum, please contact us at (262) 241-0005. We appreciate the Department’s assistance with the planned brownfield redevelopment of this site.

Respectfully,

DRAKE Consulting Group, LLC



Chelsea Corson
Senior Project Manager



D.J. Burns
President/Project Director

cc: Atty. Jacques Condon

Appendix A

Figures extracted from CH2M Final Remedial Investigation Report (2015) & CH2M Remedial Alternatives Evaluation Report (2017) cited for reference

- Figure 1-2 – Amcast North Property – Features and Investigation Locations (CH2M, 2015)
- Figure 1-3 – Amcast South Property – Features and Investigation Locations (CH2M, 2015)
- Figure 1-6 – Storm Sewer Location Map (CH2M, 2015)
- Figure 3-1 – Amcast North and Residential Yards - Surface Soil Sample Results – PCBs (CH2M, 2015)
- Figure 3-2 – Amcast North - Subsurface Soil Sample Results – PCBs (CH2M, 2015)
- Figure 3-6 – Amcast South - Surface Soil Sample Results – PCBs (CH2M, 2015)
- Figure 3-7 – Amcast South - Subsurface Soil Sample Results – PCBs (CH2M, 2015)
- Figure 4-1 – Amcast North and Residential Yards Alternatives (CH2M, 2017)
- Figure 4-3 – Amcast South Alternatives (CH2M, 2017)
- Figure 4-6 – Amcast North Storm Sewer Alternatives (CH2M, 2017)
- Figure 4-7 – Amcast South Storm Sewer Alternatives (CH2M, 2017)

Figures adapted from CH2M Final Remedial Investigation Report (2015)

- Figure 1-2.Rev. – Amcast North Property – Proposed Additional Soil Investigation Locations
- Figure 1-3.Rev. – Amcast South Property – Proposed Additional Soil Investigation Locations

Appendix B

Soil Analytical Tables

- Table 1.1.N – Historical PCB Soil Analytical Results – Amcast North
- Table 1.2.N – Historical VOC Soil Analytical Results – Amcast North
- Table 1.3.N – Historical PAH Soil Analytical Results – Amcast North
- Table 1.4.N – Historical Metals Soil Analytical Results – Amcast North
- Table 1.1.S – Historical PCB Soil Analytical Results – Amcast South/Central
- Table 1.2.S – Historical VOC Soil Analytical Results – Amcast South/Central
- Table 1.3.S – Historical PAH Soil Analytical Results – Amcast South/Central
- Table 1.4.N – Historical Metals Soil Analytical Results – Amcast South/Central

Storm Sewer Sediment Analytical Tables

- Table 2.1.N – Historical PCB Storm Sewer Sediment Analytical Results – Amcast North

Table 2.1.S – Historical & Current PCB Storm Sewer Sediment Analytical Results – Amcast South/Central

Table 2.2.S – PAH Storm Sewer Sediment Analytical Results – Amcast South/Central

Table 2.3.S – Metals Storm Sewer Sediment Analytical Results – Amcast South/Central

Groundwater Analytical Tables

Table 2.1.N – Historical PCB Groundwater Analytical Results – Amcast North

Table 2.2.N – Historical VOC Groundwater Analytical Results – Amcast North

Table 2.3.N – Historical PAH Groundwater Analytical Results – Amcast North

Table 2.4.N – Historical Metals Groundwater Analytical Results – Amcast North

Table 2.1.S – Historical PCB Groundwater Analytical Results – Amcast South/Central

Table 2.2.S – Historical VOC Groundwater Analytical Results – Amcast South/Central

Table 2.3.S – Historical PAH Groundwater Analytical Results – Amcast South/Central

Table 2.4.S – Historical Metals Groundwater Analytical Results – Amcast South/Central

Appendix C

Drake Standard Procedures for Environmental Investigations

Appendix D

Pace Analytical Laboratory Report & Chain of Custody

Appendix A

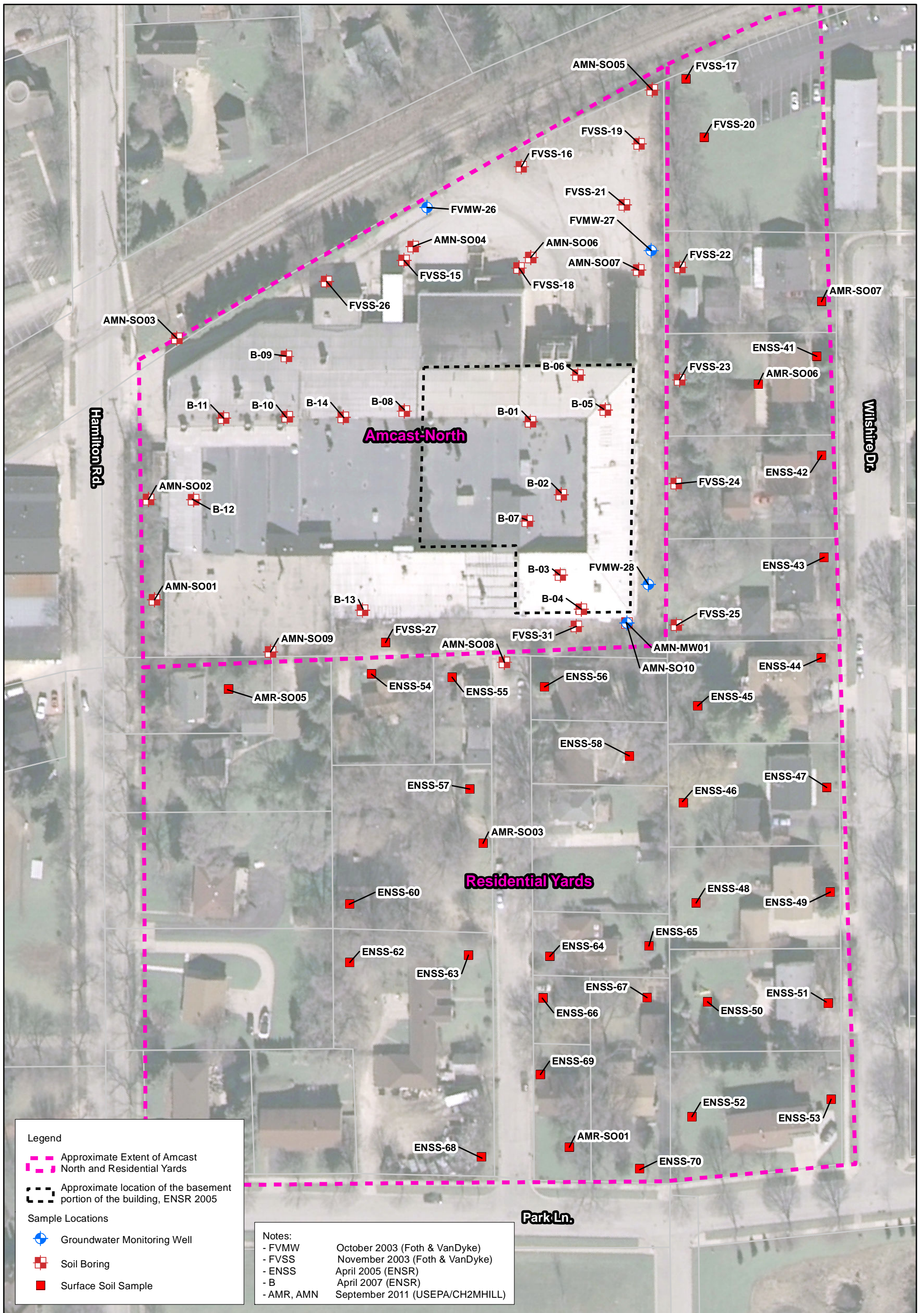
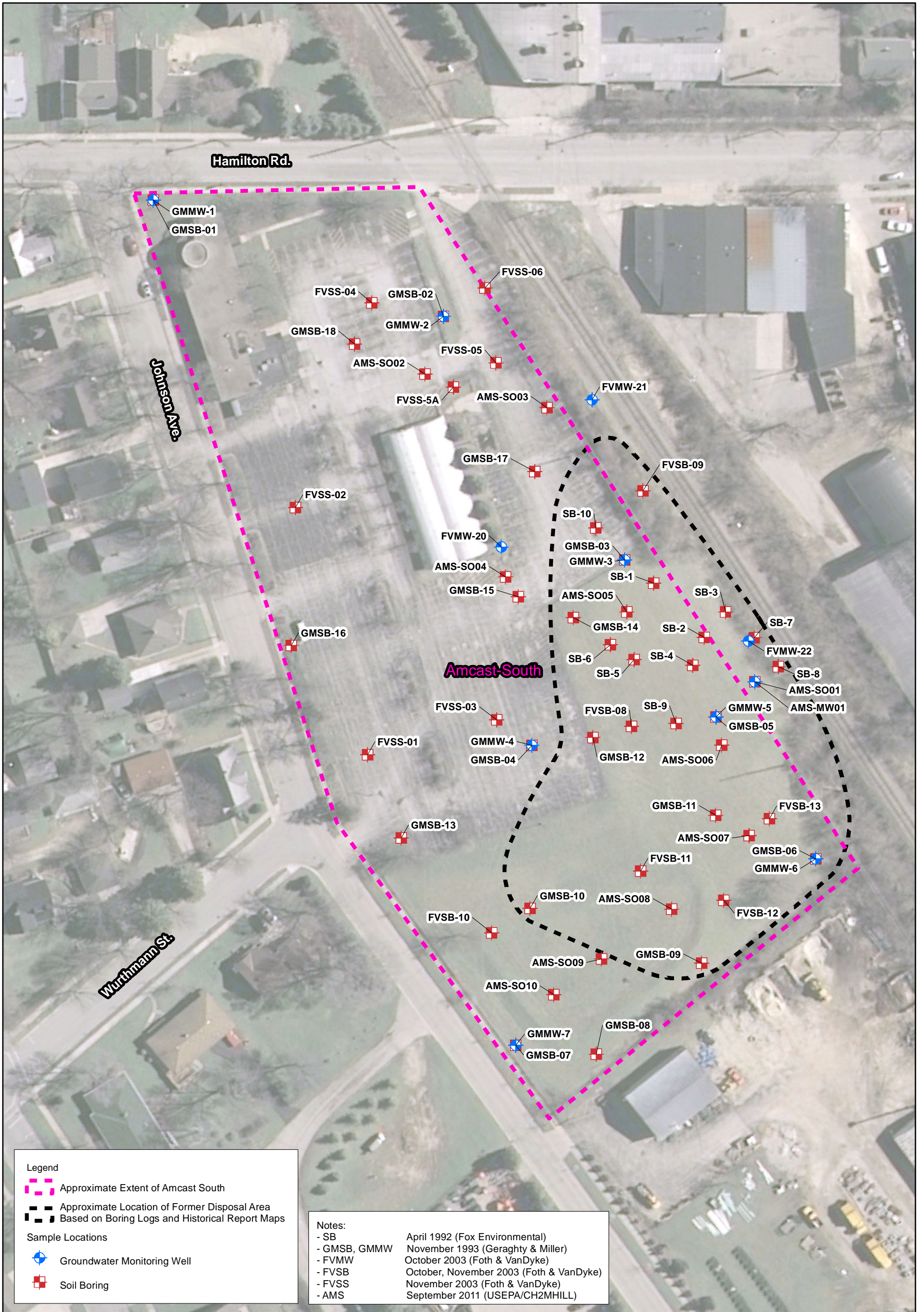


Figure 1-2
 Amcast North Property and Residential Yards - Features
 and Investigation Locations
 Remedial Investigation Report
 Amcast Industrial Site Cedarburg, WI



Legend

- - - Approximate Extent of Amcast South
- - - Approximate Location of Former Disposal Area
- - - Based on Boring Logs and Historical Report Maps

Sample Locations

- Groundwater Monitoring Well
- Soil Boring

Notes:

- SB April 1992 (Fox Environmental)
- GMSB, GMMW November 1993 (Geraghty & Miller)
- FVMW October 2003 (Foth & VanDyke)
- FVSB October, November 2003 (Foth & VanDyke)
- FVSS November 2003 (Foth & VanDyke)
- AMS September 2011 (USEPA/CH2MHILL)

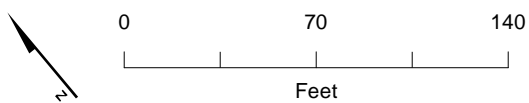
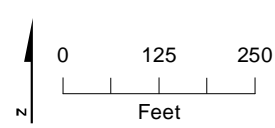
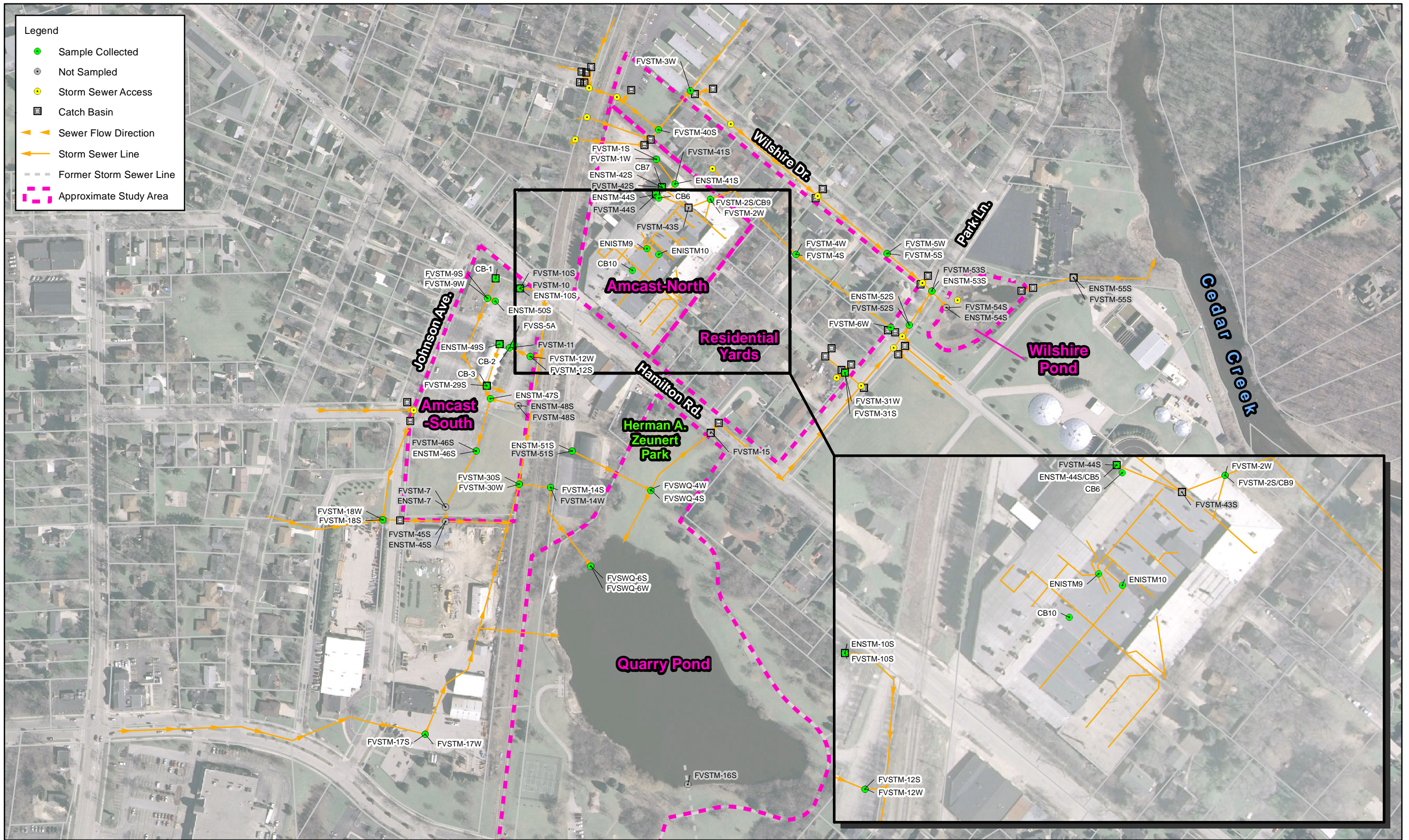


Figure 1-3
 Amcast South Property - Features and Investigation Locations
 Remedial Investigation Report
 Amcast Industrial Site Cedarburg, WI



Notes: All locations and flow direction arrows are approximate, summarized from the following resources:
 - City of Cedarburg 2010 Adobe Files
 - Foth & Van Dyke, 2004.
 - ENSR, 2005, 2007.

Figure 1-6
 Storm Sewer Location Map
 Remedial Investigation Report
 Amcast Industrial Site Cedarburg, WI

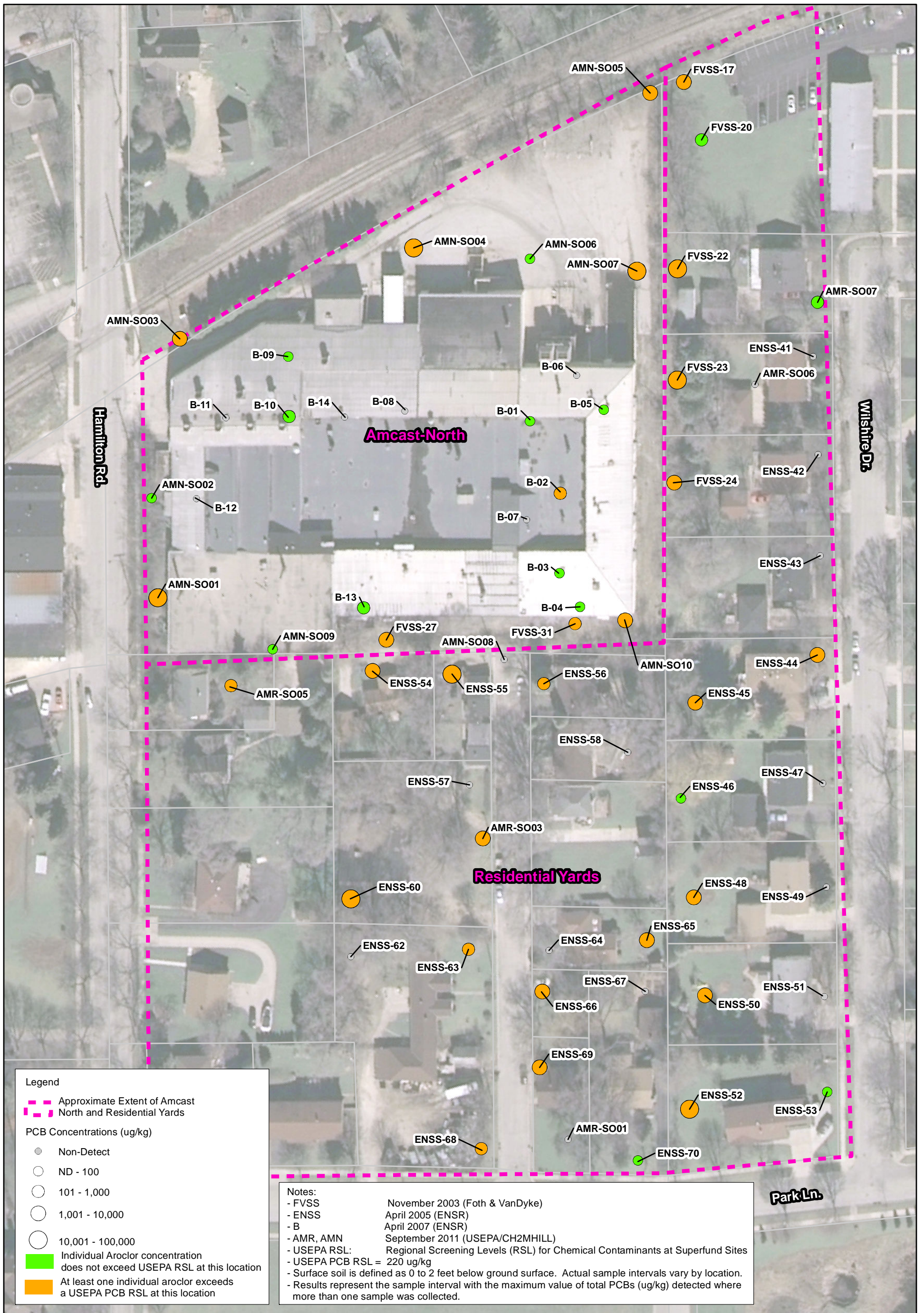


Figure 3-1
 Amcast North and Residential Yards - Surface Soil Sample Results (PCBs)
 Remedial Investigation Report
 Amcast Industrial Site Cedarburg, WI



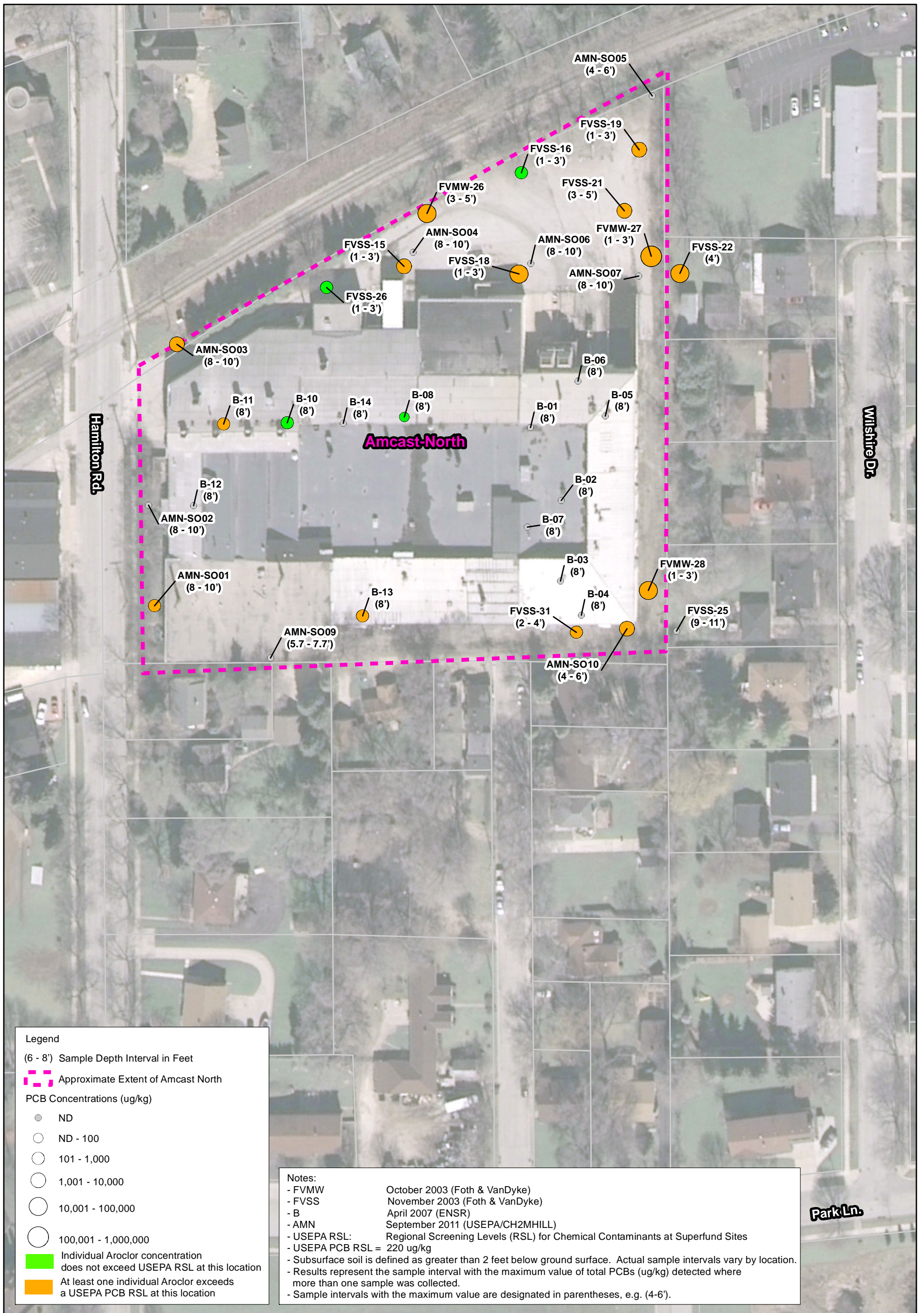
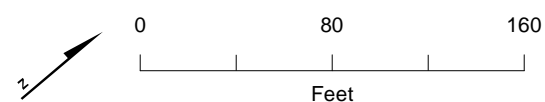
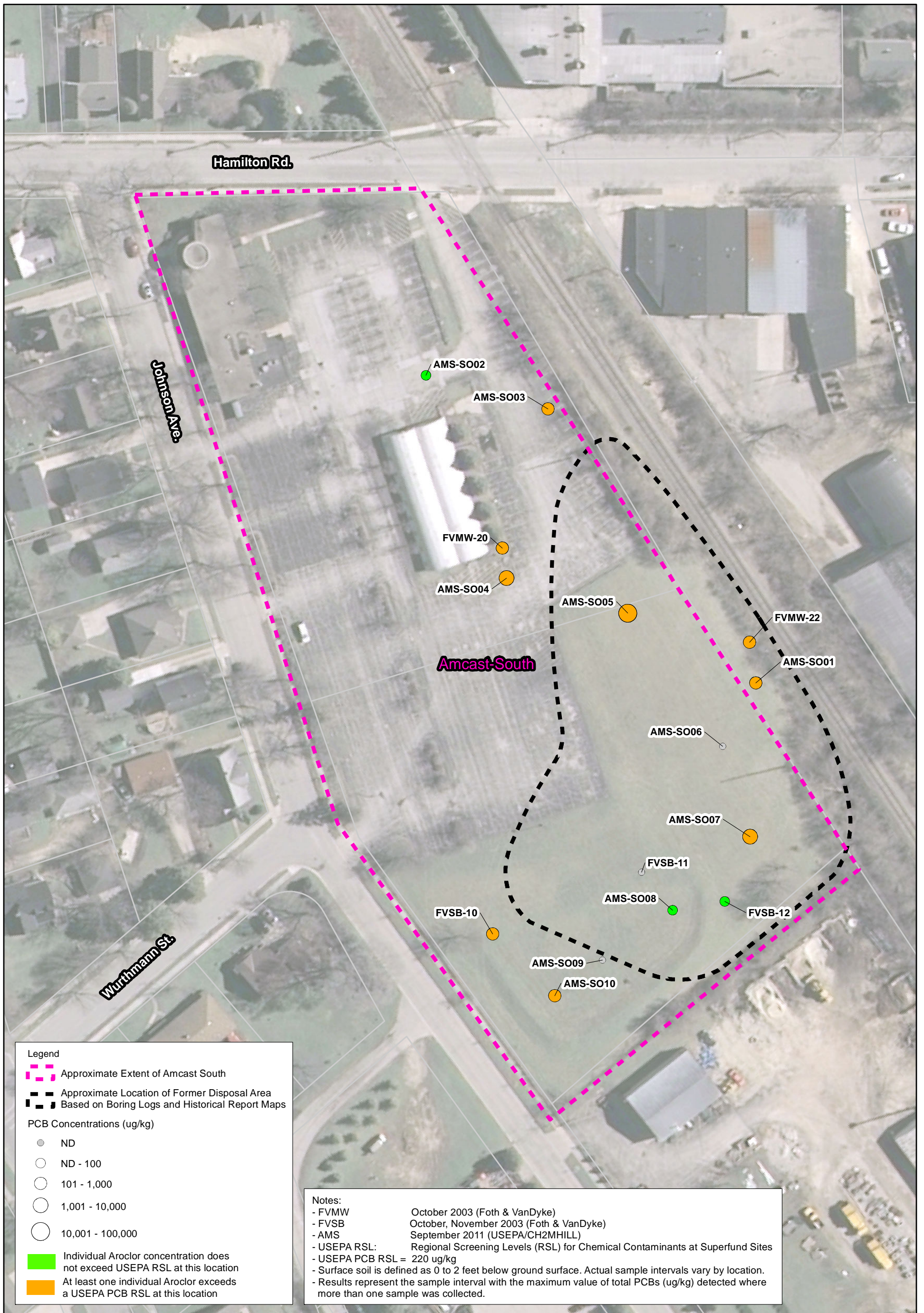


Figure 3-2
 Amcast North - Subsurface Soil Sample Results (PCBs)
 Remedial Investigation Report
 Amcast Industrial Site Cedarburg, WI





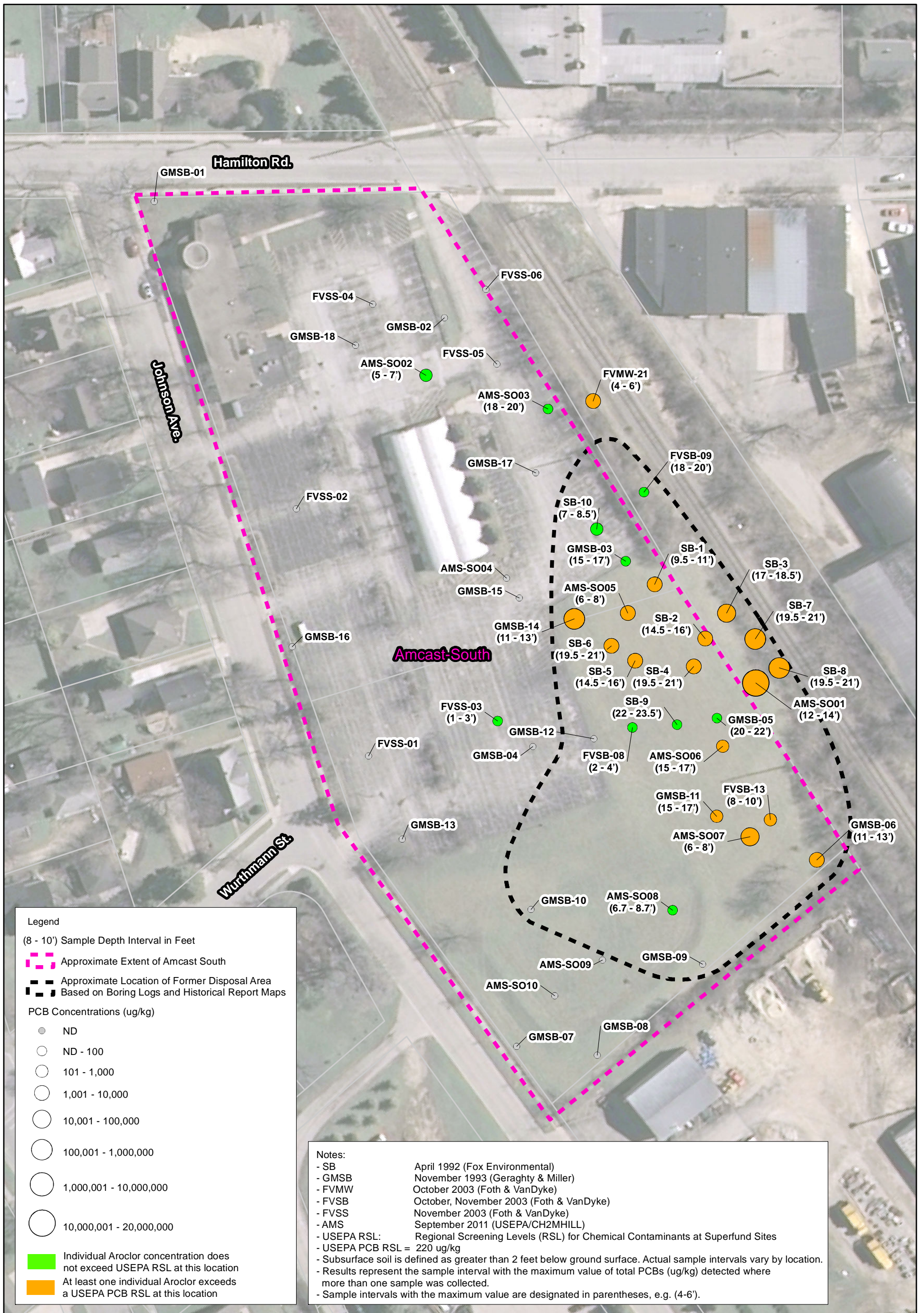


Figure 3-7
Amcast South - Subsurface Soil Sample Results (PCBs)
Remedial Investigation Report
Amcast Industrial Site Cedarburg, WI

