



August 8, 2019

Mr. Jim Hager, CEO
WRR Environmental Services, Inc.
5200 Ryder Road
Eau Claire, WI 54701

Subject: Infiltration/Injection Temporary Exemption Request for
WRR Environmental Services, 5200 Ryder Rd., Eau Claire, Wisconsin
WDNR BRRTS Activity #02-18-000274

Dear Mr. Hager:

The purpose of this letter is to provide a temporary exemption for the injection of remedial materials into groundwater. A request for a temporary exemption to inject the following compounds into groundwater at the WRR Environmental Services site was received from your consultant, Gannett Fleming (GF), on July 30, 2019:

- Micro-scale Zero Valent Iron (μ ZVI) – 10,000 lbs
- Newman Zone 55 or HRO EVO - 50,000 lbs
- Neutral Zone – 25,000 lbs
- Newman Zone OS – 1,500 lbs
- SDC-9 DHC microbes – 90 liters

The Department also received a complete General Permit Notice of Intent (NOI) form and Discharge Management Plan request for a Contaminated Groundwater from Remedial Action Operations WPDES General Permit. A review fee of \$700 was submitted on July 31, 2019.

This temporary exemption is intended to provide assurances to WRR Environmental Services Co., Inc. that the environmental cleanup being conducted in response to a discharge of contaminants on the Property is in accordance with s. 292.12, Wis. Stats.

Background Information - Previous Injections

A pilot test and the first phase of a full-scale injection were conducted in the northern portion of the WRR facility, as approved by the DNR in its letter to WRR of April 25, 2018, and its notice to proceed email to GF of October 12, 2018, respectively. In June and October 2018, a total of 20,020 gallons of water mixed with the following reagents were injected into 47 borings and one multipurpose soil vapor extraction and injection well (SVE-4), including:

- 10,382 lbs of emulsified vegetable oil (EVO) - RNAS' Newman Zone 55 or HRO
- 4,800 lbs of a pH buffer containing calcium carbonate – RNAS' Neutral Zone
- 17.5 gallons (approximately 160 lbs) of an oxygen scavenger – RNAS' Newman Zone OS

- 1,800 lbs of micro-scale zero valent iron (μ ZVI) – Regenesi's MicroZVI
- 18-liters of a Dehalococcoides culture (DHC – The microbes that facilitate the breakdown of chlorinated volatile organic compounds or CVOCs) – APTIM's SDC-9

The pilot test consisted of injecting a total of 1,382 lbs of EVO, 600 lbs of μ ZVI, 3 liters of DHC culture, and 5 gallons of OS as a 5,020-gallon (total) mixture into 17 borings (IB-1 through IB-15, IB-A, and IB-B) and well SVE-4. More detail is available in GF's *Pilot Test Injection Report & Work Plan for Full-Scale Injections* dated October 3, 2019.

The first phase of full-scale injections consisted of injecting a total of 9,000 lbs of EVO, 4,800 lbs of a pH buffer containing calcium carbonate, 1,200 lbs of μ ZVI, 15 liters of DHC culture, and 12.5 gallons of OS as a 15,000-gallon (total) mixture into 30 borings (IB-16 through IB-45). More detail on the full-scale injection and subsequent groundwater monitoring is available in GF's *2018 Injection Report & Work Plan for Additional Injections* dated July 30, 2019.

Current Proposal

GF proposes to conduct additional injections during the weeks of August 19 and 26, 2019, in expanded areas of the northern portion of the site, near where the pilot test and full-scale injections previously took place. Additionally, GF proposes to inject reducing reagents into the groundwater in the southeastern portion of the site, east of the E-II Warehouse. According to GF's *2018 Injection Report & Work Plan for Additional Injections*, current groundwater conditions in that area (i.e., elevated ORP readings, sulfate, and DO concentrations, and low pH and TOC concentrations) are aerobic and do not appear favorable for the growth of DHC microbes. However, the report concludes that these conditions are similar to conditions measured in pre-injection samples collected from the northern portion of the facility, and that the injection of reducing reagents is therefore likely to successfully increase microbial activity and decrease CVOC concentrations to levels below concern in the southeastern area of the site.

GF proposes that it may also be beneficial to inject reducing reagents into the groundwater in the area west of Building E-1 extending south to Warehouse A at a later date. Elevated concentrations of CVOCs were detected in groundwater samples collected from W-33 and from Geoprobe borings in that area in 2013 and 2016. There is some evidence, however, that subsequent to injections in the northern area of the facility, microbially-facilitated degradation of CVOC may be occurring in the western portion of the site, as indicated by decreasing CVOC concentrations and moderately elevated microbe concentrations measured in W-33. GF will continue to monitor CVOC and DHC concentrations and RNA parameters in W-33 to determine whether reagents injected in the northern portion of the site in 2018 may have migrated to the western portion of the site.

