

Central Coast Regional Water Quality Control Board

November 20, 2015

CERTIFIED MAIL

7009 2250 0001 0315 7165

Megan Graves
Aera Energy LLC
10000 Ming Avenue
Bakersfield, CA 93311

ORDER PURSUANT TO CALIFORNIA WATER CODE SECTION 13267. You are legally obligated to respond to this Order. Read this Order carefully.

Aera Energy LLC is the operator of injection wells identified as American Petroleum Institute (API) numbers 05321007, 05321008, 05321009, 05321011, 05321348, 05321360, 05321484, 05321549, 05321550, 05321583, 05321587, 05321739, and 05321819 (hereinafter "injection wells subject to this Order"). The California Division of Oil, Gas, and Geothermal Resources (Division) has informed the Central Coast Regional Water Quality Control Board (Central Coast Water Board) that the injection wells subject to this Order have been injecting Class II fluids produced by oil or gas extraction activities into an aquifer that may not have been properly designated as an exempt aquifer under the federal Safe Drinking Water Act (42 U.S.C. § 300(f) et seq.). The aquifer may be suitable for drinking water supply and other beneficial uses.

The Central Coast Water Board is concerned about the potential threat to human health and potential impacts to water quality posed by the discharge of waste associated with the injection of fluids into aquifers that may be suitable for drinking water supply and other beneficial uses. The technical information and reports required by this Order are necessary to assess the potential threat to human health and potential impacts to water quality. The need to understand the potential threat to human health and potential impacts to water quality justifies the need for the information and reports required by this Order. Based on the nature and possible consequences of the discharges of waste, the burden of providing the required information, including reporting costs, bears a reasonable relationship to the need for the report, and the benefits to be obtained. Aera Energy LLC is required to submit this information and reports because it is the operator of the injection wells subject to this Order.

This Order requires that Aera Energy LLC provide information demonstrating that the existing injection activities are protective of human health and the environment. This document is not an order to shut-in these injection wells.

Statutory and Procedural Background

The Central Coast Water Board's authority to require technical reports derives from section 13267 of the California Water Code, which specifies, in part, that:

(a) A regional board...in connection with any action relating to any plan or requirement authorized by this division, may investigate the quality of any waters of the state within its region.

DR. JEAN-PIERRE WOLFF, CHAIR | KENNETH A. HARRIS JR., EXECUTIVE OFFICER

895 Aerovista Place, Suite 101, San Luis Obispo, CA 93401 | www.waterboards.ca.gov/centralcoast

(b)(1) In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

Under the authority of California Water Code section 13267, the Central Coast Water Board hereby orders Aera Energy LLC to:

1. By **January 18, 2016**, if you believe the requirements of this Order are not applicable to the injection wells subject to this Order, please submit comprehensive written justification to the Central Coast Water Board, which clearly supports any one of the following: 1) Calif. Oil Independents and its predecessors in interest have never injected fluids into the injection wells subject to this Order, 2) previous or current injection is only within an exempt aquifer, or 3) previous or current injection is only within a zone that is not an underground source of drinking water (USDW). Documentation in support of the second or third justifications must be consistent with criteria established under federal Safe Drinking Water Act (42 U.S.C. § 300(f) et seq.). You must submit justification as described above for each injection well identified in this Order, or submit the information required below.
2. By **January 18, 2016**, submit a work plan that describes the procedures you will use to collect and analyze representative groundwater samples from the injection zones related to the injection wells subject to this Order. The work plan must include an implementation schedule that includes submitting sampling analysis results by March 7, 2016 (see #3 below). Your work plan is subject to review and approval by the Assistant Executive Officer.
3. By **March 7, 2016**, submit a technical report that contains all of the following information:
 - a. Analyses of groundwater samples from the injection zones related to the injection wells subject to this Order, pursuant to the water quality analysis and reporting requirements contained in Attachment A to this Order.
 - b. Analyses of all fluids currently being injected into the injection wells subject to this Order, pursuant to the water quality analysis and reporting requirements contained in Attachment A to this Order.
 - c. All available historical chemical analyses of fluids injected into the injection wells subject to this Order. In situations where chemical analyses do not exist, you must describe the type of fluids injected and the likely and potential chemical constituents of the fluids.

