State of Wisconsin
Department of Natural Resources
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Notification For Hazardous Substance Discharge (Non-Emergency Only)

Form 4400-225 (R 02/20)

Emergency Discharges / Spills should be reported via the 24-Hour Hotline: 1-800-943-0003

Notice: Hazardous substance discharges must be reported immediately according to s. 292.11 Wis. Stats. Non-emergency hazardous substance discharges may be reported by telefaxing or e-mailing a completed report to the Department, or calling or visiting a Department office in person. If you choose to notify the Department by telefax or by email, you should use this form to be sure that all necessary information is included. However, use of this form is not mandatory. Under s. 292.99, Wis. Stats., the penalty for violating the reporting requirements of ch. 292 Wis. Stats., shall be no less than $10 nor more than $5000 for each violation. Each day of continued violation is a separate offense. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than program administration. However, information submitted on this form may also be made available to requesters under Wisconsin's Open Records Law (ss. 19.31 – 19.39, Wis. Stats.).

Confirmatory laboratory data should be included with this form, to assist the DNR in processing this Hazardous Substance Release Notification.

Complete this form. **TYPE or PRINT LEGIBLY.** NOTIFY appropriate DNR region (see next page) **IMMEDIATELY** upon discovery of a potential release from **(check one)**:

- ◯ Underground Petroleum Storage Tank System (additional information may be required for Item 6 below)
- ◯ Aboveground Petroleum Storage Tank System
- ◯ Dry Cleaner Facility
- ◉ Other - Describe: Discharge of AFFF during fire suppression system testing

ATTN DNR: **R & R Program Associate**

Date DNR Notified: 03/26/2021

1. Discharge Reported By

Name	Firm	Phone Number (include area code)
Kevin Hedinger	GZAGeoEnvironmental, Inc.	(262) 754-2578

Mailing Address	Email
17975 West Sarah Lane, Suite 100, Brookfield, WI 53045	kevin.hedinger@gza.com

2. Site Information

Name of site at which discharge occurred. Include local name of site/business, not responsible party name, unless a residence/vacant property.

Oshkosh Defense LLC West Plant

Location: Include street address, not PO Box. If no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60.

500 West Waukau Avenue

Municipality: (City, Village, Township) Specify municipality in which the site is located, not mailing address/city.

Oshkosh

County	Legal Description:	WTM:
Winnebago	SW ¼ of SE ¼ Section 35 , Town 18 N, Range 16 ◉ E ◯ W	X 636276 Y 390914

3. Responsible Party (RP) and/or RP Representative

Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Oshkosh Defense LLC

☐ A local governmental unit claiming an exemption from state Spill Law and Solid Waste Management responsibilities for the discharge being reported, per Wis. Stat. §§ 292.11(9)(e) and 292.23, should: 1) check this box; 2) review DNR publication RR-055; and 3) provide documentation to DNR that demonstrates compliance with the statutory requirements of the liability exemptions. Local governmental units may also request a fee-based liability clarification letter from DNR by using DNR Form 4400-237.

Contact Person Name (if different)	Phone Number	Email
Kevin Tubbs	(920) 502-3043	ktubbs@oshkoshcorp.com

Mailing Address	City	State	ZIP Code
1917 Four Wheel Drive	Oshkosh	WI	54902

Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Oshkosh Defense LLC

Contact Person Name (if different)	Phone Number	Email
Kevin Tubbs	(920) 502-3043	ktubbs@oshkoshcorp.com

Mailing Address	City	State	ZIP Code
1917 Four Wheel Drive	Oshkosh	WI	54902

(continued)

Notification For Hazardous Substance Discharge (Non-Emergency Only)

4. Hazardous Substance Information

Identify hazardous substance discharged (check all that apply):

- ☐ VOCs
  - ☐ PCE
  - ☐ TCE
  - ☐ Other Chlorinated
  - ☐ Diesel
  - ☐ Fuel Oil
  - ☐ Gasoline
  - ☐ Hydraulic Oil
  - ☐ Jet Fuel
- *(VOCs continued)*
  - ☐ Mineral Oil
  - ☐ Waste Oil
  - ☐ Petroleum-Unknown Type
- ☐ PAHs
- ☐ PCBs
- ☐ Cyanide
- ☐ Leachate
- ☐ Manure
- ☐ Metals
  - ☐ Arsenic
  - ☐ Chromium
  - ☐ Lead
  - ☐ Other: _____
- ☐ Pesticides: _____
- ☐ Fertilizer: _____
- ☐ RCRA Hazardous Waste: _____
- ☒ Other: Perfluoralkyl Substances
- ☐ Unknown

5. Impacts to the Environment Information

Enter "K" for known/confirmed or "P" for potential for all that apply.

- ____ Air Contamination
- ____ Co-mingled (Petroleum & Non-Petroleum)
- ____ Contamination in Fractured Bedrock
- ____ Contamination Within 1 Meter of Bedrock
- ____ Contaminated Private Well
- ____ Contaminated Public Well
- ____ Contamination in Right of Way
- ____ Fire Explosion Threat
- ____ Free Product
- ____ Groundwater Contamination
- ____ Off-Site Contamination
- ____ Sanitary Sewer Contamination
- ____ Storm Sewer Contamination
- ____ Sediment Contamination
- ____ Soil Contamination
- ____ Soil Gas Contamination
- ____ Sub-slab Vapor Contamination
- ____ Surface Water Contamination
- ____ Within 100 ft of Private Well
- ____ Within 1000 ft of Public Well

Other (specify): Discharge of AFFF during fire suppression system testing

Contamination was discovered as a result of:

☐ Tank closure assessment Date _____

☒ Site assessment Date 11/07/2020

☐ Other - Describe: _____ Date _____

Lab results: ☐ Lab results will be faxed upon receipt ☒ Lab results are attached

Additional Comments: Include a brief description of immediate actions taken to halt the release and contain or cleanup hazardous substances that have been discharged.

The fire suppression system testing discharged AFFF to the grass area adjacent to the north side of the building. A portion of the the foam discharged is believed to have reached the storm drain in an adjacent depressed loading dock area. The fire suppression system testing discharge to the grass area was discontinued in 2019.

6. Federal Energy Act Requirements (Section 9002(d) of the Solid Waste Disposal Act (SWDA))

For all confirmed releases from USTs occurring after 9/30/2007 please provide the following information:

☒ Does not apply.

Source

- ☐ Tank
- ☐ Piping
- ☐ Dispenser
- ☐ Submersible Turbine Pump
- ☐ Delivery Problem
- ☐ Other (specify): _____

Cause

- ☐ Spill
- ☐ Overfill
- ☐ Corrosion
- ☐ Physical or Mechanical Damage
- ☐ Installation Problem
- ☐ Other (does not fit any of above)
- ☐ Unknown

Submit this completed form along with any associate lab results using the RR Program Submittal Portal, found on the DNR website at https://dnr.wi.gov/topic/Brownfields/Submittal.html.

If you have any questions, please contact the appropriate regional Environmental Program Associate (EPA) listed under the "EPAs" tab at https://dnr.wi.gov/topic/Brownfields/Contact.html.

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SITE INVESTIGATION REPORT

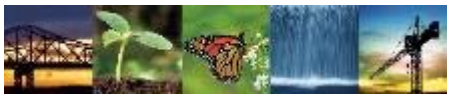
Oshkosh Defense West Plant Site
500 West Waukau Avenue
Oshkosh, Wisconsin

March 29, 2021
File No. 20.0157080.00

PREPARED FOR:
Oshkosh Defense, LLC
c/o Godfrey & Kahn, S.C.

GZA GeoEnvironmental, Inc.
17975 West Sarah Lane, Suite 100 | Brookfield, WI 53045
262-754-2560

31 Offices Nationwide
www.gza.com



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March 29, 2021
File No. 20.0157080.00

Mr. Kevin McKnight, Hydrogeologist
Wisconsin Department of Natural Resources
625 East County Road Y, Suite 700
Oshkosh, Wisconsin 54901-9731

Subject: Site Investigation Report
Oshkosh Defense West Plant Site
500 West Waukau Avenue
Oshkosh, Wisconsin

Dear Mr. McKnight:

GZA GeoEnvironmental, Inc. (GZA), on behalf of Oshkosh Defense, LLC (Oshkosh/"Client") and its outside legal counsel, Godfrey & Kahn, S.C., has prepared this Site Investigation Report to document a subsurface evaluation for possible per- and poly-fluoroalkyl substances (PFAS) at 500 West Waukau Avenue in Oshkosh, Wisconsin, referred to as the Oshkosh Defense, LLC West Plant (Oshkosh Defense West Plant/"Site"). The information contained within this report is consistent with the meeting held on Friday, March 19, 2021, between the Wisconsin Department of Natural Resources (WDNR), Oshkosh, and Godfrey & Kahn, S.C.

The investigation focused on evaluating the presence of PFAS in soils in an area outside of the Oshkosh Defense West Plant Site where annual testing of the fire suppression system could have resulted in an area of PFAS impact. Based on the findings of this work, limited PFAS were detected in the soil samples and further work is planned to continue the investigation, including an evaluation of a related stormwater pathway that leaves the testing area. At this time, Oshkosh is requesting the WDNR's review of the documentation and findings provided in this report and provide its concurrence on our conclusions and path forward.

Should you have any questions or comments, please feel free to contact the undersigned at (262) 754-2578.

Very truly yours,

GZA GeoEnvironmental, Inc.

Kevin M. Hedinger
Senior Hydrogeologist

John C. Osborne, P.G.
Principal Hydrogeologist

J:\157000to157099\157080 Oshkosh\Report\Site Investigation Report- West Plant\
FINAL 20.0157080.00 SI Rpt_Oshkosh Defense West Plant 3-29-21.docx

Attachments

cc: Mr. Edward B. Witte, Godfrey & Kahn, S.C.
Mr. Kevin Tubbs, Oshkosh Defense, LLC

APPENDICES

1.0 GENERAL INFORMATION

GZA GeoEnvironmental, Inc. (GZA), on behalf of Godfrey & Kahn, S.C., outside legal counsel for Oshkosh Defense, LLC (Oshkosh/"Client"), has prepared this Site Investigation Report for the property located at 500 West Waukau Avenue in Oshkosh, Wisconsin ("Site"). This report presents the results of a subsurface investigation designed to evaluate for the presence of per- and poly-fluoroalkyl substances (PFAS) resulting from testing of the fire suppression system in the paint kitchen of the Oshkosh Defense, LLC West Plant (Oshkosh Defense West Plant) building. A release notification has not yet been submitted to the Wisconsin Department of Natural Resources (WDNR) for this Site and, based on the results of the work presented herein, Oshkosh is requesting concurrence from the WDNR regarding our proposed next steps for the Site.

The Responsible Party for the Site is as follows:

Oshkosh Defense LLC
Mr. Kevin Tubbs
1917 Four Wheel Drive
Oshkosh, Wisconsin 54902
ktubbs@oshkoshcorp.com
920-502-3043

The environmental consultant for this project is:

GZA GeoEnvironmental, Inc.
Mr. Kevin Hedinger
17975 West Sarah Lane, Suite 100
Brookfield, Wisconsin 53045
kevin.hedinger@gza.com
262-754-2578

The name and address of the Site are:

Oshkosh Defense, LLC West Plant
500 West Waukau Avenue
Oshkosh, Wisconsin 54902

The Site is part of a property that covers an area of approximately 81 acres and is identified by Parcel ID No. 1413490000 in the City of Oshkosh Parcel Viewer. The Site and property are located in a commercial and industrial use area within the southwest ¼ of the southeast ¼ of Section 35, Township 18 North, Range 16 East, Winnebago County, Wisconsin, as shown on Figure 1. The Site is located in the southwest corner of the property, near the intersection of Hughes Street and West Waukau Avenue, adjacent to the north side of the building referred to as the Oshkosh Defense West Plant. The WTM91 coordinates for the approximate center of the Site are as follows X: 636276.87731, Y: 390914.88644.

The Site is bordered to the north by an industrial storage yard that is part of Oshkosh's property; to the west by Hughes Street, beyond which is Wittman Regional Airport; to the south by industrial properties; and to the east by other Oshkosh manufacturing buildings. The investigation at the Site focused on a grass-covered area on the north side of the Oshkosh Defense West Plant, along the approximate middle of the building. The Site is between an at-grade driveway entrance into the Oshkosh Defense West Plant building on the east and a depressed loading dock on the west. The loading dock is depressed approximately 3.5 feet below surrounding grade at the deepest point and grades rise along the driveway toward the north until it meets the surrounding grade. Along the sides of the concrete loading dock driveway, concrete

aprons flank both sides that cover the side slope created due to the depressed nature of the loading dock. Walk doors are located on both the east and west sides of the loading dock, which allow for access into the building. The loading dock is used for routine delivery of supplies to the Oshkosh Defense West Plant. Located east of the sub-grade loading dock and underlying a portion of the green space is a 25-foot by 50-foot, subterranean extension of the Oshkosh Defense West Plant that extends approximately 15 feet deep and is accessible from inside of the Oshkosh Defense West Plant. The extension houses water treatment and handling equipment for a chiller used in the operations at the Oshkosh Defense West Plant. The Oshkosh Defense West Plant is used for painting activities, therefore, it is equipped with a fire suppression system for Class B fires. The fire suppression system utilizes Alcohol-Resistant-Aqueous Film Forming Foam (AR-AFFF) that contains PFAS. In the past, the fire suppression system was tested and the foam was discharged from a pipe on the north side of the building onto the grass area and into the loading dock area. Figure 2 shows the Site layout, including the surface slope indication, underground utilities, surface covering, and pertinent features in the investigation area.

Based on the previous fire suppression testing activities that discharged AR-AFFF-containing PFAS, on behalf of Oshkosh, GZA conducted a subsurface investigation, as summarized in this report. The report is being submitted in consideration of relevant sections of Wisconsin Administrative Code (Wis. Adm. Code) NR 706 regarding release notification and NR 716 to satisfy general site investigation requirements. This report is also subject to the Limitations provided in Appendix A.

2.0 BACKGROUND AND SITE HISTORY

The Oshkosh Defense West Plant is used for vehicle painting activities. The paint kitchen in the Oshkosh Defense West Plant is served by a fire suppression system capable of controlling or extinguishing Class B fires involving flammable and combustible liquids. The fire suppression system was charged with AR-AFFF that contained PFAS, as specified by the National Fire Protection Association (NFPA) for high-hazard fires and was tested to ensure it was operating properly. The fire suppression system has not been discharged because of a fire, but is inspected and annually tested, in conformance with NFPA standards. The inspection and testing process included the brief discharge of AR-AFFF from the fire suppression system through a pipe on the north side of the Oshkosh Defense West Plant building. At the time of testing, AR-AFFF was discharged out of the pipe via a hose and nozzle to the grass and loading dock area on the north side of the building. Following discharge, the foam was allowed to break down in the grass and loading dock areas. The exterior area closest to the discharge pipe is currently underlain by the extension that was constructed in the 1970s and covered by approximately 9 inches of soil.

The depressed loading dock contains a storm sewer catch basin that drains water that collects in the loading dock from precipitation. The foam that was discharged during testing migrated to the storm sewer through breakdown of the foam and from residuals in surface water runoff in the loading dock area. The location, route, construction, and discharge location for the storm sewer in the loading dock is being reviewed, but was not the focus of the investigation at this time.

GZA's investigation focused on determining the presence of residual PFAS that may remain in soils surrounding the AR-AFFF discharge area. PFAS are a complex class of fluorinated compounds developed in the 1950s, and used in manufacturing processes and commercially available products, including AR-AFFF. Until approximately 2000, the PFAS compounds, most commonly perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA), were manufactured to contain carbon chain lengths with eight completely fluorinated carbons. The strength of the carbon-fluorine bond has resulted in PFOS, PFOA, and other PFAS persisting in the environment, and the bioaccumulating nature of these compounds within humans and other organisms enhance their toxicity.

Between 2000 and 2006, chemical manufacturers committed to reducing the manufacturing of long-chain PFAS, those having a carbon chain length of eight fluorinated carbons, such as PFOS and PFOA. The United States Environmental

Protection Agency (USEPA) indicates that by 2010, 95% of long-chain PFAS was eliminated and by 2015, the elimination of long-chain PFAS manufacturing was reportedly complete.[1]

The discharges from testing of the fire suppression system spans the time during which manufacturers phased out foams containing an eight fluorinated carbon chain length (C8 foams) to the six fluorinated carbon chain length foams (C6 foams). During the manufacturing process of the PFAS used in the C8 foam concentrate, PFOS and PFOA were the predominant form present; however, other PFAS substances may have also been present. The C8 foams, depending on the age, likely contained PFOS and PFOA, fluorotelomers, and other PFAS impurities. The fluorotelomers do not contain fully fluorinated carbon chains and can be precursors to other perfluoroalkyl substances that are generated by degradation of the fluorotelomers. Given the timing of the phase out and the testing performed, it is likely that the foam discharges contained PFOS, PFOA, fluorotelomers, and short-chain PFAS compounds. In addition, it is likely that after the phase out of PFOS and PFOA manufacturing was complete in 2015, the AR-AFFF concentrate inventory on-Site could have contained PFOS and PFOA given the long shelf life of the AR-AFFF.

The AR-AFFF used in the Site fire suppression system originally contained C8 AR-AFFF, specifically, ANSULITE LOW VISCOSITY 3x3 AR-AFFF Foam Concentrate. The Safety Data Sheet (SDS) for this product is provided in Appendix B. As part of each testing event, the AR-AFFF tank was topped off with additional concentrate to maintain a full tank. As described in further detail below, the AR-AFFF that was added to the tank changed to short-chain (C6) PFAS with the phase out of the C8 AR-AFFF from 2006 through 2015. Currently, the foam concentrate material in the tank at the Oshkosh Defense West Plant that is on-Site for use in the fire suppression system is believed to be a blend of C8 and C6 foams. For at least the last six years, the AR-AFFF that was added to the tank following annual testing would have been C6 foams that are manufactured using fluorotelomers that do not contain or degrade to PFOS and PFOA.

