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June 14, 2016

Agenda Item: #14
July 19, 2016

Honorable Board of Supervisors
County of Alameda
1221 Oak Street, Suite 536
Oakland, CA 94612

Dear Board Members:

SUBJECT: Amendment of the Alameda County Zoning Ordinance, specifically General Ordinance Code Section 17.06.100 through Section 17.06.140, to prohibit high intensity oil and gas operations in the unincorporated area.

RECOMMENDATION:

As recommended by the Planning Commission, approve the proposed ordinance with the optional language (Attachment A) that would allow waterflood well enhancement. This recommendation would allow the current operator to continue exploration and primary oil extraction by currently employed methods permitted under its permit from the Division of Oil, Gas and Geothermal Resources (DOGGR), and would also allow secondary well enhancement in the form of limited waterflood enhancement, but would prohibit steam injection, cyclic steaming, and all forms of well stimulation including hydraulic and acid fracturing and acid matrix stimulation.

SUMMARY:

The proposed ordinance shown in Attachment A defines high intensity oil and gas operations in the unincorporated area, including well stimulation by increasing the permeability of the geologic rock formation; enhanced recovery wells that are injected with water and/or various chemicals into oil-bearing formations; hydraulic fracturing; acid fracturing; acid matrix stimulation treatment; acid well stimulation treatment; and disposal or storage of the substances used in or the waste or byproducts of the uses listed above.

The proposed ordinance prohibits these uses, including necessary equipment; it also provides an amortization period of one (1) year in which any existing operations must be brought into compliance with the new requirements, but provides a procedure for an operator to demonstrate a vested right to conduct the prohibited activities, and allows that an exemption could be granted by the Planning Commission in such cases.

The optional <u>underlined</u> language shown in Attachment B, and included in Attachment A, was considered by the Planning Commission, and their final recommendation included the language allowing a limited level of waterflood enhancement (specifically, only use of water that is produced from the well extraction itself – no imported water, clean groundwater or surface water; also, no added chemicals designed to increase oil production).

Routine well maintenance and clarification chemicals for regular well extraction could be used. This would allow the existing operator to maintain or increase production levels in its existing well field into the future. It would also permit other operators to use this well enhancement technique on other production sites.

Perspectives on the Draft Ordinance and Oil Production in General

There are many viewpoints on the Draft Ordinance and Oil Production, based on comments and letters received to date.

- Oil industry representatives view the Draft Ordinance unfavorably, assert that the proposed ordinance would encroach upon areas pre-empted by state law on oil and gas operations, and would prefer that the regulation of oil and gas production be left fully to the State of California.

- E&B Natural Resources, the operator, has stated the following specific concerns with the recommended version of the Ordinance:

  - The draft ordinance prohibits E&B from being able to dispose of wastewater.
  - The proposed findings do not support a ban on water injection.
  - The draft ordinance prohibits routine maintenance using dilute acid.
  - The ordinance creates new definitions for standard regulatory terms.
  - The vested rights process unfairly panelizes E&B, and makes it costly and difficult to show that their existing operations do not violate the new rules.

  Staff believes that most of the substantive issues from E&B are addressed by the current language in the proposed ordinance. E&B continues to express disfavor with the draft, but has stated publicly that they believe they can work with the ordinance as recommended by the Planning Commission.

- The environmental community has favored adoption of the strongest possible restrictions on high-intensity oil and gas operations, citing the threat of climate change and the necessity to keep fossil fuels in the ground. They have cited concerns including air quality, water quality (both surface and groundwater), seismic safety concerns, and localized health effects. They cite successful efforts elsewhere in California to prohibit such activities.

- Property owners and royalty owners have expressed opposition to the ordinance because of the negative impact it will have on mineral and royalty owners in Alameda County. They assert that the ordinance would take away the rights of property owners to access the full value of their land, and that the ordinance would prohibit safe and permitted technologies, including water injection, that could take away the income that royalty owners rely on. They assert that the Draft Ordinance is unconstitutional, and may result in takings claims.

- The scientific and engineering community has the opinion that hydraulic fracturing and other well stimulation techniques, while having been implemented for many decades, have not received an adequate level of analysis and monitoring to conclude whether these methods of oil production can be conducted safely in terms of the environment and public health and welfare. In California, this opinion is exemplified by an analysis entitled An Independent Scientific Assessment of Well Stimulation in California - An Examination of Hydraulic Fracturing and Acid Stimulations in the Oil and Gas Industry, (various authors, California Council on Science and Technology, July 2015). This analysis broadly concludes that more data collection, analysis and monitoring should be

conducted to determine the effects of well stimulation techniques on the environment and the adequacy of regulations, and that until these are determined, caution should be used in all such permits and operations. Although outside the specific scope of the study, the report also concludes that "The majority of impacts associated with hydraulic fracturing are caused by the indirect impacts of oil and gas production enabled by the hydraulic fracturing," and that "Agencies with jurisdiction should evaluate impacts of concern for all oil and gas development, rather than just the portion of development enabled by well stimulation. As appropriate, many of the rules and regulations aimed at mitigating indirect impacts of hydraulic fracturing and acid stimulation should also be applied to all oil and gas wells" (Recommendation 3.3). The Executive Summary for this analysis is included as Attachment C.

All of the letters received to date are included in Attachment D.

Comparison of Wastewater Injection with Waterflood Well Enhancement

Much of the recent discussion at the Planning Commission has centered on whether waterflood well enhancement should be permitted, allowing E&B Natural Resources to continue producing oil after the most easily accessible oil is depleted. The optional language, which is part of Attachment A and underlined in Attachment B, addresses this issue.

Simply put, waterflood is a technique that uses water produced as a by-product of extracting oil, pumps this "process" water back into the ground to push more oil towards production wells where it can be extracted. This process can be repeated over a prolonged period of time. The Planning Commission action to exclude limited waterflooding from the definition of high intensity operations would allow the existing operator to maintain or increase production levels in its existing well field into the future. A more comprehensive discussion of this issue of waterflood is presented in Attachment E.

Under current County regulations, waterflood well enhancement could already be permitted; whether it could be permitted under the new ordinance revision depends upon whether the Board adopts the optional language or not. The Board should note that, although it is not fracturing per se, waterflood enhancement would be a new activity in the County, and could potentially extend the life of production wells, as well as stimulate new oil production and provide other operators an option for opening new wells on other sites. Given that the probable impact of wastewater injection and waterflood are largely similar (but done for different reasons) the optional language (in Attachment A and shown explicitly in Attachment B) would likely result in longer production and possibly significant increases in production. If the Board chose to minimize the potential for lateral wastewater migration, greenhouse gas emissions and other possible environmental effects, it could choose to adopt the draft Ordinance without the optional language (underlined language in Attachment B would be removed).

Planning Commission Consideration and Action

The Planning Commission heard this matter over five substantial sessions. After the Agricultural Advisory Committee had expressed its non-opposition to an ordinance that would minimize high-intensity oil and gas production but still allow oil exploration and extraction, the Planning Commission voted 6-0, no abstentions, to recommend to your Board the Ordinance as shown in Attachment A, with optional language that would specifically allow waterflood techniques under limited conditions. All other well enhancement and stimulation methods, including steam injection, cyclic steaming, hydraulic and acid fracturing and acid matrix stimulation would be prohibited.

The most recent three Planning Commission staff analyses and the Resolution of May 23, 2016 are included as Attachment F.

Conformance with the General Plan

No passages in the General Plan support or restrict oil or gas exploration, extraction or production. Policy 167 conditionally permits the oil and gas use. The changes proposed would continue general oil and gas operations as a conditionally permitted use, and would be in conformance with the General Plan.

Environmental Review

This action is exempt from the requirements of CEQA pursuant to CEQA Guidelines Sections 15378 "Not a Project," 15307 Class 7, "Actions by Regulatory Agencies for Protection of Natural Resources," Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment," and Section 15061(b)(3) "General Rule."

CONCLUSION AND STAFF RECOMMENDATION

As recommended by the Planning Commission, approve the Proposed Ordinance with the optional language (Attachment A) that would allow waterflood well enhancement. This recommendation would allow the current operator to continue exploration and primary oil extraction by currently employed methods permitted under its permit from the Division of Oil, Gas and Geothermal Resources (DOGGR), and would also allow secondary well enhancement in the form of limited waterflood enhancement as described above, but would still prohibit steam injection, cyclic steaming, and all forms of well stimulation including hydraulic and acid fracturing and acid matrix stimulation.

The complete record is attached.

Very truly yours,

Chris Bazar, Director
Community Development Agency

Attachments:

ATTACHMENT A: Draft Ordinance Change for Zoning Ordinance, Section 17.06
ATTACHMENT B: Optional Language for two Paragraphs that would permit limited Waterflood well enhancement
ATTACHMENT C: An Independent Scientific Assessment of Well Stimulation in California - An Examination of Hydraulic Fracturing and Acid Stimulations in the Oil and Gas Industry, Executive Summary (various authors, California Council on Science and Technology, July 2015).
ATTACHMENT D: All Letters and E-Mail communications received, 2014-2016
ATTACHMENT E: In-Depth Discussion of Underground Injection, Wastewater Injection and Waterflood Enhancement, Groundwater Impacts and Seismicity
ATTACHMENT F: Three (3) most recent Planning Commission Staff Analyses and Planning Commission Resolution of May 23, 2016

ATTACHMENT A:

Draft Ordinance Change for Zoning Ordinance, Section 17.06

ORDINANCE NO.: _____

AN ORDINANCE AMENDING CHAPTER 17.06 OF THE ALAMEDA COUNTY GENERAL ORDINANCE CODE TO PROHIBIT HIGH-INTENSITY OIL AND GAS OPERATIONS

The Board of Supervisors of the County of Alameda, State of California, does ordain as follows:

SECTION I

The Board of Supervisors makes the following findings in support of this Ordinance:

1. One of the basic objectives of the County's Zoning regulations is to promote public health and safety; and

2. The land use activity of drilling for and extraction of oil, gas and hydrocarbons has been conducted in Alameda County for several decades, subject to issuance of discretionary conditional use permits; and

3. Recent advances in technologies used for oil and gas exploration have made it feasible to extract oil and gas that was previously considered trapped within shale formations; and

4. The recent development and increasing prevalence of high-intensity oil and gas operations, which may use well stimulation treatments such as hydraulic fracturing, commonly called "fracking," and acid fracturing have raised concerns regarding public health, safety and welfare, including pollution of air, soil, surface water, and groundwater, the depletion of water supplies, noise pollution, traffic, and seismic hazards; and

5. Great interest has been shown by the oil and gas industry in extracting oil and gas from the Monterey Shale Formation, which has been estimated to contain 600 million barrels of recoverable oil; and

6. Portions of the Monterey Shale Formation, and other rocks potentially containing oil and gas resources, may underlie portions of the County; and

7. Although no such high-intensity oil and gas operations currently exist within the County, technologically feasible and economically viable approaches may be discovered by the oil and gas industry to tap potential accumulations of oil and gas resources in the Monterey Shale Formation or other rocks containing oil and gas resources, and interest could turn from the developed resource areas in southern California to other parts of the State, including this County; and

8. The practice of storing wastewater or produced water from oil and gas operations, which may contain hazardous concentrations of chemicals, at or near the surface in pits or sumps may result in environmental damage if the chemicals seep into surrounding soils and water sources; and

9. Article XI, Section 7 of the California Constitution permits a county to make and enforce all local police, sanitary and other ordinances and regulations not in conflict with general laws; and

10. The County has the authority to regulate the intensity of land uses pursuant to California Government Code Section 65850; and

11. The State of California adopted SB4 in 2013 and regulations in 2015 (Title 14, Ch. 4, Sections 1751 et seq.) concerning well stimulation activities such as fracking and has adopted regulations regarding the disposal of wastewater, but the State has not limited a local agency's jurisdiction to govern appropriate uses of land within its boundaries; and

12. This Ordinance Amendment does not contradict or duplicate state law because, while the state law imposes requirements for such operations, it does not require that such operations be permitted in any and all parts of the State; and

13. This Ordinance Amendment does not tread into a field fully occupied by state law, because the state law does not impose restrictions or requirements with respect to local land use; and

14. This Ordinance Amendment is not anticipated to effectuate a taking of private property because no high-intensity oil and gas operations currently exist in the County and any affected land will almost certainly retain some economically viable use consistent with the agricultural character of the district such as viticulture, farming, ranching, animal boarding, production of renewable energy, open space and conservation easements, and some residential uses; and

15. Currently, drilling for and removal of oil, gas or other hydrocarbon substances is only permitted in the Agricultural district of the County if a conditional use permit is approved pursuant to Ordinance Code section 17.06.040(I); and

16. High-intensity oil and gas operations constitute a land use separate and distinct from those uses permitted by Ordinance Code section 17.06.040(I) because drilling for and removal of oil, gas or other hydrocarbon substances generally involves drilling wells through which oil or gas flows naturally under its own pressure or through which oil is pumped up to the surface, whereas high-intensity oil and gas operations, typically include high-pressure injections of solvents, acids, and other chemicals, and/or steam to fracture, heat, or dissolve into the land in order to free oil and/or natural gas from underground formations and the uses of drilling for and removing oil and gas are distinct from storing and disposing of wastewater; and

17. In adopting the South Livermore Plan in 1993, the East County Area Plan (ECAP) in 1994, and Measure D in 2000, the Board of Supervisors and the voters have been reducing industrial uses in the East County in favor of agricultural uses, open space uses, and uses that would enhance the development of the region as a wine region; and

18. High-intensity oil and gas operations, including hydraulic fracturing, endanger the County's public health and safety and the environment; and

19. This Ordinance Amendment is consistent with ECAP policy 167 in that it continues to "protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction," and

20. The potential harm associated with the prohibited activities could affect not only the human communities of the County but also the agricultural and open space uses, including potential negative effects on the water and food sources for horses, cattle and wildlife; and

21. This Ordinance Amendment would restrict all current and future land uses within the unincorporated area of Alameda County from expanding to include high-intensity oil and gas operations, thus helping to reduce the likelihood of the risks described above; and

22. With this action, the Alameda County Board of Supervisors intends to prohibit high-intensity oil and gas operations such as fracking in all districts; and

23. This action is exempt from the requirements of CEQA, based on the following:

(1) This Ordinance Amendment is not a project within the meaning of Section 15378 of the CEQA Guidelines, because it has no potential for resulting in physical change in the environment, directly or ultimately; and

(2) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15307, Class 7, "Actions by Regulatory Agencies for Protection of Natural Resources" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of natural resources; and

(3) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of the environment; and

(4) This Ordinance Amendment is not subject to CEQA under the general rule stated in CEQA Guidelines Section 15061(b)(3) that CEQA applies only to projects which have the potential for causing a significant effect on the environment. For the reasons set forth in subparagraphs (1), (2) and (3), it

can be seen with certainty that there is no possibility that this Ordinance Amendment will have a significant effect on the environment.

SECTION II

Sections 17.06.100 through Section 17.06.140 are hereby added to the Alameda County General Ordinance Code and read as follows:

17.06.100 High-Intensity Oil and Gas Operations – Definition

1. For the purposes of this chapter, high-intensity oil and gas operations means any of the following uses:

   A. Well stimulation treatment – any treatment of a well designed to enhance oil or gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments, as defined in Title 14 California Code of Regulations Section 1761.
   B. Enhanced recovery wells - wells that are injected with brine, water, steam, polymers, carbon dioxide, or other gasses into oil-bearing formations to recover residual oil and in some limited applications natural gas. The injected fluid thins (decreases the viscosity) or displaces small amounts of extractable oil and gas, which is then available for recovery. Examples include waterflood injection that uses imported water, shallow well water or surface water and/or injects chemicals designed for well production increase (other than those found naturally in produced water or which are necessary for routine well maintenance or clarifier use), steamflood injection, and cyclic steam injection.
   C. Hydraulic fracturing or "fracking" – a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.
   D. Acid fracturing – a well stimulation treatment that, in whole or in part, includes pressurized injection of acid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.
   E. Acid matrix stimulation treatment – an acid treatment conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.
   F. Acid well stimulation treatment - a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.

G. Disposal or storage of the substances used in or the waste or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water, other than storage associated with transportation through the County for disposal or storage outside of the County.
H. Disposal or storage in pits or sumps of any wastewater or produced water that is a byproduct of the uses listed in 17.06.040(I).

2. High-Intensity Oil and Gas Operations do not include produced water injection, storage tanks for produced water, and routine well cleaning and maintenance activities. Waterflood injection that does not use imported water, shallow well water or surface water and/or does not inject chemicals designed for well production increase (other than those found naturally in produced water or which are necessary for routine well maintenance or clarifier use) is excluded and does not constitute high-intensity oil and gas operations, as long the injection complies with all applicable state law and regulations.

17.06.110 High-Intensity Oil and Gas Operations – Prohibited Use

High-intensity oil and gas operations are prohibited in the unincorporated areas of the County. The development, construction, installation, or use of any facility, appurtenance, or above-ground equipment, whether temporary or permanent, mobile or fixed, accessory or principal, in support of high-intensity oil and gas operations is prohibited in the unincorporated areas of the County.

17.06.120 High-Intensity Oil and Gas Operations – Amortization Period

A. Within one year of the effective date of this section, the owners and operators of any existing high-intensity oil and gas operations shall bring land uses into conformity with this ordinance.
B. The one-year amortization period permitted by Subsection A may be extended on a case-by-case basis if the Planning Commission determines that a high-intensity oil and gas operations owner or operator has shown that one year is not a reasonable amortization period pursuant to state law and Section 17.06.140. Any extension may be only for the minimum length of time necessary to provide a reasonable amortization period.

17.06.130 High-Intensity Oil and Gas Operations – Consistent with State and Federal Law

The provisions of sections 17.06.100 through 17.06.120 shall not be applicable to the extent, but only to the extent, they would violate the constitution or laws of the United States or of the State of California.

In the event a property owner contends that application of these provisions effects an unconstitutional taking of property, the property owner may request, and the Planning

Commission may grant, an exception to application of these provisions in accordance with Section 17.06.140.

17.06.140 High-Intensity Oil and Gas Operations – Nonconforming uses

A. A person claiming a vested right to uses prohibited by Sections 17.06.100 through 17.06.120 must apply to the County for a determination that the vested right exists. Notice of the hearing shall be made in accordance with the procedures provided by section 17.54.830. The determination shall be made by the Planning Commission, following a public hearing. Upon a determination that the vested right exits, the use may continue subject to the sections of this title concerning nonconforming uses (17.52.610 through 17.52.730). The determination shall be appealable to the Board of Supervisors pursuant to sections 17.54.670-17.54.710.

B. The applicant for any exemption shall submit as part of the application any and all evidentiary support reasonably available sufficient to establish the basis for the claim of exemption.

C. A determination of exemption application shall be approved or conditionally approved only if the review authority first makes the following findings:
   1. The applicant obtained prior to the effective date of this section, a vested right to conduct high-intensity oil and gas operations;
   2. Approving or conditionally approving the application is required because the applicant has shown that a one year amortization period is not a reasonable amortization period pursuant to state law; and
   3. The extension is no longer than the minimum length of time necessary to provide a reasonable amortization period.

D. No enforcement action shall be taken against any owner or operator of an existing facility if an application for a determination of exemption has been filed in compliance with this Section and the application has not expired, or final action to deny the application has not occurred.

SECTION III

This ordinance shall take effect and be in force thirty (30) days from and after the date of passage and before the expiration of fifteen (15) days after its passage it shall be published once with the names of the members voting for and against the same in the Inter-City Express, a newspaper published in the County of Alameda.

Adopted by the Board of Supervisors of the County of Alameda, State of California, on the ____ day of _____, 2016, by the following called vote:

AYES:
NOES:
EXCUSED:

_____
, President of the Board of Supervisors
of the County of Alameda,
State of California

_____
, Clerk of the Board of Supervisors
of the County of Alameda,
State of California

Approved as to Form:

Donna R. Ziegler, County Counsel

By: _____

ATTACHMENT B:

Optional Language for two Paragraphs that permit limited Waterflood well enhancement

Optional Language that would permit limited waterflood well enhancement (Underlined).

17.06.100 High-Intensity Oil and Gas Operations – Definition

1. For the purposes of this chapter, high-intensity oil and gas operations means any of the following uses:

   B. Enhanced recovery wells - wells that are injected with brine, water, steam, polymers, carbon dioxide, or other gasses into oil-bearing formations to recover residual oil and in some limited applications natural gas. The injected fluid thins (decreases the viscosity) or displaces small amounts of extractable oil and gas, which is then available for recovery. Examples include waterflood injection that uses imported water, shallow well water or surface water and/or injects chemicals designed for well production increase (other than those found naturally in produced water or which are necessary for routine well maintenance or clarifier use), steamflood injection, and cyclic steam injection.

2. High-Intensity Oil and Gas Operations do not include produced water injection, storage tanks for produced water, and routine well cleaning and maintenance activities. Waterflood injection that does not use imported water, shallow well water or surface water and/or does not inject chemicals designed for well production increase (other than those found naturally in produced water or which are necessary for routine well maintenance or clarifier use) is excluded and does not constitute high-intensity oil and gas operations, as long the injection complies with all applicable state law and regulations.

ATTACHMENT C:

An Independent Scientific Assessment of Well Stimulation in California - An Examination of Hydraulic Fracturing and Acid Stimulations in the Oil and Gas Industry, Executive Summary (various authors, California Council on Science and Technology, July 2015).

An Independent Scientific Assessment of Well Stimulation in California

Executive Summary

An Examination of Hydraulic Fracturing and Acid Stimulations in the Oil and Gas Industry

July 2015

CCST
CALIFORNIA COUNCIL ON SCIENCE & TECHNOLOGY

BERKELEY LAB
Lawrence Berkeley National Laboratory

An Independent Scientific Assessment of Well Stimulation in California

Executive Summary

An Examination of Hydraulic Fracturing and Acid Stimulations in the Oil and Gas Industry

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July 2015

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About CCST

CCST is a non-profit organization established in 1988 at the request of the California State Government and sponsored by the major public and private postsecondary institutions of California and affiliate federal laboratories in conjunction with leading private-sector firms. CCST's mission is to improve science and technology policy and application in California by proposing programs, conducting analyses, and recommending public policies and initiatives that will maintain California's technological leadership and a vigorous economy.

