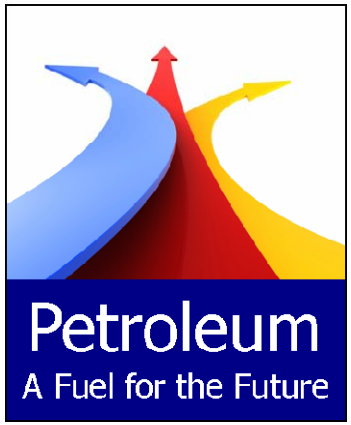
WESTERN STATES PETROLEUM ASSOCIATION

# Hydraulic Fracturing in California




Western States Petroleum Association
August 2012

# California is a Major Consumer of Petroleum

3rd largest gasoline consumer behind China and rest of U.S.

In 2010, California refineries produced:

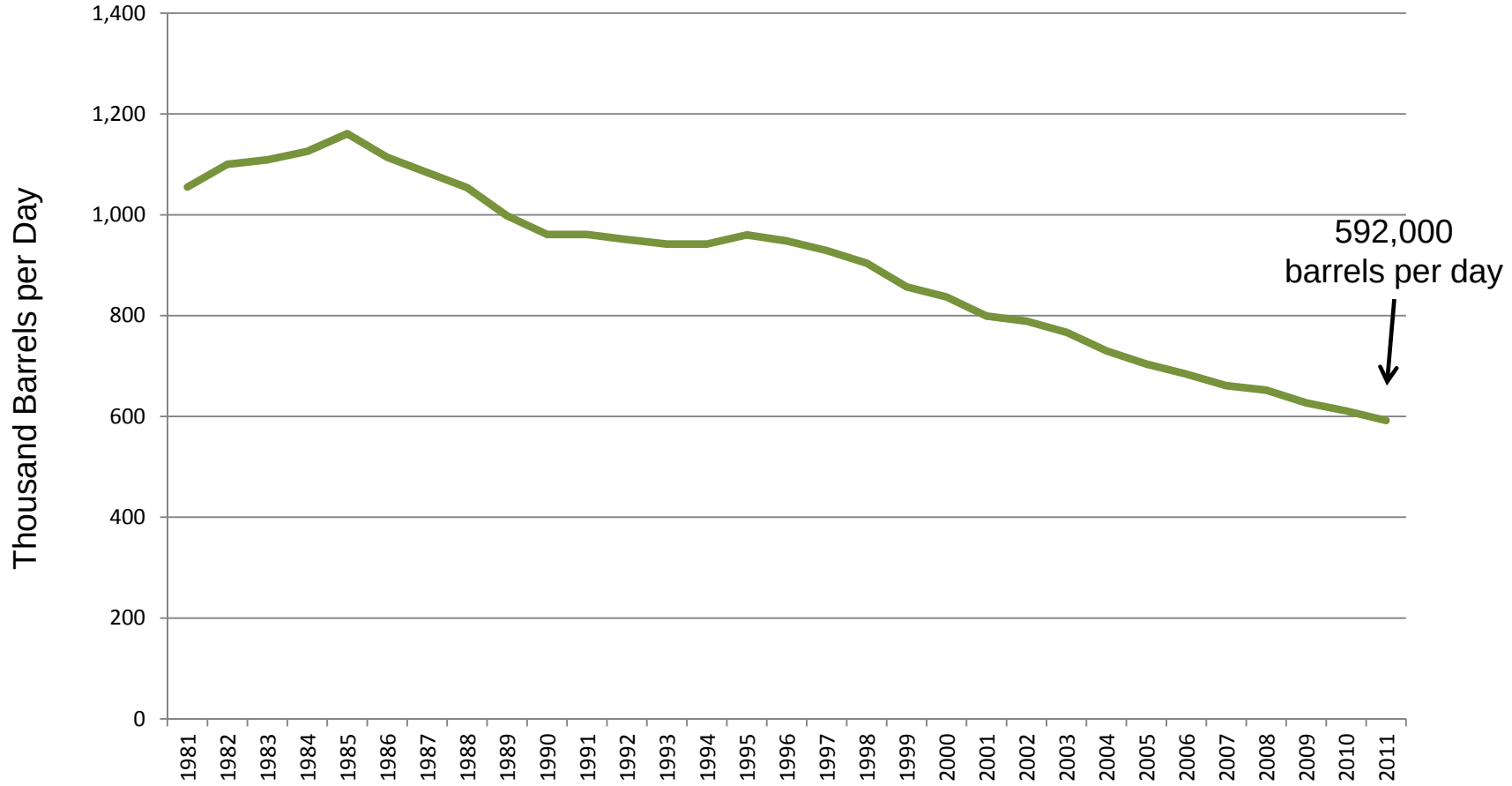
- 43 millions gallons of gasoline per day
- 13.7 million gallons of diesel fuel per day
- 10.4 millions gallons of jet fuel per day