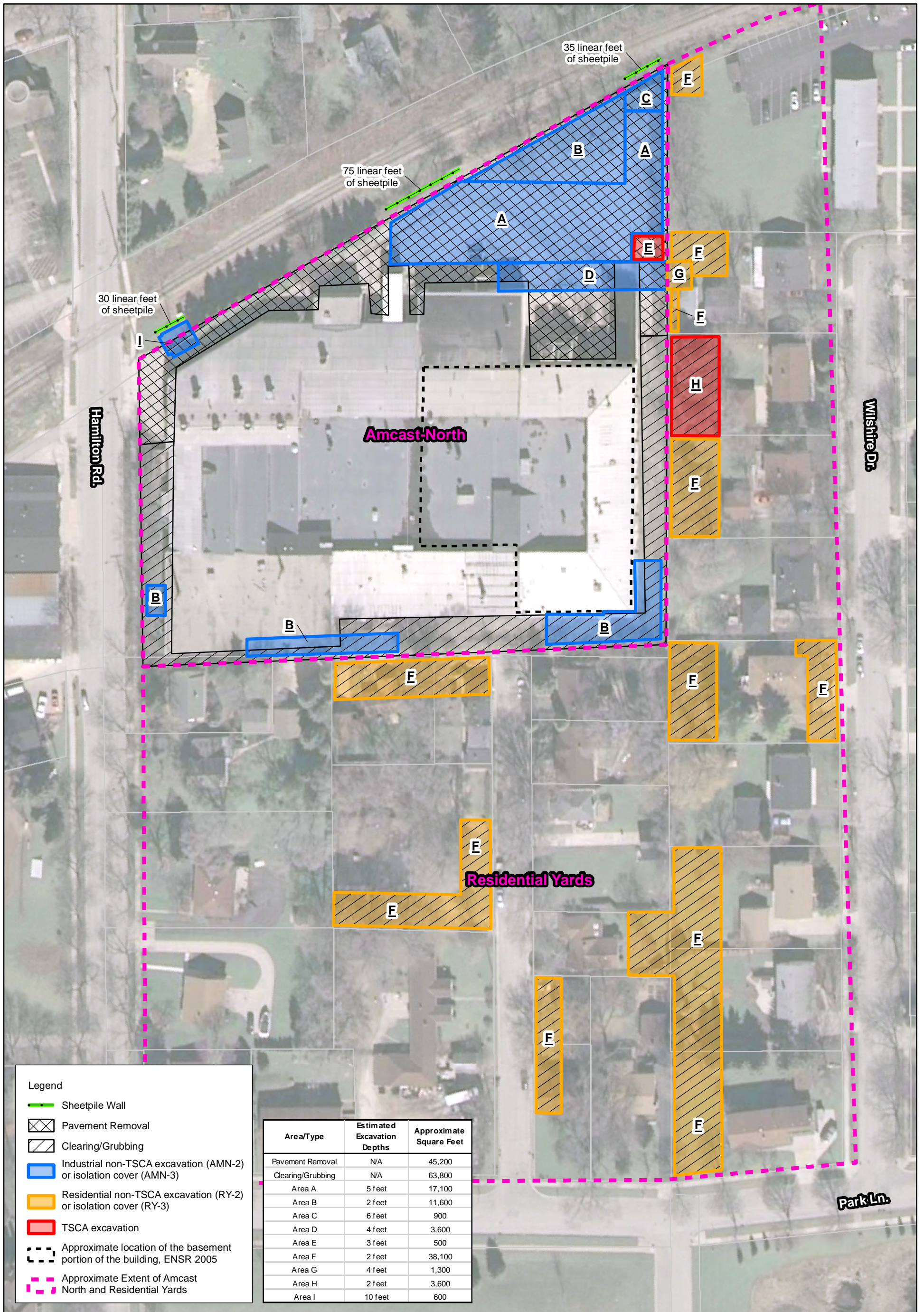


Figure 4-1
Amcast North and Residential Yards Alternatives
Remedial Alternative Evaluation Report
Amcast Industrial Site Cedarburg, WI



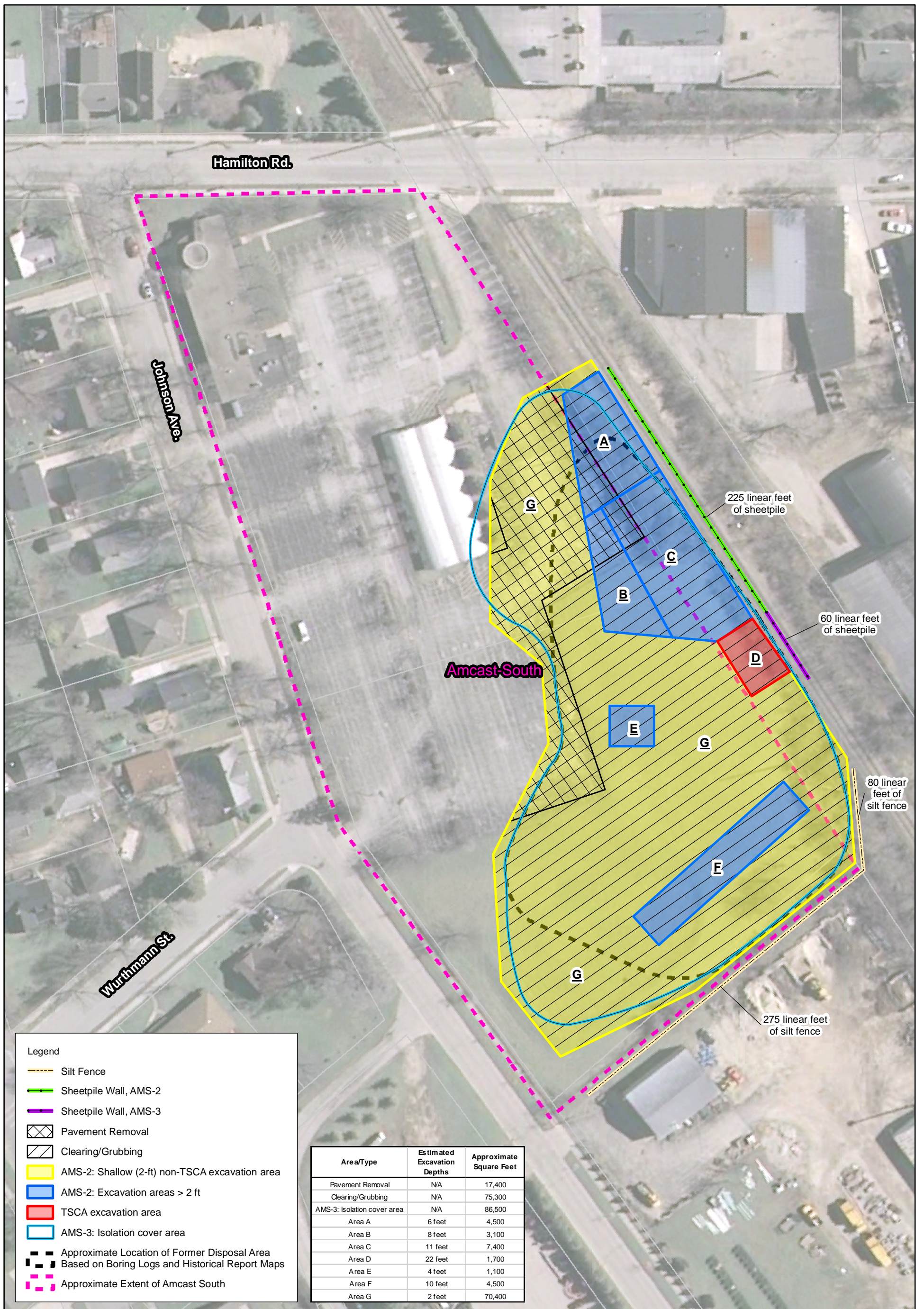
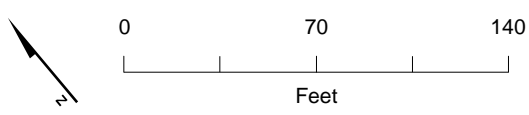


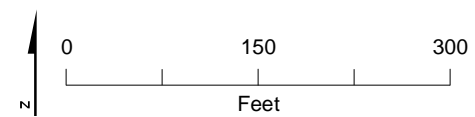
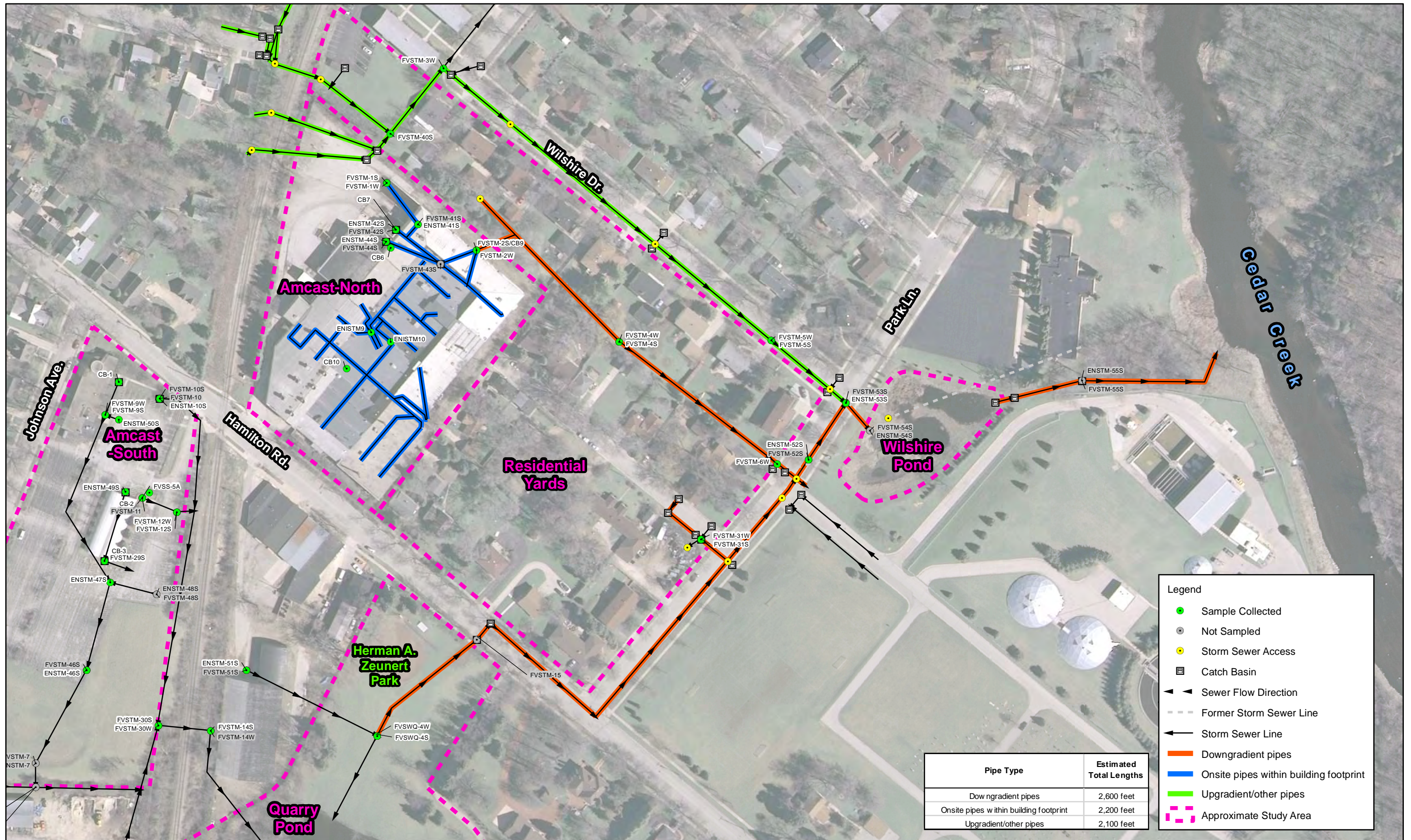
Figure 4-3
 Amcast South Alternatives
 Remedial Alternative Evaluation Report
 Amcast Industrial Site Cedarburg, WI

Legend

- Silt Fence
- Sheetpile Wall, AMS-2
- Sheetpile Wall, AMS-3
- Pavement Removal
- Clearing/Grubbing
- AMS-2: Shallow (2-ft) non-TSCA excavation area
- AMS-2: Excavation areas > 2 ft
- TSCA excavation area
- AMS-3: Isolation cover area
- Approximate Location of Former Disposal Area Based on Boring Logs and Historical Report Maps
- Approximate Extent of Amcast South

Area/Type	Estimated Excavation Depths	Approximate Square Feet
Pavement Removal	N/A	17,400
Clearing/Grubbing	N/A	75,300
AMS-3: Isolation cover area	N/A	86,500
Area A	6 feet	4,500
Area B	8 feet	3,100
Area C	11 feet	7,400
Area D	22 feet	1,700
Area E	4 feet	1,100
Area F	10 feet	4,500
Area G	2 feet	70,400





Notes: All locations and flow direction arrows are approximate, summarized from the following resources:
 - City of Cedarburg 2010 Adobe Files
 - Foth & Van Dyke, 2004.
 - ENSR, 2005, 2007.

Figure 4-6
 Amcast North Storm Sewer Alternatives
 Remedial Alternative Evaluation Report
 Amcast Industrial Site Cedarburg, WI

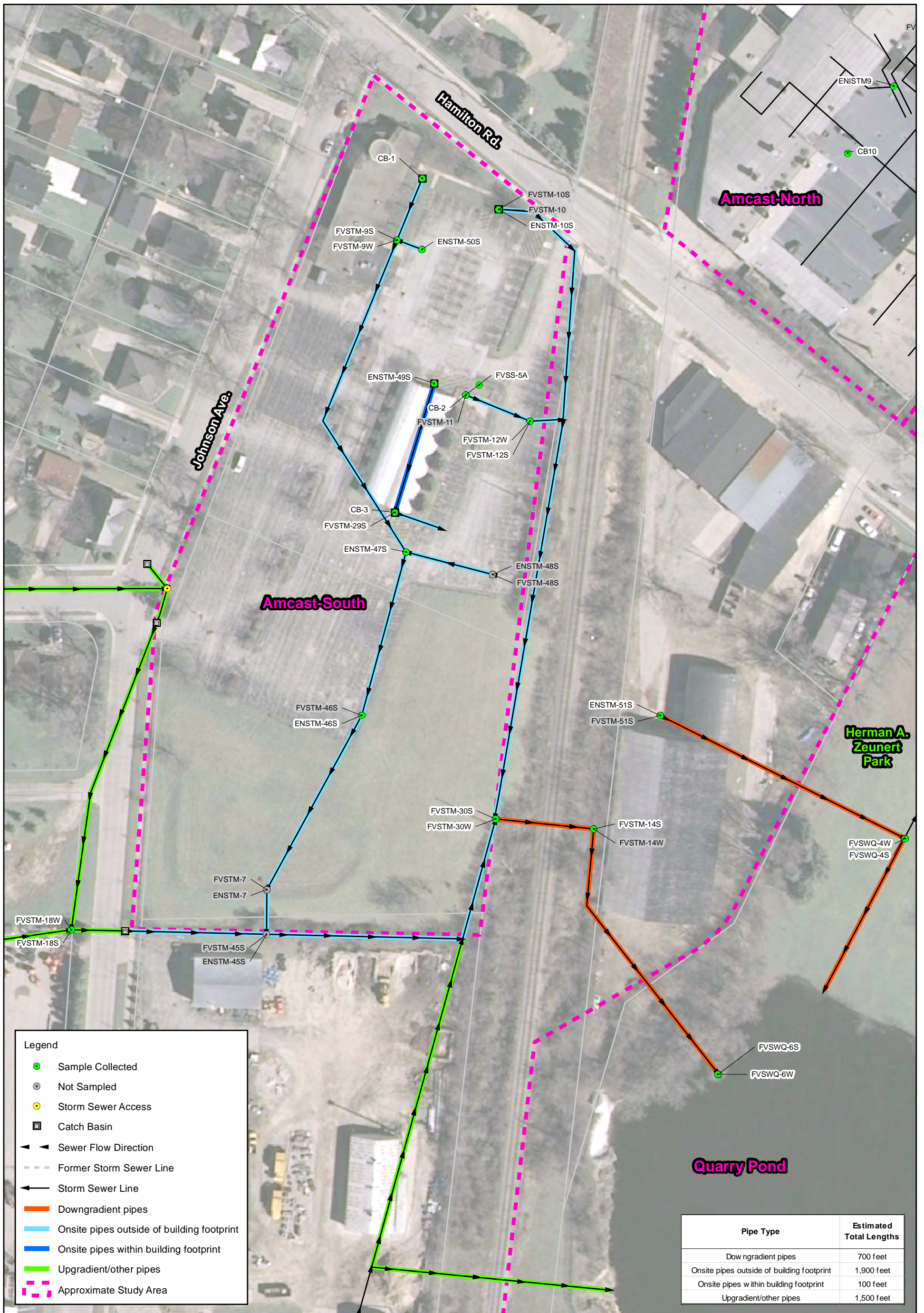


Figure 4-7
 Amcast south Storm Sewer Alternatives
 Remedial Alternative Evaluation Report
 Amcast Industrial Site Cedarburg, WI

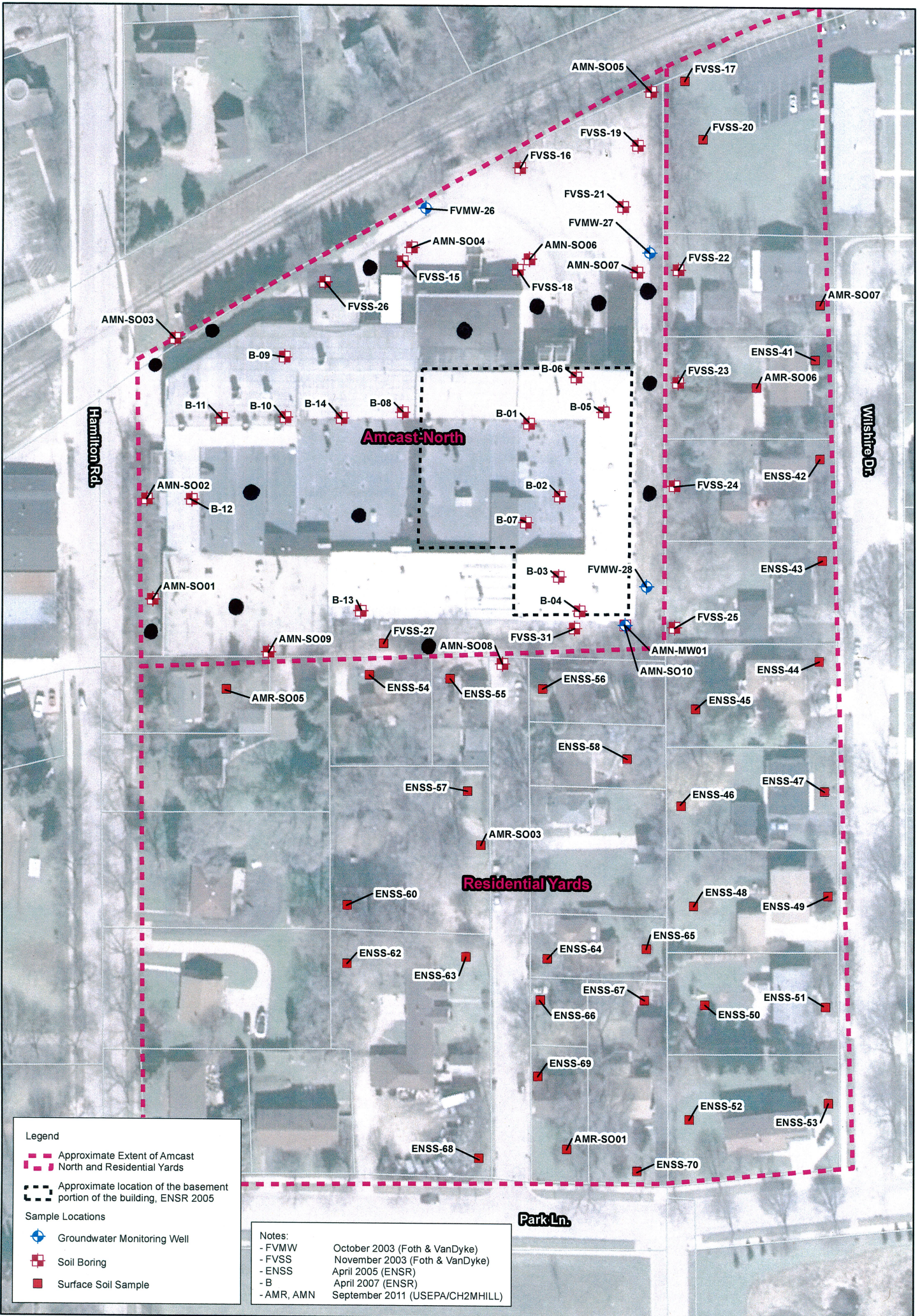


Figure 1-2, Rev
 Amcast North Property and Residential Yards - Features and Investigation Locations
 Remedial Investigation Report
 Amcast Industrial Site Cedarburg, WI

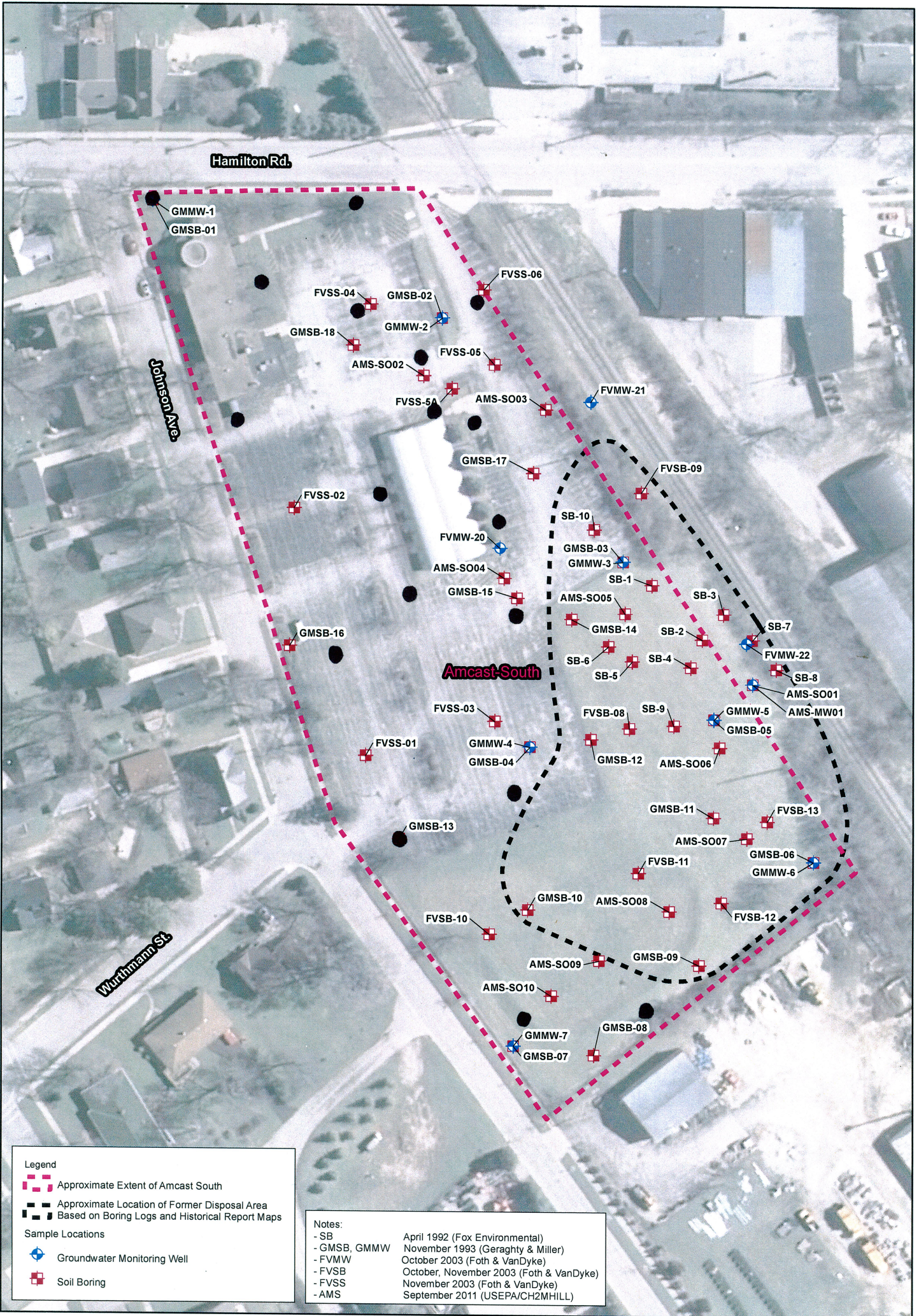


Figure 1.3 Rev
 Amcast South Property - Features and Investigation Locations
 Remedial Investigation Report
 Amcast Industrial Site Cedarburg, WI

Appendix B

Table 1.4.N
Soil Analytical Table
J16001- Amcast North Redevelopment Site
Cedarburg, WI