Note

Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the organizations or agencies that provided support for the project.

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In 2013, the California Legislature passed Senate Bill 4 (SB 4), setting the framework for regulation of hydraulic fracturing and acid stimulation technologies in California. SB 4 also requires the California Natural Resources Agency to conduct an independent scientific study to assess current and potential future well stimulation practices, including the likelihood that these technologies could enable extensive new petroleum production in the state; the impacts of well stimulation technologies (including hydraulic fracturing, acid fracturing and matrix acidizing) and the gaps in data that preclude this understanding; potential risks associated with current practices; and alternative practices that might limit these risks.

The California Council on Science and Technology (CCST) organized and led the study. Members of the CCST steering committee were appointed based on technical expertise and a balance of technical viewpoints. Lawrence Berkeley National Laboratory (LBNL) and subcontractors (the science team) developed the findings based on original technical data analyses and a review of the relevant literature. The science team studied each of the issues required by SB 4, and the science team and the steering committee collaborated to develop a series of conclusions and recommendations. Final responsibility for the conclusions and recommendations in this report lies with the steering committee. All steering committee members have agreed with these conclusions and recommendations. Any steering committee member could have written a dissenting opinion, but no one requested to do so.

This report has undergone extensive peer review; peer reviewers are listed in Appendix E of the Summary Report, "Expert Oversight and Review." Eighteen reviewers were chosen for their relevant technical expertise. More than 1,500 anonymous review comments were provided to the authors. The authors revised the report in response to peer review comments. In cases where the authors disagreed with the reviewer, the response to review included their reasons for disagreement. Report monitors, appointed by CCST, then reviewed the response to the review comments and when satisfied, approved the report.

To create a hydraulic fracture, an operator increases the pressure of a mixture of water and chemicals in an isolated section of a well until the surrounding rock breaks, or "fractures." Sand injected into these fractures props them open after the pressure is released. Acid fracturing, in which a high-pressure acidic fluid fractures the rock and etches the walls of the fractures, is hardly used in California and not discussed further. Matrix acidizing does not fracture the rock; instead, acid pumped into the well at relatively low pressure dissolves some of the rock and makes it more permeable. This study identified seven equally important major principles required for safe hydraulic fracturing and acid stimulation in California. Organized by principle, we draw conclusions and recommendations.

Principle 1. Maintain, expand and analyze data on the practice of hydraulic fracturing and acid stimulation in California.

Public records provide substantial information about the location, frequency of use, and water and chemical use for hydraulic fracturing and acid stimulation in California.

Conclusion 1.1. Most well stimulations in California are hydraulic fracturing and most hydraulic fracturing occurs in the San Joaquin Valley.

About 95% of reported hydraulic fracturing operations in California occur in the San Joaquin Basin, nearly all in four oil fields in Kern County. Over the last decade, about 20% of oil and gas production in California came from wells treated with hydraulic fracturing. Hydraulic fracturing accounts for about 90% of all well stimulations in California; matrix acidizing accounts for only 10%; and acid fracturing operations nearly none. Operators in California commonly use acid for well maintenance, but acid stimulation will not likely lead to major increases in oil and gas production due to the state's geology. Operators of dry (non-associated) gas wells located in Northern California rarely use hydraulic fracturing (Volume I, Chapter 3).

Conclusion 1.2. The California experience with hydraulic fracturing differs from that in other states.

Present-day hydraulic fracturing practice and geologic conditions in California differ from those in other states, and as such, recent experiences with hydraulic fracturing in other states do not necessarily apply to current hydraulic fracturing in California (Volume I, Chapters 2 and 3).

Conclusion 1.3. Hydraulic fracturing in California does not use a lot of fresh water compared to other states and other human uses.

Operators in California use about 800 acre-feet (about a million cubic meters [m^3]) of water per year for hydraulic fracturing. This does not represent a large amount of freshwater compared to other human water use, so recycling this water has only modest benefits. However, hydraulic fracturing takes place in relatively water-scarce regions. Where production was enabled by hydraulic fracturing, at least twice and possibly fourteen times as much fresh water was used for subsequent enhanced oil recovery using water or steam flooding than all the water used for hydraulic fracturing throughout the state. The state has recently begun requiring detailed reporting of water use and produced water disposal in California's oil and gas fields under Senate Bill 1281 (SB 1281). In the future, these data could help optimize oil and gas water practices, including water use, production, reuse, and disposal.

Recommendation 1.1. Identify opportunities for water conservation and reuse in the oil and gas industry.

When roughly a year of water data becomes available from implementation of SB 1281, the state should begin an early assessment of these data to evaluate water sources, water production, reuse, and disposal for the entire oil and gas industry. Early assessment will shed light on the adequacy of the data reporting requirements and identify additional requirements that could include additional information about the quality of the water used and produced. When several years of data become available, a full assessment should identify opportunities to reduce freshwater consumption or increase the beneficial use of produced water, and regularly update opportunities for water efficiency and conservation (Volume I, Chapter 3).

Conclusion 1.4. A small number of offshore wells use hydraulic fracturing.

California operators currently use hydraulic fracturing in a small portion of offshore wells, and we expect hydraulic fracturing to remain incidental in the offshore environment. Policies currently restrict oil and gas production offshore, but if these were to change in the future, production could largely occur without well stimulation technology for the foreseeable future (Volume III, Chapter 2 [Offshore Case Study]).

Conclusion 1.5. Record keeping for hydraulic fracturing and acid stimulation in federal waters does not meet state standards.

Current record-keeping practice on stimulations in federal waters (from platforms more than three nautical miles offshore) does not meet the standards set by the pending SB 4 well treatment regulations and does not allow an assessment of the level of activity or composition of hydraulic fracturing chemicals being discharged in the ocean. The National Pollutant Discharge Elimination System permits that regulate discharge from offshore platforms do not effectively address hydraulic fracturing fluids. The limited publicly available records disclose only a few stimulations per year.

Recommendation 1.2. Improve reporting of hydraulic fracturing and acid stimulation data in federal waters.

The state of California should request that the federal government improve data collection and record keeping concerning well stimulation conducted in federal waters to at least match the requirements of SB 4. The U.S. Environmental Protection Agency should conduct an assessment of ocean discharge and, based on these results, consider if alternatives to ocean disposal for well stimulation fluid returns are necessary (Volume III, Chapter 2 [Offshore Case Study]).

Principle 2. Prepare for potential future changes in hydraulic fracturing and acid stimulation practice in California.

Conclusion 2.1. Future use of hydraulic fracturing in California will likely resemble current use.

Future use of hydraulic fracturing will most likely expand production in and near existing oil fields in the San Joaquin Basin that currently require hydraulic fracturing. Oil resource assessment and future use of hydraulic fracturing and acid stimulation in the Monterey Formation of California remain uncertain. In 2011, the U.S. Energy Information Administration (EIA) estimated that 15 billion barrels (2.4 billion m^3) of recoverable shale-oil resources existed in Monterey source rock. This caused concern about the potential environmental impacts of widespread shale-oil development in California using hydraulic fracturing. In 2014 the EIA downgraded the 2011 estimate by 96%. This study reviewed both EIA estimates and concluded that neither one can be considered reliable. Any potential for production in the Monterey Formation would be confined to those parts of the formation in the "oil window," that is, where Monterey Formation rocks have experienced the temperatures and pressures required to form oil. The surface footprint of this subset of the Monterey Formation expands existing regions of oil and gas production rather than opening up entirely new oil and gas producing regions.

> **Recommendation 2.1. Assess the oil resource potential of the Monterey Formation.**
>
> *The state should request a comprehensive, science-based and peer-reviewed assessment of source-rock ("shale") oil resources in California and the technologies that might be used to produce them. The state could request such an assessment from the U.S. Geological Survey, for example.*
>
> **Recommendation 2.2. Keep track of exploration in the Monterey Formation.**
>
> *As expansive production in the Monterey Formation remains possible, Division of Oil, Gas, and Geothermal Resources (DOGGR) should track well permits for future drilling in the "oil window" of the Monterey source rocks (and other extensive source rocks, such as the Kreyenhagen) and be able to report increased activity (Volume I, Chapter 4; Volume III, Chapter 3 [Monterey Formation Case Study]).*

Principle 3. Account for and manage both direct and indirect impacts of hydraulic fracturing and acid stimulation.

Hydraulic fracturing or acid stimulation can cause direct impacts. Potential direct impacts might include a hydraulic fracture extending into protected groundwater, accidental spills of fluids containing hydraulic fracturing chemicals or acid, or inappropriate disposal or reuse of produced water containing hydraulic fracturing chemicals. These direct impacts

do not occur in oil and gas production unless hydraulic fracturing or acid stimulation has occurred. This study covers potential direct impacts of hydraulic fracturing or acid stimulation.

Hydraulic fracturing or acid stimulation can also incur indirect impacts, i.e., those not directly attributable to the activity itself. Some reservoirs require hydraulic fracturing for economic production. All activities associated with oil and gas production enabled by hydraulic fracturing or acid stimulation can bring about indirect impacts. Indirect impacts of hydraulic-fracturing-enabled oil and gas development usually occur in all oil and gas development, whether or not the wells are stimulated.

Conclusion 3.1. Direct impacts of hydraulic fracturing appear small but have not been investigated.

Available evidence indicates that impacts caused directly by hydraulic fracturing or acid stimulation or by activities directly supporting these operations appear smaller than the indirect impacts associated with hydraulic-fracturing-enabled oil and gas development, or limited data precludes adequate assessment of these impacts. Good management and mitigation measures can address the vast majority of potential direct impacts of well stimulation.

> **Recommendation 3.1. Assess adequacy of regulations to control direct impacts of hydraulic fracturing and acid stimulations.**
>
> *Over the next several years, relevant agencies should assess the adequacy and effectiveness of existing and pending regulations to mitigate direct impacts of hydraulic fracturing and acid stimulations.*

Conclusion 3.2. Operators have unrestricted use of many hazardous and uncharacterized chemicals in hydraulic fracturing.

The California oil and gas industry uses a large number of hazardous chemicals during hydraulic fracturing and acid treatments. The use of these chemicals underlies all significant potential direct impacts of well stimulation in California. This assessment did not find recorded negative impacts from hydraulic fracturing chemical use in California, but no agency has systematically investigated possible impacts. A few classes of chemicals used in hydraulic fracturing (e.g. biocides, quaternary ammonium compounds, etc.) present larger hazards because of their relatively high toxicity, frequent use, or use in large amounts. The environmental characteristics of many chemicals remain unknown. We lack information to determine if these chemicals would present a threat to human health or the environment if released to groundwater or other environmental media. Application of green chemistry principles, including reduction of hazardous chemical use and substitution of less hazardous chemicals, would reduce potential risk to the environment or human health.

Recommendation 3.2. Limit the use of hazardous and poorly understood chemicals.

Operators should report the unique Chemical Abstracts Service Registry Number (CASRN) identification for all chemicals used in hydraulic fracturing and acid stimulation, and the use of chemicals with unknown environmental profiles should be disallowed. The overall number of different chemicals should be reduced, and the use of more hazardous chemicals and chemicals with poor environmental profiles should be reduced, avoided, or disallowed. The chemicals used in hydraulic fracturing could be limited to those on an approved list that would consist only of those chemicals with known and acceptable environmental hazard profiles. Operators should apply green chemistry principles to the formulation of hydraulic fracturing fluids, particularly for biocides, surfactants, and quaternary ammonium compounds, which have widely differing potential for environmental harm. Relevant state agencies, including DOGGR, should as soon as practical engage in discussion of technical issues involved in restricting chemical use with a group representing environmental and health scientists and industry practitioners, either through existing roundtable discussions or independently (Volume II, Chapters 2 and 6).

Conclusion 3.3. The majority of impacts associated with hydraulic fracturing are caused by the indirect impacts of oil and gas production enabled by the hydraulic fracturing.

Impacts caused by additional oil and gas development enabled by well stimulation (i.e. indirect impacts) account for the majority of environmental impacts associated with hydraulic fracturing. A corollary of this conclusion is that all oil and gas development causes similar impacts whether the oil is produced with well stimulation or not. As hydraulic fracturing enables only 20-25% of production in California, only about 20-25% of any given indirect impact is likely attributable to hydraulically fractured reservoirs.

Recommendation 3.3. Evaluate impacts of production for all oil and gas development, rather than just the portion of production enabled by well stimulation.

Concern about hydraulic fracturing might cause focus on impacts associated with production from fractured wells, but concern about these indirect impacts should lead to study of all types of oil and gas production, not just production enabled by hydraulic fracturing. Agencies with jurisdiction should evaluate impacts of concern for all oil and gas development, rather than just the portion of development enabled by well stimulation. As appropriate, many of the rules and regulations aimed at mitigating indirect impacts of hydraulic fracturing and acid stimulation should also be applied to all oil and gas wells (Volume II, Chapters 5 and 6).

Conclusion 3.4. Oil and gas development causes habitat loss and fragmentation.

Any oil and gas development, including that enabled by hydraulic fracturing, can cause habitat loss and fragmentation. The location of hydraulic-fracturing-enabled development coincides with ecologically sensitive areas in the Kern and Ventura Counties.

> **Recommendation 3.4. Minimize habitat loss and fragmentation in oil and gas producing regions.**
>
> *Enact regional plans to conserve essential habitat and dispersal corridors for native species in Kern and Ventura Counties. The plans should identify top-priority habitat and restrict development in these regions. The plan should also define and require those practices, such as clustering multiple wells on a pad and using centralized networks of roads and pipes, which will minimize future surface disturbances. A program to set aside compensatory habitat in reserve areas when oil and gas development causes habitat loss and fragmentation should be developed and implemented (Volume II, Chapter 5; Volume III, Chapter 5 [San Joaquin Basin Case Study]).*

Principle 4. Manage water produced from hydraulically fractured or acid stimulated wells appropriately.

Large volumes of water of various salinities and qualities get produced along with the oil. Oil reservoirs tend to yield increasing quantities of water over time, and most of California's oil reservoirs have been in production for several decades to over a century. For 2013, more than 3 billion barrels (.48 billion m^3) of water came along with some 0.2 billion barrels (.032 billion m^3) of oil in California. Operators re-inject some produced water back into the oil and gas reservoirs to help recover more petroleum and mitigate land subsidence. In other cases, farmers use this water for irrigation; often blending treated produced water with higher-quality water to reduce salinity.

Conclusion 4.1. Produced water disposed of in percolation pits could contain hydraulic fracturing chemicals.

Based on publicly available data, operators disposed of some produced water from stimulated wells in Kern County in percolation pits. The effluent has not been tested to determine if there is a measureable concentration of hydraulic fracturing chemical constituents. If these chemicals were present, the potential impacts to groundwater, human health, wildlife, and vegetation would be extremely difficult to predict, because there are so many possible chemicals, and the environmental profiles of many of them are unmeasured.

Recommendation 4.1. Ensure safe disposal of produced water in percolation pits with appropriate testing and treatment or phase out this practice.

Agencies with jurisdiction should promptly ensure through appropriate testing that the water discharged into percolation pits does not contain hazardous amounts of chemicals related to hydraulic fracturing as well as other phases of oil and gas development. If the presence of hazardous concentrations of chemicals cannot be ruled out, they should phase out the practice of discharging produced water into percolation pits. Agencies should investigate any legacy effects of discharging produced waters into percolation pits including the potential effects of stimulation fluids (Volume II, Chapter 2; Volume III, Chapters 4 and 5 [Los Angeles Basin and San Joaquin Basin Case Studies]).

Conclusion 4.2. The chemistry of produced water from hydraulically fractured or acid stimulated wells has not been measured.

Chemicals used in each hydraulic fracturing operation can react with each other and react with the rocks and fluids of the oil and gas reservoirs. When a well is stimulated with acid, the reaction of the acid with the rock minerals, petroleum, and other injected chemicals can release contaminants of concern in the oil reservoirs, such as metals or fluoride ions that have not been characterized or quantified. These contaminants may be present in recovered and produced water.

Recommendation 4.2. Evaluate and report produced water chemistry from hydraulically fractured or acid stimulated wells.

Evaluate the chemistry of produced water from hydraulically fractured and acid stimulated wells, and the potential consequences of that chemistry for the environment. Determine how this chemistry changes over time. Require reporting of all significant chemical use, including acids, for oil and gas development (Volume II, Chapters 2 and 6).

Conclusion 4.3. Required testing and treatment of produced water destined for reuse may not detect or remove chemicals associated with hydraulic fracturing and acid stimulation.

Produced water from oil and gas production has potential for beneficial reuse, such as for irrigation or for groundwater recharge. In fields that have applied hydraulic fracturing or acid stimulations, produced water may contain hazardous chemicals and chemical byproducts from well stimulation fluids. Practice in California does not always rule out the beneficial reuse of produced water from wells that have been hydraulically fractured or stimulated with acid. The required testing may not detect these chemicals, and the treatment required prior to reuse necessarily may not remove hydraulic fracturing chemicals.

Recommendation 4.3. Protect irrigation water from contamination by hydraulic fracturing chemicals and stimulation reaction products.

Agencies of jurisdiction should clarify that produced water from hydraulically fractured wells cannot be reused for purposes such as irrigation that could negatively impact the environment, human health, wildlife and vegetation. This ban should continue until or unless testing the produced water specifically for hydraulic fracturing chemicals and breakdown products shows non-hazardous concentrations, or required water treatment reduces concentrations to non-hazardous levels (Volume II, Chapter 2; Volume III, Chapter 5 [San Joaquin Basin Case Study]).

Conclusion 4.4. Injection wells currently under review for inappropriate disposal into protected aquifers may have received water that contains chemicals from hydraulic fracturing.

DOGGR is currently reviewing injection wells in the San Joaquin Valley for inappropriate disposal of oil and gas wastewaters into protected groundwater. The wastewaters injected into some of these wells likely included stimulation chemicals because hydraulic fracturing occurs nearby.

Recommendation 4.4. In the ongoing investigation of inappropriate disposal of wastewater into protected aquifers, recognize that hydraulic fracturing chemicals may have been present in the wastewater.

In the ongoing process of reviewing, analyzing, and remediating the potential impacts of wastewater injection into protected groundwater, agencies of jurisdiction should include the possibility that hydraulic fracturing chemicals may have been present in these wastewaters (Volume II, Chapter 2; Volume III, Chapter 5 [San Joaquin Basin Case Study]).

Conclusion 4.5. Disposal of produced water by underground injection has caused earthquakes elsewhere.

Fluid injected in the process of hydraulic fracturing will not likely cause earthquakes of concern. In contrast, disposal of produced water by underground injection could cause felt or damaging earthquakes. To date, there have been no reported cases of induced seismicity associated with produced water injection in California. However, it can be very difficult to distinguish California's frequent natural earthquakes from those possibly caused by water injection into the subsurface.

Recommendation 4.5. Determine if there is a relationship between wastewater injection and earthquakes in California.

Conduct a comprehensive multi-year study to determine if there is a relationship between oil and gas-related fluid injection and any of California's numerous earthquakes. In parallel, develop and apply protocols for monitoring, analyzing, and managing produced water injection operations to mitigate the risk of induced seismicity. Investigate whether future changes in disposal volumes or injection depth could affect potential for induced seismicity (Volume II, Chapter 4).

Conclusion 4.6. Changing the method of produced water disposal will incur tradeoffs in potential impacts.

Based on publicly available data, operators dispose of much of the produced water from stimulated wells in percolation pits (evaporation-percolation ponds), about a quarter by underground injection (in Class II wells), and less than one percent to surface bodies of water. Changing the method of produced water disposal could decrease some potential impacts while increasing others.

Recommendation 4.6. Evaluate tradeoffs in wastewater disposal practices.

As California moves to change disposal practices, for example by phasing out percolation pits or stopping injection into protected aquifers, agencies with jurisdiction should assess the consequences of modifying or increasing disposal via other methods (Volume II, Chapter 2; Volume II, Chapter 4).

Principle 5. Add protections to avoid groundwater contamination by hydraulic fracturing.

Conclusion 5.1. Shallow fracturing raises concerns about potential groundwater contamination.

In California, about three quarters of all hydraulic fracturing operations take place in shallow wells less than 2,000 feet (600 meters) deep. In a few places, protected aquifers exist above such shallow fracturing operations, and this presents an inherent risk that hydraulic fractures could accidentally connect to the drinking water aquifers and contaminate them or provide a pathway for water to enter the oil reservoir. Groundwater monitoring alone may not necessarily detect groundwater contamination from hydraulic fractures. Shallow hydraulic fracturing conducted near protected groundwater resources warrants special requirements and plans for design control, monitoring, reporting, and corrective action.

Recommendation 5.1. Protect groundwater from shallow hydraulic fracturing operations.

Agencies with jurisdiction should act promptly to locate and catalog the quality of groundwater throughout the oil-producing regions. Operators proposing to use hydraulic fracturing operation near protected groundwater resources should be required to provide adequate assurance that the expected fractures will not extend into these aquifers and cause contamination. If the operator cannot demonstrate the safety of the operation with reasonable assurance, agencies with jurisdiction should either deny the permit, or develop protocols for increased monitoring, operational control, reporting, and preparedness (Volume I, Chapter 3; Volume II, Chapter 2; Volume III, Chapter 5 [San Joaquin Basin Case Study]).

Conclusion 5.2. Leakage of hydraulic fracturing chemicals could occur through existing wells.

California operators use hydraulic fracturing mainly in reservoirs that have been in production for a long time. Consequently, these reservoirs have a high density of existing wells that could form leakage paths away from the fracture zone to protected groundwater or the ground surface. The pending SB 4 regulations going into effect July 2015 do address concerns about existing wells in the vicinity of well stimulation operations; however, it remains to demonstrate the effectiveness of these regulations in protecting groundwater.

Recommendation 5.2. Evaluate the effectiveness of hydraulic fracturing regulations designed to protect groundwater from leakage along existing wells.

Within a few years of the new regulations going into effect, DOGGR should conduct or commission an assessment of the regulatory requirements for existing wells near stimulation operations and their effectiveness in protecting groundwater with less than 10,000 TDS from well leakage. This assessment should include comparisons of field observations from hydraulic fracturing sites with the theoretical calculations for stimulation area or well pressure required in the regulations (Volume II, Chapter 2; Volume III, Chapters 4 and 5 [San Joaquin Basin and Los Angeles Basin Case Studies]).

Principle 6. Understand and control emissions and their impact on environmental and human health.