That's 2.8 million gallons of fuel an hour

Source: California Energy Commission, Weekly Fuels Watch Report

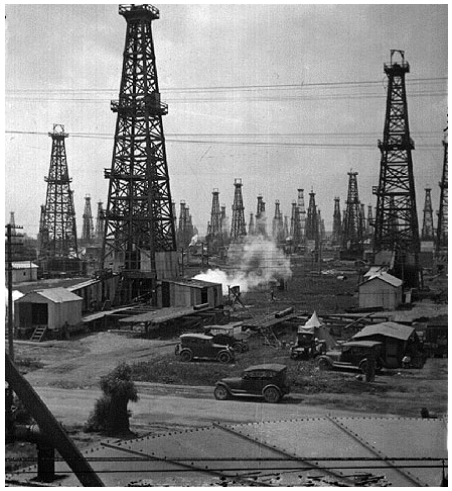
WESTERN STATES PETROLEUM ASSOCIATION

# California Oil Production




Source: U.S. Energy Information Administration

# Kern County Oil Production



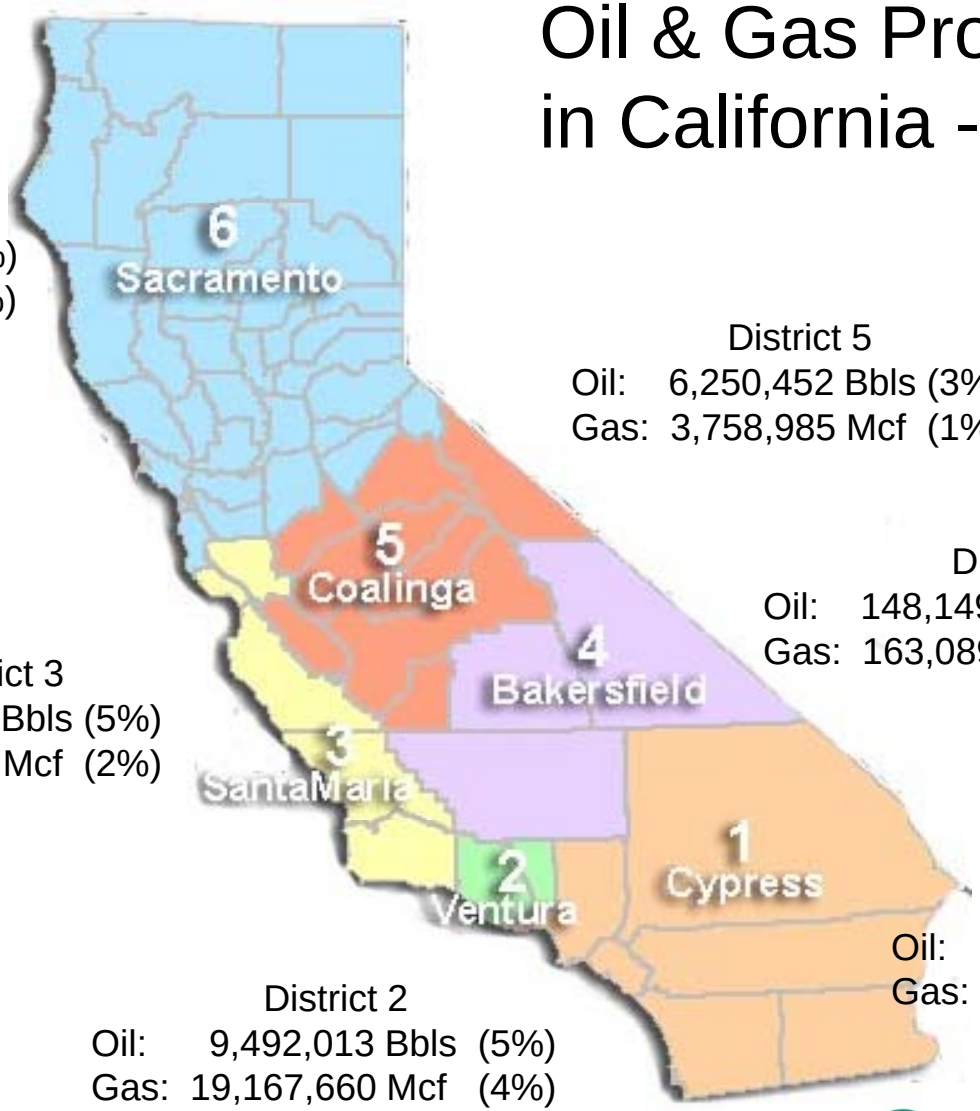
- Kern County produces 74% of California's oil
- 2010 production = 148 million barrels
- Midway-Sunset, South Belridge, Kern River, Cymric, and Elk Hills are the state's top 5 producing oil fields
- Midway-Sunset, South Belridge and Kern River are among the top 10 producing oil fields in the nation
- The Kern River oil field was discovered in 1899



Source: California Division of Oil, Gas & Geothermal Resources,

WESTERN STATES PETROLEUM ASSOCIATION

# Oil & Gas Production in California - 2010




District 6
Oil: 18,586 Bbls (<1%)
Gas: 71,200,990 Mcf (27%)

District 5
Oil: 6,250,452 Bbls (3%)
Gas: 3,758,985 Mcf (1%)

District 4
Oil: 148,149,302 Bbls (74%)
Gas: 163,089,053 Mcf (62%)

District 3
Oil: 10,802,896 Bbls (5%)
Gas: 3,796,226 Mcf (2%)

