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April 7, 2025

Mr. Mike Kirchner
Dane County Regional Airport
4000 International Lane
Madison WI 53704

Subject: Infiltration/Injection Temporary Exemption for Dane County Airport, Madison WI.
Remedial Action at Darwin Burn Pit
BRRTS #02-13-583366
WPDES Permit Site ID (FIN) 98268

Dear Mr. Kirchner:

The Wisconsin Department of Natural Resources (DNR) received on October 15, 2024, a report dated September 19, 2024, titled: Draft Work Plan – Source Area Interim Response Measure and Performance Monitoring, Darwin Burn Pit (DBP), BRRTS #02-13-583366, Dane County Regional Airport, Madison, WI. A review fee for this workplan was received in full, from Dane County on March 12, 2025. The report was prepared and submitted on your behalf from ORIN Technologies, LLC (ORIN). In addition, on March 31, 2025, the DNR received a letter dated March 25, 2025, from you requesting a temporary exemption to NR 140 and NR 812, Wis. Adm. Codes for the purpose of completing an interim remedial measure to address the per and poly fluoroalkyl substances (PFAS) present in the soil and groundwater at the Darwin Burn Pit (DBP). The DBP is located on the south, southwest side of the airport.

In addition to the workplan submitted by ORIN, researchers from Marquette University and the consulting firm WSP submitted a workplan to DNR on April 1, 2025, that also outlines work that will be implemented at the Darwin Burn Pit. The ORIN workplan and the WSP workplan complement each other in data collection in order to maximize the data collected and information that is created as a result of implementing this remedial action. Both workplans will be implemented simultaneously at the DBP and are addressed concurrently in this letter.

The DNR is approving the remedial approach for the PFAS contamination at the Darwin Burn Pits.

This letter grants a temporary exemption for the injection of remedial material into the groundwater. The project proposes to place Bioavailable Absorbent Material (BAM), calcium peroxide, and indigenous bacteria thought to be capable of degrading PFAS, into the subsurface soil and groundwater at the DBP. This temporary exemption is intended to provide assurances to Dane County that the study to be completed in response to a release of contaminants at the DBP and is conducted in accordance withs. 292.12, Wis. Stats.

The DNR also received a complete electronic Notice of Intent (eNOI) and Discharge Management Plan for the Contaminated Groundwater from Remedial Action Operations Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit No. WI-0046566-07-0 on February 24, 2025.

The remedial action implemented by ORIN calls for treating the DBP at two different depths in the soil. The areas to be treated are shown on Figure 6 and Figure 7 of the ORIN October 15, 2024, report. This area was a former fire training area where firefighting foam that contained PFAS was used for training purposes. To address PFAS in the unsaturated zone BAM will be mixed into the top 5 feet of soil as shown on Figure 6. The area to be treated

is approximately 9,500 square feet. The goal of this remedial action is to bind the PFAS into the organic material of the BAM.

Figure 7 shows the area where BAM, calcium peroxide and indigenous bacteria will be placed into the approximately upper 10 feet of the water table. The expected area of treatment is shown on Figure 7. The depths to be treated are approximately 12 feet to 22 feet below ground surface. The water table is present 10-12 feet below ground surface in this area. The radius of treatment from each injection point is estimated to be 7.5 feet and an expected 160 treatment points are planned. An average of 200 gallons of solution containing BAM, bacteria, and calcium peroxide is planned for each injection point.

The submitted materials include the following information about BAM and calcium peroxide:

- BAM is a pyrolyzed, recycled cellulosic bio-mass product
- BAM has diverse pore sizes and is highly absorbent
- Calcium peroxide is to enhance the degradation of contaminants in groundwater over time through the release of oxygen.

In addition to placing BAM and calcium peroxide into groundwater for increasing dissolved oxygen in the groundwater, the remedial action will also install an ECKOGRID system. The ECKOGRID is designed to increase oxygen concentrations in groundwater by using an electric current passing through cathodes and anodes placed into the ground to cause the hydrolysis of water.

The work to be completed by Marquette and WSP involves groundwater monitoring within and on the edges of the area being treated with BAM, bacteria and oxygen by ORIN. The Marquette/WSP work involves sampling where only BAM material is placed, where only bacteria are placed, and where only the ECKOGRID is placed.