Gaseous emissions and particulates associated with hydraulic fracturing can arise from the use of fossil fuel in engines, outgassing from fluids, leaks, or proppant. Emissions can also result from all production processes. Such emissions have potential environmental or health impacts.

Conclusion 6.1. Oil and gas production from hydraulically fractured reservoirs emits less greenhouse gas per barrel of oil than other forms of oil production in California.

Burning fossil fuel to run vehicles, make electricity, and provide heat accounts for the vast majority of California's greenhouse gas emissions. In comparison, publicly available California state emission inventories indicate that oil and gas production operations emit about 4% of California total greenhouse gas emissions. Oil and gas production from hydraulically fractured reservoirs emits less greenhouse gas per barrel of oil than production using steam injection. Oil produced in California using hydraulic fracturing also emits less greenhouse gas per barrel than the average barrel imported to California. If the oil and gas derived from stimulated reservoirs were no longer available, and demand for oil remained constant, the replacement fuel could have larger greenhouse gas emissions.

> **Recommendation 6.1. Assess and compare greenhouse gas signatures of different types of oil and gas production in California.**
>
> *Conduct rigorous market-informed life-cycle analyses of emissions impacts of different oil and gas production to better understand GHG impacts of well stimulation (Volume II, Chapter 3).*

Conclusion 6.2. Air pollutant and toxic air emissions from hydraulic fracturing are mostly a small part of total emissions, but pollutants can be concentrated near production wells.

According to publicly available California state emission inventories, oil and gas production in the San Joaquin Valley air district likely accounts for significant emissions of sulfur oxides (SO_x), volatile organic compounds (VOC), and some air toxics, notably hydrogen sulfide (H_2S). In other oil and gas production regions, production as a whole accounts for a small proportion of total emissions. Hydraulic fracturing facilitates about 20% of California production, and so emissions associated with this production also represent about 20% of all emissions from the oil and gas production in California. Even where the proportion of air pollutant and toxic emissions caused directly or indirectly by well simulation is small, atmospheric concentrations of pollutants near production sites can be much larger than basin or regional averages, and could potentially cause health impacts.

> **Recommendation 6.2. Control toxic air emissions from oil and gas production wells and measure their concentrations near productions wells.**
>
> *Apply reduced-air-emission completion technologies to production wells, including stimulated wells, to limit direct emissions of air pollutants, as planned. Reassess opportunities for emission controls in general oil and gas operations to limit emissions. Improve specificity of inventories to allow better understanding of oil and gas emissions sources. Conduct studies to improve our understanding of toxics*

concentrations near stimulated and un-stimulated wells (Volume II, Chapter 3; Volume III, Chapter 4 [Los Angeles Basin Case Study]).

Conclusion 6.3. Emissions concentrated near all oil and gas production could present health hazards to nearby communities in California.

Many of the constituents used in and emitted by oil and gas development can damage health, and place disproportionate risks on sensitive populations, including children, pregnant women, the elderly, and those with pre-existing respiratory and cardiovascular conditions. Health risks near oil and gas wells may be independent of whether wells in production have undergone hydraulic fracturing or not. Consequently, a full understanding of health risks caused by proximity to production wells will require studying all types of productions wells, not just those that have undergone hydraulic fracturing. Oil and gas development poses more elevated health risks when conducted in areas of high population density, such as the Los Angeles Basin, because it results in larger population exposures to toxic air contaminants.

Recommendation 6.3. Assess public health near oil and gas production.

Conduct studies in California to assess public health as a function of proximity to all oil and gas development, not just stimulated wells, and develop policies such as science-based surface setbacks, to limit exposures (Volume II, Chapter 6; Volume III, Chapters 4 and 5 [San Joaquin Basin and Los Angeles Basin Case Studies]).

Conclusion 6.4. Hydraulic fracturing and acid stimulation operations add some occupational hazards to an already hazardous industry.

Studies done outside of California found workers in hydraulic fracturing operations were exposed to respirable silica and VOCs, especially benzene, above recommended occupational levels. The oil and gas industry commonly uses acid along with other toxic substances for both routine maintenance and well stimulation. Well-established procedures exist for safe handling of dangerous acids.

Recommendation 6.4. Assess occupational health hazards from proppant use and emission of volatile organic compounds.

Conduct California-based studies focused on silica and volatile organic compounds exposures to workers engaged in hydraulic-fracturing-enabled oil and gas development processes based on the National Institute for Occupational Safety and Health occupational health findings and protocols (Volume II, Chapter 6).

Principle 7. Take an informed path forward.

Conclusion 7.1. Data reporting gaps and quality issues exist.

Significant gaps and inconsistencies exist in available voluntary and mandatory data sources, both in terms of duration and completeness of reporting. Because the hydrologic and geologic conditions and stimulation practices in California differ from other unconventional plays in this country, many data gaps are specific to California.

> **Recommendation 7.1. Improve and modernize public record keeping for oil and gas production.**
>
> *DOGGR should digitize paper records and organize all datasets in databases that facilitate searches and quantitative analysis. DOGGR should also institute and publish data quality assurance practices, and institute enforcement measures to ensure accuracy of reporting. When a few years' reporting data become available, a study should assess the value, completeness, and consistency of reporting requirements for hydraulic fracturing and acid treatment operations—and as necessary, revise or expand reporting requirements. The quality and completeness of the data collected by the South Coast Air Quality Management District provides a good example of the completeness and availability the state should seek to emulate. The Department of Conservation should reevaluate well stimulation data trends after 3–5 years of reporting.*

Conclusion 7.2. Future research would fill knowledge gaps.

Questions remain at the end of this initial assessment of the impacts of well stimulation in California that can only be answered by new research and data collection. Volumes II and III of this report series provide many detailed recommendations for filling data gaps and additional research. Some examples of key questions include:

- Has any protected groundwater been contaminated with stimulation chemicals in the past, and what would protect against this occurrence in the future? No records of groundwater contamination due to hydraulic fracturing were found, but there were also few investigations designed to look for contamination.
- What environmental risks do stimulation chemicals pose, and are there practices that would limit these risks?
- Can water being produced from hydraulically fractured wells become a resource for California?
- How does oil and gas production as a whole (including that enabled by hydraulic fracturing) affect California's water system?

- Does California's current or future practice of underground injection of wastewater present a significant risk of inducing earthquakes?
- How can the public best be protected from air pollution associated with oil and gas production?
- What are the ecological impacts of oil and gas development in California?

Recommendation 7.2. Conduct integrated research to close knowledge gaps.

Conduct integrated research studies in California to answer key questions about the environmental, health, and seismic impacts of oil and gas production enabled by well stimulation. Integrated research studies should include regional hydrologic characterization and field studies related to surface and groundwater protection, induced seismicity, ecological conditions, as well as air and health effects.

Conclusion 7.3. Ongoing scientific advice could inform policy.

As the state of California digests this assessment and as more data become available, continued interpretation of both the impacts of well stimulation and the potential meaning of scientific data and analysis would inform the policy framework for this complex topic.

Recommendation 7.3. Establish an advisory committee on oil and gas.

The state of California should establish a standing scientific advisory committee to support decisions on the regulation of oil and gas development.

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ATTACHMENT D:

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January 30, 2015

Alameda County Board of Supervisors
County of Alameda Administration Building
1221 Oak Street #536
Oakland, CA 94612

Re: Proposed General Plan and Zoning Ordinance Amendments Regarding Restriction of Oil and Natural Gas Exploration and Extraction

Dear Honorable Supervisors:

We are writing on behalf of our client, Californians for Energy Independence, a statewide coalition of energy producers, business associations, and local government leaders and agencies, among others, formed to educate the public about proven, safe oil extraction technologies.

We recently became aware of a proposal to amend the County's General Plan and Zoning Ordinance to remove all references to oil, gas, petroleum, and drilling, exploration, and extraction thereof. It appears that both the goal and impact of this change would be a ban on all oil and gas development. Such a ban, if adopted, would significantly harm the valuable mineral interests within the County.

Having just learned of this proposal, we have not had a chance to analyze its impacts fully, but the proposal appears to be legally infirm on many bases, including potentially being fully preempted by state law. We intend to detail our concerns for the County prior to the Planning Commission's February 17, hearing, should it proceed, but wanted to let you know now how deeply concerned we are that this effort appears to be moving forward without any study and without notice to the many impacted mineral rights owners.

We urge you to suspend this effort now and until its potentially far-reaching impacts have been evaluated fully and all interested parties have an opportunity to participate in the process.

Very truly yours,

Benjamin J. Hanelin
of LATHAM & WATKINS LLP

LA\4000757

cc: Bruce Jensen, Senior Planner
Rock Zierman, California Independent Petroleum Association
Joyce Holtzclaw, VP Western Division for E&B Natural Resources
Sean Welch, Nielsen Merksamer Parrinello Gross & Leoni LLP
George Mihlsten, Latham & Watkins LLP

January 29, 2015

Dear Mr. Jensen,

I received a notice of public hearings about the Alameda County zoning ordinance amendments concerning the restriction of oil and natural gas exploration and extraction.

In the 40 plus years that there have been oil wells on my property on Patterson Pass Road in Livermore (APN: 099B-5600-003-04), I believe there has been no detrimental effects on the property. There is cattle grazing around the oil wells, and wildlife is present, as well. Currently, the parcels surrounding my property include other oil wells, a trucking business, and Zone 7. Zone 7 creates more traffic, noise, and dust than that created by the oil production. I have experience with E & B Natural Resources Management Corporation, and this company has been consistently managing the site well. I do not believe that further exploration on my property or other properties would have any additional safety or visual impacts.

Additionally, the oil production in the county provides significant tax revenue for the state and federal governments.

Thank you for considering my comments.

Sincerely,

Paula M. Flessatti
2903 Chateau Way
Livermore, CA 94550
(925) 447-7448

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February 17, 2015

Submitted via email to bruce.jensen@acgov.org

Albert Lopez, Planning Director
Alameda County Community Development Agency, Planning Department
Attn: Bruce Jensen, Senior Planner
224 West Winton Avenue, Room 111
Hayward, California 94544

Re: Proposed General Plan Amendment and Zoning Ordinance Amendment – Removal of Policy 167 of the East County Area Plan (ECAP) and removal of Alameda County Code of Ordinances (ACZO) Title 17 – Zoning, Section 17.06.040, Conditional uses—Board of zoning adjustments, Paragraph 1

Dear Director Lopez:

The California Cattlemen's Association (CCA) appreciates the opportunity to comment on the Alameda County Community Planning Departments consideration of whether or not to recommend that the Alameda County Board of Supervisors remove all references to oil, gas, and petroleum, and to drilling, exploration, and extraction thereof from the ECAP and ACZO. CCA strongly **opposes** these amendments, as they are overbroad, would amount to an unconstitutional taking of private property rights without just compensation, and are preempted by the State's oil and gas regulatory regime. CCA is a statewide trade organization representing more than 1,750 cattle ranchers throughout the state, including more than 100 members in the Alameda/Contra Costa area, some of whom possess mineral rights estates within the county and would be directly impacted by the proposed amendments.

I. The proposed ECAP and ACZO amendments are overbroad

Director Bazar's memo to the Transportation and Planning Committee notes that "[t]he Board Committee directed staff to develop the proposal after community members expressed concerns regarding enhanced well stimulation techniques commonly referred to as 'fracking.'" However, the proposed amendments are broad enough to ban much more than that which is of concern to the community. That is, rather than merely banning 'fracking' (which, as the memo notes, is not even "currently practiced or foreseen as necessary by existing operators in Alameda County), the proposed amendments would ban all oil and gas exploration and extraction. The result is a broad regulatory change which broadly and severely impacts private property rights without remedying anything which the community perceives as a threat (whether such perception is reasonable or otherwise). Because the proposed amendments would curtail private property rights beyond what is strictly necessary to achieve the County's stated purpose, the Transportation and Planning Committee should not recommend their adoption by the Board.

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FEEDER COUNCIL VICECHAIR
SELMA

II. The proposed amendments would amount to an unconsititutional taking of private property without just compensation

The Fifth Amendment to the United States Constitution states that private property shall not "be taken for public use, without just compensation," a prohibition which has been applied to state and municipal governments under the Fourteenth Amendment. Because the proposed amendments ban virtually all conventional oil extraction in addition to banning 'fracking,' application of the amendments would render exercise of a property owners' mineral rights estate commercially impracticable, thereby effecting a regulatory taking for which Alameda County would owe the property owner just compensation.

The U.S. Supreme Court has held that a regulatory taking necessarily occurs where a regulation deprives a property owner of "all economically beneficial use of property," but the Court has also held that a regulatory taking can occur even where regulation "leaves the property owner some economically beneficial use of his property."

Under both state and federal law, mineral rights are a distinct property interest protected by the Fifth and Fourteenth Amendments. In California, courts have found that "undue restriction" of a mineral estate holder's right to drill for oil "is as much a taking for constitutional purposes as appropriating or destroying" the underlying property itself. Where an individual possesses only the mineral estate (as distinct from the surface estate), the court will focus its inquiry upon whether the regulation makes it "commercially impracticable" to profitably exercise those mineral rights.

As noted in Director Bazar's memo to the Transportation and Planning Committee, the effect of the proposed amendments would be that "Alameda County would no longer have any oil or gas extraction land uses, including potential enhanced well stimulation," except for currently permitted operations so long as they do not become idle for a six-month period. Thus, all economically beneficially use of mineral rights estates would be prohibited. However, the extent of Alameda County's takings liability would not be confined to existing operations, as it would still deprive mineral estate holders *not currently exercising their mineral rights* of all future economically-beneficial use of their property; this is a property interest for which the County would still be liable for just compensation for taking.

III. The proposed amendments are likely preempted by existing State legislation and regulation

In jurisdictions where "fracking" bans have been overturned, they have been overturned largely on the basis that the bans are preempted by state laws allowing and comprehensively regulating oil and gas extraction. Such bans have been overturned on this basis in Longmont and Fort Collins, Colorado, and challenged on this basis in lawsuits in Denton, Texas and elsewhere.

As is noted in Director Bazar's memo, existing law in California is permissive of oil and gas exploration and extraction, which is robustly regulated by the State Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), as well as the State Water

Resources Control Board. Though the court decisions in Colorado and elsewhere will not control in California, of course, the preemption analysis is likely to be similar in California as in Colorado. Here, as in Longmont, "there is no way to harmonize [Alameda County]'s fracking ban" with "the state interest in production, prevention of waste and protection of correlative rights" regarding oil and gas extraction. Because state law preempts municipal law, the Alameda County ban would likely be deemed invalid.

IV. The form of the amendments does not immunize the County from legal challenge

Finally, Director Bazar's memo notes that "[t]he Office of County Counsel has advised that any *new ordinance language specifically banning* all oil extraction activity…or enhanced well stimulation techniques could place the County at risk of legal action" (emphasis added). Presumably, then, the proposed amendments removing references to oil and gas are intended to provide the County protection against legal action. However, this tactic in no way broadly immunizes the County from legal challenge. While the form of the amendments may diminish the potential of a *facial* challenge to the ECAP and ACZO, the *effect* of the amendments would still be a prohibition of all oil and gas extraction, and if enforced would still permit legal challenge to the law *as applied*. Furthermore, Director Bazar's memo makes it abundantly clear that the *intent* of the amendments—regardless of their form—is a ban on all oil and gas exploration and extraction in response to community concerns which were limited to "fracking."

Conclusion

CCA appreciates the opportunity to comment on the proposed amendments to Alameda County's General Plan and Zoning Ordinance. We urge that the Planning Commission urge the Board of Supervisors to reject the proposed amendments because of the undue burden they would place on private property owners, especially mineral rights estate holders. Additionally, we urge the rejection of the amendments because they are overbroad and are likely unconstitutional both on takings and preemption grounds.

Sincerely,

Kirk Wilbur
Director of Government Relations
California Cattlemen's Association

E&B NATURAL RESOURCES MANAGEMENT CORPORATION

Land Department
1400 Easton Drive, Suite 141 • Bakersfield, California 93309
Phone: (661) 636-6999• Fax: (661) 864-7523

February 16, 2015

Alameda County Planning Department
Attn: Bruce Jensen, Senior Planner
224 West Winton Avenue, Room 111
Hayward, CA 94544
E-Mail: bruce.jensen@acgov.org

Re: Proposed General Plan and Zoning Ordinance Amendments Regarding Restriction of Oil and Natural Gas Exploration and Extraction

Dear Honorable Supervisors:

E&B Natural Resources Management Corporation ("E&B") recommends that the Alameda County Board of Supervisors reject the proposed Amendments to the Alameda County General Plan and Zoning Ordinance to remove all references to oil, gas, petroleum, and drilling, exploration, and extraction thereof. E&B is the Lessee and Operator of several oil and natural gas leases in the Livermore Oil Field, which is located approximately two miles east of the town of Livermore, California. The Livermore Oil Field is unique in that it is California's northern-most oil field, has been in operation since 1967, and has produced over two million barrels of oil.

There are numerous well-documented benefits associated with oil development in the Livermore Field. E&B employs residents and procures services in the area from local Alameda County vendors. The oil and natural gas leases are comprised of approximately 500 acres and are owned by 15 different mineral and royalty owners, most of whom reside in Alameda County. E&B paid out approximately $150,000.00 to the various royalty owners in 2014, including $16,300 to the Alameda County Flood Control and Water Conservation District. The Field currently produces on average over 1,000 barrels of oil per month. Through job creation and increased revenue for both the state and local businesses, the benefits ripple across the County, providing money for education, businesses, transportation and other important needs. The fiscal impact is significant, and the County may be required to make up for any lost revenue as a result of passing the Amendments, including negative impacts on local schools, hospitals, the state, etc.

In addition, passing the Amendments opens the County to the possibility of costly litigation. The Amendments are inherently unfair and unconstitutional and have the potential to put Alameda County in conflict with State law and recent federal court rulings. They deny access to private property, diminish property rights, and accelerate the reduction of current oil-related revenues. The Amendments deny a State-regulated industry's operation in the County and exceed the County's legal authority as a political subdivision of the State. They are

completely unnecessary and overreaching, due to the small geographic oil and gas footprint in the County, and due to the well established state regulatory process which already protects the County's public and private resources. Moreover, E&B has never "Fracked" within the Livermore field, nor does E&B have plans to "Frack" within the Livermore Field. Rather than addressing any real harm, the Amendments target one field and its mineral rights owners and operations, punishing a select few residents and one single business for being part of a marginalized and unpopular group.

As the field ages, many necessary actions are being taken to prolong the field's life, in accordance with industry best practices and procedures, including the drilling of new wells, the redrilling of old wells, the implementation of water flood operations, and the replacement of producing wells and disposal wells. Allowing only a continuation of operations "as originally permitted" is too broad and vague too allow E&B to continue operating according to industry best practices and procedures, and may constitute a Taking under the California Constitution.

In addition, the proposed regulations may prevent E&B from being able to perform its contractual obligations to protect its Lessor's mineral rights. For example, E&B has contractual obligations to protect its Lessors from drainage from adjacent properties. If E&B is unable to obtain extensions of Conditional Use Permits on certain Leases while Conditional Use Permits remain in effect on adjacent leases, this could result in drainage, which E&B is contractually obligated to prevent. However, in such a situation, E&B would be without recourse to fulfill its obligations.

The Constitution of the State of California, Article 1, Section 1 states that "All people are by nature free and independent and have inalienable rights. Among these are enjoying and defending life and liberty, *acquiring, possessing, and protecting property,* and pursuing and obtaining safety, happiness, and privacy" (emphasis added). The proposed Amendments make broad, sweeping, conclusory allegations about tenuous and unconfirmed links to harms, while targeting an unpopular industry and a few select property owners. These Amendments are neither fair, beneficial, nor helpful to Alameda County or it residents. Therefore, E&B Natural Resources Management Corporation recommends that the Alameda County Board of Supervisors reject the proposed Amendments to the Alameda County General Plan and Zoning Ordinance.

Yours truly,

Gary Richardson
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BY EMAIL & HAND DELIVERY

February 17, 2015

Alameda County Planning Commission
224 W. Winton Ave.
Hayward, CA 94544
Attn: Albert Lopez, Planning Director

Re: Proposed General Plan and Zoning Ordinance Amendments Regarding Oil and Natural Gas Exploration and Extraction

Dear Honorable Chair Ready and Honorable Commissioners:

We are writing on behalf of our client, Californians for Energy Independence, a statewide coalition of energy producers, business associations, and local government leaders and agencies, among others, formed to educate the public about proven, safe oil extraction technologies.

We are very concerned with the proposal to amend the Alameda County General Plan and Zoning Ordinance to prohibit all oil and gas development in the County ("Proposed Ordinance"). Having reviewed the limited information that has been made available on the Proposed Ordinance, it appears that the Proposed Ordinance is not only unnecessary from a planning perspective, but would expose the County to significant legal and financial risk.

The County Counsel's office agrees:

> ***"The Office of the County Counsel has advised that any new ordinance language specifically banning all oil extraction activity (including existing uses) or enhanced well stimulation techniques could place the County at risk of legal action."*** (Staff Report, p. 2.)

According to the Staff Report, the Proposed Ordinance has been motivated by alleged community concerns over hydraulic fracturing, an extraction method more widely known as "fracking" or "hydrofracturing." But, as the Staff Report confirms, "***no hydrofracturing is currently practiced or foreseen as necessary by existing operators in Alameda County***." (Staff Report, p. 4 [emphasis added].) The Planning Department Presentation, which also focuses almost entirely on the unused method of hydraulic fracturing, states plainly that hydraulic fracturing ***"is not currently used in Alameda County."*** (Planning Commission Presentation, slide 5 [emphasis added].)

Unfounded concerns about non-existent hydraulic fracturing in the County aside, the Proposed Ordinance goes much further than merely attempting to regulate hydraulic fracturing. The Proposed Ordinance would, it appears, prohibit all oil and gas exploration and development in the County, despite the fact that there is no evidence to justify such a broad, far-reaching prohibition.

Given the complete lack of evidence regarding impacts from existing operations and the total absence of hydraulic fracturing in the County, we are quite concerned about this course of action, as it exposes the County to a great deal of unnecessary risk. ***Risks include the possibility of litigation over the Ordinance's legality, substantial takings claims brought by mineral rights holders, and extensive costs to the County relating to these legal actions.*** See Attachment A.