Federal offshore
Oil: 22,120,000 Bbls
Gas: 41,201,000 Mcf

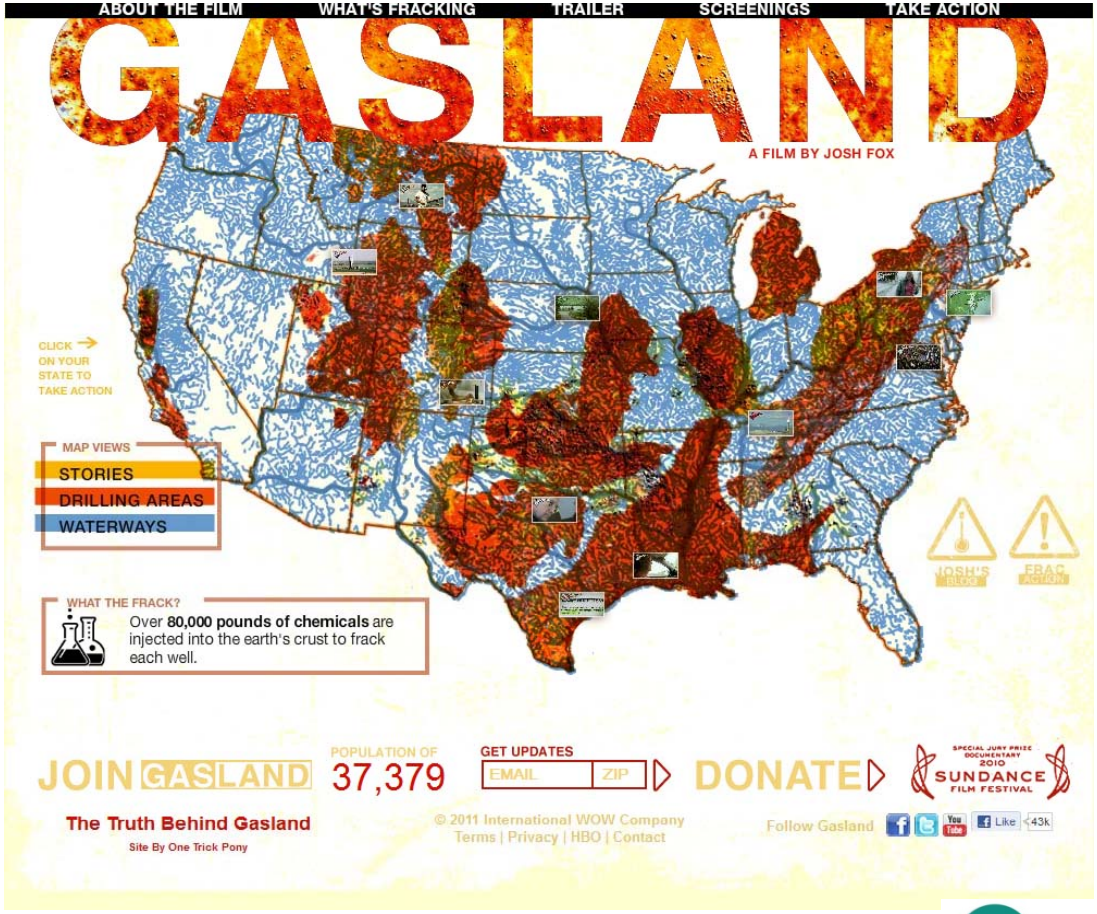
District 2
Oil: 9,492,013 Bbls (5%)
Gas: 19,167,660 Mcf (4%)

District 1
Oil: 26,757,607 Bbls (13%)
Gas: 11,296,317 Mcf ( 4%)



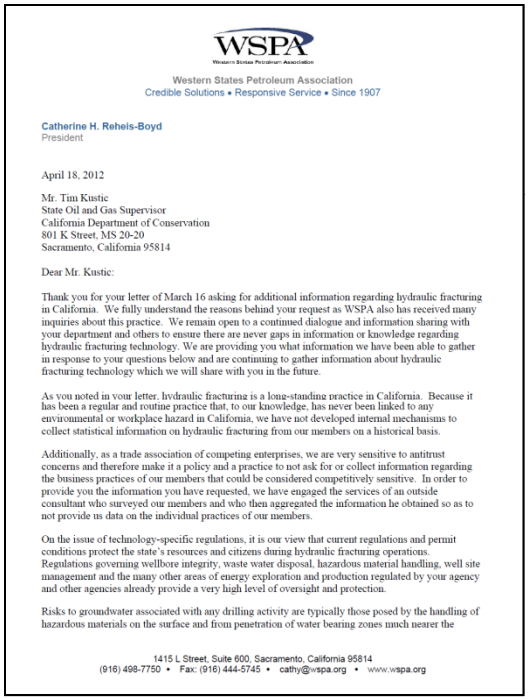
Source: California Division of Oil, Gas & Geothermal Resources, offshore and onshore production

# Hydraulic Fracturing



# Hydraulic Fracturing: How Much, Where

- 628 wells fractured in 2011 by WSPA member companies (80 percent of CA production)
- 2,294 wells drilled in 2011
- 47,917 wells currently producing oil and/or gas in CA
- 164,000 gallons of water on average used per fracture operation in CA
- 80 percent of hydraulic fracture jobs were in DOGGR District 4 (Kern, Tulare, Kings counties)



