**WISCONSIN AIR NATIONAL GUARD**
**HEADQUARTERS 115TH FIGHTER WING (ACC) (ANG)**
**3110 MITCHELL STREET**
**MADISON WISCONSIN 53704-2529**

14 July 2021

MEMORANDUM FOR WISCONSIN DEPARTMENT OF NATURAL RESOURCES

FROM: 115 CES/CC

SUBJECT: Materials Management Plan – BRRTS #: 02-13-585319

1. Pursuant to Wisconsin Administrative Code NR 718, a materials management plan (MMP) is required for materials that could be removed that contain contaminants of concern. This memorandum serves as the material management plan that the 115th Fighter Wing will follow during construction related to the beddown of the F-35. This material management plan provides the process for handling soil and water that have the potential to contain contaminants of concern.

2. **Building 1209 Site Soil Results** – As a result of F-35 construction, it was determined, in concert with the Wisconsin Department of Natural Resources, that a soils management area for management of perfluorintated contaminated soils should be established. It was determined, after sampling multiple locations, to establish this soil management area on the West side of Building 1209, Truax Field Air National Guard Base. Six (6) sample locations West of B1209 were sampled for perfluorinated compounds. All six sample locations had some concentrations of perfluorinated compounds within the soil and water. Concentrations of PFOS ranged from non-detect to 1,500 µg/Kg. Five sample locations had PFOA concentrations had a range of non-detect to 4.4 µg/Kg. A complete summary of all data is found within Attachment 1, B1209 Sampling Report dated July 2021.

3. **Site Soil Handling and Disposition** – Soil from construction activities will fall into two major categories with different disposition procedures.

- Soil with no detection of contaminants – managed as clean fill for contractors/Government to use as desired.
- Soil with perfluorinated compounds – management discussed below.

All soil that contains perfluorinated compounds to be excavated will be available to use as fill within any project site pursuant to that the fill location will ultimately be an impervious surface. Based on the results of samples taken West of B1209, this area will be used as a soil management area where perfluorinated compound containing soil can be stockpiled during F-35 construction activities. As fill material is required for a project under a final finished condition of an impervious surface, material will be removed from the soil management area and used as fill. The soil placed in the temporary soils management area will be stored in accordance with (IAW) Wisconsin Administrative Code NR 718.05(2). If any soil that contains perfluorinated compounds still exists in the temporary soils management area at the conclusion of F-35 construction, disposition will be coordinated with the Department of Natural Resources (DNR).

4. **Building 1209 Site Water Results** – A review of the three (3) sample locations indicate that perfluorinated compounds are present at each of the groundwater sample locations. Fifteen different perfluorinated compounds were detected of the thirty-six investigated in varying amounts across the site. The largest contributors, and most likely to be regulated in the future, PFOS amounts ranged from 5,500 ng/L to 72,000 ng/L. PFOA amounts ranged from 53 ng/L to 2,400 ng/L. A complete summary of all data is found within Attachment 1, B1209 Sampling Report July 2021.

5. **Site Water Handling and Disposition** – For all project sites, if dewatering is required, the contractor will be required to provide totes/storage containers for all potentially contaminated water. Results of dewatering samples will be used to determine final disposition in coordination with the Wisconsin DNR. Water will not be discharged until either a) a proper WPDES dewatering permit can be obtained, or b) is allowed to be discharged to the Madison Metropolitan Sewer District (in which case WI NR 200.03 (3) (a) would apply).

