



Central Valley Regional Water Quality Control Board

FILE

15 November 2013

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CERTIFIED MAIL
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CALIFORNIA WATER CODE DIRECTIVE PURSUANT TO SECTION 13267. You are legally obligated to respond to this Order. Please read this Order carefully.

Your company has been identified as the owner and/or operator of oil and/or gas wells within the Central Valley Region. Information from the California Division of Oil, Gas, and Geothermal Resources (CDOGGR) indicates your company's production has exceeded 1,000 barrels of crude oil or 10 million cubic feet of dry natural gas in a month or your company may have drilled an exploratory well(s) since January 2012. Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff is aware that common oil and gas industry practice is to discharge well drilling fluids and possibly well completion fluids to land, typically in an unlined sump.

Drilling fluids are those fluids used during drilling activities to carry cuttings to the surface and cool the drill bit. Drilling fluids include a mixture of fresh and/or saline water, formation fluids (i.e., connate water mixed with hydrocarbons), added minerals and solids, and smaller volumes of chemical additives to improve the performance of the drilling fluid. Added minerals typically include bentonite clay to increase the viscosity and stabilize the borehole and barite to help control the flow of pressurized formation fluids into the borehole. Added solids are typically inert materials to control and seal lost circulation zones.

Completion fluids include saline water (typically potassium chloride water), residual drilling fluid, formation fluids, and stimulation and flowback fluids from wells that are treated.

Stimulation fluids include acid stimulation treatment fluid and hydraulic fracturing treatment fluid. Acid treatment of wells can be at pressures sufficient to fracture the formation and may be combined with hydraulic fracturing treatments (acid fracturing). Other acid treatments are at pressures lower than necessary to fracture the formation, but high enough to increase formation permeability (acid matrix). Acid treatments, for the purposes of this document, exclude those processes using an acidic fluid designed to clean out a well casing or to remove formation damage caused by perforations within a few feet of the wellbore.

Hydraulic fracturing treatment fluids are injected at pressures which are increased in steps to control the amount of fracturing in the target formation. Flowback fluids are hydraulic fracturing

APPROVED
Supervising Engineer

fluids that flow to the surface from a well after stimulation treatment and before the start of production. Flowback fluids are a mixture of stimulation fluid and formation fluids.

The discharge of "drilling muds/boring wastes" (drilling fluids and cuttings) to land in an unlined sump during the well drilling phase is conditionally waived by Resolution R5-2008-0182 Waiver of Reports of Waste Discharge and Waste Discharge Requirements for Specific Types of Discharges within the Central Valley Region (General Waiver), which expires on 4 December 2013. The discharge of completion fluids to land after the drilling phase is not included in the General Waiver. Completion of the well drilling phase occurs after the well casing is installed and the drilling fluid in the well is displaced with completion fluid, typically a saline water based on potassium chloride.

This Order seeks information about the: (1) discharges of drilling fluids to land (i.e., including sumps), and (2) discharges of well completion and/or workover fluids to land at any company well during the reporting period **from 1 January 2012 to the present**. This information is required to identify the characteristics and volumes of waste discharged to land and to evaluate the potential impacts or threatened impacts to water quality posed by the discharge of these fluids to land. In addition, how your company closes sumps may cause impacts or threatened impacts to water quality.

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 and potential impacts to water quality posed by the discharge of wastes to land during the drilling and completion of oil and gas wells. Discharge to land includes the use of lined and unlined sumps. To understand the potential threat and potential impacts to water quality, the Central Valley Water Board needs to identify what wastes are being discharged to land during well drilling and completion activities.

The technical report required by this Order is necessary to assess the potential threat and potential impacts to water quality. The need to understand the potential threat and potential impacts to water quality justifies the need for the information required by this Order. The required information is also necessary to evaluate the waste discharge practices currently being

implemented at hydrocarbon well drilling and completion sites in the Central Valley Region. Based on the nature and possible consequences of the discharges, the burden of providing the required information, including the costs of producing the required report, the information requested bears a reasonable relationship to the need for the report, and the benefits to be obtained from the report.

Under the prescribed authority of California Water Code section 13267, the Central Valley Water Board directs you to submit a technical report containing specific information, including an electronic spreadsheet. For the spreadsheet, the information needs to be entered into each column for all new company wells drilled and any company wells where stimulation treatment occurred during the reporting period.

The information that needs to be in each column of your spreadsheet is identified in the attached example spreadsheet along with instructions that include the measurement unit or response code number for selected columns. Each well reported should be presented in a separate spreadsheet row.

If a well has been granted confidential status by the CDOGGR pursuant to Section 3234 of the Public Resources Code, then state in the technical report which company wells currently have confidential status, and do not submit the information in columns H, J, K, and S.