Sample ID	Sample Depth (feet bgs)	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Total Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
			Metals (mg/kg)																						
FVMW-26	1-3'	10/28/03	-	-	1.3	-	-	-	-	7.3	-	-	-	4.3	-	-	0.009	-	-	-	-	-	-	-	-
	3-5'	10/28/03	-	-	1.1	-	-	-	-	16	-	-	-	4.4	-	-	0.007	-	-	-	-	-	-	-	-
FVMW-27	1-3'	10/28/03	-	-	1.2	-	-	0.66	-	25	-	-	-	<u>56</u>	-	-	0.025	-	-	-	-	-	-	-	
FVMW-28	1-3'	10/29/03	-	-	1.9	-	-	0.24	-	<u>120</u>	-	-	-	<u>51</u>	-	-	0.048	-	-	-	-	-	-	-	
FVSS-31	2-4'	10/29/03	-	-	2.2	-	-	0.47	-	<u>65</u>	-	-	-	<u>73</u>	-	-	0.023	-	-	-	-	-	-	-	
	4-6'	10/29/03	-	-	1.7	-	-	-	-	9	-	-	-	6	-	-	0.013	-	-	-	-	-	-	-	
FVSS-15	1-3'	11/04/03	-	-	3.9	-	-	0.25	-	8	-	-	-	11	-	-	0.016	-	-	-	-	-	-	-	
FVSS-16	1-3'	11/04/03	-	-	1.9	-	-	0.23	-	9.7	-	-	-	5.5	-	-	0.008	-	-	-	-	-	-	-	
FVSS-19	1-3'	11/04/03	-	-	2.9	-	-	0.37	-	<u>160</u>	-	-	-	14	-	-	0.057	-	-	-	-	-	-	-	
FVSS-26	1-3'	11/04/03	-	-	1.3	-	-	0.17	-	5.8	-	-	-	3.6	-	-	0.007	-	-	-	-	-	-	-	
FVSS-21	3-5'	11/04/03	-	-	2.9	-	-	0.29	-	16	-	-	-	17	-	-	0.016	-	-	-	-	-	-	-	
AMN-SO01	0-2'	09/14/11	6,010	6.3 UJ	4.1	55.8	0.53 U	0.16 J	70,700 J	<u>304</u>	5.1 J	<u>36.3 J</u>	16,800 J	18.5 J	39,200 J	541	0.02 J	20.6	435 J	3.7 U	1.1 UJ	526 U	2.6 U	33.3	75.2
	8-10'	09/14/11	6,740	17.9 UJ	2.1	41.9	0.55 U	0.55 U	126,000 J	11.7	4.2 J	15.9 J	12,200 J	4.6 J	58,600 J	324	0.1 U	13.8	704	3.9 U	1.1 UJ	205 J	2.8 U	25.8	31.9
AMN-SO02	0-2'	09/15/11	8,270	6.5 UJ	4.6	72	0.28 J	0.15 J	38,900 J	15.8	5.7	15 J	15,200 J	14.9 J	21,400 J	668	0.06 J	13.9	514 J	3.8 U	1.1 UJ	543 U	2.7 U	29.5	54.5
	8-10'	09/15/11	1,890	10.5 UJ	<i>0.62 J</i>	9.6 J	0.54 U	0.54 U	144,000 J	3.8	5.4 U	4.7 J	4,830 J	0.35 J	74,400 J	183	0.02 J	3.1 J	545 U	3.8 U	1.1 UJ	545 U	2.7 U	10.9	17.6
AMN-SO03	0-2'	09/15/11	4,530	9.7 UJ	1.8	28.1	0.54 U	0.54 U	128,000 J	8.3	2 J	9.9 J	9,080 J	3.4 J	66,700 J	242	0.03 J	8	388 J	3.8 U	1.1 UJ	356 J	2.7 U	17.2	30.3
	8-10'	09/15/11	4,700	9.5 UJ	1.7	32.4	0.53 U	0.53 U	137,000 J	9.2	2.4 J	9.9 J	9,010 J	3.2 J	67,400 J	268	0.02 J	9.3	560	3.7 U	1.1 UJ	214 J	2.6 U	16	26.6
AMN-SO04	0-2'	09/15/11	5,010	9.5 UJ	2.2	29.4	0.53 U	0.53 U	127,000 J	19.1	2.7 J	12.6 J	9,790 J	4.6 J	69,100 J	283	0.03 J	10.7	401 J	3.7 U	1.1 UJ	510 J	2.7 U	17.8	29.4
	8-10'	09/15/11	3,030	18.9 UJ	1.4	21.2	0.52 U	0.52 U	129,000 J	6.4	5.2 U	8.6 J	7,200 J	2.6 J	67,100 J	536	0.03 J	5.5	398 J	3.7 U	1 UJ	384 J	2.6 U	12	17.9
AMN-SO05	0-2'	09/16/11	11,800 J	6.9 UJ	5.2	263 J	0.25 J	0.29 J	19,500 J	<u>187 J</u>	6.2	<u>114 J</u>	17,600 J	<u>73.4</u>	18,600 J	475 J	0.05 J	19	810	4 U	1.1 UJ	573 U	2.9 UJ	32.7 J	221
	4-6'	09/16/11	5,590 J	16.7 UJ	2.7	37.8 J	0.56 UJ	0.56 U	134,000 J	11.8 J	3.4 J	14.4 J	10,800 J	6	140,000 J	301 J	0.12 U	11.9	686	3.9 U	1.1 UJ	555 U	2.8 UJ	17.8 J	33.5
AMN-SO06	0-2'	09/16/11	2,170 J	13.8 UJ	<i>0.61 J</i>	13.4 J	0.57 UJ	0.57 U	16,5000 J	3.6 J	5.7 U	11.5 J	4,520 J	3.4	91,400 J	177 J	0.11 U	3.2 J	574 U	4 U	1.1 UJ	574 U	2.9 UJ	6.8 J	10.7
	8-10'	09/16/11	4,380 J	20.5 UJ	1.2	31.8 J	0.55 UJ	0.55 U	150,000 J	9.2 J	5.5 U	11.1 J	8,310 J	2.8	68,600 J	247 J	0.02 J	8.1	588	3.9 U	1.1 UJ	185 J	2.8 UJ	14.3 J	30.5
AMN-SO07	0-2'	09/16/11	4,120 J	12.6 UJ	1.6	119 J	0.53 UJ	0.53 U	175,000 J	7.8 J	5.3 U	<u>46.3 J</u>	7,430 J	9.7	92,400 J	269 J	0.05 J	8.5	262 J	3.7 U	1.1 UJ	526 U	2.6 UJ	10.5 J	54.6
	8-10'	09/16/11	6,050 J	18.5 UJ	2.8	61.1 J	0.55 UJ	0.55 U	115,000 J	10.9 J	3.9 J	15.5 J	12,200 J	5.5	66,900 J	310 J	0.02 J	12.7	1,120	3.9 U	1.1 UJ	447 J	2.8 UJ	20.8 J	33
AMN-SO09	0-2'	09/15/11	7,330	6.4 UJ	5.3	76.3	0.34 J	0.16 J	48,800 J	14.3	5.9	19.4 J	14,500 J	29.1 J	27,900 J	558	0.08 J	14.1	539	3.8 U	1.1 UJ	536 U	2.7 U	27.4	57.4
	5.7-7.7'	09/15/11	5,960	17.8 UJ	2.2	34.9	0.55 U	0.55 U	126,000 J	9.9	3.6 J	12.8 J	10,700 J	3.9 J	62,500 J	328	0.03 J	11.5	627	3.8 U	1.1 UJ	550 U	2.7 U	21.5	29.4
AMN-SO10	0-2'	09/14/11	7,610	12.7 UJ	3.1	118	0.53 U	0.22 J	99,400 J	43.3	4.7 J	<u>50.1 J</u>	12,900 J	41.4 J	46,400 J	417	0.05 J	13.9	728	3.7 U	1.1 UJ	531 U	2.7 U	22.9	140
	4-6'	09/14/11	7,600	7.2 UJ	4.1	79.2	0.2 J	0.34 J	9,100 J	25.1	7.7	33.5 J	13,700 J	28.6 J	5,010 J	805	0.05 J	11.2	607	4.2 U	1.2 UJ	598 U	3 U	27.6	189
Groundwater Pathway RCL			600	0.542	0.584	164.8	6.32	0.752	NS	360,000	3.61	91.6	NS	27	NS	39.12	0.21	13.1	NS	0.52	0.85	NS	0.284	60	NS
Background Threshold Value			28,721	NS	8	364	NS	<u>1</u>	14,536	<u>44</u>	22	<u>35</u>	34,314	<u>52</u>	8,290	2,937	NS	<u>31</u>	NS	NS	NS	NS	NS	<u>85</u>	150
Non-Industrial Direct Contact Pathway RCLs			77,500	31.3	0.68	15,300	156	71	NS	NS	23.4	3,130	54,800	400	NS	1,830	3.13	1,550	NS	931	391	NS	0.782	393	23,500
Industrial Direct Contact Pathway RCLs			100,000	467	3	100,000	2,300	985	NS	NS	347	46,700	100,000	800	NS	25,900	3.13	22,500	NS	5,840	5,840	NS	11.7	5,840	100,000

NOTES:

FVSS/FVMW - soil sample result obtained from F&VD_Preliminary Site Characterization Summary_March 2004, Table 1*

AMN = soil sample result value obtained from CH2M_Final Remedial Investigation Report_May 2015, Table C-1*

* - Consultant summary data not confirmed by laboratory analytical report

All values expressed in mg/kg (milligrams per kilogram).

- constituent not reported/analyzed

NS - no standard established for this analyte

U - value reported as "nondetect" by CH2M (May 2015)

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

BTV - Background Threshold Value

TCLP - toxicity characteristic leaching procedure

RCL - Residual Contaminant Level (Wis. Ad. Code ch. NR 720, December 2018)

Bold text indicates Non-industrial Direct Contact exceedance

Bold text and underlined indicates Industrial Direct Contact exceedance (with the exception of arsenic where bold and underlined indicates a BTV exceedance)

Italics text indicates Groundwater Pathway exceedance or BTV exceedance (if no standard for groundwater pathway)

Italics and underlined text indicates BTV exceedance

Table 1.4.S
Soil Analytical Table
J16001- Amcast South Redevelopment Site
Cedarburg, WI

Sample ID	Sample Depth (feet bgs)	Sample Date	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Total Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
			Metals (mg/kg)																						
FVSS-1	1-3'	11/03/03	-	-	3.4	-	-	0.44	-	12	-	-	-	<u>62</u>	-	-	0.07	-	-	-	-	-	-	-	-
FVSS-1	5-7'	11/03/03	-	-	1.3	-	-	0.20	-	14	-	-	-	11	-	-	0.017	-	-	-	-	-	-	-	-
FVSS-2	3-5'	11/04/03	-	-	5.3	-	-	0.30	-	17	-	-	-	11	-	-	0.075	-	-	-	-	-	-	-	-
FVSS-3	1-3'	11/03/03	-	-	2.8	-	-	0.24	-	11	-	-	-	9.2	-	-	0.016	-	-	-	-	-	-	-	-
FVSS-4	1-3'	11/04/03	-	-	3.5	-	-	0.27	-	14	-	-	-	8.6	-	-	0.021	-	-	-	-	-	-	-	-
FVSS-5	1-3'	11/03/03	-	-	3.1	-	-	0.28	-	19	-	-	-	6.9	-	-	0.031	-	-	-	-	-	-	-	-
FVSS-6	1-3'	11/05/03	-	-	-	-	-	<u>26</u>	-	<u>150</u>	-	-	-	1,200	-	-	0.67	-	-	-	-	-	-	-	-
FVSS-6	5-7'	11/05/03	-	-	8	-	-	0.68	-	15	-	-	-	430	-	-	0.066	-	-	-	-	-	-	-	-
FVSB-8	2-4'	11/03/03	-	-	2.7	-	-	<u>3.1</u>	-	14	-	-	-	<u>250</u>	-	-	0.019	-	-	-	-	-	-	-	-
FVSB-8	18-20'	11/03/03	-	-	<u>4.7</u>	-	-	0.35	-	26	-	-	-	9.7	-	-	0.028	-	-	-	-	-	-	-	-
FVSB-10	0-2'	11/30/03	-	-	1.6	-	-	0.19	-	4.6	-	-	-	20	-	-	0.023	-	-	-	-	-	-	-	-
FVSB-11	0-2'	11/30/03	-	-	5.7	-	-	0.69	-	16	-	-	-	<u>95</u>	-	-	0.082	-	-	-	-	-	-	-	-
FVSB-12	0-2'	11/31/03	-	-	2.1	-	-	0.23	-	11	-	-	-	14	-	-	0.019	-	-	-	-	-	-	-	-
FVSB-13	8-10'	11/06/03	-	-	2.2	-	-	0.24	-	7	-	-	-	<u>35</u>	-	-	0.015	-	-	-	-	-	-	-	-
FVMW-20	0-2'	10/29/03	-	-	1.5	-	-	0.22	-	7.7	-	-	-	9.9	-	-	0.046	-	-	-	-	-	-	-	-
AMS-SO02	0-2'	09/14/11	<i>8,610</i>	7.2 UJ	4.7	54.5	0.2 J	0.6 U	<i>61,600 J</i>	8.6	<u>4.9 J</u>	29.6 J	17,200 J	14.9 J	<i>36,400 J</i>	458	0.03 J	22.6	289 J	3.8 U	1.2 UJ	623	2.7 U	17.7	47.7
AMS-SO02	5-7'	09/14/11	<i>4,330</i>	18.3 UJ	2.5	31.6	0.55 U	0.55 U	<i>136,000 J</i>	15.5	2.8 J	24 J	9,990 J	8.8 J	<i>57,900 J</i>	347	0.11 U	11.1	653	4.2 U	1.1 UJ	1080	3 U	33.3	29.9
AMS-SO03	0-2'	09/14/11	<i>4,150</i>	8.6 UJ	4.6	58.5	0.26 J	0.16 J	<i>111,000 J</i>	7.9	2.3 J	524 J	9,380 J	38.8 J	<i>62,200 J</i>	404	0.03 J	29.4	275 J	3.9 U	1.1 UJ	554 U	2.8 U	13.9	71.6
AMS-SO03	18-20'	09/14/11	<i>6,240</i>	20.1 UJ	1.3	41.3	0.56 U	0.56 U	<i>132,000 J</i>	15	4.1 J	13.2 J	11,500 J	4.2 J	<i>61,500 J</i>	282	0.11 U	12.1	921	3.9 U	1.1 UJ	244 J	2.8 U	21.7	50.4
AMS-SO04	0-2'	09/12/11	<i>4,170 J</i>	22.1 UJ	1.8	31.9	0.54 U	0.54 U	<i>152,000 J</i>	6.8 J	1.6 J	15.5	7,450 J	20	<i>89,800 J</i>	<i>336 J</i>	0.11 U	5.4	540 UJ	3.8 U	1.1 UJ	540 U	2.7 U	10.8	32.8
AMS-SO04	8-10'	09/12/11	<i>13,500 J</i>	7.3 UJ	<u>8.2</u>	133	0.5 J	0.23 J	<i>10,500 J</i>	29.6 J	<u>12.3</u>	16.9	30,100 J	12.7	<i>10,300 J</i>	<i>1,200 J</i>	0.05 J	28.5	762 J	4.3 U	1.2 UJ	608 U	3 U	75.9	60.7
AMS-SO05	0-2'	09/12/11	<i>5,970 J</i>	20.4 UJ	2.7	66.2	0.31 J	0.54	<i>167,000 J</i>	17.9 J	3.4 J	27.4	11,100 J	<u>50.9</u>	<i>47,700 J</i>	<i>624 J</i>	0.09 U	10.1	515 UJ	3.6 U	1 UJ	515 U	2.6 U	23.3	66.2
AMS-SO05	6-8'	09/12/11	<i>8,880 J</i>	6.4 UJ	0.83 J	184	0.19 J	<u>0.87</u>	<i>2,490 J</i>	147 J	<u>5.8</u>	<u>144</u>	10,900 J	32.4	<i>2,330 J</i>	<i>69.6 J</i>	0.11 U	26.3	534 UJ	3.7 U	1.1 UJ	534 U	2.7 U	26	180
AMS-SO06	0-2'	09/13/11	<i>6,350 J</i>	18.4 UJ	2.2	59	0.26 J	0.21 J	<i>139,000 J</i>	12.3 J	<u>3.7 J</u>	22	11,500 J	<u>58.3</u>	<i>5,660 J</i>	<i>787 J</i>	0.02 J	12.2	668 J	3.7 U	1.1 UJ	528 U	2.6 U	19.7	54.2
AMS-SO06	15-17'	09/13/11	<i>11,400 J</i>	7.4 UJ	5.7	90.4	0.41 J	0.34 J	<i>18,400 J</i>	26.2 J	<u>7.5</u>	13.6	19,700 J	14.4	<i>61,800 J</i>	<i>556 J</i>	0.09 U	17.4	828 J	4.3 U	1.2 UJ	620 U	3.1 U	33	64.9
AMS-SO07	0-2'	09/13/11	<i>6,500 J</i>	12.6 UJ	3.1	44.5	0.53 U	0.16 J	<i>91,400 J</i>	16.3 J	<u>4.8 J</u>	54.9	13,100 J	20.1	<i>47,200 J</i>	<i>474 J</i>	0.11 U	16.9	527 UJ	3.7 U	1.1 UJ	527 U	2.6 U	26.6	46.6
AMS-SO07	6-8'	09/13/11	<i>19,700 J</i>	6.8 UJ	2.9	135	0.34 J	<u>1.2</u>	<i>112,000 J</i>	<u>47.1 J</u>	<u>4 J</u>	<u>1,590</u>	13,300 J	200	<i>55,400 J</i>	<i>418 J</i>	0.13	<u>32.5</u>	659 J	4 U	1.1 UJ	354 J	2.8 U	30.3	270
AMS-SO08	0-2'	09/13/11	<i>5,890 J</i>	12.6 UJ	3.1	39.2	0.52 U	0.18 J	<i>102,000 J</i>	11.4 J	<u>4.2 J</u>	16.1	12,500 J	14.2	<i>49,600 J</i>	<i>450 J</i>	0.11 U	11.2	524 UJ	3.7 U	1 UJ	524 U	2.6 U	26.7	44.4
AMS-SO08	6.7-8.7'	09/13/11	<i>6,510 J</i>	13.5 UJ	3.1	38.6	0.56 U	0.15 J	<i>92,200 J</i>	12.5 J	<u>4.4 J</u>	16.2	12,800 J	23.9	<i>44,900 J</i>	<i>363 J</i>	0.11 U	12.4	608 J	3.9 U	1.1 UJ	562 U	2.8 U	28.7	50
AMS-SO09	0-2'	09/13/11	<i>4,920 J</i>	17.6 UJ	2.5	32.4	0.52 U	0.52 U	<i>129,000 J</i>	9.4 J	3.4 J	12.4	10,800 J	9.7	<i>59,800 J</i>	<i>368 J</i>	0.11 U	9.5	523 UJ	3.7 U	1 UJ	523 U	2.6 U	21.6	39
AMS-SO09	6.3-8.3'	09/13/11	<i>4,390 J</i>	19.9 UJ	1.9	26.1	0.55 U	0.55 U	<i>157,000 J</i>	7.9 J	3.2 J	13.1	10,000 J	5.4	<i>54,700 J</i>	<i>344 J</i>	0.11 U	9.1	551 UJ	3.9 U	1.1 UJ	551 U	2.8 U	19.4	35.7
AMS-SO10	0-2'	09/13/11	<i>5,640 J</i>	15.7 UJ	4.9	40.9	0.52 U	0.15 J	<i>115,000 J</i>	11.1 J	3.6 J	12.2	11,000 J	22	<i>52,400 J</i>	<i>343 J</i>	0.02 J	9.9	524 UJ	3.7 U	1 UJ	524 U	2.6 U	23	43.1
AMS-SO10	5.9-7.9'	09/13/11	<i>5,980 J</i>	13.7 UJ	7.9	40.1	0.57 U	0.15 J	<i>113,000 J</i>	11 J	<u>4.5 J</u>	13.8	12,500 J	8.3	<i>52,000 J</i>	<i>365 J</i>	0.11 U	11.5	571 UJ	4 U	1.1 UJ	571 U	2.9 U	31.5	39.8
Groundwater Pathway RCL			600	0.542	0.584	164.8	6.32	0.752	NS	360,000	3.61	91.6	NS	27	NS	39.12	0.21	13.1	NS	0.52	0.85	NS	0.284	60	NS
Background Threshold Value			28,721	NS	8	364	NS	<u>1</u>	14,536	<u>44</u>	22	35	34,314	<u>52</u>	8,290	2,937	NS	<u>31</u>	NS	NS	NS	NS	NS	<u>85</u>	150
Non-Industrial Direct Contact Pathway RCLs			77,500	31.3	0.68	15,300	156	71	NS	NS	23.4	3,130	54,800	400	NS	1,830	3.13	1,550	NS	931	391	NS	0.782	393	23,500
Industrial Direct Contact Pathway RCLs			100,000	467	3	100,000	2,300	985	NS	NS	347	46,700	100,000	800	NS	25,900	3.13	22,500	NS	5,840	5,840	NS	11.7	5,840	100,000

NOTES:

FVSS/FVMW - soil sample result obtained from F&VD_Preliminary Site Characterization Summary_March 2004, Table 1*

AMS = soil sample result value obtained from CH2M_Final Remedial Investigation Report_May 2015, Table C-1*

* - Consultant summary data not confirmed by laboratory analytical report

All values expressed in mg/kg (milligrams per kilogram).

- constituent not reported/analyzed

NS - no standard established for this analyte

U - value reported as "nondetect" by CH2M (May 2015)

J - value reported as an "estimated value" by CH2M (May 2015)

BTV - Background Threshold Value

TCLP - toxicity characteristic leaching procedure

RCL - Residual Contaminant Level (Wis. Ad. Code ch. NR 720, December 2018)

Bold text indicates Non-Industrial Direct Contact exceedance

Bold text and underlined indicates Industrial Direct Contact exceedance (with the exception of arsenic where bold and underlined indicates a BTV exceedance)

Italics text indicates Groundwater Pathway exceedance or BTV exceedance (if no standard for groundwater pathway)

Italics and underlined text indicates BTV exceedance

TABLE 2.1.N
Sediment Storm Sewer Analytical - Polychlorinated biphenyls (PCBs)
J16001- AMCAST NORTH
N39 W5789 Hamilton Road, Cedarburg WI

Sample ID	General Source Location	Historical Data Source	Sample Date	Polychlorinated biphenyls (PCBs) - micrograms per kilogram (mg/kg)									
				Total PCBs	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268
FVSTM-01S	Ext. Stm.	3	10/14/03	3	-	-	-	-	3	-	-	-	-
FVSTM-02S (CB-09)	Ext. Stm.	3	10/14/03	2.5	-	-	-	-	2.5	-	-	-	-
		1	04/09/07	19	<0.87	<0.87	<0.87	<0.87	19	<0.87	<0.87	<0.87	<0.87
ENSTM-41S	Int. Stm.	2	04/27/05	2.2	-	-	-	-	-	-	-	-	-
ENSTM-44S (CB-05)	Ext. Stm.	2	04/27/05	1	-	-	-	-	-	-	-	-	-
		1	04/09/07	<u>0.735</u>	<0.018	<0.018	<0.018	<0.018	<u>0.7</u>	<0.018	0.035	<0.018	<0.018
ENSTM-42S (CB-07)	Ext. Stm.	2	04/27/05	<u>0.64</u>	-	-	-	-	-	-	-	-	-
		1	04/09/07	1.2	<0.033	<0.033	<0.033	<0.033	1.2	<0.033	<0.033	<0.033	<0.033
CB-06	Int. Stm.	1	04/09/07	3.9	<0.17	<0.17	<0.17	<0.17	3.9	<0.17	<0.17	<0.17	<0.17
CB-10	Int. Stm.	1	04/09/07	4.3	<0.056	<0.056	<0.056	<0.056	4.3	<0.056	<0.056	<0.056	<0.056
ENISTM-09	Int. Stm.	1	04/09/07	3	<0.2	<0.2	<0.2	<0.2	3	<0.2	<0.2	<0.2	<0.2
ENISTM-10	Int. Stm.	1	04/09/07	5.5	<0.053	<0.053	<0.053	<0.053	3	2.2	0.3	<0.053	<0.053
<i>Toxic Substances Control Act (TSCA) Clean-up Values (mg/kg)</i>				50									
<i>Wis. Adm. Code NR 720 Soil Residual Contaminant Levels - mg/kg (December 2018)</i>													
<i>Non-Industrial Direct Contact RCL</i>				<u>0.234</u>	<u>4.11</u>	<u>0.213</u>	<u>0.190</u>	<u>0.235</u>	<u>0.236</u>	<u>0.239</u>	<u>0.243</u>	NS	NS
<i>Industrial Direct Contact RCL</i>				0.967	28	0.883	0.792	0.972	0.975	0.988	1	NS	NS
<i>Groundwater Pathway RCL</i>				0.0094	NS	NS	NS	NS	NS	NS	NS	NS	

NOTES:

- constituent not reported/analyzed

NS - no established standard

mg/kg - milligrams per kilogram (equivalent to parts per million)

RCL - residual contaminant level

Bold values indicates concentration exceeds WDNR NR 720 Industrial Direct Contact RCL value

Italic & underlined values indicate concentration exceeds WDNR NR 720 Non-Industrial Direct Contact RCL

Red & boxed indicates value exceeds > 50 mg/kg TSCA clean-up values

Bold Red sample ID indicates area requires TSCA disposal

General source location (Area of Concern):

Ext. Stm. - exterior storm

Int. Stm. - interior storm

Historical Data Source:

1. ENSR_Phase II Investigation 2007_Pace 882603 (Pace Analytical Services (Report #)

2. TM_ENSR_Phase 2 Areas of Immediate Concern_June 2005 Table 1*

3. F&VD_Preliminary Site Characterization Summary, Table 3*

* - Consultant summary data not confirmed by laboratory analytical report; only detects were reported

TABLE 2.1.S

Sediment Storm Sewer Analytical Polychlorinated biphenyls (PCBs)

J16001- AMCAST CENTRAL/SOUTH

N39 W5789 Hamilton Road, Cedarburg WI

Sample ID	Historical Data Source	Sample Date	Polychlorinated biphenyls (PCBs) - milligrams per kilogram (mg/kg)							
			Total PCBs	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
FVSTM-29S (CB-03)	3	10/13/03	390	-	-	-	-	390	-	-
	1	04/09/07	520	<8.1	<8.1	<8.1	<8.1	500	<8.1	14
	NA	09/15/20	184	<6.27	<6.27	<6.27	<6.27	177	<6.27	7.02 J
FVSTM-30S	3	10/16/03	2.9	-	-	-	-	2.9	-	-
FVSTM-09S	3	10/28/03	23	-	-	-	-	23	-	-
	NA	09/14/20	8.49	<0.341	<0.341	<0.341	<0.341	8.49	<0.341	<0.341
FVSTM-12S	3	10/28/03	4.8	-	-	-	-	4.8	-	-
	NA	09/14/20	4.31	<0.0699	<0.0699	<0.0699	<0.0699	2.26	<u>1.79</u>	<u>0.26</u>
ENSTM-10S FVSTM-10	2	04/26/05	2.9	-	-	-	-	-	-	-
	1	04/09/07	6.7	<0.27	<0.27	<0.27	<0.27	2.1	4	<u>0.59</u>
	NA	09/15/20	7.35	<0.133	<0.133	<0.133	<0.133	2.32	4.33	<u>0.698</u>
ENSTM-46S	2	04/26/05	23	-	-	-	-	-	-	-
	NA	09/14/20	3.48	<0.0941	<0.0941	<0.0941	<0.0941	3.48	<0.0941	<0.0941
ENSTM-47S	2	04/26/05	790	-	-	-	-	-	-	-
	NA	09/15/20	3,150	<79	<79	<79	<79	2,990	<79	155 J
ENSTM-49S	2	04/26/05	66	-	-	-	-	-	-	-
	1	04/09/07	94	<4	<4	<4	<4	90	<4	4.2
	NA	09/14/20	124	<4.62	<4.62	<4.62	<4.62	117	<4.62	6.89 J
ENSTM-50S	2	04/26/05	1.9	-	-	-	-	-	-	-
CB-01	1	04/09/07	<i>0.18</i>	<0.02	<0.02	<0.02	<0.02	<i>0.082</i>	<i>0.093</i>	<0.020
	NA	09/14/20	<i>0.188</i>	<0.0268	<0.0268	<0.0268	<0.0268	<i>0.0667 J</i>	<i>0.121</i>	<0.0268
FVSS-05A	3*	11/05/03	23,000	-	-	-	-	23,000	-	-
FVSTM-11 (CB-02)	1	04/09/07	1.3	<0.082	<0.082	<0.082	<0.082	1.3	<0.082	<0.082
	NA	09/15/20	1,030	<23.4	<23.4	<23.4	<23.4	966	<23.4	62.7 J
ENSTM-7	NA	09/15/20	3.02	<0.0775	<0.0775	<0.0775	<0.0775	2.92	<0.0775	0.1 J
MH-1	NA	09/14/20	<i>0.163</i>	<0.0191	<0.0191	<0.0191	<0.0191	<i>0.163</i>	<0.0191	<0.0191
MH-2	NA	09/14/20	<u>0.585</u>	<0.026	<0.026	<0.026	<0.026	<u>0.542</u>	<0.026	0.0431 J
Toxic Substances Control Act (TSCA) Clean-up Values (mg/kg)			50							
Wis. Adm. Code NR 720 Soil Residual Contaminant Levels - mg/kg (December 2018)										
Non-Industrial Direct Contact RCL			<u>0.234</u>	<u>4.11</u>	<u>0.213</u>	<u>0.190</u>	<u>0.235</u>	<u>0.236</u>	<u>0.239</u>	<u>0.243</u>
Industrial Direct Contact RCL			0.967	28	0.883	0.792	0.972	0.975	0.988	1
Groundwater Pathway RCL			<i>0.0094</i>	NS	NS	NS	NS	NS	NS	NS

NOTES:

- constituent not reported/analyzed

NS - no established standard

mg/kg - milligrams per kilogram (equivalent to parts per million)

RCL - residual contaminant level

Bold values indicates concentration exceeds WDNR NR 720 Industrial Direct Contact RCL value*Italic* & underlined values indicate concentration exceeds WDNR NR 720 Non-Industrial Direct Contact RCL**Red** & boxed indicates value exceeds > 50 mg/kg TSCA clean-up values**Bold Red** sample ID indicates area requires TSCA disposal*Historical Data Source:*

1. ENSR_Phase II Investigation 2007_Pace 882603 (Pace Analytical Services (Report #)

2. TM_ENSR_Phase 2 Areas of Immediate Concern_June 2005 Table 1*

3. F&VD_Preliminary Site Characterization Summary, Table 3*

* - Consultant summary data not confirmed by laboratory analytical report

Table 2.2.S
Sediment Storm Sewer Analytical - PAHs
J16001- AMCAST CENTRAL/SOUTH
N39 W5789 Hamilton Road, Cedarburg WI

Sample ID	FVSTM-29S (CB-03)	FVSTM-09S	FVSTM-12S	ENSTM-10S FVSTM-10	ENSTM-46S	ENSTM-47S	ENSTM-49S	CB-01	FVSS-05A FVSTM-11 (CB-02)		ENSTM-7	MH-1	MH-2	Groundwater Pathway RCL	Non- Industrial Direct Contact Pathway RCLs	Industrial Direct Contact Pathway RCLs
Sample Collection Date	09/15/20	09/14/20	09/14/20	09/15/20	09/14/20	09/15/20	09/14/20	09/14/20	11/5/03 ³	09/15/20	09/15/20	09/14/20	09/14/20			
Polycyclic Aromatic Hydrocarbons (ug/kg)																
1-Methylnaphthalene	<603	65.0 J	<224	<533	<301	<127	<743	<4.3	-	<524	<873	<428	<417	NS	17,600	72,700
2-Methylnaphthalene	<604	102 J	<224	<534	<302	<127	<744	<4.3	2,100	<524	<874	<429	<418	NS	239,000	3,010,000
Acenaphthene	4,160	242	264 J	<474	<268	<113	2,350 J	3.9 J	23,000	2,670 J	784 J	<380	<371	NS	3,590,000	45,200,000
Acenaphthylene	<521	36.1 J	<193	<460	<260	<109	<642	<3.7	-	<452	<753	<370	<360	NS	NS	NS
Anthracene	8,930	289	1,580	1,740 J	837 J	253 J	6,110	23.5 J	26,000	8,410	5,410 J	597 J	1,100 J	197,727	17,900,000	100,000,000
Benzo(a)anthracene	<u>36,000</u>	602	<u>10,700</u>	<u>10,000</u>	<u>6,870</u>	<u>2,250</u>	<u>14,800</u>	181	<u>71,000</u>	<u>25,200</u>	<u>34,600</u>	<u>6,750</u>	<u>10,100</u>	NS	<u>1,140</u>	<u>20,800</u>
Benzo(a)pyrene	<u>48,100</u>	<u>652</u>	<u>14,000</u>	<u>12,100</u>	<u>8,840</u>	<u>3,050</u>	<u>15,600</u>	<u>238</u>	<u>80,000</u>	<u>28,900</u>	<u>38,500</u>	<u>9,550</u>	<u>15,800</u>	<u>470</u>	<u>115</u>	<u>2,110</u>
Benzo(b)fluoranthene	<u>81,600</u>	<u>810</u>	<u>22,600</u>	<u>17,700</u>	<u>15,100</u>	<u>5,020</u>	<u>23,100</u>	349	<u>86,000</u>	<u>42,700</u>	<u>64,100</u>	<u>17,300</u>	<u>29,400</u>	<u>479</u>	<u>1,150</u>	<u>21,100</u>
Benzo(g,h,i)perylene	41,500	475	11,000	7,790	7,110	2,690	10,200	176	67,000	19,900	28,900	8,110	13,800	NS	NS	NS
Benzo(k)fluoranthene	<u>32,200</u>	398	9,980	7,400	5,800	2,020	9,500	154	<u>58,000</u>	<u>16,600</u>	<u>23,200</u>	6,540	10,300	NS	<u>11,500</u>	211,000
Chrysene	<u>57,400</u>	<u>783</u>	<u>16,800</u>	<u>13,700</u>	<u>11,100</u>	<u>3,200</u>	<u>19,100</u>	<u>255</u>	<u>78,000</u>	<u>33,800</u>	<u>46,700</u>	<u>12,000</u>	<u>20,500</u>	<u>145</u>	115,000	2,110,000
Dibenz(a,h)anthracene	<u>11,000</u>	<u>150 J</u>	<u>3,060</u>	<u>2,270 J</u>	<u>1,710 J</u>	<u>617 J</u>	<u>2,680 J</u>	47.9	<u>14,000</u>	<u>5,710</u>	<u>7,310</u>	<u>1,920 J</u>	<u>3,190</u>	NS	<u>115</u>	<u>2,110</u>
Fluoranthene	<u>118,000</u>	1,520	37,000	29,100	23,400	5,400	50,200	538	<u>110,000</u>	83,700	<u>107,000</u>	23,600	39,300	<u>88,878</u>	2,390,000	30,100,000
Fluorene	4,020 J	308	374 J	<438	350 J	<104	2,620 J	4.7 J	<u>25,000</u>	3,250 J	1,200 J	<351	397 J	<u>14,803</u>	2,390,000	30,100,000
Indeno(1,2,3-cd)pyrene	<u>35,400</u>	327	<u>9,950</u>	<u>6,920</u>	<u>6,270</u>	<u>2,300</u>	<u>9,420</u>	158	<u>78,000</u>	<u>18,000</u>	<u>25,800</u>	<u>7,270</u>	<u>12,300</u>	NS	<u>1,150</u>	<u>21,100</u>
Naphthalene	<u>821 J</u>	343	<150	<356	<201	<84.5	<496	<2.9	<u>2,000</u>	<349	<582	<286	<278	<u>658</u>	<u>5,520</u>	24,100
Phenanthrene	52,600	1,170	10,600	10,100	9,110	1,690	35,000	151	120,000	50,700	43,700	8,020	13,700	NS	NS	NS
Pyrene	<u>83,000</u>	1,070	23,100	18,500	14,500	3,780	<u>31,300</u>	332	<u>160,000</u>	53,700	<u>72,500</u>	14,900	24,700	<u>54,132</u>	1,790,000	22,600,000

Note:

All values expressed in ug/kg (micrograms per kilogram).

