Proposed Rule 1148.2
Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers

Working Group Meeting
February 14, 2013
Definitions - Subdivision (c)

- Revised definition for “well production stimulation activity”
  - Well Production Stimulation or Enhancement Activity means acidizing, gravel packing, hydraulic fracturing, or any combination thereof.
  - Includes a definitive list of activities
  - Added definition for “acidizing” and “gravel packing”

- Clarified following definitions to refer to “well production stimulation or enhancement activity”
  - “flowback fluid”
  - “well completion”
  - “well completion fluid”
  - “rework”
Definitions - Subdivision (c) (Continued)

- Modified definition of “rework” to include “plugging”
- Added definition for “air toxic”
  - Definition of “air toxic” references AB2588 chemicals
  - Generally includes all chemicals that are in definition for “toxic air contaminant” and “hazardous air pollutant”
  - Removed definitions for “toxic air contaminant” and “hazardous air pollutant”
- Added definitions for:
  - Owner or Operator (c)(10)
  - Trade Secret (c)(15)
Clarified notification and reporting to require:

- Name and contact information of oil or gas well owner or operator (d)(1)(A) and (e)(1)(A)
- Well name and if the API well number (if available) (d)(1)(B) and (e)(1)(B)

Adding a provision to post notification within 24 hours of receipt on AQMD website*

Corrected reference to air toxics definition and reformatted reporting requirement for suppliers (e)(2)

* This provision will be added. Not in draft distributed 2/13/13.
Notification and Reporting Requirements - Subdivision (e)

- Changed references to new definitions and to specific provisions to clarify requirements for suppliers (e)(3)
- Specified 30 day time period for submittal of information for suppliers (e)(4)
- Reworded for clarity and required identification of the affected well in report to the Executive Officer (e)(5)
Air Quality Studies

- Industry representatives recommended that AQMD staff review studies
  - EPA NSPS TSD Supporting Studies
  - TSD – Specifically Sections 4.2, 5.2, 6.2, and 7.2
  - Environmental Defense Fund Study
- AQMD staff reviewed studies looking for
  - PM emissions from mixing operations
  - VOC and toxic emissions from well completions, focusing on flowback or drilling fluids
  - Other air quality data related to drilling, well completions, or reworks
EPA NSPS TSD Supporting Studies

- TSD included fifteen studies reviewed for emissions and activity data.
- AQMD staff reviewed studies.

### Table 4-1. Major Studies Reviewed for Consideration of Emissions and Activity Data

<table>
<thead>
<tr>
<th>Report Name</th>
<th>Affiliation</th>
<th>Year of Report</th>
<th>Activity Factor(s)</th>
<th>Emission Information</th>
<th>Control Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse Gas Mandatory Reporting Rule and Technical Supporting Documents</td>
<td>EPA</td>
<td>2010</td>
<td>Nationwide</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Inventory of Greenhouse Gas Emissions and Sinks: 1990-2008</td>
<td>EPA</td>
<td>2010</td>
<td>Nationwide</td>
<td>[ ]</td>
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</tr>
<tr>
<td>Methane Emissions from the Natural Gas Industry</td>
<td>Gas Research Institute / US Environmental</td>
<td>1996</td>
<td>Nationwide</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Methane Emissions from the US Petroleum Industry (Draft)</td>
<td>EPA</td>
<td>1996</td>
<td>Nationwide</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Methane Emissions from the US Petroleum Industry</td>
<td>EPA</td>
<td>1999</td>
<td>Nationwide</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Oil and Gas Emission Inventories for Western States</td>
<td>Western Regional Air Partnership</td>
<td>2005</td>
<td>Regional</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Recommendations for Improvements to the Central States Regional Air Partnership’s Oil and Gas Emission Inventories</td>
<td>Central States Regional Air Partnership</td>
<td>2008</td>
<td>Regional</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Oil and Gas Producing Industry in Your State</td>
<td>Independent Petroleum Association of America</td>
<td>2009</td>
<td>Nationwide</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Emissions from Natural Gas Production in the Barnett Shale and Opportunities for Cost-effective Improvements</td>
<td>Environmental Defense Fund</td>
<td>2009</td>
<td>Regional</td>
<td>[ ]</td>
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</tr>
<tr>
<td>Emissions from Oil and Natural Gas Production Facilities</td>
<td>Texas Commission for Environmental Quality</td>
<td>2007</td>
<td>Regional</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Availability, Economics and Production of North American Unconventional Natural Gas Supplies</td>
<td>Interstate Natural Gas Association of America</td>
<td>2008</td>
<td>Nationwide</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>Petroleum and Natural Gas Statistical Data</td>
<td>U.S. Energy Information Administration</td>
<td>2007–2009</td>
<td>Nationwide</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Preferred and Alternative Methods for Estimating Air Emissions from Oil and Gas Field Production and Processing Operations</td>
<td>EPA</td>
<td>1999</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program</td>
<td>New York State Department of Environmental Conservation</td>
<td>2000</td>
<td>Regional</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Natural Gas STAR Program</td>
<td>EPA</td>
<td>2000–2010</td>
<td>Nationwide/Regional</td>
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</tr>
</tbody>
</table>
Six studies focused on GHGs from natural gas development and production processes.

