

November 8, 2011

Patrick Alford, Planning Manger
City of Newport Beach
3300 Newport Boulevard
Newport Beach, CA 92663



Dear Mr. Alford:

Please let it be noted that I object to approval of the Banning Ranch DEIR in its present form and request that the comments below, along with all references, be incorporated into the official record of proceedings of this project and its successors.

Because Banning Ranch is and will continue to be an operating oil field, even after the development is done and families are living on the property, and because there will be children and adults exercising on the soccer fields, baseball diamond and tennis courts proposed for Sunset Ridge Park and the community/sports park near 15th Street, I'm writing in regard to the impact of contaminants like mercury and methane gas on exercising children and adults.

Oil wastes contain dangerous toxins, including benzene, a known carcinogen, toluene, arsenic, lead and barium, along with radioactive material and various treatment chemicals, such as mercury, which can be lethal at levels as low as 0.1 parts per million. Further, oil wastes are not regulated by the EPA, and there is no indication in the Banning Ranch DEIR's Chapter 4.5, Hazards and Hazardous Materials, that the oil field operations have been tested for mercury, which would include the oil wastes.

Frank Tamminen, author and environmental policy advisor makes videos on the health and environmental effects of oil pollution. Below is a transcript of his video on the effects of mercury on the human body:

Oil Wells: What are the effects of mercury on the human body?

Mercury is one of the more insidious toxins with respect to human health because we bio-accumulate it. That means, for example, if you ate one aspirin every single day you would be perfectly fine for your entire life, and there is some evidence it would be good for your health. If you took the same amount of mercury every day it would build up in your system day after day after day until it killed you. Frankly, if you took that much you would be dead within the year.

http://www.dailymotion.com/video/xg6d18_oil-wells-what-are-the-effects-of-mercury-on-the-human-body_lifestyle#rel-page-1

In a detailed study ["Mercury in Petroleum and Natural Gas: Estimation of Emissions From Production, Processing, and Combustion" (PDF) (79 pp,

1.03 MB) (EPA/600/R-01/066) September 2001], the U.S. Environmental Protection Agency (EPA) describes what is known about mercury as a byproduct of oil production. Here is a brief excerpt:

“Mercury is a trace component of all fossil fuels, including natural gas, gas condensates, crude oil, coal, tar sands, and other bitumens. The use of fossil hydrocarbons as fuels provides the main opportunity for releasing emissions of the mercury they contain into the atmospheric environment, but other avenues also exist in production, transportation, and processing systems.”

<http://www.epa.gov/nrmrl/pubs/600r01066/600r01066.htm>

And this, from *Pipeline*, an international newsletter for the energy industry:

“[...] The dangers of mercury stem from the toxic vapour it emits at room temperature. Unlike hydrogen sulphide (H₂S) mercury vapour cannot be seen or smelled and is therefore a silent killer.

About 70% of mercury that is inhaled is retained by the body. The mercury then enters the *blood stream and is able to cross the blood brain barrier with harmful long term effects*. It takes approximately 20 years for one teaspoon of mercury to evaporate. One gram of mercury can pollute a 20-acre lake causing the fish in that lake unsafe to eat.

How common is mercury exposure in the oil and gas industry?

On a daily basis, it is very common for people in the oil and gas industry to be exposed to mercury vapour at dangerous levels. Remember this is the same material that we used to handle in school science classes. No one had any idea it was giving off a toxic vapour.

Where would you find mercury? Is it through drilling, exposing naturally occurring mercury or a by-product of the chemical processes utilised in refining?

Mercury is found in almost all oil and gas reservoirs. Highest concentrations are normally found from reservoirs in South America, Australasia and the Middle East. European, African and North American gas sources also contain mercury while lower concentrations are found in the North Sea. The more mature and deeper reservoirs seem to have more mercury.

Mercury is a challenge to the industry with regard to corrosion/fouling of piping and equipment, product quality specifications, and Health, Safety and Environment aspects. Monitoring of mercury levels is important due to system integrity, gas specifications, surrounding environment and work environment.”

http://www.pipelinecommunity.com/index.php?option=com_content&view=article&id=276%3Amercury-and-solace-catid=44%3Afeatures&Itemid=13

Given that mercury is a product of crude oil extraction and processing and the potential releases of mercury wastes are to air, water and land, what tests for mercury contamination are routinely done by the Banning Ranch oil field? What tests have been done and what are the results?

