



November 30, 2018

Mr. Keith Freihofer
ANG/A7OR
3500 Fetchet Avenue
Andrews AFB, MD 20762-5157

Subject: Review of *Draft-Final Remedial Investigation Report*
128th Air Refueling Wing, General Mitchell International Airport, Milwaukee, WI
BRRTS #: 02-41-579106, 02-41-579107, 02-41-579108, 02-41-579109, 02-41-579110
FID #: 241496970

Dear Mr. Freihofer:

On October 6, 2018, the Wisconsin Department of Natural Resources (DNR) received a revised version of the *Draft-Final Remedial Investigation Report* (Redline Report), prepared on your behalf by your consultant, Wood (formerly Amec Foster Wheeler). Review of the Redline Report and response from the DNR was requested.

Background

The 128th Air Refueling Wing (ARW) is located at the Air National Guard (ANG) base at General Mitchell International Airport (GMIA). The 128th ARW was organized at General Mitchell Field between 1946 and 1948, and began its air refueling mission in the early 1960s. The ARW continues to operate at GMIA, providing fuel to U.S. military and allied aircraft, aero-medical evacuation, and the lift personnel and equipment to strategic locations.

Previous releases at the 128th ARW have been reported to the DNR. Previous and current investigations include, but are not limited to, the 1968 Westshore Pipeline release, during which approximately 600,000 gallons of gasoline were spilled, a jet fuel release from the aboveground receipt headers and associated underground piping at Building 610, known as the legacy spill, and a secondary release of jet fuel from an emergency vent located on the roof of Building 606.

Report Summary

The Redline Report identifies six Areas of Concern (AOCs) at the ANG base at GMIA. The objective of the Redline Report was to fully delineate the nature and extent of site-specific contaminants in soil and groundwater through investigative activities. Each AOC was investigated via soil and groundwater sampling, with two AOCs also being investigated for possible vapor intrusion via sub-slab sampling. Each AOC is described in the review section.

The Redline Report was reviewed for compliance with Wis. Admin. Code ch. NR 716, which explains the requirements for site investigations and site investigation reports. The DNR provides the following general comments:

- The DNR understands that the Final Remedial Investigation Report will include certification by a certified professional hydrogeologist, as required in Wis. Admin. Code § NR 712.07, in addition to a

certification by a professional engineer. Subsequent reports should be certified by the appropriate professional(s), as indicated in Wis. Admin Code § NR 712.07

- The DNR understands that subsequent reports will contain isoconcentration maps and cross sections for each applicable AOC. These figures must illustrate the horizontal and vertical extent of soil and groundwater contamination with concentration lines interpreted between sampling points.
- In subsequent reports, applicable tables and figures, including the isoconcentration maps and cross sections, should be comprehensive, including all relevant data from previous investigations and/or sampling events.
- The DNR understands that in subsequent reports soil concentrations will be compared to Wisconsin's three generic Residual Contaminant Levels (RCLs): groundwater protection pathway, non-industrial direct contact, and industrial direct contact. When comparing soil results, use the newest DNR RCLs, dated June 2018. Additionally, the data on the soil contamination figures should be reflective of the soil data tables in this manner.

The DNR also provides the following comments related to the specific AOCs:

Former Aircraft Washing Area (RW010) – BRRTS #: 02-41-579110

This AOC is the location of the former aircraft washing rack, where aircraft were historically cleaned using the underground detergent, waste oil, and holding tanks. The detergent tank was removed in the 1990s. Decommissioning or removal records for the waste oil and holding tanks have not been located. This AOC is currently used for miscellaneous storage and maintenance. The Redline Report identified groundwater concentrations of Bis(2-ethylhexyl) phthalate (DEHP) exceeding the Wis. Admin. Code ch. NR 140 Preventive Action Limit (PAL) in the first of two sampling rounds from several AOC permanent monitoring wells.

- The DNR understands that no further action is being recommended for this AOC. For the subsequent Decision Document, provide justification for the determination, including discussion regarding DEHP being flagged as a lab contaminant and not being related to site activities, former or current.

Oil-Water Separator (OW014) & Former Drain Oil Underground Storage Tank (TU015) – BRRTS #: 02-41-579108

These two AOCs are located at Guard West. An oil-water separator (OWS) was replaced between 1994 and 1995, during which time other underground storage tanks (USTs) were reportedly removed. Currently, this area, specifically Building 302, is being used for storage. Building 302 was formerly a maintenance building. It is not known whether the drain oil UST was removed, and no documentation pertaining to the OWS removal/replacement was located.

The Redline Report identified concentrations of polycyclic aromatic hydrocarbons (PAHs) in soil exceeding RCLs for direct contact. Naphthalene was also detected in exceedance of its protection of the groundwater pathway RCL. Groundwater samples collected from temporary monitoring wells identified various PAHs exceeding their respective Wis. Admin. Code ch. NR 140 Enforcement Standards (ESs). These exceedances were absent in groundwater samples collected from permanent monitoring wells. Additionally, three sub-slab samples were collected beneath the slab of Building 302, located at the western edge of the AOC. The concentrations of these sub-slab samples were below DNR vapor risk screening levels (VRSLs).

- The DNR understands that Wood is proposing further investigation to define the degree and extent of PAH contamination. The Redline Report indicates that the PAH exceedances appear to be associated with general historical site operations, including, but not limited to, asphalt sealing, repairing, and general maintenance activities. If PAH contamination at the site is attributable to general site conditions, rather

than a discharge from a UST, OWS, or another source, include that discussion in the subsequent report and determine if additional investigation is needed, or if the source of PAH contamination is assumed to be site-wide due to site conditions.