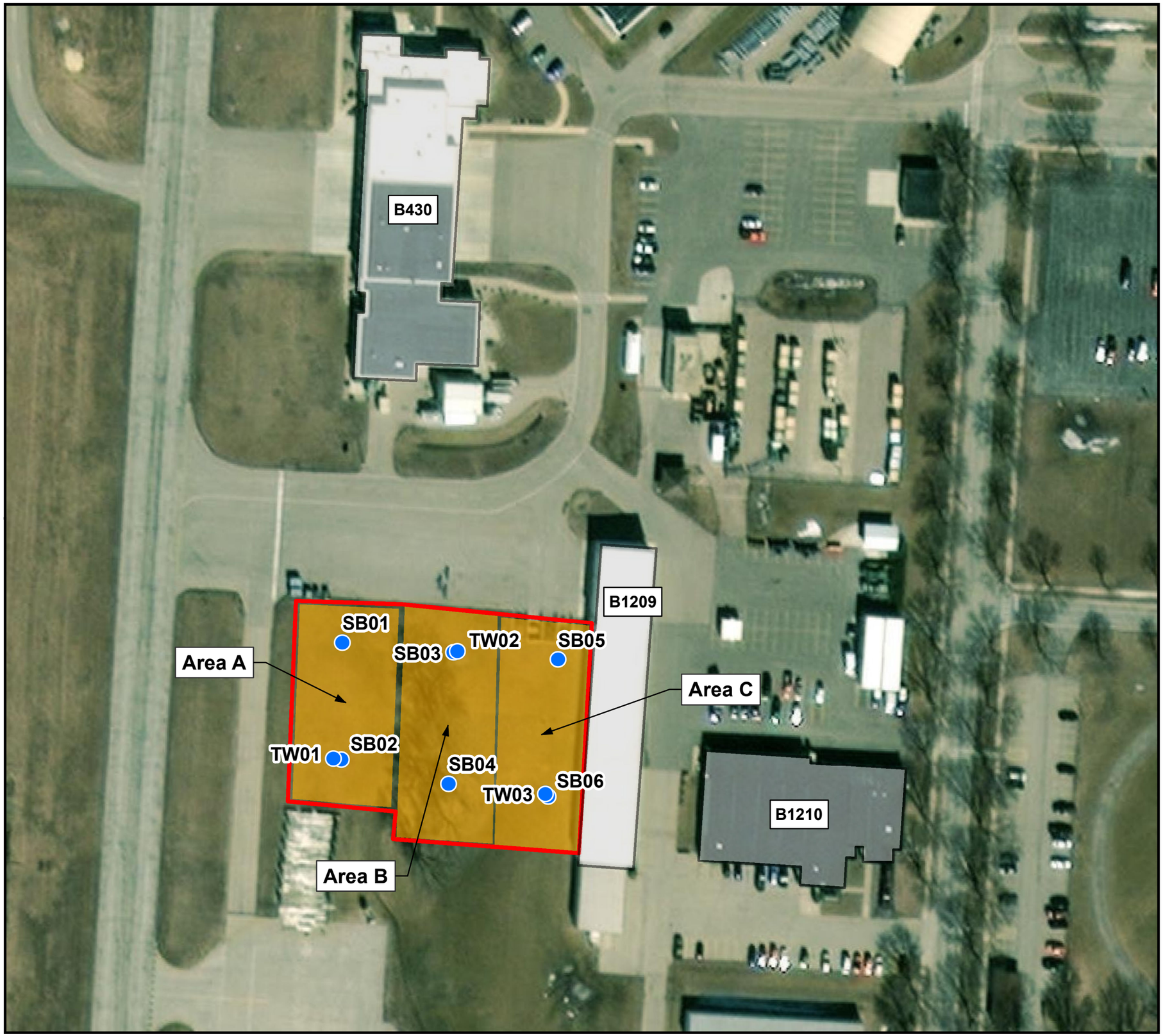
6. The above and attached is the 115th Fighter Wing's approach to material management for construction projects related BRRTS #: 02-13-585319 at Truax. Upon approval of this MMP, site specific addendum's will be submitted for WI DNR notification of soil material disposition.

7. If you have any additional questions, please feel free to contact me at 608-286-0010 or michael.dunlap@us.af.mil at any time. Thank you in advance for your review of this material management plan.