Several groundwater monitoring wells will be installed as part of this remedial action. However, the full extent of PFAS contamination in groundwater has not yet been fully defined in either a vertical or horizontal extent. S. NR716.11(5), Wis. Adm. Code requires that the full extent of groundwater contamination be delineated in both a vertical and horizontal extent from the source area. The three additional wells along with existing wells at the DBP are not likely sufficient to define the extent of PFAS contamination in groundwater emanating from the DBP. **Dane County, City of Madison, and Wisconsin Air National Guard, as the Responsible Party (RP) Group, is still required to prepare and submit a plan to delineate the extent of PFAS contamination in groundwater coming from the Darwin Burn Pit area**.

Determination on the NR 812 Injection Prohibition:
The injection prohibition under s. NR 812.05, Wis. Adm. Code, is not applicable in this case because the proposed action is a DNR approved activity necessary for the remediation of groundwater. This letter serves as your approval from the DNR to inject BAM, calcium peroxide and indigenous bacteria to treat PFAS compounds in soil and groundwater, in accordance with this temporary exemption. This remedial approach was discussed with the Drinking Water and Groundwater Program on January 10, 2025.

NR 140 Temporary Exemption:
DNR approval is hereby granted to Dane County for the injection of BAM, calcium peroxide and bacteria into the groundwater at the Darwin Burn Pits located on the Dane County Airport Property, subject to the terms and conditions outlined in this letter. This remedial approach was discussed with the Drinking Water and Groundwater Program on January 10, 2025. The expiration date of this temporary exemption is two years from the date of this letter.

The need to obtain a temporary exemption for the injection of remedial material for which a groundwater standard has not been established is required under s. NR 140.28(1)(d), Wis. Adm. Code. Based on the information provided by your consultant, it appears that the requirements necessary for a temporary exemption for the

injection of a remedial material for which a groundwater quality standard has not been established under s. NR 140.28(1)(d), have been, or will be met, in accordance with s. NR 140.29(5)(c) and (d), Wis. Adm. Code.

DNR approval is granted with the following terms and conditions:

A. General:
   1. The remedial action for restoring contaminated groundwater or soil, and any infiltrated or injected contaminated water and remedial materials, shall achieve the applicable response objectives required by s. NR 140.24(4) or s. NR 140.26(2), Wisconsin Adm. Code, within a reasonable period of time.
   2. The type, concentration and volume of substances or remedial material to be infiltrated or injected shall be minimized to the extent that is necessary for restoration of the contaminated groundwater.
   3. Any infiltration or injection of contaminated water or remedial material into the groundwater shall not significantly increase the threat to public health or welfare, or to the environment.
   4. No uncontaminated or contaminated groundwater, substances or remedial material shall be infiltrated or injected into an area where a non-aqueous phase liquid is present in the contaminated groundwater.
   5. There shall be no expansion of soil or groundwater contamination, or migration of any infiltrated or injected contaminated water or remedial material, beyond the edge of previously contaminated areas, except that infiltration or injection into previously uncontaminated areas may be allowed if the Department determines that expansion into adjacent, previously uncontaminated areas is necessary for the restoration of the contaminated groundwater, and requirements of s. NR 140.18(1), Wis. Adm. Code will be met.
   6. All necessary federal, state and local licenses, permits and other approvals are obtained and compliance with all applicable environmental protection requirements is required. Permit No. WI-0046566-07-0 is required for this project.
   7. All groundwater monitoring wells, or wells that may be used to place material into the subsurface, shall be constructed in accordance with NR141, Wis. Adm. Code.