How are oil wastes containing mercury stored on Banning Ranch? What is the operation's mercury recovery system? Is there a compliance and monitoring inspection program in place?

Methane gas is also a hazard, particularly on oil fields developed for residential use and where oil exploration and production is still ongoing, as is the case with Banning Ranch.

On page 4.5-7 of the Hazards and Hazardous Materials section, it describes the discovery of a highly elevated concentration of methane gas near the Main Drill Site Tank Farm, which prompts questions about safety and human health impacts.

The paragraph in question reads as follows (emphasis added):

“Twenty-three areas were identified as areas of PECs (Exhibit 4.5-1). The Project site is impacted primarily by petroleum hydrocarbons. Seven of the 23 PECs (1) investigated showed significant hydrocarbon impacts beyond surface areas. During the soil evaluation, soil gas was observed bubbling in a Lowland pond near REC/PEC3 #02 – Main Drill Site Tank Farm, and samples were collected. **Analytical results indicate elevated methane concentrations, measured up to 73.2 percent (2) of the collected vapor with no hydrogen sulfide detected.** This indicates a natural origin from the marsh area. There were no indications of soil gas observed in the Upland (e.g., odors indicating a release from soils or abandoned wells) (3) (Geosyntec 2009).”

The above paragraph can also be found on page 8 of Geosyntec's 2009 Draft Remedial Action Report that was prepared for Newport Banning Ranch LLC, with the exception of one sentence: “This indicates a natural origin from the marsh area.” In checking the BR DEIR's Exhibit 4.5-1, which locates all the PECS on a map of Banning Ranch, there doesn't appear to be anything that could be called a marsh near the Main Drill Site Tank Farm. Is that a reference to the Acoe Wetlands Restoration Area to the west? If so, were the wetlands also tested for methane? Is the lack of hydrogen sulfide the only reason to think methane found in the pool near the tank farm was from a natural source? Does natural methane normally form vapors with concentrations as high as 72.3%? With a concentration that high, it would seem very important to know the exact source, especially since tank farms are for oil storage and a concentration that high could indicate a leak. Was the tank farm checked for leaks?

The legend of Exhibit 4.5-1 mentions that PECs 13 and 14 were grouped with other PECs, but doesn't describe them. What were PECs 13 and 14 originally? It also states that PECs 25 and 26 are non-specific PECs. It describes PEC 26 as drilling mud sumps and oil well sumps. Were these

sumps used for oil wastes? Where are the oil wastes currently stored on Banning Ranch? Are they above ground, below ground or both? Have the oil wastes ever been tested for contaminants or for fugitive emissions?

(1) Which 7 PECs showed significant hydrocarbon impacts beyond surface areas? How far down did the impacts go and what will be done to determine their depth? What was or will be done to remediate these areas? Has Geosyntec repeated this field sampling since 2001 to determine current methane levels? Have any of these findings been verified by independent expert analysis?

(2) Shouldn't testing have been done to assure that soil gas wasn't present in the upland areas, especially given that there are over 300 abandoned wells on Banning Ranch, likely improperly capped and subject to seepage of methane and other toxins? Is a smell test enough? Shouldn't current field sampling be done on soil gas because it was detected in such high concentrations in the lowlands? How can a DEIR (Draft Environmental Impact Report) be an accurate assessment of the contamination and possible health *impacts* without current sampling? No environmental impact report should be considered complete, nor should it be approved, without up-to-date and accurate sampling, including verification of that sampling by independent experts.

(3) The 2001 analysis found methane concentrations up to 73.2%. What are the dangers of that high a concentration? This sampling was done a decade ago. In 2011, have methane gas concentrations been ruled out in all other areas of the oil field operations? Given that methane is highly combustible and extremely dangerous, shouldn't field samples be taken in advance of development to assure that high methane concentrations don't now exist? How can environmental impacts be adequately addressed and the safety of future residents of the development be assured without such information?

