

BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re: ARCADIS G&M, Inc.  
Petition for Variance

OGC File No. 02-1032

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FINAL ORDER GRANTING PETITION FOR  
VARIANCE FROM RULE 62-522.300(3), F.A.C.

On July 16, 2002, ARCADIS G&M, Inc., filed a petition for variance from requirements in Rule 62-522.300(3) of the Florida Administrative Code (F.A.C.). The petition was for a variance from rule 62-522.300(3), which prohibits a zone of discharge for discharges through wells, in order to use an in-situ remediation process. This process involves the use of wells or borings which is considered installation of one or more temporary Class V underground injection control wells at the site of contamination. A notice of receipt of the petition was published in the Florida Administrative Weekly, and on the Department's Internet site on August 16, 2002.

1. Petitioner is located at 3903 Northdale Boulevard, Suite 120, Tampa, Florida, 33624.

2. ARCADIS G&M, Inc., wants to use ammonium nitrate to remediate sites contaminated with petroleum hydrocarbons and other suitable contaminants. The ammonium nitrate is 99-100% ammonium nitrate and is used to enhance the biodegradation of

free phase and dissolved hydrocarbon compounds in both soils and ground water. The 1% inert byproducts are primarily water and magnesium. The ammonium nitrate acts as an electron acceptor, similar to oxygen, in the conversion of hydrocarbon compounds to inert compounds (primarily carbon dioxide and water). The ammonium nitrate also acts as a nutrient to aid in the conversion process.

3. Under Rule 62-520.420, F.A.C., 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, and the minimum criteria of rule 62-520.410 (as reflected in Chapter 62-777 as ground water target cleanup levels). However, on August 27, 2001, Rules 62-522.300(2) and 62-528.605(3), F.A.C., were amended to allow injection of products for ground water cleanup that do not meet the primary or secondary drinking water standards. Specific limitations were included in the rules. The use of ammonium nitrate only requires a variance for ammonia, as described below. Nitrate, total dissolved solids (TDS), and pH will be addressed in the Remedial Action Plan, pursuant to Rule 62-522.300(2)(c), without the need for a variance for those parameters.

4. Ammonium nitrate is shipped as dry solid granules that must be mixed with water prior to injection. The injected fluid, at a maximum overall concentration of 2.5 percent ammonium nitrate by weight, may contain as much as 18,540 milligrams per

liter (mg/L) nitrate (4,167 mg/L as N), 6,550 mg/L of ammonia (4,167 mg/L as N), 26,000 mg/L of TDS, and may have a pH as low as 5.0. The target concentrations for both ammonia nitrogen and nitrate nitrogen are 200 mg/L within the aquifer. The ammonium nitrate is to be injected into contaminated ground water through injection wells. Over time, the ammonium nitrate will be consumed by naturally occurring bacteria.

5. When the ammonium nitrate is added to the ground water, the ground water cleanup target level for ammonia (2.8 mg/L) may be temporarily exceeded. Ammonia is only expected to exceed its ground water cleanup target level within an area extending out in a radius of 50 feet from the immediate point of injection for a period of one year. The presence of ammonia above its ground water cleanup target level has no anticipated adverse impacts to human health because such an exceedance will occur only in ground water at a site already contaminated by petroleum hydrocarbons and other suitable contaminants, and the ground water is not presently used for domestic purposes. The ammonia will return to meeting the ground water cleanup target levels or meet the naturally occurring background values, whichever is less stringent, within, at most, one year from injection. No other constituents of the injected product or resulting remediation will exceed any other primary or secondary drinking water standard or ground water cleanup target level not covered by the rule amendments discussed in paragraph 3 above.

6. The injection of the ammonium nitrate through temporary wells or borings is considered a type of 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, F.A.C. Under Rule 62-528.630(2)(c), F.A.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."

7. Rule 62-522.300(3) 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 ammonium nitrate for remediation of contaminated ground water.

8. 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(3) Other discharges through wells or sinkholes that allow direct contact with Class G-I, F-I, or Class G-II ground water shall not be allowed a zone of discharge.

9. ARCADIS G&M, Inc., 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 or would violate the principles of fairness because the use of this process is to remediate contaminated ground water as quickly and inexpensively as possible, without causing further harm to the environment or public health. The petition also states that injection of ammonium nitrate can be more effective, quicker, and potentially less costly than traditional remediation technologies. Remediation would improve the water quality, and to prohibit any exceedance of the specified ground water cleanup target level in such a small area of already contaminated ground water and for short duration would cause a substantial hardship. 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 ammonium nitrate, the clean up of contaminated ground water and soils will be accelerated and returned to a usable condition. In addition, the use of ammonium nitrate has been tentatively approved by the Department's Division of Waste Management as being a sound environmental solution to the contamination, so long as ARCADIS G&M, Inc., is able to obtain a variance.

10. Zones of discharge for the use of ammonium nitrate are necessary because of the temporary (not to exceed one year) exceedance of the ammonia ground water cleanup target levels 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 sites contaminated with petroleum hydrocarbons and other suitable 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.