B. Specific:
   1. The remedial material to be injected to the groundwater shall be limited to BAM, calcium peroxide, and bacteria indigenous to this site.
   2. The remedial material and injection project shall be implemented as described in the September 19, 2024, report submitted by ORIN on behalf of Dane County on October 15, 2024, and titled: Draft Work Plan – Source Area Interim Response Measure and Performance Monitoring Plan, Darwin Burn Pit (DBP), BRRTs #02-13-583366. Dane County Regional Airport (DCRA), Madison, Wisconsin.
   3. Dane County or ORIN shall notify DNR of field activities prior to implementation. The notification may go to Steve Ales (stephenm.ales@wisconsin.gov) or Issac Ross (Issac.Ross@wisconsin.gov).
   4. **Within 1 month of initial field activities** (well installation, BAM/calcium peroxide/bacteria placement, start-up of ECKOGRID) being completed, a summary report describing the remediation, chemical amounts used, other field information and observations regarding the field effort shall be submitted to DNR. Individual reports may come from ORIN, from Marquette/WSP, or may be combined describing the work completed by each party on behalf of Dane County.
   5. Groundwater samples are proposed to be collected at various intervals following implementing the remedial action. The first sample is to be collected prior to placing remedial materials into the ground. The last sample is proposed 12 months after the material is placed into the ground. The sampling schedule is outlined in the October 15, 2024, workplan and in the April 1, 2024, workplan from Marquette/WSP.
   6. **Within 2 months of the final groundwater sampling event planned for this study**, Dane County shall submit and provide a summary report outlining the overall process used in this remedial action, the results of all soil and groundwater samples collected, and an analysis of available data, including the PFAS sampling results for groundwater. The summary report shall provide an opinion as to whether PFAS compounds were degraded by biodegradation or whether changes in PFAS concentrations from the start to the end of the project are due to another process such as sorbing on to BAM. The opinion should be supported by data collected during the study.

7. Any significant changes to the remedial process as outlined in the ORIN document submitted October 15, 2024, or to the Marquette/WSP document submitted on April 1, 2025, shall be submitted to the DNR for approval prior to changes being implemented at the Darwin site. This includes, but is not limited to, adjustments to volume/mass of material injected, additional injection points, number of injection events, and/or changes in the type of remediation media used in the injection points.
8. Modifications to the sampling schedule, or other aspects of this remedial action may be requested.
9. In the event of future injection activities or the need for additional time to study changes in the groundwater quality, Dane County may apply for an extension of this approval. A request for extension must be received by the DNR at least 30 days prior to the expiration date.
10. Any permit extension approvals will be dependent upon DNR review of spite specific data or any other information it deems necessary.
11. Upon completion of implementing the injection of material, the injection holes must be abandoned in accordance with s. NR 141.24, Wis. Adm. Code, and later topped off with grout or native soils if settling occurs.

C. Monitoring Conditions:
1. The volume of material (BAM/calcium peroxide/indigenous bacteria) shall be recorded.
2. Groundwater monitoring shall take place as proposed by ORIN in the October 4, 2024, submittal. Groundwater samples will be analyzed for PFAS, pH, dissolved oxygen, ORP, fluorine and microbial analyses.
3. Other groundwater samples shall be as proposed in the Marquette/WSP plan submitted on April 1, 2025.
4. Groundwater samples for PFAS shall be analyzed using EPA Method 1633.

Failure to adhere to the provisions of this temporary exemption to NR 140, Wis. Adm. Code may result in the DNR requiring revisions to the remedial action design, operation or monitoring procedures, or the revocation of this exemption and the implementation of an alternative remedial action to restore soil or groundwater quality, or both.

WPDES PERMIT APPROVAL

The DNR determined that the proposed injection/infiltration discharge to groundwater at the Darwin Burn Pit (BRRTs # 02-13-583366) is eligible for coverage and is hereby authorized under the Contaminated Groundwater from Remedial Action Operations WPDES General Permit No. WI-0046566-07-0. This determination was based on review of a complete NOI, and discharge management plan submitted by ORIN Technologies and received on February 24, 2025, and is assigned a WPDES Permit Site ID (FIN) of 98268. Download the permit and fact sheet from the DNR General Permits web page at dnr.wisconsin.gov/topic/Wastewater/GeneralPermits.html.

The DNR is also approving the discharge management plan that was submitted with the eNOI in accordance with the *Contaminated Groundwater from Remedial Action Operations* WPDES General Permit No. WI-0046566-07-0. The discharge management plan satisfies the requirements in Section 3 of the general permit.