- d. All available analytical data for groundwater samples collected from any injection zones within one (1) mile of the injection wells subject to this Order.
- e. A list and location map of all water supply wells within one mile of the injection wells subject to this Order.
- f. Information for each identified water supply well, including: well completion report records from the Department of Water Resources or other sources; type of well (i.e., domestic, irrigation, industrial, etc.); whether any of the water is used for domestic purposes; status (i.e., active, idle, etc.); well construction; borehole geophysical logs; and all analytical results for any water samples collected from each water supply well. The information collected as part of this well survey is to be supplemented by an on-the-ground verification of the current condition or existence of the wells and any new wells not listed in the database(s) search. Exact locations of all the wells are to be provided on a scale map and clearly labeled. If exact locations are not available, an explanation as to why the locations were not provided must be included.
- g. For the injection wells subject to this Order, the information described in items A through N, below, must be submitted in electronic spreadsheet format, using fields labeled as stated below, respectively. The information described in items O through R, below, must be submitted as attachments:
 - A. The name of the owner and/or operator of the injection well;
 - B. API number for the injection well;
 - C. Injection well name and number
 - D. Name of the field in which the injection well is located;
 - E. County in the which the injection well is located;
 - F. Latitude and Longitude (decimal degrees) of well head location;
 - G. Latitude and Longitude Datum, indicate "1" for North American Datum of 1983 or "2" for North American Datum of 1927;
 - H. Injection well total depth (feet);
 - I. Top injection depth (feet);
 - J. Formation/Zone name at top injection depth;
 - K. Bottom injection depth (feet);
 - L. Formation/Zone name at bottom injection depth;
 - M. Date injection started in the well (Day/Month/Year, xx/xx/xxxx);
 - N. Total injection volume in barrels by calendar year (to present day);
 - O. Attach well construction diagram including all perforations, annular material, and seals;
 - P. Attach a description of all sources of fluid injected;

- Q. Attach all data maintained in compliance with California Code of Regulations, title 14, section 1724.10, subdivision (h).
- R. Attach documentation associated with each mechanical integrity test undertaken to comply with California Code of Regulations, title 14, section 1724.10, subdivision (j).

All required work plans and technical information must be submitted in an electronic format compatible with the State's GeoTracker system following the requirements of California Code of Regulations, title 23, section 3893 (available at: http://www.waterboards.ca.gov/ust/electronic_submittal/docs/text_regs.pdf).

A unique case identifier (Global ID) is assigned for each well subject to this Order contained in Attachment B.

Based on the information submitted in the work plan and/or technical report, additional information or action may be required.

Additionally, please submit a hard copy to the attention of:

John Robertson, Supervising Engineering Geologist
Central Coast Water Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401
John.Robertson@waterboards.ca.gov

All information is to be copied to the Division, to the attention of:

Steven R. Bohlen, State Oil and Gas Supervisor
Department of Conservation, DOGGR
801 K Street
Sacramento, CA 95814-3500
Steven.Bohlen@conservation.ca.gov

Submissions pursuant to this Order must be prepared and signed by an appropriately registered and experienced geologist or engineer, and must include the following statement signed by an authorized representative of Aera Energy LLC:

"I certify under 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."

The failure to furnish the required report, or the submission of a substantially incomplete report or false information, is a misdemeanor, and may result in additional enforcement actions, including issuance of an Administrative Civil Liability Complaint pursuant to California Water Code section 13268. Liability may be imposed pursuant to California Water Code section 13268 in an amount not to exceed one thousand dollars (\$1,000) for each day in which the violation occurs.

Any person aggrieved by this Order of the Central Coast Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320. The State Water Board must receive the petition by 5:00 p.m., within 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations, and instructions applicable to filing petitions, are at http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml, or will be provided upon request.

Be advised that sections 13260 and 13264 of the California Water Code require any person who proposes to discharge waste that could affect waters of the state to submit a Report of Waste Discharge for any new discharge or change in the character, volume, or location of an existing discharge. Fluids produced by oil or gas extraction activities that can no longer be disposed of in the injection wells subject to this Order cannot be discharged to land or waters of the state prior to the issuance of Waste Discharge Requirements, and cannot be discharged to waters of the United States prior to the issuance of an National Pollutant Discharge Elimination System (NPDES) Permit. Failure to comply with these requirements may constitute a misdemeanor under Water Code section 13265 or a felony under Water Code section 13387, and may also subject Aera Energy LLC to judicial or administrative civil liabilities.

Any questions regarding this matter should be directed to Aaron Katona at (805) 542-4649 or at aaron.katona@waterboards.ca.gov; or John Robertson at (805) 542-4630 or at John.Robertson@waterboards.ca.gov.