3.0 GEOLOGIC AND HYDROGEOLOGIC SETTING

The Site is located within a region of Winnebago County characterized by glacially derived, unconsolidated deposits of the Kewaunee Formation ranging from lake sediments associated with glacial Lake Oshkosh to various glacial till units primarily associated with the Kirby Lake Member of the Kewaunee Formation.[2] The till deposits are described as red, clayey silt that contains some coarser-grained deposits and is generally at least 3 meters thick and tend to have low relief, flay-lying topography. In the area of the Site, the Kirby Lake member is reported to include thin (less than 6 feet) patches of lake sediment. Other characteristics of these units include:

- A higher percentage of fine-grained sediment with sand, silt, and clay grain-size distributions averaging 24%, 42%, and 34%, respectively; and
- Measured hydraulic conductivity values in field tests averaging 7.19×10^{-5} centimeters per second (cm/sec) while laboratory testing indicated averages of 9.46×10^{-8} cm/sec.

The upper bedrock unit in eastern Winnebago County underlying the Site is dolomite of the Ordivician Sinnipee Group. The bedrock is generally encountered less than 40 feet below ground surface (bgs) in this portion of the County.[3]

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[1] Interstate Technology & Regulatory Council, History and Use of Per-and Polyfluoroalkyl Substances (PFAS), April 2020.

[2] Hooyer, T.S., Mode, W.N., 2008, Quaternary Geology of Winnebago County, Wisconsin, Wisconsin Geological and Natural History Survey, Bulletin 105, James M. Robertson, Director, 33 p.

[3] Olcott, P.G., 1966, Geology and Water Resources of Winnebago County, Wisconsin, Geological Water Supply Paper 1814, prepared in cooperation with the University of Wisconsin Geological and Natural History Survey, 61 pp.

While groundwater occurs in both the unconsolidated glacial units and bedrock formations, the glacial deposits are generally not considered part of the regional aquifer system. These fine-grained glacial deposits that cover most of the broad lowlands in the eastern portion of the County are believed to hydraulically confine the underlying bedrock aquifers and tend to restrict groundwater recharge and discharge to shallow and deeper regional groundwater systems. Based on general topography and the location of recharge areas and shallow groundwater discharge zones, the groundwater flow direction in the area of the Site is expected to be predominantly eastward toward Lake Winnebago.

Surface water in the Site area is controlled by storm sewer catch basins in the loading dock and surrounding roadways that flow into a sewer line north of the Site. The storm sewer water is conveyed to the east through piping along the north side of the Oshkosh Defense West Plant. The storm sewer pipe extends to the east beyond the Oshkosh Defense West Plant building approximately 500 feet where it turns to the north and eventually discharges into Glatz Creek approximately 1,300 feet north of the Site.

4.0 INVESTIGATION ACTIVITIES AND METHODS

To evaluate for evidence of PFAS in soils originating from periodic testing of the fire suppressions system, GZA performed a series of soil boring, sampling, and analytical testing to determine the presence and potential distribution of PFAS in unsaturated soils in the area most likely to be affected. This area was considered to be the grass area east of the depressed loading dock on the north side of the Oshkosh Defense West Plant building.

4.1 SOIL BORINGS AND SOIL SAMPLING

On November 7, 2020, GZA provided oversight of its subcontractor, On-Site Environmental, Inc. (OSE), during the advancement of seven Geoprobe® borings (WP-B1 through WP-B6 and WP-B8) and one hand auger boring (WP-B7) on the Site at the locations identified on Figure 3. Prior to initiating the field sampling activities, GZA requested confirmation that OSE's Geoprobe® sampling systems, tooling, and ancillary equipment were fully evaluated for the presence of PFAS that could result in inducing impacts to the samples collected. OSE provided GZA with quality assurance/quality control (QA/QC) protocols for deployment of its sampling equipment to ensure the equipment is PFAS-free and sample integrity is retained.

Borings WP-B1 through WP-B5 were advanced to a depth of 10 feet bgs, WP-B8 was advanced to a depth of 5 feet bgs for visual observation of the upper soil column, and WP-B6 was advanced to a depth of 15 feet bgs to determine if bedrock was at the base of the basement and to confirm the soil types to the depth of the basement using the Geoprobe®. WP-B7 was hand-excavated with a stainless-steel trowel to a depth of 9 inches bgs or the top of the concrete basement ceiling. Geoprobe® soil samples were collected continuously from the ground surface to the terminus of the borings using 2-inch diameter by 5-foot long, stainless-steel sampling tubes lined with disposable acetate liners. The soil samples were visually observed and classified in accordance with the Unified Soil Classification System (USCS) and then divided into 1-foot intervals for placement into sealable plastic bags. During soil classification and soil handling, activities were completed by personnel wearing disposable latex gloves. Based on the soil classification and observations, discrete intervals were selected and the samples were placed into laboratory-supplied containers for submittal of laboratory analysis for the Wisconsin list of the PFAS. The physical observations and classification of soils are presented on the soil boring logs, which are provided in Appendix C; corresponding soil boring abandonment forms are also provided in Appendix C. The rationale for each boring was as follows:

- Boring WP-B1 was located approximately 30 feet north of the building at the closest location on the east side of the loading dock driveway at which the boring could be advanced off the concrete apron. This location provided the most likely place along the loading dock driveway to encounter PFAS compounds in the soil from the fire suppression system testing.
- Borings WP-B2, WP-B3, and WP-B4 were located north of the building, approximately 3 to 5 feet north of the subsurface basement structure along the north side of the building wall. The surface slope on the north side of the building is toward the north. These locations allowed for advancement of the borings into native soils outside of the basement structure and allow for the evaluation of potential migration due to the surface slope.
- Borings WP-B5 and WP-B6 were located approximately 45 feet north of the building and approximately 20 feet north of the basement structure. This area is further downslope of the discharge pipe and evaluated the potential for migration of PFAS compounds by surface water runoff.
- Boring WP-B7 was hand-excavated into the 9-inch cover soils overlying the extension structure. However, it is likely that the soils in WP-B7 were disturbed during the soil regrading in the grass area in the last several years.
- Boring WP-B8 was located between WP-B2 and WP-B6 to confirm the shallow soil lithology between these borings. No soil samples were collected for laboratory analysis from this boring.

Because of the nature of the AR-AFFF discharges being applied to the surface, the focus of analytical testing for evidence of PFAS impacts was the upper portion of the soil column. Soil samples for laboratory analysis were collected in the upper 3 feet of the subsurface and from a second sample interval that was near, but above, the observed water table at the time of drilling. Therefore, two soil samples from each boring were selected for laboratory analysis, except for boring WP-B7, in which one soil sample was selected for laboratory analysis because of the limited soil thickness. Additionally, in borings WP-B4 and WP-B5, the deeper sample was held by the laboratory pending the results of the shallower interval.

To conduct the analyses, GZA selected Pace Analytical Services, Inc. (Pace) of West Columbia, South Carolina (formerly Shealy Environmental Services, Inc.) which is a WDNR-certified laboratory to provide these laboratory services. Following collection and recording, the soil samples were placed into laboratory-supplied containers, on ice within an insulated cooler, and submitted to Pace under chain-of-custody protocol. Soil samples were submitted for the analysis of 36 PFAS, which are presently recommended for quantification by the WDNR, Method 537.1 using the liquid chromatography-tandem mass spectrometry (LC-MS/MS) procedure. The laboratory analytical reports for the soil samples submitted from the Site are provided in Appendix D.

5.0 PRESENTATION AND DISCUSSION OF RESULTS

5.1 SUBSURFACE CONDITIONS

The soil lithology encountered at the Site during the soil boring activities consisted of approximately 0.5-foot of topsoil and grass underlain by red/brown clay to a depth of 9 to 10 feet bgs. Brown, fine to medium sand was encountered in two borings at depths of 9.5 to 11 feet. In boring WP-B6, which was advanced to 15 feet bgs, the sand was approximately 1 foot thick and was underlain by 2 to 3 feet of silt. The soils in the upper 2 to 3 feet of the soil column appear to be disturbed, likely caused by soil disturbance related to the Oshkosh Defense West Plant addition activities. Depending on the timing of the disturbance and regrading of the area, it is possible that shallow soils in the upper 2 to 3 feet may have been blended and redistributed if they were present in the soils prior to the disturbance.

During boring advancement, bedrock was not encountered in any of the borings and there was no indication of weathered bedrock in any of the borings. The generalized soil lithology, soil sampling intervals selected for laboratory analysis, and the soil analytical results of the detected PFAS constituents are shown on the cross-sections presented on Figures 4 and 5. The lines of geologic cross-sections are shown in plan view on Figure 3.

Groundwater was visually observed to be present in the sand layer. The overlying clay deposit appeared to be moist, but groundwater was not readily apparent. The sand layer and coinciding depth to groundwater in WP-B1 adjacent to the loading dock driveway was observed at a depth of 9 feet bgs, which is approximately 6 to 7 feet below the deepest part of the loading dock and the storm sewer line that follows the driveway to the north. The groundwater in the sand layer was not observed to be under pressure head. Groundwater monitoring wells were not installed as part of this investigation.

5.2 SOIL ANALYTICAL RESULTS

A total of 11 soil samples were analyzed for the Wisconsin list of 36 PFAS compounds. The only PFAS compounds with proposed residual contaminant levels (RCLs) are PFOS and PFOA for industrial and non-industrial direct contact exposure. The WDNR has provided guidance that the soil-to-groundwater pathway RCLs are to be calculated using the USEPA Risk-based Regional Screening Tool and WDNR default values outlined in the WDNR guidance document dated January 23, 2014.

GZA used the Risk-based Screening Tool to obtain the necessary toxicological data for PFOS and PFOA to develop the soil-to-groundwater RCLs. Following the guidance document, the risk-based screening levels calculated by the tool were converted to a screening level relative to the proposed NR 140 Enforcement Standard (ES) of 20 nanogram per liter (ng/L) (0.02 micrograms per liter [µg/L]) for combined PFOS and PFOA. The soil-to-groundwater RCL for PFOS was calculated to be 0.038 micrograms per kilogram (µg/kg) and the soil-to-groundwater RCL for PFOA was calculated to be 0.006 µg/kg. The supporting documentation for the calculation of the soil-to-groundwater RCL is provided in Appendix E. The resulting RCLs applicable to this Site include the following:

Constituent	Industrial Direct Contact (µg/kg)	Non-Industrial Direct Contact (µg/kg)	Soil-to-Groundwater (µg/kg)
PFOS	16,400	1,260	0.038
PFOA	16,400	1,260	0.006

The soil sample analytical results indicate that six constituents were detected above the method detection limits, including 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS), Perfluoroheptanoic Acid (PFHpA), Perfluorohexanoic acid (PFHxA), PFOS, PFOA, and Perfluoropentanoic acid (PFPeA). The only constituents detected that currently have soil or groundwater standards are PFOS and PFOA, whereas the other constituents detected in the soil do not have soil or groundwater standards for comparison purposes. A summary of the soil analytical results is presented on Table 1 and the laboratory analytical report is provided in Appendix D. Figure 6 shows the distribution of the PFAS compounds detected in soil for each boring. Also note that because of the limited detections of PFAS in the shallower soil samples analyzed, the deeper samples retained during field sampling, as shown on the chain-of-custody form, did not require analysis.

PFOA was detected in WP-B3 (2-3') at 4.5 µg/kg and PFOS was detected in WP-B1 (1-2') at 1.3 µg/kg, which exceed the calculated soil-to-groundwater RCL of 0.006 µg/kg and 0.038 µg/kg for these constituents, respectively. These borings are located near the center of the north wall of the basement structure and adjacent to the loading dock driveway, respectively. The soil samples from the deeper interval in both of these borings have reported concentrations of PFOS and PFOA less than the respective method detection limits, indicating the PFOA and PFOS had not migrated vertically. The soil samples from the other borings had reported concentrations less than the respective method detection limits.

The lack of concentrations in the deeper sample intervals indicate that the PFOA and PFOS may be limited to the upper 3 feet of the soil column in each boring. The PFOA and PFOS concentrations detected in the soil appear to coincide with the periodic nature of the discharge of AR-AFFF-containing long-chain PFAS during the fire suppression system testing. The limited horizontal distribution of PFOA and PFOS in the soil samples from the borings may be a result of the shallow, low permeability clay soils limiting infiltration and promoting surface water runoff.

6:2 FTS was detected above the method detection limit in samples WP-B2 (2-3'), WP-B3 (2-3'), and WP-B3 (5-6'). 6:2 FTS is a fluorotelomer with eight carbon atoms, but unlike PFOS and PFOA, only six of the carbon atoms are completely fluorinated. The structure of this fluorotelomer allows for it to be degraded under aerobic conditions. The degradation of fluorotelomers can result in the generation of PFHxA and PFPeA. 6:2 FTS and its breakdown products are generally believed to be of lower toxicity than PFOS and PFOA due to the shorter carbon chain length, lack of bioaccumulation, and shorter half-lives.[4]

PFHpA was detected above the method detection limit in samples from WP-B3 (2-3'), WP-B3 (5-6'), and WP-B-4 (2-3'). PFHpA is a seven-carbon chain compound with only six fully fluorinated carbon atoms. PFHpA may be present from the degradation of fluorotelomers or other impurities in the C8 foam discharged to the surface.

The breakdown products PFHxA and PFPeA were detected above the method detection limit in WP-B1 (1-2'), WP-B3 (2-3'), WP-B3 (5-6'), and WP-B4 (2-3'). The presence of 6:2 FTS confirms that during more recent years of fire suppression testing, the included short-chain formulations of AR-AFFF following the phase out of the long-chain PFAS. The soil samples in which 6:2 FTS and its breakdown products were detected above the method detection limits are from borings along the north edge of the basement structure. Of these samples, the only boring with a detected concentration in the deeper interval was WP-B3 (5-6'). 6:2 FTS, PFHxA, and PFPeA do not have regulatory standards for comparison.

Only the breakdown products of 6:2 FTS were detected in the samples collected WP-B1 (1-2') and WP-B4 (2-3'). The lack of 6:2 FTS in these samples appear to indicate limited migration of the breakdown products from the area of boring WP-B2 and WP-B3. Also note that given the low concentrations of 6:2 FTS detected in the soil samples, it is possible that 6:2 FTS is present, but below the method detection limit.

The soil samples collected from WP-B5, WP-B6, and WP-B7 did not detect any PFAS constituents at concentrations above method detection limits. Borings WP-B5 and WP-B6 were located the furthest downslope to evaluate the potential for lateral migration away from the AR-AFFF discharge area. Boring WP-B7 was collected from the soil on top of the extension structure nearest the discharge point, but contains soils recently placed therefore, may not be representative of historic discharges. The lack of PFAS constituents in these samples appears to indicate that the releases of AR-AFFF during testing was focused, showing a limited area of impact near the north edge of the basement structure and loading dock area, but not evidence of widespread migration away from the discharge point.

6.0 SUMMARY AND CONCLUSIONS

The following summary and conclusions are based on the results of Site investigation activities, analytical results, and historical operations performed at the Site.

- The Oshkosh Defense West Plant has a Class B fire suppression system that uses AR-AFFF substances that contain PFAS constituents. The system was tested and discharged AR-AFFF at a 3% concentrate mixture with water.

[4] National Association for Surface Finishing, 6:2 Fluorotelomer Sulfonate (6:2 FTS), Toxicology at a Glance, March 2019.

- During the testing, the discharge of AR-AFFF occurred north of the north wall of the Oshkosh Defense West Plant building and the foam discharged onto the grassy area and into the loading dock area. Once discharged, the foam was allowed to break down in the grass and loading dock areas.
- Although the AR-AFFF used during testing did contain PFAS initially, the system testing was performed before, during, and after the phase out period for the manufacturing of long-chain PFAS. Following testing, foam concentrate was added to maintain a full tank. Therefore, the products used throughout the testing likely contained both the C6 and C8 foams.
- This portion of the investigation focused on assessing the soil impacts in the area where AR-AFFF discharges occurred and did not evaluate the migration of potential impact through the Site stormwater system.
- A total of eight soil borings were advanced, six of which extended from 10 to 15 feet bgs, one of which extended to 9 inches due to the presence of the underlying basement structure, and one which extended to 5 feet to confirm the lithology between borings.
- A total of 11 soil samples were analyzed by Pace for analysis of the Wisconsin list of 36 PFAS compounds.
- Underlying a surficial layer of topsoil in the upper 0.5-foot, geologic conditions consist of low permeability clay deposits (consistent with till of the regional Kewaunee Formation) extending to a depth of approximately 9 to 11 feet bgs. A sand layer approximately 1 foot thick, which may represent patchy lake sediment, was encountered beneath clay. In the boring advanced to 15 feet, beneath the sand was a silt layer followed by a sand layer.
- Groundwater was observed in the sand layer at an estimated depth of 9 to 10 feet. The sand layer appeared to be continuous throughout the borings advanced on the Site; however, only two borings encountered the sand layer. Bedrock was not encountered in any of the soil borings.
- Applicable PFAS regulatory thresholds for the Site include published non-industrial and industrial direct-contact RCLs for PFOS and PFOA. The soil-to-groundwater RCLs for PFOS and PFOA were calculated using the WDNR guidance and were established relative to the proposed ES of 20 ng/l (0.02 µg/l) for combined PFOA and PFOS. PFOS at 1.3 µg/kg and PFOA at 4.5 µg/kg were each found in one soil sample exceeding the calculated soil-to-groundwater RCLs of 0.038 µg/kg and 0.006 µg/kg, respectively.
- Other PFAS detected at concentrations exceeding the method detection limit were 6:2 FTS, PFHxA, PFPeA, and PFHpA, and do not appear to require further investigation based on the extent of impact being defined in the soil borings installed in this investigation and the lack of applicable regulatory standards for comparison.
- Based on the location and magnitude of the PFAS detections, it appears that the affected soils are limited to the area near the north edge of the basement structure and the loading dock area and did not extend out to the furthest outlying borings.

In GZA's professional opinion, the presence, but limited vertical and horizontal extent of PFOS and PFOA in the unsaturated soils exceeding the calculated RCLs, appears to indicate that the periodic fire suppression testing conducted by Oshkosh resulted in a very limited release of long-chain and short-chain PFAS. It is important to note that the calculated RCL used for comparison is a conservative and preliminary value based on a proposed NR 140 ES that is yet to be promulgated.

Oshkosh embarked upon this investigation to understand the soil conditions resulting from the fire suppression testing activities. Although enforceable PFAS criteria in soil at this time may be considered preliminary in nature, the findings of this work indicate that shallow soil and potentially underlying groundwater may contain detectable concentrations of PFOS and/or PFOA. However, the WDNR has not provided concurrence with the calculated soil-to-groundwater RCL

presented in this report for PFOS and PFOA. Upon WDNR review of the RCL, it may be necessary to develop a scope of work to evaluate the groundwater conditions in this area.

