

Rule 1148.2

Working Group Meeting

February 18, 2014

Background – Rule 1148.2

- Adopted April 5, 2013
- Applies to operators of oil and gas wells and chemical suppliers
- Requires pre-project notification, emissions and chemical usage reporting for drilling, well completion, or rework activities
- SCAQMD website where the public may access notification and chemical usage information

(Adopted April 5, 2013)

RULE 1148.2 NOTIFICATION AND REPORTING REQUIREMENTS FOR OIL AND GAS WELLS AND CHEMICAL SUPPLIERS

- (a) Purpose
The purpose of this rule is to gather air quality-related information on oil and gas well drilling, well completion, and well reworks.
- (b) Applicability
This rule applies to any operator of an onshore oil or gas well located in the District that is conducting oil or gas well drilling, well completion, or well reworks. In addition, this rule applies to suppliers as defined in paragraph (c)(14).
- (c) Definitions
For the purposes of this rule, the following definitions shall apply:
- (1) ACIDIZING means a treatment of the wellbore or reservoir formation with an acid to either clean out scale, damage, or other debris in the well, or react with the soluble substances in the formation to improve permeability and enhance production of oil and gas.
 - (2) AIR TOXIC means any substance identified on a list that is compiled and maintained by the California Air Resources Board pursuant to Health and Safety Code Section 44321.
 - (3) CHEMICAL FAMILY means a group of chemicals with related physical and chemical properties.
 - (4) DRILLING means digging or boring into the earth for the purpose of developing, extracting, or producing oil, gas, or other hydrocarbons, but does not include remediation efforts to clean-up or remove contamination.
 - (5) DRILLING FLUID means fluid used to lubricate the drill string, line the walls of a well, flush cuttings to the surface, and create enough hydrostatic weight to prevent blowouts.
 - (6) FLOWBACK FLUID means the fluid that flows from an oil or gas well following a well production stimulation or treatment activity, either in preparation for a subsequent phase of well production stimulation or treatment activity, or in preparation for a cleanup and returning the well to production. The flowback period begins when material introduced into the well during the well production stimulation or treatment activity

1148.2 - 1

Background – Board Resolution 13-31

- Convene Working Group within 6 months after the first emissions report is received to discuss equipment and chemical data, and emissions monitoring/sampling results
- Report semi-annually to Stationary Source Committee (SSC) on notifications, emissions, and chemical use reporting
- Report to the SSC within 2 years of rule adoption, findings and recommendations for the need, if any, for emission controls or regulatory efforts for well drilling, well completion, and well reworks

Caveats

- “Snap Shot” June through December 2013
- Initial review of data
 - expected to improve over time
 - continuing to evaluate data
- Only non-trade secret information presented
- Staff analyzing both trade and non-trade secret data
- Missing reports – initiating the compliance process