The Planning Department Presentation recites the numerous legal challenges to attempts to ban various forms of oil extraction. As the presentation notes, some challenges have been successful and some have failed, but ***we are aware of no judicial precedent sanctioning a complete ban of oil and gas development across an entire city or county that was adopted by that city or county's legislative body***, which is exactly what the Proposed Ordinance would do.

We are also concerned that the Proposed Ordinance does not even attempt to protect the interests of existing operators with vested rights. Should the Proposed Ordinance move forward – despite its unnecessary risks to the County – the Planning Commission should recommend clarifications that vested rights holders may seek renewals and extensions of conditional use permits and permit revisions and/or new permits for redrilling and well workovers, among other routine operational activities, even if existing oil and gas uses are deemed nonconforming.

Ultimately, however, the Proposed Ordinance is a bad solution in search of a problem. Rather than recommending the adoption of the Proposed Ordinance, we respectfully submit that the Planning Commission should, consistent with one of the options in Staff's Presentation, ***take a wait and see approach***. Not only is hydraulic fracturing not being conducted or even contemplated in the County, but the State recently adopted new regulations for hydraulic fracturing and other well stimulation methods and is now completing a comprehensive environmental review of these activities. The State, not the County of Alameda with very limited resources, is best situated to evaluate and respond to the concerns some have raised about hydraulic fracturing.

A "wait and see" approach is most certainly warranted here, and we urge this Honorable Commission to recommend disapproval of the Proposed Ordinance.

Very truly yours,

Benjamin J. Hanelin
of LATHAM & WATKINS LLP

Attachment

LATHAM&WATKINS LLP

cc: Alameda County Board of Supervisors
Brian E. Washington, Chief Assistant County Counsel
Steve Merksamer, Nielsen Merksamer Parrinello Gross & Leoni, LLP
Sean Welch, Nielsen Merksamer Parrinello Gross & Leoni, LLP
George Mihlsten, Latham & Watkins, LLP

ATTACHMENT A

I. UNCONSTITUTIONAL TAKINGS

A. Constitutional legal framework

Both the United States and California Constitutions prohibit the government from taking private property without "just compensation." (U.S. Const. Amend. 5; Cal. Const, Art. I § 19(a).) A "taking" can arise either from a physical occupation of property or from excessive regulation of property. The latter is commonly referred to as a "regulatory taking." (*See* (1922) *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393.)

The government causes a *per se* (or categorical) regulatory taking when it eliminates "all economically beneficial use of property." (*Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1015-16 (1992).) But it is not necessary for the property holder to prove a 100% loss. A regulation may effect a taking even where it "*leaves the property owner some economically beneficial use of his property*." *Kavanau v. Santa Monica Rent Control Bd.* (1997) 16 Cal. 4th 761, 774 (emphasis in original).

To determine whether such a regulatory taking (sometimes called a partial regulatory taking) has occurred, courts engage in a fact-specific inquiry using the factors set forth by the Supreme Court in *Penn Central Transp. Co. v. New York City* (1978) 438 U.S. 104: (1) the economic impact of the regulation on the claimant; (2) the extent to which the regulation has interfered with distinct investment-backed expectations; and (3) the character of the governmental action. *Id.* at 124.[1] "[T]he *Penn Central* inquiry turns in large part, albeit not exclusively, upon the magnitude of a regulation's economic impact and the degree to which it interferes with legitimate property interests." (*Lingle v. Chevron U.S.A. Inc.* (2005) 544 U.S. 528, 540.)

Notably, the *purpose* of the challenged regulation is irrelevant to the takings analysis, which turns instead on the regulation's *economic impact* on the landowner's property. (*See Lockaway Storage v. County of Alameda* (Cal. App. 2013) 216 Cal. App. 4th 161, 185 ("[T]he question is not 'whether a regulation of private property is effective in achieving some legitimate public purpose.' Instead, the goal is to assess the 'magnitude or character of the burden a particular regulation imposes upon private property rights.'") (quoting *Lingle*, 544 U.S. at 542).)

B. Regulatory takings of mineral rights

Under both California and federal law, mineral rights – including, in particular, the right to extract oil and gas – are a distinct property interest protected by the Takings Clause. In fact, the right to drill for oil (and gas) "is as much entitled to protection as the property itself, and the undue restriction of the use thereof is as much a taking for constitutional purposes as appropriating or destroying it." (*Braly v. Board of Fire Comm'rs*, 157 Cal. App. 2d 608, 612 (1958) (internal citations and quotation marks omitted); *see also, e.g., Nevada Irrigation Dist. v.*

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[1] The California Supreme Court has identified several additional factors that may be considered when evaluating a regulatory takings claim. (*See Kavanau*, 16 Cal. 4th at 775-76.)

Keystone Copper Corp. (1964) 224 Cal. App. 2d 523, 526-27 (recognizing separate mineral and surface estates in property).)

Mineral rights are valuable only to the extent that they can be exercised *profitably*. The regulatory takings analysis for mineral rights therefore focuses on whether the challenged regulation makes it "commercially impracticable" to extract the minerals. (*Pennsylvania Coal*, 260 U.S. at 414 ("mak[ing] it commercially impracticable to mine certain coal has very nearly the same effect for constitutional purposes as appropriating or destroying it").) Put differently, the challenged regulation causes a regulatory taking of mineral rights if it does not allow the claimant to make a reasonable profit on those mineral rights. (*See Kavanau*, 16 Cal. 4th at 775 (courts must consider "whether the regulation permits the property owner to profit and to obtain a reasonable return on investment") (internal alterations, citations and quotation marks omitted).)

C. Prohibiting all oil and gas production would constitute a compensable taking

Here, the proposed amendments to the County General Plan and Zoning Ordinance do not seek merely to regulate oil and gas extraction activities; it appears to ban the extraction of oil and gas in their entirety. As a result, the proposed amendment unquestionably would constitute a compensable taking of mineral rights under both state and federal law. (*Lucas*, 505 U.S. at 1015-16 (holding a *per se* regulatory taking occurs when the government eliminates "all economically beneficial use of property"); *Pennsylvania Coal*, 260 U.S. at 414 (holding a regulatory taking occurs when the challenged regulation makes it "commercially impracticable" to extract minerals from the claimant's land).)

In *Whitney Benefits*, for example, the court found that the challenged statute "clearly prohibited surface mining of [claimant's] coal, thereby depriving claimant of all economically viable use of its property and destroying its value." (*Whitney Benefits, Inc. v. United States* (1991) 926 F.2d 1169, 1172 (internal quotation marks omitted).) In affirming the trial court's decision, the Federal Circuit further held that "the only property here involved is the right to surface mine a particular deposit of coal. . . . [The challenged statute] took Benefits' coal rights. That is what, and only what, this suit is all about. . . . [State law] recognizes separate mineral and surface estates, and mineral rights are clearly property subject to the taking clause of the Fifth Amendment." (*Id.* at 1174.) Accordingly, the Federal Circuit affirmed the finding that a regulatory taking had occurred, as well as the award of $60.3 million in damages. (*Id.* at 1178.)

D. The County's damages would be substantial

Upon a finding that the proposed amendment constitutes a regulatory taking, the County would be required to pay "just compensation" for the affected oil and gas rights. "[T]he 'just compensation' required by the Fifth Amendment is measured by the property owner's loss rather than the government's gain." (*Brown v. Legal Found.* (2003) 538 U.S. 216, 235-36.) In the mineral rights context, "just compensation" is equal to the total amount of future income the mineral rights holder will lose due to the challenged regulation. (*See Whitney Benefits* (Cl. Ct. 1989) 18 Cl. Ct. 394, 408 *aff'd* (1991) 926 F.2d 1169 (determining "just compensation" for the regulatory taking of coal mining rights by "employ[ing] an often-used method incorporating the discounted cash flow (DCF) approach, valuing the property based on the discounted stream of income the property is capable of producing over its useful economic life").)

In light of the proposed amendment's apparent outright prohibition of oil and gas extraction activities, the County's potential takings liability would be equal to the total value of ***all*** oil and gas that no longer could be extracted pursuant to the amendment – potentially in the hundreds of millions of dollars.

Even if the County were to elect not to enforce the proposed amendment against a landowner once a court determines that it constitutes a regulatory taking, the County nonetheless would be liable to the landowner for all income it lost as a result of the "temporary taking" of the landowner's oil and gas rights. (*First English Evangelical Lutheran Church v. County of Los Angeles* (1987) 482 U.S. 304.)

In addition, under California law, the County would have to reimburse the landowner's "reasonable costs, disbursements, and expenses, including reasonable attorney, appraisal, and engineering fees[.]" (Cal. Code Civ. P. § 1036; *Hensler v. City of Glendale*, 8 Cal. 4th 1, 15 (1994) ("[T]he owner's reasonable costs and attorney fees must be reimbursed by the local entity if the owner establishes that the restriction on land use is a compensable taking.").) Attorney fees alone can reach easily reach several million dollars for just a single takings claim.

II. STATE LAW PREEMPTION

Where local legislation conflicts with the state's general laws, the local legislation is preempted and is void and unenforceable. (See, e.g., *Sherwin-Williams Co. v. City of Los Angeles* (1993) 4 Cal.4th 893, 897.) A conflict between local and state legislation exists where the local legislation duplicates, contradicts, or enters into an area fully occupied by state law. (*Id.* at 897-98.)

Preemption by state law may either be express or implied. Implied preemption exists where the state has fully occupied the field that a lower body seeks to regulate. Implied preemption can take three forms: (1) the subject matter has been so fully and completely covered by state law as to clearly indicate that it has become exclusively a matter of statewide concern; (2) the subject matter has been partially covered by state law couched in terms that indicate clearly that a paramount state concern will not tolerate further or additional local action; or (3) the subject matter has been partially covered by state law, and the subject is of such a nature that the adverse effect of a local ordinance on the transient citizens of the state outweighs the possible benefit to the locality. (See, e.g., *Sherwin-Williams*, supra, 4 Cal.4th at 897-98.)

A review of the relevant and long-standing statutes and authorities makes clear that the Proposed Ordinance is preempted by state law. First, the state has fully occupied the field of regulation of hydraulic fracturing and other well stimulation techniques by adopting the state's comprehensive oil and gas code, and, further, by enacting Senate Bill 4. Moreover, the Proposed Ordinance falls under the third prong of implied preemption: state oil and gas laws explicitly encourage the development of oil and gas resources, and a local ordinance banning such development in all zones and areas would be wholly incompatible with state law such that the adverse effect of the ordinance on transient citizens of the state would outweigh the possible benefit to the County.

State law governing oil and gas resources is primarily concerned with preservation and wise development of those resources. An overriding objective in state law is to encourage the

development of the state's oil and gas reserves, while preventing waste. Public Resources Code section 3106 empowers the Division of Oil, Gas and Geothermal Resources ("DOGGR") to supervise oil and gas drilling "so as to permit the owners and operators of the wells to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons." (Pub. Res. Code, § 3106(b).) The Code also directs DOGGR to "encourage the wise development of oil and gas resources." (Pub. Res. Code, § 3106(d).) In 1974, California joined the Interstate Compact to Conserve Oil and Gas, whose purpose is to prevent waste in producing oil and gas in oil-producing states. Among the objectives of the Compact, enshrined in California law, is "to recommend measures for the maximum ultimate recovery of oil and gas." (Pub. Res. Code, § 3276.)

An ordinance adopted by a California County – a subdivision of the state – to ban all oil and gas development within its boundaries is inimical to the clear objectives established in state law. As such, the Proposed Ordinance would be preempted by state law.

We are aware of no California court, at any level of our judicial system, that has reviewed and upheld a city- or county-adopted ban on all oil and gas development.

Courts in other states which have considered this question, however, have struck down such broad bans. A federal court in New Mexico recently found that an ordinance adopted by Mora County was preempted by New Mexico law because it was "antagonistic to state law, because it prohibits activities that New Mexico state law permits." (*SWEPI, LP v. Mora County*, Dist. N.M. Case No. CIV 14-0035 JB/SCY, Memorandum Opinion, Jan. 19, 2015, at 179.)

Similarly, the Colorado Supreme Court ruled more than 20 years ago that "the statewide interest in the efficient development and production of oil and gas resources in a manner calculated to prevent waste, as well as in protecting the correlative rights of owners and producers in a common pool or source to a just and equitable share of the profits of production, prevents a home-rule city from exercising its land-use authority so as to totally ban the drilling of oil, gas, or hydrocarbon wells within the city." (*Voss v. Lundvall Bros.* (1992) 830 P.2d 1061, 1062.) Both New Mexico and Colorado are members of the Interstate Compact to Conserve Oil and Gas, and, similar to California, state law in both states prioritizes the wise development and prevention of waste in promoting the recovery of oil and gas resources.

The California Legislature long ago expressed its intent to promote the recovery of oil and gas resources in the state. A local ordinance prohibiting those activities in their entirety is contrary to the state's general intent and would be preempted by state law.

III. A BAN ON ALL OIL AND GAS PRODUCTION WOULD BE ARBITRARY AND IRRATIONAL

The Proposed Ordinance also appears to go well beyond the general police power granted to local municipalities to enact zoning ordinances.

Courts are clear that a municipality may not enact a prohibition on oil and gas development unless it articulates justifications for doing so that are reasonable, non-arbitrary, and which show that the prohibition is reasonably necessary and reasonably related to legitimate government objectives. This principle was first set forth by the California Supreme Court in

Pacific Palisades Assn. v. City of Huntington Beach (1925) 196 Cal. 211, when the Court considered the validity of an emergency ordinance banning oil production in certain zones within the city. The Court made clear that "it is elementary that the enjoyment of the property cannot be interfered with or limited arbitrarily." (*Id.* at 216.) Furthermore, any zoning ordinance "must be reasonably necessary and reasonably related to the health, safety, morals, or general welfare of the community" (*id.*), and while a municipality may restrict oil development within its boundaries, it may only do so "if reason appears for so doing." (*Id.* at 217.)

Subsequent cases have confirmed that a municipality may only utilize a zoning ordinance to restrict oil and gas development if it articulates reasonable justifications for doing so, and if the action is not arbitrary. (See, e.g., *Marblehead Land Co. v. City of Los Angeles* (1931) 47 F.2d 528, 532 [a restriction on oil development is permissible only "provided it is done reasonably and not arbitrarily"]; *Beverly Oil Co. v. City of Los Angeles* (1953) 40 Cal.2d 552 [citing both *Pacific Palisades Assn.* and *Marblehead Land Co.* for the proposition that zoning ordinances restricting oil development may not be arbitrary or unreasonable]; *Friel v. County of Los Angeles* (1959) 172 Cal.App.2d 142 [citing *Pacific Palisades Assn.*, *Marblehead Land Co.*, and *Beverly Oil Co.* for the same proposition].)

As noted above, we are aware of no California judicial decision affirming a city- or county-adopted ban on oil and gas production in the entirety of a city or county.[2]

The Planning Department Presentation notes that Santa Cruz County recently adopted a general plan amendment banning oil and gas exploration, and the City of Beverly Hills adopted an ordinance which banned fracking and similar extraction techniques. (Presentation, slide 21.) Neither of those actions have been challenged in court, however, and there is no controlling legal authority that supports the legality of those ordinances. The only municipality-enacted local ordinances in California which restricted oil and gas development that have been successfully defended in courts were ones that restricted the practice in only a portion of the city or county, not a blanket prohibition throughout the jurisdiction. If the County moves forward with the Proposed Ordinance, therefore, there is a real risk, as identified by the County Counsel's office, of a legal challenge.

While it does not appear that California courts have had the opportunity to pass on the question that the Proposed Ordinance would present, courts in other states have. ***Many of these courts have concluded that local zoning ordinances banning oil and gas development were not permissible.***

In *Clouser v. City of Norman* (1964) 393 P.2d 827, for example, the Oklahoma Supreme Court found that an ordinance prohibiting drilling within city limits was beyond the city's power

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[2] In the City of Hermosa Beach, voters in 1995 adopted a proposition that banned oil and gas drilling within the city. What followed was nearly 20 years of litigation between the city and a company that had a contract to drill for oil in the city and which claimed $750 million in lost profits damages. After spending heavily on litigation, the city eventually settled the lawsuit in 2012. The settlement required Hermosa Beach to pay millions of dollars to the company's successor, and to place an initiative on the ballot that would allow an exception to the municipal code's general prohibition. The initiative is on the ballot at the election on March 3, 2015.

because the city failed to articulate reasonable, non-arbitrary reasons for the enactment. The court found that due to the isolation of the property in question, "[t]he development of this tract could not affect other areas nor could it affect the future development of the city." (*Id.* at 830.) The city could not justify its action, and therefore the ordinance was void.

Here, the County has failed to articulate – and cannot articulate – reasonable, non-arbitrary justifications for the Proposed Ordinance. The Staff Report identifies only three active oil and gas permits in the County, all in the Livermore Oil Field, on land covering three square miles east of the intersection of Greenville Road and Patterson Pass Road. This land is zoned for large parcel agricultural uses, and is not adjacent to or in proximity to residential, commercial, or public uses. Only one of the active permits involves active wells, and there is no evidence in the record that these active wells have caused any negative environmental impacts.

As the Staff Report makes clear, there is no hydraulic fracturing in the County, and none is planned. Nevertheless, the Staff Report recites a series of purported negative effects of oil and gas development, including pollution of air, soil, surface water, and groundwater, depletion of water supplies, noise pollution, seismic hazards, and greenhouse gas emissions (Staff Report, p. 3). The Staff Report does not tie any of these impacts to active operations in the County.

Listing the perceived impacts of hydraulic fracturing when none is occurring in the County and none is planned is not enough to uphold the Proposed Ordinance. To the contrary, a zoning ordinance that restricts or bans oil and gas development must be supported by reasonable, non-arbitrary justifications that are related to the public health, safety, morals, or general welfare. (See, e.g., *Pacific Palisades Assn.*, 196 Cal. 211, 216-17; *Marblehead Land Co.*, 47 F.2d 528, 532.)

Of the 418 square miles within the County's East County Area Plan, thousands of acres are zoned for large parcel agriculture uses, and hundreds more are zoned for industrial uses. These lands are specifically set aside and segregated from denser residential, commercial, and public uses. The Proposed Ordinance would prohibit oil and gas development on all of these lands, even though there is no evidence whatsoever that existing oil and gas activities contribute to any of the supposed negative impacts with which the County is purportedly concerned. This is the very definition of an irrational, arbitrary regulation. We have serious doubts about whether it could survive judicial scrutiny.

IV. THE PROPOSED ORDINANCE FAILS TO PROTECT THE INTERESTS OF EXISTING OPERATORS

The Proposed Ordinance is also fatally flawed because it appears to do nothing to protect the interests of holders of vested rights – i.e., the existing producer of oil and gas in the County.

The Staff Report states that the effect of the Proposed Ordinance would be to make existing oil and gas operations in the County non-conforming uses. The Staff Report explains that this designation would prevent the issuance of new permits for oil and gas uses (Staff Report, p. 2), but would allow modifications to existing permits for well stimulation techniques provided that the new procedures neither significantly alter nor expand the existing nonconforming use. (*Id.*)

We agree that such accommodations would be required for legal nonconforming uses, but we are concerned that they do not appear to be congruent with Alameda County Code section 17.52.700. Section 17.52.700 states that where an existing nonconforming use requires a license or permit, such license or permit may not be authorized, issued, renewed, re-issued or extended "unless and until a conditional use permit has been secured for the continued maintenance or conducting of the business use." This appears to provide very little certainty for any existing operator and threatens to stop existing production long before the resource is fully exhausted. The Staff Report asserts that "the net effect on the active operation would be virtually nil" and that the active producer "would be able to continue to extract oil as they currently do until the oil is gone, and to perform any activities currently permitted." (Staff Report, p. 4.) We are concerned that this may not be the case under the Proposed Ordinance as it is currently drafted. The existing producer may need revisions or extensions to its existing permits, including conditional use permits that are subject to expiration, and the Proposed Ordinance must make clear that such revisions and extensions would be approved if the Ordinance is adopted.

Though we strongly oppose the Proposed Ordinance, if it is enacted, the County must also act to fully protect the interests of vested rights holders, who have valid permits to conduct oil and gas operations and who have invested substantial resources in reliance on those permits.

Oil and gas exploration and drilling is a complex, dynamic enterprise, and often requires revisions to existing permits and approvals to account for changes in environment, circumstances, and regulations. In particular, even existing operations need new and revised permits for redrilling wells and well workovers, which are a routine and expected part of operations, and extensions to conditional use permits required for operations. The Proposed Ordinance must make clear that holders of vested rights may seek and obtain revisions to existing permits, including conditional use permits required by Section 17.52.700, in order to fully develop resources authorized by their permits.

V. ADOPTING THE PROPOSED ORDINANCE WITHOUT ANY ENVIRONMENTAL REVIEW VIOLATES CEQA

The Community Development Agency proposes to exempt the Proposed Ordinance from CEQA as a regulatory action to protect the environment under Section 15308 of the CEQA Guidelines. Section 15308 exempts only "actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment." (CEQA Guidelines, § 15308.)

The Staff Report presents no evidence that the Proposed Ordinance is necessary to protect the environment. As the Staff Report acknowledges, there is no hydraulic fracturing currently occurring in the County, and none is planned. The Staff Report lists a litany of alleged negative impacts of oil and gas development (Staff Report, p. 3), but provides no evidence that oil and gas activities in the County are causing or contributing to any of those impacts.

Section 15308's exemption for regulatory acts is narrow and cannot be stretched to include the Proposed Ordinance. A municipality cannot "circumvent CEQA merely by characterizing its ordinances as environmentally friendly and therefore exempt" under the exemption. (*Save the Plastic Bag Coalition v. County of Marin* (2013) 218 Cal.App.4th 209,

219-220.) Rather, a municipality claiming that a project need not undergo CEQA review because it is a regulatory action intended to protect the environment must first marshal substantial evidence establishing that the project falls within the exempt category of projects. (See *Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 115.)

In *Dunn-Edwards Corp. v. Superior Court* (1992) 9 Cal.App.4th 644 (disapproved on other grounds by *Western States Petroleum Assn. v. Superior Court* (1995) 9 Cal.4th 559), for example, the court rejected an air district's argument that regulations imposing emission standards for volatile organic compounds contained in architectural coatings were categorically exempt under CEQA Guidelines Sections 15307 and 15308 because the regulations were more stringent and "cannot be said to have created an adverse change." (*Id.* at 657.) The court held the agency's conclusion that the regulations would not result in a net increase in emissions was not supported by any evidence on the record and was therefore "predicated on lack of the very information which would be provided by an EIR." (*Id.* at 658.)