WSPA

Western States Petroleum Association
Credible Solutions • Responsive Service • Since 1907

Catherine H. Reheis-Boyd
President

April 18, 2012

Mr. Tim Kustic
State Oil and Gas Supervisor
California Department of Conservation
801 K Street, MS 20-20
Sacramento, California 95814

Dear Mr. Kustic:

Thank you for your letter of March 16 asking for additional information regarding hydraulic fracturing in California. We fully understand the reasons behind your request as WSPA also has received many inquiries about this practice. We remain open to a continued dialogue and information sharing with your department and others to ensure there are never gaps in information or knowledge regarding hydraulic fracturing technology. We are providing you what information we have been able to gather in response to your questions below and are continuing to gather information about hydraulic fracturing technology which we will share with you in the future.

As you noted in your letter, hydraulic fracturing is a long-standing practice in California. Because it has been a regular and routine practice that, to our knowledge, has never been linked to any environmental or workplace hazard in California, we have not developed internal mechanisms to collect statistical information on hydraulic fracturing from our members on a historical basis.

Additionally, as a trade association of competing enterprises, we are very sensitive to antitrust concerns and therefore make it a policy and a practice to not ask for or collect information regarding the business practices of our members that could be considered competitively sensitive. In order to provide you the information you have requested, we have engaged the services of an outside consultant who surveyed our members and who then aggregated the information he obtained so as to not provide us data on the individual practices of our members.

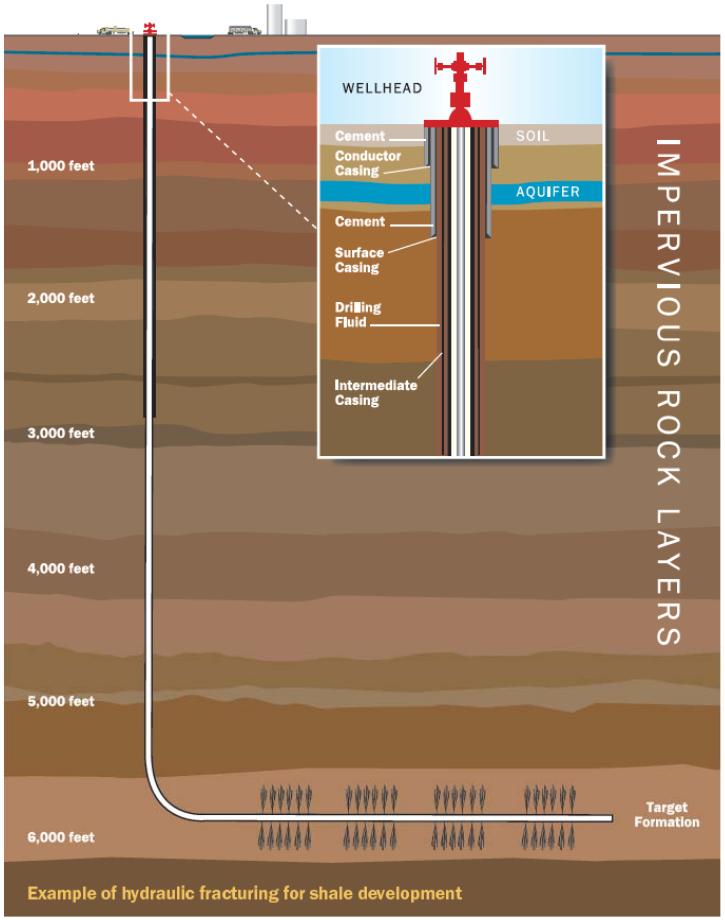
On the issue of technology-specific regulations, it is our view that current regulations and permit conditions protect the state's resources and citizens during hydraulic fracturing operations. Regulations governing wellbore integrity, waste water disposal, hazardous material handling, well site management and the many other areas of energy exploration and production regulated by your agency and other agencies already provide a very high level of oversight and protection.

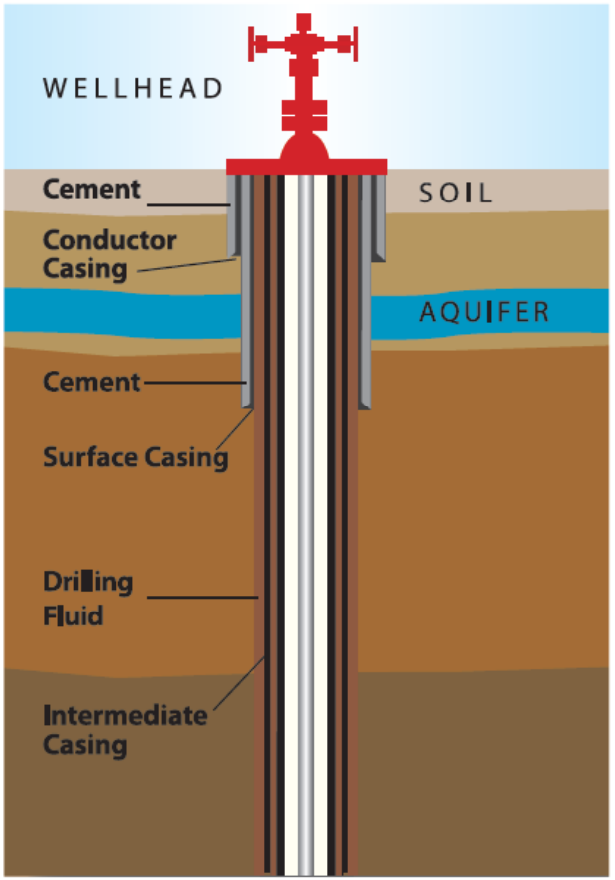
Risks to groundwater associated with any drilling activity are typically those posed by the handling of hazardous materials on the surface and from penetration of water bearing zones much nearer the