The technical report needs to describe the procedures to close unlined drilling sumps at new wells and also to close smaller temporary operational sumps next to existing wells. If waste is solidified during closure of sump(s), then describe that solidification process in the report. General comments about any information in the spreadsheet need to be included in the technical report.

Submissions pursuant to this Order need to include the following statement signed by an authorized representative:

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 the 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 action 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 directive, except that if the thirtieth day following

the date of this directive 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 applicable to filing petitions may be found at: www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

By **18 February 2014**, please submit the certified technical report with the spreadsheet to the attention of Dane S. Johnson of this office. The report needs to include a CD-ROM with an electronic copy of the report in Adobe Acrobat (PDF) format and the spreadsheet in Excel (XLS) format. In order to simplify your response, an example spreadsheet and instructions are attached to help you provide the required information. An example spreadsheet and instructions XLS file can be downloaded from the Central Valley Water Board web site at:

www.waterboards.ca.gov/centralvalley/water_issues/waste_to_land/index.shtml

If no wells were drilled and no stimulation treatment of any company wells occurred during the reporting period, then submit by **18 February 2014** a statement certifying that the company did not conduct any well drilling or stimulation treatment activities during the reporting period.

Based on the information submitted in the technical report, additional information may be requested.

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



for Pamela C. Creedon
Executive Officer

Attachment

cc: Julie Macedo, Office of Enforcement, State Water Resources Control Board, Sacramento
Tim Kustic, CDOGGR, Sacramento

**EXAMPLE
FOR EACH WELL FROM 1 JANUARY 2012 TO PRESENT**

THE INFORMATION IS REQUIRED PURSUANT TO CALIFORNIA WATER CODE SECTION 13267
CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD, FRESNO, CA

A	B	C	D	E	F	G		H		I	J	K	L	M
						Well Head Location Latitude	Well Head Location Longitude	Bottom Hole Location Latitude	Bottom Hole Location Longitude					

INSTRUCTIONS TO COMPLETE THE SPREEDSHEET ARE ON THE THIRD PAGE.

INSTRUCTIONS TO COMPLETE SPREADSHEET

Please use the following guidelines when entering data into the spreadsheet.

Spreadsheet Column

- A. The name of the Owner and/or Operator.
- B. American Petroleum Institute well number.
- C. Well name and number.
- D. For Well Type use 1 for production well, 2 for waterflood well, 3 for steamflood well, 4 for injection disposal well; and 5 for other well type, including exploratory.
- E. Field name.
- F. County well is located in.
- G. Latitude and Longitude (decimal degrees) of well head location.
- H. Latitude and Longitude (decimal degrees) of bottom hole location, if directionally drilled.
- I. Latitude and Longitude Datum, use 1 for North American Datum of 1983 use 1 for NAD83 or 2 for NAD27.
- J. Total well depth (feet).
- K. Total vertical depth of well (feet).
- L. Date drilling started (dd/mm/yy).
- M. What is the source of the drilling fluid makeup water? Use 1 for oil field produced water, 2 for domestic/municipal/irrigation supply well, 3 for surface water, or 4 for other water source.
- N. Were fluids discharged to land? (Yes/No)
- O. If Yes for column N and a sump was used, then provide the estimated sump size (L x W x D in feet). If a sump was not used, describe how fluids were stored or discharged on separate page.
- P. If a sump was used, then how many days did a discharge to the sump occur?
- Q. Did well undergo stimulation treatment? (Yes/No)
- R. If Yes for column P, then what is the estimated total quantity of stimulation fluid? (barrels)
- S. If Yes for column P, then what date was well treatment started (dd/mm/yy).
- T. If Yes for column P, then provide the name of the zone treated (Formation and/or zone name).
- U. If Yes for column P, then provide the type of treatment. Use 1 for hydraulic fracture, 2 for acid fracture, or 3 for acid matrix.
- V. If Yes for column P, then was a drilling or operational sump present at start of treatment? (Yes/No)
- W. If Yes for column U, then identify the type of fluids in the sump before the start of treatment. Use 1 for drilling fluids and completion fluids, or 3 for workover fluids.
- X. If Yes for column U, then were any excess or unusable treatment fluids discharged to the sump? (Yes/No)
- Y. If Yes for column U, then were any flowback fluids discharged to the sump? (Yes/No)
- Z. Was the sump 'clean closed' by removing all wastes for proper disposal? (Yes/No)
- AA. If No for column Y, then was waste in sump covered with soil after dewatering? (Yes/No)
- BB. If Yes for column Z, then how was the waste solidified? Use 1 for no solidification, or 2 for other solidification process, and describe on an additional page.