Four studies evaluated production or post production activities/data and some GHG emission information.

One study had no emissions information.

Five studies estimated emissions from non-GHG emissions, however, information and data showed gaps:

- No emission estimates for mixing operations and flowback fluids for non-hydraulically fractured wells.
- Two studies included emissions estimates for flowback fluids from hydraulically fractured wells:
  - Inadequate information on basis for emissions (sampling, monitoring, empirical data).
  - Emission estimate methodologies not sufficiently detailed.
- Combustion equipment lacked information to quantify emissions (no activity data, equipment size, and emission factors).
TSD Section 4.2

- Estimates of methane, VOC, and HAPs during oil and gas well completions and recompletions
- Emissions based on using natural gas releases (from a previous GHG inventory) as a surrogate and percent composition of methane, VOC, and HAPs from data referenced in other sources
Specific emission sources not identified
No PM or NOx emissions estimated
No combustion equipment emissions estimated
No direct measurement/sampling
Did not include oil wells undergoing hydraulic fracturing
EPA concluded that they lacked sufficient data on the emissions to set NSPS standards for hydraulically fractured oil wells
TSD Sections 5.2, 6.2, and 7.2

- Description of Sections 5.2, 6.2, and 7.2
  - Section 5.2: Emission estimates from pneumatic devices used in production, transmission, and storage of natural gas
  - Section 6.2: Emission estimates from compressors used in production, transmission, and storage of natural gas
  - Section 7.2: Emission estimates from storage tanks for oil and natural gas production

- Findings
  - No well drilling, completion or recompletion information
  - Not the focus of PR 1148.2
Environmental Defense Fund Study

- Focus on natural gas production and distribution network
- No information on drilling, completions, or reworks
- Estimated emissions from GHG emissions
Additional Comments Received

- Comment: Delay March Public Hearing for PR1148.2
  - Public Hearing moved from March 1 to April 5, 2013

- Comment: Public meetings needed in the communities affected by oil and gas operations
  - Two Public Consultation Meetings added on February 20, 2013 in Baldwin Hills and Wilmington

- Comment: PR1148.2 should include VOC and GHG emissions from storage/process tanks and H2S emissions from well operations
  - AQMD staff will investigate storage and collection operations through a sampling and monitoring program
Comment: Include a 2 year sunset provision for PR 1148.2 for the entire rule

- PR1148.2 includes a sunset provision for the reporting requirements
- Governing Board can decide if they want to expand the sunset provision

Comment: PR1148.2 is unnecessary and overly burdensome to industry – AQMD and industry can data share

- Rulemaking provides greater accuracy, consistency, clarity, and timeliness of data gathering
Additional Comments Received (Continued)

- Comment: Sampling and monitoring plan is needed
  - AQMD staff developing initial concepts for sampling and monitoring plan
    - PM sampling
    - VOC and toxics sampling
    - H2S sampling
  - Use of portable analyzers to identify magnitude
  - More intensive monitoring if needed
Schedule

- Baldwin Hills Public Consultation Meeting
  - February 20, 2013, 2:00 PM
  - West Church of God in Christ Multipurpose Building
  - 3045 Crenshaw Blvd.

- Wilmington Public Consultation Meeting
  - February 20, 2013, 6:00 PM
  - Wilmington Senior Citizen Center
  - 1371 Eubank Ave.
  - Wilmington, CA

- Working Group Meeting
  - March 6, 2013, 2:00 PM
  - AQMD Headquarters, GB

- Stationary Source Committee
  - March 15, 2013

- Public Hearing
  - April 5, 2013