Based on the proximity of the storm sewer in the loading dock to the discharge pipe, foam discharged during the testing entered the storm sewer from the breakdown of the foam and/or through residual concentrations in surface water runoff. The storm sewer will be evaluated to determine its route, type of construction, modifications since building construction in the 1970s, and the discharge point through time. Following this review and evaluation of the storm sewer, Oshkosh will consider an appropriate scope of work to investigate potential PFAS in soils and/or groundwater. This evaluation will be presented to the WDNR under separate cover for review.

7.0 CERTIFICATIONS

"I, Kevin M. Hedinger, hereby certify that I am a hydrogeologist as that term is defined in s NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Kevin M. Hedinger
Senior Project Manager / Hydrogeologist

March 29, 2021
Date

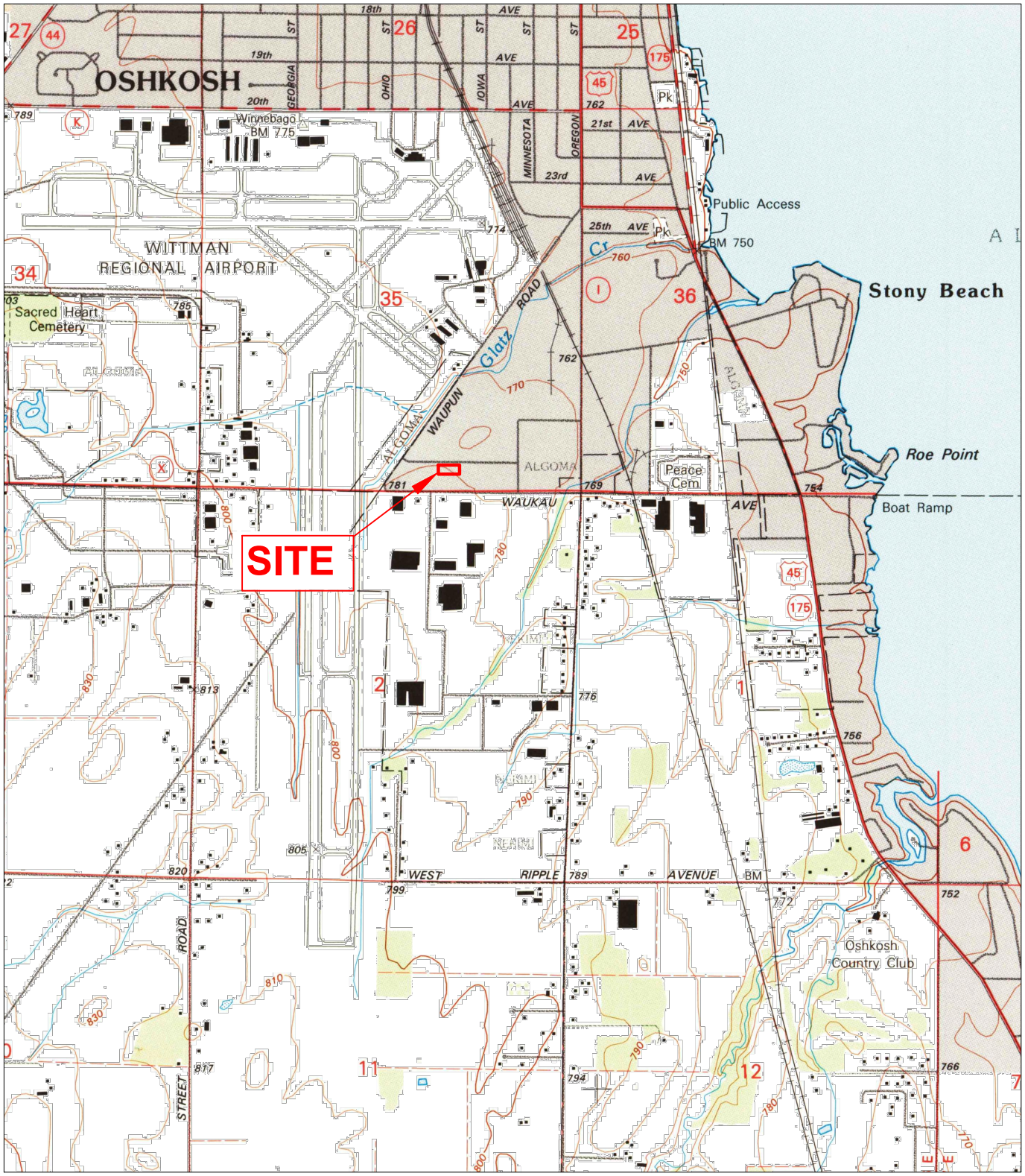
TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - PFAS
Defense West Plant Site
Oshkosh, Wisconsin

Location		Wisconsin Non-Industrial Direct Contact RCL[2] (µg/kg)	Wisconsin Industrial Direct Contact RCL[2] (µg/kg)	Soil to Groundwater Pathway RCL (µg/kg)	WP B-1	WP B-1	WP B-2	WP B-2	WP B-3	WP B-3	WP B-4	WP B-5	WP B-6	WP B-6	WP B-7
Sample Name					WP B-1 (1-2')	WP B-1 (5-6')	WP B-2 (2-3')	WP B-2 (5-6')	WP B-3 (2-3')	WP B-3 (5-6')	WP B-4 (2-3')	WP B-5 (2-3')	WP B-6 (2-3')	WP B-6 (6-7')	WP B-7 (0-9')
Laboratory Sample ID					VK12014-013	VK12014-014	VK12014-011	VK12014-012	VK12014-007	VK12014-008	VK12014-005	VK12014-009	VK12014-003	VK12014-004	VK12014-015
Sample Date					11/7/2020	11/7/2020	11/7/2020	11/7/2020	11/7/2020	11/7/2020	11/7/2020	11/7/2020	11/7/2020	11/7/2020	11/7/2020
Parameter (µg/kg)	**CAS Number**														
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	763051-92-9	NA	NA	NA	< 1.8	< 2.5	< 2.0	< 2.4	< 2.6	< 2.1	< 2.0	< 2.4	< 1.9	< 2.1	< 2.2
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	NA	NA	NA	< 1.8	< 2.5	**5.6**	< 2.4	**4.2**	**2.5**	< 2.0	< 2.4	< 1.9	< 2.1	< 2.2
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	39108-34-4	NA	NA	NA	< 1.8	< 2.5	< 2.0	< 2.4	< 2.6	< 2.1	< 2.0	< 2.4	< 1.9	< 2.1	< 2.2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	757124-72-4	NA	NA	NA	< 1.8	< 2.5	< 2.0	< 2.4	< 2.6	< 2.1	< 2.0	< 2.4	< 1.9	< 2.1	< 2.2
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-D	13252-13-6	NA	NA	NA	< 3.7	< 5.0	< 4.1	< 4.8	< 5.2	< 4.1	< 3.9	< 4.9	< 3.8	< 4.3	< 4.4
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	919005-14-4	NA	NA	NA	< 1.8	< 2.5	< 2.0	< 2.4	< 2.6	< 2.1	< 2.0	< 2.4	< 1.9	< 2.1	< 2.2
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	756426-58-1	NA	NA	NA	< 1.8	< 2.5	< 2.0	< 2.4	< 2.6	< 2.1	< 2.0	< 2.4	< 1.9	< 2.1	< 2.2
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	2991-50-6	NA	NA	NA	< 1.8	< 2.5	< 2.0	< 2.4	< 2.6	< 2.1	< 2.0	< 2.4	< 1.9	< 2.1	< 2.2
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	2355-31-9	NA	NA	NA	< 1.8	< 2.5	< 2.0	< 2.4	< 2.6	< 2.1	< 2.0	< 2.4	< 1.9	< 2.1	< 2.2
Perfluorobutanesulfonic Acid (PFBS)	375-73-5	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorobutanoic Acid (PFBA)	375-22-4	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorodecanoic Acid (PFDA)	335-76-2	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorododecanoic Acid (PFDoA)	307-55-1	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluoroheptanesulfonic Acid (PFHPS)	375-92-8	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluoroheptanoic Acid (PFHpA)	375-85-9	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	**4.2**	**1.7**	**2.1**	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorohexanoic Acid (PFHxA)	307-24-4	NA	NA	NA	**1.1**	< 1.3	< 1.0	< 1.2	**3.8**	**3.2**	**3.5**	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorononanesulfonic Acid (PFNS)	68259-12-1	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorononanoic Acid (PFNA)	375-95-1	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorooctanesulfonamide (FOSA)	754-91-6	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	1,260	16,400	0.038	**1.3**	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorooctanoic Acid (PFOA)	335-67-1	1,260	16,400	0.006	< 0.92	< 1.3	< 1.0	< 1.2	**4.5**	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
PFOS + PFOA (Calculated)	PFOS+PFOA	1,260	16,400	NA	**1.3**	ND	ND	ND	**4.5**	ND	ND	ND	ND	ND	ND
Perfluoropentanesulfonic Acid (PFPeS)	2706-91-4	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluoropentanoic Acid (PFPeA)	2706-90-3	NA	NA	NA	**2.9**	< 1.3	< 1.0	< 1.2	**2.8**	**4.6**	**3.0**	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorotetradecanoic Acid (PFTA)	376-06-7	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1
Perfluoroundecanoic Acid (PFUnA)	2058-94-8	NA	NA	NA	< 0.92	< 1.3	< 1.0	< 1.2	< 1.3	< 1.0	< 0.99	< 1.2	< 0.95	< 1.1	< 1.1

Notes:
1. The Soil-to-Groundwater Pathway RCL was calculated using the United States Environmental Protection Agency (USEPA) Regional Screening Level Web Calculator, https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search, and the Wisconsin Department of Natural Resources (WDNR) Soil Residual Contaminant Level Determinations document, Pub-RR-890.
2. Results are presented in micrograms per kilogram (µg/kg).
3. "NA" indicates there is no standard for that parameter and "ND" indicates the parameters used in the calculation were not detected.

FIGURES



0 1,000' 2,000' 4,000'

SCALE IN FEET 1" = 2,000'

NO.	ISSUE/DESCRIPTION	BY	DATE

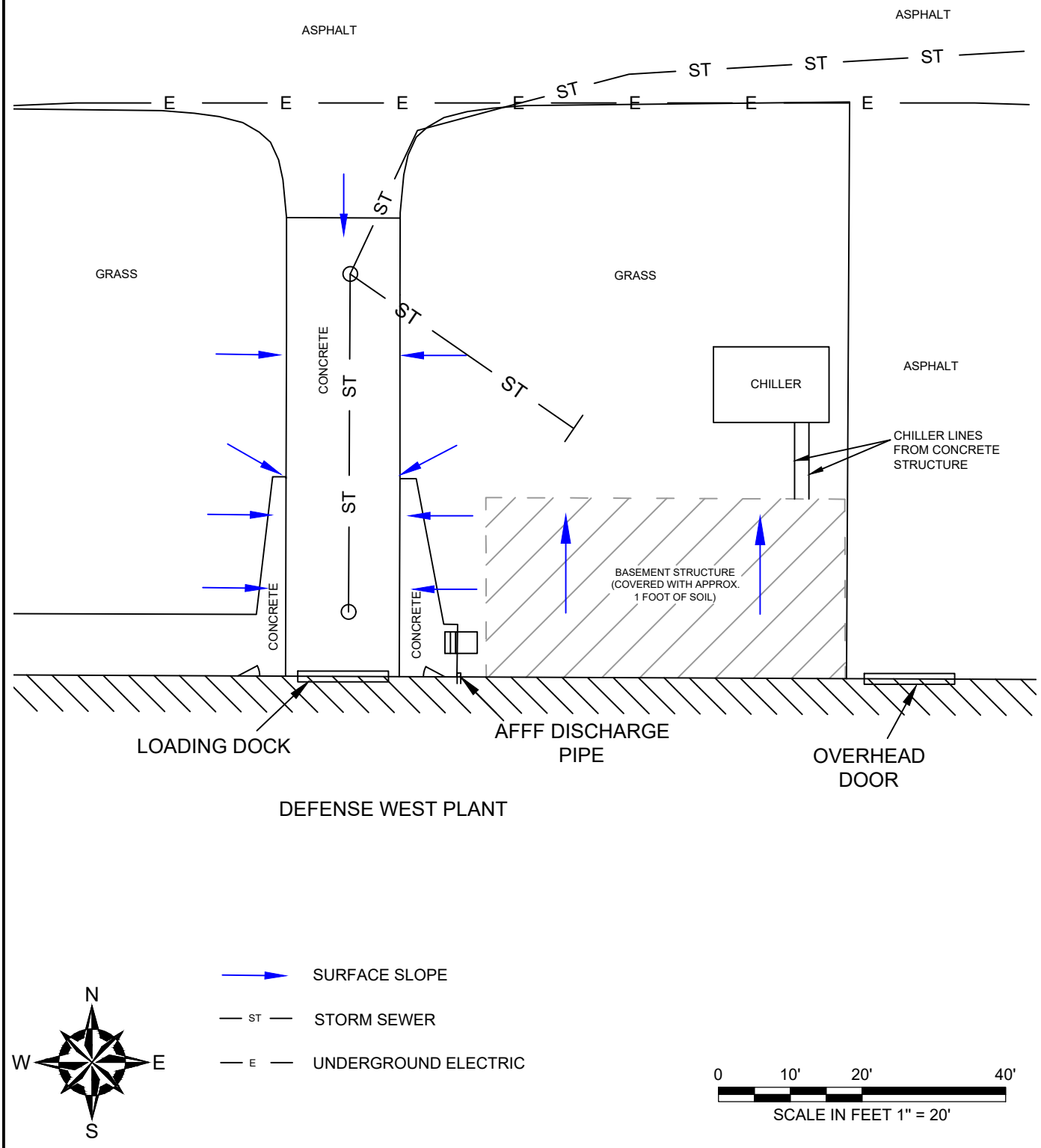
OSHKOSH CORPORATION
DEFENSE WEST PLANT
OSHKOSH, WISCONSIN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
OSHKOSH CORPORATION
OSHKOSH, WISCONSIN

SITE LOCATION

PROJ MGR: KMH	REVIEWED BY: JCO	CHECKED BY: JCO	FIGURE 1
DESIGNED BY: KMH	DRAWN BY: KMH	SCALE: AS SHOWN	
DATE: 12/29/2020	PROJECT NO. 20.0157080.01	REVISION NO.	SHEET NO.



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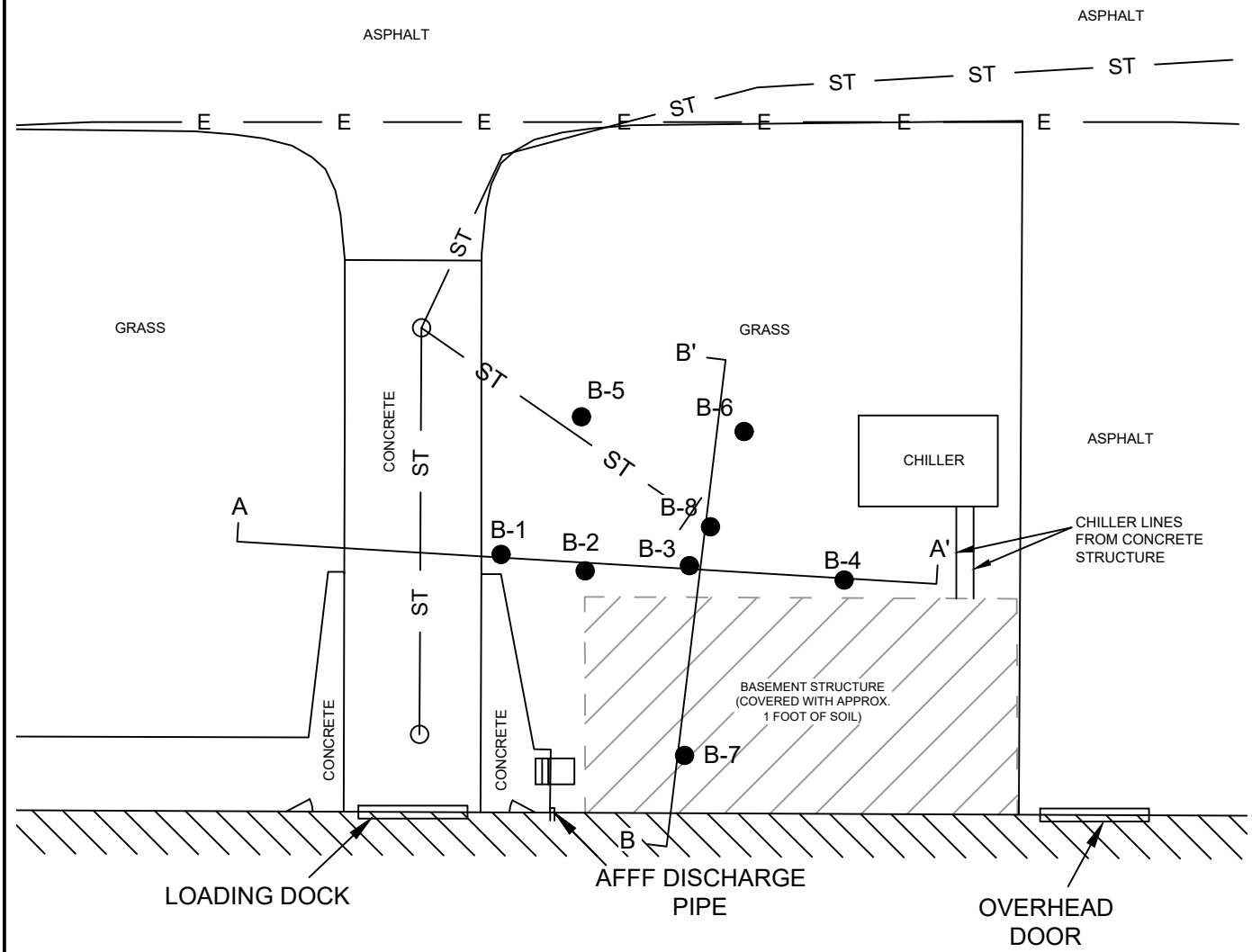
DEFENSE WEST PLANT
OSHKOSH, WISCONSIN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
OSHKOSH CORPORATION
OSHKOSH, WISCONSIN

SITE PLAN

PROJ MGR: KMH	REVIEWED BY: JO	CHECKED BY: JO	FIGURE 2
DESIGNED BY: KMH	DRAWN BY: KMH	SCALE: 1"=20'	
DATE: JANUARY 2021	PROJECT NO. 20.0157080.00	REVISION NO.	SHEET NO.



