CALIFORNIA DEPARTMENT OF CONSERVATION

Division of Oil, Gas, and Geothermal Resources

PROOF OF SERVICE

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1. Documents served:

   Department of Conservation - EMERGENCY ORDER TO IMMEDIATELY CEASE INJECTION OPERATIONS to Longbow, LLC, dated July 1, 2014, Order No. 1055

   Central Valley Regional Water Quality Control Board - ORDER PURSUANT TO CALIFORNIA WATER CODE SECTION 13267 to Longbow, LLC, dated July 2, 2014

2. Person served: _____

   Title of person served: _____

   Service is made on behalf of: **Longbow, LLC**
   Name of Business Served

3. By personally delivering copies to the person served, as follows:

   a. Date: _____ b. Time: _____

   c. Address: _____

4. At the time of service I was at least 18 years of age and not a party to this cause.

   a. Person who served papers: _____

   b. Address: _____

   c. The fee for service: _____

   d. I am a registered California process server.

      Registration Number: _____

      County: _____

I declare under the penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date: _____

Name: _____ _____
Type or Print Name Signature

Steven R. Bohlen, State Oil and Gas Supervisor
Department Of Conservation
Division of Oil, Gas, and Geothermal Resources
801 K Street
Sacramento, CA 95814-3500
Telephone (916) 323-6733
Facsimile (916) 445-9916

STATE OF CALIFORNIA

NATURAL RESOURCES AGENCY

DEPARTMENT OF CONSERVATION

DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

EMERGENCY ORDER TO IMMEDIATELY CEASE INJECTION OPERATIONS

NO. 1055

Dated: Wednesday, July 2, 2014

Operators: Longbow, LLC

Well(s): 02966045 and 03046608

BY

Steven R. Bohlen

STATE OIL AND GAS SUPERVISOR

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INTRODUCTION

1. The Division of Oil, Gas, and Geothermal Resources (Division) has determined that an emergency exists in connection with underground injection operations for the well(s) operated by Longbow, LLC, identified as API no(s). 02966045 and 03046608 (hereinafter "the wells subject to this order"). Injection into these wells poses danger to life, health, property, and natural resources. Therefore, under the authority of Public Resources Code sections 3106, 3222, 3224, 3225, 3226, and 3235, and California Code of Regulations, title 14, sections 1724.6, 1724.7, 1724.10, the State Oil and Gas Supervisor (Supervisor) is ordering that injection into the well(s) subject to this order immediately cease as specified below. The Division is working cooperatively with the Central Valley Regional Water Quality Control Board, (which is contemporaneously issuing its own order pursuant to California Water Code section 13267), and the State Water Resources Control Board to obtain information for use in evaluating, preserving and protecting underground water suitable for irrigation or domestic purposes.

2. This order constitutes written notice from the Division to immediately stop injection in the well(s) subject to this order, pursuant to California Code of Regulations, title 14, section 1724.10, subdivision (h).

STATUTORY and RELATED AUTHORITY

3. Pursuant to Public Resources Code section 3106, the Supervisor shall supervise the operation of wells in this State so as to prevent, as far as possible, damage to life, health, property, and natural resources, and to prevent damage to underground waters suitable for irrigation and domestic purposes by the infiltration of, or the addition of, detrimental substances.

4. Pursuant to Public Resources Code sections 3222, 3224, 3225, 3226, 3235, and other authorities, the Supervisor has a duty to, and may take action to, prevent the infiltration of detrimental substances into underground water potentially suitable for irrigation or domestic purposes. Pursuant to these statutes and authorities, the Supervisor may order tests to be performed, remedial action(s) to be taken, and the preparation of reports regarding such tests and/or remedial action(s).

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5. Pursuant to Title 14, California Code of Regulations, sections 1724.6, 1724.7, 1724.10, and other authorities, the Division possesses authority to approve and evaluate Underground Injection and Disposal projects, and to require that data be submitted in connection therewith.

6. Pursuant to Title 40, Code of Federal Regulations, section 146.4, and other authorities, only properly designated aquifers may receive injected fluids in connection with underground injection operations.

7. Pursuant to Title 14, California Code of Regulations, section 1724.10, subdivision (h), underground injection operations shall be stopped upon written notice from the Division.

