UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

UNDERGROUND INJECTION CONTROL PERMIT NUMBER PAS2R208CELK

AUTHORIZATION TO OPERATE CLASS IIR INJECTION WELLS

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U. S. C. §§ 300f-300j-11, commonly known as the SDWA), the Resource Conservation and Recovery Act (42 U. S. C. §§ 6901-6991i, commonly known as RCRA) and attendant regulations promulgated by the U. S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

ARG Resources, Inc.

100 Four Falls Corporate Center

Suite 215

West Conshohocken, Pennsylvania 19428-2960

is authorized by this permit to inject fluids through the 1032 Class IIR water flood injection wells, referenced in the permit application, from a facility located at the Kane Field, Sackett Area, Highland Township, Elk County, Pennsylvania, in accordance with the conditions set forth herein.

All references to Title 40 of the Code of Federal Regulations are to all regulations that are in effect on the date that this permit is effective.

This permit shall become effective on July 10, 2001.

This permit and its authorization to inject shall remain in effect for the operational life of the facility, which includes proper well closure, plugging and abandonment.

Signed this 2nd day of April 2002.

Rebecca W. Hanmer, Director
Water Protection Division

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Customer Service Hotline: 1-800-438-2474

PART I

A. Effect of Permit

The Permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The underground injection activity, otherwise authorized by this permit or rule, shall not allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not authorized in this permit or otherwise authorized by permit or rule is prohibited. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of other Federal, State or local laws or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under Part C or the imminent and substantial endangerment provisions in Part D of the Safe Drinking Water Act (SDWA) or any other common or statutory law for any breach of any other applicable legal duty.

B. Permit Actions

This permit can be modified, revoked and reissued, or terminated for cause or upon request as specified in 40 CFR §§ 144.12, and 144.40. Also, the permit is subject to minor modifications as specified in 40 CFR § 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee shall not stay the applicability or enforceability of any permit condition.

C. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. General Requirements

1. Duty to Comply. The permittee shall comply with all applicable UIC Program regulations and conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance or modification, or for denial of a permit renewal application.

2. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

4. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

5. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. If the permittee becomes aware of any incomplete or incorrect information in the permit application or subsequent reports, the permittee shall promptly submit information addressing these deficiencies.

6. Inspection and Entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA.

7. Penalties. Any person who violates a permit requirement is subject to civil penalties, fines and other enforcement actions under the SDWA and may be subject to the same such actions pursuant to RCRA. Any person who willfully violates permit conditions is subject to criminal prosecution.

8. Transfer of Permits. This permit is not transferable to any person except after notice is sent on EPA Form 7520-7 and approval is given by the Director and the requirements of 40 CFR § 144.38 are satisfied. The Director may require modification or revocation of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act.

9. Signatory Requirements.

a. All reports required by this permit and other information requested by the Director shall be signed as follows:

(1) for a corporation, by a responsible corporate officer of at least the level of vice-president;

(2) for a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

(3) for a municipality, State, Federal, or other public agency by either a principal executive or a ranking elected official.

b. A duly authorized representative of the official designated in paragraph a. above may also sign only if:

(1) the authorization is made in writing by a person described in paragraph a. above;

(2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position; and

(3) the written authorization is submitted to the Director.

c. If an authorization under paragraph b. of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the

facility, a new authorization satisfying the requirements of paragraph b. of this section must be submitted to the Director prior to or together with any reports, information or applications to be signed by an authorized representative.

d. Any person signing a document under paragraph a. or b. of this section shall make the following certification:

> "I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

10. Confidentiality of Information.

a. In accordance with 40 CFR Parts 2 (Public Information), and § 144.5, any information submitted to the Director pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 and § 144.5 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee.

(2) Information which deals with the existence, absence, or level of contaminants in drinking water.

11. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

PART II

A. General

Copies of all reports and notifications required by this permit shall be signed and certified in accordance with the requirements of Section D(9) of Part I of this permit and shall be submitted to the Director at the following address:

Water Protection Division
Safe Drinking Water Act Branch (3WP32)
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, Pennsylvania 19103

B. Record Retention

1. The permittee shall retain records of all monitoring and other information required by this permit, including the following (if applicable), for a period of at least five years from the date the application was signed. This period may be extended by request of the Director at any time.

a. All data required to complete the permit application form for this permit and any supplemental information submitted under 40 CFR § 144.31;

b. Calibrations and maintenance records and all original strip chart recordings for continuous monitoring instrumentation;

c. Copies of all reports required by this permit;

d. The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified by this permit and 40 CFR § 146.10.

2. The permittee shall continue to retain the records after the above specified retention periods unless he or she delivers the records to the Director or obtains written approval from the Director to discard the records.

3. Records of monitoring information shall include:

a. The date, exact place, and the time of sampling or measurements;

b. The individual(s) who performed the sampling or measurements;

c. A precise description of both sampling methodology and the handling (custody) of samples;

d. The date(s) analyses were performed;

e. The individual(s) who performed the analyses;

f. The analytical techniques or methods used;

g. The results of such analyses;

4. Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited below.

5. All environmental measurements required by the permit, including, but not limited to measurements of pressure, temperature, mechanical integrity (as applicable) and chemical analyses shall be done in accordance with EPA guidance on quality assurance.

C. Monitoring Requirements

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the fluid to be analyzed and the procedure for analysis of the sample shall be in accordance with test procedures approved under 40 CFR § 136.3 unless otherwise approved by the Director. The permittee shall identify the types of tests and methods used to generate the monitoring data.

2. Injection pressure, flow rate and cumulative volume shall at a minimum be observed weekly, recorded monthly, and submitted yearly.

3. The nature of the injected fluid shall at minimum be monitored for the parameters listed below, once at the initiation of the injection operation and, thereafter, whenever the injected fluid is changed.

- pH
- Specific Gravity
- Specific Conductance
- Sodium
- Chloride
- Iron
- Magnesium
- Manganese
- Total Dissolved Solids
- Barium
- Hydrogen Sulfide
- Alkalinity
- Dissolved Oxygen
- Hardness

4. A demonstration of mechanical integrity in accordance with 40 CFR § 146.8 shall, after the initial demonstration, be made at least once every five years. Subsequent demonstrations shall be

conducted no more than 60 days prior to the fifth and tenth anniversary dates of the issuance of this permit. In addition to the above requirement, a mechanical integrity test demonstration shall be conducted whenever protective casing or tubing is removed from the well, the packer is reseated, or a well failure is evident. The permittee may continue operation only if he has successfully demonstrated to the Director the mechanical integrity of the permitted wells. The permittee shall cease injection operations if a loss of mechanical integrity becomes evident or if mechanical integrity cannot be demonstrated. Any such test shall be conducted in keeping with the notification requirements of Permit Condition D.12 of Part II of this permit.

D. Reporting and Notification Requirements

1. Report on Permit Review. Within 30 days of receipt of this permit, the permittee shall report to the Director that he or she has read and is personally familiar with all terms and conditions of this permit.

2. Commencing Injection. The operator of an injection well may not commence injection until construction is complete, and

a. The permittee has demonstrated to EPA that the injection well(s) have mechanical integrity in accordance with 40 CFR § 146.8 and the permittee has received written notice from the Director that such demonstration is satisfactory; and

b. The permittee has submitted notice of completion of construction (EPA Form 7520-10) to the Director; and

c. The Director has inspected or otherwise reviewed the new injection well(s) and finds they are in compliance with the conditions of the permit; or

d. The permittee has not received notice from the Director of his or her intent to inspect or otherwise review the new injection well(s) within 13 days of the date of the notice in paragraph (a) of this permit condition in which case prior inspection or review is waived and the permittee may commence injection.