1415 L Street, Suite 600, Sacramento, California 95814
(916) 498-7750 • Fax: (916) 444-5745 • cathy@wspa.org • www.wspa.org

Source: WSPA survey of member companies; Division of Oil, Gas & Geothermal Resources Annual Report 2011, Monthly Production Report: FracFocus website, partial results

# What is Hydraulic Fracturing

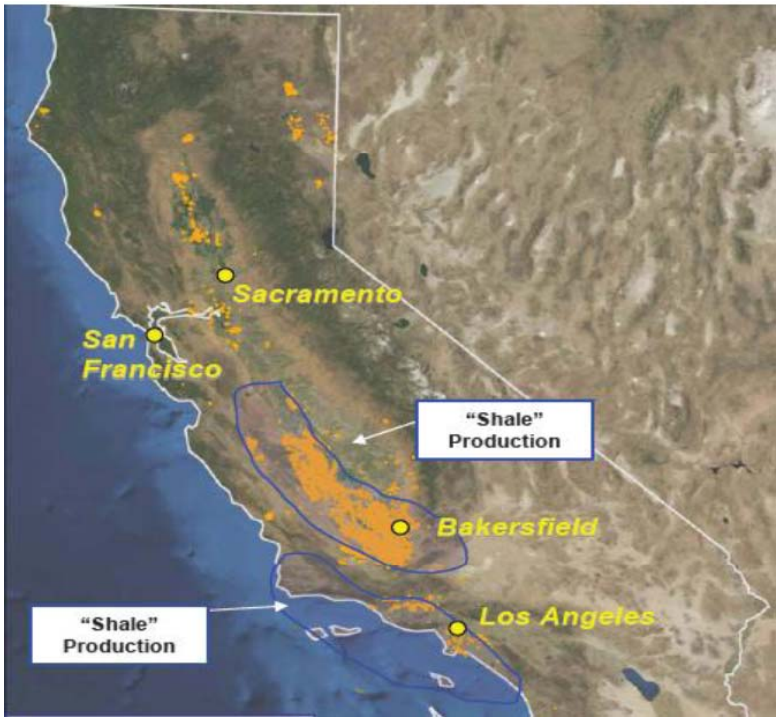



Source: API, Hydraulic Fracturing; Unlocking America's Natural Gas Resources July 19, 2010