As was done in October 2018, injection borings will receive between 250 and 500 gallons of a mixture of the reagents listed on the following page. All borings will be injected with a mixture of Newman Zone OS, EVO, and Neutral Zone, and DHC microbes. Borings located in areas where elevated CVOC concentrations are present in the groundwater (i.e., one or more compounds are present at concentrations three or more orders of magnitude above their NR

140 enforcement standard) will receive injections that include μ ZVI. Each boring will be injected to a depth of at least 5 feet below the surface of the water table.

Although GF is proposing to conduct injections in the northern and southeastern portions of the site in August 2019, approval is also requested to inject additional reagents in those areas at a later date, as well as in the western area, if groundwater sample results indicate that additional reagents are needed to maintain anaerobic conditions, to adjust pH, and/or to supplement the microbial population in the groundwater.

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 the compounds listed below, to treat CVOCs in groundwater, in accordance with this temporary exemption:

- Micro-scale Zero Valent Iron (μ ZVI) – 10,000 lbs
- Newman Zone 55 or HRO EVO - 50,000 lbs
- Neutral Zone – 25,000 lbs
- Newman Zone OS – 1,500 lbs
- SDC-9 DHC microbes – 90 liters

NR 140 Temporary Exemption:

DNR approval is hereby granted to WRR Environmental Services Co., Inc. for the injection of the compounds listed above to groundwater on the WRR Environmental Services property, with certain terms and conditions. The expiration date of this temporary exemption shall be 5 years from the date of this letter.

The need to obtain a temporary exemption for the injection of a remedial material for which a groundwater quality 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 the requirements 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 140.28 (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 (2) or s. NR 140.26 (2), Wis. 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 groundwater

shall not significantly increase the threat to public health or welfare, or to the environment.

4. No uncontaminated or contaminated groundwater, substance or remedial material shall be infiltrated or injected into an area where a floating non-aqueous 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 DNR determines that expansion into adjacent, previously uncontaminated areas is necessary for the restoration of the contaminated groundwater, and the 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 shall be obtained, and compliance with all applicable environmental protection requirements is required. A Contaminated Groundwater from Remedial Action Operations WPDES General Permit is required for this action.

B. Specific:

7. The remedial materials to be injected to the groundwater shall be limited to:
 - Micro-scale Zero Valent Iron (μ ZVI) – 10,000 lbs
 - Newman Zone 55 or HRO EVO - 50,000 lbs
 - Neutral Zone – 25,000 lbs
 - Newman Zone OS – 1,500 lbs
 - SDC-9 DHC microbes – 90 liters
8. The remedial material and injection project shall be conducted as described in the July 30, 2019 *2018 Injection Report & Work Plan for Additional Injections*.
9. Gannett Fleming shall notify the DNR of field activities no less than one (1) week before implementation.
10. Remediation progress reports shall be submitted with the semi-annual progress reports. The progress reports shall include the groundwater monitoring results. The first report should be submitted not more than 6 months after the first injection. Recommendations as to the next phase of sampling and/or the need for additional treatment shall be included in a future report. This report shall be submitted as soon as the necessary information is available, and must be submitted prior to the expiration date of this temporary approval.
11. Any significant changes based on information from the injection groundwater monitoring reports or results shall be submitted to the DNR for approval prior to the changes being implemented at the WRR Environmental Services site. This includes, but is not limited to, adjustments to the volume/mass of the media injected, additional injection points, number of injection events, and/or changes in the type of remediation media used in the injection points.
12. Modifications to the sampling schedule may be requested.
13. In the event of future injection activities, the responsible party may apply for an extension of this approval. A request for an extension of this approval must be received by the DNR before the expiration date.

14. Any permit extension approvals will be dependent on DNR review of site-specific data or any other information it deems necessary.
15. Upon completion of the project, the injection holes must be abandoned in accordance with s. NR 141.25, Wis. Adm. Code, and later topped off with grout or native soils if settling occurs, unless converted to NR 141-compliant monitoring wells, or an alternative approved by the DNR Project Manager.

Monitoring Conditions:

1. That the actual volume injected be recorded on an hourly basis for each day of the project.
2. That baseline monitoring be performed prior to the first injection event in each of the proposed injection areas, for the following groundwater parameters, at the following wells:
 - a. VOCs, dissolved gasses (methane, ethane, ethene), sulfate, dissolved iron and manganese, total organic carbon, alkalinity, dissolved oxygen, pH, oxidation/reduction potential, temperature, and specific conductivity.
 - b. at monitoring wells: W-32, W-33, W-34 and W-35.
3. That after completion of the injection phase of the remedial action (60 to 120 days), all monitoring wells be sampled for the parameters listed in #2a above.
4. That a Site-Specific Health and Safety Plan be followed.
5. That the injection is performed at less than 100 psi at a rate which prohibits solution mounding in the aquifer, and plume disfigurement.

