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February 17, 2025
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: Supplemental Site Investigation Work Plan
Oshkosh Defense West Plant
500 West Waukau Avenue
Oshkosh, Wisconsin
BRRTS No. 02-71-587406

Dear Mr. McKnight:

GZA GeoEnvironmental, Inc. (GZA), on behalf of Oshkosh Defense, LLC (Oshkosh/"Client"), prepared this Supplemental Site Investigation Work Plan ("Work Plan") for the property at 500 West Waukau Avenue in Oshkosh, Wisconsin (referred to as the "West Plant"). This Work Plan is being submitted in response to comments from the Wisconsin Department of Natural Resources (WDNR) based on a review of the Supplemental Site Investigation Report, dated August 6, 2024.[1] GZA and Oshkosh representatives met with the WDNR on November 6, 2024, prior to receiving the written correspondence, to discuss the review comments.

BACKGROUND

Based on the review comments received by Oshkosh in a November 6, 2024 letter, the WDNR PFAS Review Committee is requesting additional site investigation activities be completed in accordance with Chapter NR 716, Wisconsin Administrative Code (Wis. Adm. Code). Specifically, the comments provided by the WDNR are as follows:

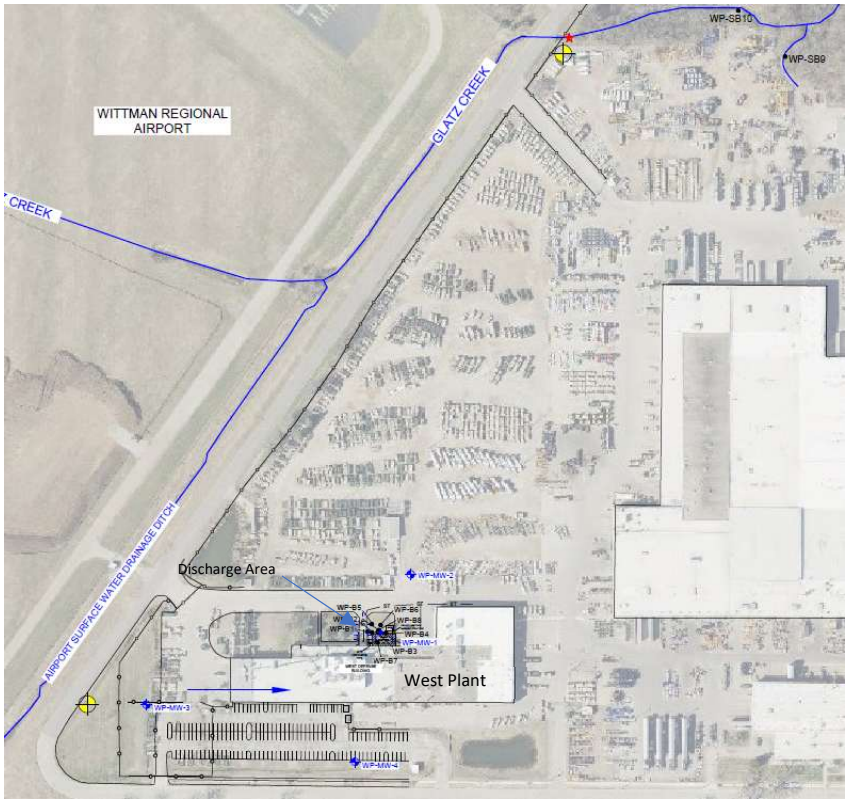
- Additional soil sampling is needed in the vicinity of WP-SB-9 and WP-SB-10 to define per- and polyfluoroalkyl substance (PFAS) impacts;
- Evaluation of PFAS concentrations in WP-SB-9 relative to the discharge area soil concentration on the north side of the West Plant building to determine if there are other sources entering the storm sewer that discharge in the area of WP-SB-9;
- Additional groundwater investigation to evaluate if the perfluorooctane sulfonic acid (PFOS) concentration in MW-3 is from the discharge area or from another on-site or off-site source area; and
- Additional groundwater sampling of monitoring wells MW-2 and MW-3 as part of the additional groundwater investigation.