FACTS

8. The well(s) subject to this order are under the permitting authority of the Supervisor and/or Division pursuant to Public Resources Code section 3106, and Title 14, California Code of Regulations section 1724.6.

9. Such permitting authority is also contemplated by the federal Safe Drinking Water Act and its implementing regulations. Effective March 14, 1983, California's Division of Oil, Gas and Geothermal Resources (Division) was granted primacy by the United States Environmental Protection Agency (US EPA) to carry out the terms of an Underground Injection Control Program, pursuant to section 1425 of the Safe Drinking Water Act (codified at 42 U.S.C. § 300f et seq.). (48 Fed. Register 6336, Feb. 11, 1983.)

10. Contemporaneously with the granting of primacy to the Division, and on occasion thereafter, certain underground aquifers within the State were designated as "exempted aquifers." (40 CFR, § 146.3.) This designation qualifies such aquifers as appropriate for the injection of fluids attendant to or produced by oil and gas extraction activities and depends upon, among other things, the presence of sufficient hydrocarbons and sufficient number of parts per million (ppm) of total dissolved solids (TDS) in the receiving aquifer. (40 CFR, section 146.4.)

11. As a result of the granting of primacy, the Division, pursuant to Title 14, California Code of Regulations sections 1724.6, 1724.7, and 1724.10, must approve any subsurface injection or disposal activities based on pertinent and necessary data submitted to the Division.

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12. The Division has become aware that certain underground injection activities are occurring into non-exempted aquifers.

13. Based on information and belief, the Division has determined that the well(s) subject to this order are injecting into one or more non-exempt aquifers which:

(a) May contain underground water suitable for irrigation or domestic purposes;

(b) May contain water with less than 3,000 ppm total dissolved solids;

(c) May have been specifically denied exempted aquifer status by the US EPA in connection with the Division's application for primacy;

(d) May not have been hydrocarbon-bearing at the time injection commenced; and

(e) May be potential underground sources of drinking water.

14. In order to prevent the infiltration of detrimental substances into underground water suitable for irrigation or domestic purposes, the Supervisor relies on the above-referenced legal authorities and factual allegations, and makes the orders set forth below.

ORDERS

15. Based on the facts, circumstances, and authorities described herein, on information and belief, and pursuant to the Supervisor's duties set forth in Public Resources Codes section 3106, pursuant to Public Resources Code section 3222, 3224, 3225, 3226, and 3235 the Supervisor has determined that an emergency exists and that immediate action(s) are necessary to protect life, health, property, and natural resources, specifically, the further degradation of the affected aquifers, and orders as follows:

I. Cease and Desist Injection Operations

16. The operator subject to this order will cease all injection operations into the well(s) subject to this order on or before 12:00 Noon on Monday, July 7, 2014 unless the operator subject to this order provides the Division with documentary evidence generated by the United States Environmental Protection Agency, satisfactory to the Supervisor, specifically establishing that the aquifer(s) affected by the wells subject to this order are "exempted aquifers" as defined in Title 40, Code of Federal Regulations, sections 146.3, consistent with Title 40, Code of Federal Regulations section 144.1,

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subdivisions (e)-(g), and the Safe Drinking Water Act. In the event the operator subject to this order makes such a submission of evidence, the operator will nevertheless cease any and all injection operations into the wells subject to this order on or before 12:00 Noon on Monday, July 7, 2014unless the Supervisor notifies the operator in writing (1) that the documentary evidence provided is sufficient to establish that the aquifer receiving injection is an exempted aquifer under the authorities stated above, and (2) that resumption of injection is approved on that basis.

II. Alternative Disposal or Injection

17. In the event that production activities relying on the use of any well subject to this order are continued using an alternative method of disposal of fluid, or an alternative location of underground injection, such alternative disposal or injection method or location shall be utilized only pursuant to, as applicable, (a) any applicable waste discharge requirements or NPDES permit issued by the Central Valley Regional Water Quality Control Board; (b) an existing permit for Underground Injection into an "exempted aquifer" consistent with Title 40, Code of Federal Regulations, section 146.3, updated to reflect the addition of the new injectate as required by Title 14 of the California Code of Regulations, section 1724.10, subdivision (d); or (c) other means carried out in full compliance with any required laws or regulations.

III. Written Approval Required

18. Injection operations shall not resume into the well(s) subject to this order except on the express written approval of the Supervisor.

