

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re: US Army Corps of Engineers,
Jacksonville District, and
ECG, Inc.
Petition for Variance

OGC File No. 98-2638

FINAL ORDER GRANTING PETITION FOR
VARIANCE FROM RULE 62-522.300(2)(a)

On September 16, 1998, US Army Corps of Engineers, Jacksonville District, and its contractor ECG, Inc., filed a petition for variance from requirements in rule 62-522.300(2)(a) of the Florida Administrative Code, under section 120.542 of the Florida Statutes and rule 28-104.002 of the Florida Administrative Code. The petition was for a variance from rule 62-522.300(2)(a), which prohibits a zone of discharge for discharges through wells, in order to use Fenton's Reagent Technology and subsequent chemical process (Fenton's Process) to degrade and destroy in-situ the contaminants at the Palm Valley Bridge Site. Such use would be through one or more temporary Class V underground injection control wells at the site of soil and ground water contamination. A notice of receipt of the petition was published in the Florida Administrative Weekly on October 23, 1998.

1. Petitioner US Army Corps of Engineers, Jacksonville District (USACE) is located at 400 West Bay Street, Jacksonville, Florida 32202; and ECG, Inc., is located at 1317 Wilmer Avenue, Suite 102, Anniston, Alabama 36201.

2. USACE and ECG, Inc., intend to use the Fenton's Process which uses technical grade hydrogen peroxide to degrade and destroy contamination. The hydrogen peroxide in the presence of free ferric iron oxidizes cyclic ring aromatic hydrocarbons to carbon dioxide and water. Technical grade sulfuric acid is injected to reduce the ground water pH to around 2-4. Only hydrogen peroxide and sulfuric acid are injected, ferric iron is supplied by that already present in the ground water. When injected into the soil and ground water under acidic conditions in the presence of free ferric iron, hydroxyl free radicals are generated. These hydroxyl free radicals attack the cyclic ring hydrocarbons, breaking them down to carbon dioxide and water. Laboratory and field tests using this process have demonstrated high levels of success in reducing levels of contaminants in a short time.

3. Under rule 62-520.420 of the Florida Administrative Code, the standards for Class G-II ground waters include the primary and secondary drinking water standards of rules 62-550.310 and 62-550.320 of the Florida Administrative Code.

4. Upon injection of the sulfuric acid and hydrogen peroxide into the soil and ground water, concentrations of pH, sulfate,

and total dissolved solids may temporarily exceed the secondary drinking water standards of 6.5-8.5 for pH (be less than 6.5), 250 mg/L for sulfate, and 500 mg/L for total dissolved solids, within an area extending out in a radius of twenty feet from the immediate point of injection. The presence of pH, sulfate, and total dissolved solids above (for pH, less than the required range) the standards has no anticipated adverse impacts to human health because such exceedances will occur only in ground water at a site already contaminated by organics, and the ground water is not presently used for domestic purposes. No other constituents of the injected substances or resulting bioremediation will exceed any other primary or secondary drinking water standard. The pH, sulfate, and total dissolved solids will return to meeting the respective secondary drinking water standard, or meet the naturally occurring background value, whichever is less stringent, within 365 days from injection.

5. The injection of these substances is through an underground injection control well, Class V, Group 4, "injection wells associated with an aquifer remediation project," as described in rule 62-528.300(1)(e)4 of the Florida Administrative Code. Under rule 62-528.630(2)(c), "Class V wells associated with aquifer remediation projects shall be authorized under the provisions of a remedial action plan . . . provided the construction, operation, and monitoring of this Chapter are met."

6. The rule (62-522.300(2)(a)) from which this petition seeks a variance prohibits the Department from granting a zone of discharge for a discharge through an injection well to Class G-II ground water. Strict adherence to this rule would preclude the Department from granting approval for the use of the Fenton's Process at the Palm Valley Bridge Site for remediation of contaminated ground water and soils.

7. The applicable rules state in pertinent part:

62-522.300(1) . . . [N]o installation shall directly or indirectly discharge into any ground water any contaminant that causes a violation in the ground water quality standards and criteria for the receiving ground water as established in Chapter 62-520, F.A.C., except within a zone of discharge established by permit or rule pursuant to this chapter.

62-522.300(2) No zone of discharge shall be allowed under any of the following circumstances:

(a) Discharges through wells or sinkholes that allow direct contact with Class G-I and Class G-II ground water

8. USACE has stated in its petition that to apply the zone of discharge prohibition to its use of this remediation process would create a substantial hardship and would violate the principles of fairness because the use of the process is to remediate contaminated soils and ground water. The petition also states that other methods of remediation not using in-situ products or processes are more costly and take longer. Remediation would improve the water quality, and to prohibit any exceedance of the specified secondary drinking water standards,

all non-health-based standards, in such a small area of already contaminated ground water and for short duration would violate the principles of fairness. This small and temporary exceedance is not the usual occurrence, nor are most dischargers involved in the remediation of contaminated ground water. By allowing the use of the Fenton's Process, the clean-up of the contaminated ground water will be accelerated and returned to a usable condition. In addition, the use of the Fenton's Process has been tentatively approved by the Department's Division of Waste Management as being a sound environmental solution to the contamination, so long as USACE is able to obtain a variance. Lastly, other similar in-situ processes have been granted variances, and not to allow this process to be used would violate the principles of fairness.