Suspected Petroleum Contamination: Building 522 (CB018a) – BRRTS #: 02-41-579107 & Prime Beef Drive/Tanker Avenue (CB018b) – BRRTS #: 02-41-579109

These two AOCs are located at Guard Central and are within areas associated with the 1968 Westshore Pipeline release. CB018a addresses contamination located adjacent to Building 522, near the intersection of Upset Avenue and Minuteman Drive. The Redline Report identifies PAHs in shallow soil samples exceeding direct contact RCLs. Temporary monitoring well samples also identified PAHs exceeding Wis. Admin. Code ch. NR 140 ESs. These exceedances were absent in groundwater samples collected from permanent monitoring wells. The Redline Report attributes the PAH impacts to general site use rather than a specific source.

Petroleum volatile organic compounds (PVOCs) were identified in soil exceeding the protection of the groundwater pathway RCL. Temporary monitoring well samples also found PVOCs exceeding their respective Wis. Admin. Code ch. NR 140 ESs. In permanent monitoring wells, VOCs were found to exceed their respective Wis. Admin. Code ch. NR 140 PALs and ESs. A fingerprint analysis was performed on groundwater samples collected from temporary monitoring wells. The results of this analysis indicated that the petroleum impacts appeared to be associated with old or highly weathered gasoline. Additionally, three sub-slab samples were collected beneath the slab of Building 522. The concentrations of the sub-slabs samples were below DNR VRSLs.

AOC CB018b addresses contamination near the petroleum, oil, and lubrication facility, at the intersection of Prime Beef Drive and Tanker Avenue. The Redline Report identifies PAHs in soil samples exceeding direct contact RCLs. Temporary monitoring well samples also identified PAHs exceeding Wis. Admin. Code ch. NR 140 PALs and ESs. In permanent monitoring wells, MW-206 had ES exceedances for select PAHs in the first of two sampling rounds. The Redline Report attributes the PAH impacts to the current and historical use of the site. Naphthalene was also detected above the protection of the groundwater pathway RCL at soil boring location SB-04.

- It is the DNR's understanding that these two AOCs will not be investigated in terms of the previously closed 1968 Westshore Pipeline release (BRRTS #: 02-41-000590). However, concentrations of PAHs in soil at both AOCs exceeding direct contact RCLs were identified during the remedial investigation. The Redline Report indicates that the PAHs at these AOCs are attributable to general site conditions rather than a specific discharge, similar to the OW014 & TU015 BRRTS case. If PAH contamination at the site is attributable to general site conditions, rather than a discharge from a specific source, include that discussion in the subsequent report and determine if additional investigation is needed, or if the source of PAH contamination is assumed to be site-wide due to site conditions.
- Chlorinated volatile organic compounds were detected in groundwater at AOC CB018a. These exceedances should be further assessed, and additional groundwater monitoring may be needed to define a concentration trend. Evaluate the potential source of these contaminants.

Vinyl Chloride Groundwater Contamination (CG019) – BRRTS #: 02-41-579106

This AOC identifies a vinyl chloride (VC) groundwater plume located within the southern end of Guard Central. The source of the VC is currently unknown. Historical and current sampling data suggest that the VC contamination is located along the east-west drainage ditch. Wis. Admin. Code ch. NR 140 ES exceedances are noted in the shallow groundwater zone, where wells are screened between 5 and 20 feet below ground surface (bgs), and also in the deeper groundwater zone, where wells are screened from 30 to 40 feet bgs. Two wells

within the drainage ditch were screened from 40 to 50 feet bgs, but VC was not detected in either of the two sampling events at either location.

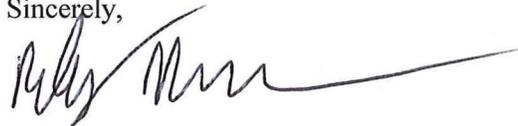
- Data tables and figures should be comprehensive, including all relevant sampling data. Tables and figures should also incorporate data collected during the Henningson, Durham, Richardson, Inc. investigation.
- Use the created isoconcentration figures to assess possible vapor intrusion into nearby buildings and to determine if the degree and extent of VC contamination has been defined. To assess vapor intrusion, refer to the DNR's vapor intrusion guidance, "Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin," RR-800.
- The DNR understands that Wood is recommending remedial action at this AOC. Remedial action should be considered on the basis of potential receptors and migration pathways; whether there is a threat to human health or the environment. Evaluate the need for remedial action, including monitored natural attenuation, in terms of risk.

The site investigation can be an iterative process. If applicable, future sampling results may indicate that further assessment is needed to define the degree and extent of contamination in all affected media.

The DNR understands that Wood intends to submit additional reports/documentation outlining the next steps for these AOCs. The future documents should incorporate the comments outlined in this letter and be in compliance with the Wis. Admin. Code NR 700 series.

The DNR appreciates the efforts you are taking to address the contamination at these AOCs. If you have any questions about this letter, please contact me, the DNR Project Manager, at (414) 263-8699, or by email at Riley.Neumann@wisconsin.gov.

Sincerely,



Riley D. Neumann
Hydrogeologist
Remediation & Redevelopment Program

cc: 2nd Lt. Brian Schrader, Environmental Manager, 128th ARW (electronic)
John Raltson, Project Manager, Wood Group (electronic)