Here, there is no evidence, much less substantial evidence, to support a determination that the Proposed Ordinance falls within the narrow exemption under Section 15308. The Staff Report merely concludes, without further explanation, that the exemption applies. This is not enough. The County cannot simply assert, without any support, that the Proposed Ordinance is categorically exempt from CEQA under Section 15308. (*Save the Plastic Bag Coalition*, 218 Cal.App.4th at 219-220.) Because the County has no evidence to support its conclusion that the Proposed Ordinance is exempt from CEQA, the County has not met its burden of establishing that the Proposed Ordinance falls within Section 15308's exemption for regulatory actions to protect the environment. Therefore, the Proposed Ordinance must undergo CEQA review.

BOS, CAO

Castro Valley Democratic Club
Post Office Box 20866
Castro Valley CA 94546

CLERK, BOARD OF
SUPERVISORS' OFFICE
15 MAR 30 PM 1:39
COUNTY OF ALAMEDA

March 24, 2015

Alameda County Planning Commission

% Bruce Jensen, Senior Planner

Alameda County Planning Dept

224 W. Winton Ave, Room 111

Hayward CA 94544-1215

Dear Commissioners:

We are writing to you in support of eliminating as permitted uses any new or expanded oil and gas exploration and production activities in the Alameda County General Plan and the East County Area Plan, and removing oil and gas exploration, production, and extraction as permitted uses from the Alameda County Zoning Ordinance. These changes are recommended by county staff in your public hearing on February 17, 2015 and the Castro Valley Democratic Club hereby endorses the resolution presented on that date.

Oil and gas operations that are increasingly using hydrofracking methods use significant amounts of precious water that Alameda County and California can simply not afford to waste in this time of extreme drought. Once hydrofracking is started it must performed on a continuous basis thus using even more water resources.

The use of enhanced methods to develop oil and gas supplies does work but we must question why we are using resources to produce more dirty oil and gas that then detracts from efforts to produce clean renewable and other alternative energy sources. The profits that result from oil and gas production benefits a small few at significant consequences to the public at large.

Oil and gas operations are notorious for improper disposal of their waste products, often in unlined pits and pits which overflow with storm water, which results in contamination of surface water such as streams. Groundwater aquifers have already been impacted by improper disposal into wells, many of these in areas that once contained clean water suitable for crop irrigation and drinking. Once water is contaminated with the by-products of oil and gas operations, it is extremely detrimental to wildlife, crops, and people.

C DA

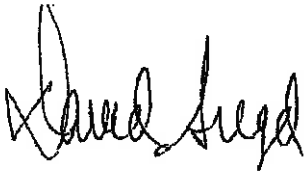
Oil and gas operations emit methane, a greenhouse gas which causes significantly more global warming effects than carbon dioxide. The climate change we are helping cause by continued hydrofracking here will have a large economic effects in Alameda County due to sea level rise and even more damaging effects of larger storms and flooding events.

Oil and gas operations are not good neighbors to farms, ranches, vineyards, homes, schools, businesses, and other inhabited places. They adversely affect the health of children and adults who live or work nearby, and often result in damage to nearby crops.

We urge you to protect the environment, and the health and safety of animals and people in Alameda County by adopting the changes to the General Plans and Zoning Ordinance as recommended by county staff on February 17, 2015.

By: David Siegel

President Castro Valley Democratic Club



cc: Alameda County Board of Supervisors

1221 Oak St. Suite 536

Oakland CA 94612

Castro Valley Democratic Club Membership by e-mail

THE COUNTY PLANNING COMMISSION OF ALAMEDA COUNTY
HAYWARD, CALIFORNIA

~ DRAFT ~ RESOLUTION NO. 15- - AT MEETING HELD FEBRUARY 17, 2015

RECOMMENDATION FOR EAST COUNTY AREA PLAN (ECAP) GENERAL PLAN AMENDMENT AND ORDINANCE AMENDING CHAPTER 17.06 OF THE ALAMEDA COUNTY GENERAL ORDINANCE CODE REGARDING RESTRICTION OF DRILLING FOR AND REMOVAL OF OIL, GAS AND OTHER HYDROCARBON SUBSTANCES

Introduced by Commissioner
Seconded by Commissioner

WHEREAS, one of the basic objectives of the County's General Plan and Zoning regulations is to promote the public health, safety and; and

WHEREAS, the land use activity of drilling for and extraction of oil, gas and hydrocarbons has been conducted in Alameda County for several decades, subject to issuance of discretionary conditional use permits; and

WHEREAS oil and gas exploration and development raises a number of public health, safety and welfare concerns, including pollution of air, soil, surface water, and groundwater; the depletion of water supplies; noise pollution; and seismic hazards; and

WHEREAS greenhouse gas emissions resulting from oil and gas exploration and burning fossil fuel are contributing to climate change with potential public health, safety, welfare, economic, and social impacts in Alameda County, including increased risk of flooding and inundation, extreme storm events, erosion, water shortages, loss of biodiversity, heat waves, and wildfires; and

WHEREAS the proposed General Plan Amendment and Ordinance Revision would render these activities nonconforming uses; and in this way, the existing uses would be able to continue to proceed as originally approved, but could not expand or change significantly; and,

WHEREAS the proposed General Plan Amendment and Ordinance Revision would, as a result, progressively reduce and restrict future oil and gas production land uses on all lands within the unincorporated area of Alameda County, thus helping to reduce the likelihood of the risks of oil and gas production described above; and

WHEREAS with the proposed actions, the Alameda County Board of Supervisors intends to prohibit oil and gas exploration and extraction in all districts.

WHEREAS this Planning Commission held a duly noticed public hearing on the proposal to amend the East County Area Plan (ECAP) and the General Ordinance Code, Section 17.06 at the hour of 3:00 p.m. on Tuesday, the 17th day of February, 2015, in the Auditorium of the Alameda County Building, 224 Winton Avenue, Hayward, California; and

WHEREAS the Review Documents, testimony submitted in writing and at the public hearing and other items in the public record have been considered by the Planning Commission prior to this action; and

WHEREAS this Planning Commission does find that amendment of the Alameda County General Plan and Section 17.06 of the General Ordinance Code for the purpose of restriction of drilling and removal of oil, gas and other hydrocarbon substances is in the interest of the public health, safety, and welfare.

NOW THEREFORE,

BE IT RESOLVED that the Planning Commission does hereby recommend to the Board of Supervisors amendment of the Alameda County General Plan, East County Area Plan, specifically that the following Policy be removed in its entirety:

> *ECAP Policy 167: The County shall impose conditions of approval on new **Petroleum Resource Exploration and Extraction** conditional use permits to protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction; potential impacts include but are not limited to traffic, noise, dust, health and safety, and visual impacts, as well as land contamination, surface and groundwater contamination, improper disposal of petroleum wastes, and improper site reclamation. The conditions should at least include, but not be limited to, those developed through the California Environmental Quality Act review process, and shall be monitored accordingly.*

BE IT FURTHER RESOLVED that the Planning Commission does hereby recommend to the Board of Supervisors that the Alameda County Code of Ordinances, Title 17 - Zoning, Section 17.06.040, Conditional uses—Board of zoning adjustments, Paragraph I be repealed as follows:

> ~~I. Drilling for and removal of oil, gas or other hydrocarbon substances;~~

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOE:

EXCUSED:

ABSENT:

ABSTAINED:

ALBERT LOPEZ - PLANNING DIRECTOR & SECRETARY
COUNTY PLANNING COMMISSION OF ALAMEDA COUNTY

Mr. David Siegel
3787 Brookdale Blvd.
Castro Valley, CA 94546

OAKLAND
CA 945
27 MAR '15
PM 6.1

Alameda County Board of Supervisors
1221 Oak Street, Suite 536
Oakland, CA 94612

CLERK, BOARD OF
SUPERVISORS' OFFICE
15 MAR 30 PM 4:32
COUNTY OF ALAMEDA

94612429499

Council 57
AFSCME
We Make California Happen

Oakland
80 Swan Way, Suite 110
Oakland CA 94621-1438
Toll Free 800-244-8122
Phone 510-577-9694
Fax 510-383-9613
www.afscme57.org

August 28, 2014

Alameda County Board of Supervisors
County of Alameda Administration Building
1221 Oak Street, #536
Oakland, CA 94612

Dear Alameda County Board of Supervisors,

I am writing on behalf of AFSCME Council 57 to urge you to ban fracking and other extreme oil and gas stimulation techniques in Alameda County.

As you may know, fracking and other extreme oil and gas extraction methods pose a direct and immediate threat to the drinking water, air, food, health, climate and economy of Alameda County and California. Fracking furthers our dependence on fossil fuels, delaying the much-needed transition to a green energy economy.

The risks of fracking include the leaching of fracking fluid into local water tables, difficulty disposing the waste fluids, induced earthquakes, and severe air pollution. In addition, fracking uses up to 2 million gallons of fresh water per fracked event, a waste of water we cannot afford during the worst drought California has ever seen.

Currently Alameda County has six producing oil and gas wells east of Livermore. Though they are not currently being fracked, oil and gas companies are pushing expansion across the state. Passing a local ordinance as a preventative measure would ensure that Alameda County remains protected and frack-free.

The Board of Supervisors has shown strong leadership in the past on clean energy initiatives, and now has the opportunity to once again lead. AFSCME Council 57 opposes fracking, supports the efforts of Alameda County Against Fracking and is a member of Californians Against Fracking.

Thank you for continuing to put the health of our communities and the environment first.

Sincerely,

Cheryl Brown
Political and Legislative Director

opeiu3afl-cio252ad

Alameda County Board of Supervisors
County of Alameda Administration Building
1221 Oak St., #536
Oakland, CA 94612

Dear Alameda County Board of Supervisors,

We urge you to take expedited action to ban extreme oil and gas well stimulation techniques such as hydraulic fracturing and acidizing in Alameda County, by passing an ordinance to that effect. A county ordinance will protect Alameda County from the multiple hazards posed by high-intensity petroleum operations and send a clear message to Governor Brown that he should end fracking in the state of California.

Hydraulic fracturing - also known as fracking - is a water-intensive process where millions of gallons of fluid - typically water, sand, and chemicals - are injected underground at high pressure to fracture the rock surrounding an oil or gas well. Several environmental concerns have emerged across America which pose critical challenges, including the leaching of fracking fluid into local water tables, difficulty of disposing of the waster fluids, induced earthquakes, and severe air pollution.

Currently Alameda County has 6 producing oil and gas wells east of Livermore. Without a local ordinance prohibiting extreme well stimulation techniques, we believe the County is vulnerable to the introduction of these methods and the resulting environmental risks and concerns that could endanger the nearly 1.6 million citizens of the county.

Leading local governmental units such as Los Angeles, Butte County and Marin County have passed legislation against fracking, with Santa Cruz County being the first to issue a county-wide ban. Alameda County has the opportunity to join the leaders by prohibiting fracking and moving in the direction of more sustainable/less polluting energy solutions. This ordinance will provide the broad political authority to demand that California do the same, before the consequences of this unregulated, socially irresponsible, and environmentally destructive energy extraction spreads any further.

We are providing a packet of items that we hope will be informative to you and helpful to staff in drafting an ordinance. Included in the packet are: a fact sheet on fracking from Food & Water Watch, a sample ordinance for Alameda County, pictures demonstrating hazards already observed in areas of California where these methods are taking place, ongoing petitions from both Moveon.org and CREDO Action so far signed by over 6,500 individuals, and an ongoing sign on letter from organizations that support a ban on extreme well stimulation techniques in Alameda County.

Additionally, should Alameda County Counsel be interested in additional legal support, we can refer you to a white paper covering legal issues of local ordinances prohibiting

high-intensity petroleum operations written by legal staff at the Center for Biological Diversity.

We appeal to you today as representatives of a broad coalition of groups united in our determination to protect Alameda County, and ask you to take the first step by instructing staff to draft an ordinance that would prohibit the use of all extreme oil and gas well stimulation techniques in the unincorporated areas of Alameda County.

Sincerely,

Aria Cahir, San Francisco Bay Chapter Sierra Club

Barbara Stebbins, 350 Bay Area

Frank Burton & Lawrence Abbot, MoveOn.org

Tia Lebherz, Food & Water Watch

(on behalf of Alameda County Against Fracking)

Sample Ordinance to Ban the Use of Land for Fracking and Other High-Intensity Petroleum Operations in Unincorporated Areas of Alameda County

Whereas, the purpose of this Ordinance is to protect the public health and safety, and general welfare of the residents of Alameda County and to safeguard the local air, water, and soil our County depends on; and

whereas high-intensity petroleum operations including but not limited to: hydraulic fracturing, acid well stimulation, acid matrix, enhanced recovery wells, and combinations of these and other extreme methods; require the use of chemicals known to be hazardous to humans and the environment; and utilize vast quantities of water; and

whereas high-intensity petroleum operations threaten contamination of ground and surface water; contribute hazardous chemicals to air pollution; contaminate soil and, in the processes of extraction, transport and refining, emit large quantities of greenhouse gases; and

whereas High-Intensity Petroleum Operations as well as the disposal of waste fluid resulting from these operations have now been shown to cause increased strength and frequency of earthquakes; and

whereas all of Alameda County is considered highly seismically active with numerous identified earthquake faults, including the Hayward and Calaveras Faults;

whereas the unincorporated areas of Alameda county include and are adjacent to some of the most densely populated areas in California; and

whereas these same unincorporated areas of Alameda county serve as underground water storage for much of Alameda County as well as underground water storage for San Francisco County; and

whereas water scarcity is a frequently recurring problem in Alameda County and predicted to become worse as the effects of climate change accelerates; and

whereas Alameda County already experiences serious air pollution problems; and

whereas the significant greenhouse gas emissions that would result from high-intensity petroleum operations would undermine Alameda County's Climate Action Plan's goal of reducing greenhouse gas emissions 80% by 2050;

the Board of Supervisors of the County of Alameda find that the use of land for the development, construction, installation, or operation of any facility, appurtenance, or above-ground equipment in support of high-intensity petroleum operations as defined below is incompatible within the unincorporated portions of Alameda County and is prohibited in all unincorporated areas of Alameda County.

Traditional oil and gas extraction operations already permitted within the county may continue, but those operational wells are prohibited from being subject to any of the high-intensity petroleum operations prohibited in the unincorporated areas of Alameda County.

Definitions (Taken from San Benito's *Protect Our Water and Health: Ban Fracking Initiative.*)

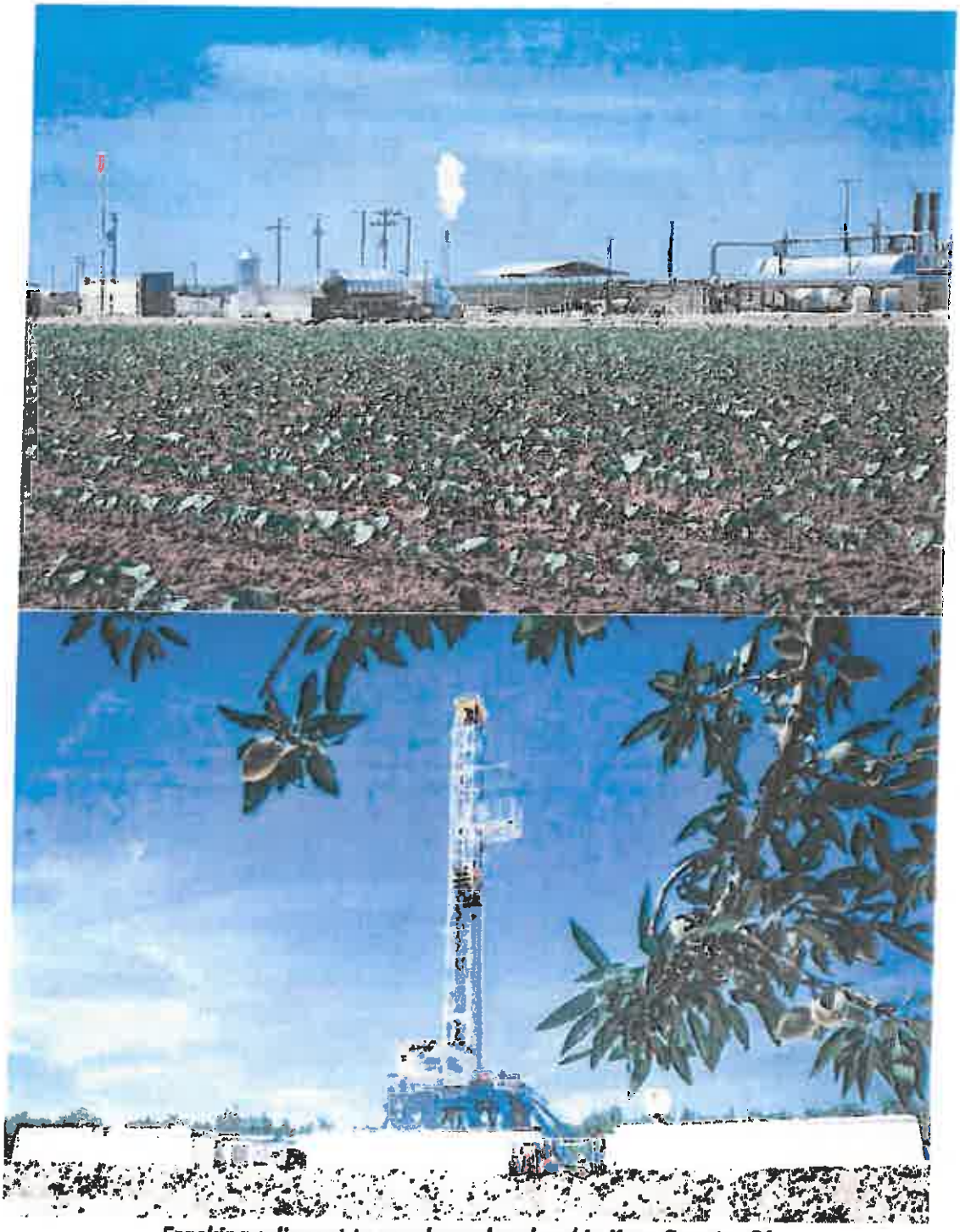
"High-Intensity Petroleum Operations" mean (1) Well Stimulation Treatments and/or (2) the operation of Enhanced Recovery Wells. "Well Stimulation Treatment" means any treatment of a well designed to enhance oil and gas production or recovery by increasing the permeability of the formation. Well Stimulation Treatments include, but are not limited to, Hydraulic Fracturing Treatments and Acid Well Stimulation Treatments.

"Hydraulic Fracturing Treatment" means a Well Stimulation Treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid or fluids into an underground geologic formation in order to fracture or with the intent to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

"Acid Well Stimulation Treatment" means a Well Stimulation Treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The Acid Well Stimulation Treatment may be at any applied pressure and may be used in combination with Hydraulic Fracturing Treatments or other Well Stimulation Treatments. Acid Well Stimulation Treatments include acid matrix stimulation treatments and acid fracturing treatments. Acid matrix stimulation treatments are acid treatments conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.

"Enhanced Recovery Wells" means wells that are injected with brine, water, steam, polymers, carbon dioxide, or other fluids into oil-bearing formations to recover residual oil and in some limited applications natural gas. The injected fluid thins (decreases the viscosity) or displaces oil and gas, which is then available for recovery. Examples include waterflood injection, steamflood injection, and cyclic steam injection.

Fracking and Agriculture in California
Photos Taken May 2014 – Kern County, CA



Fracking adjacent to an almond orchard in Kern County, CA

Alameda County Against Fracking - Sign On

Please join Alameda County Against Fracking, a coalition of local organizations united to ban fracking & other extreme well stimulation methods in Alameda County.

Fracking poses a direct and immediate threat to the drinking water, air, food, health, wildlife, climate and economy of Alameda County and California. Alameda County is home to six oil wells that are not currently being fracked. As a county we should use the precautionary principle to ban fracking before it starts and take a stand for our essential resources.

We believe we must act locally to ban fracking in our county while simultaneously working with the statewide coalition Californians Against Fracking. While our state prides itself on being a leader in the fight against climate change, oil companies are gearing up to frack the Monterey Shale putting farmland, water, communities, wildlife and our climate at risk.

Alameda County Against Fracking and Californians Against Fracking are coalitions for any organization, civic group, business, faith institution, health institution, professional association, labor union, political club, environmental justice, environmental or outdoor organization, social justice group, farm, restaurant, brewery or other food producer that supports a ban on fracking in Alameda County and California. Join us and help protect our county and state from fracking.

Organizational Sign Ons As of 5/28/14

San Francisco Bay Chapter Sierra Club
350 Bay Area
MoveOn.org
Food & Water Watch
Center For Biological Diversity
California Native Plants Society East Bay Chapter
Greenlining Institute

Ongoing Petitions to Ban Fracking in Alameda County

CREDO: https://www.credomobilize.com/petitions/ban-fracking-in-alameda-county

To: Alameda Board of Supervisors

Fracking is an inherently dangerous threat to our air, water and health. Ban fracking now.

Signatures to date: 3, 654

MoveOn.org: http://petitions.moveon.org/sign/ban-fracking-and-other

To: Alameda County Board of Supervisors:

BAN FRACKING AND OTHER EXTREME OIL EXTRACTION METHODS IN ALAMEDA COUNTY

Signatures to 5/28/14: 2,857 and growing every day

CENTER for BIOLOGICAL DIVERSITY Because this is good.

working through science, law and creative media to secure a future for all species, great or small, hovering on the brink of extinction.

September 3, 2014

Via Electronic Mail

Alameda County Transportation and Planning Committee
County of Alameda Administration Building
1221 Oak Street, #536
Oakland, CA 94612

Re: Consideration of Ban on Enhanced Well Stimulation

Dear Transportation and Planning Committee Members:

On behalf of the Center for Biological Diversity, I am writing to thank you for your attention to the dangers of hydraulic fracturing (fracking) and other forms of enhanced well stimulation. We encourage you to pass a county ordinance that will protect the water, air, climate, and health of Alameda County residents.

