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March 13, 2015

Ms. Adele Lagomarsino  
California Department of Conservation  
Division of Oil, Gas and Geothermal Resources  
801 K Street, MS 18-00  
Sacramento, CA 95814

CC: Office of Administrative Law  
Mark Nechodom  
Steve Bohlen

Attn: DRAFT ENVIRONMENTAL IMPACT REPORT REQUIRED BY PUBLIC RESOURCES CODE SECTION 3161, SUBDIVISION (B)(3) AND (4), PURSUANT TO SENATE BILL 4: ANALYSIS OF OIL AND GAS WELL STIMULATION TREATMENTS IN CALIFORNIA

Dear Ms. Lagomarsino,

Thank you for the opportunity to submit written comments on the Draft Environmental Impact Report (DEIR) required by Public Resources Code Section 3161, subdivision (b)(3) and (4), put forth by the Department of Conservation's (DOC) Division of Oil, Gas, and Geothermal Resources (DOGGR). Earthworks is a nonprofit organization dedicated to protecting communities and the environment from the impacts of irresponsible mineral and energy development, while seeking sustainable solutions. For twenty-five years, we have worked nationwide to advance policy reforms, improve corporate practices, and safeguard land and public health. Founded in 1999, the Oil & Gas Accountability Project (OGAP) of Earthworks works with local communities, landowners, organizations, agencies, and elected officials to advance these goals, while also providing information and support to citizens and groups conducting public awareness and advocacy efforts at the local and state level.

We recognize the tremendous time and staff expertise that Aspen Environmental Group (Aspen) has invested in preparing the DEIR, as required by passage of SB4. The subsequent Final EIR must be consistent with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Division 13, commencing with Section 21000) and the State CEQA Guidelines (California Code of Regulations Chapter 3, commencing with Section 15000). The EIR must provide the public with detailed information, and thoroughly and fully evaluate the potential effects associated with oil and gas well stimulation treatments within the State of California (State).

Although the EIR addresses impacts resulting from past, current, and some future well stimulation treatment (WST) activities associated with oil and gas reservoirs, we wish to ensure that it covers all the issue areas as required by CEQA. A full life cycle analysis of increased WST projects, from planning, to construction, to production, to transport, and to use of the extracted fuels, must be included in order to present a full and clear picture of the

process. When negative and adverse potential impacts are detected, mitigation measures, including a halt to all WST activities, and alternatives, must be looked at to minimize the impacts to California's people, economy, and environment.

Given the widespread and large scale nature of the development that is envisioned by the oil and gas industry in the State, and the potentially harmful WST methods that are to be used, DOGGR, acting as the lead agency preparing the EIR, must conduct an in depth, comprehensive analysis to ensure the protection of public health and the environment. Based on the history and records of environmental and health impacts caused by oil and gas development, the significant possibility exists that expanded use of WSTs will have a detrimental impact on water quality, air quality, greenhouse gas (GHG) emissions, and have a disadvantageous effects on the State's most vulnerable communities – subjects that already plague the state, and would exacerbate environmental and social problems locally and nationally.

Several areas of concern arise when reviewing the Draft EIR. The document is divided into nineteen chapters of information, totaling more than 2,700 pages of data, tables, figures, and maps. Unfortunately, the public is being allowed just sixty days to read and comment on this huge, highly technical document. This is an impossible task for citizens, as well as anyone who can contribute valuable information to the environmental review process. The public has the legal right to comment on the Draft, but may not have time to do so. We must be given the time to carefully analyze this data, and ensure the protection of our health, our environment, and our people, from fracking and acidizing. We repeat our formal request for a 120-day extension to the public comment period.

Unfortunately, there is very little or no data regarding public health impacts in the Draft EIR. These impacts must be thoroughly studied for the Final EIR, not by DOGGR, which has no experience in public health issues, but instead, by the California Department of Public Health (CDPH). Based on the history and records of health impacts caused by fracking and acidizing, the significant possibility exists that expanded use of these practices in urban and populated areas will have a detrimental impact on public health. It is essential for DOGGR to consider and guard against negative impacts of unconventional well stimulation — and thus protect people, economy, and the environment of the State.