The proposed injection/infiltration discharge to groundwater is eligible for coverage and is hereby authorized under the *Contaminated Groundwater from Remedial Action Operations* WPDES General Permit No. WI-0046566-07-0 in accordance with Wis. Admin. Code § NR 205.08, subject to the following general permit conditions:

1. Coverage Effective Date: Coverage at your facility will become effective under this permit upon the date of this letter until permit coverage termination, revocation or reissuance of the general permit. This permit applies only to the discharge activities and site described in the eNOI for the above referenced project.
2. Discharge Management Plan: The permittee shall operate consistent with the approved discharge management

plan. A copy of the discharge management plan shall be retained by the permittee and this plan shall be made available upon DNR inspection or submitted to the DNR upon request. Permittees shall notify the DNR when the discharge management plan is amended to determine if the amendment requires DNR approval.

3. Reporting: The permittee is exempt from monitoring and reporting under this general permit and shall follow the terms and conditions of the remedial action plan approval under Wis. Admin. Code ch. NR 724 and the temporary exemption granted under Wis. Admin. Code § NR 140.28(5).

4. Coverage Termination: Once the project is completed, please complete and submit a *Notice of Termination* (Form 3400-221) to the DNR, available at dnr.wi.gov/topic/wastewater/GeneralPermits.html.

5. Change of Authorized Representative: If you plan on changing the authorized representative contact for the facility or you want to assign a new person to be a duly authorized representative to submit specific permit documents on your behalf, please complete and submit a *Delegation of Signature Authority* (Form 3400-220) to the DNR, available at dnr.wi.gov/topic/wastewater/GeneralPermits.html.

6. Facility Changes: If there have been or will be any changes in facility operations that result in new or different wastewater discharges to the waters of the state, please contact the DNR consistent with Section 7.1.6 of the general permit. If reapplication is necessary, please complete a notice of intent (NOI) form for the applicable general permit to verify that your discharge is eligible for that general permit. NOI forms are available at dnr.wi.gov/topic/wastewater/GeneralPermits.html.

7. Compliance with Permit Conditions: You are responsible for compliance with the general permitter requirements and conditions listed above and all other applicable requirements and conditions contained in the general permit. **To assure you remain in compliance and avoid any enforcement action, please carefully read the general permit.**

Wis. Stat. § 283.35(1) authorizes the DNR to issue a general permit applicable to a designated area of the state authorizing discharges from specified categories or classes of point sources located within that area. Upon the request of the owner or operator of a point source, the DNR shall withdraw the point source from the coverage of a general permit and issue an individual WPDES permit for that source in accordance with Wis. Stat. § 283.35(2). Additionally, the DNR may withdraw a point source from the coverage of a general permit and issue an individual WPDES permit if that source meets any of the factors listed in Wis. Stat. § 283.35(3). Issuance of such an individual permit will provide for a public comment period and potentially a public informational hearing and/or an adjudicatory hearing. In lieu of general permit withdrawal, the DNR may refer any violation of a general permit to the Department of Justice for enforcement under Wis. Stat. § 283.91, pursuant to Wis. Stat. § 283.89. To remain in compliance and avoid any enforcement action, please read your permit carefully.

To challenge the reasonableness of or necessity for any term or condition of an issued, reissued or modified general permit, Wis. Stat. § 283.63 and Wis. Admin. Code ch. NR 203 require that you file a verified petition for review with the Secretary of the DNR within 60 days after notice of the permit decision was issued by the DNR. For other permit-related decisions, such as the decision to confer general permit coverage to your facility, that are not reviewable pursuant to Wis. Stat. § 283.63, it may be possible for permittees or other persons to obtain an administrative review pursuant to Wis. Stat. § 227.42 and Wis. Admin. Code § NR 2.05(5) or a judicial review pursuant to Wis. Stat. § 227.52. If you choose to pursue one of these options, you should know that Wisconsin Statutes and Administrative Code establish time periods within which requests to review DNR decisions must be filed.

If you have questions regarding this approval letter, please contact Steve Ales at 608-400-9187 or stephenm.ales@wisconsin.gov.

Sincerely,

Issac A. Ross
South Central Region Supervisor
Remediation and Redevelopment Program
Fitchburg DNR Service Center

Cc: Steve Ales, DNR – via email at stephenm.ales@wisconsin.gov
Brian Austin, DNR – via email at Brian.Austin@wisconsin.gov
Larry Kinsman, ORIN – via email at lkinsman@orinrt.com
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