9. Zones of discharge for the use of the Fenton's Process are necessary because of the temporary exceedance of the pH, sulfate, and total dissolved solids standards in the ground water immediately surrounding the injection. Because this ground water is already contaminated and does not meet all applicable standards, allowing a zone of discharge as part of an approved remediation strategy for organic contaminants meets the purpose of the underlying statute, which is to improve the quality of the waters of the state for beneficial uses. Such contaminated ground water is not presently used for drinking purposes, thus posing no threat to human health.

10. The Department received no comments about the petition for variance.

11. For the foregoing reasons, USACE has demonstrated that it is entitled to a variance from the prohibition of zones of discharge in rule 62-522.300(2)(a) for use of the Fenton's Process at the Palm Valley Bridge Site, with the conditions below.

a. Use of the Fenton's Process must be through a Department-approved remedial action plan, or other Department-enforceable document, for an aquifer remediation project and such approval shall not be solely by a delegated local program.

b. The discharge to the ground water must be through a Class V, Group 4 underground injection control well which meets all of the applicable construction, operating, and monitoring requirements of chapter 62-528 of the Florida Administrative Code.

c. The extent of the zone of discharge for pH, sulfate, and total dissolved solids shall be a twenty-foot radius from the point of injection and the duration of the zone of discharge shall be 365 days. This will allow ample time for the temporarily exceeded parameters to return to their secondary drinking water standards set forth in chapter 62-550 of the Florida Administrative Code, or their naturally occurring background levels at the site, whichever is less stringent.

d. The injection of the product shall be at such a rate and volume that no undesirable migration occurs of the injected substances, their by-products, or the contaminants already present in the aquifer.

e. The Department-approved remedial action plan shall address appropriate ground water monitoring requirements associated with the use of the Fenton's Process for remediation based on site-specific hydrogeology and conditions. These shall include the sampling of ground water at monitoring wells located outside the contamination plume, before use of the Fenton's Process, to determine the naturally occurring background levels of pH, sulfate, and total dissolved solids which are the parameters pertinent to this variance, and iron which is assumed to be naturally occurring at high levels so that a variance is not needed. (If iron is not present at sufficiently high concentrations in the background, a variance to exceed the secondary standard for iron will be necessary before use of the Fenton's Process.) The specific conditions should also include monitoring of these parameters in ground water downgradient from the injection points for at least one year after active remediation.

This order will become final unless a timely petition for an administrative hearing is filed under sections 120.569 and 120.57 of the Florida Statutes before the deadline for a filing a

petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the Department's action may file for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Petitions filed by the USACE or its contractor, ECG, or any of the parties listed below must be filed within 21 days of receipt of this written notice. Petitions filed by any other persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within 21 days of publication of the public notice receipt of the written notice, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication. The petitioner shall mail a copy of the petition to US Army Corps of Engineers, Jacksonville District, 400 West Bay Street, Jacksonville, Florida 32202, at the at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and

120.57 of the Florida Statutes, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

(a) The name, address, and telephone number of each petitioner; the Department case identification number and the county in which the subject matter or activity is located;

(b) A statement of how and when each petitioner received notice of the Department action;

(c) A statement of how each petitioner's substantial interests are affected by the Department action;

(d) A statement of the material facts disputed by the petitioner, if any;

(e) A statement of facts that the petitioner contends warrant reversal or modification of the Department action;

(f) A statement of which rules or statutes the petitioner contends require reversal or modification of the Department action; and

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under section 120.573 of the Florida Statutes is not available for this proceeding.

This action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above.

Any party to this order has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the

notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

DONE AND ORDERED this 14th day of January 1999 in Tallahassee, Florida.

Mimi A. Drew

Mimi A. Drew
Director,
Division of Water Facilities

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FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to s. 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Heather Chapman 1/15/99
clerk Date

Copies furnished to:
Rich Deuerling, UIC Section
Rick Ruscito, Bur. Petroleum Storage Systems
Brent Hartsfield, Bur. Waste Cleanup
Cynthia Christen, OGC

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing Final Order has been furnished by U.S. Mail to Mr. Edward E. Middleton, Chief, Engineering Division, US Army Corps of Engineers, Jacksonville District, 400 West Bay Street, Jacksonville, Florida 32202; and Mr. Russ Graham, ECG, Inc., 1317 Wilmer Avenue, Suite 102, Anniston, Alabama 36201, on this _____ day of _____ 1999.

Cynthia K. Christen
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