During our discussions on November 11, 2024, the WDNR indicated that additional investigation was necessary southwest of background well MW-3, toward Oshkosh's west property line. Background monitoring well MW-3 was installed at its location, approximately 500 feet west and upgradient of the discharge area and within approximately 100 feet east of the western property

[1] *Supplemental Site Investigation Report, Oshkosh Defense West Plant, 500 West Waukau Avenue, Oshkosh, Wisconsin, BRRTS No. 02-71-587406*, dated August 6, 2024, GZA File No. 20.0157080.00.

boundary, to evaluate the potential for off-site contaminants affecting groundwater on the West Plant site. Groundwater samples from background monitoring well MW-3 contained the highest PFOS concentration detected in groundwater in the on-site monitoring wells, indicating an off-site source of PFAS is the likely cause of elevated PFOS in groundwater beneath the Site. Additional investigation is being requested by WDNR to support off-site contaminant migration and to potentially support an off-site liability exemption, if appropriate.

Additional investigation is also being requested in the area of WP-SB-9 and WP-SB-10 to delineate the PFAS detected in the soil samples. We believe there is a potential for these soil samples collected along Glatz Creek to be influenced by off-site PFAS migrating through groundwater and surface water. To understand the PFAS concentration migrating in groundwater along the western property boundary at Glatz Creek and the potential influence of groundwater on soil samples at or near the water table, an upgradient groundwater monitoring well is proposed to be installed. Delineation soil sampling in the areas of WP-SB-9 and WP-SB-10 may be considered once the background groundwater influence is understood and soil sampling is determined to be necessary.



Based on the comments in the WDNR letter and the results of previous groundwater sampling, Oshkosh is proposing to conduct activities that provide a better understanding of the potential groundwater flow direction across the Oshkosh property, the potential for off-site PFAS contaminants to migrate onto the West Plant property through groundwater and surface water, and the interaction of groundwater with Glatz Creek. Once the potential for off-Site PFAS migration is evaluated, Oshkosh will evaluate if additional soil and groundwater samples are necessary at the Site and may submit a separate work plan, as needed, for additional investigation.

The Work Plan presented herein incorporates information gained from our discussion and is intended to satisfy the requirements of Chapter NR 716.

INVESTIGATION APPROACH AND RATIONALE

Based on the WDNR comments, the following additional investigation activities are proposed:

- Installation of two monitoring wells on the western property boundary along Hughes Street, both which will provide greater confidence on background groundwater quality entering the Site. Based on site investigation groundwater elevations, groundwater flow beneath the West Plant building is to the east/northeast; therefore, installation of wells along the western property boundary is assumed to represent an on-site upgradient location. The groundwater flow direction in the area of Glatz Creek was not determined by the site investigation activities because it is approximately 1,500 feet north of the existing monitoring well network. However, the shallow groundwater flow regime near the creek likely discharges to Glatz Creek while deeper bedrock flow is expected to be east toward Lake Winnebago.

One monitoring well is proposed to be installed to confirm background conditions on the western property boundary west/southwest of monitoring well MW-3. This well will provide additional groundwater elevation data to evaluate the groundwater flow direction on the southwest corner of the Site, and groundwater samples from this well and other on-site wells can be evaluated for the potential of off-site contaminants to affect groundwater quality on-site.

The second well will be installed on-site along the western property boundary in the area south of where Glatz Creek crosses beneath Hughes Street. This well is being installed to evaluate the groundwater quality on the western property boundary and to evaluate the possible hydraulic connection between groundwater and surface water in Glatz Creek. The locations of the proposed monitoring wells are shown on **Figure 1**.

During soil boring advancement, soil samples will be collected continuously throughout the depths of the boring for visual observation and soil classification.