The Final EIR must contain a comprehensive health risk assessment, conducted by CDPH. WST activities could generate a tremendous amount of air and water pollutants. The Final EIR should include a full emissions inventory with predicted future pollution levels, and a full health risk assessment (“HRA”) that includes the level of toxic risk, as well as pollution that the nearby communities will face from these proposed activities. The HRA should identify all sensitive populations that could be impacted by the project, and accurately assess the toxic air contaminant and criteria air pollutant risks that neighboring residents, workers, and recreational users will have to bear as a result of project related activities.

Earthworks will also continue to push for a broad reach in the Final EIR. Additional subjects of study, such as occupational health, and subjects that will have significant impacts, yet are not identified in the Draft EIR, such as environmental justice, need to be thoroughly and fully studied. Our state's most vulnerable populations, such as those found in areas surrounding the Inglewood oil field in Los Angeles, or those in Kern County, are at the forefront of this issue, and will suffer the most negative impacts. Yet no information (such as this report, the regulations, or other informational materials) are provided by DOGGR in Spanish or other

languages, and no outreach has been done to Hispanic populations. It is imperative to create an inclusive atmosphere to encourage all communities in California, regardless of language barriers, to participate in the process.

The DEIR has identified nine potential significant environmental impacts in the following subject areas:

- Aesthetics
- Greenhouse Gas Emissions
- Air Quality
- Land use and Planning
- Biological Resources: Terrestrial Environment
- Risk of Upset/Public and Worker Safety
- Cultural Resources
- Transportation and Traffic
- Geology, Soils, and Mineral Resources

The Final EIR must present an accurate environmental baseline. Under CEQA, the baseline conditions for determining “significant impacts” are those local and regional conditions that exist when the NOP is made available for review. See CEQA Guidelines, §15125(a) (an EIR must describe the “physical environmental conditions in the vicinity of the Project, as they exist at the time the notice of preparation is published . . . from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.”). The final EIR must include a detailed analysis of the current levels of identified significant impacts, and make a realistic comparison of the environmental impacts of the proposed project versus the existing conditions.

In order to prevent long-term damage, the subject areas must be addressed. In this letter, Earthworks will address two main subject areas: Air Quality and Risk of Upset/Public and Worker Safety.

### ***Air Quality***

Section 10.3 implies that oil and gas development is regulated by agencies at multiple levels of government, including at the local, state, and federal levels. However, the section fails to disclose exemptions on air quality rules enjoyed by the industry. For example, under the Clean Air Act (CAA), exemptions exist to prevent “aggregation” of point source emissions from oil fields.

The CAA states:

(4) Oil and gas wells; pipeline facilities.

(A) Notwithstanding the provisions of subsection (a), emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control, to determine whether such units or stations are major sources, and in the case of any oil or gas exploration or production well (with its associated equipment), such emissions shall not be aggregated for any purpose under this section.

(B) The Administrator shall not list oil and gas production wells (with its associated equipment) as an area source category under subsection (c), except that the Administrator may establish an area source category for oil and gas production wells located in any metropolitan statistical area or consolidated metropolitan statistical area with a population in excess of 1 million, if the Administrator determines that emissions of hazardous air pollutants from such wells present more than a negligible risk of adverse effects to public health.

(42 USC 7412(n)(4).)

This means that emissions from facilities such as pumps, flares, compressors, pipelines, and others, are treated as separate sources, and thus cannot be aggregated to determine overall emissions, such as those from other major sources. Pollutants, such as ozone precursors or particulate matter, emitted at levels greater than 55 pounds per day, or 10 tons per year, are found to have significant impacts on the environment. Since separate facilities do not meet or exceed the 25 tons per year, higher than the recommended 10 tons per year, as required by the CAA ((42 USC 7412(a)(1).), industry is not required to employ best available control technology (BACT) in order to achieve National Emission Standards for Hazardous Air Pollutants.