DUNLAP.MICHAEL.J.1138452693 Digitally signed by DUNLAP.MICHAEL.J.1138452693 Date: 2021.07.16 10:06:20 -05'00'

MICHAEL J. DUNLAP, Lt Col, WI ANG
Commander, 115th Civil Engineer Squadron
Base Civil Engineer, 115th Fighter Wing

Attachment:
1. B1209 Sampling Report 1 July 2021

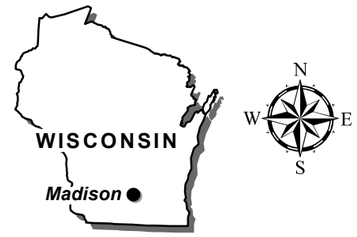



# Figure 2

## *DRAFT Site Map*

### WiDOT PFAS Sampling

Truax Field
Madison, WI




*Map Projection: NAD 1983 UTM Zone 15 N, Meters*
*Basemap: ESRI World Imagery WMS, 3/19/2018*

0 100 200 Feet
0 20 40 60 Meters

★ Site Location
● Proposed Sample Location
Site Boundary
Assessment Area

Bay West
Customer-Focused Environmental & Industrial Solutions

Drawn By: N.J. Date Drawn/Revised: 5/24/2021 Project No.J210482

Y:\Clients\WISCONSIN_DEPARTMENT_OF_TRANSPORTATION\Truax_ANG_BaseMapDocs\J210482\001_Truax_Sampling_DOT\J210482 FIG 2 Site Map.mxd

**Table 1**
**Soil Analytical Results**

Truax PFAS Sampling DOT Project
Truax Field Air National Guard Base, Madison, Wisconsin

