

Hydraulic Fracturing in Culver City and the Baldwin Hills

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In addition to references cited over 20 other articles were read in preparation of this document, completed May 29,2012.

The following outline offers my understanding of this now world-wide controversial issue.

1. What is hydraulic fracturing (HF) or fracking?
2. A bit of history with a brief overview of HF's costs and benefits.
3. Culver City related HF issues.
4. Legal precedents.
5. Common sense criteria.

1. What is hydraulic fracturing or fracking?

According to the Oxford English Dictionary, hydraulic fracturing is “the forcing open of fissures in subterranean rocks by introducing liquid at high pressure, especially to extract oil or gas.” Fracking is a common term used for this process of hydraulic fracturing.

This supposedly common, 60 year old practice in the petroleum industry has no common definition. Our neighbor, Plains Exploration and Production (PXP) in one of the documents on its website alludes to a number of definitions of hydraulic fracturing (some of which use the term to define the term).

Early on when Supervisor Ridley-Thomas held informative hearings, Jon Peirson who monitors the field told the audience that PXP was doing nothing more than “gravel packing”-- his euphemism for a definition I requested of Dr Tom Clyde Williams, another Industry expert.

According to Williams, hydraulic fracturing is the “**Injection of liquids into a formation at sufficient pressure to exceed the formation's fracture pressure** - force great enough to raise the formation and breaking it in less than 12-24 hours (Rock weighs 2-3 time more than water - fracking pressure would be sufficient to lift that weight).”

Neither mention that the liquids/proppants utilize thousands of gallons of water laced with proprietary carcinogenic chemicals produced and injected by Halliburton, nor that inherent in this process is seismicity which may induce earthquakes.

(I sometimes wonder if Halliburton thinks corporately of this field in which they inject the chemicals-- as a monetary win-win; for if they get to extrude oil & gas they can make millions, and if this process triggers “the Big One” they stand to make billions cleaning up the devastation.)

2. Brief History & Costs-benefits analysis of fracking

Keeping our focus on Culver City and the Baldwin Hills, let's look at the promised benefits and related costs of hydraulic fracturing.

Benefits: Intended benefits are cheap energy, jobs, additional revenue for City, County and State governments. Unspoken benefits sought by any corporation include dividends to stockholders, with senior management keeping their high paying jobs and earning bonuses if...

The promise of “cheap energy” from the touted 60 years of fracking belies the fact of ever rising gasoline prices. And given our free market system, how can PXP tout “California Oil for California's Energy Needs?” How can PXP assure the oil it produces will stay in California or even in the United States?

Costs: The price tag of these promised benefits primarily affect the communities in which fracking takes place as they pay the hidden costs. How so?

The Bush-Cheney administration created loopholes in major environmental statutes providing the Oil and Gas Industry Exclusions and Exemptions. Following is a direct quote from a 2007 report.

The Oil and Gas Industry’s Exclusions and Exemptions to Major Environmental Statutes written by Renee Lewis Kosnik, MSEL, JD Research Director, **Oil and Gas Accountability Project:**

Executive Summary

The oil and gas industry enjoys sweeping exemptions from provisions in the major federal environmental statutes intended to protect human health and the environment. These statutes include the:

- **Comprehensive Environmental Response, Compensation, and Liability Act**
- **Resource Conservation and Recovery Act**
- **Safe Drinking Water Act**
- **Clean Water Act**
- **Clean Air Act**
- **National Environmental Policy Act**
- **Toxic Release Inventory under the Emergency Planning and Community Right-to-Know Act**

This lack of regulatory oversight can be traced to many illnesses and even deaths for people and wildlife across the country. There are a variety of chemicals used during the many phases of oil and gas development. These chemicals also produce varying types of waste throughout these processes. Because of the exemptions and exclusions, toxic chemicals and hazardous wastes are permeating the soil, water sources and the air threatening human health to an alarming extent.