IV. Provide Information

19. The operator subject to this order will provide the following information to the State Oil and Gas Supervisor, in compliance with the truthful and accurate reporting requirement of Public Resources Code section 3236, **within 30 days of the date of this order:**

(a) For each well subject to this order, any and all information compiled or maintained, whether or not previously submitted to the Division, in compliance with Title 14,

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California Code of Regulations, section 1724.7. The information submitted in response to this aspect of this order shall include, but not be limited to, the categories of information listed in Exhibit A attached hereto;

(b) For each well subject to this order, the total volume of injected fluid for each month of operation, for all years of operation, any periodic chemical analyses of the fluid(s) being injected, and any amendments to the original project approval, as provided by Division reporting requirements;

(c) For each well subject to this order, a technical report with an analysis of a representative sample of the fluid being injected, in accordance with the water quality analysis and reporting requirements contained in Exhibit B to this order;

(d) For each well subject to this order, any and all data maintained in compliance with Title 14, California Code of Regulations, section 1724.10, subd. (h);

(e) For each well subject to this order, the dates of, and documentation associated with, each mechanical integrity test undertaken to comply with Title 14, California Code of Regulations, section 1724.10, subd. (j);

(f) For each well subject to this order, please also send copies of all of the data required in items (a) through (e) above to

Central Valley Water Board
Attn. Dane Johnson
1685 E Street
Fresno, CA 93706

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Operator's Appeal Rights

20. This order may be appealed by filing a written statement with the State Oil and Gas Supervisor or district deputy that the order is not acceptable within ten (10) days of service of the order. **This is an emergency order issued pursuant to Public Resources Code section 3226 and therefore, pursuant to Public Resources Code section 3350, subdivision (b), the filing of an appeal of this emergency order shall not operate as a stay of the order.**

DATE JUL 01 2014

By _____
Steven R. Bohlen
State Oil and Gas Supervisor

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Exhibit A

Paragraph 19(a) of this order requires submission of the categories of information listed below. Specifically, your submission will include the following in spreadsheet form, labeled with the capital letters indicated, with attachments containing the backup documentation indicated in items Q through S, inclusive:

A. The name of the owner and/or operator of the injection well;
B. American Petroleum Institute (API) number for the injection well;
C. Injection well name and number;
D. Name of the field in which the well is located;
E. County in which the 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. Identify and describe all sources of fluid injected into the well;
O. Injection volume in barrels for the period from 1 June 2013 through 31 May 2014;
P. Total injection volume in barrels from the date injection in the well began through 31 May 2014;
Q. Attach well construction diagram including all perforations, annular material, and seals;
R. Attach copies of all available water quality lab analyses and/or reports of the injected fluids;
S. Attach a calculation of the average water quality of injected fluid from the date injection began through 31 May 2014;

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Exhibit B

Paragraph 19(c) of this order requires a technical report with an analysis of a representative sample of the fluid being injected into the well(s) subject to this order. Such sampling and reporting will reflect the following:

Sampling

Injection fluid samples shall be analyzed by a laboratory certified by the Environmental Laboratory Accreditation Program, using current applicable EPA-approved analytical methods for water 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
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

Water quality information shall be submitted in a technical report that includes, at a minimum:

A. Site plan with location(s) of representative sample(s).
B. Description of field sampling procedures.
C. Table(s) of analytical results organized by well number (including API number).
D. Copies of analytical laboratory reports, including quality assurance/quality control procedures and analytical test methods.
E. Waste management and disposal procedures.

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CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

July 2, 2014

PERSONAL SERVICE AND
CERTIFIED MAIL
7013 2250 0002 0464 3966

Brad C. Califf, Agent
Longbow, LLC
1701 Westwind Drive, Suite 101
Bakersfield, CA 93301

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

Longbow, LLC, is the operator of the injection wells identified as API numbers 02966045 and 03046608 (hereinafter "injection wells subject to this Order"). The California Division of Oil, Gas, and Geothermal Resources (Division) has determined that the injection wells subject to this Order have been injecting fluids produced by oil or gas extraction activities into aquifers that may not have been properly designated as exempt aquifers under the federal Safe Drinking Water Act (42 U.S.C. § 300f et seq.). These aquifers may be suitable for drinking water supply and other beneficial uses. The Division is issuing an Emergency Order to Immediately Cease Injection Operations (Emergency Order) to Longbow, LLC, for the injection wells subject to this Order concurrently with the issuance of this Order by the Central Valley Regional Water Quality Control Board (Central Valley Water Board).