DEFENSE WEST PLANT

A A' LINES OF GEOLOGIC CROSS-SECTION

ST STORM SEWER

E UNDERGROUND ELECTRIC

SOIL BORING

N W E S

0 10' 20' 40'

SCALE IN FEET 1" = 20'

NO.	ISSUE/DESCRIPTION	BY	DATE

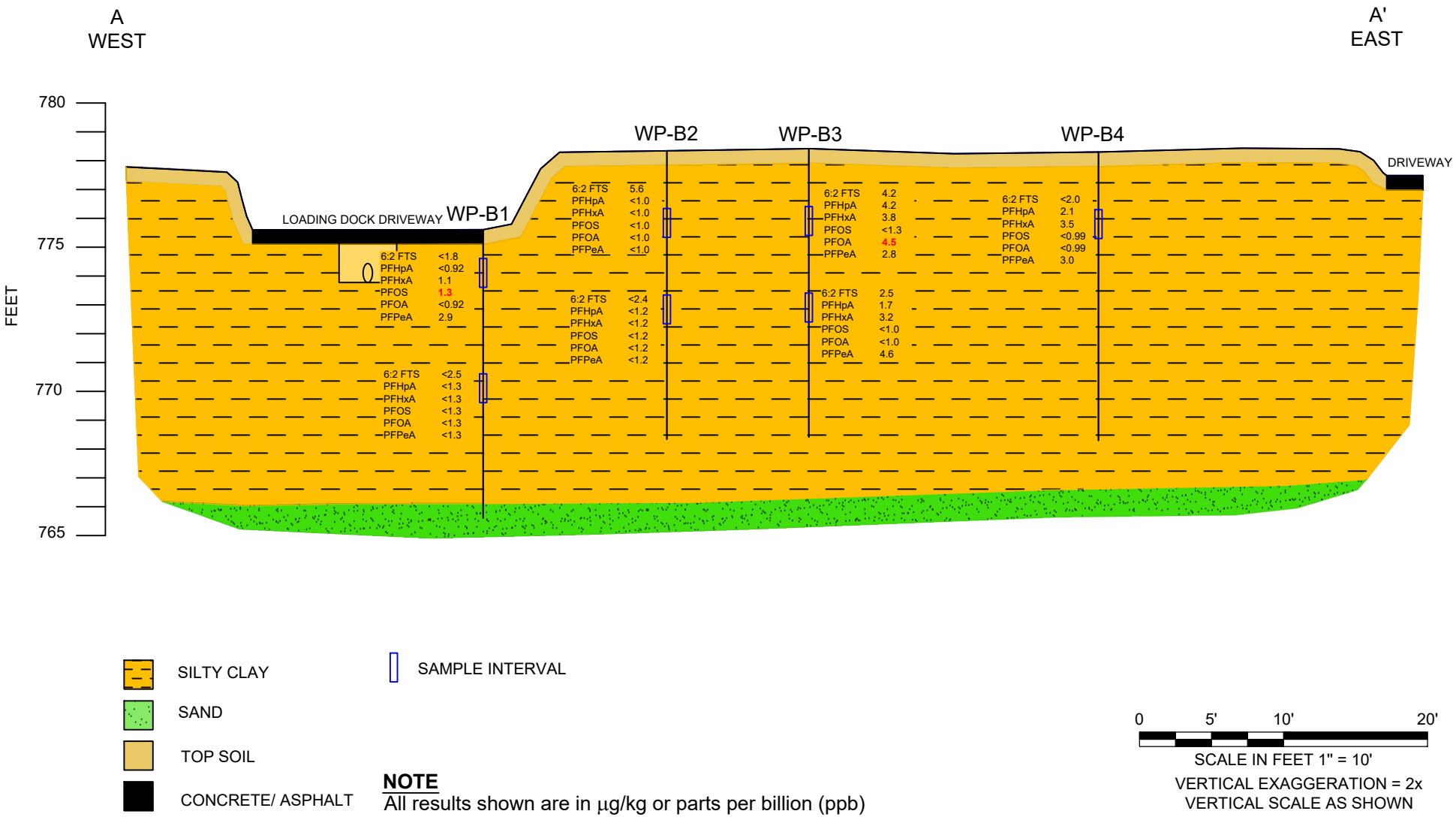
DEFENSE WEST PLANT
OSHKOSH, WISCONSIN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
OSHKOSH CORPORATION
OSHKOSH, WISCONSIN

SOIL BORING PLAN

PROJ MGR: KMH	REVIEWED BY: JO	CHECKED BY: JO	FIGURE 3
DESIGNED BY: KMH	DRAWN BY: KMH	SCALE: 1"=20'	
DATE: JANUARY 2021	PROJECT NO. 20.0157080.00	REVISION NO.	SHEET NO.



SCALE IN FEET 1" = 10'
VERTICAL EXAGGERATION = 2x
VERTICAL SCALE AS SHOWN

NOTE
All results shown are in µg/kg or parts per billion (ppb)

NO.	ISSUE/DESCRIPTION	BY	DATE

DEFENSE WEST PLANT
OSHKOSH, WISCONSIN

GEOLOGIC CROSS-SECTION
(WEST - EAST)

PREPARED BY:
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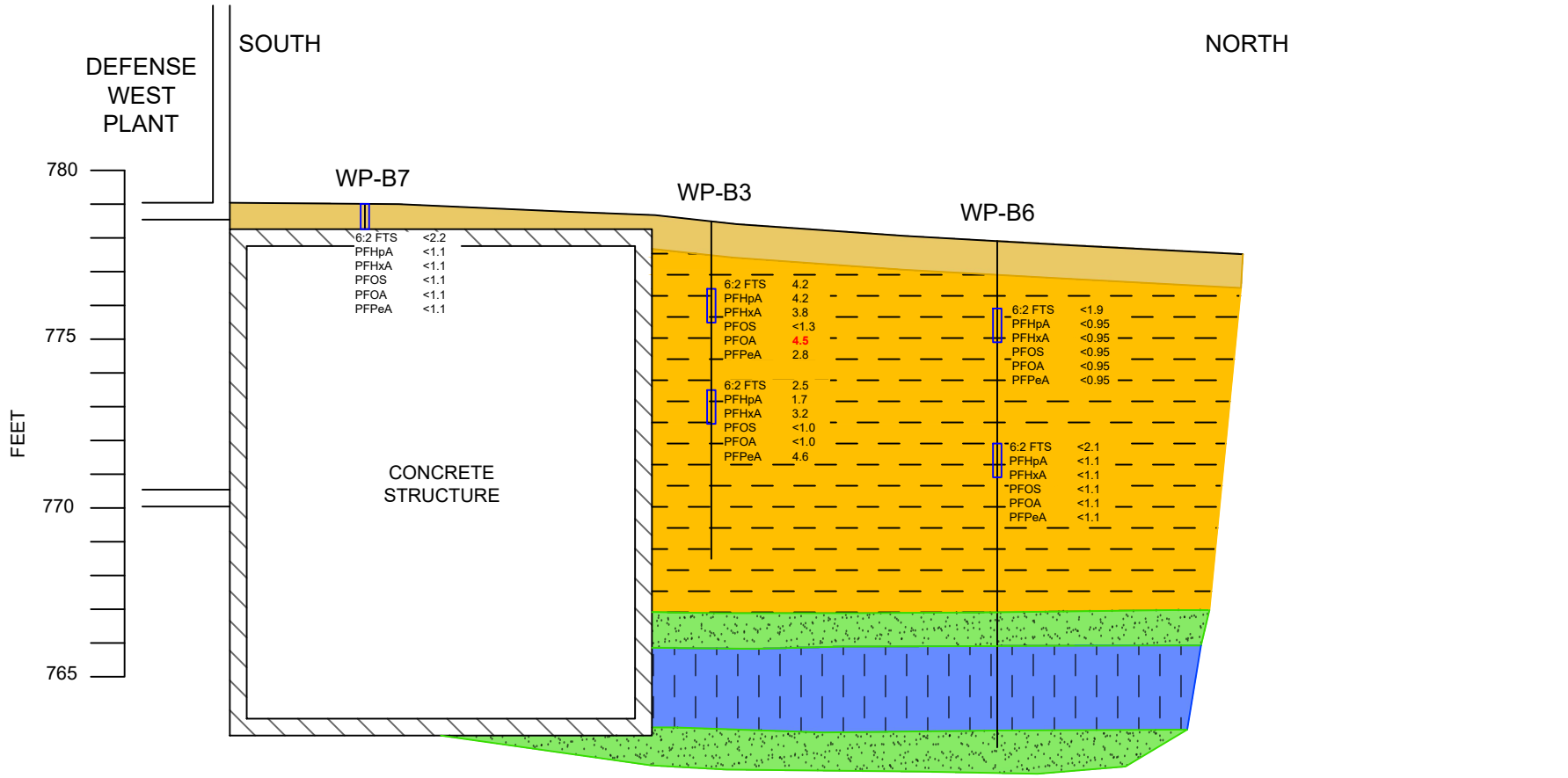
PREPARED FOR:
OSHKOSH CORPORATION
OSHKOSH, WISCONSIN

PROJ MGR:	KMH	REVIEWED BY:	JCO	CHECKED BY:	JCO
DESIGNED BY:	KMH	DRAWN BY:	KMH	SCALE:	AS SHOWN
DATE:	JANUARY 2021	PROJECT NO.	20.0157080.00	REVISION NO.	

4
SHEET NO. 1 OF 1



NOTE
All results shown are in µg/kg or parts per billion (ppb)

NO.	ISSUE/DESCRIPTION	BY	DATE

DEFENSE WEST PLANT
OSHKOSH, WISCONSIN

GEOLOGIC CROSS-SECTION (SOUTH - NORTH)

PREPARED BY:
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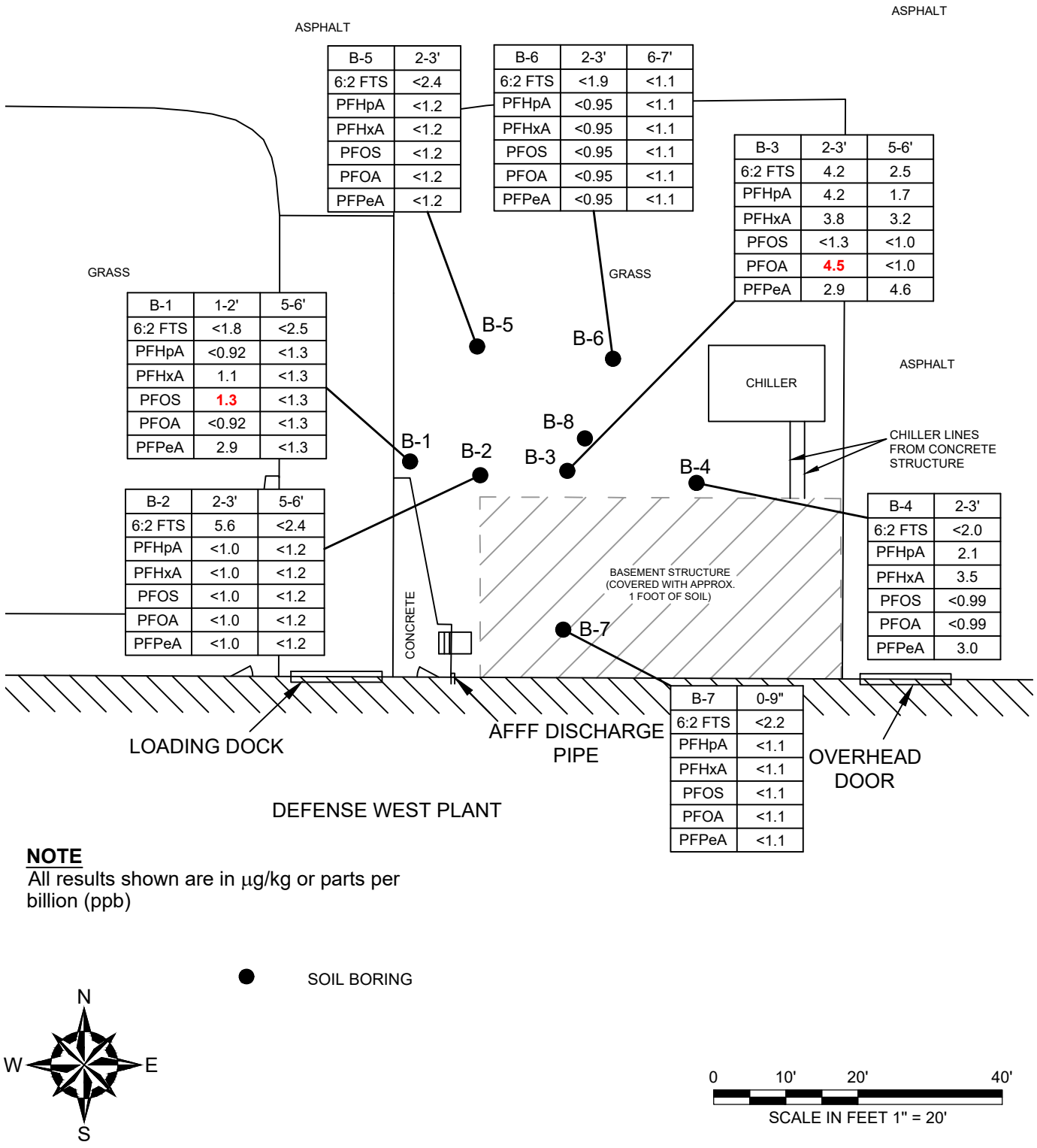
PREPARED FOR:
OSHKOSH CORPORATION
OSHKOSH, WISCONSIN

PROJ MGR: KMH	REVIEWED BY: JCO	CHECKED BY: JCO			
DESIGNED BY: KMH	DRAWN BY: KMH	SCALE: AS SHOWN			
DATE: JANUARY 2021	PROJECT NO. 20.0157080.00	REVISION NO.			

5
SHEET NO. 1 OF 1



NOTE

All results shown are in µg/kg or parts per billion (ppb)

● SOIL BORING

N W E S

0 10' 20' 40'

SCALE IN FEET 1" = 20'

NO.	ISSUE/DESCRIPTION	BY	DATE

DEFENSE WEST PLANT
OSHKOSH, WISCONSIN

PREPARED BY:
GZA GeoEnvironmental, Inc.
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PREPARED FOR:
OSHKOSH CORPORATION
OSHKOSH, WISCONSIN

PFAS DETECTED IN SOIL

PROJ MGR: KMH	REVIEWED BY: JO	CHECKED BY: JO	FIGURE 6
DESIGNED BY: KMH	DRAWN BY: KMH	SCALE: 1"=20'	
DATE: JANUARY 2021	PROJECT NO. 20.0157080.00	REVISION NO.	SHEET NO.

APPENDIX A

LIMITATIONS

LIMITATIONS

Standard of Care

1. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the proposal and/or report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).
2. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state, or federal agency.
3. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the report.

Subsurface Conditions

4. The generalized soil profile(s) provided in our report are based on widely spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and were based on our assessment of subsurface conditions. The composition of strata and the transitions between strata may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location, refer to the exploration logs.
5. Water level readings have been made in test holes (as described in the report) and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater, however, occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the report.

Compliance with Codes and Regulations

6. GZA used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various and possibly contradictory interpretations. Interpretations and compliance with codes and regulations by other parties are beyond our control.

Screening and Analytical Testing

7. GZA collected environmental samples at the locations identified in the report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future site activities and uses may result in a requirement for additional testing.
8. Our interpretation of field screening and laboratory data is presented in the report. Unless otherwise noted, GZA relied on the laboratory's quality assurance (QA)/quality control (QC) program to validate these data.
9. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the report.

Interpretation of Data

10. Our opinions are based on available information, as described in the report, and on our professional judgment. Additional observations made over time and/or space may not support the opinions provided in the report.

Additional Information

11. In the event that Client or others authorized to use this report obtain information on environmental or hazardous waste issues at the site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

Additional Services

12. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction and/or property development/ redevelopment at the site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

APPENDIX B

PRODUCT SAFETY DATA SHEET

Safety Data Sheet

This safety data sheet complies with the requirements of: 2012 OSHA Hazard Communication Standard (29CFR 1910.1200)

Product name ANSULITE LOW VISCOSITY 3X3 AR-AFFF Foam Concentrate

1. Identification

1.1. Product Identifier

Product name ANSULITE LOW VISCOSITY 3X3 AR-AFFF Foam Concentrate

1.2. Other means of identification

Product code 416493
Synonyms None
Chemical Family No information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use Fire extinguishing agent.
Uses advised against Consumer use.

1.4. Details of the Supplier of the Safety Data Sheet

Company Name Tyco Fire Protection Products
One Stanton Street
Marinette, WI 54143-2542
Telephone: 715-735-7411
Contact point Product Stewardship at 1-715-735-7411
E-mail address psra@tycofp.com

1.5. Emergency Telephone Number

Emergency telephone CHEMTREC 001-800-424-9300 or 001-703-527-3887

2. Hazards Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation - Category 1

2.2. Label Elements

Signal Word
DANGER

Hazard Statements
Causes serious eye damage

Precautionary Statements

Prevention
Wear protective gloves/protective clothing/eye protection/face protection.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

2.3. Hazards Not Otherwise Classified (HNOC)
Not Applicable.

2.4. Other Information
Causes mild skin irritation.

3. Composition/information on Ingredients

3.1. Mixture
The following component(s) in this product are considered hazardous under applicable OSHA(USA)

Chemical name	CAS No.	weight-%
2-(2-Butoxyethoxy)ethanol	112-34-5	7 - 13
Caprylcaprilyl glucoside	68515-73-1	1 - 5
Sodium Decyl Sulfate	142-87-0	1 - 5

4. First aid measures

4.1. Description of first aid measures
Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water. Get medical attention if irritation develops and persists.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. (Get medical attention immediately if symptoms occur.).