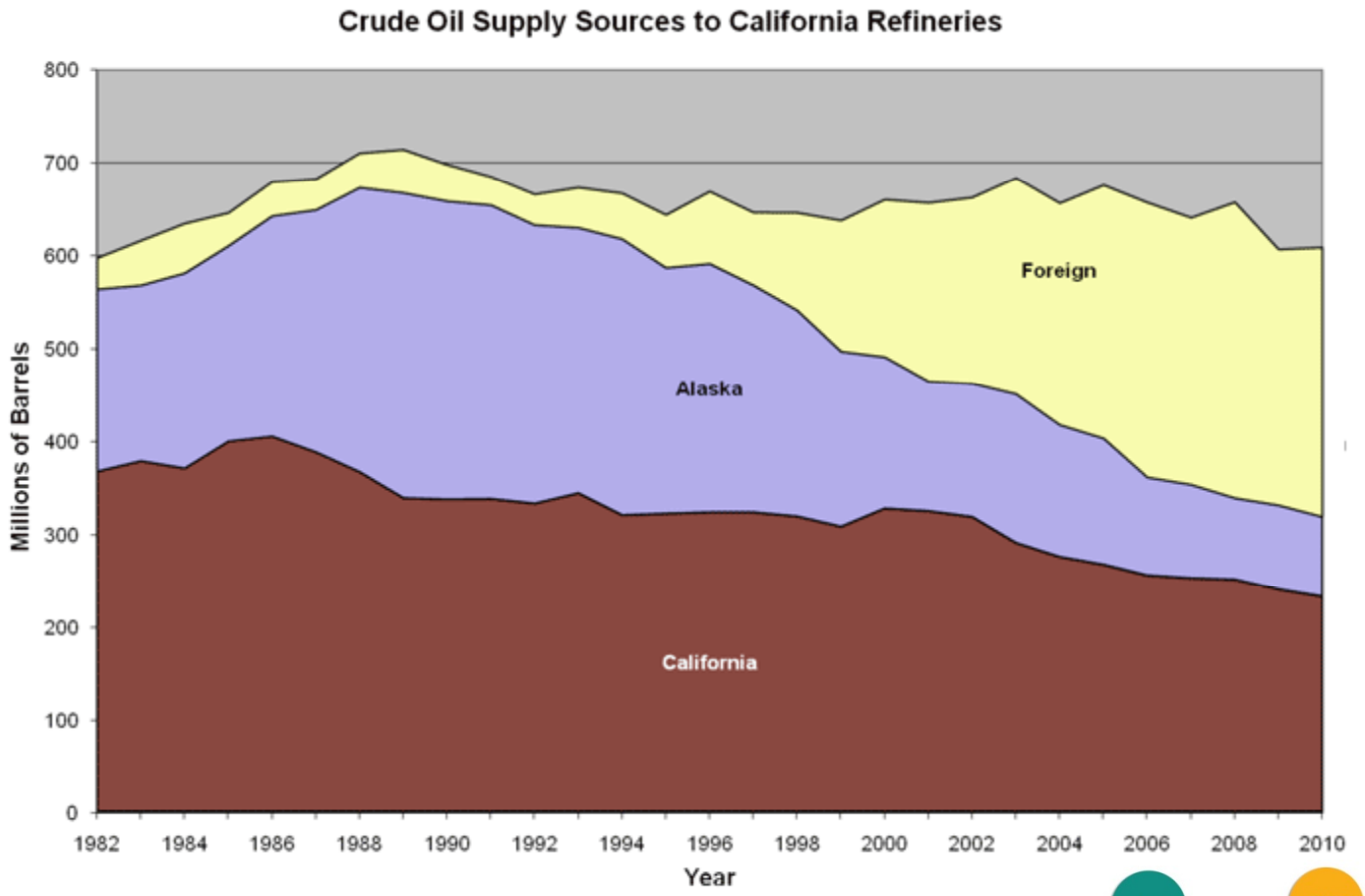
# California Shale Oil

- New EIA estimate – California's Monterey Shale formation contains 15.4 billion barrels of technically recoverable oil
- Total California proved reserves are 2.8 billion barrels
- 15 billion barrels could replace all of California's foreign imports for 43 years at current consumption rates



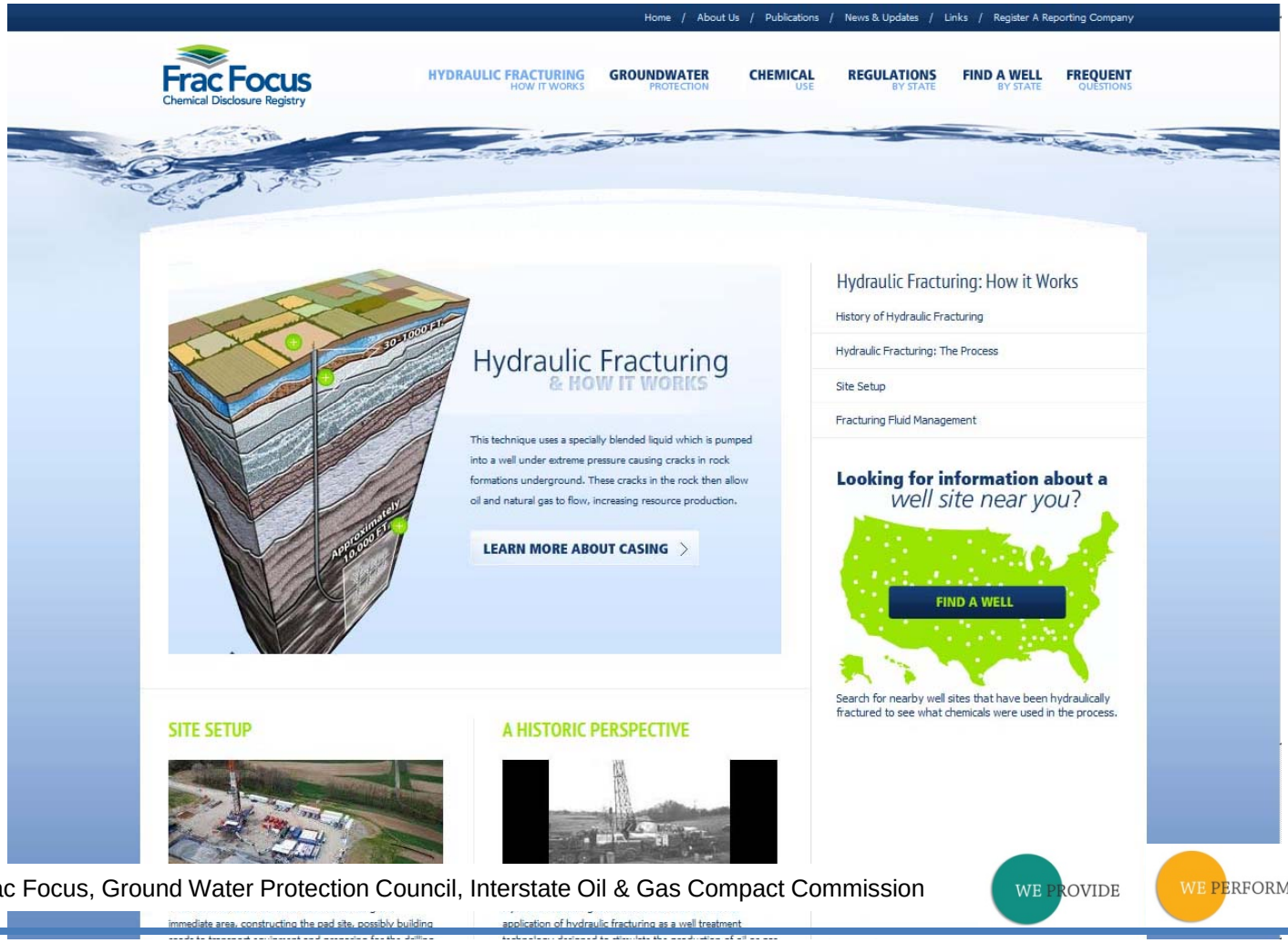

Source: U.S. Energy Information Administration | Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays, July 2011