- sample Not Analyzed for this parameter

RCL residual contaminant level

all less than (<) values are reported as the laboratory minimum detection limit (MDL)

NS - No Standard established for this analyte

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

Bold text identifies Non-Industrial Direct Contact Exceedance

Bold and underlined values indicate concentrations that exceed NR 720 industrial direct contact soil RCLs

Italics and underlined text identifies Groundwater Pathway Exceedance

Ch. NR 720 Residual Contaminant Levels based on November 2013 Wis. Ad. Code and WDNR Remediation & Redevelopment December 2018 Guidance RR-052h

3. F&VD Preliminary Site Characterization Summary, Table 12*

* - Consultant summary data not confirmed by laboratory analytical report

Table 2.3.S
Sediment Storm Sewer Analytical - RCRA Metals
J16001- AMCAST CENTRAL/SOUTH
N39 W5789 Hamilton Road, Cedarburg WI

Sample ID	FVSTM-29S (CB-03)	FVSTM-09S	FVSTM-12S	ENSTM-10S FVSTM-10	ENSTM-46S	ENSTM-47S	ENSTM-49S	CB-01	FVSS-05A FVSTM-11 (CB-02)		ENSTM-7	MH-1	MH-2	Groundwater Pathway RCL	Background Threshold Value (mg/kg)	Non- Industrial Direct Contact Pathway RCLs	Industrial Direct Contact Pathway RCLs
Sample Collection Date	09/15/20	09/14/20	09/14/20	09/15/20	09/14/20	09/15/20	09/14/20	09/14/20	11/5/03 ³	09/15/20	09/15/20	09/14/20	09/14/20				
Resource Conservation & Recovery Act (RCRA) Metals (mg/kg)																	
Arsenic	<6.0	7.5	3.7 J	<u>10.2 J</u>	<3.5	2.2 J	<4.1	2.8 J	4.5	7.1 J	<3.7	<3.4	2.4 J	0.584	8	0.68	3
Barium	64.6	46.4	42.5	101	47.1	141	34.7	41.2	-	51.7	6.7	11	33.3	164.8	364	15,300	100,000
Cadmium	8.3	1.8	1.2	1.6	<0.16	4.4	5.7	0.43 J	6.4	3.6	<0.17	0.17 J	0.63 J	0.752	1	71	985
Chromium, Total	140	20.2	34.7	65	6.4	15.3	201	12.7	60	65.4	5.9	6.1	144	360,000	44	NS	NS
Lead	374	114	71.8	178	7.2	128	201	22.2	290	178	7.3	10.7	58.4	27	52	400	800
Selenium	<5.4	<1.9	<2.9	<2.8	<1.5	<1.6	<3.7	<2.2	-	<1.9	<1.7	<1.5	<2.1	0.52	NS	931	5,840
Silver	0.64 J	1.1 J	<0.68	1.2 J	<0.36	0.57 J	1.0 J	<0.52	-	<0.44	<0.39	<0.36	<0.50	0.85	NS	391	5,840
Mercury	1.2	0.098	0.038 J	0.28	<0.011	0.028 J	0.33	0.024 J	0.18	0.11	<0.012	<0.012	0.018 J	0.21	NS	3.13	<u>3.13</u>

Note:

All values expressed in mg/kg (milligrams per kilogram).

- sample Not Analyzed for this parameter

RCL - Residual Contaminant Level (Wis. Ad. Code ch. NR 720, December 2018)

all less than (<) values are reported as the laboratory minimum detection limit (MDL)

NS - No Standard established for this analyte

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

BTV - Background Threshold Value

Bold text identifies Non-Industrial Direct Contact Exceedance

Bold text and underlined indicates Industrial Direct Contact exceedance (with the exception of arsenic where bold and underlined indicates a BTV exceedance)

Italics text indicates Groundwater Pathway exceedance or BTV exceedance (if no standard for groundwater pathway).

Italics and underlined text indicates BTV exceedance

Ch. NR 720 Residual Contaminant Levels based on November 2013 Wis. Ad. Code and WDNR Remediation & Redevelopment December 2018 Guidance RR-052h

3. F&VD_Preliminary Site Characterization Summary, Table 15*

* - Consultant summary data not confirmed by laboratory analytical report

Table 3.1.N
 Polychlorinated biphenyls (PCBs) - Groundwater Analytical Table
 AMCAST NORTH- J16001
 N39 W5789 Hamilton Road, Cedarburg WI

Well ID	AMNW-01			FVMW-26						FVMW-27						NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
	09/23/11	11/19/18	11/19/19	12/02/03	01/13/04	04/10/07	09/21/11	11/19/18	11/19/19	12/03/03	01/12/04	04/10/07	09/21/11	11/19/18	11/19/19		
PCBs (ug/L)																	
PCB-1016 (Aroclor 1016)	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	NS	NS
PCB-1221 (Aroclor 1221)	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	NS	NS
PCB-1232 (Aroclor 1232)	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	NS	NS
PCB-1242 (Aroclor 1242)	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	-	-	0.82	1 U	<0.24	<0.11	NS	NS
PCB-1248 (Aroclor 1248)	1 U	<0.24	<0.11	0 U	0 U	<0.24	1 U	<0.24	<0.11	0 U	0.3	<0.24	1 U	0.37 J	<0.11	NS	NS
PCB-1254 (Aroclor 1254)	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	NS	NS
PCB-1260 (Aroclor 1260)	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	-	-	<0.24	1 U	<0.24	<0.11	NS	NS
PCB-1262 (Aroclor 1262)	1 U	-	-	-	-	-	1 U	-	-	-	-	-	1 U	-	-	NS	NS
PCB-1268 (Aroclor 1268)	1 U	-	-	-	-	-	1 U	-	-	-	-	-	1 U	-	-	NS	NS
PCB, Total	-	<0.24	<0.11	-	-	<0.24	-	<0.24	<0.11	-	0.3	0.82	-	0.37 J	<0.11	<u>0.003</u>	0.03

Note:

ug/L - micrograms per liter (equivalent to parts per billion)

PCBs - Polychlorinated Biphenyls

ES - enforcement standard, as established in Wisconsin Administrative Code Chapter NR 140

PAL - preventive action limit, as established in Wisconsin Administrative Code Chapter NR 140

Bold - concentration exceeds NR 140 ES

Italics and underline - concentration exceeds NR 140 PAL

Wis. Adm. Code NR 140 Public Health Groundwater Quality Standards (January 2020)

(J) - estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

(U) - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

NS - no established standard

< less than the specified detection limit

- sample either not analyzed for specific parameter or not reported for specific parameter

FVMW-28 (not shown) well was observed to be "dry" during multiple sampling events - no groundwater samples have been recorded for this well

Table 3.4.N
 RCRA Metals - Groundwater Analytical Table
 AMCAST NORTH- J16001
 N39 W5789 Hamilton Road, Cedarburg WI

Well ID	ANMW-01		FVMW-26		FVMW-27		NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
	11/19/18	11/19/19	11/19/18	11/19/19	11/19/18	11/19/19		
Total Metals (ug/L)								
Arsenic, Total	<u>14.9 J</u>	<u><8.3</u>	<8.3	<8.3	<8.3	<8.3	<u>1</u>	10
Barium, Total	358	128	130	133	116	94.9	<u>400</u>	2,000
Cadmium, Total	<u>1.8 J</u>	<u><1.3</u>	<1.3	<1.3	<1.3	<1.3	<u>0.5</u>	5
Chromium, Total	471	336	<2.5	5.0 J	<2.5	<2.5	<u>10</u>	100
Lead, Total	35.5	8.7 J	<5.9	<5.9	<5.9	<5.9	<u>1.5</u>	15
Selenium, Total	<12.2	<12.2	<12.2	<12.2	<12.2	<12.2	<u>10</u>	50
Silver, Total	<3.3	<3.2	<3.3	<3.2	<3.3	<3.2	<u>10</u>	50
Mercury, Total	<0.084	<0.084	<0.084	<0.084	<0.084	<0.084	<u>0.2</u>	2

Well ID	ANMW-01		FVMW-26		FVMW-27		NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
	11/19/18	11/19/19	11/19/18	11/19/19	11/19/18	11/19/19		
Dissolved Metals (ug/L)								
Arsenic, Dissolved	<8.3	<13.2	<8.3	<13.2	<8.3	<13.2	<u>1</u>	10
Barium, Dissolved	83.1	90.7	94.9	102	112	87.5	<u>400</u>	2,000
Cadmium, Dissolved	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<u>0.5</u>	5
Chromium, Dissolved	385	311	<2.5	<2.5	<2.5	<2.5	<u>10</u>	100
Lead, Dissolved	<5.9	<6.4	<5.9	<6.4	<5.9	<6.4	<u>1.5</u>	15
Selenium, Dissolved	<12.2	<12.3	<12.2	<12.3	<12.2	<12.3	<u>10</u>	50
Silver, Dissolved	<3.3	<3.2	<3.3	<3.2	<3.3	<3.2	<u>10</u>	50
Mercury, Dissolved	0.098 J	<0.084	<0.084	<0.084	<0.084	<0.084	<u>0.2</u>	2

Note:

ug/L - micrograms per liter (equivalent to parts per billion)

ES - enforcement standard, as established in Wisconsin Administrative Code Chapter NR 140

PAL - preventive action limit, as established in Wisconsin Administrative Code Chapter NR 140

Bold - concentration exceeds NR 140 ES

Italics and underline - concentration exceeds NR 140 PAL

< less than the specified detection limit

FVMW-28 (not shown) well was observed to be "dry" during multiple sampling events - no groundwater samples have been recorded for this well

Table 3.1.5
 Polychlorinated biphenyls (PCBs) - Groundwater Analytical Table
 AMCAST CENTRAL & AMCAST SOUTH- J16001
 N39 W5789 Hamilton Road, Cedarburg WI

Well ID	Sample Collection Date	PCB-1016 (Aroclor 1016)	PCB-1221 (Aroclor 1221)	PCB-1232 (Aroclor 1232)	PCB-1242 (Aroclor 1242)	PCB-1248 (Aroclor 1248)	PCB-1254 (Aroclor 1254)	PCB-1260 (Aroclor 1260)	PCB-1262 (Aroclor 1262)	PCB-1268 (Aroclor 1268)	PCB, Total
AMS-MW01	09/22/11	1 U	1 U	1 U	1 U	1.5	1 U	1 U	1 U	1 U	1.5
	11/19/18	<0.24	<0.24	<0.24	2.8	<0.24	<0.24	<0.24	-	-	2.8
	11/19/19	<0.21	<0.21	<0.21	7.2	<0.21	<0.21	<0.21	-	-	7.2
GMMW-1	11/18/93	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
	12/04/03	-	-	-	-	0 U	-	-	-	-	-
	01/12/04	-	-	-	-	0 U	-	-	-	-	-
	04/10/07	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	-	-	<0.23
	09/20/11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
	11/19/18	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	-	-	<0.24
GMMW-2	11/18/93	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
	12/05/03	-	-	-	-	0 U	-	-	-	-	-
	01/12/04	-	-	-	-	0 U	-	-	-	-	-
	04/10/07	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	-	-	<0.23
	09/20/11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
	11/19/18	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	-	-	<0.24
GMMW-3	11/18/93	<1.0	<2.0	<1.0	<1.0	2.3	<1.0	<1.0	-	-	2.3
	12/04/03	-	-	-	-	0 U	-	-	-	-	-
	01/12/04	-	-	-	-	1.6	-	-	-	-	1.6
	04/10/07	<0.23	<0.23	<0.23	<0.23	0.55	<0.23	<0.23	-	-	0.55
	09/20/11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
	11/19/18	<0.24	<0.24	<0.24	<0.24	5.5	2.7	0.61	-	-	8.81
GMMW-4	11/18/93	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
	12/03/03	-	-	-	-	0 U	-	-	-	-	-
	01/12/04	-	-	-	-	0 U	-	-	-	-	-
	04/10/07	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	-	-	<0.23
	09/21/11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
	11/19/18	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	-	-	<0.24
GMMW-5	11/18/93	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
	12/02/03	-	-	-	-	0 U	-	-	-	-	-
	01/12/04	-	-	-	-	0 U	-	-	-	-	-
	04/10/07	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	-	-	<0.23
	09/22/11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
	11/19/18	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	-	-	<0.24
GMMW-6	11/18/93	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
	04/10/07	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	-	-	<0.23
	09/22/11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
	11/19/18	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	-	-	<0.24
	11/19/19	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	-	-	<0.11
GMMW-7	11/18/93	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-
	12/05/03	-	-	-	-	0 U	-	-	-	-	-
	01/12/04	-	-	-	-	0 U	-	-	-	-	-
	04/10/07	<0.23	<0.23	<0.23	0.33	<0.23	<0.23	<0.23	-	-	0.33
	09/21/11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
	11/19/18	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	-	-	<0.24
FVMW-20	12/05/03	-	-	-	-	0 U	-	-	-	-	-
	01/13/04	-	-	-	-	0 U	-	-	-	-	-
	04/10/07	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	-	-	<0.23
	09/20/11	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	-
	11/19/18	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	-	-	<0.24
FVMW-21	11/19/19	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	-	-	<0.11
	12/05/03	-	-	-	-	0 U	-	-	-	-	-
	01/12/04	-	-	-	-	0.3	-	-	-	-	0.3
NR 140 Preventive Action Limit (PAL)	04/10/07	<0.23	<0.23	<0.23	<0.23	0.3	<0.23	<0.23	-	-	0.3
	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<u>0.003</u>
	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.03

Note:
 ug/L - micrograms per liter (equivalent to parts per billion)
 PCBs - Polychlorinated Biphenyls
 ES - enforcement standard, as established in Wisconsin Administrative Code Chapter NR 140
 PAL - preventive action limit, as established in Wisconsin Administrative Code Chapter NR 140
Bold - concentration exceeds NR 140 ES
Italics - concentration exceeds NR 140 PAL
 11/19/2018 FVMW-21 and FVMW-22 No Sample (Well Dry)
 (J) - estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
 (U) - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
 NS - no established standard
 < less than the specified detection limit
 - sample either not analyzed for specific parameter or not reported for specific parameter
 FVMW-28 (not shown) well was observed to be "dry" during multiple sampling events - no groundwater samples have been recorded for this well

Table 3.2.S
VOC - Groundwater Analytical Table
AMCAST CENTRAL & SOUTH- J16001
N39 W5789 Hamilton Road, Cedarburg WI

Well ID	AMSMW-01			GMMW-1							NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
	09/22/11	11/19/18	11/19/19	11/18/93	12/03/03	01/12/04	04/10/07	09/20/11	11/19/18	11/19/19		
Volatile Organic Compounds (ug/L)												
1,1,1,2-Tetrachloroethane	-	<0.27	<0.27	<5	-	-	<0.92	-	<0.27	<0.27	7	70
1,1,1-Trichloroethane	0.5 U	<0.24	<0.24	<5	-	-	<0.90	0.5 U	<0.24	<0.24	40	200
1,1,2,2-Tetrachloroethane	0.5 U	<0.28	<0.28	-	-	-	<0.20	0.5 U	<0.28	<0.28	0.02	0.2
1,1,2-Trichloroethane	0.5 U	<0.55	<0.55	<5	-	-	<0.42	0.5 U	<0.55	<0.55	0.5	5
1,1-Dichloroethane	0.5 U	<0.27	<0.27	<5	-	-	<0.75	0.5 U	<0.27	<0.27	85	850
1,1-Dichloroethene	0.5 U	<0.24	<0.24	<5	-	-	<0.57	0.5 U	<0.24	<0.24	0.7	7
1,1-Dichloropropene	-	<0.54	<0.54	-	-	-	<0.75	-	<0.54	<0.54	NS	NS
1,2,3-Trichlorobenzene	0.5 U	<0.63	<0.63	-	-	-	<0.74	0.5 U	<0.63	<0.63	NS	NS
1,2,3-Trichloropropane	-	<0.59	<0.59	-	-	-	<0.99	-	<0.59	<0.59	12	60
1,2,4-Trichlorobenzene	0.5 U	<0.95	<0.95	-	-	-	<0.97	0.5 U	<0.95	<0.95	14	70
1,2,4-Trimethylbenzene	-	<0.84	<0.84	-	-	-	<0.97	-	<0.84	<0.84	96	480
1,2-Dibromo-3-chloropropane	-	<1.8	<1.8	-	-	-	<0.87	-	<1.8	<1.8	0.02	0.2
1,2-Dibromoethane (EDB)	0.5 U	<0.83	<0.83	-	-	-	<0.56	0.5 U	<0.83	<0.83	0.005	0.05
1,2-Dichlorobenzene	-	<0.71	<0.71	-	-	-	<0.83	-	<0.71	<0.71	60	600
1,2-Dichloroethane	0.5 U	<0.28	<0.28	<5	-	-	<0.36	0.5 U	<0.28	<0.28	0.5	5
1,2-Dichloropropane	0.5 U	<0.28	<0.28	<5	-	-	<0.46	0.5 U	<0.28	<0.28	0.5	5
1,3,5-Trimethylbenzene	-	<0.87	<0.87	-	-	-	<0.83	-	<0.87	<0.87	96	480
1,3-Dichlorobenzene	-	<0.63	<0.63	-	-	-	<0.87	-	<0.63	<0.63	120	600
1,3-Dichloropropane	-	<0.83	<0.83	-	-	-	<0.61	-	<0.83	<0.83	NS	NS
1,4-Dichlorobenzene	-	<0.94	<0.94	-	-	-	<0.95	-	<0.94	<0.94	15	75
2,2-Dichloropropane	-	<2.3	<2.3	-	-	-	<0.62	-	<2.3	<2.3	NS	NS
2-Chlorotoluene	-	<0.93	<0.93	-	-	-	<0.85	-	<0.93	<0.93	NS	NS
4-Chlorotoluene	-	<0.76	<0.76	-	-	-	<0.74	-	<0.76	<0.76	NS	NS
Benzene	0.5 U	<0.25	<0.25	<5	-	-	<0.41	0.5 U	<0.25	<0.25	0.5	5
Bromobenzene	-	<0.24	<0.24	-	-	-	<0.82	-	<0.24	<0.24	NS	NS
Bromochloromethane	0.5 U	<0.36	<0.36	-	-	-	<0.97	0.5 U	<0.36	<0.36	NS	NS
Bromodichloromethane	0.5 U	<0.36	<0.36	<5	1.4	1.2	1.4	1.1	0.61 J	0.56 J	0.06	0.6
Bromoform	0.5 U	<4.0	<4.0	<5	-	-	<0.94	0.5 U	<4.0	<4.0	0.44	4.4
Bromomethane	0.5 U	<0.97	<0.97	<10	-	-	<0.91	0.5 U	<0.97	<0.97	1	10
Carbon tetrachloride	0.5 U	<0.17	<0.17	<5	-	-	<0.49	0.5 U	<0.17	<0.17	0.5	5
Chlorobenzene	0.5 U	<0.71	<0.71	<5	-	-	<0.41	0.5 U	<0.71	<0.71	NS	NS
Chloroethane	0.5 U	<1.3	<1.3	<10	-	-	<0.97	0.5 U	<1.3	<1.3	80	400
Chloroform	0.5 U	<1.3	<1.3	<5	<u>1.1</u>	<u>1</u>	<u>1.7</u>	1.8 U	<1.3	<1.3	0.6	6
Chloromethane	0.5 U	<2.2	<2.2	<10	-	-	<0.24	0.5 U	<2.2	<2.2	3	30
Dibromochloromethane	0.5 U	<2.6	<2.6	<5	-	-	<0.81	0.5 U	<2.6	<2.6	6	60
Dibromomethane	-	<0.94	<0.94	-	-	-	<0.60	-	<0.94	<0.94	NS	NS
Dichlorodifluoromethane	0.5 U	<0.50	<0.50	-	-	-	<0.99	0.5 U	<0.50	<0.50	200	1,000
Diisopropyl ether	-	<1.9	<1.9	-	-	-	<0.76	-	<1.9	<1.9	NS	NS
Ethylbenzene	0.5 U	<0.22	<0.22	<5	1.5	-	<0.54	0.5 U	<0.22	<0.22	140	700
Hexachloro-1,3-butadiene	5 U	<1.2	<1.2	-	-	-	<0.67	5 U	<1.2	<1.2	NS	NS
Isopropylbenzene (Cumene)	0.5 U	<0.39	<0.39	-	-	-	<0.59	0.5 U	<0.39	<0.39	NS	NS
Methyl-tert-butyl ether	0.5 U	<1.2	<1.2	-	-	-	<0.61	0.5 U	<1.2	<1.2	12	60
Methylene Chloride	0.5 U	<0.58	<0.58	<5	-	-	<0.43	0.5 U	<0.58	<0.58	0.5	5
Naphthalene	-	<1.2	<1.2	-	-	-	<0.74	-	7	<1.2	10	100
Styrene	0.5 U	<0.47	<0.47	<5	-	-	<0.86	0.5 U	<0.47	<0.47	10	100
Tetrachloroethene	0.5 U	<0.33	<0.33	<5	-	-	<0.45	0.5 U	<0.33	<0.33	0.5	5
Toluene	0.5 U	0.26 J	0.19 J	<5	-	-	<0.67	0.5 U	<0.17	<0.17	160	800
Trichloroethene	0.5 U	<0.26	<0.26	<5	-	-	<0.48	0.1 J	<0.26	<0.26	0.5	5
Trichlorofluoromethane	0.5 U	<0.21	<0.21	-	-	-	<0.79	0.5 U	<0.21	<0.21	698	3,490
Vinyl chloride	0.5 U	<0.17	<0.17	<10	-	-	<0.18	0.5 U	<0.17	<0.17	0.02	0.2
cis-1,2-Dichloroethene	0.5 U	<0.27	<0.27	<5	-	-	<0.83	0.5 U	<0.27	<0.27	7	70
cis-1,3-Dichloropropane	0.5 U	<3.6	<3.6	<5	-	-	<0.19	0.5 U	<3.6	<3.6	0.04	0.4
Total Xylenes	1 U	<0.73	<0.73	<5	9.6	-	2.63	1 U	<0.73	<0.73	400	2,000
p-Isopropyltoluene	-	<0.80	<0.80	-	-	-	<0.67	-	<0.80	<0.80	NS	NS
sec-Butylbenzene	-	<0.85	<0.85	-	-	-	<0.89	-	<0.85	<0.85	NS	NS
tert-Butylbenzene	-	<0.30	<0.30	-	-	-	<0.97	-	<0.30	<0.30	NS	NS
trans-1,2-Dichloroethene	0.5 U	<1.1	<1.1	<5	-	-	<0.89	0.5 U	<1.1	<1.1	20	100
trans-1,3-Dichloropropane	0.5 U	<4.4	<4.4	<5	-	-	<0.19	0.5 U	<4.4	<4.4	0.04	0.4
2-Butanone	5 U	-	-	<50	-	-	-	5 U	-	-	NS	NS
2-Hexanone	5 U	-	-	<50	-	-	-	5 U	-	-	NS	NS
4-Methyl-2-Pentanone	5 U	-	-	<50	-	-	-	5 U	-	-	NS	NS
Acetone	10 U	-	-	<50	-	-	-	5 U	-	-	NS	NS
Carbon Disulfide	0.5 U	-	-	<50	-	-	-	0.5 U	-	-	NS	NS
Chlorinated Fluorocarbon	0.5 U	-	-	-	-	-	-	0.5 U	-	-	NS	NS
Cyclohexane	0.5 U	-	-	-	-	-	-	0.5 U	-	-	NS	NS
Methyl Acetate	0.5 U	-	-	-	-	-	-	0.5 U	-	-	NS	NS
Methylcyclohexane	0.5 U	-	-	-	-	-	-	0.5 U	-	-	NS	NS

Note:
ug/L - micrograms per liter (equivalent to parts per billion)
VOCs - Volatile Organic Compounds
ES - enforcement standard, as established in Wisconsin Administrative Code Chapter NR 140
PAL - preventive action limit, as established in Wisconsin Administrative Code Chapter NR 140
Bold - concentration exceeds NR 140 ES
Italics and underline - concentration exceeds NR 140 PAL
(J) - estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
(U) - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
NS - no established standard
< - less than the specified detection limit
- sample either not analyzed for specific parameter or not reported for specific parameter
AMNMW-01 = off-site well

Table 3.2.S
VOC - Groundwater Analytical Table
AMCAST CENTRAL & AMCAST SOUTH- J16001
N39 W5789 Hamilton Road, Cedarburg WI