Sincerely,

Michael J. Thomas
Assistant Executive Officer

Enclosure:

Attachment A - Water Quality Sampling, Analysis and Reporting

Attachment B – GeoTracker Upload Instructions and Assigned Global Identification Number(s)

Cc:

Julie Macedo, State Water Board
julie.Macedo@waterboards.ca.gov

Janice Zinky, State Water Board
janice.Zinky@waterboards.ca.gov

Eric Gillman, State Water Board
eric.gillman@waterboards.ca.gov

Christine York, State Water Board
cristine.york@waterboards.ca.gov

John Robertson, Central Coast Water Board
john.robertson@waterboards.ca.gov

Matthew Keeling, Central Coast Water Board
matt.keeling@waterboards.ca.gov

Aaron Katona, Central Coast Water Board
aaron.katona@waterboards.ca.gov

ATTACHMENT A
Water Quality Sampling, Analysis, and Reporting

Water Quality Sampling

All groundwater sampling is to be performed by a qualified person. A qualified person is any person with the knowledge and training in proper sampling methods, chain of custody, and quality assurance/quality control protocols. Any person conducting groundwater sampling, other than personnel from a certified laboratory, shall consult with the certified laboratory to ensure that the sampler understands and follows the proper sampling collection procedures and protocols. All procedures to sample groundwater supply wells shall be consistent with US EPA Science and Ecosystem Support Division Operating Procedure for Groundwater Sampling (March 2013) (available at <http://www.epa.gov/region4/sesd/fbgstp/Groundwater-Sampling.pdf>).

Water Quality Analysis

Groundwater samples collected from wells and injection zones shall be analyzed by a laboratory certified by the Environmental Laboratory Accreditation Program, using current applicable EPA-approved analytical methods. The methods of analysis and the detection limits used shall be appropriate for the expected concentrations. The analytical method having the lowest method detection limit (MDL) shall be selected from among those methods that would provide valid results in light of any matrix effects or interferences. Analyze samples for the following:

- A. Total dissolved solids
- B. Metals listed in California Code of Regulations, title 22, section 66261.24, subdivision (a)(2)(A)
- C. Benzene, toluene, ethylbenzene, and xylenes
- D. Total petroleum hydrocarbons for crude oil
- E. Polynuclear aromatic hydrocarbons (including acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, benzo[g,h,i]perylene, chrysene, dibenzo[a,h]anthracene, fluoranthene, fluorene, indeno[1,2,3-cd]pyrene, naphthalene, phenanthrene, and pyrene)
- F. Radionuclides listed under California Code of Regulations, title 22, Table 64442, which includes Gross Alpha particle activity (excluding radon and uranium), Uranium, Radium-226, and Radium-228.
- G. Methane
- H. Major and minor cations (including sodium, potassium, magnesium, and calcium)
- I. Major and minor anions (including nitrate, chloride, sulfate, alkalinity, and bromide)
- J. Trace elements (including lithium, strontium, boron, iron, and manganese)

Water Quality Reporting

Work plans, and technical reports and associated data shall be uploaded in an electronic format compatible with the State's GeoTracker system.

Technical Report that includes

- Site plan with the location(s) of the wells sampled
- Description of field sampling procedures
- Copies of analytical laboratory reports, including quality assurance/quality control procedures and analytical test methods.
- Waste management and disposal procedures
- Table(s) of analytical results organized by well number (including API number).
- A list and location map of all the water supply wells located within a one mile radius of the injection well(s)

All GeoTracker uploads should consist of a GeoReport, GeoMap(s), and an EDF of laboratory data, if applicable.

ATTACHMENT B
GeoTracker Upload Instructions and Assigned Global Identification Number(s)

Technical justifications included in correspondence letters/reports, work plans, and technical reports and associated data shall be uploaded in an electronic format compatible with the State's GeoTracker system. To begin the process:

- Log in or create a password
- Claim your site(s) (i.e. global ID)
- Add field point name(s)
- Upload the following:
 - Work plan/Technical report and associated data (GeoReport)
 - *laboratory report (EDF)
 - *Site Maps (GeoMAP)

For more information, please contact the GeoTracker Help Desk at Geotracker@waterboards.ca.gov or (866) 480-1028.

Injection Well	Assigned Global ID number
05321007	T10000007558
05321008	T10000007559
05321009	T10000007560
05321011	T10000007561
05321348	T10000007562
05321360	T10000007563
05321484	T10000007564
05321549	T10000007565
05321550	T10000007566
05321583	T10000007567
05321587	T10000007568
05321739	T10000007569
05321819	T10000007570

*GeoTracker submittal may not be required for all document types.