The presentation materials on fracking provided by Chris Bazar, Director of the Community Development Agency, outline six options in response to the County's consideration of addressing fracking and other oil and gas activity:

1. Do nothing, and allow oil operators to use enhanced well stimulation if they wish.
2. Pass an ordinance requiring administrative or discretionary review of enhanced well stimulation proposals.
3. Adopt a moratorium on enhanced stimulation.
4. Adopt a ban on enhanced stimulation.
5. Adopt a moratorium or ban on all new oil and gas activities.
6. Track the outcome on the City of Compton legal challenge, and then choose a strategy.

We strongly urge the Committee to recommend both Options 4 and 5. The combination of these two options is the best way to ensure the protection of health and safety of Alameda County residents. A ban on enhanced stimulation should effectively prohibit fracking, acidizing, cyclic steam injection, and other forms of dangerous oil and gas operations that have been shown to be unsafe. As the presentation points out, well contamination has been confirmed in four states. Recently, the Pennsylvania Department of Environmental Protection admitted that 243 water wells were contaminated as a result of fracking. Together with the dangers from water resource depletion, air pollution, seismic activity, damage to wildlife and ecosystems, and mounting evidence of adverse health impacts, Alameda County must prohibit these practices for the general welfare of the County.

The County should also ban all new oil and gas activity. The expansion of oil and gas operations in the County poses a threat in much the same manner as enhanced well stimulation. The various stages of oil and gas production—drilling, construction, extraction, transportation, waste disposal—are each damaging to the environment and public health. Thus, a ban on oil and gas is the best way to protect Alameda County residents.

The other options do not go far enough in protecting public health and the environment. Doing nothing would expose residents to potentially irreversible and irreparable harm. Groundwater contaminated by well stimulation chemicals cannot be feasibly remediated and illnesses caused by exposure to chemicals cannot be cured. The time to pass protective measures is now, *before* residents become sick and *before* the environment is harmed.

The legal challenge against the City of Compton should be viewed only as a scare tactic by the oil industry. Local governments are well within their authority to use their zoning code to ban or restrict oil and gas activity, including fracking (See attached white paper). The city of Compton has ample legal support for their ordinance, and we believe the city will prevail on all issues raised in the complaint filed in Los Angeles Superior Court. Even in the unlikely event that the oil industry were to win on some technicality in this challenge, however, that would not call into question the basic police power of local governments in California to protect their residents. Moreover, the final judgment may take a long time, during which Alameda County will risk exposing its residents to the dangers of enhanced well stimulation. Thus, the County should not wait while the oil industry's weak lawsuit proceeds in court.

We applaud the strong leadership the Committee has shown so far in addressing this important issue. We urge the Committee to continue its efforts to protect the water, air, climate, and health of the County's residents.

Thank you for your attention to this matter.

Sincerely,

Hollin Kretzmann
Staff Attorney
Center for Biological Diversity
351 California St., Ste. 600
San Francisco, CA 94110
(415) 436-9682

Local Governments and the Power to Ban Fracking and Other Forms of Unconventional Oil and Gas Activity in California

Hollin Kretzmann, Staff Attorney
Kassie Siegel, Senior Counsel and Climate Law Institute Director

January 31, 2014

INTRODUCTION

Many cities and counties in California have recently begun to consider passing bans or moratoriums on oil and gas development or on unconventional well-stimulation techniques such as hydraulic fracturing ("fracking"). Because the oil and gas industry frequently asserts that local governments do not have the authority to enact these ordinances,[1] the Center for Biological Diversity studied some of the main points of contention.

A review of legal authority showed that local governments have the authority to permanently or temporarily ban oil and gas development within their jurisdiction. More limited bans on fracking are also within a local government's authority and are also possible. A court reviewing the validity of a local ordinance will likely look to the specific circumstances that are unique to each city and county. Therefore, it is important for proponents of an ordinance to consult with their own counsel and analyze the facts on a case-by-case basis.

There is always some inherent legal risk in enacting such ordinances, especially when faced with aggressive opposition by the oil and gas industry, which has vast financial resources to intimidate and litigate. Nevertheless, it is our opinion that well-drafted local ordinances that address the community's need for protection from oil and gas development and extreme extraction techniques should withstand legal challenge despite claims to the contrary.

I. Cities and Counties Have the Authority to Ban All Oil and Gas Development Within Their Jurisdiction

California has long recognized the authority of a local government to use its police power and zoning power to enact local bans on all oil and gas activity. The state Constitution provides that local governments "may make and enforce all ordinances and regulations in respect to municipal affairs.... City charters ... with respect to municipal affairs shall supersede all laws inconsistent therewith." Article XI, sec. 5. The California Public Resources Code confirms that local

[1] See, e.g., Letter to Matthew W. Granger, County Counsel, San Benito County, from Craig A. Moyer, Manatt, Phelps, and Phillips, LLP, dated September 18, 2012.

authorities retain the power to "enact and enforce laws and regulations regulating the *conduct and location* of oil production activities, including ... zoning,... public safety, nuisance ... [and] noise..." Cal. Pub. Res. Code § 3690 (emphasis added). Thus, a city using its zoning power has inherent authority to ban oil and gas development.

The courts have consistently held that city zoning ordinances, unquestionably a municipal affair, prohibiting the production of oil in designated areas are valid. A city has "unquestioned right to regulate the business of operating oil wells within its city limits, and to prohibit their operation within delineated areas and districts if reason appears for so doing." *Beverly Oil Co. v. City of Los Angeles* (1953) 40 Cal.2d 552 at 558. There can be no constitutional challenge to an ordinance banning oil development if it is reasonably related to promoting the public health, safety, comfort, and welfare, and if the means adopted to accomplish that promotion are reasonably appropriate to the purpose. *Hermosa Beach Stop Oil Coalition v. City of Hermosa Beach* reinforced this deference to local authority. "Enactment of a city ordinance prohibiting exploration for and production of oil, unless arbitrary, is a valid exercise of the municipal police power." (2001) 86 Cal.App.4th 534, 555.

"There can be no question of the inherent right of the city to control or prohibit such production, provided it is done reasonably and not arbitrarily." *Beverly* at 558 (citing *Marblehead Land Co. v. City of Los Angeles* (1931) 47 F.2d 528; *see also* California Attorney General's Opinion (1976) 59 Ops. Cal. Atty. Gen. 461, 465 ("[I]t is our opinion that cities and counties have the power to prohibit [oil and gas] operations."). It is "well settled that the enactment of an ordinance which limits the owners' property interest in oil bearing lands located within the city is not of itself an unreasonable means of accomplishing a legitimate objective within the police power of a city." *Beverly Oil* at 558. The Supreme Court has long held that zoning "is one of the most essential powers of the government, one that is the least limitable." *Beverly* at 557, citing *Chicago & Alton R. Co. v. Tranbarger* (1915) 238 U.S. 67, 78. Thus, there is ample support showing that local authorities may prohibit oil and gas activity, and that such prohibitions are "reasonable."

Opponents of a ban frequently argue that local authority is "preempted" by state law and therefore cannot restrict oil and gas development. Preemption occurs when a state law directly regulates an activity, which trumps a local authority's ability to enact conflicting regulations. Preemption occurs only when a state law expressly preempts local laws and ordinances or when it does so impliedly.

California courts will "presume, absent a clear indication of preemptive intent from the Legislature," that traditional areas of local control such as land use "[are] not preempted by state statute." *Big Creek Lumber Co. v. Cty. of Santa Cruz* (2006) 38 Cal.4th 1139, 1150 (adding, "The party claiming that general state law preempts a local ordinance has the burden of demonstrating preemption.").

Though there is some disagreement as to whether local authorities could regulate downhole activities, ordinances enacted for the purposes of land-use control and environmental protection are thought to be within the local police power of cities and counties and not preempted by the state. The California Attorney General opined, "[A]pproval [of the activity by the state] would ... not nullify a valid prohibition of drilling or a permit requirement by a county or city in all or

parts of its territory." 59 Ops. Cal. Atty. Gen. 461 (1976). A local government could approve a non-conflicting requirement related to a local concern, "such as environmental protection." *Id.* Given that a ban on oil and gas development directly relates to land use and environmental protection, not to mention public health and safety, a local ordinance should withstand a challenge on the grounds of preemption.

There are two types of preemption: express and implied. A court will first determine whether state law contains *express* language that preempts local authority. Courts interpret the absence of explicit preemption language as an indication that legislators did not intend to preempt local ordinances: "When the Legislature wishes expressly to preempt all regulation of an activity, it knows how to do so." *Big Creek Lumber* at 1155. Since California oil and gas law does not contain express language preempting local authority over land use, there is no express preemption. Moreover, the Public Resources Code explicitly preserves local authority to "enact and enforce laws and regulations regulating the *conduct and location* of oil production activities, including ... zoning,... public safety, nuisance ... [and] noise..." Pub. Res. Code § 3690.

Implied preemption is found only where a claimant demonstrates that the local law (1) duplicates state law, (2) contradicts state law, or (3) enters a field that is fully occupied by state law. *See Big Creek Lumber* at 1150. We do not believe that any of these arguments is applicable here.

Local bans would not duplicate state laws because they are enacted for local purposes and because the state does not dictate where and whether oil and gas development can occur. Courts review whether there is "significant local interest to be served that may differ from one locality to another." *Riverside* at 744. In such cases, courts will presume that state law does not preempt local authority. Here, there is tremendous local interest in the issue of oil and gas development, yet localities may differ in the risks they face and their priorities for health, safety, and the environment. Some communities may be especially concerned about groundwater, while other communities may see increased traffic, air quality, surface-water contamination, aesthetic impacts, or particularized effects of climate change as the predominant risk. "If there is a significant local interest to be served which may differ from one locality to another then the presumption favors the validity of the local ordinance against an attack of state preemption." *Big Creek Lumber* at 1149. Local ordinances that address a risk or concern that is particular to that local jurisdiction are more likely to withstand a challenge based on preemption.

The industry may argue that a ban contradicts state oil and gas law, which requires the state to "encourage the wise development of oil and gas." Pub. Res. Code § 3106(d). It may argue that a local ban would contradict state law, thereby triggering implied state preemption. But a court is unlikely to agree with this argument. California courts find implicit preemption over local ordinances when local laws are "contrary or inimical" to the state law. *City of Riverside v. Inland Empire Patients Health & Wellness Center, Inc.*, 56 Cal. 4th 729, 743 (Cal. 2013). A local ordinance is inimical when it "directly requires what the state statute forbids or *prohibits what the state enactment demands*." *Id.* The state law must be "so overshadowing that it obliterates all vestiges of local power as to a subject where municipalities have traditionally enjoyed a broad measure of autonomy." *Big Creek Lumber* at 1154.

A local ban is not inimical to state oil and gas law. The state has the duty to "prevent, as far as possible, damage to life, health, property, and natural resources." Id. § 3106(a). A local ban would align with this goal. In addition, the decision of whether to allow oil and gas development is not preempted by state laws dictating the manner in which oil and gas activity occurs. Furthermore, state courts have held that local prohibitions are not necessarily inimical to state laws that allow a type of activity. For example, state laws that legalized certain kinds of marijuana use did not preempt a local ordinance that banned all marijuana dispensaries. *Riverside* at 743. Similarly, state laws that prohibited local governments from "regulating the conduct of timber operations" did not preclude local governments from banning timber operations from certain areas. *See Big Creek Lumber* at 1149. A state law that regulates the *manner* of activity does not preclude a local government from regulation of the location of that activity. *Big Creek Lumber* at 1157.

Finally, implicit preemption can be found where a subject is fully "occupied" by state law. State law does not fully occupy the field of oil and gas zoning. There is no reference to where oil and gas development can occur, and no law prohibits local authorities from using its land use authority to restrict or ban such activities. Although state regulations do pertain to many aspects of oil and gas development, they do not dictate where oil development may occur. As mentioned above, the Public Resources Code explicitly preserves local authority for zoning matters.

Given the considerations above, local ordinances may be strengthened by including findings that detail the risks and concerns that are unique to that locality. An ordinance that is structured as a land use or zoning ordinance that specifies prohibited uses in all areas is least likely to be preempted by state law.

II. A Well-Drafted City or County Ban on Fracking and Other Extreme Extraction Methods Should Withstand Legal Challenge

Like the complete oil and gas ban, a fracking ban is unlikely to be held as preempted by state law. Nonetheless, industry may raise arguments that a fracking ban is preempted. California recently enacted Senate Bill 4 (SB 4), a law that regulates hydraulic fracturing within the state. The oil industry may argue that the law is evidence that the state intends to preempt local law on all matters related to fracking.

We believe it is extremely unlikely that a court will find that SB 4 preempts a local ban for several reasons. First, there is no express preemption. The law does not mention zoning or land use, nor does it refer to preemption of local law. In fact, SB 4 contains provisions that explicitly *preserve* local authority. Section 3160(n), a "savings clause," states that the division must still comply with "any other provision of existing laws, regulations, and orders." Furthermore, the author of the legislation, Senator Fran Pavley, issued a letter concurrent with the bill's passage explaining that that the bill is "not intended to preempt … local government's authority over land use…."[2] There is also no legislative history that would indicate that the bill preempts local

[2] Sen. Pavley letter to Secretary of Senate Gregory Schmidt, dated Sept. 12, 2013 ("Pavely Letter"), available at http://cleanwateraction.org/files/publications/SB%204%20letter%20to%20journal%20final.pdf.

zoning. Thus, the evidence indicates that the legislature intended to preserve local authority, not preempt it.

A court will also probably decline to find implied preemption against a fracking ban. A local authority could successfully argue that a fracking ban does not duplicate, conflict with, or enter into a field fully occupied by state law. First, there is no duplication between a local zoning ordinance and the provisions of SB 4. Local bans are enacted for local purposes and because the state does not currently dictate where and whether oil and gas development can occur. A court will also review whether the state law contemplates local authority. *Big Creek Lumber* at 1154. Implied preemption typically does not exist where the state law "recognizes local regulations.". *Big Creek Lumber* at 1157. Here, in addition to the savings clause, SB 4 also explicitly contemplates that a local lead agency can and will conduct an independent environmental impact report. § 3161(b)(4)(C). These reports would be meaningless if local governments were stripped of their zoning authority. Thus, local ordinances are not duplicative.

Industry groups may argue that local bans conflict with SB 4. They will likely point to language in SB 4 that states that through January 1, 2015, "The division *shall allow*, until regulations governing this article are finalized and implemented, and upon written notification by an operator, all of the activities defined in Section 3157 [i.e., fracking and other well stimulation], provided [certain conditions] are met." § 3161(b).[3] The Division of Oil, Gas, and Geothermal Resources (DOGGR) has issued "interim" regulations that interpret section 3161(b) as mandating that DOGGR allow fracking when only a subset of the conditions listed in that section have been met.[4] To date, this interpretation has not been overturned by a court. If it is not overturned in future litigation, there is some risk that a court could interpret this language as implicitly preempting local control over fracking between now and January 1, 2015. It is important to note, however, that this argument would be applicable only for the remainder of 2014, after which this provision would be superseded by other provisions of the law which take effect on January 1, 2015.

Moreover, as discussed above, a local authority may prohibit what state laws allow. Furthermore, although SB 4 regulates *how* fracking shall be conducted, it says nothing as to *where* or *whether* it may be conducted. Moreover, the "shall allow" mandate does not extend to local authorities; it only pertains to the state's Division of Oil, Gas, and Geothermal Resources. Therefore, SB 4 does not "demand" that local governments allow oil and gas development in all cases. Consequently, a ban would probably not directly conflict with or be inimical to state law, even between now and January 1, 2015.

Finally, SB 4 does not fully occupy the field of fracking. As mentioned, SB 4 does not provide *where* and *whether* fracking shall be allowed by local authorities. In addition, preemption would mean operators would be allowed to drill wells that use fracking wherever they choose, regardless of *any* local ordinance. Such a result is counter to California's treatment of local zoning authority, which is "one of the most essential powers of the government, one that is the

[3] Section 3161(b)'s "shall allow" provision applies only to the interim regulations that will apply until the state adopts formal regulations by January 1, 2015.

[4] *See* SB 4 Interim Well Stimulation Treatment Regulations Notice of Proposed Emergency Rulemaking, at 5.

least limitable." *Beverly* at 557. Thus, a court is unlikely to find implied preemption of local ordinances regarding fracking.

Local ordinances that ban fracking can be strengthened in the same ways as a full ban on oil and gas development. An ordinance that makes clear that risks and concerns particular to the locality are the driving force behind the ban are most likely to withstand scrutiny. Structuring the ordinance as a ban on certain land uses is also likely to strengthen the ordinance by tying it to a local government's least restricted zoning power.

III. Temporary Moratoriums May Be a Useful Tool to Protect Communities in the Short Term

Given the likelihood that a permanent ban will survive a legal challenge, an outright ban is probably preferable to a temporary moratorium in most cases. However, local authorities do have the option of passing an "interim ordinance" and may find it useful in conjunction with passing a permanent ban.

The California Government Code outlines a specific process for enacting a temporary moratorium that stays in place until an issue can be fully studied. Gov. Code § 65858. While the process allows local authorities to bypass some of the formal requirements of enacting a zoning ordinance, the moratorium passed under this procedure must be passed by a four-fifths supermajority and expire in two years.[5] The advantage of a moratorium under this section is that it can be passed and take effect immediately. Some municipalities that can attain a four-fifths vote may wish to consider enacting a two-year moratorium to halt oil development or fracking immediately, allowing time to prepare permanent bans.

IV. CONCLUSION

Although a local ordinance will have to be analyzed after the exact language is finalized, local governments have clear authority in California to ban oil and gas activity within their jurisdictions. A ban specific to fracking and other types of well stimulation is also likely to be held valid, and although the oil and gas industry may argue that such ordinances are preempted by SB 4, there is substantial supporting evidence that the new state statute has not preempted local zoning authority. A moratorium provides an alternative way to halt oil and gas development or fracking in the short term. Temporary measures may allow a local government to stop certain activities while a permanent ban is enacted.

The oil and gas industry may raise additional objections to local ordinances, including claims of takings and vested rights. We believe that such objections may be a resolved when drafting an ordinance in a way that does not place the local government at financial risk or prevent it from accomplishing its environmental, health, and safety goals. Local governments should consult with their counsel and consider all of their individual circumstances when drafting oil and gas ordinances and responding to such claims.

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[5] The first interim ordinance is limited to 45 days, but can be extended up to two years. Cal. Gov. Code § 65858(a).

The strongest and most appropriate language for a ban will vary for each city or county. Local authorities considering a ban should consult with their counsel for advice on how best to draft an ordinance to meet the unique circumstances of that community.

Contact: Hollin Kretzmann, Staff Attorney, Center for Biological Diversity, (415) 632-9682 x333 or hkretzmann@biologicaldiversity.org.

The authors gratefully acknowledge the assistance of Rachel B. Hooper, Catherine C. Engberg, Heather M. Minner, and Peter J. Broderick of Shute, Mihaly & Weinberger LLP in the preparation of this paper.

Gmail by Google

Fwd: Official Democratic Party Resolution on: Radioactive Shale Oil and Gas Drilling Wastewater Disposa

Charles Davidson <charlesdavidson@me.com> Thu, Sep 4, 2014 at 5:47 AM
To: Lawrence Abbott <lawrencerabbott@aol.com>, Frank Burton <frank.burton.now@gmail.com>

Begin forwarded message:

From: Charles Davidson <charlesdavidson@me.com>
Subject: **Official Democratic Party Resolution on: Radioactive Shale Oil and Gas Drilling Wastewater Disposa**
Date: September 3, 2014 at 11:42:19 PM PDT
To: Charles Davidson <charlesdavidson@me.com>
Cc: Charles Davidson 2 <charlesdavidson5280@gmail.com>

Official Democratic Party Resolution on: Radioactive Shale Oil and Gas Drilling Wastewater Disposal (Adopted and Approved on 11/13/2013)

Charles Davidson AD-15; charlesdavidson@me.com

WHEREAS, high levels of radioactive wastewater from shale oil and shale gas well drilling, typically from one, two or more miles underground, has been found to contain radioactivity levels up to 3,600 times safe drinking water levels and 300 times allowable industrial effluent levels, according to the EPA [1];

WHEREAS, shale oil and gas drilling may release radioactive heavy-metals typically locked within deep rock layers, termed Naturally Occurring Radioactive Materials, or NORMS; Horizontal shale drilling *plus* aggressive well stimulation methods, such as hydraulic fracturing and acid matrix stimulation, may release radioactive heavy-metals into the wastewater stream, such as radium, uranium and thorium; That compared to conventional vertical drilling into shallower pooled petroleum reserves, current horizontal shale oil and gas drilling is typically much deeper and involves aggressively disturbing greater amounts of tightly-embedded NORMS.

WHEREAS, Radioactivity levels of California drilling wastewater are currently deemed insignificant,

based upon a 1996 study during the Administration of Governor Pete Wilson, from vertical-only wells drilled into pooled petroleum resources typically more shallow than shale; The California Division of Oil Gas and Geothermal Resources (DOGGR), therefore, deemed all oil drilling wastes to be, a priori, not a potential radioactive hazard. [14]

THEREFORE, BE IT RESOLVED, to make obsolete the Wilson Administration era oil drilling wastewater study and undertake a new study to investigate current levels of wastewater radioactivity from horizontal or directional shale wells and potentially radioactive solid shale drilling wastes, such as filters and pipe and tank scale; That radioactivity levels in shale well produced-wastewater be assessed at the well-head and correlated with gamma ray spectroscopy from the original well logs made while drilling.

THEREFORE, BE IT FURTHER RESOLVED, That oil and gas drilling waste having significantly elevated levels of radioactivity above accepted levels of concern, be disposed of and transported in the appropriate manner, if measured above levels deemed safe during the Wilson Era study, while both consistent with and not exempt from general industrial radioactive levels set by California and Federal guidelines; That significantly radioactive drilling-process wastewater be deemed unfit for Class 2 injection wells traditionally used for wastewater with insignificant radiation levels and that the most appropriate and robust storage or injection well must be required for its safe long-term disposal; That significantly radioactive solid oil and gas drilling waste also be disposed of in special radioactivity-capable facilities; That there be prudent consideration of the seismic threats to wastewater injection well integrity.