| Sample ID | | RSL Residential | RSL Industrial | RCL Non-Industrial | RCL Industrial | D-1 | D-2 | SB-01 | | SB-02 | | SB-03 | | SB-04 | | SB-05 | | SB-06 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample depth (ftbgs) | | | | | | | | 0.5-1.0 | 4-5 | 0.5-1.0 | 4-5 | 0.5-1.0 | 4-5 | 0.5-1.0 | 4-5 | 0.5-1.0 | 4-5 | 0.5-1.0 | 4-5 |
| Date Sampled | | | | | | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 |
| **Perfluorinated analytes (by method PFAS by ID; µg/Kg)** | | | | | | | | | | | | | | | | | | | |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 763051-92-9 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| 1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS) | 39108-34-4 | NE | NE | NE | NE | < 2.1 | < 1.9 | **27** | **24** | **62** | **19** | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS) | 27619-97-2 | NE | NE | NE | NE | < 2.1 | < 1.9 | **9.6** | **11** | **4.2** | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| 1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS) | 120226-60-0 | NE | NE | NE | NE | < 2.1 | < 1.9 | **2.6** | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| 1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS) | 757124-72-4 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| 2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE) | 1691-99-2 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| 2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE) | 24448-09-7 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| 4,8-dioxa-3H-perfluorononanoic acid (ADONA) | 919005-14-4 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS) | 756426-58-1 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| Hexafluoropropylene oxide dimer acid (GenX) | 13252-13-6 | NE | NE | NE | NE | < 4.2 | < 3.9 | < 4.0 | < 3.5 | < 3.8 | < 3.8 | < 4.0 | < 3.7 | < 3.8 | < 4.4 | < 3.7 | < 4.0 | < 4.2 | < 3.7 |
| N-ethylperfluoro-1-octanesulfonamide (EtFOSA) | 4151-50-2 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| N-methylperfluoro-1-octanesulfonamide (MeFOSA) | 31506-32-8 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| Perfluoro-1-butanesulfonic acid (PFBS) | 375-73-5 | 1900 | 246000 | 1260000 | 1640000 | **4.1 J** | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | **2.1 J** | < 0.93 | **1.4** | < 1.1 | < 0.93 |
| Perfluoro-1-decanesulfonic acid (PFDS) | 335-77-3 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-1-heptanesulfonic acid (PFHpS) | 375-92-8 | NE | NE | NE | NE | < 1.0 | < 0.97 | **5.6** | **3.9** | < 0.95 | < 0.95 | < 1.0 | **2.4** | < 0.96 | < 1.1 | **2.3** | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-1-nonanesulfonic acid (PFNS) | 68259-12-1 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | **1.0** | < 0.93 | < 0.96 | < 1.1 | **1.1** | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-1-octanesulfonamide (PFOSA) | 754-91-6 | NE | NE | NE | NE | < 1.0 | < 0.97 | **6.1** | **2.7** | **2.3** | **1.2** | **3.5** | < 0.93 | < 0.96 | < 1.1 | **3.8** | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-1-pentanesulfonic acid (PFPeS) | 2706-91-4 | NE | NE | NE | NE | **7.1 J** | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | **2.0 J** | **2.1** | **5.1** | < 1.1 | < 0.93 |
| Perfluorododecanesulfonic acid (PFDOS) | 79780-39-5 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluorohexanesulfonic acid (PFHxS) | 355-46-4 | NE | NE | NE | NE | **38 J** | < 0.97 | **55** | **20** | **8.0** | **2.4** | **8.4** | **2.1** | **10** | **13 J** | **37** | **22** | **1.4** | < 0.93 |
| Perfluoro-n-butanoic acid (PFBA) | 375-22-4 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-n-decanoic acid (PFDA) | 335-76-2 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | **1.0** | < 0.95 | **1.7** | < 0.93 | < 0.96 | < 1.1 | **1.9** | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-n-dodecanoic acid (PFDoA) | 307-55-1 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-n-heptanoic acid (PFHpA) | 375-85-9 | NE | NE | NE | NE | < 1.0 | < 0.97 | **1.2** | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | 67905-19-5 | NE | NE | NE | NE | < 2.1 | < 1.9 | < 2.0 | < 1.8 | < 1.9 | < 1.9 | < 2.0 | < 1.9 | < 1.9 | < 2.2 | < 1.9 | < 2.0 | < 2.1 | < 1.9 |
| Perfluoro-n-hexanoic acid (PFHxA) | 307-24-4 | NE | NE | NE | NE | **3.3 J** | < 0.97 | **1.4** | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | **1.5 J** | **2.0** | **4.5** | < 1.1 | < 0.93 |
| Perfluoro-n-nonanoic acid (PFNA) | 375-95-1 | NE | NE | NE | NE | < 1.0 | < 0.97 | **2.1** | **1.8** | **2.9** | **1.0** | **1.3** | **3.3** | < 0.96 | < 1.1 | **1.3** | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-n-octadecanoic acid (PFODA) | 16517-11-6 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-n-octanoic acid (PFOA) | 335-67-1 | NE | NE | 1260 | 1640 | **2.7** | < 0.97 | **4.4** | **3.3** | **2.9** | < 0.95 | **1.2** | < 0.93 | < 0.96 | < 1.1 | **2.4** | **1.0** | < 1.1 | < 0.93 |
| Perfluoro-n-pentanoic acid (PFPeA) | 2706-90-3 | NE | NE | NE | NE | **2.1** | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | **1.3** | < 0.93 | **1.0** | **1.4** | **1.8** | **1.8** | < 1.1 | < 0.93 |
| Perfluoro-n-tetradecanoic acid (PFTeDA) | 376-06-7 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-n-tridecanoic acid (PFTrDA) | 72629-94-8 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | < 1.0 | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluoro-n-undecanoic acid (PFUdA) | 2058-94-8 | NE | NE | NE | NE | < 1.0 | < 0.97 | < 1.0 | < 0.88 | < 0.95 | < 0.95 | **1.3** | < 0.93 | < 0.96 | < 1.1 | < 0.93 | < 1.0 | < 1.1 | < 0.93 |
| Perfluorooctanesulfonic acid (PFOS) | 1763-23-1 | NE | NE | 1260 | 1640 | **9.0** | < 0.97 | **1500** | **1400** | **1100** | **600** | **250** | **500** | **34** | **12** | **310** | **22** | **6.8** | < 0.93 |
| PFOA+PFOS | NA | NE | NE | 1260 | 1640 | **11.7** | **---** | **1504.4** | **1403.3** | **1102.9** | **600** | **251.2** | **500** | **34** | **12** | **312.4** | **23** | **6.8** | **---** |