Rule 1148.2 – Notification Requirements

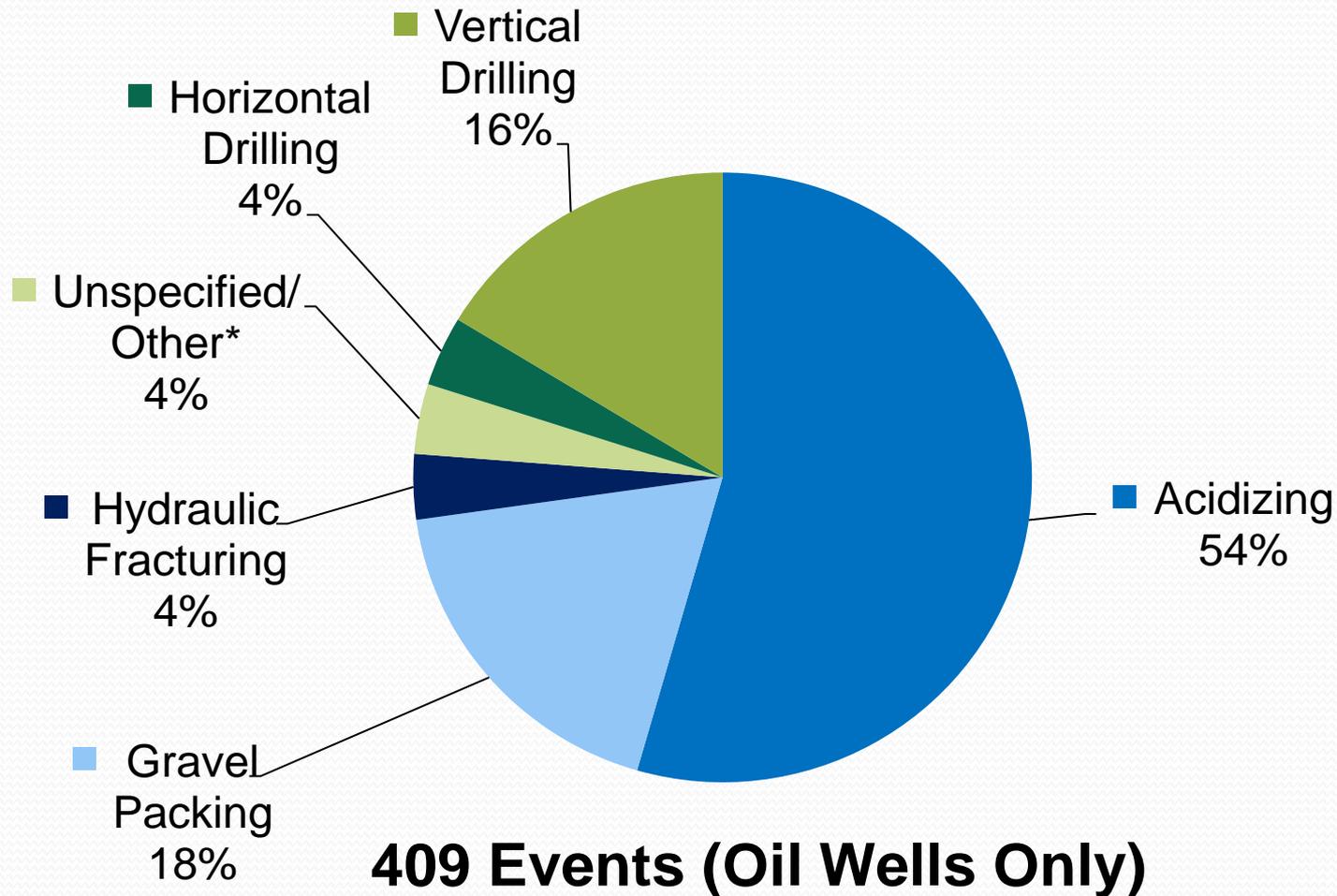
- Notify SCAQMD 10 days to 24 hours prior to:
 - Well drilling
 - Well completion
 - Well Rework
- Identify nearest sensitive receptor within 1,500 feet of well
- SCAQMD will post on its website within 24 hours



Summary of Rule 1148.2 - Notification Data (June-Dec 2013)

- Approximately 370 Notifications representing 409 events (Some notifications have multiple events)
- <1% gas wells
 - Gas wells: 2 drilling and 1 unspecified
- >99% oil wells
 - Acidizing represents nearly half of the events
 - 14 hydraulic fracturing events
 - Of the 83 drilling events
 - 66 vertical drilling
 - 15 horizontal drilling
 - 2 unspecified

Distribution of Notifications by Activity (June – Dec 2013)



R 1148.2 – Well Activity by Location



Location of Well Events

- 90% of notifications in Los Angeles County
- 10% of notifications in Orange County
- No notifications in Riverside and San Bernardino County
- Approximately 50% are within 1,500 feet of a sensitive receptor



Well Events Near Sensitive Receptors

Distance to Sensitive Receptor (ft)	Acidizing	Drilling	Gravel Packing	Hydraulic Fracturing	Other*	Total
≤ 50	1					1
51 – 100	5		1			6
101 – 500	42	10	8		5	65
501 – 1000	28	27	17		1	73
1001 – 1500	30	13	13			56

* Cement jobs, perforations

Rule 1148.2 – Emission Source Reporting

- Submit Emission Source Reports to the SCAQMD for drilling, well completion, and well rework activities
 - Combustion sources (i.e., engines >50 bhp)
 - Dry materials usage/ fugitive dust
 - Drilling and flowback fluids
- Reports to be submitted to SCAQMD no later than 60 days after completion of well activity
- Reporting requirement sunsets in April 2015

Equipment Reporting Results

Well Activity	Average Hours of Operation	Average Number of Engines	Average Engine Size (HP)
Horizontal Drilling	250	10	400
Vertical Drilling	86	7	700
Acidizing	84	2	471
Gravel Packing	70	9	555
Hydraulic Fracturing	37	6	1165

Rule 1148.2 – Chemical Usage Reporting

- Non-Trade Secret Chemical Information
 - Facilities required to report within 60 days of last well activity
 - Chemical name
 - Purpose of chemical
 - Total volume/density or mass
 - Max concentration
 - Identification if chemical is an air toxic
- Trade-Secret Chemical Information
 - Suppliers must report chemical information for any trade secret chemicals to SCAQMD within 60 of delivery to operator