Ingestion Rinse mouth. Do not induce vomiting without medical advice. If swallowed, call a poison control center or physician immediately.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed
Symptoms No information available.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed
Note to physicians Treat symptomatically.

5. Fire-fighting measures

5.1. Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Unsuitable Extinguishing Media
None.

5.3. Specific Hazards Arising from the Chemical

None known.

Hazardous Combustion Products	Carbon oxides, Fluorinated oxides, Nitrogen oxides (NOx), Oxides of sulfur

5.4. Explosion Data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

5.5. Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions	Ensure adequate ventilation, especially in confined areas.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental Precautions

Environmental Precautions	Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	Pick up and transfer to properly labeled containers.

7. Handling and Storage

7.1. Precautions for Safe Handling

Advice on safe handling	Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible Materials	Strong oxidizing agents. Strong acids. Strong bases.

8. Exposure Controls/Personal Protection

8.1. Control Parameters

Exposure guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL
2-(2-Butoxyethoxy)ethanol 112-34-5	TWA: 10 ppm inhalable fraction and vapor	-	-	-

ACGIH (American Conference of Governmental Industrial Hygienists) OSHA (Occupational Safety and Health Administration of the US Department of Labor) NIOSH IDLH Immediately Dangerous to Life or Health

8.2. Appropriate Engineering Controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

8.3. Individual protection measures, such as personal protective equipment

Eye/Face Protection Avoid contact with eyes. Tight sealing safety goggles.

Skin and Body Protection Wear protective gloves and protective clothing.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Ventilation Use local exhaust or general dilution ventilation to control exposure with applicable limits

8.4. General hygiene considerations

Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State Liquid
Odor Characteristic
Odor Threshold No data available

Color Light yellow

Property	Values	Remarks • Method
pH	No data available	
Melting point/freezing point	No data available	
Boiling point / boiling range	100 °C / 212 °F	
Flash Point	> 100 °C / > 212 °F	
Evaporation Rate	No data available	
Flammability (solid, gas)	No data available	
Flammability limit in air		
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	
Specific gravity	No data available	
Water Solubility	No data available	
Solubility in Other Solvents	No data available	
Partition coefficient	No data available	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Kinematic viscosity	No data available	

Density 1.05

10. Stability and Reactivity

10.1. Chemical Stability

Stable under recommended storage conditions.

10.2. Reactivity

No data available

10.3. Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

10.4. Conditions to Avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible Materials

Strong oxidizing agents. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon oxides. Nitrogen oxides (NOx). Oxides of sulfur. Fluorinated oxides.

11. Toxicological Information

11.1. Information on Likely Routes of Exposure

Product information No data available

Inhalation No data available.

Eye Contact Severely irritating to eyes.

Skin contact May cause irritation.

Ingestion No data available.

Component Information

Acute Toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-(2-Butoxyethoxy)ethanol 112-34-5	= 5660 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	-
Sodium Decyl Sulfate 142-87-0	= 1950 mg/kg (Rat)	-	-

11.2. Information on Toxicological Effects

Symptoms No information available.

11.3. Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin Corrosion/Irritation Irritating to skin.
Serious eye damage/eye irritation Severely irritating to eyes.
Carcinogenicity No information available.
Reproductive Toxicity No information available.
STOT - Single Exposure No information available.
STOT - Repeated Exposure No information available.
Aspiration Hazard No information available.

11.4. Numerical Measures of Toxicity - Product information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 18148 mg/kg
ATEmix (dermal) 23945 mg/kg

12. Ecological Information

12.1. Ecotoxicity

Not classified.

Chemical name	Algae/aquatic plants	Fish	Crustacea
2-(2-Butoxyethoxy)ethanol 112-34-5	EC50 (96h) > 100 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1300 mg/L Lepomis macrochirus	EC50 (48h) > 100 mg/L Daphnia magna EC50 (24h) = 2850 mg/L Daphnia magna
n-Butanol 71-36-3	EC50 (96h) > 500 mg/L Desmodesmus subspicatus EC50 (72h) > 500 mg/L Desmodesmus subspicatus	LC50 (96h) static = 1910000 µg/L Pimephales promelas LC50 (96h) static 1730 - 1910 mg/L Pimephales promelas LC50 (96h) static 100000 - 500000 µg/L Lepomis macrochirus LC50 (96h) flow-through = 1740 mg/L Pimephales promelas	EC50 (48h) Static 1897 - 2072 mg/L Daphnia magna EC50 (48h) = 1983 mg/L Daphnia magna
Sodium Hydrogen Carbonate 144-55-8	EC50 (120h) = 650 mg/L Nitzschia linearis	LC50 (96h) static 8250 - 9000 mg/L Lepomis macrochirus	EC50 (48h) = 2350 mg/L Daphnia magna
Hexamethylenetetramine 100-97-0	-	LC50 (96h) flow-through 44600 - 55600 mg/L Pimephales promelas	EC50 (48h) 29868 - 43390 mg/L Daphnia magna
Methylene chloride 75-09-2	EC50 (72h) > 500 mg/L Pseudokirchneriella subcapitata EC50 (96h) > 500 mg/L Pseudokirchneriella subcapitata	LC50 (96h) static = 193 mg/L Lepomis macrochirus LC50 (96h) flow-through = 193 mg/L Lepomis macrochirus LC50 (96h) static 262 - 855 mg/L Pimephales promelas LC50 (96h) flow-through 140.8 - 277.8 mg/L Pimephales promelas	EC50 (48h) Static 1532 - 1847 mg/L Daphnia magna EC50 (48h) = 190 mg/L Daphnia magna
1,3-Dichloropropene 542-75-6	EC50 (96h) 2.45 - 6.45 mg/L Pseudokirchneriella subcapitata EC50 (72h) 3.12 - 10.5 mg/L Pseudokirchneriella subcapitata	LC50 (96h) semi-static = 4.5 mg/L Oncorhynchus mykiss LC50 (96h) = 2 mg/L Oncorhynchus mykiss LC50 (96h) static 3.1 - 4.9 mg/L Oncorhynchus mykiss LC50 (96h) flow-through 0.211 - 0.271 mg/L Pimephales promelas LC50 (96h) static 1.52 - 2.68 mg/L Pimephales promelas LC50 (96h) static 5.1 - 6.8 mg/L Lepomis macrochirus	EC50 (48h) Static 0.063 - 0.129 mg/L Daphnia magna EC50 (48h) = 0.09 mg/L Daphnia magna

12.2. Persistence and Degradability
No information available.

12.3. Bioaccumulation
No information available.

12.4. Other Adverse Effects
No information available

13. Disposal Considerations

13.1. Waste Treatment Methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Do not reuse container.

14. Transport Information

DOT	NOT REGULATED
TDG	NOT REGULATED
MEX	NOT REGULATED
ICAO (air)	NOT REGULATED
IATA	NOT REGULATED
IMDG	NOT REGULATED

15. Regulatory Information

15.1. International Inventories

TSCA	Complies
DSL/NDSL	Complies
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
2-(2-Butoxyethoxy)ethanol - 112-34-5	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic health hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

15.3. US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Methylene chloride - 75-09-2	Carcinogen
1,3-Dichloropropene - 542-75-6	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
2-(2-Butoxyethoxy)ethanol 112-34-5	X	-	X
n-Butanol 71-36-3	X	X	X
1-(3-Chloroallyl)-3,5,7-triaza-1-azonia Adamantane chloride 4080-31-3	X	-	-
Hexamethylenetetramine 100-97-0	X	-	-
Methylene chloride 75-09-2	X	X	X
1,3-Dichloropropene 542-75-6	X	X	X

16. Other information, including date of preparation of the last revision

NFPA	**Health Hazards** 3	**Flammability** 1	**Instability** 0	**Physical and chemical properties** -
HMIS	**Health Hazards** 3	**Flammability** 1	**Physical Hazards** 0	**Personal Protection** X

Revision date 20-Mar-2018
Revision note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

APPENDIX C

WDNR SOIL BORING LOGS AND ABANDONMENT FORMS

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Managment ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
OshKosh Corporation		**WP-B1**

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name **Tony Kapugi** Last Name Firm **On-Site Environmental Services**	**11-7-20**	**11-7-20**	**Geoprobe**

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	**775.0'** Feet MSL	**NA** inches

Local Grid Origin ☐ (estimated: ☒) or Boring Location ☐
State Plane _____ N, _____ E S ☐/C ☐/N ☐
NE 1/4 of **NE** 1/4 of Section **2**, T **17**, R **16**
Lat **725780**
Long **2350076**
Local Grid Location
☒ N _____ Feet ☐ S
☒ E _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	71	**71**	**Oshkosh, Wisconsin**

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	60/48	NA		(0-9") Loam; brown; dry. (9"-1') Base Coarse Gravel (GM); with Sand, F-C; some Silt; gray; moist (1'-3') CLAY (CL) FILL/disturbed CLAY; Some Sand, F-C; Gravel and rock fragments dispersed throughout; red/brown; dry. (3'-4') CLAY (CL); Some Sand, F-C; red/brown; hard; dry. (4'-5') No recovery.	Loam GM CL			NA						Rock dense from 2.5'-3
2	60/60	NA	5	(5'-9'4") CLAY (CL); trace Sand, F-C; red/brown; hard; dry. (9'4"-10') Poorly-graded SAND (SP-SM), F-M; little Silt; moist-wet.	SP-SM			NA						No free water in sand
			10											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature	Firm
S. Stephenson	GZA GeoEnvironmental, Inc.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis Stats. Completeion of this form is manatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not indended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent

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State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Managment ☐ Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
OshKosh Corporation		**WP-B2**

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name **Tony Kapugi** Last Name Firm **On-Site Environmental Services**	**11-7-20**	**11-7-20**	**Geoprobe**

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	**777.5'** Feet MSL	**NA** inches

Local Grid Origin ☐ (estimated: ☒) or Boring Location ☐
State Plane _____ N, _____ E S ☐/C ☐/N ☐
NE 1/4 of **NE** 1/4 of Section **2**, T **17**, R **16**
Lat **725778** Long **2350085**

Local Grid Location
☒ N _____ Feet ☐ S
☒ E _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	71	**71**	**Oshkosh, Wisconsin**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	60/60	NA		(0-1.5') LOAM; brown; dry. (1.5'-5') CLAY (CL); trace Sand, F-C; trace-little rock frags; red/brown; dry.	Loam CL			NA						Rocks (0.5" diameter) at 2'2" amd 4'3".
2	60/60	NA	5	(5'-10') CLAY (CL); Some Sand, F-C; little Gravel/rock fragments, F-M; brown; dry.				NA						Clay in 5-10' run is softer in consistency and higher in sand content than above. Water assumed to be at 9' based on change in consistency to very soft. Gravel dispersed from 7.5'-10'.
			10											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature	Firm
S. Stephenson	GZA GeoEnvironmental, Inc.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis Stats. Completeion of this form is manatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not indended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent

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State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Managment ☐ Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
OshKosh Corporation		WP-B3

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Tony Kapugi Last Name Firm On-Site Environmental Services	11-7-20	11-7-20	Geoprobe

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	777.5' Feet MSL	NA inches

Local Grid Origin ☐ (estimated: ☒) or Boring Location ☐
State Plane _____ N, _____ E S ☐/C ☐/N ☐
NE 1/4 of NE 1/4 of Section 2, T 17, R 16
Lat 725780
Long 2350097

Local Grid Location
☒ N _____ Feet ☐ S
☒ E _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	71	71	Oshkosh, Wisconsin

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	60/60	NA		(0-1'9") Loam; brown; dry. (1'9"-5') CLAY (CL) FILL/disturbed CLAY; Some Sand, F-C; dispersed gravel/rock fragments throughout run; brown/red; dry.	Loam CL			NA						
2	60/33	NA	5	(5'-7'9") CLAY (CL) FILL/disturbed CLAY; Some Sand, F-C; dispersed gravel/rock fragments throughout run; brown/red; dry. (7'9"-10') No recovery.				NA						Change to softer consistency at 5'8"-consistent with higher water content.
			10											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature	Firm
S. Stephenson	GZA GeoEnvironmental, Inc.

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Managment ☐ Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
OshKosh Corporation		**WP-B4**

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name **Tony Kapugi** Last Name Firm **On-Site Environmental Services**	**11-7-20**	**11-7-20**	**Geoprobe**

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	**777.5'** Feet MSL	**NA** inches

Local Grid Origin ☐ (estimated: ☒) or Boring Location ☐
State Plane _____ N, _____ E S ☐/C ☐/N ☐
NE 1/4 of **NE** 1/4 of Section **2**, T **17**, R **16**
Lat **725778**
Long **3350114**

Local Grid Location
☒ N _____ Feet ☐ S
☒ E _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	71	**71**	**Oshkosh, Wisconsin**

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	60/33	NA		(0-1.5') Loam; brown; dry. (1.5'-2'9") CLAY (CL); trace Sand, F-C; trace Gravel, F; red/brown; hard; dry. (2'9"-5') No recovery.	Loam CL			NA						Hit wood chunk at 1.5'
2	60/40	NA	5	(5'-8'4") CLAY (CL); Some Sand, F-C; brown; dry (8'4"-10') No Recovery.				NA						Clay in 5-10' run has more sand conent and softer consistency than above. 7'-7.5' has petroleum odor and black smearing. At bottom of run there is a " rock and tree wood.
			10											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature	Firm
S. Stephenson	GZA GeoEnvironmental, Inc.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis Stats. Completeion of this form is manatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not indended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Managment ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
OshKosh Corporation		**WP-B5**

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name **Tony Kapugi** Last Name Firm **On-Site Environmental Services**	**11-7-20**	**11-7-20**	**Geoprobe**

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	**777.0'** Feet MSL	**NA** inches

Local Grid Origin ☐ (estimated: ☒) or Boring Location ☐
State Plane _____ N, _____ E S ☐/C ☐/N ☐
NE 1/4 of **NE** 1/4 of Section **2**, T **17**, R **16**
Lat **725796**
Long **2350084**

Local Grid Location
☒ N _____ Feet ☐ S
☒ E _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	71	**71**	**Oshkosh, Wisconsin**

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	60/51	NA		(0-7") Loam; brown; dry. (7"-1'1") Clay Loam; brown; dry. (1'1"-1'10") CLAY (CL) FILL/disturbed CLAY (CL); rock fragments/gravel dispersed through; red/brown; dry. (1'10"-2') Gravel Base Course (GW); white; dry. (2"-2'9") CLAY (CL) FILL/disturbed CLAY (CL); rock fragments/gravel dispersed through; red/brown; dry. (2'9"-4'3") CLAY (CL); red/brown; dry.	Loam CL			NA						
2	60/60	NA	5	(5'-10') CLAY (CL); trace Sand, F-C; red/brown/dry.				NA						
			10											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature	Firm
S. Stephenson	GZA GeoEnvironmental, Inc.

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Managment ☐ Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
OshKosh Corporation		**WP-B6**

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name **Tony Kapugi** Last Name Firm **On-Site Environmental Services**	**11-7-20**	**11-7-20**	**Geoprobe**

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	**777.0'** Feet MSL	**NA** inches

Local Grid Origin ☐ (estimated: ☒) or Boring Location ☐
State Plane _____ N, _____ E S ☐/C ☐/N ☐
NE 1/4 of **NE** 1/4 of Section **2**, T **17**, R **16**
Lat **725796**
Long **2350102**
Local Grid Location
☒ N _____ Feet ☐ S
☒ E _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	71	**71**	**Oshkosh, Wisconsin**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	60/60	NA		(0-1.5') CLAY (CL)/ Regraded material; trace Sand, F; organic debris, wood pieces, roots; brown; dry. (1.5'-2') Base Coarse Gravel (GW); white; dry. (2'-5') CLAY (CL); trace Sand, F-C; trace Gravel, F-C; brown/red; dry.	CL			NA						
					GW									
					CL									
2	60/60	NA	5	(5'-10') CLAY (CL); trace Sand, F-C; trace Gravel, F-C; brown/red; dry.				NA						
3	60/60	NA	10	(10'-11') CLAY (CL); trace Sand, F-C; trace Gravel, F-C; brown/red; dry. (11'-11'10") Poorly-graded SAND (SM), F-M; Some Silt; brown; wet. (11'10"-14'10") SILT (MH); with Clay/Clayey SILT ; orange mottling and barves visible; brown; wet. (14'10"-15') Poorly-graded SAND (SM); with Silt ; little Clay; brown; moist.	SM			NA						
					MH									
					SM									

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature	Firm
S. Stephenson	GZA GeoEnvironmental, Inc.

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GZA WI DNR FORMAT - GZADEPTH.GDT - 1/12/21 12:40 - J:\GEOTECH PROJECTS\GINT PROJECT DATABASES\20.0157080.00 OSHKOSH CORP.GPJ

State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Managment ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
OshKosh Corporation		**WP-B7**

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name **Tony Kapugi** Last Name Firm **On-Site Environmental Services**	**11-7-20**	**11-7-20**	**Hand Auger**

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	**777.5'** Feet MSL	**NA** inches

Local Grid Origin ☐ (estimated: ☒) or Boring Location ☐
State Plane _____ N, _____ E S ☐/C ☐/N ☐
NE 1/4 of **NE** 1/4 of Section **2**, T **17**, R **16**
Lat **725757**
Long **2350097**

Local Grid Location
☒ N _____ Feet ☐ S
☒ E _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	71	**71**	**Oshkosh, Wisconsin**

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	9/9	NA		(0-9") Loam; brown; dry. Geosynthetic liner discovered at 9".	Loam			NA						
			5											
			10											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature	Firm
S. Stephenson	GZA GeoEnvironmental, Inc.

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State of Wisconsin
Department of Natural Resources

Soil Boring Log Information

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Managment ☐ Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
OshKosh Corporation		WP-B8

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name Tony Kapugi Last Name Firm On-Site Environmental Services	11-7-20	11-7-20	Geoprobe

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet	777.0' Feet MSL	NA inches

Local Grid Origin ☐ (estimated: ☒) or Boring Location ☐
State Plane _____ N, _____ E S ☐/C ☐/N ☐
NE 1/4 of NE 1/4 of Section 2, T 17, R 16
Lat 725785
Long 2350100

Local Grid Location
☒ N _____ Feet ☐ S
☒ E _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	71	71	Oshkosh, Wisconsin

Sample Number and Type	Sample Length All. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plastic Limit	P 200	RQD/ Comments
1	60/51	NA		(0-9") Loam; brown; dry. (9"-1'5") Clay Loam; brown; dry. (1'5"-5') CLAY (CL); trace Sand, F-C; trace rock frags; red/brown; hard; dry.	Loam CL			NA						
			5											
			10											

I hereby certify that the information on this form is true and correct to the best of my knowledge

Signature	Firm
S. Stephenson	GZA GeoEnvironmental, Inc.