The monitoring well will be completed with 2-inch-diameter, flush-threaded polyvinyl chloride (PVC) riser and well screen. The well screen will be 10 feet of 0.010-inch, factory-slotted PVC screen with PVC riser pipe. The annular space surrounding the well screen will be filled with sand filter pack material from the bottom of the borehole to a depth approximately 2 feet above the top of the screen. The annular space above the sand filter pack will be filled with ⅜-inch bentonite pellets to create a seal to prevent surface water migration along the well casing. The surface of the well will be completed as an above-grade completion with a steel protective cover with locking lid. A vented PVC cap will be placed on the top of the well.

- The monitoring well will be developed by surging water in the well screen and sand filter pack to mobilize sediment into the well and water will be removed using a disposable bailer or submersible pump. The wells will be developed in accordance with the WDNR Groundwater Sampling Field Manual procedures utilizing PFAS-free sampling equipment. The purge water will be placed in a 55-gallon drum and labeled until proper disposal can be arranged.
- Groundwater samples will be collected from the newly installed monitoring wells and existing monitoring wells MW-1 and MW-3 using low-flow sampling techniques. During purging, field parameters (temperature, pH, dissolved oxygen, specific conductance, oxidation-reduction potential, and turbidity) will be monitored using a flow-through cell until the parameters stabilize. The groundwater sampling activities and measurements will be recorded on a groundwater sampling form. The groundwater samples will be collected directly from the pump tubing into laboratory-supplied sample containers. The samples will be shipped under chain-of-custody control to Pace® Analytical in West Columbia, South Carolina for analyses of the Wisconsin List of 33 PFAS.
- A staff gauge is proposed to be installed in Glatz Creek to evaluate the hydraulic connection of surface water and groundwater. The staff gauge will be installed near the Hughes Street Bridge, as shown on **Figure 1**, and will be surveyed into the on-site datum. The creek elevation will be measured during groundwater elevation measurement events to assess groundwater/surface water interaction with the creek.
- The top of casing and ground surface elevations of the wells and the staff gauges will be surveyed relative to the on-site datum.
- Upon receipt of the soil and groundwater results, the site investigation activities and analytical results will be summarized in a letter and presented to the WDNR.

SCHEDULE

To understand the hydraulic connection between surface water and groundwater, multiple seasonal measurement events are necessary. Therefore, it is anticipated that the proposed site investigation activities described above will be implemented in Spring 2025, weather permitting. Groundwater analytical results will be provided to the WDNR in a timely manner upon receipt, but a report summarizing the activities and results will likely be submitted in late Summer or Fall 2025.

If you have questions regarding this Work Plan, please feel free to contact Mr. Kevin Hedinger at 262-754-2578 or via email at kevin.hedinger@gza.com, or Mr. John Osborne at 262-754-2590 or via email at john.osborne@gza.com.

Sincerely,

GZA GeoEnvironmental, Inc.