# Sources of Oil for California Refineries




Source: U,S, Energy Information Administration; California Energy Commission

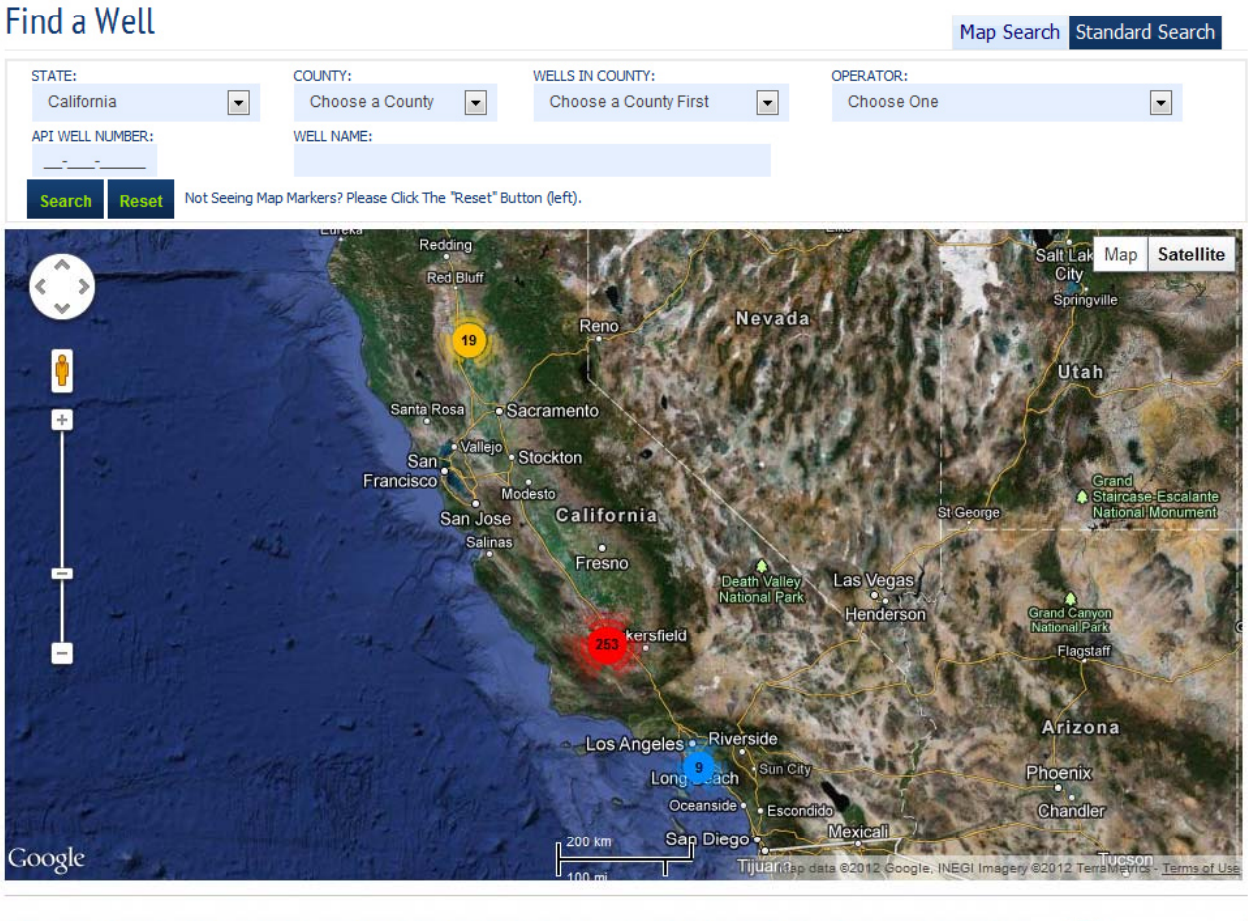
# Voluntary Disclosure






Source: Frac Focus, Ground Water Protection Council, Interstate Oil & Gas Compact Commission

# Voluntary Disclosure




Source: Frac Focus, Ground Water Protection Council, Interstate Oil & Gas Compact Commission

# Voluntary Disclosure

**Hydraulic Fracturing Fluid Product Component Information Disclosure**

| | |
|---|---|
| Fracture Date | 9/15/2011 |
| State: | California |
| County: | Los Angeles |
| API Number: | 0403726720 |
| Operator Name: | |
| Well Name and Number: | VIC 1-330 |
| Longitude: | -118.379139976 |
| Latitude: | 34.006457093 |
| Long/Lat Projection: | NAD83 |
| Production Type: | Oil |
| True Vertical Depth (TVD): | 8,030 |
| Total Water Volume (gal)*: | 168,210 |