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

12. For the foregoing reasons, ARCADIS G&M, Inc., has demonstrated that it is entitled to a variance from the prohibition of zones of discharge in rule 62-522.300(3) for its remedial product, with the conditions below.

a. Use of ammonium nitrate at any contaminated site 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, F.A.C.

c. The extent of the zone of discharge for which ammonia may be exceeded shall be a 50-foot radius from the point of injection and the duration of the zone of discharge shall be one

year. This will allow ample time for the temporarily exceeded parameter to return to the applicable levels set forth in Chapter 62-777, F.A.C., or the 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 either the product, its 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 ammonium nitrate 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 ammonium nitrate, to determine the naturally occurring background levels of ammonia, which is the parameter pertinent to this variance, and nitrate, pH, and TDS. Nitrate, pH, and TDS are included herein solely because of the recent rule amendments discussed in paragraph 3 above, which require any parameter that will not meet its standard to be included in the remedial action plan for monitoring and zone of discharge purposes. Ammonia, nitrate, pH, and TDS should also be included in the monitoring of the 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 proceeding is filed pursuant to the provisions of sections 120.569 and 120.57 of the Florida Statutes. Any person whose substantial interests are affected by the Department's action may file such a petition. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000. Petitions filed by ARCADIS G&M, Inc. or any of the parties listed below must be filed within 21 days of receipt of this order. Petitions filed by any other person must be filed within 21 days of publication of the public notice or within 21 days of receipt of this order, 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. A petitioner must mail a copy of the petition to ARCADIS G&M, Inc., 3903 Northdale Boulevard, Suite 120, Tampa, Florida, 33624, 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 will only be at the

discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputed 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 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 final action may be different from the position taken by it in this order. Persons whose substantial interests will be affected by any such final decision of the Department on the petitions 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.

A 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 \_\_\_\_\_ day of \_\_\_\_\_ 2002 in  
Tallahassee, Florida.

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Mimi A. Drew  
Director  
Division of Water Resource  
Management  
Department of Environmental  
Protection

2600 Blair Stone Road  
Mail Station 3500  
Tallahassee, Florida 32399-2400  
Telephone (850) 245-8335

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to s.  
120.52, Florida Statutes, with the designated Agency Clerk,  
receipt of which is hereby acknowledged. All copies were mailed  
before the close of business on the date below to the persons  
listed.

\_\_\_\_\_  
Clerk

\_\_\_\_\_  
Date

Copies furnished to:

George Heuler, MS 3530  
Richard Deuerling, MS 3530  
Cathy McCarty, MS 3530  
Rick Ruscito, MS 4580

Jeff Lockwood, MS 4535  
Rob Cowdery, MS 4520  
Cynthia Christen, MS 35  
Kathy Carter, MS 35

**NOTICE OF RIGHTS OF SUBSTANTIALLY AFFECTED PERSONS**

This determination is final and effective on the date filed with the Clerk of the Department unless a timely and sufficient petition for an administrative hearing is filed under sections 120.569 and 120.57 of the Florida Statutes as provided below. If a sufficient petition for an administrative hearing is timely filed, this determination automatically becomes only proposed agency action subject to the result of the administrative review process. Therefore, on the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. The procedures for petitioning for a hearing are set forth in Rules 28-106.201-.202 and 62-110.106, F.A.C., and are summarized below.

Be advised that, under Florida law, your neighbors and other parties who may be substantially affected by this determination have a right to request an administrative hearing. Because the administrative hearing process is designed to re-determine final agency action, the filing of a petition for an administrative hearing may result in a final determination different from this determination. Generally speaking, the 21-day period for filing a petition begins to run on the date of publication of the notice (if published) or the date a person receives actual notice, whichever occurs first (see below).

The Department will not publish notice of this determination. Publication of notice by you is optional and is not required for you to proceed. However, in the event that an administrative hearing is held and the Department's determination is reversed, proceeding with the proposed activity before the time period for requesting an administrative hearing has expired would mean that the activity was conducted without the required permit or authorization. In cases where notice is not published, there may be instances in which a substantial amount of time could pass before an affected person receives notice of the agency action.

If you wish to limit the time within which all substantially affected persons may request an administrative hearing, you may elect to publish, at your own expense, the notice specified below in the legal advertisement section of a newspaper of general circulation in the county where the activity is to take place. A single publication will suffice.

If you wish to limit the time within which any specific person(s) may request an administrative hearing, you may provide direct notice to such person(s), by certified mail and enclosing a copy of this determination.

For the purposes of publication, a newspaper of general circulation means a newspaper meeting the requirements of sections 50.011 and 50.031 of the Florida Statutes. In the event you do publish this notice, within seven days of publication, you

must provide to the following address proof of publication issued by the newspaper as provided in section 50.051 of the Florida Statutes. If you provide direct written notice to any person as noted above, you must provide to the following address a copy of the direct written notice: Florida Department of Environmental Protection, UIC Program, MS 3530, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; Attn: Cathy McCarty.

NOTICE  
STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

The Department of Environmental Protection gives notice that a variance from the zone of discharge prohibition for injection through wells has been granted to ARCADIS G&M, Inc., for the use of ammonium nitrate for aquifer remediation.

A person whose substantial interests are affected by the Department's action may petition 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 by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Mediation is not available.

If a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Intervention will be permitted 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 (F.A.C.).

In accordance with Rules 28-106.111(2) and 62-110.106(3)(a)(4), F.A.C., petitions for an administrative hearing must be filed within 21 days of publication of the notice or receipt of written notice, whichever occurs first. Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000 before the applicable deadline. A timely request for extension of time will toll the running of the time period for filing a petition until the request is acted upon. Upon motion by the requesting party showing that the failure to file a request for an extension of time before the deadline was the result of excusable neglect, the Department may also grant the requested extension of time.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative hearing within the appropriate time period shall constitute a waiver of that right.

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

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;

(c) A statement of when and how the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;

(f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action; and

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

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.

Under sections 120.569(2)(c) and (d) of the Florida Statutes, a petition for administrative hearing shall be dismissed by the agency if the petition does not substantially comply with the above requirements or is untimely filed. Complete copies of all documents relating to this determination are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, at Florida Department of Environmental Protection, UIC Program, Room 212F, 2600 Blair Stone Road, Tallahassee, Florida. Please call Cathy McCarty to set up appointment, 850/245-8654.