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State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Winnebago	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		35	18 N	16 ☒ E ☐ W

Well Street Address: 2830 Hughes Street

Well City, Village or Town	Well ZIP Code
Oshkosh	54902

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Boring	___ ___ ___ ___ ___

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 11/7/2020

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
10'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

2. Facility / Owner Information

Facility Name: West Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #: WP-B1
Original Well Owner:
Present Well Owner: Oshkosh Corporation
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code
Oshkosh	WI	54209

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10'	1 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Tony Kapugi- On-Site Environmental		11/7/2020

Street or Route	Telephone Number
P.O. Box 280	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53290		

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Winnebago	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	SW	35	18 N	16 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 2830 Hughes Street

Well City, Village or Town	Well ZIP Code
Oshkosh	54902

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Boring	___ ___ ___ ___ ___

2. Facility / Owner Information

Facility Name: West Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #: WP-B2
Original Well Owner:
Present Well Owner: Oshkosh Corporation
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code
Oshkosh	WI	54209

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 11/7/2020

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
10'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10'	1 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Tony Kapugi- On-Site Environmental		11/7/2020

Street or Route	Telephone Number
P.O. Box 280	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53290		

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Winnebago	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions) _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	SW	35	18 N	16 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 2830 Hughes Street

Well City, Village or Town	Well ZIP Code
Oshkosh	54902

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Boring	___ ___ ___ ___ ___

2. Facility / Owner Information

Facility Name: West Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #: WP-B3
Original Well Owner:
Present Well Owner: Oshkosh Corporation
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code
Oshkosh	WI	54209

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 11/7/2020

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
10'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10'	1 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Tony Kapugi- On-Site Environmental		11/7/2020

Street or Route	Telephone Number
P.O. Box 280	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53290		

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Winnebago	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	SW	35	18 N	16 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 2830 Hughes Street

Well City, Village or Town	Well ZIP Code
Oshkosh	54902

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Boring	___ ___ ___ ___ ___

2. Facility / Owner Information

Facility Name: West Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #: WP-B4
Original Well Owner:
Present Well Owner: Oshkosh Corporation
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code
Oshkosh	WI	54209

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 11/7/2020

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
10'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10'	1 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Tony Kapugi- On-Site Environmental		11/7/2020

Street or Route	Telephone Number
P.O. Box 280	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53290		

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Winnebago	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	SW	35	18 N	16 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 2830 Hughes Street

Well City, Village or Town	Well ZIP Code
Oshkosh	54902

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Boring	___ ___ ___ ___ ___

2. Facility / Owner Information

Facility Name: West Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #: WP-B5
Original Well Owner:
Present Well Owner: Oshkosh Corporation
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code
Oshkosh	WI	54209

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 11/7/2020

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
10'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	10'	1 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Tony Kapugi- On-Site Environmental		11/7/2020

Street or Route	Telephone Number
P.O. Box 280	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53290		

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Winnebago	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	SW	35	18 N	16 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 2830 Hughes Street

Well City, Village or Town	Well ZIP Code
Oshkosh	54902

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Boring	___ ___ ___ ___ ___

2. Facility / Owner Information

Facility Name: West Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #: WP-B6
Original Well Owner:
Present Well Owner: Oshkosh Corporation
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code
Oshkosh	WI	54209

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 11/7/2020

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
15'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	15'	1 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Tony Kapugi- On-Site Environmental		11/7/2020

Street or Route	Telephone Number
P.O. Box 280	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53290		

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

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☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Winnebago	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions): _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	SW	35	18 N	16 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 2830 Hughes Street

Well City, Village or Town	Well ZIP Code
Oshkosh	54902

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Boring	___ ___ ___ ___ ___

2. Facility / Owner Information

Facility Name: West Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #: WP-B7
Original Well Owner:
Present Well Owner: Oshkosh Corporation
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code
Oshkosh	WI	54209

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 11/7/2020

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☐ Driven (Sandpoint) ☐ Dug
☒ Other (specify): Hand Auger

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
1'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	1'	0.2 bags	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Tony Kapugi- On-Site Environmental		11/7/2020

Street or Route	Telephone Number
P.O. Box 280	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53290		

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☐ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Winnebago	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions) _____ N _____ W
Format Code: ☐ DD ☐ DDM
Method Code: ☐ GPS008 ☐ SCR002 ☐ OTH001

¼ / ¼ SW	¼ SW	Section	Township	Range
or Gov't Lot #		35	18 N	16 ☒ E ☐ W

Well Street Address: 2830 Hughes Street

Well City, Village or Town	Well ZIP Code
Oshkosh	54902

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
Soil Boring	___ ___ ___ ___ ___

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 11/7/2020

If a Well Construction Report is available, please attach.

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
5'	NA

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
	NA

Was well annular space grouted? ☐ Yes ☒ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

2. Facility / Owner Information

Facility Name: West Plant
Facility ID (FID or PWS):
License/Permit/Monitoring #: WP-B8
Original Well Owner:
Present Well Owner: Oshkosh Corporation
Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code
Oshkosh	WI	54209

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☐ Yes	☐ No	☒ N/A
Did material settle after 24 hours?	☐ Yes	☐ No	☒ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☐ Yes	☐ No	☒ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☐ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☒ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	5'	1 bag	

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
Tony Kapugi- On-Site Environmental		11/7/2020

Street or Route	Telephone Number
P.O. Box 280	(608) 837-8992

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Sun Prairie	WI	53290		

DNR Use Only

Date Received	Noted By

Comments:

APPENDIX D

SOIL LABORATORY ANALYTICAL REPORT
AND CHAIN-OF-CUSTODY DOCUMENTATION

Report of Analysis

GZA GeoEnvironmental, Inc.
17975 West Sarah Lane, Suite 100
Brookfield, WI 53045
Attention: Kevin Hedinger

Project Name: Oshkosh Corporation

Project Number: 20.0157080

Lot Number:**VK12014**

Date Completed:12/07/2020
Revision Date: 12/08/2020

N. Saikaly

12/08/2020 11:50 AM
Approved and released by:
Project Manager II: **Nisreen Saikaly**

Pace Analytical Services, LLC (*formerly Shealy Environmental Services, Inc.*)
106 Vantage Point Drive West Columbia, SC 29172
Tel: 803-791-9700 Fax: 803-791-9111 www.pacelabs.com

Case Narrative
GZA GeoEnvironmental, Inc.
Lot Number: VK12014

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W" qualifier

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample Summary
GZA GeoEnvironmental, Inc.
Lot Number: VK12014
Project Name: Oshkosh Corporation
Project Number: 20.0157080

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	WP Equipment Blank DS1	Aqueous	11/07/2020 0800	11/10/2020
002	WP Equipment Blank T2	Aqueous	11/07/2020 0810	11/10/2020
003	WP B-6 (2-3')	Solid	11/07/2020 0825	11/10/2020
004	WP B-6 (6-7')	Solid	11/07/2020 0830	11/10/2020
005	WP B-4 (2-3')	Solid	11/07/2020 0840	11/10/2020
006	WP B-4 (5-6')	Solid	11/07/2020 0845	11/10/2020
007	WP B-3 (2-3')	Solid	11/07/2020 0905	11/10/2020
008	WP B-3 (5-6')	Solid	11/07/2020 0910	11/10/2020
009	WP B-5 (2-3')	Solid	11/07/2020 0925	11/10/2020
010	WP B-5 (6-7')	Solid	11/07/2020 0930	11/10/2020
011	WP B-2 (2-3')	Solid	11/07/2020 0940	11/10/2020
012	WP B-2 (5-6')	Solid	11/07/2020 0945	11/10/2020
013	WP B-1 (1-2')	Solid	11/07/2020 1000	11/10/2020
014	WP B-1 (5-6')	Solid	11/07/2020 1005	11/10/2020
015	WP B-7 (0-9')	Solid	11/07/2020 1015	11/10/2020

(15 samples)

Detection Summary

GZA GeoEnvironmental, Inc.

Lot Number: VK12014

Project Name: Oshkosh Corporation

Project Number: 20.0157080

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
005	WP B-4 (2-3')	Solid	PFHpA	PFAS by ID	2.1		ug/kg	16
005	WP B-4 (2-3')	Solid	PFHxA	PFAS by ID	3.5		ug/kg	16
005	WP B-4 (2-3')	Solid	PFPeA	PFAS by ID	3.0		ug/kg	16
007	WP B-3 (2-3')	Solid	6:2 FTS	PFAS by ID	4.2		ug/kg	18
007	WP B-3 (2-3')	Solid	PFHpA	PFAS by ID	4.2		ug/kg	18
007	WP B-3 (2-3')	Solid	PFHxA	PFAS by ID	3.8		ug/kg	18
007	WP B-3 (2-3')	Solid	PFOA	PFAS by ID	4.5		ug/kg	18
007	WP B-3 (2-3')	Solid	PFPeA	PFAS by ID	2.8		ug/kg	18
008	WP B-3 (5-6')	Solid	6:2 FTS	PFAS by ID	2.5		ug/kg	20
008	WP B-3 (5-6')	Solid	PFHpA	PFAS by ID	1.7		ug/kg	20
008	WP B-3 (5-6')	Solid	PFHxA	PFAS by ID	3.2		ug/kg	20
008	WP B-3 (5-6')	Solid	PFPeA	PFAS by ID	4.6		ug/kg	20
011	WP B-2 (2-3')	Solid	6:2 FTS	PFAS by ID	5.6		ug/kg	24
013	WP B-1 (1-2')	Solid	PFHxA	PFAS by ID	1.1		ug/kg	28
013	WP B-1 (1-2')	Solid	PFPeA	PFAS by ID	2.9		ug/kg	28
013	WP B-1 (1-2')	Solid	PFOS	PFAS by ID	1.3		ug/kg	28

(16 detections)

PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-001**

Description: **WP Equipment Blank DS1** Matrix: **Aqueous**

Date Sampled: **11/07/2020 0800** Project Name: **Oshkosh Corporation**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/19/2020 1732	MMM	11/18/2020 1701	73958

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		8.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		8.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		8.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		8.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		8.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		8.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		8.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		8.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		8.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		4.4	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		4.4	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		94	25-150
13C2_6:2FTS		91	25-150
13C2_8:2FTS		90	25-150
13C2_PFDoA		77	25-150
13C2_PFTeDA		73	25-150
13C3_PFBS		79	25-150
13C3_PFHxS		77	25-150
13C3-HFPO-DA		92	25-150
13C4_PFBA		87	25-150
13C4_PFHpA		83	25-150
13C5_PFHxA		82	25-150
13C5_PFPeA		80	25-150
13C6_PFDA		84	25-150
13C7_PFUdA		81	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-001**

Description: **WP Equipment Blank DS1** Matrix: **Aqueous**

Date Sampled: **11/07/2020 0800** Project Name: **Oshkosh Corporation**

Date Received: **11/10/2020** Project Number: **20.0157080**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		88	25-150
13C8_PFOS		73	25-150
13C8_PFOSA		92	10-150
13C9_PFNA		91	25-150
d5-EtFOSAA		90	25-150
d3-MeFOSAA		93	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-002**

Description: **WP Equipment Blank T2** Matrix: **Aqueous**

Date Sampled: **11/07/2020 0810** Project Name: **Oshkosh Corporation**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/19/2020 1742	MMM	11/18/2020 1701	73958

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		9.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		9.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		9.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		9.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		9.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		9.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		9.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		9.7	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		9.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		4.8	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		4.8	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		96	25-150
13C2_6:2FTS		97	25-150
13C2_8:2FTS		94	25-150
13C2_PFDoA		71	25-150
13C2_PFTeDA		64	25-150
13C3_PFBS		74	25-150
13C3_PFHxS		74	25-150
13C3-HFPO-DA		93	25-150
13C4_PFBA		87	25-150
13C4_PFHpA		86	25-150
13C5_PFHxA		88	25-150
13C5_PFPeA		80	25-150
13C6_PFDA		74	25-150
13C7_PFUdA		81	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-002**

Description: **WP Equipment Blank T2** Matrix: **Aqueous**

Date Sampled: **11/07/2020 0810** Project Name: **Oshkosh Corporation**

Date Received: **11/10/2020** Project Number: **20.0157080**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		83	25-150
13C8_PFOS		76	25-150
13C8_PFOSA		87	10-150
13C9_PFNA		89	25-150
d5-EtFOSAA		85	25-150
d3-MeFOSAA		88	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-003**

Description: **WP B-6 (2-3')** Matrix: **Solid**

Date Sampled: **11/07/2020 0825** Project Name: **Oshkosh Corporation** % Solids: **84.6** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 1952	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		1.9	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		1.9	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		1.9	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		1.9	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		1.9	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		3.8	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		1.9	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		1.9	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		1.9	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		0.95	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		0.95	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		86	25-150
13C2_6:2FTS		80	25-150
13C2_8:2FTS		79	25-150
13C2_PFDoA		83	25-150
13C2_PFTeDA		77	25-150
13C3_PFBS		66	25-150
13C3_PFHxS		68	25-150
13C3-HFPO-DA		85	25-150
13C4_PFBA		76	25-150
13C4_PFHpA		78	25-150
13C5_PFHxA		81	25-150
13C5_PFPeA		75	25-150
13C6_PFDA		79	25-150
13C7_PFUdA		84	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.**		Laboratory ID: **VK12014-003**	
Description: **WP B-6 (2-3')**		Matrix: **Solid**	
Date Sampled: **11/07/2020 0825**	Project Name: **Oshkosh Corporation**	% Solids: **84.6**	**11/13/2020 0210**
Date Received: **11/10/2020**	Project Number: **20.0157080**		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		80	25-150
13C8_PFOS		74	25-150
13C8_PFOSA		88	10-150
13C9_PFNA		80	25-150
d5-EtFOSAA		73	25-150
d3-MeFOSAA		65	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-004**

Description: **WP B-6 (6-7')** Matrix: **Solid**

Date Sampled: **11/07/2020 0830** Project Name: **Oshkosh Corporation** % Solids: **84.0** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2002	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.1	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.1	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.1	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		2.1	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.1	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.3	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.1	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.1	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.1	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.1	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		82	25-150
13C2_6:2FTS		82	25-150
13C2_8:2FTS		78	25-150
13C2_PFDoA		81	25-150
13C2_PFTeDA		76	25-150
13C3_PFBS		65	25-150
13C3_PFHxS		74	25-150
13C3-HFPO-DA		83	25-150
13C4_PFBA		74	25-150
13C4_PFHpA		75	25-150
13C5_PFHxA		78	25-150
13C5_PFPeA		75	25-150
13C6_PFDA		75	25-150
13C7_PFUdA		80	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-004**

Description: **WP B-6 (6-7')** Matrix: **Solid**

Date Sampled: **11/07/2020 0830** Project Name: **Oshkosh Corporation** % Solids: **84.0** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		79	25-150
13C8_PFOS		78	25-150
13C8_PFOSA		83	10-150
13C9_PFNA		77	25-150
d5-EtFOSAA		73	25-150
d3-MeFOSAA		67	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
W = Reported on wet weight basis

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-005**

Description: **WP B-4 (2-3')** Matrix: **Solid**

Date Sampled: **11/07/2020 0840** Project Name: **Oshkosh Corporation** % Solids: **79.9** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2013	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.0	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.0	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.0	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		2.0	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.0	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		3.9	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.0	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.0	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.0	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**2.1**		**0.99**	**ug/kg**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**3.5**		**0.99**	**ug/kg**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**3.0**		**0.99**	**ug/kg**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		0.99	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		0.99	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		87	25-150
13C2_6:2FTS		80	25-150
13C2_8:2FTS		85	25-150
13C2_PFDoA		92	25-150
13C2_PFTeDA		78	25-150
13C3_PFBS		70	25-150
13C3_PFHxS		71	25-150
13C3-HFPO-DA		83	25-150
13C4_PFBA		76	25-150
13C4_PFHpA		77	25-150
13C5_PFHxA		84	25-150
13C5_PFPeA		76	25-150
13C6_PFDA		76	25-150
13C7_PFUdA		79	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-005**

Description: **WP B-4 (2-3')** Matrix: **Solid**

Date Sampled: **11/07/2020 0840** Project Name: **Oshkosh Corporation** % Solids: **79.9** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		79	25-150
13C8_PFOS		73	25-150
13C8_PFOSA		86	10-150
13C9_PFNA		79	25-150
d5-EtFOSAA		79	25-150
d3-MeFOSAA		70	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-007**

Description: **WP B-3 (2-3')** Matrix: **Solid**

Date Sampled: **11/07/2020 0905** Project Name: **Oshkosh Corporation** % Solids: **75.9** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2024	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.6	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.6	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.6	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	**27619-97-2**	**PFAS by ID SOP**	**4.2**		**2.6**	**ug/kg**	**1**
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.6	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		5.2	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.6	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.6	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.6	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**4.2**		**1.3**	**ug/kg**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**3.8**		**1.3**	**ug/kg**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**4.5**		**1.3**	**ug/kg**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**2.8**		**1.3**	**ug/kg**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.3	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		93	25-150
13C2_6:2FTS		88	25-150
13C2_8:2FTS		86	25-150
13C2_PFDoA		89	25-150
13C2_PFTeDA		83	25-150
13C3_PFBS		76	25-150
13C3_PFHxS		76	25-150
13C3-HFPO-DA		89	25-150
13C4_PFBA		82	25-150
13C4_PFHpA		80	25-150
13C5_PFHxA		84	25-150
13C5_PFPeA		81	25-150
13C6_PFDA		79	25-150
13C7_PFUdA		87	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-007**

Description: **WP B-3 (2-3')** Matrix: **Solid**

Date Sampled: **11/07/2020 0905** Project Name: **Oshkosh Corporation** % Solids: **75.9** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		85	25-150
13C8_PFOS		84	25-150
13C8_PFOSA		94	10-150
13C9_PFNA		85	25-150
d5-EtFOSAA		85	25-150
d3-MeFOSAA		76	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-008**