Notes:
Sample Analysis = WDNR List (36 compounds), published January 1, 2021
ftbgs - feet below ground surface
SB - soil boring
µg/Kg - micrograms per kilogram
USEPA - United States Environmental Protection Agency
WIDNR - Wisconsin Department of Natural Resources
RSL - USEPA Regional Screening Level (TR=1E-06, HQ=1)
RCL - WIDNR Residual Contaminant Level
NE - Action level not established for this analyte
< - Less than the laboratory Reporting Limit (RL)
--- - Not analyzed for
**Bold - Analyte detected**
Dark yellow - Result exceeds the Residential RSL, published May 5, 2021
Light yellow - Result exceeds the Industrial RSL, published May 5, 2021
Dark green - Result exceeds the Non-industrial RCL, published December 2018
Light green - Result exceeds the Industrial RCL, published December 2018
J - Estimated result

**Table 2**
**Groundwater Analytical Results**

Truax PFAS Sampling DOT Project
Truax Field Air National Guard Base, Madison, Wisconsin

| Sample ID | | ES | PAL | HAL | TW-01 | TW-02 | TW-02-D | TW-03 | EB-01 | FB-01 |
|---|---|---|---|---|---|---|---|---|---|---|
| Date Sampled | | | | | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 | 5/25/2021 |
| Depth to Groundwater (feet below ground surface) | | | | | 8.59 | 8.77 | 8.77 | 9.75 | NA | NA |
| **Perfluorinated analytes (by method PFAS by ID; ng/L)** | | | | | | | | | | |
| 11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS) | 763051-92-9 | NE | NE | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| 1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS) | 39108-34-4 | NE | NE | NE | **3000** | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS) | 27619-97-2 | NE | NE | NE | **3700** | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| 1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS) | 120226-60-0 | NE | NE | NE | **15** | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| 1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS) | 757124-72-4 | NE | NE | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| 2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE) | 1691-99-2 | 20 | 2 | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| 2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE) | 24448-09-7 | NE | NE | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| 4,8-dioxa-3H-perfluorononanoic acid (ADONA) | 919005-14-4 | 3000 | 600 | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS) | 756426-58-1 | NE | NE | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| Hexafluoropropylene oxide dimer acid (GenX) | 13252-13-6 | 300 | 30 | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| N-ethylperfluoro-1-octanesulfonamide (EtFOSA) | 4151-50-2 | 20 | 2 | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA) | 2991-50-6 | 20 | 2 | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| N-methylperfluoro-1-octanesulfonamide (MeFOSA) | 31506-32-8 | NE | NE | NE | < 14 | < 700 | < 690 | < 14 | < 14 | < 15 |
| N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA) | 2355-31-9 | NE | NE | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| Perfluoro-1-butanesulfonic acid (PFBS) | 375-73-5 | 450000 | 90000 | NE | **300** | **200** | **210** | **46** | < 3.5 | < 3.9 |