Also, why weren't the health impacts of methane gas mentioned in this DEIR, especially since methane replaces oxygen in the air, which is of particular concern for athletes and children and teens, who breathe in 30% more air while exercising? The development is adjacent to Sunset Ridge Park, which will have a soccer field, a baseball diamond and areas for children to run and play, and it has a planned community/sports park with three soccer fields and six to eight tennis courts, so the health impacts of methane will have much more significance. In addition, there will be health impacts to the students of Carden Hall, a grade school adjacent to the development, and to the students of the community college that's currently under construction next to Carden Hall.

“What are the main health hazards associated with breathing in methane?” (emphasis added)

Methane is not toxic below the lower explosive limit of 5% (50000 ppm). However, when methane is present at high concentrations, it acts as an asphyxiant. **Asphyxiants displace oxygen in the air and can cause symptoms of oxygen deprivation (asphyxiation).** The available oxygen should be a minimum of 18% or harmful effects will result. Methane displaces oxygen to 18% in air when present at 14% (140000 ppm). It is not expected to cause unconsciousness (narcosis) due to central nervous system depression until it reaches much higher concentrations (30% or 300000 ppm) - well above the lower explosive limit and asphyxiating concentrations.

Effects of oxygen deficiency are:

12-16% - breathing and pulse rate are increased, with slight muscular incoordination;

10-14% - emotional upsets, abnormal fatigue from exertion, disturbed respiration;

6-10% - nausea and vomiting, inability to move freely, collapse, possible lack of consciousness;

Below 6% - convulsive movements, gasping, possible respiratory collapse and death.

Since exercise increases the body's need for oxygen, symptoms will occur more quickly during exertion in an oxygen-deficient environment. Survivors of oxygen deprivation may show damage to some or all organs including the central nervous system and the brain. These effects may or may not be reversible with time, depending on the degree and duration of the low oxygen and the amount of tissue injury. [...] Under stressful conditions and with exposure to high concentrations, the effects of cardiac sensitization may be important for some hydrocarbon gases. The asphyxiant effects of methane may enhance cardiac sensitization.”

http://www.ccohs.ca/oshanswers/chemicals/chem_profiles/methane/health_met.html#_1_1

Another area of great concern is the health risks of pollution generated during the Project development when construction and remediation will be done concurrently, resulting in significant and unavoidable impacts. In the Air Quality section of the DEIR, it states that potential exceedances of NO_x will be caused due to questions of the availability of Tier 4 construction equipment. The Air Quality section also states that after the development, air pollutants like ozone and NO_x will continue to cause significant and unavoidable impacts because the Project development's growth will create increasing energy requirements and traffic impacts.

Therefore, children will be breathing in hazardous pollutants while they are playing in the parks next to and on the development, as will exercising adults. And there will be no end in sight to this exposure because as

remediation and construction end, the health risks don't. The exposure continues unabated, caused by the rising traffic volume and congestion.

Detailed information on the health risks of NOx and ozone can be found on the EPA web site as follows:

NOx: <http://www.epa.gov/air/nitrogenoxides/health.html>

Ozone: <http://www.epa.gov/apti/ozonehealth/population.html>

In summary, NOx creates small particles that penetrate deeply into sensitive parts of the lungs. It can cause respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admission and premature death. Breathing in higher concentrations of ozone is associated with increased asthma attacks, increased hospital admissions, decrements in lung function and inflammation, increased daily mortality and other markers for morbidity.

In light of these concerns, doesn't the city have an obligation to ensure that toxic exposure is minimized in every way possible, especially for children whose immune system is not mature? As stated, the children in question are those who will play on the parks' four soccer fields, its baseball diamond and its tennis courts. It's the school children of Carden Hall and any children who live adjacent the property as nearest sensitive receptors, or in the tightly wrapped surrounding communities. It's the young adults who will be attending Coastline Community College on 15th Street, adjacent the property. It's also the elderly, the infirm and those suffering respiratory conditions, cancers or other wasting illnesses. Can these toxic health risks be ignored in favor of the overriding public benefits that the City Council refers to in their Statement of Overriding Considerations? It's hard to imagine what benefits the public more than their health and well being. It's even harder to imagine what could take a greater toll on the public than the poisoning of the very air they breathe as they exercise.

Thank you for your consideration of these concerns. I look forward to your response.

Sincerely,



Suzanne Forster
8 Summerwind Court
Newport Beach, CA 92663
blush1996@aol.com