

EPA Chartered Scientific Advisory Board Teleconference
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Thank you for this opportunity.

In order to assess the potential threat posed by hydraulic fracturing on drinking water sources it is critical that the EPA conduct its own independent testing, assessments, field studies and other research. In this regard, I agree with the SAB's concerns and recommendations to the EPA.

I also agree with the Board's concerns about drawing "national-level conclusions" based on the evidence so far presented. As a resident of California, I know with absolute certainty that the effects of even the relatively small amount of hydraulic fracturing occurring in my state remain unknown and may never be known. This is because until very recently, hydraulic fracturing in California was regulated but not reported.

On March 8, 2012, I attended a public meeting hosted by the California Department of Conservation. The purpose of the meeting was to address public concerns about hydraulic fracturing in the Inglewood oil field, considered to be the largest urban oil field in the country. Try to imagine our astonishment when Mr. Jason Marshall, the Chief Deputy Director of the California Department of Conservation (DOC) said,

"There is no law that says before you do a frack job, you have to tell DOGGR."¹

DOGGR, the Division of Oil, Gas and Geothermal Resources, is the state agency responsible for regulating oil and gas well activities in California. When a state with some of the toughest environmental protection laws in the country has allowed operators to conduct well stimulation activities without even filing a notification, one can only imagine what has been taking place in states with less stringent requirements.

In a power point presentation entitled, "Fracking in California", David Albright, an Associate Director with the U.S.EPA Region 9 wrote:

"The extent to which horizontal drilling (with hydraulic fracturing) is occurring in CA is not well understood, because there are currently no requirements to report these activities."²

¹ Hydraulic Fracturing Study#2_Inglewood
<https://www.youtube.com/watch?v=SvdTmmF2wFc>

² Hydraulic Fracturing - An Overview and EPA Region 9 Perspective
Regional Tribal Operations Committee Meeting
EPA Region 9
San Francisco, CA
May 9, 2013
<https://archive.epa.gov/region9/tribal/web/pdf/fracking-in-california.pdf>

Fortunately, for those of us who live in Southern California, the first attempt at public disclosure of such activities came from an unlikely source, the South Coast Air Quality Management District (SCAQMD). On April 5, 2013, the SCAQMD adopted Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Well and Chemical Suppliers. This rule includes a searchable database available on the SCAQMD's website where the public can access information on when and where various well stimulation activities are taking place and what types of chemicals are being used.³

I've had the honor of being a part of the SCAQMD's working group for Rule 1148.2. On November 12, 2014 we were given an update on the findings and implementation of this rule.⁴ Of particular concern to the working group was the finding that approximately 50% of these activities were occurring at a distance of **1,500' or less** from "sensitive receptors."

SCAQMD well inspection observers also noted:

Visible smoke at 13 inspections (13%)
Visible dust at 13 inspections (13%)
Noticeable odors at 10 inspections (10%)

Although this rule is designed to address air quality issues, its findings suggest the possibility of airborne contamination of drinking water sources, a pathway not specifically addressed in the EPA's hydraulic fracturing water cycle (HFWC). Are smoke, along with particulate matter, and dust covered under "spills and releases" if it is observed during the chemical mixing stage of the HFWC? Even odors themselves can be symptomatic of a serious problem depending on the type of chemical causing the odor.

One of the many lessons learned from the massive Aliso Canyon gas leak is that contaminants can become aerosolized, travel long distances through the atmosphere and be re-deposited miles away from the well-head. It is possible that such contaminants may end up in drinking water sources open to the air (such as rivers or lakes) or be washed into such sources via stormwater runoff. Residue containing heavy metals (barium, vanadium, manganese, lead, strontium and aluminum) was found inside residences near the gas leak.⁵ The homes required professional clean up by trained personnel following Los Angeles County Health Department protocols.

Thank you again for the opportunity to address this board.

³ Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Well and Chemical Suppliers
<http://www.aqmd.gov/home/regulations/compliance/1148-2>

⁴ SCAQMD findings on air contaminants
Update on Implementation of Rule 1148.2
Rule 1148.2 Working Group Meeting
November 12, 2014
<http://www.aqmd.gov/docs/default-source/compliance/rule-1148.2-reports/r1148-2-wg-pres-nov-12-2014.pdf?sfvrsn=2>

⁵ Porter Ranch: Barium and other metals may be the culprit behind gas leak symptoms
KPCC, Sharon McNary May 12 2016
<http://www.scpr.org/news/2016/05/12/60583/porter-ranch-barium-and-other-metals-found-to-be-t/>