Fracking's Radioactive Wastewater Problem, Coming to a State Near You

by Charles Davidson <charlesdavidson@me.com>

There is plenty of evidence from areas of the eastern US that have allowed horizontal drilling and hydraulic fracturing (or fracking) for shale oil or gas indicating that it should not be allowed in California, nor anywhere. The New York Times reported that hydraulic fracturing wastewater from 15 deep, horizontal shale gas wells contained radiation "over 1000 times acceptable levels" set by federal safe drinking-water standards. (1) One of these wells contained radioactivity levels up to 3,600 times safe drinking water levels and 300 times allowable industrial effluent levels, according to the cited EPA document. [1]

Prospectors who are drilling horizontally into deep layers of black shale rock searching for tightly embedded oil or gas use drill-head Geiger counters to measure radioactivity, that is naturally occurring and not insignificant, when drilling one, two or more miles below ground. Black shale radioactivity is due to the presence of uranium, radium, thorium and other heavy metals that are highly concentrated within the thicker, asphalt-like fraction of this petroleum-bearing rock.

EPA scientists are concerned about radioactivity data from shale well operation waste logs that have markedly "elevated levels that need to be controlled and disposed of appropriately". (1) Yet, so far, nothing has been done to correct this growing problem. As a resultant example of this lack of oversight in shale drilling, a public sewage treatment plant in Pennsylvania directly upstream from drinking-water intake facilities accepted wastewater containing radioactivity levels exceeding 2,122 times the drinking-water standard (and 175 times federal industrial discharge limits). (5,13) In 2009, drilling

company Ultra Resources sent more than 155,000 gallons of this wastewater to nine rural towns, for dust suppression. The water came from two gas wells in Tioga County Pennsylvania and contained radium at almost 700 times the levels allowed in drinking water. (5) Produced shale oil wastewater has been found to contain radium levels as high as 9,000 picocuries per liter, with pipe and tank scale sometimes over 100,000 picocuries per liter, according to the EPA. (15)

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January 29, 2015

Dear Mr. Jensen,

I received a notice of public hearings about the Alameda County zoning ordinance amendments concerning the restriction of oil and natural gas exploration and extraction.

In the 40 plus years that there have been oil wells on my property on Patterson Pass Road in Livermore (APN: 099B-5600-003-04), I believe there has been no detrimental effects on the property. There is cattle grazing around the oil wells, and wildlife is present, as well. Currently, the parcels surrounding my property include other oil wells, a trucking business, and Zone 7. Zone 7 creates more traffic, noise, and dust than that created by the oil production. I have experience with E & B Natural Resources Management Corporation, and this company has been consistently managing the site well. I do not believe that further exploration on my property or other properties would have any additional safety or visual impacts.

Additionally, the oil production in the county provides significant tax revenue for the state and federal governments.

Thank you for considering my comments.

Sincerely,

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January 30, 2015

Alameda County Board of Supervisors
County of Alameda Administration Building
1221 Oak Street #536
Oakland, CA 94612

Re: Proposed General Plan and Zoning Ordinance Amendments Regarding Restriction of Oil and Natural Gas Exploration and Extraction

Dear Honorable Supervisors:

We are writing on behalf of our client, Californians for Energy Independence, a statewide coalition of energy producers, business associations, and local government leaders and agencies, among others, formed to educate the public about proven, safe oil extraction technologies.

We recently became aware of a proposal to amend the County's General Plan and Zoning Ordinance to remove all references to oil, gas, petroleum, and drilling, exploration, and extraction thereof. It appears that both the goal and impact of this change would be a ban on all oil and gas development. Such a ban, if adopted, would significantly harm the valuable mineral interests within the County.

Having just learned of this proposal, we have not had a chance to analyze its impacts fully, but the proposal appears to be legally infirm on many bases, including potentially being fully preempted by state law. We intend to detail our concerns for the County prior to the Planning Commission's February 17, hearing, should it proceed, but wanted to let you know now how deeply concerned we are that this effort appears to be moving forward without any study and without notice to the many impacted mineral rights owners.

We urge you to suspend this effort now and until its potentially far-reaching impacts have been evaluated fully and all interested parties have an opportunity to participate in the process.

Very truly yours,

Benjamin J. Hanelin
of LATHAM & WATKINS LLP

LA\4000757

cc: Bruce Jensen, Senior Planner
Rock Zierman, California Independent Petroleum Association
Joyce Holtzclaw, VP Western Division for E&B Natural Resources
Sean Welch, Nielsen Merksamer Parrinello Gross & Leoni LLP
George Mihlsten, Latham & Watkins LLP

E&B NATURAL RESOURCES MANAGEMENT CORPORATION

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February 16, 2015

Alameda County Planning Department
Attn: Bruce Jensen, Senior Planner
224 West Winton Avenue, Room 111
Hayward, CA 94544
E-Mail: bruce.jensen@acgov.org

Re: Proposed General Plan and Zoning Ordinance Amendments Regarding Restriction of Oil and Natural Gas Exploration and Extraction

Dear Honorable Supervisors:

E&B Natural Resources Management Corporation ("E&B") recommends that the Alameda County Board of Supervisors reject the proposed Amendments to the Alameda County General Plan and Zoning Ordinance to remove all references to oil, gas, petroleum, and drilling, exploration, and extraction thereof. E&B is the Lessee and Operator of several oil and natural gas leases in the Livermore Oil Field, which is located approximately two miles east of the town of Livermore, California. The Livermore Oil Field is unique in that it is California's northern-most oil field, has been in operation since 1967, and has produced over two million barrels of oil.

There are numerous well-documented benefits associated with oil development in the Livermore Field. E&B employs residents and procures services in the area from local Alameda County vendors. The oil and natural gas leases are comprised of approximately 500 acres and are owned by 15 different mineral and royalty owners, most of whom reside in Alameda County. E&B paid out approximately $150,000.00 to the various royalty owners in 2014, including $16,300 to the Alameda County Flood Control and Water Conservation District. The Field currently produces on average over 1,000 barrels of oil per month. Through job creation and increased revenue for both the state and local businesses, the benefits ripple across the County, providing money for education, businesses, transportation and other important needs. The fiscal impact is significant, and the County may be required to make up for any lost revenue as a result of passing the Amendments, including negative impacts on local schools, hospitals, the state, etc.

In addition, passing the Amendments opens the County to the possibility of costly litigation. The Amendments are inherently unfair and unconstitutional and have the potential to put Alameda County in conflict with State law and recent federal court rulings. They deny access to private property, diminish property rights, and accelerate the reduction of current oil-related revenues. The Amendments deny a State-regulated industry's operation in the County and exceed the County's legal authority as a political subdivision of the State. They are

completely unnecessary and overreaching, due to the small geographic oil and gas footprint in the County, and due to the well established state regulatory process which already protects the County's public and private resources. Moreover, E&B has never "Fracked" within the Livermore field, nor does E&B have plans to "Frack" within the Livermore Field. Rather than addressing any real harm, the Amendments target one field and its mineral rights owners and operations, punishing a select few residents and one single business for being part of a marginalized and unpopular group.

As the field ages, many necessary actions are being taken to prolong the field's life, in accordance with industry best practices and procedures, including the drilling of new wells, the redrilling of old wells, the implementation of water flood operations, and the replacement of producing wells and disposal wells. Allowing only a continuation of operations "as originally permitted" is too broad and vague too allow E&B to continue operating according to industry best practices and procedures, and may constitute a Taking under the California Constitution.

In addition, the proposed regulations may prevent E&B from being able to perform its contractual obligations to protect its Lessor's mineral rights. For example, E&B has contractual obligations to protect its Lessors from drainage from adjacent properties. If E&B is unable to obtain extensions of Conditional Use Permits on certain Leases while Conditional Use Permits remain in effect on adjacent leases, this could result in drainage, which E&B is contractually obligated to prevent. However, in such a situation, E&B would be without recourse to fulfill its obligations.

The Constitution of the State of California, Article 1, Section 1 states that "All people are by nature free and independent and have inalienable rights. Among these are enjoying and defending life and liberty, *acquiring, possessing, and protecting property,* and pursuing and obtaining safety, happiness, and privacy" (emphasis added). The proposed Amendments make broad, sweeping, conclusory allegations about tenuous and unconfirmed links to harms, while targeting an unpopular industry and a few select property owners. These Amendments are neither fair, beneficial, nor helpful to Alameda County or it residents. Therefore, E&B Natural Resources Management Corporation recommends that the Alameda County Board of Supervisors reject the proposed Amendments to the Alameda County General Plan and Zoning Ordinance.

Yours truly,

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BY EMAIL & HAND DELIVERY

February 17, 2015

Alameda County Planning Commission
224 W. Winton Ave.
Hayward, CA 94544
Attn: Albert Lopez, Planning Director

Re: Proposed General Plan and Zoning Ordinance Amendments Regarding Oil and Natural Gas Exploration and Extraction

Dear Honorable Chair Ready and Honorable Commissioners:

We are writing on behalf of our client, Californians for Energy Independence, a statewide coalition of energy producers, business associations, and local government leaders and agencies, among others, formed to educate the public about proven, safe oil extraction technologies.

We are very concerned with the proposal to amend the Alameda County General Plan and Zoning Ordinance to prohibit all oil and gas development in the County ("Proposed Ordinance"). Having reviewed the limited information that has been made available on the Proposed Ordinance, it appears that the Proposed Ordinance is not only unnecessary from a planning perspective, but would expose the County to significant legal and financial risk.

The County Counsel's office agrees:

> ***"The Office of the County Counsel has advised that any new ordinance language specifically banning all oil extraction activity (including existing uses) or enhanced well stimulation techniques could place the County at risk of legal action."*** (Staff Report, p. 2.)

According to the Staff Report, the Proposed Ordinance has been motivated by alleged community concerns over hydraulic fracturing, an extraction method more widely known as "fracking" or "hydrofracturing." But, as the Staff Report confirms, "***no hydrofracturing is currently practiced or foreseen as necessary by existing operators in Alameda County***." (Staff Report, p. 4 [emphasis added].) The Planning Department Presentation, which also focuses almost entirely on the unused method of hydraulic fracturing, states plainly that hydraulic fracturing ***"is not currently used in Alameda County."*** (Planning Commission Presentation, slide 5 [emphasis added].)

Unfounded concerns about non-existent hydraulic fracturing in the County aside, the Proposed Ordinance goes much further than merely attempting to regulate hydraulic fracturing. The Proposed Ordinance would, it appears, prohibit all oil and gas exploration and development in the County, despite the fact that there is no evidence to justify such a broad, far-reaching prohibition.

Given the complete lack of evidence regarding impacts from existing operations and the total absence of hydraulic fracturing in the County, we are quite concerned about this course of action, as it exposes the County to a great deal of unnecessary risk. ***Risks include the possibility of litigation over the Ordinance's legality, substantial takings claims brought by mineral rights holders, and extensive costs to the County relating to these legal actions.*** See Attachment A.

The Planning Department Presentation recites the numerous legal challenges to attempts to ban various forms of oil extraction. As the presentation notes, some challenges have been successful and some have failed, but ***we are aware of no judicial precedent sanctioning a complete ban of oil and gas development across an entire city or county that was adopted by that city or county's legislative body***, which is exactly what the Proposed Ordinance would do.

We are also concerned that the Proposed Ordinance does not even attempt to protect the interests of existing operators with vested rights. Should the Proposed Ordinance move forward – despite its unnecessary risks to the County – the Planning Commission should recommend clarifications that vested rights holders may seek renewals and extensions of conditional use permits and permit revisions and/or new permits for redrilling and well workovers, among other routine operational activities, even if existing oil and gas uses are deemed nonconforming.

Ultimately, however, the Proposed Ordinance is a bad solution in search of a problem. Rather than recommending the adoption of the Proposed Ordinance, we respectfully submit that the Planning Commission should, consistent with one of the options in Staff's Presentation, ***take a wait and see approach***. Not only is hydraulic fracturing not being conducted or even contemplated in the County, but the State recently adopted new regulations for hydraulic fracturing and other well stimulation methods and is now completing a comprehensive environmental review of these activities. The State, not the County of Alameda with very limited resources, is best situated to evaluate and respond to the concerns some have raised about hydraulic fracturing.

A "wait and see" approach is most certainly warranted here, and we urge this Honorable Commission to recommend disapproval of the Proposed Ordinance.

Very truly yours,

Benjamin J. Hanelin
of LATHAM & WATKINS LLP

Attachment

LATHAM&WATKINS LLP

cc: Alameda County Board of Supervisors
Brian E. Washington, Chief Assistant County Counsel
Steve Merksamer, Nielsen Merksamer Parrinello Gross & Leoni, LLP
Sean Welch, Nielsen Merksamer Parrinello Gross & Leoni, LLP
George Mihlsten, Latham & Watkins, LLP

ATTACHMENT A

I. UNCONSTITUTIONAL TAKINGS

A. Constitutional legal framework

Both the United States and California Constitutions prohibit the government from taking private property without "just compensation." (U.S. Const. Amend. 5; Cal. Const, Art. I § 19(a).) A "taking" can arise either from a physical occupation of property or from excessive regulation of property. The latter is commonly referred to as a "regulatory taking." (*See* (1922) *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393.)

The government causes a *per se* (or categorical) regulatory taking when it eliminates "all economically beneficial use of property." (*Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1015-16 (1992).) But it is not necessary for the property holder to prove a 100% loss. A regulation may effect a taking even where it "*leaves the property owner some economically beneficial use of his property*." *Kavanau v. Santa Monica Rent Control Bd.* (1997) 16 Cal. 4th 761, 774 (emphasis in original).

To determine whether such a regulatory taking (sometimes called a partial regulatory taking) has occurred, courts engage in a fact-specific inquiry using the factors set forth by the Supreme Court in *Penn Central Transp. Co. v. New York City* (1978) 438 U.S. 104: (1) the economic impact of the regulation on the claimant; (2) the extent to which the regulation has interfered with distinct investment-backed expectations; and (3) the character of the governmental action. *Id.* at 124.[1] "[T]he *Penn Central* inquiry turns in large part, albeit not exclusively, upon the magnitude of a regulation's economic impact and the degree to which it interferes with legitimate property interests." (*Lingle v. Chevron U.S.A. Inc.* (2005) 544 U.S. 528, 540.)

Notably, the *purpose* of the challenged regulation is irrelevant to the takings analysis, which turns instead on the regulation's *economic impact* on the landowner's property. (*See Lockaway Storage v. County of Alameda* (Cal. App. 2013) 216 Cal. App. 4th 161, 185 ("[T]he question is not 'whether a regulation of private property is effective in achieving some legitimate public purpose.' Instead, the goal is to assess the 'magnitude or character of the burden a particular regulation imposes upon private property rights.'") (quoting *Lingle*, 544 U.S. at 542).)

B. Regulatory takings of mineral rights

Under both California and federal law, mineral rights – including, in particular, the right to extract oil and gas – are a distinct property interest protected by the Takings Clause. In fact, the right to drill for oil (and gas) "is as much entitled to protection as the property itself, and the undue restriction of the use thereof is as much a taking for constitutional purposes as appropriating or destroying it." (*Braly v. Board of Fire Comm'rs*, 157 Cal. App. 2d 608, 612 (1958) (internal citations and quotation marks omitted); *see also, e.g., Nevada Irrigation Dist. v.*

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[1] The California Supreme Court has identified several additional factors that may be considered when evaluating a regulatory takings claim. (*See Kavanau*, 16 Cal. 4th at 775-76.)

Keystone Copper Corp. (1964) 224 Cal. App. 2d 523, 526-27 (recognizing separate mineral and surface estates in property).)

Mineral rights are valuable only to the extent that they can be exercised *profitably*. The regulatory takings analysis for mineral rights therefore focuses on whether the challenged regulation makes it "commercially impracticable" to extract the minerals. (*Pennsylvania Coal*, 260 U.S. at 414 ("mak[ing] it commercially impracticable to mine certain coal has very nearly the same effect for constitutional purposes as appropriating or destroying it").) Put differently, the challenged regulation causes a regulatory taking of mineral rights if it does not allow the claimant to make a reasonable profit on those mineral rights. (*See Kavanau*, 16 Cal. 4th at 775 (courts must consider "whether the regulation permits the property owner to profit and to obtain a reasonable return on investment") (internal alterations, citations and quotation marks omitted).)

C. Prohibiting all oil and gas production would constitute a compensable taking

Here, the proposed amendments to the County General Plan and Zoning Ordinance do not seek merely to regulate oil and gas extraction activities; it appears to ban the extraction of oil and gas in their entirety. As a result, the proposed amendment unquestionably would constitute a compensable taking of mineral rights under both state and federal law. (*Lucas*, 505 U.S. at 1015-16 (holding a *per se* regulatory taking occurs when the government eliminates "all economically beneficial use of property"); *Pennsylvania Coal*, 260 U.S. at 414 (holding a regulatory taking occurs when the challenged regulation makes it "commercially impracticable" to extract minerals from the claimant's land).)

In *Whitney Benefits*, for example, the court found that the challenged statute "clearly prohibited surface mining of [claimant's] coal, thereby depriving claimant of all economically viable use of its property and destroying its value." (*Whitney Benefits, Inc. v. United States* (1991) 926 F.2d 1169, 1172 (internal quotation marks omitted).) In affirming the trial court's decision, the Federal Circuit further held that "the only property here involved is the right to surface mine a particular deposit of coal. . . . [The challenged statute] took Benefits' coal rights. That is what, and only what, this suit is all about. . . . [State law] recognizes separate mineral and surface estates, and mineral rights are clearly property subject to the taking clause of the Fifth Amendment." (*Id.* at 1174.) Accordingly, the Federal Circuit affirmed the finding that a regulatory taking had occurred, as well as the award of $60.3 million in damages. (*Id.* at 1178.)

D. The County's damages would be substantial

Upon a finding that the proposed amendment constitutes a regulatory taking, the County would be required to pay "just compensation" for the affected oil and gas rights. "[T]he 'just compensation' required by the Fifth Amendment is measured by the property owner's loss rather than the government's gain." (*Brown v. Legal Found.* (2003) 538 U.S. 216, 235-36.) In the mineral rights context, "just compensation" is equal to the total amount of future income the mineral rights holder will lose due to the challenged regulation. (*See Whitney Benefits* (Cl. Ct. 1989) 18 Cl. Ct. 394, 408 *aff'd* (1991) 926 F.2d 1169 (determining "just compensation" for the regulatory taking of coal mining rights by "employ[ing] an often-used method incorporating the discounted cash flow (DCF) approach, valuing the property based on the discounted stream of income the property is capable of producing over its useful economic life").)

In light of the proposed amendment's apparent outright prohibition of oil and gas extraction activities, the County's potential takings liability would be equal to the total value of *all* oil and gas that no longer could be extracted pursuant to the amendment – potentially in the hundreds of millions of dollars.

Even if the County were to elect not to enforce the proposed amendment against a landowner once a court determines that it constitutes a regulatory taking, the County nonetheless would be liable to the landowner for all income it lost as a result of the "temporary taking" of the landowner's oil and gas rights. (*First English Evangelical Lutheran Church v. County of Los Angeles* (1987) 482 U.S. 304.)

In addition, under California law, the County would have to reimburse the landowner's "reasonable costs, disbursements, and expenses, including reasonable attorney, appraisal, and engineering fees[.]" (Cal. Code Civ. P. § 1036; *Hensler v. City of Glendale*, 8 Cal. 4th 1, 15 (1994) ("[T]he owner's reasonable costs and attorney fees must be reimbursed by the local entity if the owner establishes that the restriction on land use is a compensable taking.").) Attorney fees alone can reach easily reach several million dollars for just a single takings claim.

II. STATE LAW PREEMPTION

Where local legislation conflicts with the state's general laws, the local legislation is preempted and is void and unenforceable. (See, e.g., *Sherwin-Williams Co. v. City of Los Angeles* (1993) 4 Cal.4th 893, 897.) A conflict between local and state legislation exists where the local legislation duplicates, contradicts, or enters into an area fully occupied by state law. (*Id.* at 897-98.)

Preemption by state law may either be express or implied. Implied preemption exists where the state has fully occupied the field that a lower body seeks to regulate. Implied preemption can take three forms: (1) the subject matter has been so fully and completely covered by state law as to clearly indicate that it has become exclusively a matter of statewide concern; (2) the subject matter has been partially covered by state law couched in terms that indicate clearly that a paramount state concern will not tolerate further or additional local action; or (3) the subject matter has been partially covered by state law, and the subject is of such a nature that the adverse effect of a local ordinance on the transient citizens of the state outweighs the possible benefit to the locality. (See, e.g., *Sherwin-Williams*, supra, 4 Cal.4th at 897-98.)

A review of the relevant and long-standing statutes and authorities makes clear that the Proposed Ordinance is preempted by state law. First, the state has fully occupied the field of regulation of hydraulic fracturing and other well stimulation techniques by adopting the state's comprehensive oil and gas code, and, further, by enacting Senate Bill 4. Moreover, the Proposed Ordinance falls under the third prong of implied preemption: state oil and gas laws explicitly encourage the development of oil and gas resources, and a local ordinance banning such development in all zones and areas would be wholly incompatible with state law such that the adverse effect of the ordinance on transient citizens of the state would outweigh the possible benefit to the County.

State law governing oil and gas resources is primarily concerned with preservation and wise development of those resources. An overriding objective in state law is to encourage the

development of the state's oil and gas reserves, while preventing waste. Public Resources Code section 3106 empowers the Division of Oil, Gas and Geothermal Resources ("DOGGR") to supervise oil and gas drilling "so as to permit the owners and operators of the wells to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons." (Pub. Res. Code, § 3106(b).) The Code also directs DOGGR to "encourage the wise development of oil and gas resources." (Pub. Res. Code, § 3106(d).) In 1974, California joined the Interstate Compact to Conserve Oil and Gas, whose purpose is to prevent waste in producing oil and gas in oil-producing states. Among the objectives of the Compact, enshrined in California law, is "to recommend measures for the maximum ultimate recovery of oil and gas." (Pub. Res. Code, § 3276.)

An ordinance adopted by a California County – a subdivision of the state – to ban all oil and gas development within its boundaries is inimical to the clear objectives established in state law. As such, the Proposed Ordinance would be preempted by state law.

We are aware of no California court, at any level of our judicial system, that has reviewed and upheld a city- or county-adopted ban on all oil and gas development.