This Order is intended to complement the Division's Emergency Order. As described further below, this Order requires Longbow, LLC, to submit information about the quality of groundwater within the zone(s) where fluids have been injected using the injection wells subject to this Order. In addition, this Order requires Longbow, LLC, to submit the location and contact information for all water supply wells within one (1) mile of each of the injection wells subject to this Order. The Division's Emergency Order requires Longbow, LLC, to submit other information that is also needed to assess the threat to groundwater quality posed by the operation of the injection wells subject to this Order. The Division's Emergency Order requires Longbow, LLC, to submit that information to the Division and to the Central Valley Water Board. This Order is not intended to require Longbow, LLC, to submit any information that the Division's Emergency Order also requires Longbow, LLC, to submit.

The Central Valley 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.*

(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.

The Central Valley 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 were not properly designated as exempt aquifers under the federal Safe Drinking Water Act and 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. Longbow, LLC, is required to submit this information and reports because it is the operator of the injection wells subject to this Order.

Under the authority of California Water Code section 13267, the Central Valley Water Board hereby orders Longbow, LLC, to:

1. **By 11 July 2014**, submit a work plan that adequately describes the procedures to collect a representative groundwater sample from the injection zone(s) for each of the injection wells subject to this Order. **By 1 August 2014**, submit a technical report with the analyses of each of the groundwater samples, in accordance with the water quality analysis and reporting requirements contained in Attachment A to this Order.

   Note: If a representative sample cannot feasibly be collected from one or more of the injection zones for any of the injection wells subject to this Order within the required timeframe (e.g., due to constraints posed by the design of the injection well), then **by 18 July 2014**, submit a technical report demonstrating that collection of a representative sample from those injection zones is not feasible within the required timeframe, and proposing an alternative sampling procedure and expeditious time schedule for obtaining a representative sample of groundwater from those injection zones. Alternative sampling procedures and time schedules are subject to approval by the Assistant Executive Officer of the Central Valley Water Board.

2. **By 1 August 2014,** submit all previously-obtained analytical data for fluid samples collected from any injection zones within one (1) mile of each of the injection wells subject to this Order.

3. **By 1 August 2014**, submit a technical report containing the following:

   A. A list and location map of all water supply wells within one mile of each injection well subject to this Order.
   B. All available information for each identified water supply well, including the well owner name and contact information; type of well (i.e., domestic, irrigation, industrial, etc.); status (i.e., active, idle, etc.); well construction; borehole geophysical logs; and all analytical results for any water sample(s) collected from each water supply well. Notify Central Valley Water Board staff within 24 hours upon determination that any water supply well information cannot be obtained from the California Department of Water Resources because it is confidential.

Submissions pursuant to this Order must include the following statement signed by an authorized representative of Longbow, 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 Valley Water Board may petition the State Water Resources Control Board (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, may be found at http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml, or will be provided upon request.

By **9 July 2014**, you must contact Dane S. Johnson of this office at (559) 445-5525 to discuss your proposed work plan and technical report.

All required technical information must be submitted to the attention of:

Dane S. Johnson
Central Valley Water Board
1685 E Street
Fresno, CA 93706

In addition, 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

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

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 Longbow, LLC, to judicial or administrative civil liabilities. It is strongly recommended that you contact Central Valley Water Board staff to discuss any proposed changes to the discharge of the fluids that had previously been disposed of in an injection well subject to this Order.

Any questions regarding this matter should be directed to me at (559) 445-5116 or at Clay.Rodgers@waterboards.ca.gov.

Clay L. Rodgers

Clay L. Rodgers
Assistant Executive Officer

Enclosure: Attachment A

ATTACHMENT A

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 for water 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
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

Water quality information shall be submitted in a technical report that includes, at a minimum:

A. Site plan with locations of well(s) sampled.
B. Description of field sampling procedures.
C. Table(s) of analytical results organized by well number (including API number).
D. Copies of analytical laboratory reports, including quality assurance/quality control procedures and analytical test methods.
E. Waste management and disposal procedures.