Well ID	GMMW-6					GMMW-7						NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
	11/18/93	04/10/07	09/22/11	11/19/18	11/19/19	11/18/93	12/03/03	04/10/07	09/21/11	11/19/18	11/19/19		
Volatile Organic Compounds (ug/L)													
1,1,1,2-Tetrachloroethane	<5	<0.92	-	<0.27	<0.27	<5	-	<0.92	-	<0.27	<0.27	7	70
1,1,1-Trichloroethane	<5	<0.90	0.5 U	<0.24	<0.24	<5	-	<0.90	0.5 U	<0.24	<0.24	40	200
1,1,2,2-Tetrachloroethane	-	<0.20	0.5 U	<0.28	<0.28	-	-	<0.20	0.5 U	<0.28	<0.28	0.02	0.2
1,1,2-Trichloroethane	<5	<0.42	0.5 U	<0.55	<0.55	<5	-	<0.42	0.5 U	<0.55	<0.55	0.5	5
1,1-Dichloroethane	<5	<0.75	0.5 U	<0.27	<0.27	<5	-	<0.75	0.5 U	<0.27	<0.27	85	850
1,1-Dichloroethene	<5	<0.57	0.5 U	<0.24	<0.24	<5	-	<0.57	0.5 U	<0.24	<0.24	0.7	7
1,1-Dichloropropene	-	<0.75	-	<0.54	<0.54	-	-	<0.75	-	<0.54	<0.54	NS	NS
1,2,3-Trichlorobenzene	-	<0.74	0.5 U	<0.63	<0.63	-	-	<0.74	0.5 U	<0.63	<0.63	NS	NS
1,2,3-Trichloropropane	-	<0.99	-	<0.59	<0.59	-	-	<0.99	-	<0.59	<0.59	12	60
1,2,4-Trichlorobenzene	-	<0.97	0.5 U	<0.95	<0.95	-	-	<0.97	0.5 U	<0.95	<0.95	14	70
1,2,4-Trimethylbenzene	-	<0.97	-	<0.84	<0.84	-	-	<0.97	-	<0.84	<0.84	96	480
1,2-Dibromo-3-chloropropane	-	<0.87	-	<1.8	<1.8	-	-	<0.87	-	<1.8	<1.8	0.02	0.2
1,2-Dibromoethane (EDB)	-	<0.56	0.5 U	<0.83	<0.83	-	-	<0.56	0.5 U	<0.83	<0.83	0.005	0.05
1,2-Dichlorobenzene	-	<0.83	-	<0.71	<0.71	-	-	<0.83	-	<0.71	<0.71	60	600
1,2-Dichloroethane	<5	<0.36	0.5 U	<0.28	<0.28	<5	-	<0.36	0.5 U	<0.28	<0.28	0.5	5
1,2-Dichloropropane	<5	<0.46	0.5 U	<0.28	<0.28	<5	-	<0.46	0.5 U	<0.28	<0.28	0.5	5
1,3,5-Trimethylbenzene	-	<0.83	-	<0.87	<0.87	-	-	<0.83	-	<0.87	<0.87	96	480
1,3-Dichlorobenzene	-	<0.87	-	<0.63	<0.63	-	-	<0.87	-	<0.63	<0.63	120	600
1,3-Dichloropropane	-	<0.61	-	<0.83	<0.83	-	-	<0.61	-	<0.83	<0.83	NS	NS
1,4-Dichlorobenzene	-	<0.95	-	<0.94	<0.94	-	-	<0.95	-	<0.94	<0.94	15	75
2,2-Dichloropropane	-	<0.62	-	<2.3	<2.3	-	-	<0.62	-	<2.3	<2.3	NS	NS
2-Chlorotoluene	-	<0.85	-	<0.93	<0.93	-	-	<0.85	-	<0.93	<0.93	NS	NS
4-Chlorotoluene	-	<0.74	-	<0.76	<0.76	-	-	<0.74	-	<0.76	<0.76	NS	NS
Benzene	<5	<0.41	0.5 U	<0.25	<0.25	<5	-	<0.41	0.5 U	<0.25	<0.25	0.5	5
Bromobenzene	-	<0.82	-	<0.24	<0.24	-	-	<0.82	-	<0.24	<0.24	NS	NS
Bromochloromethane	-	<0.97	0.5 U	<0.36	<0.36	-	-	<0.97	0.5 U	<0.36	<0.36	NS	NS
Bromodichloromethane	<5	<0.56	0.5 U	<0.36	<0.36	<5	-	<0.56	0.5 U	<0.36	<0.36	0.06	0.6
Bromoform	<5	<0.94	0.5 U	<4.0	<4.0	<5	-	<0.94	0.5 U	<4.0	<4.0	0.44	4.4
Bromomethane	<10	<0.91	0.5 U	<0.97	<0.97	<10	-	<0.91	0.5 U	<0.97	<0.97	1	10
Carbon tetrachloride	<5	<0.49	0.5 U	<0.17	<0.17	<5	-	<0.49	0.5 U	<0.17	<0.17	0.5	5
Chlorobenzene	<5	<0.41	0.5 U	<0.71	<0.71	<5	-	<0.41	0.5 U	<0.71	<0.71	NS	NS
Chloroethane	<10	<0.97	0.5 U	<1.3	<1.3	<10	-	<0.97	0.5 U	<1.3	<1.3	80	400
Chloroform	<5	<0.37	0.5 U	<1.3	<1.3	<5	-	<0.37	0.5 U	<1.3	<1.3	0.6	6
Chloromethane	<10	<0.24	0.5 U	<2.2	<2.2	<10	-	<0.24	0.5 U	<2.2	<2.2	3	30
Dibromochloromethane	<5	<0.81	0.5 U	<2.6	<2.6	<5	-	<0.81	0.5 U	<2.6	<2.6	6	60
Dibromomethane	-	<0.60	-	<0.94	<0.94	-	-	<0.60	-	<0.94	<0.94	NS	NS
Dichlorodifluoromethane	-	<0.99	0.5 U	<0.50	<0.50	-	-	<0.99	0.5 U	<0.50	<0.50	200	1,000
Diisopropyl ether	-	<0.76	-	<1.9	<1.9	-	-	<0.76	-	<1.9	<1.9	NS	NS
Ethylbenzene	<5	<0.54	0.5 U	<0.22	<0.22	<5	-	<0.54	0.5 U	<0.22	<0.22	140	700
Hexachloro-1,3-butadiene	-	<0.67	5 U	<1.2	<1.2	-	-	<0.67	5 U	<1.2	<1.2	NS	NS
Isopropylbenzene (Cumene)	-	<0.59	0.5 U	<0.39	<0.39	-	-	<0.59	0.5 U	<0.39	<0.39	NS	NS
Methyl-tert-butyl ether	-	<0.61	0.5 U	<1.2	<1.2	-	-	<0.61	0.5 U	<1.2	<1.2	12	60
Methylene Chloride	<5	<0.43	0.5 U	<0.58	<0.58	<5	-	<0.43	0.5 U	<0.58	<0.58	0.5	5
Naphthalene	-	<0.74	-	<1.2	<1.2	-	-	<0.74	-	<1.2	<1.2	10	100
Styrene	<5	<0.86	0.5 U	<0.47	<0.47	<5	-	<0.86	0.5 U	<0.47	<0.47	10	100
Tetrachloroethene	<5	<0.45	0.5 U	<0.33	<0.33	<5	-	<0.45	0.5 U	<0.33	<0.33	0.5	5
Toluene	<5	<0.67	0.5 U	<0.17	<0.17	<5	-	<0.67	0.5 U	<0.17	<0.17	160	800
Trichloroethene	<5	<0.48	0.5 U	<0.26	<0.26	<5	-	<0.48	0.5 U	<0.26	<0.26	0.5	5
Trichlorofluoromethane	-	<0.79	0.5 U	<0.21	<0.21	-	-	<0.79	0.5 U	<0.21	<0.21	698	3,490
Vinyl chloride	<10	<0.18	0.5 U	<0.17	<0.17	<10	-	<0.18	0.5 U	<0.17	<0.17	0.02	0.2
cis-1,2-Dichloroethene	<5	<0.83	0.5 U	<0.27	<0.27	<5	-	<0.83	0.5 U	<0.27	<0.27	7	70
cis-1,3-Dichloropropene	<5	<0.19	0.5 U	<3.6	<3.6	<5	-	<0.19	0.5 U	<3.6	<3.6	0.04	0.4
Total Xylenes	<5	2.63	1 U	<0.73	<0.73	<5	4.4	2.63	1 U	<0.73	<0.73	400	2,000
p-Isopropyltoluene	-	<0.67	-	<0.80	<0.80	-	-	<0.67	-	<0.80	<0.80	NS	NS
sec-Butylbenzene	-	<0.89	-	<0.85	<0.85	-	-	<0.89	-	<0.85	<0.85	NS	NS
tert-Butylbenzene	-	<0.97	-	<0.30	<0.30	-	-	<0.97	-	<0.30	<0.30	NS	NS
trans-1,2-Dichloroethene	<5	<0.89	0.5 U	<1.1	<1.1	<5	-	<0.89	0.5 U	<1.1	<1.1	20	100
trans-1,3-Dichloropropene	<5	<0.19	0.5 U	<4.4	<4.4	<5	-	<0.19	0.5 U	<4.4	<4.4	0.04	0.4
2-Butanone	<50	-	5 U	-	-	<50	-	-	5 U	-	-	NS	NS
2-Hexanone	<50	-	5 U	-	-	<50	-	-	5 U	-	-	NS	NS
4-Methyl-2-Pentanone	<50	-	5 U	-	-	<50	-	-	5 U	-	-	NS	NS
Acetone	<50	-	5 U	-	-	<50	-	-	10 U	-	-	NS	NS
Carbon Disulfide	<50	-	0.5 U	-	-	<50	-	-	0.5 U	-	-	NS	NS
Chlorinated Fluorocarbon	-	-	0.5 U	-	-	-	-	-	0.5 U	-	-	NS	NS
Cyclohexane	-	-	0.5 U	-	-	-	-	-	0.5 U	-	-	NS	NS
Methyl Acetate	-	-	0.5 U	-	-	-	-	-	0.5 U	-	-	NS	NS
Methylcyclohexane	-	-	0.5 U	-	-	-	-	-	0.5 U	-	-	NS	NS

Note:
ug/L - micrograms per liter (equivalent to parts per billion)
VOCs - Volatile Organic Compounds
ES - enforcement standard, as established in Wisconsin Administrative Code Chapter NR 140
PAL - preventive action limit, as established in Wisconsin Administrative Code Chapter NR 140
Bold - concentration exceeds NR 140 ES
Italics and underline - concentration exceeds NR 140 PAL
(i) - estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
(U) - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
NS - no established standard
< - less than the specified detection limit
- - sample either not analyzed for specific parameter or not reported for specific parameter

Table 3.2.S
VOC - Groundwater Analytical Table
AMCAST CENTRAL & AMCAST SOUTH- J16001
N39 W5789 Hamilton Road, Cedarburg WI

Well ID	FVMW-20						FVMW-21	NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
	Sample Collection Date	12/02/03	01/13/04	04/10/07	09/20/11	11/19/18	11/19/19		
Volatile Organic Compounds (ug/L)									
1,1,1,2-Tetrachloroethane	-	-	<0.92	-	<0.27	<0.27	<0.92	7	70
1,1,1-Trichloroethane	-	-	<0.90	0.5 U	<0.24	<0.24	<0.90	40	200
1,1,2,2-Tetrachloroethane	-	-	<0.20	0.5 U	<0.28	<0.28	<0.20	0.02	0.2
1,1,2-Trichloroethane	-	-	<0.42	0.5 U	<0.55	<0.55	<0.42	0.5	5
1,1-Dichloroethane	-	-	<0.75	0.5 U	<0.27	<0.27	<0.75	85	850
1,1-Dichloroethene	-	-	<0.57	0.5 U	<0.24	<0.24	<0.57	0.7	7
1,1-Dichloropropene	-	-	<0.75	-	<0.54	<0.54	<0.75	NS	NS
1,2,3-Trichlorobenzene	-	-	<0.74	0.5 U	<0.63	<0.63	<0.74	NS	NS
1,2,3-Trichloropropane	-	-	<0.99	-	<0.59	<0.59	<0.99	12	60
1,2,4-Trichlorobenzene	-	-	<0.97	0.5 U	<0.95	<0.95	<0.97	14	70
1,2,4-Trimethylbenzene	-	-	<0.97	-	<0.84	<0.84	<0.97	96	480
1,2-Dibromo-3-chloropropane	-	-	<0.87	-	<1.8	<1.8	<0.87	0.02	0.2
1,2-Dibromoethane (EDB)	-	-	<0.56	0.5 U	<0.83	<0.83	<0.56	0.005	0.05
1,2-Dichlorobenzene	-	-	<0.83	-	<0.71	<0.71	<0.83	60	600
1,2-Dichloroethane	-	-	<0.36	0.5 U	<0.28	<0.28	<0.36	0.5	5
1,2-Dichloropropane	-	-	<0.46	0.5 U	<0.28	<0.28	<0.46	0.5	5
1,3,5-Trimethylbenzene	-	-	<0.83	-	<0.87	<0.87	<0.83	96	480
1,3-Dichlorobenzene	-	-	<0.87	-	<0.63	<0.63	<0.87	120	600
1,3-Dichloropropane	-	-	<0.61	-	<0.83	<0.83	<0.61	NS	NS
1,4-Dichlorobenzene	-	-	<0.95	-	<0.94	<0.94	<0.95	15	75
2,2-Dichloropropane	-	-	<0.62	-	<2.3	<2.3	<0.62	NS	NS
2-Chlorotoluene	-	-	<0.85	-	<0.93	<0.93	<0.85	NS	NS
4-Chlorotoluene	-	-	<0.74	-	<0.76	<0.76	<0.74	NS	NS
Benzene	-	-	<0.41	0.5 U	<0.25	<0.25	<0.41	0.5	5
Bromobenzene	-	-	<0.82	-	<0.24	<0.24	<0.82	NS	NS
Bromochloromethane	-	-	<0.97	0.5 U	<0.36	<0.36	<0.97	NS	NS
Bromodichloromethane	-	-	0.56	0.5 U	<0.36	<0.36	<0.56	0.06	0.6
Bromoform	-	-	<0.94	0.5 U	<4.0	<4.0	<0.94	0.44	4.4
Bromomethane	-	-	<0.91	0.5 U	<0.97	<0.97	<0.91	1	10
Carbon tetrachloride	-	-	<0.49	0.5 U	<0.17	<0.17	<0.49	0.5	5
Chlorobenzene	-	-	<0.41	0.5 U	<0.71	<0.71	<0.41	NS	NS
Chloroethane	-	-	<0.97	0.5 U	<1.3	<1.3	<0.97	80	400
Chloroform	-	-	<0.37	0.5 U	<1.3	<1.3	<0.37	0.6	6
Chloromethane	-	-	<0.24	0.5 U	<2.2	<2.2	<0.24	3	30
Dibromochloromethane	-	-	<0.81	0.5 U	<2.6	<2.6	<0.81	6	60
Dibromomethane	-	-	<0.60	-	<0.94	<0.94	<0.60	NS	NS
Dichlorodifluoromethane	-	-	<0.99	0.5 U	<0.50	<0.50	<0.99	200	1,000
Diisopropyl ether	-	-	<0.76	-	<1.9	<1.9	<0.76	NS	NS
Ethylbenzene	-	-	<0.54	0.5 U	<0.22	<0.22	<0.54	140	700
Hexachloro-1,3-butadiene	-	-	<0.67	5 U	<1.2	<1.2	<0.67	NS	NS
Isopropylbenzene (Cumene)	-	-	<0.59	0.5 U	<0.39	<0.39	<0.59	NS	NS
Methyl-tert-butyl ether	-	-	<0.61	0.5 U	<1.2	<1.2	<0.61	12	60
Methylene Chloride	-	-	<0.43	0.5 U	<0.58	<0.58	<0.43	0.5	5
Naphthalene	-	-	<0.74	-	<1.2	<1.2	<0.74	10	100
Styrene	-	-	<0.86	0.5 U	<0.47	<0.47	<0.86	10	100
Tetrachloroethene	-	-	<0.45	0.5 U	<0.33	<0.33	<0.45	0.5	5
Toluene	-	-	<0.67	0.5 U	<0.17	<0.17	<0.67	160	800
Trichloroethene	<u>4.5</u>	<u>3.2</u>	<u>1.9</u>	<u>1.3</u>	<u>0.68 J</u>	<u>0.72 J</u>	<0.48	0.5	5
Trichlorofluoromethane	-	-	<0.79	0.5 U	<0.21	<0.21	<0.79	698	3,490
Vinyl chloride	-	-	<0.18	0.5 U	<0.17	<0.17	<0.18	0.02	0.2
cis-1,2-Dichloroethene	-	-	<0.83	0.5 U	<0.27	<0.27	<0.83	7	70
cis-1,3-Dichloropropene	-	-	<0.19	0.5 U	<3.6	<3.6	<0.19	0.04	0.4
Total Xylenes	-	-	2.63	1 U	<0.73	<0.73	2.63	400	2,000
p-Isopropyltoluene	-	-	<0.67	-	<0.80	<0.80	<0.67	NS	NS
sec-Butylbenzene	-	-	<0.89	-	<0.85	<0.85	<0.89	NS	NS
tert-Butylbenzene	-	-	<0.97	-	<0.30	<0.30	<0.97	NS	NS
trans-1,2-Dichloroethene	-	-	<0.89	0.5 U	<1.1	<1.1	<0.89	20	100
trans-1,3-Dichloropropene	-	-	<0.19	0.5 U	<4.4	<4.4	<0.19	0.04	0.4
2-Butanone	-	-	-	5 U	-	-	-	NS	NS
2-Hexanone	-	-	-	5 U	-	-	-	NS	NS
4-Methyl-2-Pentanone	-	-	-	5 U	-	-	-	NS	NS
Acetone	-	-	-	5 U	-	-	-	NS	NS
Carbon Disulfide	-	-	-	0.5 U	-	-	-	NS	NS
Chlorinated Fluorocarbon	-	-	-	0.5 U	-	-	-	NS	NS
Cyclohexane	-	-	-	0.5 U	-	-	-	NS	NS
Methyl Acetate	-	-	-	0.5 U	-	-	-	NS	NS
Methylcyclohexane	-	-	-	0.5 U	-	-	-	NS	NS

Note:
ug/L - micrograms per liter (equivalent to parts per billion)
VOCs - Volatile Organic Compounds
ES - enforcement standard, as established in Wisconsin Administrative Code Chapter NR 140
PAL - preventive action limit, as established in Wisconsin Administrative Code Chapter NR 140
Bold - concentration exceeds NR 140 ES
Italics and underline - concentration exceeds NR 140 PAL
(J) - estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
(U) - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
NS - no established standard
< - less than the specified detection limit
- sample either not analyzed for specific parameter or not reported for specific parameter
FVMW-21 = off-site well
11/19/2018 FVMW-21 and FVMW-22 No Sample (Well Dry)
11/19/2019 FVMW-21 and FVMW-22 No Sample (Well Dry)
FVMW-22 (not shown) well was observed to be "dry" during multiple sampling events - no groundwater samples have been recorded for this well

Table 3.4.S
 RCRA Metals - Groundwater Analytical Table
 AMCAST CENTRAL & AMCAST SOUTH- J16001
 N39 W5789 Hamilton Road, Cedarburg WI

Well ID	AMSW-01		GMMW-1			GMMW-2			GMMW-3			GMMW-4			NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
Sample Collection Date	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19		
Total Metals (ug/L)																
Arsenic, Total	221	108	-	<8.3	<8.3	-	<8.3	<8.3	-	<u>9.3 J</u>	18.3 J	-	14.2 J	20.1 J	<u>1</u>	10
Barium, Total	<u>530</u>	355	-	121	101	-	75.8	62.8	-	113	68.8	-	219	84.6	<u>400</u>	2,000
Cadmium, Total	<1.3	<1.3	-	<1.3	<1.3	-	<1.3	<1.3	-	<1.3	<1.3	-	<u>1.4 J</u>	<1.3	<u>0.5</u>	5
Chromium, Total	123	51.2	-	7.1 J	4.4 J	-	<u>17.8</u>	5.9 J	-	3.5 J	<2.5	-	<u>64.3</u>	<u>10.5</u>	<u>10</u>	100
Lead, Total	42.4	20.6	-	<5.9	<5.9	-	<5.9	<5.9	-	<5.9	<5.9	-	90.2	21.2	<u>1.5</u>	15
Selenium, Total	<3.3	<12.2	-	<3.3	<12.2	-	<3.3	<12.2	-	<3.3	<12.2	-	<3.3	<12.2	10	50
Silver, Total	<12.2	<3.2	-	<12.2	<3.2	-	<12.2	<3.2	-	<12.2	<3.2	-	<12.2	<3.2	10	20
Mercury, Total	<u>1.3</u>	<0.084	-	<0.084	<0.084	-	<0.084	<0.084	-	<0.084	<0.084	-	0.093 J	0.19 J	<u>0.2</u>	2

Well ID	AMSW-01		GMMW-1			GMMW-2			GMMW-3			GMMW-4			NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)
Sample Collection Date	11/19/18	11/19/19	11/18/93	11/18/93	11/19/19	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19		
Dissolved Metals (ug/L)																
Arsenic, Dissolved	<8.3	<13.2	<10	<8.3	<13.2	<10	<8.3	<13.2	<10	8.7 J	<13.2	<10	<8.3	<13.2	1	10
Barium, Dissolved	183	159	<u>600</u>	99.2	95.0	340	65.9	57.4	150	79.3	46.6	160	83.1	55.3	<u>400</u>	2,000
Cadmium, Dissolved	<1.3	<1.3	<5	<1.3	<1.3	<5	<1.3	<1.3	<5	<1.3	<1.3	<5	<1.3	<1.3	0.5	5
Chromium, Dissolved	<2.5	<2.5	<10	3.1 J	<2.5	<10	4.3 J	3.7 J	<10	<2.5	<2.5	<10	<2.5	<2.5	10	100
Lead, Dissolved	<5.9	<6.4	<5	<5.9	<6.4	<5	<5.9	<6.4	<5	<5.9	<6.4	<5	<5.9	<6.4	1.5	15
Selenium, Dissolved	<3.3	<12.3	<10	<3.3	<12.3	<10	<3.3	<12.3	<10	<3.3	<12.3	<10	<3.3	<12.3	10	50
Silver, Dissolved	<12.2	<3.2	<0.2	<12.2	<3.2	<0.2	<12.2	<3.2	<0.2	<12.2	<3.2	<0.2	<12.2	<3.2	10	50
Mercury, Dissolved	<u>0.94</u>	<0.084	<10	<0.084	<0.084	<10	<0.084	<0.084	<10	<0.084	<0.084	<10	<u>0.3</u>	<0.084	<u>0.2</u>	2

Note:

ug/L - micrograms per liter (equivalent to parts per billion)

ES - enforcement standard, as established in Wisconsin Administrative Code Chapter NR 140

PAL - preventive action limit, as established in Wisconsin Administrative Code Chapter NR 140

Bold - concentration exceeds NR 140 ES

Italics and underline - concentration exceeds NR 140 PAL

< less than the specified detection limit

(J) - estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

AMNMW-01 = off-site well

Table 3.4.S
 RCRA Metals - Groundwater Analytical Table
 AMCAST CENTRAL & AMCAST SOUTH- J16001
 N39 W5789 Hamilton Road, Cedarburg WI

Well ID	GMMW-5			GMMW-6			GMMW-7			FVMW-20		NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)	
Sample Collection Date	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19	11/19/18	11/19/19			
Total Metals (ug/L)														
Arsenic, Total	-	173	158	-	<8.3	<8.3	-	<8.3	<8.3	<8.3	<8.3	<u>1</u>	10	
Barium, Total	-	300	280	-	178	142	-	214	177	131	84.3	400	2,000	
Cadmium, Total	-	<1.3	<1.3	-	<1.3	<1.3	-	<1.3	<1.3	<1.3	<1.3	0.5	5	
Chromium, Total	-	<u>81.9</u>	<u>70.9</u>	-	<u>14.6</u>	<u>10.6</u>	-	<u>20.7</u>	<u>12.1</u>	<u>17.1</u>	5.6 J	<u>10</u>	100	
Lead, Total	-	25.6	32.7	-	<5.9	<5.9	-	<5.9	<5.9	<5.9	<5.9	<u>1.5</u>	15	
Selenium, Total	-	<3.3	<12.2	-	<3.3	<12.2	-	<3.3	<12.2	<3.3	<12.2	10	50	
Silver, Total	-	<12.2	<3.2	-	<12.2	<3.2	-	<12.2	<3.2	<12.2	<3.2	10	20	
Mercury, Total	-	0.084 J	<0.084	-	<0.084	<0.084	-	<0.084	<0.084	<0.084	<0.084	0.2	2	

Well ID	GMMW-5			GMMW-6			GMMW-7			FVMW-20		NR 140 Preventive Action Limit (PAL)	NR 140 Enforcement Standard (ES)	
Sample Collection Date	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19	11/18/93	11/19/18	11/19/19	11/19/18	11/18/19			
Dissolved Metals (ug/L)														
Arsenic, Dissolved	<10	<8.3	<13.2	<10	<8.3	<13.2	<10	<8.3	<13.2	<8.3	<13.2	1	10	
Barium, Dissolved	<120	108	104	<120	115	97.8	190	143	122	60.7	82.6	400	2,000	
Cadmium, Dissolved	<5	<1.3	<1.3	<5	<1.3	<1.3	<5	<1.3	<1.3	<1.3	<1.3	0.5	5	
Chromium, Dissolved	<10	<2.5	<2.5	<10	<2.5	<2.5	<10	<2.5	<2.5	2.9 J	<2.5	10	100	
Lead, Dissolved	<5	<5.9	<6.4	<5	<5.9	<6.4	<5	<5.9	<6.4	<5.9	<6.4	1.5	15	
Selenium, Dissolved	<10	<3.3	<12.3	<10	<3.3	<12.3	<10	<3.3	<12.3	<3.3	<12.3	10	50	
Silver, Dissolved	<0.2	<12.2	<3.2	<0.2	<12.2	<3.2	<0.2	<12.2	<3.2	<12.2	<3.2	10	50	
Mercury, Dissolved	<10	<u>0.26 J</u>	<0.084	<10	<0.084	<0.084	<10	<0.084	<0.084	<0.084	<0.084	<u>0.2</u>	2	

Note:

ug/L - micrograms per liter (equivalent to parts per billion)

ES - enforcement standard, as established in Wisconsin Administrative Code Chapter NR 140

PAL - preventive action limit, as established in Wisconsin Administrative Code Chapter NR 140

Bold - concentration exceeds NR 140 ES

Italics and underline - concentration exceeds NR 140 PAL

< less than the specified detection limit

(J) - estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

FVMW-28 (not shown) well was observed to be "dry" during multiple sampling events - no groundwater samples have been recorded for this well

11/19/2018 FVMW-21 and FVMW-22 No Sample (Well Dry)

11/19/2019 FVMW-21 and FVMW-22 No Sample (Well Dry)

Appendix C

Drake Consulting Group, LLC
Standard Procedures for Environmental Investigations

SOIL SAMPLING PROCEDURES

The actual procedures utilized to collect soil samples at a site may deviate from Drake's standard procedures for environmental investigations, described below, which were designed to assist in allowing its services to be performed in general accordance with applicable industry standards (i.e., standards of the American Society for Testing and Materials {ASTM}) and Wisconsin Department of Natural Resources (DNR) regulations and guidelines (Wisconsin Administrative Code Chapter NR 700.13 and the Leaking Underground Storage Tank {LUST} Petroleum Analytical and Quality Assurance Guidance, July 1993, PUBL-SW-130 93 for petroleum related investigations).

Surface Soil Sampling

Remove grass cover taking care not to lose clumps of soil attached to the roots. Collect soil sample from a depth of 0 to 24 inches using a decontaminated stainless-steel trowel, shovel or hand auger. Collect sample for laboratory analysis following "laboratory sample" soil collection procedure. The samples collected by this procedure provide a general indication of surface conditions and general stratigraphic changes; the samples obtained in this manner can be placed into containers for future classification, screening, and/or laboratory analysis.

Split-Barrel Sampling Procedure

The split-barrel sampling procedure as defined in ASTM E-1586 (84) consists of driving a 2-inch outside diameter thick-walled, hollow sampler into the soil a distance of 18 inches with a 140-pound hammer falling 30 inches (via pneumatic or mechanical drop methods). The samples collected by this procedure provide a general indication of subsurface conditions and general stratigraphic changes; the samples obtained in this manner can be placed into containers for future classification, screening, and/or laboratory analysis.

Soil Probe Sampling Procedure

The soil probe sampling procedure consists of advancing a 2-inch outside diameter or larger, thick-walled hollow sampler that typically contains a rigid plastic sheath. The probe sampler is hydraulically advanced into the soil (typically at 2-foot or 4-foot

vertical intervals. As the sampler is advanced, soil is collected in either the sampler or the plastic sheath. The samples collected by this procedure provide a general indication of subsurface conditions and general stratigraphic changes; the samples obtained in this manner can be placed into containers for future classification, screening, and/or laboratory analysis.

“Laboratory Sample” Soil Collection/Handling Procedure

In general, a portion of each soil sample obtained is transferred into a laboratory-provided sample container and preserved, if required by the analytical method selected. Following sample collection, remove rock fragments, vegetation debris, and roots. Place the required soil volumes in the laboratory provided sample bottles for laboratory analyses, tightly cap, and fill in all required information on the bottle label. The samples destined for laboratory analysis are placed into a sample cooler filled with ice and submitted to the laboratory for analysis. A portion of the soil sample obtained is also placed in a container (either glass jar, plastic jar or plastic bag) for field-screening purposes (see PID Screening Procedures below).

PID SCREENING PROCEDURES

To evaluate soils for the presence of volatile organic vapors commonly emitted by volatile organic compounds (VOCs), soil samples are typically field-screened when practicable using a photoionization detector (PID). The PID provides a qualitative (versus quantitative) analysis of volatile organic vapors with ionization potentials less than 10.6 electron volts (eV), which include those vapors present in the more volatile petroleum fuels and solvents. PID readings are measured and recorded in instrument units (iu or iu's).

PID screening typically involves subjecting containerized samples to analysis by inserting the probe end of the PID into the headspace of the container. In most instances, the sample containers are prepped prior to screening by allowing the samples to “warm” prior to screening. The container is agitated slightly to allow vapors into the headspace formed in the container, and the highest reading on the meter is recorded.

To evaluate the potential significance of PID readings, Drake generally considers PID readings greater than 10 iu to be an indicator of potential VOC contamination. It should

be noted that lower readings do not necessarily indicate the absence of contamination, as nonvolatile contaminants may be present which are not recorded by the instrument and the instrument itself can be susceptible to interference due to moisture, temperature, humidity, battery condition and other variables. Therefore, PID readings are not considered as singly reliable indicators as to the presence or absence of contaminants within the soil samples screened using such an instrument. In addition, the PID does not identify the types/nature of chemicals present. As such, the screening results are generally utilized as only a part of the site investigation/remedial processes in the overall evaluation and characterization of a site and the types of contaminants known to be, or potentially present, should be evaluated and the limitations of the PID meter, and physical observations (soil staining or odors) are also to be considered during the evaluation process. Proper calibration of the PID instrument is to be performed prior to all soil sampling

GROUNDWATER SAMPLING PROCEDURES

The actual procedures utilized to sample groundwater at a site may deviate from Drake's standard procedures, described below, which are in general accordance with Wisconsin Department of Natural Resources (DNR) regulations and guidelines (Wisconsin Administrative Code NR 141; the DNR's Groundwater Sampling Field Manual, PUBL-DG-038 96, September 1996; and the DNR's Groundwater Sampling Desk Reference, PUBL-DG-037 96, September 1996.)

Monitoring Well Construction Procedure

Groundwater monitoring wells are typically constructed in general accordance with DNR requirements as presented in Wisconsin Administrative Code Chapter NR 141. Each monitoring well consists of a 10-foot to 15-foot length of polyvinyl chloride (PVC) screen with a threaded-joint solid PVC riser pipe extending from the screened portion of the well to the ground surface. The PVC riser pipe is cut off either slightly below the ground surface for a flush-mount well and fitted with a locking cap for security or is installed to extend above the ground surface and is fitted with a protective locking metal pipe cover (pro-top) .

The annulus between the PVC pipe riser and screen and outer wall of the borehole is backfilled with a commercially packaged coarse sand (to serve as a filter pack) from the

base of the borehole to an elevation approximately ½ foot above the screened portion of the well. A ½-foot layer of fine sand is placed above each filter pack, and a bentonite annular space seal is placed above the fine sand to a depth of 1 foot below the ground surface. The driller embeds a metal protector cover (flush-mount) over each flush-mount well in a surface seal for security.

Well Development/Purging Procedure

Wisconsin Administrative Code Chapter NR 141.21 requires well development consist of the removal (purging) of ten well volumes of water or a sufficient volume to produce sediment-free water from wells that cannot be purged dry, or consist of slowly removing the stagnant water in a well that can be purged dry. In accordance with a guidance document published by the DNR (Groundwater Sampling Field Manual, PUBL-DG-038 96, September 1996), wells that are purged dry should be allowed to recover and, if time permits, should be purged a second time prior to sample collection.

Monitoring wells are developed following construction using a disposable bailer or pump. Purged water is collected in labeled 55-gallon drums and stored at the subject property pending disposal.

Monitoring Well Sample Collection Procedure

Groundwater monitoring wells are typically allowed to recover following development and prior to sample collection. To reduce the potential for cross-contamination, the wells suspected to be the least contaminated are sampled first during each sampling round. Following well purging with a disposable bailer, each sample is collected and transferred to the appropriate containers depending on which laboratory parameters are to be analyzed.

In addition to the samples collected from the monitoring wells, a trip blank is submitted to the laboratory for quality control analyses for each sampling round. The trip blank is a laboratory-supplied water sample that remains with the groundwater samples and field blank. Analysis of a trip blank can identify contamination that may occur as a result of outside influences (e.g., laboratory contamination).

The water samples are stored on ice in a cooler and submitted to the laboratory within allowable holding times.

Screen Point Sampling Procedure

When utilized, the screen point sampling device is used to sample groundwater from soil boring locations where a monitoring well is not installed. The screen point sampling device consists of a screen point sampler that is encased in a perforated stainless steel sleeve. To collect groundwater samples, the screen point sampler is driven into the probehole/borehole. When the desired sampling depth is reached, the sampler is retracted approximately 2 feet and the expendable drive point is disengaged. The inner core of the sampler is pushed further into the probehole, and water is allowed to enter the sampler and connected probe rods. Groundwater is typically recovered by pumping or bailing water collected in the open probe rods. Alternately, plastic tubing from the surface may be connected directly to the sampler screen using a soil probe post run fitting, and samples may be collected using a peristaltic pump or vacuum source. To avoid cross-contamination between probeholes, the plastic tubing is replaced prior to sampling at each probehole location.