Description: **WP B-3 (5-6')** Matrix: **Solid**

Date Sampled: **11/07/2020 0910** Project Name: **Oshkosh Corporation** % Solids: **80.5** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2034	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.1	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.1	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.1	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	**27619-97-2**	**PFAS by ID SOP**	**2.5**		**2.1**	**ug/kg**	**1**
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.1	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.1	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.1	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.1	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.1	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**1.7**		**1.0**	**ug/kg**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**3.2**		**1.0**	**ug/kg**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**4.6**		**1.0**	**ug/kg**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		86	25-150
13C2_6:2FTS		78	25-150
13C2_8:2FTS		87	25-150
13C2_PFDoA		82	25-150
13C2_PFTeDA		79	25-150
13C3_PFBS		70	25-150
13C3_PFHxS		74	25-150
13C3-HFPO-DA		86	25-150
13C4_PFBA		78	25-150
13C4_PFHpA		77	25-150
13C5_PFHxA		81	25-150
13C5_PFPeA		75	25-150
13C6_PFDA		77	25-150
13C7_PFUdA		79	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.**		Laboratory ID: **VK12014-008**	
Description: **WP B-3 (5-6')**		Matrix: **Solid**	
Date Sampled: **11/07/2020 0910**	Project Name: **Oshkosh Corporation**	% Solids: **80.5**	**11/13/2020 0210**
Date Received: **11/10/2020**	Project Number: **20.0157080**		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		78	25-150
13C8_PFOS		76	25-150
13C8_PFOSA		84	10-150
13C9_PFNA		82	25-150
d5-EtFOSAA		77	25-150
d3-MeFOSAA		74	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-009**

Description: **WP B-5 (2-3')** Matrix: **Solid**

Date Sampled: **11/07/2020 0925** Project Name: **Oshkosh Corporation** % Solids: **85.7** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2045	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.4	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.4	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.4	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		2.4	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.4	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.9	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.4	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.4	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.4	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.2	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		84	25-150
13C2_6:2FTS		78	25-150
13C2_8:2FTS		82	25-150
13C2_PFDoA		76	25-150
13C2_PFTeDA		73	25-150
13C3_PFBS		62	25-150
13C3_PFHxS		70	25-150
13C3-HFPO-DA		80	25-150
13C4_PFBA		73	25-150
13C4_PFHpA		73	25-150
13C5_PFHxA		78	25-150
13C5_PFPeA		74	25-150
13C6_PFDA		70	25-150
13C7_PFUdA		75	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.**		Laboratory ID: **VK12014-009**	
Description: **WP B-5 (2-3')**		Matrix: **Solid**	
Date Sampled: **11/07/2020 0925**	Project Name: **Oshkosh Corporation**	% Solids: **85.7**	**11/13/2020 0210**
Date Received: **11/10/2020**	Project Number: **20.0157080**		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		78	25-150
13C8_PFOS		73	25-150
13C8_PFOSA		87	10-150
13C9_PFNA		75	25-150
d5-EtFOSAA		71	25-150
d3-MeFOSAA		70	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-011**

Description: **WP B-2 (2-3')** Matrix: **Solid**

Date Sampled: **11/07/2020 0940** Project Name: **Oshkosh Corporation** % Solids: **84.0** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	12/04/2020 0032	MMM	12/01/2020 1438	75092

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.0	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.0	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.0	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	**27619-97-2**	**PFAS by ID SOP**	**5.6**		**2.0**	**ug/kg**	**1**
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.0	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.1	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.0	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.0	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.0	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.0	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.0	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		104	25-150
13C2_6:2FTS		102	25-150
13C2_8:2FTS		96	25-150
13C2_PFDoA		103	25-150
13C2_PFTeDA		107	25-150
13C3_PFBS		99	25-150
13C3_PFHxS		102	25-150
13C3-HFPO-DA		108	25-150
13C4_PFBA		104	25-150
13C4_PFHpA		108	25-150
13C5_PFHxA		109	25-150
13C5_PFPeA		109	25-150
13C6_PFDA		105	25-150
13C7_PFUdA		112	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
W = Reported on wet weight basis

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-011**

Description: **WP B-2 (2-3')** Matrix: **Solid**

Date Sampled: **11/07/2020 0940** Project Name: **Oshkosh Corporation** % Solids: **84.0** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		105	25-150
13C8_PFOS		90	25-150
13C8_PFOSA		99	10-150
13C9_PFNA		100	25-150
d5-EtFOSAA		94	25-150
d3-MeFOSAA		93	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-012**

Description: **WP B-2 (5-6')** Matrix: **Solid**

Date Sampled: **11/07/2020 0945** Project Name: **Oshkosh Corporation** % Solids: **83.0** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2056	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.4	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.4	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.4	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		2.4	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.4	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.8	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.4	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.4	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.4	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.2	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.2	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		85	25-150
13C2_6:2FTS		72	25-150
13C2_8:2FTS		86	25-150
13C2_PFDoA		81	25-150
13C2_PFTeDA		79	25-150
13C3_PFBS		67	25-150
13C3_PFHxS		71	25-150
13C3-HFPO-DA		84	25-150
13C4_PFBA		75	25-150
13C4_PFHpA		75	25-150
13C5_PFHxA		76	25-150
13C5_PFPeA		75	25-150
13C6_PFDA		76	25-150
13C7_PFUdA		80	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
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N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-012**

Description: **WP B-2 (5-6')** Matrix: **Solid**

Date Sampled: **11/07/2020 0945** Project Name: **Oshkosh Corporation** % Solids: **83.0** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		77	25-150
13C8_PFOS		72	25-150
13C8_PFOSA		86	10-150
13C9_PFNA		77	25-150
d5-EtFOSAA		73	25-150
d3-MeFOSAA		74	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-013**

Description: **WP B-1 (1-2')** Matrix: **Solid**

Date Sampled: **11/07/2020 1000** Project Name: **Oshkosh Corporation** % Solids: **82.2** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2117	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		1.8	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		1.8	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		1.8	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		1.8	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		1.8	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		3.7	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		1.8	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		1.8	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		1.8	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**1.1**		**0.92**	**ug/kg**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**2.9**		**0.92**	**ug/kg**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		0.92	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**1.3**		**0.92**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		91	25-150
13C2_6:2FTS		79	25-150
13C2_8:2FTS		87	25-150
13C2_PFDoA		85	25-150
13C2_PFTeDA		80	25-150
13C3_PFBS		71	25-150
13C3_PFHxS		76	25-150
13C3-HFPO-DA		83	25-150
13C4_PFBA		77	25-150
13C4_PFHpA		78	25-150
13C5_PFHxA		84	25-150
13C5_PFPeA		75	25-150
13C6_PFDA		83	25-150
13C7_PFUdA		80	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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Client: **GZA GeoEnvironmental, Inc.**		Laboratory ID: **VK12014-013**	
Description: **WP B-1 (1-2')**		Matrix: **Solid**	
Date Sampled: **11/07/2020 1000**	Project Name: **Oshkosh Corporation**	% Solids: **82.2**	**11/13/2020 0210**
Date Received: **11/10/2020**	Project Number: **20.0157080**		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		78	25-150
13C8_PFOS		78	25-150
13C8_PFOSA		92	10-150
13C9_PFNA		82	25-150
d5-EtFOSAA		83	25-150
d3-MeFOSAA		76	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-014**

Description: **WP B-1 (5-6')** Matrix: **Solid**

Date Sampled: **11/07/2020 1005** Project Name: **Oshkosh Corporation** % Solids: **82.8** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2127	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.5	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.5	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.5	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		2.5	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.5	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		5.0	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.5	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.5	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.5	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.3	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.3	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		88	25-150
13C2_6:2FTS		84	25-150
13C2_8:2FTS		84	25-150
13C2_PFDoA		88	25-150
13C2_PFTeDA		80	25-150
13C3_PFBS		74	25-150
13C3_PFHxS		73	25-150
13C3-HFPO-DA		88	25-150
13C4_PFBA		80	25-150
13C4_PFHpA		79	25-150
13C5_PFHxA		86	25-150
13C5_PFPeA		81	25-150
13C6_PFDA		82	25-150
13C7_PFUdA		84	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.**		Laboratory ID: **VK12014-014**	
Description: **WP B-1 (5-6')**		Matrix: **Solid**	
Date Sampled: **11/07/2020 1005**	Project Name: **Oshkosh Corporation**	% Solids: **82.8**	**11/13/2020 0210**
Date Received: **11/10/2020**	Project Number: **20.0157080**		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		85	25-150
13C8_PFOS		81	25-150
13C8_PFOSA		90	10-150
13C9_PFNA		80	25-150
d5-EtFOSAA		82	25-150
d3-MeFOSAA		76	25-150

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range
ND = Not detected at or above the LOQ	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%
H = Out of holding time	W = Reported on wet weight basis	

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.** Laboratory ID: **VK12014-015**

Description: **WP B-7 (0-9')** Matrix: **Solid**

Date Sampled: **11/07/2020 1015** Project Name: **Oshkosh Corporation** % Solids: **86.7** **11/13/2020 0210**

Date Received: **11/10/2020** Project Number: **20.0157080**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	11/23/2020 2138	SES	11/21/2020 1228	74267

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		2.2	ug/kg	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		2.2	ug/kg	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		2.2	ug/kg	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		2.2	ug/kg	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		2.2	ug/kg	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		4.4	ug/kg	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		2.2	ug/kg	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		2.2	ug/kg	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		2.2	ug/kg	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		1.1	ug/kg	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		1.1	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		89	25-150
13C2_6:2FTS		88	25-150
13C2_8:2FTS		94	25-150
13C2_PFDoA		88	25-150
13C2_PFTeDA		83	25-150
13C3_PFBS		71	25-150
13C3_PFHxS		81	25-150
13C3-HFPO-DA		93	25-150
13C4_PFBA		82	25-150
13C4_PFHpA		81	25-150
13C5_PFHxA		88	25-150
13C5_PFPeA		84	25-150
13C6_PFDA		86	25-150
13C7_PFUdA		87	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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PFAS by LC/MS/MS

Client: **GZA GeoEnvironmental, Inc.**		Laboratory ID: **VK12014-015**	
Description: **WP B-7 (0-9')**		Matrix: **Solid**	
Date Sampled: **11/07/2020 1015**	Project Name: **Oshkosh Corporation**	% Solids: **86.7**	**11/13/2020 0210**
Date Received: **11/10/2020**	Project Number: **20.0157080**		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C8_PFOA		86	25-150
13C8_PFOS		78	25-150
13C8_PFOSA		92	10-150
13C9_PFNA		83	25-150
d5-EtFOSAA		88	25-150
d3-MeFOSAA		82	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%

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QC Summary

PFAS by LC/MS/MS - MB

Sample ID: VQ73958-001
Batch: 73958
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 11/18/2020 1701

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	ng/L	11/19/2020 1556
11Cl-PF3OUdS	ND		1	8.0	ng/L	11/19/2020 1556
8:2 FTS	ND		1	8.0	ng/L	11/19/2020 1556
6:2 FTS	ND		1	8.0	ng/L	11/19/2020 1556
4:2 FTS	ND		1	8.0	ng/L	11/19/2020 1556
GenX	ND		1	8.0	ng/L	11/19/2020 1556
ADONA	ND		1	8.0	ng/L	11/19/2020 1556
EtFOSAA	ND		1	8.0	ng/L	11/19/2020 1556
MeFOSAA	ND		1	8.0	ng/L	11/19/2020 1556
PFBS	ND		1	4.0	ng/L	11/19/2020 1556
PFDS	ND		1	4.0	ng/L	11/19/2020 1556
PFHpS	ND		1	4.0	ng/L	11/19/2020 1556
PFNS	ND		1	4.0	ng/L	11/19/2020 1556
PFOSA	ND		1	4.0	ng/L	11/19/2020 1556
PFPeS	ND		1	4.0	ng/L	11/19/2020 1556
PFHxS	ND		1	4.0	ng/L	11/19/2020 1556
PFBA	ND		1	4.0	ng/L	11/19/2020 1556
PFDA	ND		1	4.0	ng/L	11/19/2020 1556
PFDoA	ND		1	4.0	ng/L	11/19/2020 1556
PFHpA	ND		1	4.0	ng/L	11/19/2020 1556
PFHxA	ND		1	4.0	ng/L	11/19/2020 1556
PFNA	ND		1	4.0	ng/L	11/19/2020 1556
PFOA	ND		1	4.0	ng/L	11/19/2020 1556
PFPeA	ND		1	4.0	ng/L	11/19/2020 1556
PFTeDA	ND		1	4.0	ng/L	11/19/2020 1556
PFTrDA	ND		1	4.0	ng/L	11/19/2020 1556
PFUdA	ND		1	4.0	ng/L	11/19/2020 1556
PFOS	ND		1	4.0	ng/L	11/19/2020 1556

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		85	25-150
13C2_6:2FTS		97	25-150
13C2_8:2FTS		93	25-150
13C2_PFDoA		73	25-150
13C2_PFTeDA		73	25-150
13C3_PFBS		76	25-150
13C3_PFHxS		78	25-150
13C3-HFPO-DA		89	25-150
13C4_PFBA		88	25-150
13C4_PFHpA		87	25-150
13C5_PFHxA		89	25-150
13C5_PFPeA		82	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
* = RSD is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: VQ73958-001
Batch: 73958
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 11/18/2020 1701

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		78	25-150
13C7_PFUdA		71	25-150
13C8_PFOA		84	25-150
13C8_PFOS		76	25-150
13C8_PFOSA		93	10-150
13C9_PFNA		88	25-150
d5-EtFOSAA		89	25-150
d3-MeFOSAA		86	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: VQ73958-002
Batch: 73958
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 11/18/2020 1701

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
9Cl-PF3ONS	15	18		1	121	50-150	11/19/2020 1606
11Cl-PF3OUdS	15	16		1	109	50-150	11/19/2020 1606
8:2 FTS	15	20		1	128	50-150	11/19/2020 1606
6:2 FTS	15	16		1	108	50-150	11/19/2020 1606
4:2 FTS	15	16		1	105	50-150	11/19/2020 1606
GenX	32	34		1	106	50-150	11/19/2020 1606
ADONA	15	21		1	142	50-150	11/19/2020 1606
EtFOSAA	16	18		1	110	50-150	11/19/2020 1606
MeFOSAA	16	18		1	110	50-150	11/19/2020 1606
PFBS	14	18		1	127	50-150	11/19/2020 1606
PFDS	15	20		1	127	50-150	11/19/2020 1606
PFHpS	15	18		1	118	50-150	11/19/2020 1606
PFNS	15	21		1	138	50-150	11/19/2020 1606
PFOSA	16	17		1	109	50-150	11/19/2020 1606
PFPeS	15	21		1	139	50-150	11/19/2020 1606
PFHxS	15	16		1	112	50-150	11/19/2020 1606
PFBA	16	20		1	128	50-150	11/19/2020 1606
PFDA	16	21		1	130	50-150	11/19/2020 1606
PFDoA	16	21		1	134	50-150	11/19/2020 1606
PFHpA	16	20		1	125	50-150	11/19/2020 1606
PFHxA	16	19		1	118	50-150	11/19/2020 1606
PFNA	16	19		1	121	50-150	11/19/2020 1606
PFOA	16	18		1	113	50-150	11/19/2020 1606
PFPeA	16	20		1	125	50-150	11/19/2020 1606
PFTeDA	16	21		1	129	50-150	11/19/2020 1606
PFTrDA	16	20		1	125	50-150	11/19/2020 1606
PFUdA	16	20		1	126	50-150	11/19/2020 1606
PFOS	15	19		1	131	50-150	11/19/2020 1606

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		87	25-150
13C2_6:2FTS		88	25-150
13C2_8:2FTS		84	25-150
13C2_PFDoA		66	25-150
13C2_PFTeDA		67	25-150
13C3_PFBS		66	25-150
13C3_PFHxS		68	25-150
13C3-HFPO-DA		92	25-150
13C4_PFBA		80	25-150
13C4_PFHpA		82	25-150
13C5_PFHxA		81	25-150
13C5_PFPeA		75	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
* = RSD is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: VQ73958-002
Batch: 73958
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 11/18/2020 1701

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		71	25-150
13C7_PFUdA		72	25-150
13C8_PFOA		83	25-150
13C8_PFOS		60	25-150
13C8_PFOSA		88	10-150
13C9_PFNA		88	25-150
d5-EtFOSAA		74	25-150
d3-MeFOSAA		79	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: VQ74267-001
Batch: 74267
Analytical Method: PFAS by ID SOP
Matrix: Solid
Prep Method: SOP SPE
Prep Date: 11/21/2020 1228

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
9Cl-PF3ONS	ND		1	2.0	ug/kg	11/23/2020 1339
11Cl-PF3OUdS	ND		1	2.0	ug/kg	11/23/2020 1339
8:2 FTS	ND		1	2.0	ug/kg	11/23/2020 1339
6:2 FTS	ND		1	2.0	ug/kg	11/23/2020 1339
4:2 FTS	ND		1	2.0	ug/kg	11/23/2020 1339
GenX	ND		1	4.0	ug/kg	11/23/2020 1339
ADONA	ND		1	2.0	ug/kg	11/23/2020 1339
EtFOSAA	ND		1	2.0	ug/kg	11/23/2020 1339
MeFOSAA	ND		1	2.0	ug/kg	11/23/2020 1339
PFBS	ND		1	1.0	ug/kg	11/23/2020 1339
PFDS	ND		1	1.0	ug/kg	11/23/2020 1339
PFHpS	ND		1	1.0	ug/kg	11/23/2020 1339
PFNS	ND		1	1.0	ug/kg	11/23/2020 1339
PFOSA	ND		1	1.0	ug/kg	11/23/2020 1339
PFPeS	ND		1	1.0	ug/kg	11/23/2020 1339
PFHxS	ND		1	1.0	ug/kg	11/23/2020 1339
PFBA	ND		1	1.0	ug/kg	11/23/2020 1339
PFDA	ND		1	1.0	ug/kg	11/23/2020 1339
PFDoA	ND		1	1.0	ug/kg	11/23/2020 1339
PFHpA	ND		1	1.0	ug/kg	11/23/2020 1339
PFHxA	ND		1	1.0	ug/kg	11/23/2020 1339
PFNA	ND		1	1.0	ug/kg	11/23/2020 1339
PFOA	ND		1	1.0	ug/kg	11/23/2020 1339
PFPeA	ND		1	1.0	ug/kg	11/23/2020 1339
PFTeDA	ND		1	1.0	ug/kg	11/23/2020 1339
PFTrDA	ND		1	1.0	ug/kg	11/23/2020 1339
PFUdA	ND		1	1.0	ug/kg	11/23/2020 1339
PFOS	ND		1	1.0	ug/kg	11/23/2020 1339