Kevin M. Hedinger
Senior Hydrogeologist

John C. Osborne, P.G.
Principal Hydrogeologist

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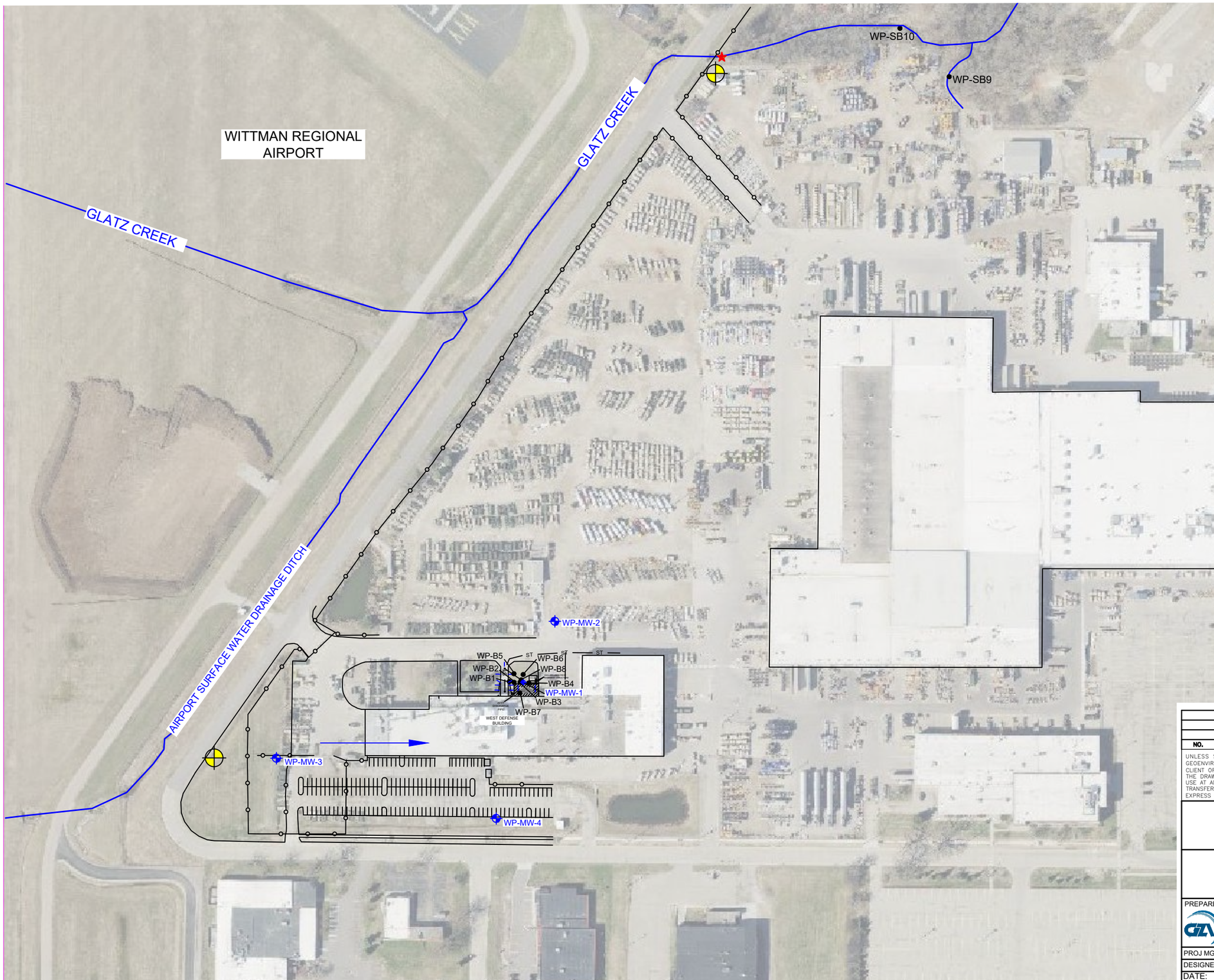
Attachment: Figure 1 - Site Plan and Proposed Locations

c. Mr. Kevin Tubbs, Oshkosh Corporation
Ms. Suzanne Murawski, Oshkosh Defense
Mr. Scott Obremski, Oshkosh Corporation
Mr. William Nelson, Godfrey & Kahn



LEGEND

- MONITORING WELL
- SOIL BORING
- PROPOSED MONITORING WELL
- PROPOSED STAFF GAUGE
- GROUNDWATER FLOW (APPROXIMATE)

N
W E
S

0 100' 200' 400'

SCALE IN FEET 1" = 200'

NO.	ISSUE/DESCRIPTION	BY	DATE

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SUPPLEMENTAL SITE INVESTIGATION REPORT
OSHKOSH DEFENSE WEST PLANT
OSHKOSH, WISCONSIN

SITE PLAN AND PROPOSED LOCATIONS

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

PREPARED FOR:
OSHKOSH CORPORATION
OSHKOSH, WISCONSIN

PROJ MGR: KMH	REVIEWED BY: JCO	CHECKED BY: KMH	FIG 1
DESIGNED BY: KMH	DRAWN BY: KMH	SCALE: 1"=50'	
DATE: 11/19/2024	PROJECT NO. 20.0157080.00	REVISION NO.	SHEET NO. OF

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