Each sample is collected by transferring samples directly from the tubing to the appropriate sample containers depending on which laboratory parameters are to be analyzed and the amount of groundwater that can be recovered. In addition to the samples collected from the soil boring, a trip blank is generally submitted to the laboratory for quality control analyses. The trip blank is a laboratory-supplied water sample that remains with the groundwater samples and field blank. Analysis of a trip blank can identify contamination that may occur as a result of outside influences (e.g., laboratory contamination). The water samples are stored on ice in a cooler and submitted to the laboratory within allowable holding times.

Appendix D

September 30, 2020

Chelsea Corson
Drake Consulting Group, LLC
118 N. Green Bay Road
Suite 2
Thiensville, WI 53092

RE: Project: J16001 AMCAST
Pace Project No.: 40214939

Dear Chelsea Corson:

Enclosed are the analytical results for sample(s) received by the laboratory on September 18, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Steven Mieczko
steve.mieczko@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Carly Corson, Drake Consulting Group, LLC
Tim Giuliani, Drake Consulting Group, LLC



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: J16001 AMCAST

Pace Project No.: 40214939

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

Virginia VELAP ID: 460263

South Carolina Certification #: 83006001

Texas Certification #: T104704529-14-1

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-16-00157

Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: J16001 AMCAST
Pace Project No.: 40214939

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40214939001	CB-1	Solid	09/14/20 10:25	09/18/20 08:05
40214939002	FVSTM-9	Solid	09/14/20 10:50	09/18/20 08:05
40214939003	FVSTM-10	Solid	09/15/20 08:40	09/18/20 08:05
40214939004	FVSTM-12	Solid	09/14/20 13:50	09/18/20 08:05
40214939005	CB-2	Solid	09/15/20 11:45	09/18/20 08:05
40214939006	ENSTM-49	Solid	09/14/20 14:10	09/18/20 08:05
40214939007	CB-3	Solid	09/15/20 12:20	09/18/20 08:05
40214939008	ENSTM-47	Solid	09/15/20 12:00	09/18/20 08:05
40214939009	ENSTM-46	Solid	09/14/20 11:50	09/18/20 08:05
40214939010	ENSTM-7	Solid	09/15/20 14:00	09/18/20 08:05
40214939011	MH-1	Solid	09/14/20 12:55	09/18/20 08:05
40214939012	MH-2	Solid	09/14/20 12:50	09/18/20 08:05

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SAMPLE ANALYTE COUNT

Project: J16001 AMCAST
Pace Project No.: 40214939

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40214939001	CB-1	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
40214939002	FVSTM-9	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
40214939003	FVSTM-10	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
40214939004	FVSTM-12	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
40214939005	CB-2	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
40214939006	ENSTM-49	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
40214939007	CB-3	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
40214939008	ENSTM-47	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G

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SAMPLE ANALYTE COUNT

Project: J16001 AMCAST
Pace Project No.: 40214939

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40214939009	ENSTM-46	EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
		EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
40214939010	ENSTM-7	EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
		EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
40214939011	MH-1	ASTM D2974-87	MLR	1	PASI-G
		EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G
40214939012	MH-2	EPA 8082	BDS	10	PASI-G
		EPA 6010	TXW	7	PASI-G
		EPA 7471	AJT	1	PASI-G
		EPA 8270 by SIM	JJB	20	PASI-G
		ASTM D2974-87	MLR	1	PASI-G

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: J16001 AMCAST
Pace Project No.: 40214939

Method: EPA 8082
Description: 8082 GCS PCB
Client: Drake Consulting Group, LLC
Date: September 30, 2020

General Information:

12 samples were analyzed for EPA 8082 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3541 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 365936

S0: Surrogate recovery outside laboratory control limits.

- MH-2 (Lab ID: 40214939012)
 - Tetrachloro-m-xylene (S)

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- CB-2 (Lab ID: 40214939005)
 - Decachlorobiphenyl (S)
 - Tetrachloro-m-xylene (S)
- CB-3 (Lab ID: 40214939007)
 - Decachlorobiphenyl (S)
 - Tetrachloro-m-xylene (S)
- ENSTM-47 (Lab ID: 40214939008)
 - Decachlorobiphenyl (S)
 - Tetrachloro-m-xylene (S)
- ENSTM-49 (Lab ID: 40214939006)
 - Decachlorobiphenyl (S)
 - Tetrachloro-m-xylene (S)
- FVSTM-9 (Lab ID: 40214939002)
 - Decachlorobiphenyl (S)
 - Tetrachloro-m-xylene (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

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PROJECT NARRATIVE

Project: J16001 AMCAST

Pace Project No.: 40214939

Method: EPA 8082

Description: 8082 GCS PCB

Client: Drake Consulting Group, LLC

Date: September 30, 2020

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: J16001 AMCAST

Pace Project No.: 40214939

Method: EPA 6010

Description: 6010 MET ICP

Client: Drake Consulting Group, LLC

Date: September 30, 2020

General Information:

12 samples were analyzed for EPA 6010 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3050 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 366182

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40214939007

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2116694)
 - Chromium
 - Lead
- MSD (Lab ID: 2116695)
 - Chromium
 - Lead

Additional Comments:

Analyte Comments:

QC Batch: 366182

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- CB-2 (Lab ID: 40214939005)
 - Arsenic

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PROJECT NARRATIVE

Project: J16001 AMCAST

Pace Project No.: 40214939

Method: EPA 6010

Description: 6010 MET ICP

Client: Drake Consulting Group, LLC

Date: September 30, 2020

Analyte Comments:

QC Batch: 366182

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- CB-3 (Lab ID: 40214939007)
 - Arsenic
 - Selenium
- ENSTM-46 (Lab ID: 40214939009)
 - Arsenic
- ENSTM-49 (Lab ID: 40214939006)
 - Arsenic
 - Selenium
- ENSTM-7 (Lab ID: 40214939010)
 - Arsenic
- MH-1 (Lab ID: 40214939011)
 - Arsenic

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PROJECT NARRATIVE

Project: J16001 AMCAST

Pace Project No.: 40214939

Method: EPA 7471

Description: 7471 Mercury

Client: Drake Consulting Group, LLC

Date: September 30, 2020

General Information:

12 samples were analyzed for EPA 7471 by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7471 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: J16001 AMCAST

Pace Project No.: 40214939

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM

Client: Drake Consulting Group, LLC

Date: September 30, 2020

General Information:

12 samples were analyzed for EPA 8270 by SIM by Pace Analytical Services Green Bay. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 366194

S0: Surrogate recovery outside laboratory control limits.

- ENSTM-46 (Lab ID: 40214939009)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)
- ENSTM-47 (Lab ID: 40214939008)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- CB-2 (Lab ID: 40214939005)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)
- CB-3 (Lab ID: 40214939007)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)
- ENSTM-49 (Lab ID: 40214939006)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)
- ENSTM-7 (Lab ID: 40214939010)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)

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PROJECT NARRATIVE

Project: J16001 AMCAST

Pace Project No.: 40214939

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM

Client: Drake Consulting Group, LLC

Date: September 30, 2020

QC Batch: 366194

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- FVSTM-10 (Lab ID: 40214939003)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)
- FVSTM-12 (Lab ID: 40214939004)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)
- MH-1 (Lab ID: 40214939011)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)
- MH-2 (Lab ID: 40214939012)
 - 2-Fluorobiphenyl (S)
 - Terphenyl-d14 (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: J16001 AMCAST

Pace Project No.: 40214939

Sample: CB-1 **Lab ID: 40214939001** Collected: 09/14/20 10:25 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<26.8	ug/kg	88.2	26.8	1	09/21/20 06:45	09/21/20 23:48	12674-11-2	
PCB-1221 (Aroclor 1221)	<26.8	ug/kg	88.2	26.8	1	09/21/20 06:45	09/21/20 23:48	11104-28-2	
PCB-1232 (Aroclor 1232)	<26.8	ug/kg	88.2	26.8	1	09/21/20 06:45	09/21/20 23:48	11141-16-5	
PCB-1242 (Aroclor 1242)	<26.8	ug/kg	88.2	26.8	1	09/21/20 06:45	09/21/20 23:48	53469-21-9	
PCB-1248 (Aroclor 1248)	66.7J	ug/kg	88.2	26.8	1	09/21/20 06:45	09/21/20 23:48	12672-29-6	
PCB-1254 (Aroclor 1254)	121	ug/kg	88.2	26.8	1	09/21/20 06:45	09/21/20 23:48	11097-69-1	
PCB-1260 (Aroclor 1260)	<26.8	ug/kg	88.2	26.8	1	09/21/20 06:45	09/21/20 23:48	11096-82-5	
PCB, Total	188	ug/kg	88.2	26.8	1	09/21/20 06:45	09/21/20 23:48	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	69-115		1	09/21/20 06:45	09/21/20 23:48	877-09-8	
Decachlorobiphenyl (S)	76	%	62-104		1	09/21/20 06:45	09/21/20 23:48	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	2.8J	mg/kg	8.3	2.5	1	09/23/20 07:19	09/23/20 17:56	7440-38-2	
Barium	41.2	mg/kg	0.85	0.26	1	09/23/20 07:19	09/23/20 17:56	7440-39-3	
Cadmium	0.43J	mg/kg	0.85	0.23	1	09/23/20 07:19	09/23/20 17:56	7440-43-9	
Chromium	12.7	mg/kg	1.7	0.47	1	09/23/20 07:19	09/23/20 17:56	7440-47-3	
Lead	22.2	mg/kg	3.4	1.0	1	09/23/20 07:19	09/23/20 17:56	7439-92-1	
Selenium	<2.2	mg/kg	7.4	2.2	1	09/23/20 07:19	09/23/20 17:56	7782-49-2	
Silver	<0.52	mg/kg	1.7	0.52	1	09/23/20 07:19	09/23/20 17:56	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	0.024J	mg/kg	0.058	0.016	1	09/25/20 08:59	09/28/20 11:13	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	3.9J	ug/kg	29.5	3.8	1	09/23/20 08:18	09/23/20 13:22	83-32-9	
Acenaphthylene	<3.7	ug/kg	29.5	3.7	1	09/23/20 08:18	09/23/20 13:22	208-96-8	
Anthracene	23.5J	ug/kg	29.5	3.7	1	09/23/20 08:18	09/23/20 13:22	120-12-7	
Benzo(a)anthracene	181	ug/kg	29.5	3.8	1	09/23/20 08:18	09/23/20 13:22	56-55-3	
Benzo(a)pyrene	238	ug/kg	29.5	3.3	1	09/23/20 08:18	09/23/20 13:22	50-32-8	
Benzo(b)fluoranthene	349	ug/kg	29.5	4.1	1	09/23/20 08:18	09/23/20 13:22	205-99-2	
Benzo(g,h,i)perylene	176	ug/kg	29.5	5.2	1	09/23/20 08:18	09/23/20 13:22	191-24-2	
Benzo(k)fluoranthene	154	ug/kg	29.5	3.8	1	09/23/20 08:18	09/23/20 13:22	207-08-9	
Chrysene	255	ug/kg	29.5	5.6	1	09/23/20 08:18	09/23/20 13:22	218-01-9	
Dibenz(a,h)anthracene	47.9	ug/kg	29.5	4.1	1	09/23/20 08:18	09/23/20 13:22	53-70-3	
Fluoranthene	538	ug/kg	29.5	3.5	1	09/23/20 08:18	09/23/20 13:22	206-44-0	
Fluorene	4.7J	ug/kg	29.5	3.5	1	09/23/20 08:18	09/23/20 13:22	86-73-7	
Indeno(1,2,3-cd)pyrene	158	ug/kg	29.5	6.1	1	09/23/20 08:18	09/23/20 13:22	193-39-5	
1-Methylnaphthalene	<4.3	ug/kg	29.5	4.3	1	09/23/20 08:18	09/23/20 13:22	90-12-0	
2-Methylnaphthalene	<4.3	ug/kg	29.5	4.3	1	09/23/20 08:18	09/23/20 13:22	91-57-6	
Naphthalene	<2.9	ug/kg	29.5	2.9	1	09/23/20 08:18	09/23/20 13:22	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: CB-1 **Lab ID: 40214939001** Collected: 09/14/20 10:25 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	151	ug/kg	29.5	3.4	1	09/23/20 08:18	09/23/20 13:22	85-01-8	
Pyrene	332	ug/kg	29.5	4.3	1	09/23/20 08:18	09/23/20 13:22	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	74	%	17-100		1	09/23/20 08:18	09/23/20 13:22	321-60-8	
Terphenyl-d14 (S)	80	%	17-98		1	09/23/20 08:18	09/23/20 13:22	1718-51-0	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	43.2	%	0.10	0.10	1		09/22/20 11:13		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: FVSTM-9 **Lab ID: 40214939002** Collected: 09/14/20 10:50 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<341	ug/kg	1120	341	15	09/21/20 06:45	09/22/20 00:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<341	ug/kg	1120	341	15	09/21/20 06:45	09/22/20 00:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<341	ug/kg	1120	341	15	09/21/20 06:45	09/22/20 00:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<341	ug/kg	1120	341	15	09/21/20 06:45	09/22/20 00:12	53469-21-9	
PCB-1248 (Aroclor 1248)	8490	ug/kg	1120	341	15	09/21/20 06:45	09/22/20 00:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<341	ug/kg	1120	341	15	09/21/20 06:45	09/22/20 00:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<341	ug/kg	1120	341	15	09/21/20 06:45	09/22/20 00:12	11096-82-5	
PCB, Total	8490	ug/kg	1120	341	15	09/21/20 06:45	09/22/20 00:12	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0	%	69-115		15	09/21/20 06:45	09/22/20 00:12	877-09-8	S4
Decachlorobiphenyl (S)	0	%	62-104		15	09/21/20 06:45	09/22/20 00:12	2051-24-3	S4
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	7.5	mg/kg	7.1	2.1	1	09/23/20 07:19	09/23/20 18:06	7440-38-2	
Barium	46.4	mg/kg	0.73	0.22	1	09/23/20 07:19	09/23/20 18:06	7440-39-3	
Cadmium	1.8	mg/kg	0.73	0.19	1	09/23/20 07:19	09/23/20 18:06	7440-43-9	
Chromium	20.2	mg/kg	1.5	0.40	1	09/23/20 07:19	09/23/20 18:06	7440-47-3	
Lead	114	mg/kg	2.9	0.87	1	09/23/20 07:19	09/23/20 18:06	7439-92-1	
Selenium	<1.9	mg/kg	6.4	1.9	1	09/23/20 07:19	09/23/20 18:06	7782-49-2	
Silver	1.1J	mg/kg	1.5	0.45	1	09/23/20 07:19	09/23/20 18:06	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	0.098	mg/kg	0.049	0.014	1	09/25/20 08:59	09/28/20 11:15	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	242	ug/kg	225	29.2	1	09/23/20 08:18	09/23/20 21:46	83-32-9	
Acenaphthylene	36.1J	ug/kg	225	28.4	1	09/23/20 08:18	09/23/20 21:46	208-96-8	
Anthracene	289	ug/kg	225	27.9	1	09/23/20 08:18	09/23/20 21:46	120-12-7	
Benzo(a)anthracene	602	ug/kg	225	29.1	1	09/23/20 08:18	09/23/20 21:46	56-55-3	
Benzo(a)pyrene	652	ug/kg	225	25.6	1	09/23/20 08:18	09/23/20 21:46	50-32-8	
Benzo(b)fluoranthene	810	ug/kg	225	31.2	1	09/23/20 08:18	09/23/20 21:46	205-99-2	
Benzo(g,h,i)perylene	475	ug/kg	225	39.5	1	09/23/20 08:18	09/23/20 21:46	191-24-2	
Benzo(k)fluoranthene	398	ug/kg	225	28.8	1	09/23/20 08:18	09/23/20 21:46	207-08-9	
Chrysene	783	ug/kg	225	42.4	1	09/23/20 08:18	09/23/20 21:46	218-01-9	
Dibenz(a,h)anthracene	150J	ug/kg	225	31.1	1	09/23/20 08:18	09/23/20 21:46	53-70-3	
Fluoranthene	1520	ug/kg	225	26.6	1	09/23/20 08:18	09/23/20 21:46	206-44-0	
Fluorene	308	ug/kg	225	27.0	1	09/23/20 08:18	09/23/20 21:46	86-73-7	
Indeno(1,2,3-cd)pyrene	327	ug/kg	225	46.9	1	09/23/20 08:18	09/23/20 21:46	193-39-5	
1-Methylnaphthalene	65.0J	ug/kg	225	32.9	1	09/23/20 08:18	09/23/20 21:46	90-12-0	
2-Methylnaphthalene	102J	ug/kg	225	32.9	1	09/23/20 08:18	09/23/20 21:46	91-57-6	
Naphthalene	343	ug/kg	225	21.9	1	09/23/20 08:18	09/23/20 21:46	91-20-3	

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ANALYTICAL RESULTS

Project: J16001 AMCAST

Pace Project No.: 40214939

Sample: FVSTM-9 **Lab ID: 40214939002** Collected: 09/14/20 10:50 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	1170	ug/kg	225	25.8	1	09/23/20 08:18	09/23/20 21:46	85-01-8	
Pyrene	1070	ug/kg	225	33.1	1	09/23/20 08:18	09/23/20 21:46	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	54	%	17-100		1	09/23/20 08:18	09/23/20 21:46	321-60-8	
Terphenyl-d14 (S)	55	%	17-98		1	09/23/20 08:18	09/23/20 21:46	1718-51-0	
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	33.2	%	0.10	0.10	1		09/22/20 11:13		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: FVSTM-10 **Lab ID: 40214939003** Collected: 09/15/20 08:40 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<133	ug/kg	437	133	4	09/21/20 06:45	09/22/20 00:36	12674-11-2	
PCB-1221 (Aroclor 1221)	<133	ug/kg	437	133	4	09/21/20 06:45	09/22/20 00:36	11104-28-2	
PCB-1232 (Aroclor 1232)	<133	ug/kg	437	133	4	09/21/20 06:45	09/22/20 00:36	11141-16-5	
PCB-1242 (Aroclor 1242)	<133	ug/kg	437	133	4	09/21/20 06:45	09/22/20 00:36	53469-21-9	
PCB-1248 (Aroclor 1248)	2320	ug/kg	437	133	4	09/21/20 06:45	09/22/20 00:36	12672-29-6	
PCB-1254 (Aroclor 1254)	4330	ug/kg	437	133	4	09/21/20 06:45	09/22/20 00:36	11097-69-1	
PCB-1260 (Aroclor 1260)	698	ug/kg	437	133	4	09/21/20 06:45	09/22/20 00:36	11096-82-5	
PCB, Total	7350	ug/kg	437	133	4	09/21/20 06:45	09/22/20 00:36	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	75	%	69-115		4	09/21/20 06:45	09/22/20 00:36	877-09-8	
Decachlorobiphenyl (S)	81	%	62-104		4	09/21/20 06:45	09/22/20 00:36	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	10.2J	mg/kg	10.5	3.1	1	09/23/20 07:19	09/23/20 18:09	7440-38-2	
Barium	101	mg/kg	1.1	0.32	1	09/23/20 07:19	09/23/20 18:09	7440-39-3	
Cadmium	1.6	mg/kg	1.1	0.29	1	09/23/20 07:19	09/23/20 18:09	7440-43-9	
Chromium	65.0	mg/kg	2.1	0.60	1	09/23/20 07:19	09/23/20 18:09	7440-47-3	
Lead	178	mg/kg	4.3	1.3	1	09/23/20 07:19	09/23/20 18:09	7439-92-1	
Selenium	<2.8	mg/kg	9.4	2.8	1	09/23/20 07:19	09/23/20 18:09	7782-49-2	
Silver	1.2J	mg/kg	2.1	0.66	1	09/23/20 07:19	09/23/20 18:09	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	0.28	mg/kg	0.070	0.020	1	09/25/20 08:59	09/28/20 11:18	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	<474	ug/kg	3650	474	100	09/23/20 08:18	09/23/20 22:04	83-32-9	
Acenaphthylene	<460	ug/kg	3650	460	100	09/23/20 08:18	09/23/20 22:04	208-96-8	
Anthracene	1740J	ug/kg	3650	453	100	09/23/20 08:18	09/23/20 22:04	120-12-7	
Benzo(a)anthracene	10000	ug/kg	3650	472	100	09/23/20 08:18	09/23/20 22:04	56-55-3	
Benzo(a)pyrene	12100	ug/kg	3650	415	100	09/23/20 08:18	09/23/20 22:04	50-32-8	
Benzo(b)fluoranthene	17700	ug/kg	3650	507	100	09/23/20 08:18	09/23/20 22:04	205-99-2	
Benzo(g,h,i)perylene	7790	ug/kg	3650	641	100	09/23/20 08:18	09/23/20 22:04	191-24-2	
Benzo(k)fluoranthene	7400	ug/kg	3650	467	100	09/23/20 08:18	09/23/20 22:04	207-08-9	
Chrysene	13700	ug/kg	3650	688	100	09/23/20 08:18	09/23/20 22:04	218-01-9	
Dibenz(a,h)anthracene	2270J	ug/kg	3650	505	100	09/23/20 08:18	09/23/20 22:04	53-70-3	
Fluoranthene	29100	ug/kg	3650	432	100	09/23/20 08:18	09/23/20 22:04	206-44-0	
Fluorene	<438	ug/kg	3650	438	100	09/23/20 08:18	09/23/20 22:04	86-73-7	
Indeno(1,2,3-cd)pyrene	6920	ug/kg	3650	761	100	09/23/20 08:18	09/23/20 22:04	193-39-5	
1-Methylnaphthalene	<533	ug/kg	3650	533	100	09/23/20 08:18	09/23/20 22:04	90-12-0	
2-Methylnaphthalene	<534	ug/kg	3650	534	100	09/23/20 08:18	09/23/20 22:04	91-57-6	
Naphthalene	<356	ug/kg	3650	356	100	09/23/20 08:18	09/23/20 22:04	91-20-3	

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: FVSTM-10 **Lab ID: 40214939003** Collected: 09/15/20 08:40 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	10100	ug/kg	3650	418	100	09/23/20 08:18	09/23/20 22:04	85-01-8	
Pyrene	18500	ug/kg	3650	536	100	09/23/20 08:18	09/23/20 22:04	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		100	09/23/20 08:18	09/23/20 22:04	321-60-8	S4
Terphenyl-d14 (S)	0	%	17-98		100	09/23/20 08:18	09/23/20 22:04	1718-51-0	S4
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	54.2	%	0.10	0.10	1		09/22/20 11:13		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: FVSTM-12 **Lab ID: 40214939004** Collected: 09/14/20 13:50 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<69.9	ug/kg	229	69.9	2	09/21/20 06:45	09/22/20 01:01	12674-11-2	
PCB-1221 (Aroclor 1221)	<69.9	ug/kg	229	69.9	2	09/21/20 06:45	09/22/20 01:01	11104-28-2	
PCB-1232 (Aroclor 1232)	<69.9	ug/kg	229	69.9	2	09/21/20 06:45	09/22/20 01:01	11141-16-5	
PCB-1242 (Aroclor 1242)	<69.9	ug/kg	229	69.9	2	09/21/20 06:45	09/22/20 01:01	53469-21-9	
PCB-1248 (Aroclor 1248)	2260	ug/kg	229	69.9	2	09/21/20 06:45	09/22/20 01:01	12672-29-6	
PCB-1254 (Aroclor 1254)	1790	ug/kg	229	69.9	2	09/21/20 06:45	09/22/20 01:01	11097-69-1	
PCB-1260 (Aroclor 1260)	260	ug/kg	229	69.9	2	09/21/20 06:45	09/22/20 01:01	11096-82-5	
PCB, Total	4310	ug/kg	229	69.9	2	09/21/20 06:45	09/22/20 01:01	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	74	%	69-115		2	09/21/20 06:45	09/22/20 01:01	877-09-8	
Decachlorobiphenyl (S)	70	%	62-104		2	09/21/20 06:45	09/22/20 01:01	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	3.7J	mg/kg	10.9	3.3	1	09/23/20 07:19	09/23/20 18:11	7440-38-2	
Barium	42.5	mg/kg	1.1	0.33	1	09/23/20 07:19	09/23/20 18:11	7440-39-3	
Cadmium	1.2	mg/kg	1.1	0.30	1	09/23/20 07:19	09/23/20 18:11	7440-43-9	
Chromium	34.7	mg/kg	2.2	0.62	1	09/23/20 07:19	09/23/20 18:11	7440-47-3	
Lead	71.8	mg/kg	4.5	1.3	1	09/23/20 07:19	09/23/20 18:11	7439-92-1	
Selenium	<2.9	mg/kg	9.7	2.9	1	09/23/20 07:19	09/23/20 18:11	7782-49-2	
Silver	<0.68	mg/kg	2.2	0.68	1	09/23/20 07:19	09/23/20 18:11	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	0.038J	mg/kg	0.076	0.022	1	09/25/20 08:59	09/28/20 11:20	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	264J	ug/kg	1530	199	20	09/23/20 08:18	09/23/20 20:54	83-32-9	
Acenaphthylene	<193	ug/kg	1530	193	20	09/23/20 08:18	09/23/20 20:54	208-96-8	
Anthracene	1580	ug/kg	1530	190	20	09/23/20 08:18	09/23/20 20:54	120-12-7	
Benzo(a)anthracene	10700	ug/kg	1530	198	20	09/23/20 08:18	09/23/20 20:54	56-55-3	
Benzo(a)pyrene	14000	ug/kg	1530	174	20	09/23/20 08:18	09/23/20 20:54	50-32-8	
Benzo(b)fluoranthene	22600	ug/kg	1530	213	20	09/23/20 08:18	09/23/20 20:54	205-99-2	
Benzo(g,h,i)perylene	11000	ug/kg	1530	269	20	09/23/20 08:18	09/23/20 20:54	191-24-2	
Benzo(k)fluoranthene	9980	ug/kg	1530	196	20	09/23/20 08:18	09/23/20 20:54	207-08-9	
Chrysene	16800	ug/kg	1530	289	20	09/23/20 08:18	09/23/20 20:54	218-01-9	
Dibenz(a,h)anthracene	3060	ug/kg	1530	212	20	09/23/20 08:18	09/23/20 20:54	53-70-3	
Fluoranthene	37000	ug/kg	1530	182	20	09/23/20 08:18	09/23/20 20:54	206-44-0	
Fluorene	374J	ug/kg	1530	184	20	09/23/20 08:18	09/23/20 20:54	86-73-7	
Indeno(1,2,3-cd)pyrene	9950	ug/kg	1530	320	20	09/23/20 08:18	09/23/20 20:54	193-39-5	
1-Methylnaphthalene	<224	ug/kg	1530	224	20	09/23/20 08:18	09/23/20 20:54	90-12-0	
2-Methylnaphthalene	<224	ug/kg	1530	224	20	09/23/20 08:18	09/23/20 20:54	91-57-6	
Naphthalene	<150	ug/kg	1530	150	20	09/23/20 08:18	09/23/20 20:54	91-20-3	

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: FVSTM-12 **Lab ID: 40214939004** Collected: 09/14/20 13:50 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	10600	ug/kg	1530	176	20	09/23/20 08:18	09/23/20 20:54	85-01-8	
Pyrene	23100	ug/kg	1530	226	20	09/23/20 08:18	09/23/20 20:54	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		20	09/23/20 08:18	09/23/20 20:54	321-60-8	S4
Terphenyl-d14 (S)	0	%	17-98		20	09/23/20 08:18	09/23/20 20:54	1718-51-0	S4
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	56.4	%	0.10	0.10	1		09/22/20 11:14		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: CB-2 **Lab ID: 40214939005** Collected: 09/15/20 11:45 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<23400	ug/kg	76900	23400	1000	09/21/20 06:45	09/22/20 14:05	12674-11-2	
PCB-1221 (Aroclor 1221)	<23400	ug/kg	76900	23400	1000	09/21/20 06:45	09/22/20 14:05	11104-28-2	
PCB-1232 (Aroclor 1232)	<23400	ug/kg	76900	23400	1000	09/21/20 06:45	09/22/20 14:05	11141-16-5	
PCB-1242 (Aroclor 1242)	<23400	ug/kg	76900	23400	1000	09/21/20 06:45	09/22/20 14:05	53469-21-9	
PCB-1248 (Aroclor 1248)	966000	ug/kg	76900	23400	1000	09/21/20 06:45	09/22/20 14:05	12672-29-6	
PCB-1254 (Aroclor 1254)	<23400	ug/kg	76900	23400	1000	09/21/20 06:45	09/22/20 14:05	11097-69-1	
PCB-1260 (Aroclor 1260)	62700J	ug/kg	76900	23400	1000	09/21/20 06:45	09/22/20 14:05	11096-82-5	
PCB, Total	1030000	ug/kg	76900	23400	1000	09/21/20 06:45	09/22/20 14:05	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0	%	69-115		1000	09/21/20 06:45	09/22/20 14:05	877-09-8	S4
Decachlorobiphenyl (S)	0	%	62-104		1000	09/21/20 06:45	09/22/20 14:05	2051-24-3	S4
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	7.1J	mg/kg	13.9	4.2	2	09/23/20 07:19	09/24/20 16:46	7440-38-2	D3
Barium	51.7	mg/kg	0.71	0.21	1	09/23/20 07:19	09/23/20 18:14	7440-39-3	
Cadmium	3.6	mg/kg	0.71	0.19	1	09/23/20 07:19	09/23/20 18:14	7440-43-9	
Chromium	65.4	mg/kg	1.4	0.39	1	09/23/20 07:19	09/23/20 18:14	7440-47-3	
Lead	178	mg/kg	2.8	0.85	1	09/23/20 07:19	09/23/20 18:14	7439-92-1	
Selenium	<1.9	mg/kg	6.2	1.9	1	09/23/20 07:19	09/23/20 18:14	7782-49-2	
Silver	<0.44	mg/kg	1.4	0.44	1	09/23/20 07:19	09/23/20 18:14	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	0.11	mg/kg	0.051	0.015	1	09/25/20 08:59	09/28/20 11:22	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	2670J	ug/kg	3590	465	20	09/23/20 08:18	09/25/20 10:18	83-32-9	
Acenaphthylene	<452	ug/kg	3590	452	20	09/23/20 08:18	09/25/20 10:18	208-96-8	
Anthracene	8410	ug/kg	3590	445	20	09/23/20 08:18	09/25/20 10:18	120-12-7	
Benzo(a)anthracene	25200	ug/kg	3590	463	20	09/23/20 08:18	09/25/20 10:18	56-55-3	
Benzo(a)pyrene	28900	ug/kg	3590	407	20	09/23/20 08:18	09/25/20 10:18	50-32-8	
Benzo(b)fluoranthene	42700	ug/kg	3590	498	20	09/23/20 08:18	09/25/20 10:18	205-99-2	
Benzo(g,h,i)perylene	19900	ug/kg	3590	629	20	09/23/20 08:18	09/25/20 10:18	191-24-2	
Benzo(k)fluoranthene	16600	ug/kg	3590	458	20	09/23/20 08:18	09/25/20 10:18	207-08-9	
Chrysene	33800	ug/kg	3590	676	20	09/23/20 08:18	09/25/20 10:18	218-01-9	
Dibenz(a,h)anthracene	5710	ug/kg	3590	496	20	09/23/20 08:18	09/25/20 10:18	53-70-3	
Fluoranthene	83700	ug/kg	3590	424	20	09/23/20 08:18	09/25/20 10:18	206-44-0	
Fluorene	3250J	ug/kg	3590	430	20	09/23/20 08:18	09/25/20 10:18	86-73-7	
Indeno(1,2,3-cd)pyrene	18000	ug/kg	3590	747	20	09/23/20 08:18	09/25/20 10:18	193-39-5	
1-Methylnaphthalene	<524	ug/kg	3590	524	20	09/23/20 08:18	09/25/20 10:18	90-12-0	
2-Methylnaphthalene	<524	ug/kg	3590	524	20	09/23/20 08:18	09/25/20 10:18	91-57-6	
Naphthalene	<349	ug/kg	3590	349	20	09/23/20 08:18	09/25/20 10:18	91-20-3	