The final EIR must make all regulations and exemptions on air emissions from oil and gas clear. The final EIR must also include an explanation as to how exemptions can impact air emissions from oil and gas development, as well as identify how future emissions will be calculated under emission inventories.

The DEIR states that expanded WSTs in California will

- Conflict with or obstruct implementation of applicable air quality plans,
- Violate any air quality standards or contribute substantially to an existing or projected air quality violation,
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors),
- Expose sensitive receptors to substantial pollutant concentrations, and
- Create objectionable odors affecting a substantial number of people.

It is predicted that WSTs will increase emissions by increasing the potential for vented and fugitive losses during well completion, by increasing production, and by requiring additional fuel burning equipment. Each district has calculated various levels of planning inventories for air emissions, but increased production from wells, or increased number of wells, will lead to growth in emissions that could exceed the planning inventories, and eventually conflict or obstruct implementation of air quality management plans.

In order to account for increased emissions, air districts must establish increased mitigation and control emissions for WST activities. This will lead to inconsistent plans throughout the State, especially in areas where the greatest growth is predicted, such as Kern and Los Angeles counties. It is also possible that air district may not fully account for future emissions, leading

to incomplete and incorrect air quality plans that do not fully protect public health. BACTs must be required for all oil and gas facilities in order to minimize the impact on air quality plans, and allow for better prediction of future air emission inventories.

California, and in particular, the San Joaquin Valley (SJV), suffers from the worst air pollution in the country, and is classified by the State as a severe nonattainment area with respect to the 1-hour ozone standard, as well as standards pertaining to particulates less than 10 microns (PM10) and 2.5 microns (PM2.5). Additional urban areas, including the Los Angeles Basin and the San Francisco Bay Area, also suffer from severe air pollution. Increased construction activities, traffic, long-term maintenance and operational activities of drilling, transport, and burning of extracted fossil fuels, will generate significant amounts of air pollutants. Facilities classified as sensitive receptors, such as schools and residences, are located throughout planned areas of development, including Los Angeles, Kern, and Ventura counties.

The Final EIR must assess air emissions from all stages of oil and gas recovery, including drilling, completion, well stimulation, production, and disposal. Air toxics and hazardous air pollutants pose a serious risk to human health, and the Final EIR must consider the chemicals potentially used in these processes, as well as the heavy industrial activities themselves, and the possible effects of each chemical on public health and the environment. For example, construction activities associated with the project will result in increased emissions of carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), sulfur oxides (SOx), and PM10 and PM2.5. Cumulative contributions of emissions that will reduce air quality must be properly evaluated to ensure that public health is protected, and determine whether expanded WSTs will conflict with implementation of plans for air quality attainment under applicable state and federal laws.

As stated in the DEIR, California's Air Toxics "Hot Spots" Information and Assessment Act requires operators of significant sources of toxic emissions to provide the affected population with information about risks posed by emissions. Yet, in California, operators often do not meet these standards. In order to mitigate and minimize exposure to toxic air emissions, all applicable laws and regulations meant to inform the general public of the dangers of oil and gas development emissions must be fully implemented. This must include communities surrounding all oil and gas facilities, such as oil fields, pipelines, flares, compressor stations, storage facilities, refineries, and pumps, among others. Information must be presented in a clear format and in languages understood by the local communities.

It is as yet unknown how much production will actually increase from existing wells, or how many additional wells will be drilled in California that use WSTs. Even with implementation of recommended mitigation measures, the DEIR predicts an increase in net emissions from WST activities, and qualifies air quality impacts as a "Class I: Significant and Unavoidable Impact."

### ***Risk of Upset/Public and Worker Safety***

Section 10.21 of the DEIR identifies seven areas where public and worker safety can be affected due to WSTs in California. Three areas are identified as "Class I: Significant and Unavoidable Impacts," meaning that even when mitigation techniques are applied, the effects cannot be reduced to 'less than significant'.