3. Twenty-four Hour Reporting.

a. The permittee shall report to the Director any noncompliance which may endanger health or the environment. Any information shall be provided orally (phone number: (215) 566-5445) within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

(1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water.

(2) Any noncompliance with a permit condition, malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water, or failure of Mechanical Integrity Test demonstrations.

b. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

4. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

5. Other Noncompliance. The permittee shall report all other instances of noncompliance not reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition D.3. of Part II of this permit.

6. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

7. Conversion. The permittee shall notify the Director 30 days prior to the conversion of the well(s) to an operating status other than an injection well.

8. Temporary Abandonment. The permittee shall notify the Director prior to the temporary abandonment of an injection well.

9. Annual Report. The permittee shall submit an annual report (EPA Form 7520-11) to the Director summarizing the results of the monitoring required by Permit Condition C of Part II of this permit. This report shall include monthly monitoring records of injected fluids, the results of any mechanical integrity test(s), and any major changes in characteristics or sources of injected fluids. The Annual Report shall be submitted not later than January 31st, summarizing the activity of the calendar year ending the previous December 31st.

10. Plugging and Abandonment Reports and Notifications.

a. The permittee shall notify the Director 45 days before plugging and abandonment of any well. The Director may allow a shorter notice period upon written request.

b. Revisions to the Plugging and Abandonment Plan must be submitted to the Director no less than 45 days prior to plugging and abandonment. The Director must approve the revisions prior to the start of plugging operations.

c. Within 60 days after plugging the well(s), the permittee shall submit a report to the Director which shall consist of either:

(1) A statement that the well was plugged in accordance with the plan previously submitted to and approved by the Director; or

(2) Where actual plugging differed from the plan previously submitted, an updated version of the plan, on the form supplied by the Director, specifying the different procedures used. Any deviation from a previously approved plan which may endanger Underground Sources of Drinking Water is cause for the Director to require the operator to replug the well.

d. The report shall be certified as accurate by the person who performed the plugging operation.

11. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

12. Mechanical Integrity Tests. The permittee shall notify the Director of his or her intent to conduct a Mechanical Integrity Test at least 30 days prior to such a demonstration.

13. Cessation of Injection Activity. After a cessation of injection for two years the owner or operator shall plug and abandon the wells in accordance with the Plugging and Abandonment Plan unless he:

a. Provides written notice to the Director; and

b. Describes actions or procedures, satisfactory to the Director, that the owner or operator will take to ensure that the wells will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance

with the technical requirements applicable to active injection wells unless waived, in writing, by the Director.

E. Mechanical Integrity.

1. Standards. The permittee shall have and maintain the mechanical integrity of the permitted injection wells pursuant to 40 CFR § 146.8.

2. Request from Director. The Director may by written notice require the permittee to demonstrate mechanical integrity at any time.

Part III

A. Construction Requirements

1. Notwithstanding any other provision of this permit, the injection wells shall inject only into a formation(s) which is separated from any Underground Source of Drinking Water by a confining zone that is free of known open faults or fractures within the Area of Review.

2. Casing and Cementing. The permittee shall case and cement the wells to prevent the movement of fluids into or between underground sources of drinking water. The casing and cement used in the construction of the well(s) must be designed for the life expectancy of the well and, at a minimum, the operation shall be conducted in accordance with the construction details described in the permit application. However, in all cases cemented surface casing shall be installed from the surface to a depth of approximately fifty feet, but not more than approximately seventy-five feet, below the lowermost underground source of drinking water. The injection zone shall be isolated by:

The circulation of cement around the long string casing to a depth not less than 100 feet above the injection zone and by tubing and packer run inside the long string casing.