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		95	25-150
13C2_6:2FTS		85	25-150
13C2_8:2FTS		90	25-150
13C2_PFDoA		89	25-150
13C2_PFTeDA		85	25-150
13C3_PFBS		75	25-150
13C3_PFHxS		77	25-150
13C3-HFPO-DA		90	25-150
13C4_PFBA		85	25-150
13C4_PFHpA		82	25-150
13C5_PFHxA		90	25-150
13C5_PFPeA		84	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
* = RSD is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: VQ74267-001
Batch: 74267
Analytical Method: PFAS by ID SOP

Matrix: Solid
Prep Method: SOP SPE
Prep Date: 11/21/2020 1228

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		89	25-150
13C7_PFUdA		83	25-150
13C8_PFOA		88	25-150
13C8_PFOS		79	25-150
13C8_PFOSA		94	10-150
13C9_PFNA		89	25-150
d5-EtFOSAA		89	25-150
d3-MeFOSAA		93	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
* = RSD is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: VQ74267-002
Batch: 74267
Analytical Method: PFAS by ID SOP
Matrix: Solid
Prep Method: SOP SPE
Prep Date: 11/21/2020 1228

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
9Cl-PF3ONS	1.9	1.9		1	103	50-150	11/23/2020 1350
11Cl-PF3OUdS	1.9	2.1		1	114	50-150	11/23/2020 1350
8:2 FTS	1.9	2.0		1	105	50-150	11/23/2020 1350
6:2 FTS	1.9	1.7		1	89	50-150	11/23/2020 1350
4:2 FTS	1.9	1.8		1	96	50-150	11/23/2020 1350
GenX	4.0	3.9		1	98	50-150	11/23/2020 1350
ADONA	1.9	1.9		1	101	50-150	11/23/2020 1350
EtFOSAA	2.0	1.8		1	92	50-150	11/23/2020 1350
MeFOSAA	2.0	1.9		1	95	50-150	11/23/2020 1350
PFBS	1.8	1.9		1	106	50-150	11/23/2020 1350
PFDS	1.9	2.3		1	122	50-150	11/23/2020 1350
PFHpS	1.9	1.9		1	100	50-150	11/23/2020 1350
PFNS	1.9	2.1		1	110	50-150	11/23/2020 1350
PFOSA	2.0	1.9		1	97	50-150	11/23/2020 1350
PFPeS	1.9	1.9		1	103	50-150	11/23/2020 1350
PFHxS	1.8	1.6		1	89	50-150	11/23/2020 1350
PFBA	2.0	2.0		1	98	50-150	11/23/2020 1350
PFDA	2.0	2.0		1	101	50-150	11/23/2020 1350
PFDoA	2.0	1.9		1	95	50-150	11/23/2020 1350
PFHpA	2.0	1.9		1	97	50-150	11/23/2020 1350
PFHxA	2.0	1.9		1	96	50-150	11/23/2020 1350
PFNA	2.0	1.9		1	97	50-150	11/23/2020 1350
PFOA	2.0	2.1		1	103	50-150	11/23/2020 1350
PFPeA	2.0	2.0		1	98	50-150	11/23/2020 1350
PFTeDA	2.0	2.1		1	104	50-150	11/23/2020 1350
PFTrDA	2.0	2.1		1	104	50-150	11/23/2020 1350
PFUdA	2.0	1.9		1	96	50-150	11/23/2020 1350
PFOS	1.9	1.8		1	98	50-150	11/23/2020 1350

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		101	25-150
13C2_6:2FTS		92	25-150
13C2_8:2FTS		94	25-150
13C2_PFDoA		92	25-150
13C2_PFTeDA		89	25-150
13C3_PFBS		75	25-150
13C3_PFHxS		82	25-150
13C3-HFPO-DA		94	25-150
13C4_PFBA		88	25-150
13C4_PFHpA		90	25-150
13C5_PFHxA		93	25-150
13C5_PFPeA		87	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
* = RSD is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: VQ74267-002
Batch: 74267
Analytical Method: PFAS by ID SOP

Matrix: Solid
Prep Method: SOP SPE
Prep Date: 11/21/2020 1228

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		85	25-150
13C7_PFUdA		88	25-150
13C8_PFOA		92	25-150
13C8_PFOS		81	25-150
13C8_PFOSA		98	10-150
13C9_PFNA		89	25-150
d5-EtFOSAA		90	25-150
d3-MeFOSAA		98	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: VQ75092-001
Batch: 75092
Analytical Method: PFAS by ID SOP

Matrix: Solid
Prep Method: SOP SPE
Prep Date: 12/01/2020 1438

Parameter	Result	Q	Dil	LOQ	Units	Analysis Date
9Cl-PF3ONS	ND		1	2.0	ug/kg	12/04/2020 1517
11Cl-PF3OUdS	ND		1	2.0	ug/kg	12/04/2020 1517
8:2 FTS	ND		1	2.0	ug/kg	12/04/2020 1517
6:2 FTS	ND		1	2.0	ug/kg	12/04/2020 1517
4:2 FTS	ND		1	2.0	ug/kg	12/04/2020 1517
GenX	ND		1	4.0	ug/kg	12/04/2020 1517
ADONA	ND		1	2.0	ug/kg	12/04/2020 1517
EtFOSAA	ND		1	2.0	ug/kg	12/04/2020 1517
MeFOSAA	ND		1	2.0	ug/kg	12/04/2020 1517
PFBS	ND		1	1.0	ug/kg	12/04/2020 1517
PFDS	ND		1	1.0	ug/kg	12/04/2020 1517
PFHpS	ND		1	1.0	ug/kg	12/04/2020 1517
PFNS	ND		1	1.0	ug/kg	12/04/2020 1517
PFOSA	ND		1	1.0	ug/kg	12/04/2020 1517
PFPeS	ND		1	1.0	ug/kg	12/04/2020 1517
PFHxS	ND		1	1.0	ug/kg	12/04/2020 1517
PFBA	ND		1	1.0	ug/kg	12/04/2020 1517
PFDA	ND		1	1.0	ug/kg	12/04/2020 1517
PFDoA	ND		1	1.0	ug/kg	12/04/2020 1517
PFHpA	ND		1	1.0	ug/kg	12/04/2020 1517
PFHxA	ND		1	1.0	ug/kg	12/04/2020 1517
PFNA	ND		1	1.0	ug/kg	12/04/2020 1517
PFOA	ND		1	1.0	ug/kg	12/04/2020 1517
PFPeA	ND		1	1.0	ug/kg	12/04/2020 1517
PFTeDA	ND		1	1.0	ug/kg	12/04/2020 1517
PFTrDA	ND		1	1.0	ug/kg	12/04/2020 1517
PFUdA	ND		1	1.0	ug/kg	12/04/2020 1517
PFOS	ND		1	1.0	ug/kg	12/04/2020 1517

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		103	25-150
13C2_6:2FTS		100	25-150
13C2_8:2FTS		90	25-150
13C2_PFDoA		101	25-150
13C2_PFTeDA		101	25-150
13C3_PFBS		91	25-150
13C3_PFHxS		98	25-150
13C3-HFPO-DA		101	25-150
13C4_PFBA		99	25-150
13C4_PFHpA		101	25-150
13C5_PFHxA		99	25-150
13C5_PFPeA		99	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
* = RSD is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: VQ75092-001
Batch: 75092
Analytical Method: PFAS by ID SOP

Matrix: Solid
Prep Method: SOP SPE
Prep Date: 12/01/2020 1438

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		100	25-150
13C7_PFUdA		104	25-150
13C8_PFOA		99	25-150
13C8_PFOS		88	25-150
13C8_PFOSA		94	10-150
13C9_PFNA		97	25-150
d5-EtFOSAA		94	25-150
d3-MeFOSAA		104	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: VQ75092-002
Batch: 75092
Analytical Method: PFAS by ID SOP

Matrix: Solid
Prep Method: SOP SPE
Prep Date: 12/01/2020 1438

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
9Cl-PF3ONS	1.9	1.8		1	96	50-150	12/04/2020 1528
11Cl-PF3OUdS	1.9	1.9		1	101	50-150	12/04/2020 1528
8:2 FTS	1.9	2.0		1	104	50-150	12/04/2020 1528
6:2 FTS	1.9	1.9		1	103	50-150	12/04/2020 1528
4:2 FTS	1.9	2.1		1	112	50-150	12/04/2020 1528
GenX	4.0	3.7		1	93	50-150	12/04/2020 1528
ADONA	1.9	2.1		1	114	50-150	12/04/2020 1528
EtFOSAA	2.0	1.9		1	93	50-150	12/04/2020 1528
MeFOSAA	2.0	1.8		1	92	50-150	12/04/2020 1528
PFBS	1.8	1.9		1	107	50-150	12/04/2020 1528
PFDS	1.9	1.8		1	92	50-150	12/04/2020 1528
PFHpS	1.9	2.2		1	115	50-150	12/04/2020 1528
PFNS	1.9	2.1		1	109	50-150	12/04/2020 1528
PFOSA	2.0	2.0		1	101	50-150	12/04/2020 1528
PFPeS	1.9	1.8		1	96	50-150	12/04/2020 1528
PFHxS	1.8	1.8		1	102	50-150	12/04/2020 1528
PFBA	2.0	2.1		1	106	50-150	12/04/2020 1528
PFDA	2.0	1.9		1	96	50-150	12/04/2020 1528
PFDoA	2.0	2.0		1	101	50-150	12/04/2020 1528
PFHpA	2.0	2.1		1	106	50-150	12/04/2020 1528
PFHxA	2.0	1.9		1	97	50-150	12/04/2020 1528
PFNA	2.0	2.1		1	106	50-150	12/04/2020 1528
PFOA	2.0	2.2		1	109	50-150	12/04/2020 1528
PFPeA	2.0	2.0		1	101	50-150	12/04/2020 1528
PFTeDA	2.0	2.3		1	113	50-150	12/04/2020 1528
PFTrDA	2.0	1.8		1	92	50-150	12/04/2020 1528
PFUdA	2.0	1.9		1	96	50-150	12/04/2020 1528
PFOS	1.9	1.9		1	102	50-150	12/04/2020 1528

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		95	25-150
13C2_6:2FTS		103	25-150
13C2_8:2FTS		95	25-150
13C2_PFDoA		109	25-150
13C2_PFTeDA		96	25-150
13C3_PFBS		91	25-150
13C3_PFHxS		98	25-150
13C3-HFPO-DA		103	25-150
13C4_PFBA		99	25-150
13C4_PFHpA		101	25-150
13C5_PFHxA		101	25-150
13C5_PFPeA		99	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the LOQ
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
* = RSD is out of criteria
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: VQ75092-002
Batch: 75092
Analytical Method: PFAS by ID SOP

Matrix: Solid
Prep Method: SOP SPE
Prep Date: 12/01/2020 1438

Surrogate	Q	% Rec	Acceptance Limit
13C6_PFDA		105	25-150
13C7_PFUdA		106	25-150
13C8_PFOA		99	25-150
13C8_PFOS		92	25-150
13C8_PFOSA		97	10-150
13C9_PFNA		100	25-150
d5-EtFOSAA		92	25-150
d3-MeFOSAA		97	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the LOQ

N = Recovery is out of criteria

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

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Number 113142

Client: GZA Geoenvironmental Inc
Address: 17975 W Sarah Lane Suite 100
City: Brookfield State: WI Zip Code: 53045
Project Name: Oshkosh Corporation
Project No.: 20.0157080D
P.O. No.:
Report to Contact: Kevin Hedinger
Sampler's Signature: x [signature]
Printed Name: Elizabeth Stapleton Yu
Telephone No. / E-mail: 262-754-2560 / kevin.hedinger@gza.com
Analysis (Attach list if more space is needed): PFAS (WI 36 list)
Quote No.:
Page 1 of 2
VK12014
NWS

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	Unpres.	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Field Filtered	PFAS (WI 36 list)	Remarks / Cooler I.D.
WP Equipment Blank DS 1	11/7/20	800	G	X			1							X	
WP Equipment Blank T 2		810	G	X			1							X	
WP B-6 (2-3')		825	G	-	X		1							X	
WP B-6 (6-7')		830	G		X		1							X	
WP B-4 (2-3')		840	G		X		1							X	
WP B-4 (5-6')		845	G		X		1							X	On hold
WP B-3 (2-3')		905	G		X		1							X	
WP B-3 (5-6')		910	G		X		1							X	
WP B-5 (2-3')		925	G		X		1							X	
WP B-5 (6-7')		930	G		X		1							X	On hold

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☒ Standard ☐ Rush (Specify)
Sample Disposal: ☐ Return to Client ☒ Disposal by Lab
Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown
QC Requirements (Specify)

Relinquished by	Date	Time	Received by	Date	Time
1. [signature]	11/7/20	1220	1. [signature]	11/7/20	1220
2. [signature]	11/9/20	1230	2. FEDEX	11/9/20	1230
3.			3.		
4. Fed Ex	11/10/20	0925	4. Laboratory received by [signature]	11/10/20	0925

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY: Received on Ice (Circle) Yes No Ice Pack; Receipt Temp. 4.5 °C; Temp Blank ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: ME003N2-01

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www.pacelabs.com

Number 113146

Client: GZA GeoEnvironmental Inc	Report to Contact: Kevin Hedinger	Telephone No. / E-mail: 262-754-2560 / kevin.hedinger@gza.com
Address: 17975 W Sarah Lane Suite 100	Sampler's Signature: X Elizabeth Stapleton Yu	Quote No
City: Brookfield / State: WI / Zip Code: 53045	Printed Name: Elizabeth Stapleton Yu	Page 2 of 2
Project Name: Oshkosh Corporation		VK12014
Project No: 20.0157080	P.O. No.	

Analysis (Attach list if more space is needed): PFAs (Mil 36 list)

Sample ID / Description (Containers for each sample may be combined on one line.)	Collection Date(s)	Collection Time (Military)	Sample Temperature	Matrix: Aqueous	Matrix: Solid	Matrix: Wipe/Air/Other	No. of Containers by Preservative Type: Unpres	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Field Filtered	PFAs (Mil 36 list)	Remarks / Cooler I.D.
WP B-2 (2-3')	11/7/20	940	6		X		1							X	
WP B-2 (5-6')		945	6		X		1							X	*On hold
WP B-1 (1-2')		1000	6		X		1							X	
WP B-1 (5-6')		1005	6		X		1							X	
WP B-7 (0-9")		1015	6		X		1							X	

Turn Around Time Required (Prior lab approval required for expedited TAT.): ☒ Standard ☐ Rush (Specify)	Sample Disposal: ☐ Return to Client ☒ Disposal by Lab	Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown
QC Requirements (Specify)		

	Date	Time		Date	Time
1. Relinquished by: Elizabeth Stapleton Yu	11/7/20	1220	1. Received by:	11/7/20	1220
2. Relinquished by:	11/9/20	1230	2. Received by: FEDEX	11/9/20	1230
3. Relinquished by:	Date	Time	3. Received by:	Date	Time
4. Relinquished by: Fed Ex	11/10/20	0925	4. Laboratory received by:	11/10/20	0925

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY — Received on Ice (Circle): (Yes) No Ice Pack — Receipt Temp: 4.5 °C — Temp Blank: ☒ Y ☐ N

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s), PINK-Field/Client Copy

Document Number: ME003N2-01

Pace Analytical

Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised:9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: GZA Cooler inspected by/date: KSC / 11/12/2020 Lot #: VK12014

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other: _____

☐ Yes	☑ No		1. Were custody seals present on the cooler?
☐ Yes	☐ No	☑ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: AHD

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.5 / 4.5 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☐ Yes	☐ No	☑ NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
☐ Yes	☐ No	☑ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers? No time
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
☑ Yes	☐ No		21. Was the quote number listed on the container label? If yes, Quote # 24122

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA.
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA _____ were received with bubbles >6 mm in diameter.

Samples(s) NA _____ were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: AHD Date: 11/12/2020

Comments:

APPENDIX E

SOIL-TO-GROUNDWATER RCL DOCUMENTATION

Default

Risk-Based Regional Screening Levels (RSL) for Soil to Groundwater

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = DWSHA; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_oRef	IUR (ug/m^3)$^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS	ABS	S (mg/L)	K_d (cm^3/g)	K_{oc} (cm^3/g)	Dilution Attenuation Factor (DAF) (unitless)	HLC (atm-m^3/mole)	Henry's Law Constant (unitless)	H` and HLC Ref	Normal Boiling Point BP (K)	BP Ref	Critical Temperature TC (K)
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	No	No	Organics	-		-		2.00E-05	D	-		1.00E+00	1.00E-01	6.80E+02	7.43E-01	3.72E+02	1.00E+00	-	-		5.32E+02	PHYSPROP	-
Perfluorooctanoic acid (PFOA)	335-67-1	No	No	Organics	7.00E-02	D	-		2.00E-05	D	-		1.00E+00	1.00E-01	9.50E+03	2.30E-01	1.15E+02	1.00E+00	4.00E-06	1.64E-04	ATSDR Draft Profile	4.66E+02	PHYSPROP	-

Chemical	CAS Number	TC	Noncarcin	Noncarcinogenic	Carcinogenic SL	Water	Water	Water	Maximum	Water	P MCL-based	Noncarci	Q Noncarci	R Carcinog	Risk-		R/Q	S S/P	ES	DF = 1	WDNR	WDNR
Perfluorooctane sulfonic acid (PFOS)	1763-23-1		6.67E-01	4.01E-01	-	6.67E-04	4.01E-04	-	-	-	-	6.29E-04	3.78E-04	-	3.78E-04	nc	#VALUE!	9.43E-04	0.02	0.0000	**0.0000377**	**0.038**
Perfluorooctanoic acid (PFOA)	335-67-1		6.67E-01	4.01E-01	1.11E+00	6.67E-04	4.01E-04	1.11E-03	-	-	-	2.87E-04	1.72E-04	4.78E-04	1.72E-04	nc	#VALUE!	1.55E-04	0.02	0.00000	**0.0000062**	**0.006**