There are several deficiencies in this section, primarily the lack of California specific data, and the listing of all available data from other states. For example, the DEIR cites casing failures at a rate of 0.33%, yet it fails to take into account information from other studies, such as a 2012 study from Pennsylvania, which cited well casing failures from WST operations to be as high as 12% in some cases. In another example, the EIR states that fracturing depths will occur at depths of six to seven thousand feet below the surface, contradicting data from the study presented by the California Council on Science and Technology (CCST), which stated that fracturing occurs at much shallower depths in our state. Additionally, the DEIR cites disposal into “lined” pits for disposal of wastewater, yet recent findings by the California State Water Resources Control Board, and reported by the Los Angeles Times, have identified hundreds of unlined pits throughout the state; many of which are operating without permits. The Final EIR, as an official informational document on WSTs in California, must include all relevant data and studies, and fully inform the public, regulators, and elected officials, of the full effects of WSTs.

Section 10.21 looks at the various ways of transporting oil and gas used to power California’s economy. This includes transport via trucks, rail, pipelines, and shipping. Table 10.28-1 shows a conservative estimate for the maximum number of round trip miles for stimulation water, chemicals, flatbed waste, and auxiliary equipment needed for WSTs in California. In Kern County alone, water trucks alone would drive over 5.8 million miles per year. The strain on local infrastructure, particularly that surrounding oil extraction areas, will be severe, along with the increased risk to the public from accidents and spills.

Because California currently imports a large percentage of crude from other states and countries, the study looks at dangers of continuing imports at current, or higher levels. The DEIR identifies dangerous routes that current rail lines must pass through, and states that “the rail lines travel through ecologically sensitive and urban areas throughout the State.” Although data looking into rail accidents in California is slim, the DEIR fails to list occasions that have severally contaminated the environment, and costs human lives, such as the Lac Megantic incident in Canada.

Transportation by pipelines also brings along with it certain dangers. The DEIR highlights the deficiencies of undetectable leaks, such as pinhole size leaks, which can lead to long-term, undetectable damages to the environment, especially from pipelines located below surface. Disposal and transportation of wastes also poses problems due to high concentrations of chemicals, acids, and naturally occurring radioactive materials (NORMs) in wastewater from WSTs. Materials such as radium and its decay products may dissolve in the brine from produced water, and may remain in the solution or settle out as a sludge, which accumulates in tanks, pits, pipes, and other equipment.

Although Section 10.23 presents good information on the dangers of transporting oil and waste, it fails to achieve the goal of an EIR to present full and impartial information for decision makers. For example, for rail deliveries, the DEIR states any increased risk from increased rail deliveries for hydraulic fracturing activities would be partially offset by the increased production of crude oil in California, which decreases the need to import crude oil from other states by rail.” CEQA mandates the preparation of EIR before a project in order to provide information, mitigation measures, and alternatives to prevent environmental damage. However, the DEIR does not present an alternative to halt WSTs. Instead, Section 10.23 presents a recommendation to increase WSTs activities in order to decrease the dangers posed

by said activities. This is contrary to the spirit of CEQA, and violates the trust the public has placed agencies to safeguard our health and our environment.

In order to maintain public trust, and present clear data, the Final EIR must correct the serious deficiencies found in the DEIR. The DEIR also states that DOGGR cannot design mitigation measures that will reduce emissions, or reduce risk to levels that achieve achieve no net increase. As a consequence, a project alternative that recommends no WSTs in California must be included in the Final EIR.

The best analysis, by itself, cannot protect the public health and the environment from the impacts of oil and gas development. It is necessary for the DOGGR to consider all possible alternatives, as well as all the cumulative impacts associated with expansion of WSTs in the State. The Final EIR must include a comprehensive environmental review, a full economic analysis, a vigorous health impact study, and an extensive public review period to safeguard the public, the environment, and the sustainability of California's economy.

Sincerely,



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