Failure to adhere to the provisions of this temporary exemption 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

The Wisconsin Department of Natural Resources (hereafter Department) has determined that your proposed discharge from WRR Environmental Services Co., Inc. located at 5200 Ryder Road, Eau Claire is eligible for coverage under the *Contaminated Groundwater from Remedial Action Operations* Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit for No. WI-0046566-07-0. This determination was based on review of a complete General Permit Notice of Intent (NOI) form and Discharge Management Plan submitted by Tony Miller, Gannett Fleming, Inc., and received on July 30, 2019. Please download the permit and fact sheet from the Department website at:

<http://dnr.wi.gov/topic/wastewater/GeneralPermits.html>.

The Department hereby approves the discharge management plan in accordance with the *Contaminated Groundwater from Remedial Action Operations* WPDES General Permit for No. WI-0046566-07-0. The approval of the discharge management plan hereby certifies that the discharge management plan requirements in Section 3 of the general permit are met.

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

1. Term of Coverage: Coverage at your facility will become effective under this general permit on **August 9, 2019** until the expiration date of the temporary exemption (see above).
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 department inspection or submitted to the department upon request. Permittees shall notify the department when the discharge management plan is amended to determine if the amendment requires department 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 ch. NR 724, Wis. Adm. Code, and the temporary exemption granted under s. NR 140.28(5), Wis. Adm. Code.
4. Discharge Status: If the project has been completed and/or the remedial action activities have ceased, please complete a Notice of Termination (Form 3400-221) available at <http://dnr.wi.gov/topic/wastewater/GeneralPermits.html>. Please email this form to will.myers@wisconsin.gov. The Department will then send a letter back to you confirming termination of coverage under this general permit.
5. New Ownership: If your facility changes ownership in the future, please complete and submit a Transfer of Coverage (Form 3400-222) available at <http://dnr.wi.gov/topic/wastewater/GeneralPermits.html>. Please email this form to will.myers@wisconsin.gov.
6. Change of Authorized Representative: If you plan on changing the authorized representative contact for the project or you want to assign a new person to be a duly authorized representative to submit specific permit documents on your behalf, please fill out a Delegation of Signature Authority (Form 3400-220) available at <http://dnr.wi.gov/topic/wastewater/GeneralPermits.html>. Please email this form to will.myers@wisconsin.gov.
7. Facility Changes: If there have been or will be any changes in your facility operations that result in new or different wastewater discharges to the waters of the state, please contact the Department and reapply for permit coverage. If reapplication is necessary, please complete a notice of intent (NOI) form for the applicable general permit(s) to verify that your discharge is eligible for that general permit. NOI forms are available at <http://dnr.wi.gov/topic/wastewater/GeneralPermits.html>. This document must be mailed to the Department.
8. Compliance: You are responsible for compliance with the requirements and conditions contained in the general permit. To assure you remain in compliance and avoid any enforcement action, please read the general permit over carefully.

LEGAL AUTHORITIES AND APPEAL RIGHTS FOR GENERAL WPDES PERMIT

Section 283.35(1), Wis. Stats., authorizes the Department 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 Department shall withdraw the point source from the coverage of a general permit and issue an individual Wisconsin Pollutant Discharge Elimination System (WPDES) permit for that source in accordance with s. 283.35(2), Wis. Stats. Additionally, the Department 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 s. 283.35(3), Wis. Stats. 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 Department may refer any violation of a general permit to the Department of Justice for enforcement under s. 283.91, Wis. Stats., pursuant to s. 283.89, Wis. Stats. In order 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, s. 283.63, Wis. Stats., and ch. NR 203, Wis. Adm. Code, require that you file a verified petition for review with the Secretary of the Department of Natural Resources within 60 days after notice of the permit decision was issued by the Department. For other permit-related decisions, such as the decision to confer general permit coverage to your facility, that are not reviewable pursuant to s. 283.63, Wis. Stats., it may be possible for permittees or other persons to obtain an administrative review pursuant to s. 227.42, Wis. Stats., and s. NR 2.05(5), Wis. Adm. Code, or a judicial review pursuant to s. 227.52, Wis. Stats. 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 Department decisions must be filed.

If you have any questions regarding this letter, please contact me at 715-839-3748 or via email at mae.willkom@wisconsin.gov.

Sincerely,



Mae Willkom
Hydrogeologist
Remediation & Redevelopment Program

cc: Anthony W. Miller, Gannett Fleming, 8025 Excelsior Dr., Madison, WI 53717-1900
Woody Myers, DNR Wastewater, Eau Claire
Trevor Moen, DNR Wastewater, Oshkosh
Brian Austin, DNR DG/5
Bill Phelps, DNR DG/5
Angela Carey, DNR, Madison
Dave Rozeboom, DNR RR, Eau Claire