For the entire document see

<http://www.earthworksaction.org/files/publications/PetroleumExemptions1c.pdf?pubs/PetroleumExemptions1c.pdf>

Culver City and Baldwin Hills Fracking Concerns

Findings from a PXP sonar study showed there are oil and gas reserves under Culver City residences and homes. The EIR-CSD indicates PXP plans to drill approximately 60 wells in Culver City by 2015 and another 40 by 2028. Their plan includes four wells to be drilled from the surface area of the oil field horizontally under Ballona Creek and into the Sentous formation which is at about 10,000 feet deep.

PXP has been successful at exploiting this rock formation using hydraulic fracturing as a well stimulation technique. As part of the litigated CSD Settlement, PXP is preparing a Hydraulic Fracturing Study. My concerns:

^ For this study PXP is studying a well they have fracked *vertically* to create a model for the planned *horizontal* drilling. If the Baldwin Hills striations, water deposits and rock formations were straight across like a layer cake, using (A) a study of a vertical well to predict (B) results of more than two mile long horizontal wells, the model might work. However, given the instability of this land (remember the collapse of the Baldwin Dam) and the fact that its formations are very convoluted, the study seems to be more *pro forma*

than predictive of potential hazards.

^ I wonder if PXP's plans to drill 100 wells in Culver City are inflated numbers? This is an often used negotiating tool in development strategy, which makes developers look like they are offering concessions when they allow cut backs. In fact PXP did this when they first stated their intention of drilling 1000 new wells in the Baldwin Hills, then conceded to 600, and then settled for 500.

^ PXP reports using over 160,000 gallons of water per well fracked vertically. For horizontal drilling or fracking "two to five million gallons of water may be

necessary to

fracture one horizontal well in a shale formation." This is from the EPA Study <http://www.epa.gov/safewater/uic/pdfs/hfresearchstudyfs.pdf>

In our drought-ridden state, should use of water for oil take precedence over water needed for human and agricultural use?

^ The **Newport-Inglewood Fault** is a right-lateral fault in Southern California. The fault extends for 75 kilometers (47 mi) from Culver City southeast to Newport Beach at which point it runs out into the Pacific Ocean. The fault can be seen on the Earth's surface as line of hills extending from Signal Hill to Culver City. The fault has a slip rate of approximately 0.6 millimeter/year (0.02 in/year) and is predicted to be capable of a 6.0–7.4 magnitude earthquake on the moment magnitude scale. From http://en.wikipedia.org/wiki/Newport-Inglewood_Fault

^ Given the proximity of the oil field to this and another Alquist-Priolo Earthquake Fault area, whose active 7.4 fault line also runs in the vicinity, is it in the best interests of the 300,000 residents that live on the perimeter of the Baldwin Hills Oil Field, as too our beach adjacent neighbors who will suffer the concomitant tsunami, to allow our elected leader to permit this controversial drilling practice before all safeguards are in place and communities in the danger zones are adequately prepared?

4. Legal Precedents

If Culver City's elected officials, as too our County Supervisors intend to honor their fiduciary responsibilities to the people's welfare, in good conscience they must require more of PXP than a study done on an inadequate model. Given the health and safety risks involved in this highly controversial form of oil production, our officials can follow the precedents of a city, a state and a nation that have put a moratorium or ban on fracking until it is proven safe.

In 2010, the City Council of Pittsburgh voted unanimously (9-0) to ban fracking. "Drafted by the Community Environmental Legal Defense Fund (CELDF), Pittsburgh's ordinance elevates the rights of people, the community, and nature over corporate "rights" and challenges the authority of the state to pre-empt community decision-making." **"With this vote we are asserting the right of the city to make critical decisions to protect our health, safety, and welfare. -Pittsburgh Councilman Doug Shields"**

Both excerpts from <http://www.yesmagazine.org/people-power/pittsburg-bans-natural-gas-drilling>

On May 16th in Vermont, “Gov. Peter Shumlin signed into law the nation’s first [state-level] ban on a hotly debated natural-gas-drilling technique that involves blasting chemical-laced water deep into the ground. . . . Shumlin said the increased amounts of natural gas obtainable through hydraulic fracturing were not worth the risk to drinking-water supplies. In the coming generation or two, “drinking water will be more valuable than oil or natural gas.”

<http://www.vindy.com/news/2012/may/28/vermont-becomes-first-state-to-ban-frack/>
According to CNN he also said, "This bill will ensure that we do not inject chemicals into groundwater in a desperate pursuit for energy," The science behind fracking is "uncertain at best," Shumlin declared.