The screenshot displays the 'R1148.2 Reporting Portal' interface. At the top, there is a navigation bar with the South Coast AQMD logo and the text 'R1148.2 Reporting Portal' and 'Home Inquiry Portal'. Below this is a secondary navigation bar with links for 'Manage Account', 'Notification', 'Emission Source Report', and 'Chemical Report'. The main content area is titled 'R1148.2 (e)(4) Chemical Report - Operator' and is divided into two main sections: 'Operator Information' and 'Well Information'. The 'Operator Information' section contains several input fields: 'Existing Event ID*', 'Facility ID', 'Operator Name*', 'Owner Contact*', 'Facility Name*', 'Operator Contact*', 'Operator Phone*', and 'Owner Phone*'. The 'Well Information' section contains input fields for 'Well Name /ID', 'API Well Number', 'County', 'Zip Code', 'Well Latitude', and 'Well Longitude'. Below these sections, there is a red error message: 'You must enter at least one Non-Trade Secret Chemical to submit this report.' and a grey box with the text 'Please click the Add Button to the right to enter a non-trade secret chemical' and an 'Add' button.

Summary of Toxics

- Looking at 13 air toxics
 - Where used
 - Amount (mass) – still evaluating
- Still evaluating trade secret data

Air Toxics	Carcinogen	Acute	Chronic
Crystalline Silica	X		X
Ethylbenzene	X		X
Ethylene Glycol			X
Formaldehyde	X	X	X
Glutural			X
Hydrochloric Acid		X	X
Hydroflouric Acid		X	X
Methanol		X	X
Naphthalene	X		X
Phosphoric Acid			X
Sodium Hydroxide		X	X
Toluene		X	X
Xylene		X	X

Non-Trade Secret Air Toxic Chemicals Used in Well Activities

Chemical Ingredient	Acidizing	Drilling	Gravel Packing	Hydraulic Fracturing
Crystalline Silica		✓	✓	✓
Ethylbenzene	✓			
Ethylene Glycol	✓	✓	✓	✓
Formaldehyde	✓	✓	✓	
Glutaral		✓	✓	
Hydrochloric Acid	✓			
Hydrofluoric Acid	✓			
Methanol	✓	✓	✓	✓
Naphthalene	✓	✓	✓	
Phosphoric Acid		✓		
Sodium Hydroxide			✓	✓
Toluene	✓			
Xylene	✓			

R1148.2 – Well Inspection Summary

- Since June 2013, SCAQMD staff conducted 74 inspections of oil/gas sites performing drilling, well completion, and well rework operations
 - 13 well drilling events
 - 14 hydraulic fracturing events
 - 36 acidizing events
 - 3 gravel packing events



R 1148.2 – Well Inspection Summary

- Observations from the well inspections include:
 - Visible smoke at 11 events (15%)
 - Visible dust at 12 events (16%)
 - Noticeable odors at 7 events (9%)



Rule 1148.2 – Monitoring and Sampling Summary

Event	Handheld Results for PM and H ₂ S	Canister Results for Organics
Acidizing Event	No elevated levels of PM or H ₂ S	Canister samples elevated levels of hydrocarbons (10x ambient) with slightly elevated levels (3x ambient) of certain air toxics such as benzene and xylenes
Hydraulic Fracturing Event 1	Slightly elevated levels of PM ₁₀ . H ₂ S not measured due to weather.	No canister sample due to weather.
Hydraulic Fracturing Event 2	No elevated levels of PM ₁₀ , except for one short-term period of elevated levels. No elevated levels of H ₂ S.	Canister sampling showed slightly elevated levels of benzene and xylenes.
Drilling Event	Elevated levels of PM ₁₀ and PM _{2.5} . Slightly elevated levels of H ₂ S.	Canister sampling results pending

Comments on Rule Implementation

- Comment: Rule should be amended to require AQMD to conduct monitoring and sampling
 - Staff conducting monitoring/sampling
 - Resolution commits to monitor/sample
- Comment: Expedite review of reported information
 - Review has been conducted and will be continued
- Comment: AQMD should report back to the Wilmington community and other communities impacted by Oil well activity
 - Will implement

Comments on Rule Implementation

- Comment: Rule should be amended to fully disclose all chemicals used in well operations and is inconsistent with the recent DOGGR reg.
 - Rule complies with California Code Section 6254.7(d)
 - DOGGR's Reg. does limit what can be claimed as a trade secret, and requires the public have access to the chemical identity, CAS #, and additive concentration, but not complete recipe (e.g., chemical constituent concentration)
 - Rule change would to have be made to change conditions on what is reported to public

Comments on Rule Implementation

- Additional comments on website, public reports, public portal, email notification
 - SCAQMD staff is working on enhancements
 - Will meet with environmental and community representatives

Next Steps

- Continue sampling and inspections
- Pursue non-compliance – events with no emissions or chemical reports
- Continue to make improvements to website and public portals
- Briefing Stationary Source Committee
February 21, 2014