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ANALYTICAL RESULTS

Project: J16001 AMCAST

Pace Project No.: 40214939

Sample: CB-2 **Lab ID: 40214939005** Collected: 09/15/20 11:45 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	50700	ug/kg	3590	410	20	09/23/20 08:18	09/25/20 10:18	85-01-8	
Pyrene	53700	ug/kg	3590	527	20	09/23/20 08:18	09/25/20 10:18	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		20	09/23/20 08:18	09/25/20 10:18	321-60-8	S4
Terphenyl-d14 (S)	0	%	17-98		20	09/23/20 08:18	09/25/20 10:18	1718-51-0	S4
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	34.9	%	0.10	0.10	1		09/22/20 11:14		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: ENSTM-49 **Lab ID: 40214939006** Collected: 09/14/20 14:10 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<4620	ug/kg	15200	4620	200	09/21/20 06:45	09/22/20 01:50	12674-11-2	
PCB-1221 (Aroclor 1221)	<4620	ug/kg	15200	4620	200	09/21/20 06:45	09/22/20 01:50	11104-28-2	
PCB-1232 (Aroclor 1232)	<4620	ug/kg	15200	4620	200	09/21/20 06:45	09/22/20 01:50	11141-16-5	
PCB-1242 (Aroclor 1242)	<4620	ug/kg	15200	4620	200	09/21/20 06:45	09/22/20 01:50	53469-21-9	
PCB-1248 (Aroclor 1248)	117000	ug/kg	15200	4620	200	09/21/20 06:45	09/22/20 01:50	12672-29-6	
PCB-1254 (Aroclor 1254)	<4620	ug/kg	15200	4620	200	09/21/20 06:45	09/22/20 01:50	11097-69-1	
PCB-1260 (Aroclor 1260)	6890J	ug/kg	15200	4620	200	09/21/20 06:45	09/22/20 01:50	11096-82-5	
PCB, Total	124000	ug/kg	15200	4620	200	09/21/20 06:45	09/22/20 01:50	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0	%	69-115		200	09/21/20 06:45	09/22/20 01:50	877-09-8	S4
Decachlorobiphenyl (S)	0	%	62-104		200	09/21/20 06:45	09/22/20 01:50	2051-24-3	S4
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	<4.1	mg/kg	13.8	4.1	2	09/23/20 07:19	09/24/20 16:49	7440-38-2	D3
Barium	34.7	mg/kg	0.71	0.21	1	09/23/20 07:19	09/23/20 18:16	7440-39-3	
Cadmium	5.7	mg/kg	0.71	0.19	1	09/23/20 07:19	09/23/20 18:16	7440-43-9	
Chromium	201	mg/kg	1.4	0.39	1	09/23/20 07:19	09/23/20 18:16	7440-47-3	
Lead	201	mg/kg	5.6	1.7	2	09/23/20 07:19	09/24/20 16:49	7439-92-1	
Selenium	<3.7	mg/kg	12.3	3.7	2	09/23/20 07:19	09/24/20 16:49	7782-49-2	D3
Silver	1.0J	mg/kg	1.4	0.43	1	09/23/20 07:19	09/23/20 18:16	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	0.33	mg/kg	0.050	0.014	1	09/25/20 08:59	09/28/20 11:25	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	2350J	ug/kg	5090	660	100	09/23/20 08:18	09/25/20 10:01	83-32-9	
Acenaphthylene	<642	ug/kg	5090	642	100	09/23/20 08:18	09/25/20 10:01	208-96-8	
Anthracene	6110	ug/kg	5090	632	100	09/23/20 08:18	09/25/20 10:01	120-12-7	
Benzo(a)anthracene	14800	ug/kg	5090	658	100	09/23/20 08:18	09/25/20 10:01	56-55-3	
Benzo(a)pyrene	15600	ug/kg	5090	578	100	09/23/20 08:18	09/25/20 10:01	50-32-8	
Benzo(b)fluoranthene	23100	ug/kg	5090	707	100	09/23/20 08:18	09/25/20 10:01	205-99-2	
Benzo(g,h,i)perylene	10200	ug/kg	5090	893	100	09/23/20 08:18	09/25/20 10:01	191-24-2	
Benzo(k)fluoranthene	9500	ug/kg	5090	650	100	09/23/20 08:18	09/25/20 10:01	207-08-9	
Chrysene	19100	ug/kg	5090	960	100	09/23/20 08:18	09/25/20 10:01	218-01-9	
Dibenz(a,h)anthracene	2680J	ug/kg	5090	704	100	09/23/20 08:18	09/25/20 10:01	53-70-3	
Fluoranthene	50200	ug/kg	5090	602	100	09/23/20 08:18	09/25/20 10:01	206-44-0	
Fluorene	2620J	ug/kg	5090	610	100	09/23/20 08:18	09/25/20 10:01	86-73-7	
Indeno(1,2,3-cd)pyrene	9420	ug/kg	5090	1060	100	09/23/20 08:18	09/25/20 10:01	193-39-5	
1-Methylnaphthalene	<743	ug/kg	5090	743	100	09/23/20 08:18	09/25/20 10:01	90-12-0	
2-Methylnaphthalene	<744	ug/kg	5090	744	100	09/23/20 08:18	09/25/20 10:01	91-57-6	
Naphthalene	<496	ug/kg	5090	496	100	09/23/20 08:18	09/25/20 10:01	91-20-3	

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ANALYTICAL RESULTS

Project: J16001 AMCAST

Pace Project No.: 40214939

Sample: ENSTM-49 **Lab ID: 40214939006** Collected: 09/14/20 14:10 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	35000	ug/kg	5090	583	100	09/23/20 08:18	09/25/20 10:01	85-01-8	
Pyrene	31300	ug/kg	5090	748	100	09/23/20 08:18	09/25/20 10:01	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		100	09/23/20 08:18	09/25/20 10:01	321-60-8	S4
Terphenyl-d14 (S)	0	%	17-98		100	09/23/20 08:18	09/25/20 10:01	1718-51-0	S4
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	34.3	%	0.10	0.10	1		09/22/20 11:14		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: CB-3 **Lab ID: 40214939007** Collected: 09/15/20 12:20 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<6270	ug/kg	20600	6270	200	09/21/20 06:45	09/22/20 02:14	12674-11-2	
PCB-1221 (Aroclor 1221)	<6270	ug/kg	20600	6270	200	09/21/20 06:45	09/22/20 02:14	11104-28-2	
PCB-1232 (Aroclor 1232)	<6270	ug/kg	20600	6270	200	09/21/20 06:45	09/22/20 02:14	11141-16-5	
PCB-1242 (Aroclor 1242)	<6270	ug/kg	20600	6270	200	09/21/20 06:45	09/22/20 02:14	53469-21-9	
PCB-1248 (Aroclor 1248)	177000	ug/kg	20600	6270	200	09/21/20 06:45	09/22/20 02:14	12672-29-6	
PCB-1254 (Aroclor 1254)	<6270	ug/kg	20600	6270	200	09/21/20 06:45	09/22/20 02:14	11097-69-1	
PCB-1260 (Aroclor 1260)	7020J	ug/kg	20600	6270	200	09/21/20 06:45	09/22/20 02:14	11096-82-5	
PCB, Total	184000	ug/kg	20600	6270	200	09/21/20 06:45	09/22/20 02:14	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0	%	69-115		200	09/21/20 06:45	09/22/20 02:14	877-09-8	S4
Decachlorobiphenyl (S)	0	%	62-104		200	09/21/20 06:45	09/22/20 02:14	2051-24-3	S4
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	<6.0	mg/kg	20.0	6.0	2	09/23/20 07:19	09/24/20 16:27	7440-38-2	D3
Barium	64.6	mg/kg	1.0	0.31	1	09/23/20 07:19	09/23/20 17:47	7440-39-3	
Cadmium	8.3	mg/kg	1.0	0.27	1	09/23/20 07:19	09/23/20 17:47	7440-43-9	
Chromium	140	mg/kg	2.1	0.57	1	09/23/20 07:19	09/23/20 17:47	7440-47-3	M0
Lead	374	mg/kg	8.2	2.5	2	09/23/20 07:19	09/24/20 16:27	7439-92-1	M0
Selenium	<5.4	mg/kg	17.9	5.4	2	09/23/20 07:19	09/24/20 16:27	7782-49-2	D3
Silver	0.64J	mg/kg	2.1	0.63	1	09/23/20 07:19	09/23/20 17:47	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	1.2	mg/kg	0.066	0.019	1	09/25/20 08:59	09/28/20 11:27	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	4160	ug/kg	4130	536	20	09/23/20 08:18	09/25/20 14:54	83-32-9	
Acenaphthylene	<521	ug/kg	4130	521	20	09/23/20 08:18	09/25/20 14:54	208-96-8	
Anthracene	8930	ug/kg	4130	513	20	09/23/20 08:18	09/25/20 14:54	120-12-7	
Benzo(a)anthracene	36000	ug/kg	4130	534	20	09/23/20 08:18	09/25/20 14:54	56-55-3	
Benzo(a)pyrene	48100	ug/kg	4130	469	20	09/23/20 08:18	09/25/20 14:54	50-32-8	
Benzo(b)fluoranthene	81600	ug/kg	4130	573	20	09/23/20 08:18	09/25/20 14:54	205-99-2	
Benzo(g,h,i)perylene	41500	ug/kg	4130	725	20	09/23/20 08:18	09/25/20 14:54	191-24-2	
Benzo(k)fluoranthene	32200	ug/kg	4130	528	20	09/23/20 08:18	09/25/20 14:54	207-08-9	
Chrysene	57400	ug/kg	4130	779	20	09/23/20 08:18	09/25/20 14:54	218-01-9	
Dibenz(a,h)anthracene	11000	ug/kg	4130	572	20	09/23/20 08:18	09/25/20 14:54	53-70-3	
Fluoranthene	118000	ug/kg	4130	489	20	09/23/20 08:18	09/25/20 14:54	206-44-0	
Fluorene	4020J	ug/kg	4130	495	20	09/23/20 08:18	09/25/20 14:54	86-73-7	
Indeno(1,2,3-cd)pyrene	35400	ug/kg	4130	861	20	09/23/20 08:18	09/25/20 14:54	193-39-5	
1-Methylnaphthalene	<603	ug/kg	4130	603	20	09/23/20 08:18	09/25/20 14:54	90-12-0	
2-Methylnaphthalene	<604	ug/kg	4130	604	20	09/23/20 08:18	09/25/20 14:54	91-57-6	
Naphthalene	821J	ug/kg	4130	403	20	09/23/20 08:18	09/25/20 14:54	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: J16001 AMCAST

Pace Project No.: 40214939

Sample: CB-3 **Lab ID: 40214939007** Collected: 09/15/20 12:20 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	52600	ug/kg	4130	473	20	09/23/20 08:18	09/25/20 14:54	85-01-8	
Pyrene	83000	ug/kg	4130	607	20	09/23/20 08:18	09/25/20 14:54	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		20	09/23/20 08:18	09/25/20 14:54	321-60-8	S4
Terphenyl-d14 (S)	0	%	17-98		20	09/23/20 08:18	09/25/20 14:54	1718-51-0	S4
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	51.5	%	0.10	0.10	1		09/22/20 11:14		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: ENSTM-47 **Lab ID: 40214939008** Collected: 09/15/20 12:00 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<79000	ug/kg	259000	79000	4000	09/21/20 06:45	09/22/20 14:26	12674-11-2	
PCB-1221 (Aroclor 1221)	<79000	ug/kg	259000	79000	4000	09/21/20 06:45	09/22/20 14:26	11104-28-2	
PCB-1232 (Aroclor 1232)	<79000	ug/kg	259000	79000	4000	09/21/20 06:45	09/22/20 14:26	11141-16-5	
PCB-1242 (Aroclor 1242)	<79000	ug/kg	259000	79000	4000	09/21/20 06:45	09/22/20 14:26	53469-21-9	
PCB-1248 (Aroclor 1248)	2990000	ug/kg	259000	79000	4000	09/21/20 06:45	09/22/20 14:26	12672-29-6	
PCB-1254 (Aroclor 1254)	<79000	ug/kg	259000	79000	4000	09/21/20 06:45	09/22/20 14:26	11097-69-1	
PCB-1260 (Aroclor 1260)	155000J	ug/kg	259000	79000	4000	09/21/20 06:45	09/22/20 14:26	11096-82-5	
PCB, Total	3150000	ug/kg	259000	79000	4000	09/21/20 06:45	09/22/20 14:26	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0	%	69-115		4000	09/21/20 06:45	09/22/20 14:26	877-09-8	S4
Decachlorobiphenyl (S)	0	%	62-104		4000	09/21/20 06:45	09/22/20 14:26	2051-24-3	S4
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	2.2J	mg/kg	6.0	1.8	1	09/23/20 07:19	09/23/20 18:18	7440-38-2	
Barium	141	mg/kg	0.62	0.18	1	09/23/20 07:19	09/23/20 18:18	7440-39-3	
Cadmium	4.4	mg/kg	0.62	0.16	1	09/23/20 07:19	09/23/20 18:18	7440-43-9	
Chromium	15.3	mg/kg	1.2	0.34	1	09/23/20 07:19	09/23/20 18:18	7440-47-3	
Lead	128	mg/kg	2.5	0.74	1	09/23/20 07:19	09/23/20 18:18	7439-92-1	
Selenium	<1.6	mg/kg	5.4	1.6	1	09/23/20 07:19	09/23/20 18:18	7782-49-2	
Silver	0.57J	mg/kg	1.2	0.38	1	09/23/20 07:19	09/23/20 18:18	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	0.028J	mg/kg	0.045	0.013	1	09/25/20 08:59	09/28/20 11:29	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	<113	ug/kg	867	113	4	09/23/20 08:18	09/25/20 15:11	83-32-9	
Acenaphthylene	<109	ug/kg	867	109	4	09/23/20 08:18	09/25/20 15:11	208-96-8	
Anthracene	253J	ug/kg	867	108	4	09/23/20 08:18	09/25/20 15:11	120-12-7	
Benzo(a)anthracene	2250	ug/kg	867	112	4	09/23/20 08:18	09/25/20 15:11	56-55-3	
Benzo(a)pyrene	3050	ug/kg	867	98.5	4	09/23/20 08:18	09/25/20 15:11	50-32-8	
Benzo(b)fluoranthene	5020	ug/kg	867	120	4	09/23/20 08:18	09/25/20 15:11	205-99-2	
Benzo(g,h,i)perylene	2690	ug/kg	867	152	4	09/23/20 08:18	09/25/20 15:11	191-24-2	
Benzo(k)fluoranthene	2020	ug/kg	867	111	4	09/23/20 08:18	09/25/20 15:11	207-08-9	
Chrysene	3200	ug/kg	867	164	4	09/23/20 08:18	09/25/20 15:11	218-01-9	
Dibenz(a,h)anthracene	617J	ug/kg	867	120	4	09/23/20 08:18	09/25/20 15:11	53-70-3	
Fluoranthene	5400	ug/kg	867	103	4	09/23/20 08:18	09/25/20 15:11	206-44-0	
Fluorene	<104	ug/kg	867	104	4	09/23/20 08:18	09/25/20 15:11	86-73-7	
Indeno(1,2,3-cd)pyrene	2300	ug/kg	867	181	4	09/23/20 08:18	09/25/20 15:11	193-39-5	
1-Methylnaphthalene	<127	ug/kg	867	127	4	09/23/20 08:18	09/25/20 15:11	90-12-0	
2-Methylnaphthalene	<127	ug/kg	867	127	4	09/23/20 08:18	09/25/20 15:11	91-57-6	
Naphthalene	<84.5	ug/kg	867	84.5	4	09/23/20 08:18	09/25/20 15:11	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: J16001 AMCAST

Pace Project No.: 40214939

Sample: ENSTM-47 **Lab ID: 40214939008** Collected: 09/15/20 12:00 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	1690	ug/kg	867	99.3	4	09/23/20 08:18	09/25/20 15:11	85-01-8	
Pyrene	3780	ug/kg	867	127	4	09/23/20 08:18	09/25/20 15:11	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		4	09/23/20 08:18	09/25/20 15:11	321-60-8	S0
Terphenyl-d14 (S)	0	%	17-98		4	09/23/20 08:18	09/25/20 15:11	1718-51-0	S0
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	23.0	%	0.10	0.10	1		09/22/20 11:14		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: ENSTM-46 **Lab ID: 40214939009** Collected: 09/14/20 11:50 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<94.1	ug/kg	309	94.1	5	09/21/20 06:45	09/21/20 19:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<94.1	ug/kg	309	94.1	5	09/21/20 06:45	09/21/20 19:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<94.1	ug/kg	309	94.1	5	09/21/20 06:45	09/21/20 19:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<94.1	ug/kg	309	94.1	5	09/21/20 06:45	09/21/20 19:21	53469-21-9	
PCB-1248 (Aroclor 1248)	3480	ug/kg	309	94.1	5	09/21/20 06:45	09/21/20 19:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<94.1	ug/kg	309	94.1	5	09/21/20 06:45	09/21/20 19:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<94.1	ug/kg	309	94.1	5	09/21/20 06:45	09/21/20 19:21	11096-82-5	
PCB, Total	3480	ug/kg	309	94.1	5	09/21/20 06:45	09/21/20 19:21	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	83	%	69-115		5	09/21/20 06:45	09/21/20 19:21	877-09-8	
Decachlorobiphenyl (S)	80	%	62-104		5	09/21/20 06:45	09/21/20 19:21	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	<3.5	mg/kg	11.5	3.5	2	09/23/20 07:19	09/24/20 16:56	7440-38-2	D3
Barium	47.1	mg/kg	0.59	0.18	1	09/23/20 07:19	09/23/20 18:21	7440-39-3	
Cadmium	<0.16	mg/kg	0.59	0.16	1	09/23/20 07:19	09/23/20 18:21	7440-43-9	
Chromium	6.4	mg/kg	1.2	0.33	1	09/23/20 07:19	09/23/20 18:21	7440-47-3	
Lead	7.2	mg/kg	2.4	0.71	1	09/23/20 07:19	09/23/20 18:21	7439-92-1	
Selenium	<1.5	mg/kg	5.2	1.5	1	09/23/20 07:19	09/23/20 18:21	7782-49-2	
Silver	<0.36	mg/kg	1.2	0.36	1	09/23/20 07:19	09/23/20 18:21	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	<0.011	mg/kg	0.039	0.011	1	09/25/20 08:59	09/28/20 12:40	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	<268	ug/kg	2060	268	10	09/23/20 08:18	09/25/20 15:28	83-32-9	
Acenaphthylene	<260	ug/kg	2060	260	10	09/23/20 08:18	09/25/20 15:28	208-96-8	
Anthracene	837J	ug/kg	2060	256	10	09/23/20 08:18	09/25/20 15:28	120-12-7	
Benzo(a)anthracene	6870	ug/kg	2060	267	10	09/23/20 08:18	09/25/20 15:28	56-55-3	
Benzo(a)pyrene	8840	ug/kg	2060	234	10	09/23/20 08:18	09/25/20 15:28	50-32-8	
Benzo(b)fluoranthene	15100	ug/kg	2060	286	10	09/23/20 08:18	09/25/20 15:28	205-99-2	
Benzo(g,h,i)perylene	7110	ug/kg	2060	362	10	09/23/20 08:18	09/25/20 15:28	191-24-2	
Benzo(k)fluoranthene	5800	ug/kg	2060	264	10	09/23/20 08:18	09/25/20 15:28	207-08-9	
Chrysene	11100	ug/kg	2060	389	10	09/23/20 08:18	09/25/20 15:28	218-01-9	
Dibenz(a,h)anthracene	1710J	ug/kg	2060	286	10	09/23/20 08:18	09/25/20 15:28	53-70-3	
Fluoranthene	23400	ug/kg	2060	244	10	09/23/20 08:18	09/25/20 15:28	206-44-0	
Fluorene	350J	ug/kg	2060	247	10	09/23/20 08:18	09/25/20 15:28	86-73-7	
Indeno(1,2,3-cd)pyrene	6270	ug/kg	2060	430	10	09/23/20 08:18	09/25/20 15:28	193-39-5	
1-Methylnaphthalene	<301	ug/kg	2060	301	10	09/23/20 08:18	09/25/20 15:28	90-12-0	
2-Methylnaphthalene	<302	ug/kg	2060	302	10	09/23/20 08:18	09/25/20 15:28	91-57-6	
Naphthalene	<201	ug/kg	2060	201	10	09/23/20 08:18	09/25/20 15:28	91-20-3	

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: ENSTM-46 **Lab ID: 40214939009** Collected: 09/14/20 11:50 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	9110	ug/kg	2060	236	10	09/23/20 08:18	09/25/20 15:28	85-01-8	
Pyrene	14500	ug/kg	2060	303	10	09/23/20 08:18	09/25/20 15:28	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		10	09/23/20 08:18	09/25/20 15:28	321-60-8	S0
Terphenyl-d14 (S)	0	%	17-98		10	09/23/20 08:18	09/25/20 15:28	1718-51-0	S0
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	19.1	%	0.10	0.10	1		09/22/20 12:02		

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: ENSTM-7 **Lab ID: 40214939010** Collected: 09/15/20 14:00 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<77.5	ug/kg	255	77.5	4	09/21/20 06:45	09/22/20 03:03	12674-11-2	
PCB-1221 (Aroclor 1221)	<77.5	ug/kg	255	77.5	4	09/21/20 06:45	09/22/20 03:03	11104-28-2	
PCB-1232 (Aroclor 1232)	<77.5	ug/kg	255	77.5	4	09/21/20 06:45	09/22/20 03:03	11141-16-5	
PCB-1242 (Aroclor 1242)	<77.5	ug/kg	255	77.5	4	09/21/20 06:45	09/22/20 03:03	53469-21-9	
PCB-1248 (Aroclor 1248)	2920	ug/kg	255	77.5	4	09/21/20 06:45	09/22/20 03:03	12672-29-6	
PCB-1254 (Aroclor 1254)	<77.5	ug/kg	255	77.5	4	09/21/20 06:45	09/22/20 03:03	11097-69-1	
PCB-1260 (Aroclor 1260)	100J	ug/kg	255	77.5	4	09/21/20 06:45	09/22/20 03:03	11096-82-5	
PCB, Total	3020	ug/kg	255	77.5	4	09/21/20 06:45	09/22/20 03:03	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	84	%	69-115		4	09/21/20 06:45	09/22/20 03:03	877-09-8	
Decachlorobiphenyl (S)	82	%	62-104		4	09/21/20 06:45	09/22/20 03:03	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	<3.7	mg/kg	12.4	3.7	2	09/23/20 07:19	09/24/20 16:58	7440-38-2	D3
Barium	6.7	mg/kg	0.64	0.19	1	09/23/20 07:19	09/23/20 18:24	7440-39-3	
Cadmium	<0.17	mg/kg	0.64	0.17	1	09/23/20 07:19	09/23/20 18:24	7440-43-9	
Chromium	5.9	mg/kg	1.3	0.35	1	09/23/20 07:19	09/23/20 18:24	7440-47-3	
Lead	7.3	mg/kg	2.5	0.76	1	09/23/20 07:19	09/23/20 18:24	7439-92-1	
Selenium	<1.7	mg/kg	5.6	1.7	1	09/23/20 07:19	09/23/20 18:24	7782-49-2	
Silver	<0.39	mg/kg	1.3	0.39	1	09/23/20 07:19	09/23/20 18:24	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	<0.012	mg/kg	0.041	0.012	1	09/25/20 08:59	09/28/20 12:43	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	784J	ug/kg	5980	775	40	09/23/20 08:18	09/25/20 11:09	83-32-9	
Acenaphthylene	<753	ug/kg	5980	753	40	09/23/20 08:18	09/25/20 11:09	208-96-8	
Anthracene	5410J	ug/kg	5980	742	40	09/23/20 08:18	09/25/20 11:09	120-12-7	
Benzo(a)anthracene	34600	ug/kg	5980	772	40	09/23/20 08:18	09/25/20 11:09	56-55-3	
Benzo(a)pyrene	38500	ug/kg	5980	679	40	09/23/20 08:18	09/25/20 11:09	50-32-8	
Benzo(b)fluoranthene	64100	ug/kg	5980	830	40	09/23/20 08:18	09/25/20 11:09	205-99-2	
Benzo(g,h,i)perylene	28900	ug/kg	5980	1050	40	09/23/20 08:18	09/25/20 11:09	191-24-2	
Benzo(k)fluoranthene	23200	ug/kg	5980	764	40	09/23/20 08:18	09/25/20 11:09	207-08-9	
Chrysene	46700	ug/kg	5980	1130	40	09/23/20 08:18	09/25/20 11:09	218-01-9	
Dibenz(a,h)anthracene	7310	ug/kg	5980	827	40	09/23/20 08:18	09/25/20 11:09	53-70-3	
Fluoranthene	107000	ug/kg	5980	707	40	09/23/20 08:18	09/25/20 11:09	206-44-0	
Fluorene	1200J	ug/kg	5980	717	40	09/23/20 08:18	09/25/20 11:09	86-73-7	
Indeno(1,2,3-cd)pyrene	25800	ug/kg	5980	1250	40	09/23/20 08:18	09/25/20 11:09	193-39-5	
1-Methylnaphthalene	<873	ug/kg	5980	873	40	09/23/20 08:18	09/25/20 11:09	90-12-0	
2-Methylnaphthalene	<874	ug/kg	5980	874	40	09/23/20 08:18	09/25/20 11:09	91-57-6	
Naphthalene	<582	ug/kg	5980	582	40	09/23/20 08:18	09/25/20 11:09	91-20-3	

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: ENSTM-7 **Lab ID: 40214939010** Collected: 09/15/20 14:00 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	43700	ug/kg	5980	684	40	09/23/20 08:18	09/25/20 11:09	85-01-8	
Pyrene	72500	ug/kg	5980	878	40	09/23/20 08:18	09/25/20 11:09	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		40	09/23/20 08:18	09/25/20 11:09	321-60-8	S4
Terphenyl-d14 (S)	0	%	17-98		40	09/23/20 08:18	09/25/20 11:09	1718-51-0	S4
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	21.6	%	0.10	0.10	1		09/22/20 12:03		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: MH-1 **Lab ID: 40214939011** Collected: 09/14/20 12:55 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<19.1	ug/kg	62.7	19.1	1	09/21/20 06:45	09/21/20 22:10	12674-11-2	
PCB-1221 (Aroclor 1221)	<19.1	ug/kg	62.7	19.1	1	09/21/20 06:45	09/21/20 22:10	11104-28-2	
PCB-1232 (Aroclor 1232)	<19.1	ug/kg	62.7	19.1	1	09/21/20 06:45	09/21/20 22:10	11141-16-5	
PCB-1242 (Aroclor 1242)	<19.1	ug/kg	62.7	19.1	1	09/21/20 06:45	09/21/20 22:10	53469-21-9	
PCB-1248 (Aroclor 1248)	163	ug/kg	62.7	19.1	1	09/21/20 06:45	09/21/20 22:10	12672-29-6	
PCB-1254 (Aroclor 1254)	<19.1	ug/kg	62.7	19.1	1	09/21/20 06:45	09/21/20 22:10	11097-69-1	
PCB-1260 (Aroclor 1260)	<19.1	ug/kg	62.7	19.1	1	09/21/20 06:45	09/21/20 22:10	11096-82-5	
PCB, Total	163	ug/kg	62.7	19.1	1	09/21/20 06:45	09/21/20 22:10	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	78	%	69-115		1	09/21/20 06:45	09/21/20 22:10	877-09-8	
Decachlorobiphenyl (S)	67	%	62-104		1	09/21/20 06:45	09/21/20 22:10	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	<3.4	mg/kg	11.4	3.4	2	09/23/20 07:19	09/24/20 17:01	7440-38-2	D3
Barium	11.0	mg/kg	0.59	0.18	1	09/23/20 07:19	09/23/20 18:26	7440-39-3	
Cadmium	0.17J	mg/kg	0.59	0.16	1	09/23/20 07:19	09/23/20 18:26	7440-43-9	
Chromium	6.1	mg/kg	1.2	0.33	1	09/23/20 07:19	09/23/20 18:26	7440-47-3	
Lead	10.7	mg/kg	2.3	0.70	1	09/23/20 07:19	09/23/20 18:26	7439-92-1	
Selenium	<1.5	mg/kg	5.1	1.5	1	09/23/20 07:19	09/23/20 18:26	7782-49-2	
Silver	<0.36	mg/kg	1.2	0.36	1	09/23/20 07:19	09/23/20 18:26	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	<0.012	mg/kg	0.042	0.012	1	09/25/20 08:59	09/28/20 12:45	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	<380	ug/kg	2930	380	20	09/23/20 08:18	09/25/20 10:35	83-32-9	
Acenaphthylene	<370	ug/kg	2930	370	20	09/23/20 08:18	09/25/20 10:35	208-96-8	
Anthracene	597J	ug/kg	2930	364	20	09/23/20 08:18	09/25/20 10:35	120-12-7	
Benzo(a)anthracene	6750	ug/kg	2930	379	20	09/23/20 08:18	09/25/20 10:35	56-55-3	
Benzo(a)pyrene	9550	ug/kg	2930	333	20	09/23/20 08:18	09/25/20 10:35	50-32-8	
Benzo(b)fluoranthene	17300	ug/kg	2930	407	20	09/23/20 08:18	09/25/20 10:35	205-99-2	
Benzo(g,h,i)perylene	8110	ug/kg	2930	514	20	09/23/20 08:18	09/25/20 10:35	191-24-2	
Benzo(k)fluoranthene	6540	ug/kg	2930	375	20	09/23/20 08:18	09/25/20 10:35	207-08-9	
Chrysene	12000	ug/kg	2930	553	20	09/23/20 08:18	09/25/20 10:35	218-01-9	
Dibenz(a,h)anthracene	1920J	ug/kg	2930	406	20	09/23/20 08:18	09/25/20 10:35	53-70-3	
Fluoranthene	23600	ug/kg	2930	347	20	09/23/20 08:18	09/25/20 10:35	206-44-0	
Fluorene	<351	ug/kg	2930	351	20	09/23/20 08:18	09/25/20 10:35	86-73-7	
Indeno(1,2,3-cd)pyrene	7270	ug/kg	2930	611	20	09/23/20 08:18	09/25/20 10:35	193-39-5	
1-Methylnaphthalene	<428	ug/kg	2930	428	20	09/23/20 08:18	09/25/20 10:35	90-12-0	
2-Methylnaphthalene	<429	ug/kg	2930	429	20	09/23/20 08:18	09/25/20 10:35	91-57-6	
Naphthalene	<286	ug/kg	2930	286	20	09/23/20 08:18	09/25/20 10:35	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: J16001 AMCAST