<http://www.reuters.com/article/2012/05/23/tagblogsfindlawcom2012-injured-idUS365234324120120523>

In a similar vein, a year ago France voted to ban fracking. According to the *Business Insider* the French Parliament voted 287-176 to ban hydraulic fracturing or fracking.

http://articles.businessinsider.com/2011-05-12/news/30004330_1_shale-gas-fracking-hydraulic

In early May 2012, speaking at the 13th International Oil Summit in Paris, French economy minister Eric Besson said that France could reconsider its ban on the use of hydraulic fracturing in the exploration of shale gas if the technique can be proven to be safe. “He said that so far, shale gas explorers had been unable to prove that hydraulic fracturing, or fracking, was not harmful to the environment.

"That doesn't mean the subject is closed -- it could be reopened tomorrow," Besson said, adding that by tomorrow he meant over the next few years. But this would only happen if operators "can prove the safety of the technique."

<http://www.platts.com/RSSFeedDetailedNews/RSSFeed/NaturalGas/8255711>

5. Common Sense Criteria: The Precautionary Principle & Informed Consent

The Precautionary Principle

As countries, states and cities struggle to balance their budgets while protecting the common good, lawmakers need to look at Precautionary Principle approaches to resolve these very real concerns regarding potential harm from hydraulic fracturing for gas and oil.

“In some legal systems, as in the law of the European Union, the application of the precautionary principle has been made a statutory requirement.” from

http://en.wikipedia.org/wiki/Precautionary_principle. Also

The precautionary principle or precautionary approach states that if an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that the action or policy is harmful, the burden of proof that it is *not* harmful falls on those taking the action.

This principle allows policy makers to make discretionary decisions in situations where there is the possibility of harm from taking a particular course or making a certain decision when extensive scientific knowledge on the matter is lacking.

The principle implies that there is a social responsibility to protect the public from exposure to harm, when scientific investigation has found a plausible risk. These protections can be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result.

A precedent for using this approach is found in our own Federal Drug Administration (FDA) policy which demands that corporations prove that their substances “Do no harm” before they can market them.

Informed Consent

Given that PXP is planning to drill under our homes, in addition to the Precautionary Principle, the changes to the Culver City municipal code in respect to hydraulic fracturing should also include:

1. That all property owners and residents in and near the horizontal drilling areas be duly informed by the City of the potential risks to their health, safety and property.
2. PXP files with the City all letters from property owners who gave their mineral rights to PXP.
3. That PXP needs to instruct all property owners regarding areas in their homes or buildings that may be adversely affected from the underground drilling.
4. That property owners may file photos/videos of their property where potential damage may occur.
5. That PXP indemnify the property owners and pay for any damages that may occur; that the burden of proof lies with PXP if property owners have filed photos/videos with the City before drilling occurred, such as those of previously sound foundations, door jambs, etc.
6. That PXP put up sufficient funds in an escrow account that will pay for any damages or loss of life occurring within Culver City from its oil & gas production, with burden of proof on PXP regarding liability.
7. That PXP not begin any hydraulic fracturing or “gravel packing” or horizontal drilling until it can prove to the citizenry and not just assume or extrapolate from a vertical model study that its processes are safe and pose no hazard to our health or safety; and that PXP's wells are in full compliance with the recent EPA requirement to capture toxic air emissions.
8. That PXP pay for our Fire Department's Disaster Preparedness Coordinator and Staff to provide all at-risk areas with Neighborhood Emergency Response Teams (NERT) trainings and also establish Community shelter areas, carrying out evacuation drills and also teaching all how to shelter-in-place in case of emergency. Areas especially at-risk include Blair Hills, Raintree, Tara Hill, Lakeside, Culver Crest and Marycrest Manor, as too our neighbor, WLA College, and our schools.
9. That the City provide unbiased public education regarding the pros and cons of this controversial process and that until affected residents give their informed consent in writing, PXP cannot engage in horizontal drilling in Culver City.

Addendum: <http://www.latimes.com/business/la-fi-hiltzik-20120608,0,1622100.column>

