



**Model Criteria for Groundwater
Monitoring in Areas of Well Stimulation:
Summary of Goals, Strategies,
Proposed Performance Measures, and
Plans for Implementation**

March 1, 2016

STATE WATER RESOURCES CONTROL BOARD

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Overview

California Water Code section 10783 (Senate Bill 4, Pavley, statutes of 2013) required the State Water Board to develop the Model Criteria, which were adopted on July 7, 2015 (Resolution No. 2015-0047). The resolution directed staff to collaborate with stakeholders to develop performance measures for the evaluation of the Model Criteria by March 1, 2016.

The State Water Resources Control Board (State Water Board) hosted two stakeholder meetings on November 10, 2015 and January 8, 2016 to collaboratively develop these performance measures. Stakeholders included staff from the Division of Oil, Gas and Geothermal Resources (DOGGR), Clean Water Action, Environmental Working Group, Chevron, California Resources Corporation, Western States Petroleum Association, and the California Independent Petroleum Association.

This draft document outlines goals, strategies, and performance measures for the model criteria for groundwater monitoring in areas of well stimulation (Model Criteria). This document, developed in cooperation with stakeholders, also includes plans for implementation. It is anticipated that these draft performance measures and implementation plans will be periodically re-evaluated and updated through a stakeholder process.

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Goal #1: Transparency and availability of online information and documentation.

Strategy	Proposed Implementation
<p>1.1 Improve and expand upon available datasets and the ability to analyze and manipulate that data.</p>	<p>The State Water Board’s GeoTracker information system (GeoTracker) will be used to provide online easy access to operator-submitted groundwater monitoring plans, requests for exclusion from monitoring, and associated data and reports. These data and information will be publicly available for export and analysis. GeoTracker will integrate capabilities for operators to easily upload information.</p> <p>By April 15, 2016, a GeoTracker frequently asked questions (FAQs) will be available on the State Water Board Oil and Gas Monitoring webpage that will include information on how operators can upload data and how the public can access the data.</p>
<p>1.2 Improve online user experience with simplified and clear messaging to make data easier to access.</p>	<p>By June 1, 2016, the Oil and Gas Monitoring webpage will be improved to provide better access to information such as schedules, FAQs, announcements, and reports.</p>
<p>1.3 Create data communication/sharing strategy to optimize data and information sharing between the State Water Board, Regional Water Boards, DOGGR, and other agencies, as appropriate.</p>	<p>By June 1, 2016, State Water Board and DOGGR staff will develop a plan for data and information sharing.</p>

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Goal #2: Provide clear milestones and timely deliverables.

Strategy	Proposed Implementation
2.1 Make milestones and deliverables outlined in the Model Criteria and Senate Bill 4 (Chapter 313, Statutes of 2013, including Water Code section 10783), publicly available.	By April 15, 2016, a schedule of deliverables and milestones (including U.S. Geological Survey [USGS]) deliverables to the State Water Board) will be posted on the Oil and Gas Monitoring webpage.
2.2 Prepare review processes, flowcharts, and timelines for reviewing groundwater monitoring plans and requests for exclusion from groundwater monitoring, including interagency collaboration and program efficiencies.	By June 1, 2016, State Water Board staff will develop process flowcharts and estimated timelines for reviewing groundwater monitoring plans and requests for exclusion from groundwater monitoring. This information will be posted on Oil and Gas Monitoring webpage.
	Beginning in March of 2017, State Water Board staff will prepare and make publicly available an " <u>Annual Model Criteria Performance Report</u> ". This report will include such information as the number of monitoring plans and requests for exclusion from monitoring submitted by operators, the number of submittals with proposed alternative approaches, timelines for review of the submittals, and the number of plans approved.

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Goal #3: Understand and mitigate impacts of well stimulation on water quality and public health.

There is limited information in areas of oil and gas operation and well stimulation activities to evaluate the potential impacts of well stimulation on groundwater resources. Water quality information collected as part of the approach defined in the Model Criteria will help evaluate groundwater and hydrogeological conditions, including establishing a baseline of water quality conditions that will be used to assess future potential impacts. Establishing a baseline of groundwater quality conditions is expected to take three to five years.