| Perfluoro-1-decanesulfonic acid (PFDS) | 335-77-3 | NE | NE | NE | **8.7** | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-1-heptanesulfonic acid (PFHpS) | 375-92-8 | NE | NE | NE | < 720 | **1400 J** | **740 J** | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-1-nonanesulfonic acid (PFNS) | 68259-12-1 | NE | NE | NE | **65 J-** | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-1-octanesulfonamide (PFOSA) | 754-91-6 | 20 | 2 | NE | **330** | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-1-pentanesulfonic acid (PFPeS) | 2706-91-4 | NE | NE | NE | < 720 | **550** | **470** | < 3.5 | < 3.5 | < 3.9 |
| Perfluorododecanesulfonic acid (PFDOS) | 79780-39-5 | NE | NE | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| Perfluorohexanesulfonic acid (PFHxS) | 355-46-4 | 40 | 4 | NE | **13000** | **15000 J** | **11000 J** | **19** | < 3.5 | < 3.9 |
| Perfluoro-n-butanoic acid (PFBA) | 375-22-4 | 10000 | 2000 | NE | < 720 | **270** | **210** | **4.6** | < 3.5 | < 3.9 |
| Perfluoro-n-decanoic acid (PFDA) | 335-76-2 | 300 | 60 | NE | **100** | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-n-dodecanoic acid (PFDoA) | 307-55-1 | 500 | 100 | NE | < 3.6 | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-n-heptanoic acid (PFHpA) | 375-85-9 | NE | NE | NE | **1900** | **310** | **280** | **19** | < 3.5 | < 3.9 |
| Perfluoro-n-hexadecanoic acid (PFHxDA) | 67905-19-5 | NE | NE | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| Perfluoro-n-hexanoic acid (PFHxA) | 307-24-4 | 150000 | 30000 | NE | **2800** | **760** | **650** | **81** | < 3.5 | < 3.9 |
| Perfluoro-n-nonanoic acid (PFNA) | 375-95-1 | 30 | 3 | NE | **380** | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-n-octadecanoic acid (PFODA) | 16517-11-6 | NE | NE | NE | < 7.2 | < 350 | < 350 | < 6.9 | < 7.1 | < 7.7 |
| Perfluoro-n-octanoic acid (PFOA) | 335-67-1 | 20 | 2 | 70 | **2400** | **1300 J** | **700 J** | **53** | < 3.5 | < 3.9 |
| Perfluoro-n-pentanoic acid (PFPeA) | 2706-90-3 | NE | NE | NE | **1900** | **790** | **640** | **21** | < 3.5 | < 3.9 |
| Perfluoro-n-tetradecanoic acid (PFTeDA) | 376-06-7 | 10000 | 2000 | NE | < 3.6 | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-n-tridecanoic acid (PFTrDA) | 72629-94-8 | NE | NE | NE | < 3.6 | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluoro-n-undecanoic acid (PFUdA) | 2058-94-8 | 3000 | 600 | NE | **15** | < 170 | < 170 | < 3.5 | < 3.5 | < 3.9 |
| Perfluorooctanesulfonic acid (PFOS) | 1763-23-1 | 20 | 2 | 70 | **72000** | **5500** | **5500** | < 3.5 | < 3.5 | < 3.9 |
| PFOA+PFOS | NA | NE | NE | 70 | **74400** | **6800** | **6200** | **53** | --- | --- |

Notes:
Sample Analysis = WDNR List (36 compounds), published January 1, 2021
TW - Temporary well
ng/L - nanograms per liter
USEPA - United States Environmental Protection Agency
WIDNR - Wisconsin Department of Natural Resources
NR140 - Administrative Code Chapter NR 140
ES - Enforcement Standard
PAL - Preventive Action Limit
HAL - USEPA Health Advisory Limit
NE - Action level not established for this analyte
NA - Not Applicable
< - Less than the laboratory Reporting Limit (RL)
--- - Not analyzed for
**Bold - Analyte detected**
Yellow - Result exceeds the WIDNR NR140 ES PFAS update, published March 1, 2021
Orange - Result exceeds the WIDNR NR140 PAL PFAS update, published March 1, 2021
Blue - Result exceeds the USEPA PFOA/PFOS HAL, published May 2016
J - Estimated result
J- - Estimated result, biased low