3. Logs and Tests. The following logs and tests shall be conducted during the drilling and construction of the wells:

Gamma Ray log on the surface cased hole;
Gamma Ray, Induction, Neutron and Caliper on the open hole;
Cement Bond Log on the cemented portion of the long string casing;
Density Log on the surface casing only if cement returns are not achieved at least back to the depth of the conductor pipe; and

Depending upon the applicable construction of a well, a standard pressure test shall be conducted between the injection tubing and long string casing or, if the well has been constructed without tubing and packer, on the long string casing prior to drilling out the cement. The test shall be conducted at 10 percent above the maximum injection pressure as specified in condition B.3 of your permit. (Note: Should testing of the long string casing be employed on certain wells (i.e., without tubing and packer) subsequent testing will require that tubing and packer or a retrievable bridge plug be installed in the well prior to testing).

The permittee shall submit a narrative report that interprets log and test results which specifically relate to the results of the cementing operation. Further, the narrative shall detail the rationale used to make these interpretations. The narrative report shall be prepared by a knowledgeable log analyst and submitted to the Director. The Director may prescribe additional logs or waive logging requirements in the future should field conditions so warrant.

4. Mechanical Integrity. Injection operations are prohibited until the permittee demonstrates that the wells covered by this permit have mechanical integrity in accordance with the permit application, as well as any procedures detailed below, and the permittee has received notice from the Director that such a demonstration is satisfactory in accordance with the provisions of Condition D.2 of Part II of this permit. Subsequent demonstrations of mechanical integrity shall be made utilizing the procedures detailed in Condition A.3 of Part III of this permit.

5. Corrective Action. Injection operations are prohibited until the permittee has successfully performed the activities detailed in the Corrective Action Plan, specified in the permit application and in the requirements for phased development specified in Condition D. of Part III of this permit.

6. Completion Reports. The results of those activities required in Part III, Section A, 1 through 5, of this permit must be summarized and submitted to the Director prior to the commencement of injection operations as part of the Completion Reports.

B. Operating Requirements

1. Injection Formation. Injection shall be limited to the Upper Devonian, Kane Sandstone Formation in the subsurface intervals between approximately 2000 and 2500 feet.

2. Injection Fluid. The permittee shall not inject any hazardous substances, as defined by 40 CFR 261 nor any other fluid, other than fresh water or produced fluid (brine) which has been produced in association with oil production from ARG Resources, Inc.'s Kane Field production wells.

3. Injection Volume Limitation. Injection volume shall not exceed, on average, 120 barrels per day per well.

4. Injection Pressure Limitation. Injection pressure, measured at the surface, shall not exceed a maximum of 1500 psi. Injection at a pressure which initiates fractures in the confining zone adjacent to underground sources of drinking water or causes the movement of injection or formation fluids into an underground source of drinking water is prohibited.

5. Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited, as is injection into any underground source of drinking water.

C. Plugging and Abandonment

1. Plugging and Abandonment. The permittee shall plug and abandon the well(s) as provided in the approved plugging and abandonment plan (EPA Form 7520-14) of the permit application and in accordance with the reporting and notification provisions of Section D.10. of Part II of this permit.

2. Plugging and Abandonment shall be conducted in such a manner that movement of fluids will not be allowed into an underground source of drinking water nor will one underground source of drinking water be allowed to move into another.

D. Requirements for Phased Development

1. Notwithstanding any other provision of this permit, the permittee shall not construct or commence injection operations in any injection well unless EPA has received and approved a Notification of Phase Development Specification for the appropriate area.

2. A detailed Phase Development Specification addressing the phase-specific Area of Review determination and Corrective Action Plan must be submitted no later than 45 days after the date of the above-referenced Notification.

E. Financial Responsibility

The permittee shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug and abandon all the underground injection wells. If

the acceptability of the Surety Bond demonstration and Standby Trust Agreement should change, the permittee shall provide advance notification to the Director. The permittee shall not substitute an alternative demonstration of financial responsibility from that which the Director has approved, unless he or she has previously submitted evidence of that alternative demonstration to the Director and the Director notifies him or her that the demonstration of financial responsibility is acceptable. The Director may require the permittee to submit a revised demonstration of Financial Responsibility if the Director has reason to believe that the original demonstration is no longer adequate to cover the costs of plugging and abandonment.