The following implementation plans are proposed to work towards understanding the potential impacts of well stimulation on groundwater resources:

Strategy	Proposed Implementation
3.1 Provide regular assessments of monitoring data, including pilot study results and identification of any chemicals of concern.	Beginning in February of 2016, the USGS will provide technical briefings to stakeholders summarizing findings of the regional monitoring efforts (The first briefing was held on February 19, 2016).
3.2 Mitigate problems as they occur and share mitigation efforts with stakeholders.	If data demonstrates a potential water quality or public health concern, State Water Board and Regional Water Quality Control Board (collectively Water Boards) staff will develop a work plan to address the concerns and information will be made available to the public.
3.3 Develop a plan to re-evaluate the effectiveness of monitoring. Modify the scope of work and approach based on evaluation of the data collected and evaluated.	By March 31, 2017, State Water Board staff will develop a plan to be used to re-evaluate the effectiveness of the Model Criteria and to provide on-going program evaluation based on the performance measures.
3.4 Coordinate with other agencies to identify risk.	Beginning in March of 2017, State Water Board staff will include a summary of significant findings and lessons learned in the <u>“Annual Model Criteria Performance Report”</u> .

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Goal #4: Provide region-specific or localized flexibility where possible.

As stated in the Model Criteria, State Water Board staff may consider proposed alternatives and modifications to the methods described in the Model Criteria based on factors such as site-specific conditions (e.g., terrain, geology, access, etc.), number and depth of aquifers containing protected water, potential pathways, and risk to receptors. Prior to approving a proposed alternative or modification, State Water Board staff will provide at least fifteen days' notice and an opportunity for stakeholders to submit comments on the proposal.

Strategy	Proposed Implementation
4.1 Consider local conditions when reviewing groundwater plans.	Beginning in March of 2017, State Water Board staff will report on the number of proposed alternative plans submitted, number of approved plans, and any observed regional geological trends associated with those plans in the <u>“Annual Model Criteria Performance Report”</u> .
4.2 Clearly communicate why region-specific activities are occurring.	
4.3 Use consistent flexibility criteria for monitoring.	

Goal #5: Assess implementation costs

Strategy	Proposed Implementation
5.1 Assess implementation cost for the State Water Board and stakeholders.	By August 31, 2016, the State Water Board will develop a list of information needed to assess the cost associated with the implementation of the Model Criteria.
	Beginning October 1, 2016, the State Water Board will request operators to submit on an annual basis the required information for assessing the cost of implementation.
	Beginning in March of 2017, State Water Board staff will report on the cost of implementation of the Regional Monitoring Program and area-specific monitoring. The <u>“Annual Model Criteria Performance Report”</u> will include an evaluation of State Water Board costs and operator costs, including effectiveness of the collection, sharing, and management of data.

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Annual Model Criteria Performance Report - Proposed Outline:

- Summary of scope of work conducted and reported by the USGS for the Regional Monitoring Program
- Summary of area-specific monitoring (operator conducted)
 - Number of groundwater monitoring plans and requests for exclusion from monitoring submitted
 - Timelines for review of the submittals
 - Number and location information of approved submittals
- Summary of area-specific monitoring plans that propose alternative or modified methods
 - Number of alternative approach plans submitted
 - Reason for approval or denial
 - Number and location information of approved submittals
 - Region specific trends observed in the approved groundwater monitoring plans
- Property-owner requested sampling
 - Number of notifications sent to property owners (information from DOGGR)
 - Number of property owners requesting sampling (information from oil and gas operators and State Water Board)
 - Summary of sampling results
 - Results of sampling audits conducted by the State Water Board
- Evaluation of cost of compliance
 - Cost of implementation of the Regional Monitoring Program
 - Cost of implementation of area-specific monitoring (information from oil and gas operators)
- Lessons learned from implementation of the Model Criteria
 - Identify opportunities to provide ongoing program evaluation based on performance measures