Pace Project No.: 40214939

Sample: MH-1 **Lab ID: 40214939011** Collected: 09/14/20 12:55 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	8020	ug/kg	2930	336	20	09/23/20 08:18	09/25/20 10:35	85-01-8	
Pyrene	14900	ug/kg	2930	431	20	09/23/20 08:18	09/25/20 10:35	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		20	09/23/20 08:18	09/25/20 10:35	321-60-8	S4
Terphenyl-d14 (S)	0	%	17-98		20	09/23/20 08:18	09/25/20 10:35	1718-51-0	S4
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	20.4	%	0.10	0.10	1		09/22/20 12:03		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: MH-2 **Lab ID: 40214939012** Collected: 09/14/20 12:50 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB									
Analytical Method: EPA 8082 Preparation Method: EPA 3541									
Pace Analytical Services - Green Bay									
PCB-1016 (Aroclor 1016)	<26.0	ug/kg	85.3	26.0	1	09/21/20 06:45	09/21/20 22:59	12674-11-2	
PCB-1221 (Aroclor 1221)	<26.0	ug/kg	85.3	26.0	1	09/21/20 06:45	09/21/20 22:59	11104-28-2	
PCB-1232 (Aroclor 1232)	<26.0	ug/kg	85.3	26.0	1	09/21/20 06:45	09/21/20 22:59	11141-16-5	
PCB-1242 (Aroclor 1242)	<26.0	ug/kg	85.3	26.0	1	09/21/20 06:45	09/21/20 22:59	53469-21-9	
PCB-1248 (Aroclor 1248)	542	ug/kg	85.3	26.0	1	09/21/20 06:45	09/21/20 22:59	12672-29-6	
PCB-1254 (Aroclor 1254)	<26.0	ug/kg	85.3	26.0	1	09/21/20 06:45	09/21/20 22:59	11097-69-1	
PCB-1260 (Aroclor 1260)	43.1J	ug/kg	85.3	26.0	1	09/21/20 06:45	09/21/20 22:59	11096-82-5	
PCB, Total	585	ug/kg	85.3	26.0	1	09/21/20 06:45	09/21/20 22:59	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	66	%	69-115		1	09/21/20 06:45	09/21/20 22:59	877-09-8	S0
Decachlorobiphenyl (S)	62	%	62-104		1	09/21/20 06:45	09/21/20 22:59	2051-24-3	
6010 MET ICP									
Analytical Method: EPA 6010 Preparation Method: EPA 3050									
Pace Analytical Services - Green Bay									
Arsenic	2.4J	mg/kg	7.9	2.4	1	09/23/20 07:19	09/23/20 18:29	7440-38-2	
Barium	33.3	mg/kg	0.81	0.24	1	09/23/20 07:19	09/23/20 18:29	7440-39-3	
Cadmium	0.63J	mg/kg	0.81	0.22	1	09/23/20 07:19	09/23/20 18:29	7440-43-9	
Chromium	144	mg/kg	1.6	0.45	1	09/23/20 07:19	09/23/20 18:29	7440-47-3	
Lead	58.4	mg/kg	3.2	0.97	1	09/23/20 07:19	09/23/20 18:29	7439-92-1	
Selenium	<2.1	mg/kg	7.1	2.1	1	09/23/20 07:19	09/23/20 18:29	7782-49-2	
Silver	<0.50	mg/kg	1.6	0.50	1	09/23/20 07:19	09/23/20 18:29	7440-22-4	
7471 Mercury									
Analytical Method: EPA 7471 Preparation Method: EPA 7471									
Pace Analytical Services - Green Bay									
Mercury	0.018J	mg/kg	0.053	0.015	1	09/25/20 08:59	09/28/20 12:47	7439-97-6	
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Acenaphthene	<371	ug/kg	2860	371	20	09/23/20 08:18	09/25/20 10:52	83-32-9	
Acenaphthylene	<360	ug/kg	2860	360	20	09/23/20 08:18	09/25/20 10:52	208-96-8	
Anthracene	1100J	ug/kg	2860	355	20	09/23/20 08:18	09/25/20 10:52	120-12-7	
Benzo(a)anthracene	10100	ug/kg	2860	369	20	09/23/20 08:18	09/25/20 10:52	56-55-3	
Benzo(a)pyrene	15800	ug/kg	2860	325	20	09/23/20 08:18	09/25/20 10:52	50-32-8	
Benzo(b)fluoranthene	29400	ug/kg	2860	397	20	09/23/20 08:18	09/25/20 10:52	205-99-2	
Benzo(g,h,i)perylene	13800	ug/kg	2860	501	20	09/23/20 08:18	09/25/20 10:52	191-24-2	
Benzo(k)fluoranthene	10300	ug/kg	2860	365	20	09/23/20 08:18	09/25/20 10:52	207-08-9	
Chrysene	20500	ug/kg	2860	539	20	09/23/20 08:18	09/25/20 10:52	218-01-9	
Dibenz(a,h)anthracene	3190	ug/kg	2860	395	20	09/23/20 08:18	09/25/20 10:52	53-70-3	
Fluoranthene	39300	ug/kg	2860	338	20	09/23/20 08:18	09/25/20 10:52	206-44-0	
Fluorene	397J	ug/kg	2860	343	20	09/23/20 08:18	09/25/20 10:52	86-73-7	
Indeno(1,2,3-cd)pyrene	12300	ug/kg	2860	595	20	09/23/20 08:18	09/25/20 10:52	193-39-5	
1-Methylnaphthalene	<417	ug/kg	2860	417	20	09/23/20 08:18	09/25/20 10:52	90-12-0	
2-Methylnaphthalene	<418	ug/kg	2860	418	20	09/23/20 08:18	09/25/20 10:52	91-57-6	
Naphthalene	<278	ug/kg	2860	278	20	09/23/20 08:18	09/25/20 10:52	91-20-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: J16001 AMCAST
Pace Project No.: 40214939

Sample: MH-2 **Lab ID: 40214939012** Collected: 09/14/20 12:50 Received: 09/18/20 08:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546									
Pace Analytical Services - Green Bay									
Phenanthrene	13700	ug/kg	2860	327	20	09/23/20 08:18	09/25/20 10:52	85-01-8	
Pyrene	24700	ug/kg	2860	420	20	09/23/20 08:18	09/25/20 10:52	129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	0	%	17-100		20	09/23/20 08:18	09/25/20 10:52	321-60-8	S4
Terphenyl-d14 (S)	0	%	17-98		20	09/23/20 08:18	09/25/20 10:52	1718-51-0	S4
Percent Moisture									
Analytical Method: ASTM D2974-87									
Pace Analytical Services - Green Bay									
Percent Moisture	41.5	%	0.10	0.10	1		09/22/20 12:03		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: J16001 AMCAST

Pace Project No.: 40214939

QC Batch: 366501

Analysis Method: EPA 7471

QC Batch Method: EPA 7471

Analysis Description: 7471 Mercury

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008, 40214939009, 40214939010, 40214939011, 40214939012

METHOD BLANK: 2118447

Matrix: Solid

Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008, 40214939009, 40214939010, 40214939011, 40214939012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	<0.010	0.035	09/28/20 10:41	

LABORATORY CONTROL SAMPLE: 2118448

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.83	0.80	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2118449 2118450

Parameter	Units	40214988008		2118450		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	mg/kg	<0.012	0.96	0.96	0.95	0.94	99	97	85-115	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: J16001 AMCAST
Pace Project No.: 40214939

QC Batch: 366182 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008, 40214939009, 40214939010, 40214939011, 40214939012

METHOD BLANK: 2116692 Matrix: Solid
Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008, 40214939009, 40214939010, 40214939011, 40214939012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	<1.5	4.9	09/23/20 17:42	
Barium	mg/kg	<0.15	0.50	09/23/20 17:42	
Cadmium	mg/kg	<0.13	0.50	09/23/20 17:42	
Chromium	mg/kg	<0.28	1.0	09/23/20 17:42	
Lead	mg/kg	<0.60	2.0	09/23/20 17:42	
Selenium	mg/kg	<1.3	4.4	09/23/20 17:42	
Silver	mg/kg	<0.31	1.0	09/23/20 17:42	

LABORATORY CONTROL SAMPLE: 2116693

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	50.0	100	80-120	
Barium	mg/kg	50	50.1	100	80-120	
Cadmium	mg/kg	50	49.4	99	80-120	
Chromium	mg/kg	50	51.7	103	80-120	
Lead	mg/kg	50	50.8	102	80-120	
Selenium	mg/kg	50	49.2	98	80-120	
Silver	mg/kg	25	25.4	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2116694 2116695

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40214939007	Spike Conc.	Spike Conc.	Result								
Arsenic	mg/kg	<6.0	103	102	102	102	99	98	75-125	1	20		
Barium	mg/kg	64.6	103	102	159	171	92	104	75-125	7	20		
Cadmium	mg/kg	8.3	103	102	109	112	99	101	75-125	2	20		
Chromium	mg/kg	140	103	102	288	353	144	207	75-125	20	20 MO		
Lead	mg/kg	374	103	102	521	604	143	225	75-125	15	20 MO		
Selenium	mg/kg	<5.4	103	102	98.1	104	96	101	75-125	6	20		
Silver	mg/kg	0.64J	51.3	51.3	53.2	53.7	102	104	75-125	1	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: J16001 AMCAST
Pace Project No.: 40214939

QC Batch: 365936 Analysis Method: EPA 8082
QC Batch Method: EPA 3541 Analysis Description: 8082 GCS PCB
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008, 40214939009, 40214939010, 40214939011, 40214939012

METHOD BLANK: 2115588 Matrix: Solid
Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008, 40214939009, 40214939010, 40214939011, 40214939012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<15.2	50.0	09/21/20 15:17	
PCB-1221 (Aroclor 1221)	ug/kg	<15.2	50.0	09/21/20 15:17	
PCB-1232 (Aroclor 1232)	ug/kg	<15.2	50.0	09/21/20 15:17	
PCB-1242 (Aroclor 1242)	ug/kg	<15.2	50.0	09/21/20 15:17	
PCB-1248 (Aroclor 1248)	ug/kg	<15.2	50.0	09/21/20 15:17	
PCB-1254 (Aroclor 1254)	ug/kg	<15.2	50.0	09/21/20 15:17	
PCB-1260 (Aroclor 1260)	ug/kg	<15.2	50.0	09/21/20 15:17	
Decachlorobiphenyl (S)	%	92	62-104	09/21/20 15:17	
Tetrachloro-m-xylene (S)	%	80	69-115	09/21/20 15:17	

LABORATORY CONTROL SAMPLE: 2115589

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<15.2			
PCB-1221 (Aroclor 1221)	ug/kg		<15.2			
PCB-1232 (Aroclor 1232)	ug/kg		<15.2			
PCB-1242 (Aroclor 1242)	ug/kg		<15.2			
PCB-1248 (Aroclor 1248)	ug/kg		<15.2			
PCB-1254 (Aroclor 1254)	ug/kg		<15.2			
PCB-1260 (Aroclor 1260)	ug/kg	500	480	96	59-119	
Decachlorobiphenyl (S)	%			95	62-104	
Tetrachloro-m-xylene (S)	%			84	69-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2115590 2115591

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40214939009	Result	Conc.	Conc.						
PCB-1016 (Aroclor 1016)	ug/kg	<94.1				<93.9	<94.1				20
PCB-1221 (Aroclor 1221)	ug/kg	<94.1				<93.9	<94.1				20
PCB-1232 (Aroclor 1232)	ug/kg	<94.1				<93.9	<94.1				20
PCB-1242 (Aroclor 1242)	ug/kg	<94.1				<93.9	<94.1				20
PCB-1248 (Aroclor 1248)	ug/kg	3480				3650	4370		18	20	
PCB-1254 (Aroclor 1254)	ug/kg	<94.1				<93.9	<94.1				20
PCB-1260 (Aroclor 1260)	ug/kg	<94.1	618	618	695	657	113	106	55-123	6	20
Decachlorobiphenyl (S)	%						85	82	62-104		
Tetrachloro-m-xylene (S)	%						90	83	69-115		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: J16001 AMCAST
Pace Project No.: 40214939

QC Batch:	366194	Analysis Method:	EPA 8270 by SIM
QC Batch Method:	EPA 3546	Analysis Description:	8270/3546 MSSV PAH by SIM
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008, 40214939009, 40214939010, 40214939011, 40214939012

METHOD BLANK: 2116737 Matrix: Solid
Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008, 40214939009, 40214939010, 40214939011, 40214939012

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	<2.4	16.7	09/23/20 11:04	
2-Methylnaphthalene	ug/kg	<2.4	16.7	09/23/20 11:04	
Acenaphthene	ug/kg	<2.2	16.7	09/23/20 11:04	
Acenaphthylene	ug/kg	<2.1	16.7	09/23/20 11:04	
Anthracene	ug/kg	<2.1	16.7	09/23/20 11:04	
Benzo(a)anthracene	ug/kg	<2.2	16.7	09/23/20 11:04	
Benzo(a)pyrene	ug/kg	<1.9	16.7	09/23/20 11:04	
Benzo(b)fluoranthene	ug/kg	<2.3	16.7	09/23/20 11:04	
Benzo(g,h,i)perylene	ug/kg	<2.9	16.7	09/23/20 11:04	
Benzo(k)fluoranthene	ug/kg	<2.1	16.7	09/23/20 11:04	
Chrysene	ug/kg	<3.2	16.7	09/23/20 11:04	
Dibenz(a,h)anthracene	ug/kg	<2.3	16.7	09/23/20 11:04	
Fluoranthene	ug/kg	<2.0	16.7	09/23/20 11:04	
Fluorene	ug/kg	<2.0	16.7	09/23/20 11:04	
Indeno(1,2,3-cd)pyrene	ug/kg	<3.5	16.7	09/23/20 11:04	
Naphthalene	ug/kg	<1.6	16.7	09/23/20 11:04	
Phenanthrene	ug/kg	<1.9	16.7	09/23/20 11:04	
Pyrene	ug/kg	<2.5	16.7	09/23/20 11:04	
2-Fluorobiphenyl (S)	%	77	17-100	09/23/20 11:04	
Terphenyl-d14 (S)	%	89	17-98	09/23/20 11:04	

LABORATORY CONTROL SAMPLE: 2116738

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	334	274	82	58-101	
2-Methylnaphthalene	ug/kg	334	272	81	59-101	
Acenaphthene	ug/kg	334	305	91	62-97	
Acenaphthylene	ug/kg	334	309	93	67-102	
Anthracene	ug/kg	334	346	104	69-120	
Benzo(a)anthracene	ug/kg	334	266	80	59-101	
Benzo(a)pyrene	ug/kg	334	345	103	70-110	
Benzo(b)fluoranthene	ug/kg	334	309	93	66-111	
Benzo(g,h,i)perylene	ug/kg	334	315	94	64-106	
Benzo(k)fluoranthene	ug/kg	334	339	102	65-108	
Chrysene	ug/kg	334	296	89	61-102	
Dibenz(a,h)anthracene	ug/kg	334	323	97	64-120	
Fluoranthene	ug/kg	334	334	100	69-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: J16001 AMCAST

Pace Project No.: 40214939

LABORATORY CONTROL SAMPLE: 2116738

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluorene	ug/kg	334	306	92	70-99	
Indeno(1,2,3-cd)pyrene	ug/kg	334	324	97	66-120	
Naphthalene	ug/kg	334	279	84	60-95	
Phenanthrene	ug/kg	334	308	92	66-98	
Pyrene	ug/kg	334	272	82	63-120	
2-Fluorobiphenyl (S)	%			85	17-100	
Terphenyl-d14 (S)	%			90	17-98	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2116739 2116740

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40214942013 Result	Spike Conc.	Spike Conc.	MS Result						
1-Methylnaphthalene	ug/kg	<0.0028 mg/kg	382	381	291	277	76	73	48-101	5	25
2-Methylnaphthalene	ug/kg	<0.0028 mg/kg	382	381	287	274	75	72	46-101	5	21
Acenaphthene	ug/kg	<0.0025 mg/kg	382	381	317	301	83	79	52-97	5	20
Acenaphthylene	ug/kg	<0.0024 mg/kg	382	381	327	313	86	82	51-102	5	20
Anthracene	ug/kg	<0.0024 mg/kg	382	381	354	334	93	88	54-120	6	20
Benzo(a)anthracene	ug/kg	<0.0025 mg/kg	382	381	275	262	72	69	34-101	5	22
Benzo(a)pyrene	ug/kg	<0.0022 mg/kg	382	381	348	331	91	87	46-110	5	25
Benzo(b)fluoranthene	ug/kg	<0.0027 mg/kg	382	381	316	304	83	80	40-111	4	23
Benzo(g,h,i)perylene	ug/kg	<0.0034 mg/kg	382	381	315	299	82	79	40-120	5	24
Benzo(k)fluoranthene	ug/kg	<0.0024 mg/kg	382	381	337	319	88	84	47-108	5	24
Chrysene	ug/kg	<0.0036 mg/kg	382	381	296	284	78	75	35-115	4	20
Dibenz(a,h)anthracene	ug/kg	<0.0026 mg/kg	382	381	325	311	85	82	46-120	4	21
Fluoranthene	ug/kg	<0.0023 mg/kg	382	381	337	325	88	85	52-120	4	23
Fluorene	ug/kg	<0.0023 mg/kg	382	381	316	299	83	79	54-99	5	20
Indeno(1,2,3-cd)pyrene	ug/kg	<0.0040 mg/kg	382	381	327	311	86	82	46-120	5	22
Naphthalene	ug/kg	<0.0019 mg/kg	382	381	305	292	80	77	46-95	4	23
Phenanthrene	ug/kg	<0.0022 mg/kg	382	381	316	298	83	78	51-98	6	20
Pyrene	ug/kg	<0.0028 mg/kg	382	381	276	260	72	68	46-120	6	24
2-Fluorobiphenyl (S)	%						73	66	17-100		
Terphenyl-d14 (S)	%						74	64	17-98		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: J16001 AMCAST

Pace Project No.: 40214939

QC Batch: 366093

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40214939001, 40214939002, 40214939003, 40214939004, 40214939005, 40214939006, 40214939007, 40214939008

SAMPLE DUPLICATE: 2116183

Parameter	Units	40214934006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	17.3	17.5	1	10	

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QUALITY CONTROL DATA

Project: J16001 AMCAST

Pace Project No.: 40214939

QC Batch: 366095

Analysis Method: ASTM D2974-87

QC Batch Method: ASTM D2974-87

Analysis Description: Dry Weight/Percent Moisture

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40214939009, 40214939010, 40214939011, 40214939012

SAMPLE DUPLICATE: 2116265

Parameter	Units	40214988003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	7.1	7.1	1	10	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: J16001 AMCAST
Pace Project No.: 40214939

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
S0 Surrogate recovery outside laboratory control limits.
S4 Surrogate recovery not evaluated against control limits due to sample dilution.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: J16001 AMCAST
Pace Project No.: 40214939

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40214939001	CB-1	EPA 3541	365936	EPA 8082	365938
40214939002	FVSTM-9	EPA 3541	365936	EPA 8082	365938
40214939003	FVSTM-10	EPA 3541	365936	EPA 8082	365938
40214939004	FVSTM-12	EPA 3541	365936	EPA 8082	365938
40214939005	CB-2	EPA 3541	365936	EPA 8082	365938
40214939006	ENSTM-49	EPA 3541	365936	EPA 8082	365938
40214939007	CB-3	EPA 3541	365936	EPA 8082	365938
40214939008	ENSTM-47	EPA 3541	365936	EPA 8082	365938
40214939009	ENSTM-46	EPA 3541	365936	EPA 8082	365938
40214939010	ENSTM-7	EPA 3541	365936	EPA 8082	365938
40214939011	MH-1	EPA 3541	365936	EPA 8082	365938
40214939012	MH-2	EPA 3541	365936	EPA 8082	365938
40214939001	CB-1	EPA 3050	366182	EPA 6010	366282
40214939002	FVSTM-9	EPA 3050	366182	EPA 6010	366282
40214939003	FVSTM-10	EPA 3050	366182	EPA 6010	366282
40214939004	FVSTM-12	EPA 3050	366182	EPA 6010	366282
40214939005	CB-2	EPA 3050	366182	EPA 6010	366282
40214939006	ENSTM-49	EPA 3050	366182	EPA 6010	366282
40214939007	CB-3	EPA 3050	366182	EPA 6010	366282
40214939008	ENSTM-47	EPA 3050	366182	EPA 6010	366282
40214939009	ENSTM-46	EPA 3050	366182	EPA 6010	366282
40214939010	ENSTM-7	EPA 3050	366182	EPA 6010	366282
40214939011	MH-1	EPA 3050	366182	EPA 6010	366282
40214939012	MH-2	EPA 3050	366182	EPA 6010	366282
40214939001	CB-1	EPA 7471	366501	EPA 7471	366545
40214939002	FVSTM-9	EPA 7471	366501	EPA 7471	366545
40214939003	FVSTM-10	EPA 7471	366501	EPA 7471	366545
40214939004	FVSTM-12	EPA 7471	366501	EPA 7471	366545
40214939005	CB-2	EPA 7471	366501	EPA 7471	366545
40214939006	ENSTM-49	EPA 7471	366501	EPA 7471	366545
40214939007	CB-3	EPA 7471	366501	EPA 7471	366545
40214939008	ENSTM-47	EPA 7471	366501	EPA 7471	366545
40214939009	ENSTM-46	EPA 7471	366501	EPA 7471	366545
40214939010	ENSTM-7	EPA 7471	366501	EPA 7471	366545
40214939011	MH-1	EPA 7471	366501	EPA 7471	366545
40214939012	MH-2	EPA 7471	366501	EPA 7471	366545
40214939001	CB-1	EPA 3546	366194	EPA 8270 by SIM	366242
40214939002	FVSTM-9	EPA 3546	366194	EPA 8270 by SIM	366242
40214939003	FVSTM-10	EPA 3546	366194	EPA 8270 by SIM	366242
40214939004	FVSTM-12	EPA 3546	366194	EPA 8270 by SIM	366242
40214939005	CB-2	EPA 3546	366194	EPA 8270 by SIM	366242
40214939006	ENSTM-49	EPA 3546	366194	EPA 8270 by SIM	366242
40214939007	CB-3	EPA 3546	366194	EPA 8270 by SIM	366242
40214939008	ENSTM-47	EPA 3546	366194	EPA 8270 by SIM	366242
40214939009	ENSTM-46	EPA 3546	366194	EPA 8270 by SIM	366242
40214939010	ENSTM-7	EPA 3546	366194	EPA 8270 by SIM	366242
40214939011	MH-1	EPA 3546	366194	EPA 8270 by SIM	366242

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: J16001 AMCAST

Pace Project No.: 40214939

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40214939012	MH-2	EPA 3546	366194	EPA 8270 by SIM	366242
40214939001	CB-1	ASTM D2974-87	366093		
40214939002	FVSTM-9	ASTM D2974-87	366093		
40214939003	FVSTM-10	ASTM D2974-87	366093		
40214939004	FVSTM-12	ASTM D2974-87	366093		
40214939005	CB-2	ASTM D2974-87	366093		
40214939006	ENSTM-49	ASTM D2974-87	366093		
40214939007	CB-3	ASTM D2974-87	366093		
40214939008	ENSTM-47	ASTM D2974-87	366093		
40214939009	ENSTM-46	ASTM D2974-87	366095		
40214939010	ENSTM-7	ASTM D2974-87	366095		
40214939011	MH-1	ASTM D2974-87	366095		
40214939012	MH-2	ASTM D2974-87	366095		

REPORT OF LABORATORY ANALYSIS

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UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436



CHAIN OF CUSTODY

***Preservation Codes**
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)

Company Name: Drake Consulting Group
 Branch/Location: Thiensville, WI
 Project Contact: Chelsea Corson
 Phone: 262-241-0005
 Project Number: J16001
 Project Name: Amcast
 Project State: WI
 Sampled By (Print): Tim Giuliani
 Sampled By (Sign): *TH*
 PO #: _____ Regulatory Program: _____

Quote #: J16001
 Mail To Contact: Carly Corson
 Mail To Company: Drake Consulting Group
 Mail To Address: 118 Green Bay Road, Thiensville WI 53092
 Invoice To Contact: Carly Corson
 Invoice To Company: Drake Consulting Group
 Invoice To Address: 118 Green Bay Road, Thiensville WI 53092
 Invoice To Phone: 262-241-0005

Data Package Options (billable)
 EPA Level III
 EPA Level IV

MS/MSD (billable)
 On your sample
 NOT needed on your sample

Matrix Codes
 A = Air W = Water
 B = Biota DW = Drinking Water
 C = Charcoal GW = Ground Water
 O = Oil SW = Surface Water
 S = Soil WW = Waste Water
 SI = Sludge WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	Y/N	Pick Letter	PCB	PAH	RCRA	Filtered? (YES/NO)	Preservation (CODE)*	Analyses Requested	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
		DATE	TIME												
001	CB-1	9/14	10:25	S			X	X	X						
002	FVSTM-9	9/14	10:50	S			X	X	X						
003	FVSTM-10	9/15	0840	S			X	X	X						
004	FVSTM-12	9/14	13:50	S			X	X	X						
005	CB-2	9/15	11:45	S			X	X	X						
006	ENSTM-49	9/14	14:10	S			X	X	X						
007	CB-3	9/15	12:20	S			X	X	X						
008	ENSTM-47	9/15	12:00	S			X	X	X						
9/18/20 009	MH-16	X	X	S			X	X	X						
010	ENSTM-48	X	X	S			X	X	X						
009 Alt	ENSTM-46	9/14	11:50	S			X	X	X						
010 G12	ENSTM-7	9/15	14:00	S			X	X	X						
011 013	MH-1	9/14	12:55	S			X	X	X						

*PCB'S
 PRIORITY
 ← HIGH PCB'S
 in own zip lock
 Bag*

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge)
 Date Needed: _____

Transmit Prelim Rush Results by (complete what you want): _____

Relinquished By: <i>TH</i> Date/Time: 9/17/20 10:35	Received By: <i>Mary Fanning</i> Date/Time: 9/17/20 10:35
Relinquished By: <i>Mary Fanning</i> Date/Time: 9/17/20 1420	Received By: _____ Date/Time: _____
Relinquished By: <i>CS Logistics</i> Date/Time: 9/18/20 0805	Received By: <i>Sam Kopp Pace</i> Date/Time: 9/18/20 0805
Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____
Relinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____

Samples on HOLD are subject to special pricing and release of liability

PACE Project No. 40214939
 Receipt Temp = *ROT* °C
 Sample Receipt pH OK / Adjusted
 Cooler Custody Seal Present / Not Present Intact / Not Intact

(Please Print Clearly)



CHAIN OF CUSTODY

COC No.

Quote #:	J16001
Mail To Contact:	Carly Corson
Mail To Company:	Drake Consulting Group
Mail To Address:	118 Green Bay Road, Thiensville WI 53092
Invoice To Contact:	Carly Corson
Invoice To Company:	Drake Consulting Group
Invoice To Address:	118 Green Bay Road, Thiensville WI 53092
Invoice To Phone:	262-241-0005

*Preservation Codes

A= None	B=HCL	C=H2SO4	D=HNO3	E=DI Water	F=Methanol	G=NaOH
H=Sodium Bisulfate Solution	I=Sodium Thiosulfate	J=Other				

Company Name:	Drake Consulting Group
Branch/Location:	Thiensville, WI
Project Contact:	Chelsea Corson
Phone:	262-241-0005
Project Number:	J16001
Project Name:	Amcast
Project State:	WI
Sampled By (Print):	Tim Giuliani
Sampled By (Sign):	<i>TH</i>

PO #:	Regulatory Program:	
Data Package Options (billable)	MS/MSD On your sample (billable) <input type="checkbox"/> NOT needed on your sample <input type="checkbox"/>	Matrix Codes A = Air W = Water B = Biota DW = Drinking Water C = Charcoal GW = Ground Water O = Oil SW = Surface Water S = Soil WW = Waste Water SI = Sludge WP = Wipe
<input type="checkbox"/> EPA Level III		
<input type="checkbox"/> EPA Level IV		

FILTERED?
(YES/NO)
PRESERVATION
(CODE)*

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	Y/N	Pick Letter	N	N	N	Analyzes Requested
		DATE	TIME							
61402 9118120 SK	MH-2	9/14	12:50	S		A	A	A		PCB X PAH X RCRA X

CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
<i>PCB'S PRESENT</i>		

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:

Email #2:

Telephone:

Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By: <i>TH</i>	Date/Time: 9/17/20 10:35
Relinquished By: <i>Mary Fannin</i>	Date/Time: 9/17/20 1420
Relinquished By: <i>CS Logistics</i>	Date/Time: 9/18/20 0805
Relinquished By:	Date/Time:

Received By: <i>Mary Fannin</i>	Date/Time: 9/17/20/10:35
Received By:	Date/Time:
Received By: <i>Susan Kay Pace</i>	Date/Time: 9/18/20 0805
Received By:	Date/Time:
Received By:	Date/Time:

PACE Project No. 40214939

Receipt Temp = *POST* °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present *Intact* / Not Intact