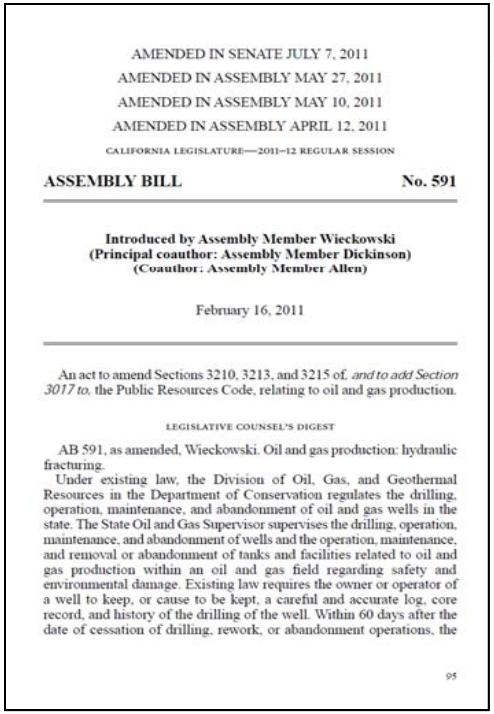
**Hydraulic Fracturing Fluid Composition:**

| Trade Name | Supplier | Purpose | Ingredients | Chemical Abstract Service Number (CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|---|---|---|---|---|---|---|---|
| 7% KCL Water | Operator | | | | 100.00% | 86.77644% | Density = 8.700 |
| SAND - PREMIUM WHITE | Halliburton | Proppant | Crystalline Silica, Quartz | 14808-60-7 | 100.00% | 3.70605% | |
| PRC SAND | Halliburton | Proppant | Crystalline Silica, Quartz | 14808-60-7 | 100.00% | 8.59803% | |
| | | | Hexamethylenetetramine | 1009-7-0 | 2.00% | 0.17196% | |
| | | | Phenol / Formaldehyde Resin | 900303-35-4 | 5.00% | 0.42990% | |
| SSA-2 | Halliburton | Sand | Crystalline Silica, Quartz | 14808-60-7 | 100.00% | 0.35578% | |
| FR-66 | Halliburton | Friction Reducer | Hydrotreated Light Petroleum Distillate | 64742-47-8 | 30.00% | 0.01335% | |
| LOSURF-300M™ | Halliburton | Surfactant | 1,2,4 Trimethylbenzene | 95-63-6 | 1.00% | 0.00079% | |
| | | | Ethanol | 64-17-5 | 60.00% | 0.04763% | |
| | | | Heavy Aromatic Petroleum Naphtha | 64742-94-5 | 30.00% | 0.02382% | |
| | | | Naphthalene | 91-20-3 | | | |
| | | | -,Branched | | | | |

Source: Frac Focus, Ground Water Protection Council, Interstate Oil & Gas Compact Commission

# Mandatory Disclosure: Assembly Bill 591

- Author: Assemblyman Bob Wieckowski, (D-Fremont)
- Sponsor: Environmental Working Group
- Requires disclosure of all chemicals used in hydraulic fracturing operations
- Information to be posted on DOGGR website
- Information to be well-specific
- WSPA position – support with appropriate protections for trade secrets
- Bill status: Pending action in 2012



AMENDED IN SENATE JULY 7, 2011
AMENDED IN ASSEMBLY MAY 27, 2011
AMENDED IN ASSEMBLY MAY 10, 2011
AMENDED IN ASSEMBLY APRIL 12, 2011
CALIFORNIA LEGISLATURE—2011–12 REGULAR SESSION

**ASSEMBLY BILL** **No. 591**

**Introduced by Assembly Member Wieckowski**
**(Principal coauthor: Assembly Member Dickinson)**
**(Coauthor: Assembly Member Allen)**

February 16, 2011

An act to amend Sections 3210, 3213, and 3215 of, *and to add Section 3017 to,* the Public Resources Code, relating to oil and gas production.

LEGISLATIVE COUNSEL'S DIGEST

AB 591, as amended, Wieckowski. Oil and gas production: hydraulic fracturing.

Under existing law, the Division of Oil, Gas, and Geothermal Resources in the Department of Conservation regulates the drilling, operation, maintenance, and abandonment of oil and gas wells in the state. The State Oil and Gas Supervisor supervises the drilling, operation, maintenance, and abandonment of wells and the operation, maintenance, and removal or abandonment of tanks and facilities related to oil and gas production within an oil and gas field regarding safety and environmental damage. Existing law requires the owner or operator of a well to keep, or cause to be kept, a careful and accurate log, core record, and history of the drilling of the well. Within 60 days after the date of cessation of drilling, rework, or abandonment operations, the

95

# Local Opposition



# State Fact Finding and Rulemaking

Workshops

- Bakersfield - May 16
- Ventura - May 30
- Culver City - June 12
- Long Beach - June 13
- Salinas - June 27
- Santa Maria - July 11
- Sacramento - July 25


Tim Kustic, oil and gas manager of the California Department of Conservation, at Santa Maria workshop July 11, 2012

Rulemaking beginning late Summer or early Fall, 2012

# Thank You!