

**Memorandum**

**Florida Department of  
Environmental Protection**

TO: Cathy McCarty, P.G.  
Florida Department of Environmental Protection  
Bureau of Water Facilities Regulation  
Underground Injection Control Section - MS 3530  
2600 Blair Stone Road, Tallahassee, FL 32399-2400

FROM: \_\_\_\_\_ (Note 1.)  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

SUBJ: **Proposed Injection Well(s) for In Situ Aquifer  
Remediation at a Remedial Action Site**

Pursuant to paragraph 62-528.630(2)(c), F.A.C., inventory information is hereby provided regarding the proposed construction of temporary injection well(s) for the purpose of in situ aquifer remediation at a contaminated site.

Facility name: \_\_\_\_\_  
Facility address: \_\_\_\_\_  
City/County: \_\_\_\_\_  
Latitude/Longitude: \_\_\_\_\_  
FDEP Facility Number: \_\_\_\_\_

Facility owner's name: \_\_\_\_\_  
Facility owner's address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Well contractor's name: \_\_\_\_\_(Note 2.)  
Well contractor's address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### AFFECTED AQUIFER

Name of aquifer: \_\_\_\_\_  
Depth to groundwater (feet): \_\_\_\_\_  
Aquifer thickness (feet): \_\_\_\_\_  
Areal extent of contamination (square feet): \_\_\_\_\_

### INJECTION WELLS

A site map showing the location and spacing of injection wells, the areal extent of the groundwater contamination plume, and associated monitoring wells is attached. The injection well(s) features are summarized below, and/or a schematic of the injection well(s) is attached.

Direct-push or HSA/Mud rotary (*circle the appropriate well type*)  
Diameter of well(s) (i.e., riser pipe & screen) (inches): \_\_\_\_\_  
Total depth of well(s) (feet): \_\_\_\_\_  
Screened interval: \_\_\_\_\_ to \_\_\_\_\_ feet below land surface  
Grouted interval: \_\_\_\_\_ to \_\_\_\_\_ feet below land surface  
Casing diameter, if applicable (inches): \_\_\_\_\_  
Cased depth, if applicable: \_\_\_\_\_ to \_\_\_\_\_ feet below land surface  
Casing material, if applicable: \_\_\_\_\_

### PROJECT DESCRIPTION

The in situ, injection-type aquifer remediation product/process remediates contaminants by:  
(check those that apply)

- bioremediation,
- chemical oxidation, or
- other (describe) \_\_\_\_\_

Brief description of the project:

\_\_\_\_\_  
\_\_\_\_\_

Summary of major design considerations and features of the project:

Number of injection wells: \_\_\_\_\_  
Injection volume per well (gallons): \_\_\_\_\_  
Single or multiple injection events: \_\_\_\_\_  
Injection volume total (all wells, all events): \_\_\_\_\_

**FLUID TO BE INJECTED**

Composition of injected fluid:  
(ingredient, wt. %) (Note 3.): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**TEMPORARY INJECTION ZONE OF DISCHARGE (ZOD)**

(check those that apply)

- No ZOD needed. The fluid to be injected meets the primary and secondary groundwater standards of Chapter 62-550, F.A.C., and the minimum groundwater criteria of Chapters 62-520 and 62-777, F.A.C.
- ZOD permission by rule 62-520.310(8)(c), F.A.C., for reagent chemical species and/or parameter(s) in the fluid to be injected (or re-injected) that exceed secondary groundwater standards. ZOD permission by this rule also applies to chemical species in the fluid to be injected that exceed primary groundwater standards or minimum groundwater criteria, provided those species are prime constituents of the reagents used to remediate site contaminants. The list of chemical species and parameters for which the approved Remedial Action Plan identifies zone size, duration and groundwater monitoring are as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- ZOD permission by rule 62-520.310(8)(c), F.A.C., for the following contaminants of concern that exceed their groundwater standards in the fluid to be re-injected as part of a closed-loop re-injection system for which the approved Remedial Action Plan identifies zone size, duration and groundwater monitoring:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- ZOD permission by variance because fluid to be injected contains the following impurities that are not prime constituents of the reagents used to remediate the site's contaminants, and the concentration of those impurities in the fluid to be injected are in excess of their primary groundwater standards:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- A variance needs to be granted before the remediation can be conducted.
- A variance has already been granted for the impurities listed above:

Date variance granted: \_\_\_\_\_ Zone size (feet): \_\_\_\_\_ Duration (time): \_\_\_\_\_

..... ◆◆◆ .....

- If ZOD permission by rule 62-520.310(8)(c), F.A.C., or by variance is checked above, then a figure that delineates the ZOD is attached, or  the ZOD is described as follows:

\_\_\_\_\_  
\_\_\_\_\_

## CLEANUP CRITERIA AND ENFORCEABLE APPROVAL ORDER

In situ injection-type aquifer remediation of the contaminants of concern at this site is intended to meet the groundwater cleanup target levels established for them in accordance with applicable and appropriate chapters of the Florida Administrative Code and cited in the approved Remedial Action Plan. Additionally, all other groundwater standards will be met at the time of project completion for any residuals associated with the ingredients of the injected remediation products, and any by-products or intermediates produced as a result of the chemical or biochemical transformation of those ingredients or the contaminants of concern during their use. Applicable primary and secondary drinking water standards are set forth in Chapter 62-550, F.A.C., and additional groundwater quality criteria are set forth in Chapters 62-520 and 62-777, F.A.C.

The remediation plan estimates that site remediation will take \_\_\_\_\_ months. We will notify you if there are any modifications to the remediation strategy which will affect the injection well design or the chemical composition and volume of the injected remediation product(s).

The proposed remediation plan was approved on \_\_\_\_\_ by an enforceable approval order. A copy is attached. The remediation system installation is expected to commence within 60 days. Please call me at \_\_\_\_\_ if you require additional information.

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- Note 1. This notification memorandum is primarily for use by state technical reviewers, but remediation contractors may fill in all blanks except those labeled "FROM" and "DATE" on page 1, and the "approval date", and "telephone number" blanks in the last paragraph on page 4. Those blanks are filled only by the regulator. In the case that the memorandum form is partially completed by the remediation contractor, the FDEP technical reviewer must verify that the information provided by the contractor is accurate and complete. Local programs are not authorized to approve underground injections into aquifers. Reason: Per agreement with EPA, the FDEP cannot delegate this authority. Local programs, after reviewing a Remedial Action Plan or an injection proposal document, should follow the instructions in the March 16, 2000, memorandum to arrange for Department headquarters' execution of an approval order, and then complete this memorandum.
- Note 2. If an injection well installation contractor has not yet been selected, then indicate the name and address of the project's general remediation contractor/consultant.
- Note 3. Complete chemical analysis of the fluid to be injected is required by Chapter 62-528, F.A.C. Some remediation products and processes may have already submitted this information at the time of application for acceptance by the Innovative Technology Acceptance Program. For those situations, when completing the Fluid To Be Injected section of this memorandum, it will suffice to indicate: (1) an Innovative Technology Acceptance letter has been issued; (2) the date of the acceptance letter; (3) the acceptance letter contains the chemical analysis, or a voucher for the confidential disclosure of the injected fluid's chemical composition if it is a proprietary formulation; and (4) the fluid will be injected at concentrations that are less than or equal to those cited in the acceptance letter. For products and processes that do not hold an Innovative Technology Acceptance letter, but for which the site-specific Remedial Action Plan provides a complete description of the chemical composition of the fluid to be injected, it will be necessary to enter this information into the Fluid To Be Injected section of this memorandum.