Courts in other states which have considered this question, however, have struck down such broad bans. A federal court in New Mexico recently found that an ordinance adopted by Mora County was preempted by New Mexico law because it was "antagonistic to state law, because it prohibits activities that New Mexico state law permits." (*SWEPI, LP v. Mora County*, Dist. N.M. Case No. CIV 14-0035 JB/SCY, Memorandum Opinion, Jan. 19, 2015, at 179.)

Similarly, the Colorado Supreme Court ruled more than 20 years ago that "the statewide interest in the efficient development and production of oil and gas resources in a manner calculated to prevent waste, as well as in protecting the correlative rights of owners and producers in a common pool or source to a just and equitable share of the profits of production, prevents a home-rule city from exercising its land-use authority so as to totally ban the drilling of oil, gas, or hydrocarbon wells within the city." (*Voss v. Lundvall Bros.* (1992) 830 P.2d 1061, 1062.) Both New Mexico and Colorado are members of the Interstate Compact to Conserve Oil and Gas, and, similar to California, state law in both states prioritizes the wise development and prevention of waste in promoting the recovery of oil and gas resources.

The California Legislature long ago expressed its intent to promote the recovery of oil and gas resources in the state. A local ordinance prohibiting those activities in their entirety is contrary to the state's general intent and would be preempted by state law.

III. A BAN ON ALL OIL AND GAS PRODUCTION WOULD BE ARBITRARY AND IRRATIONAL

The Proposed Ordinance also appears to go well beyond the general police power granted to local municipalities to enact zoning ordinances.

Courts are clear that a municipality may not enact a prohibition on oil and gas development unless it articulates justifications for doing so that are reasonable, non-arbitrary, and which show that the prohibition is reasonably necessary and reasonably related to legitimate government objectives. This principle was first set forth by the California Supreme Court in

Pacific Palisades Assn. v. City of Huntington Beach (1925) 196 Cal. 211, when the Court considered the validity of an emergency ordinance banning oil production in certain zones within the city. The Court made clear that "it is elementary that the enjoyment of the property cannot be interfered with or limited arbitrarily." (*Id.* at 216.) Furthermore, any zoning ordinance "must be reasonably necessary and reasonably related to the health, safety, morals, or general welfare of the community" (*id.*), and while a municipality may restrict oil development within its boundaries, it may only do so "if reason appears for so doing." (*Id.* at 217.)

Subsequent cases have confirmed that a municipality may only utilize a zoning ordinance to restrict oil and gas development if it articulates reasonable justifications for doing so, and if the action is not arbitrary. (See, e.g., *Marblehead Land Co. v. City of Los Angeles* (1931) 47 F.2d 528, 532 [a restriction on oil development is permissible only "provided it is done reasonably and not arbitrarily"]; *Beverly Oil Co. v. City of Los Angeles* (1953) 40 Cal.2d 552 [citing both *Pacific Palisades Assn.* and *Marblehead Land Co.* for the proposition that zoning ordinances restricting oil development may not be arbitrary or unreasonable]; *Friel v. County of Los Angeles* (1959) 172 Cal.App.2d 142 [citing *Pacific Palisades Assn.*, *Marblehead Land Co.*, and *Beverly Oil Co.* for the same proposition].)

As noted above, we are aware of no California judicial decision affirming a city- or county-adopted ban on oil and gas production in the entirety of a city or county.[2]

The Planning Department Presentation notes that Santa Cruz County recently adopted a general plan amendment banning oil and gas exploration, and the City of Beverly Hills adopted an ordinance which banned fracking and similar extraction techniques. (Presentation, slide 21.) Neither of those actions have been challenged in court, however, and there is no controlling legal authority that supports the legality of those ordinances. The only municipality-enacted local ordinances in California which restricted oil and gas development that have been successfully defended in courts were ones that restricted the practice in only a portion of the city or county, not a blanket prohibition throughout the jurisdiction. If the County moves forward with the Proposed Ordinance, therefore, there is a real risk, as identified by the County Counsel's office, of a legal challenge.

While it does not appear that California courts have had the opportunity to pass on the question that the Proposed Ordinance would present, courts in other states have. ***Many of these courts have concluded that local zoning ordinances banning oil and gas development were not permissible.***

In *Clouser v. City of Norman* (1964) 393 F.2d 827, for example, the Oklahoma Supreme Court found that an ordinance prohibiting drilling within city limits was beyond the city's power

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[2] In the City of Hermosa Beach, voters in 1995 adopted a proposition that banned oil and gas drilling within the city. What followed was nearly 20 years of litigation between the city and a company that had a contract to drill for oil in the city and which claimed $750 million in lost profits damages. After spending heavily on litigation, the city eventually settled the lawsuit in 2012. The settlement required Hermosa Beach to pay millions of dollars to the company's successor, and to place an initiative on the ballot that would allow an exception to the municipal code's general prohibition. The initiative is on the ballot at the election on March 3, 2015.

because the city failed to articulate reasonable, non-arbitrary reasons for the enactment. The court found that due to the isolation of the property in question, "[t]he development of this tract could not affect other areas nor could it affect the future development of the city." (*Id.* at 830.) The city could not justify its action, and therefore the ordinance was void.

Here, the County has failed to articulate – and cannot articulate – reasonable, non-arbitrary justifications for the Proposed Ordinance. The Staff Report identifies only three active oil and gas permits in the County, all in the Livermore Oil Field, on land covering three square miles east of the intersection of Greenville Road and Patterson Pass Road. This land is zoned for large parcel agricultural uses, and is not adjacent to or in proximity to residential, commercial, or public uses. Only one of the active permits involves active wells, and there is no evidence in the record that these active wells have caused any negative environmental impacts.

As the Staff Report makes clear, there is no hydraulic fracturing in the County, and none is planned. Nevertheless, the Staff Report recites a series of purported negative effects of oil and gas development, including pollution of air, soil, surface water, and groundwater, depletion of water supplies, noise pollution, seismic hazards, and greenhouse gas emissions (Staff Report, p. 3). The Staff Report does not tie any of these impacts to active operations in the County.

Listing the perceived impacts of hydraulic fracturing when none is occurring in the County and none is planned is not enough to uphold the Proposed Ordinance. To the contrary, a zoning ordinance that restricts or bans oil and gas development must be supported by reasonable, non-arbitrary justifications that are related to the public health, safety, morals, or general welfare. (See, e.g., *Pacific Palisades Assn.*, 196 Cal. 211, 216-17; *Marblehead Land Co.*, 47 F.2d 528, 532.)

Of the 418 square miles within the County's East County Area Plan, thousands of acres are zoned for large parcel agriculture uses, and hundreds more are zoned for industrial uses. These lands are specifically set aside and segregated from denser residential, commercial, and public uses. The Proposed Ordinance would prohibit oil and gas development on all of these lands, even though there is no evidence whatsoever that existing oil and gas activities contribute to any of the supposed negative impacts with which the County is purportedly concerned. This is the very definition of an irrational, arbitrary regulation. We have serious doubts about whether it could survive judicial scrutiny.

IV. THE PROPOSED ORDINANCE FAILS TO PROTECT THE INTERESTS OF EXISTING OPERATORS

The Proposed Ordinance is also fatally flawed because it appears to do nothing to protect the interests of holders of vested rights – i.e., the existing producer of oil and gas in the County.

The Staff Report states that the effect of the Proposed Ordinance would be to make existing oil and gas operations in the County non-conforming uses. The Staff Report explains that this designation would prevent the issuance of new permits for oil and gas uses (Staff Report, p. 2), but would allow modifications to existing permits for well stimulation techniques provided that the new procedures neither significantly alter nor expand the existing nonconforming use. (*Id.*)

We agree that such accommodations would be required for legal nonconforming uses, but we are concerned that they do not appear to be congruent with Alameda County Code section 17.52.700. Section 17.52.700 states that where an existing nonconforming use requires a license or permit, such license or permit may not be authorized, issued, renewed, re-issued or extended "unless and until a conditional use permit has been secured for the continued maintenance or conducting of the business use." This appears to provide very little certainty for any existing operator and threatens to stop existing production long before the resource is fully exhausted. The Staff Report asserts that "the net effect on the active operation would be virtually nil" and that the active producer "would be able to continue to extract oil as they currently do until the oil is gone, and to perform any activities currently permitted." (Staff Report, p. 4.) We are concerned that this may not be the case under the Proposed Ordinance as it is currently drafted. The existing producer may need revisions or extensions to its existing permits, including conditional use permits that are subject to expiration, and the Proposed Ordinance must make clear that such revisions and extensions would be approved if the Ordinance is adopted.

Though we strongly oppose the Proposed Ordinance, if it is enacted, the County must also act to fully protect the interests of vested rights holders, who have valid permits to conduct oil and gas operations and who have invested substantial resources in reliance on those permits.

Oil and gas exploration and drilling is a complex, dynamic enterprise, and often requires revisions to existing permits and approvals to account for changes in environment, circumstances, and regulations. In particular, even existing operations need new and revised permits for redrilling wells and well workovers, which are a routine and expected part of operations, and extensions to conditional use permits required for operations. The Proposed Ordinance must make clear that holders of vested rights may seek and obtain revisions to existing permits, including conditional use permits required by Section 17.52.700, in order to fully develop resources authorized by their permits.

V. ADOPTING THE PROPOSED ORDINANCE WITHOUT ANY ENVIRONMENTAL REVIEW VIOLATES CEQA

The Community Development Agency proposes to exempt the Proposed Ordinance from CEQA as a regulatory action to protect the environment under Section 15308 of the CEQA Guidelines. Section 15308 exempts only "actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment." (CEQA Guidelines, § 15308.)

The Staff Report presents no evidence that the Proposed Ordinance is necessary to protect the environment. As the Staff Report acknowledges, there is no hydraulic fracturing currently occurring in the County, and none is planned. The Staff Report lists a litany of alleged negative impacts of oil and gas development (Staff Report, p. 3), but provides no evidence that oil and gas activities in the County are causing or contributing to any of those impacts.

Section 15308's exemption for regulatory acts is narrow and cannot be stretched to include the Proposed Ordinance. A municipality cannot "circumvent CEQA merely by characterizing its ordinances as environmentally friendly and therefore exempt" under the exemption. (*Save the Plastic Bag Coalition v. County of Marin* (2013) 218 Cal.App.4th 209,

219-220.) Rather, a municipality claiming that a project need not undergo CEQA review because it is a regulatory action intended to protect the environment must first marshal substantial evidence establishing that the project falls within the exempt category of projects. (See *Davidon Homes v. City of San Jose* (1997) 54 Cal.App.4th 106, 115.)

In *Dunn-Edwards Corp. v. Superior Court* (1992) 9 Cal.App.4th 644 (disapproved on other grounds by *Western States Petroleum Assn. v. Superior Court* (1995) 9 Cal.4th 559), for example, the court rejected an air district's argument that regulations imposing emission standards for volatile organic compounds contained in architectural coatings were categorically exempt under CEQA Guidelines Sections 15307 and 15308 because the regulations were more stringent and "cannot be said to have created an adverse change." (*Id.* at 657.) The court held the agency's conclusion that the regulations would not result in a net increase in emissions was not supported by any evidence on the record and was therefore "predicated on lack of the very information which would be provided by an EIR." (*Id.* at 658.)

Here, there is no evidence, much less substantial evidence, to support a determination that the Proposed Ordinance falls within the narrow exemption under Section 15308. The Staff Report merely concludes, without further explanation, that the exemption applies. This is not enough. The County cannot simply assert, without any support, that the Proposed Ordinance is categorically exempt from CEQA under Section 15308. (*Save the Plastic Bag Coalition*, 218 Cal.App.4th at 219-220.) Because the County has no evidence to support its conclusion that the Proposed Ordinance is exempt from CEQA, the County has not met its burden of establishing that the Proposed Ordinance falls within Section 15308's exemption for regulatory actions to protect the environment. Therefore, the Proposed Ordinance must undergo CEQA review.

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February 17, 2015

Submitted via email to bruce.jensen@acgov.org

Albert Lopez, Planning Director
Alameda County Community Development Agency, Planning Department
Attn: Bruce Jensen, Senior Planner
224 West Winton Avenue, Room 111
Hayward, California 94544

Re: Proposed General Plan Amendment and Zoning Ordinance Amendment – Removal of Policy 167 of the East County Area Plan (ECAP) and removal of Alameda County Code of Ordinances (ACZO) Title 17 – Zoning, Section 17.06.040, Conditional uses—Board of zoning adjustments, Paragraph 1

Dear Director Lopez:

The California Cattlemen's Association (CCA) appreciates the opportunity to comment on the Alameda County Community Planning Departments consideration of whether or not to recommend that the Alameda County Board of Supervisors remove all references to oil, gas, and petroleum, and to drilling, exploration, and extraction thereof from the ECAP and ACZO. CCA strongly opposes these amendments, as they are overbroad, would amount to an unconstitutional taking of private property rights without just compensation, and are preempted by the State's oil and gas regulatory regime. CCA is a statewide trade organization representing more than 1,750 cattle ranchers throughout the state, including more than 100 members in the Alameda/Contra Costa area, some of whom possess mineral rights estates within the county and would be directly impacted by the proposed amendments.

I. The proposed ECAP and ACZO amendments are overbroad

Director Bazar's memo to the Transportation and Planning Committee notes that "[t]he Board Committee directed staff to develop the proposal after community members expressed concerns regarding enhanced well stimulation techniques commonly referred to as 'fracking.'" However, the proposed amendments are broad enough to ban much more than that which is of concern to the community. That is, rather than merely banning 'fracking' (which, as the memo notes, is not even "currently practiced or foreseen as necessary by existing operators in Alameda County), the proposed amendments would ban all oil and gas exploration and extraction. The result is a broad regulatory change which broadly and severely impacts private property rights without remedying anything which the community perceives as a threat (whether such perception is reasonable or otherwise). Because the proposed amendments would curtail private property rights beyond what is strictly necessary to achieve the County's stated purpose, the Transportation and Planning Committee should not recommend their adoption by the Board.

BILLY FLOURNOY
PRESIDENT
LIKELY

ROB VON DER LIETH
TREASURER
COPPEROPOLIS

BILLY GATLIN
EXECUTIVE VICE PRESIDENT
HERALD

RICH ROSS
SECOND VICE PRESIDENT
LINCOLN

MARK LACEY
SECOND VICE PRESIDENT
INDEPENDENCE

DAVE DALEY
FIRST VICE PRESIDENT
CHICO

BILL BRANDENBERG
FEEDER COUNCIL CHAIR
EL CENTRO

JACK LAVERS
SECOND VICE PRESIDENT
GLENNVILLE

MIKE SMITH
FEEDER COUNCIL VICECHAIR
SELMA

II. The proposed amendments would amount to an unconsititutional taking of private property without just compensation

The Fifth Amendment to the United States Constitution states that private property shall not "be taken for public use, without just compensation," a prohibition which has been applied to state and municipal governments under the Fourteenth Amendment. Because the proposed amendments ban virtually all conventional oil extraction in addition to banning 'fracking,' application of the amendments would render exercise of a property owners' mineral rights estate commercially impracticable, thereby effecting a regulatory taking for which Alameda County would owe the property owner just compensation.

The U.S. Supreme Court has held that a regulatory taking necessarily occurs where a regulation deprives a property owner of "all economically beneficial use of property," but the Court has also held that a regulatory taking can occur even where regulation "leaves the property owner some economically beneficial use of his property."

Under both state and federal law, mineral rights are a distinct property interest protected by the Fifth and Fourteenth Amendments. In California, courts have found that "undue restriction" of a mineral estate holder's right to drill for oil "is as much a taking for constitutional purposes as appropriating or destroying" the underlying property itself. Where an individual possesses only the mineral estate (as distinct from the surface estate), the court will focus its inquiry upon whether the regulation makes it "commercially impracticable" to profitably exercise those mineral rights.

As noted in Director Bazar's memo to the Transportation and Planning Committee, the effect of the proposed amendments would be that "Alameda County would no longer have any oil or gas extraction land uses, including potential enhanced well stimulation," except for currently permitted operations so long as they do not become idle for a six-month period. Thus, all economically beneficially use of mineral rights estates would be prohibited. However, the extent of Alameda County's takings liability would not be confined to existing operations, as it would still deprive mineral estate holders *not currently exercising their mineral rights* of all future economically-beneficial use of their property; this is a property interest for which the County would still be liable for just compensation for taking.

III. The proposed amendments are likely preempted by existing State legislation and regulation

In jurisdictions where "fracking" bans have been overturned, they have been overturned largely on the basis that the bans are preempted by state laws allowing and comprehensively regulating oil and gas extraction. Such bans have been overturned on this basis in Longmont and Fort Collins, Colorado, and challenged on this basis in lawsuits in Denton, Texas and elsewhere.

As is noted in Director Bazar's memo, existing law in California is permissive of oil and gas exploration and extraction, which is robustly regulated by the State Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), as well as the State Water

Resources Control Board. Though the court decisions in Colorado and elsewhere will not control in California, of course, the preemption analysis is likely to be similar in California as in Colorado. Here, as in Longmont, "there is no way to harmonize [Alameda County]'s fracking ban" with "the state interest in production, prevention of waste and protection of correlative rights" regarding oil and gas extraction. Because state law preempts municipal law, the Alameda County ban would likely be deemed invalid.

IV. The form of the amendments does not immunize the County from legal challenge

Finally, Director Bazar's memo notes that "[t]he Office of County Counsel has advised that any *new ordinance language specifically banning* all oil extraction activity…or enhanced well stimulation techniques could place the County at risk of legal action" (emphasis added). Presumably, then, the proposed amendments removing references to oil and gas are intended to provide the County protection against legal action. However, this tactic in no way broadly immunizes the County from legal challenge. While the form of the amendments may diminish the potential of a *facial* challenge to the ECAP and ACZO, the *effect* of the amendments would still be a prohibition of all oil and gas extraction, and if enforced would still permit legal challenge to the law *as applied*. Furthermore, Director Bazar's memo makes it abundantly clear that the *intent* of the amendments—regardless of their form—is a ban on all oil and gas exploration and extraction in response to community concerns which were limited to "fracking."

Conclusion

CCA appreciates the opportunity to comment on the proposed amendments to Alameda County's General Plan and Zoning Ordinance. We urge that the Planning Commission urge the Board of Supervisors to reject the proposed amendments because of the undue burden they would place on private property owners, especially mineral rights estate holders. Additionally, we urge the rejection of the amendments because they are overbroad and are likely unconstitutional both on takings and preemption grounds.

Sincerely,

Kirk Wilbur
Director of Government Relations
California Cattlemen's Association

February 18, 2015

Dear Mr. Jensen,

I am a fourth generation property owner in Livermore with currently active oil wells, and this is my second letter to you. My husband Raymond Miranda attended the public hearings on February 17th about the Alameda County zoning ordinance amendments concerning the restriction of oil and natural gas exploration and extraction. As my representative, he took careful notes on the proceedings for my review.

The fracking issue that concerned so many at the meeting is apparently a non- issue in Livermore. E & B Natural Resources reported that the geological formations do not support it, so it should be of no concern. Additionally, according to the information in the power point presentation, concerns about widespread drilling throughout the county are unrealistic.

E & B Natural Resources raised some very good questions about who would pay for the shut-down of the oil wells, which is not spelled out in the amendment. Additionally, the amendments do not address how property owners would be compensated for the loss of mineral rights. I understand your legal department has not even researched the legality of this amendment so why is it up for a vote?

The shut-down of the wells or limitations on additional drilling on my property would compromise my mineral rights, as well as the value of my property.

Please note that the area is not "pristine" open space. In recent years, a large ranch and apparent trucking business was established on near-by property. Additionally, Zone 7 operates a large active facility next door.

In conclusion, I currently have a ten year conditional use permit with the county. The oil wells have been operating for over 40 years without objections. Your board renewed the current ten year conditional use permit just this past year, and I expect the county to honor it.

I strongly support a "No" vote on these amendments.

Sincerely,

Paula M Flessatti

Paula M. Flessatti
2903 Chateau Way
Livermore, CA 94550
(925) 447-7448

Jensen, Bruce, CDA

From: Jensen, Bruce, CDA
Sent: Friday, February 20, 2015 12:15 PM
To: 'Kirk Wilbur'; 'Philip Wente'; 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sbiendorio, Sbiend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; 'Bob Vieira'; Kevin Zollinger
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hi, Mr. Wilbur – It's OK, these questions are pretty straightforward.

The local chapters of several environmental organizations, most notably an umbrella group called 350BayArea – EastBay (http://www.350bayarea.org/350eastbay) petitioned the Board, and spoke at public hearings to ban enhanced well stimulation techniques, such as hydraulic fracturing (aka fracking), steam injection and acidization.

Bruce Jensen
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544
(510) 670-5400

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From: Kirk Wilbur [mailto:kirk@calcattlemen.org]
Sent: Friday, February 20, 2015 11:01 AM
To: Jensen, Bruce, CDA; 'Philip Wente'; 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek';

'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; 'Bob Vieira'; Kevin Zollinger
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Sorry to inundate you with questions, Mr. Jensen. I'm not aware of who the original petitioners were. Do you have that information (I apologize if it is in the packet you originally sent out—I didn't see that information upon a cursory review).

Kirk Wilbur
Director of Government Relations
California Cattlemen's Association
1221 H St.
Sacramento, CA 95814
(916) 444-0845

From: Jensen, Bruce, CDA [mailto:bruce.jensen@acgov.org]
Sent: Friday, February 20, 2015 10:14 AM
To: 'Philip Wente'; 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; Kirk Wilbur; 'Bob Vieira'; Kevin Zollinger
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hello, Philip – The official staff position on the need for this ordinance is outlined in the Staff Analysis and the draft PC Resolution, both of which are subject to amendment. To recap – from Staff Analysis, Page 3:

"Based on continued progress in the oil industry to increase extraction of existing oil and gas resources and expand into new areas, there is a need to address the potential for this activity to expand in Alameda County. Oil and gas exploration and development raises the following public health, safety and welfare concerns: pollution of air, soil, surface water, and groundwater; the depletion of water supplies; noise pollution; and seismic hazards. In addition, greenhouse gas emissions resulting from oil and gas exploration and burning fossil fuel are warming the planet and contributing to climate change with potential public health, safety, welfare, economic, and social impacts in Alameda County, including increased risk of flooding and inundation, extreme storm events, erosion, water shortages, loss of biodiversity, heat waves, and wildfires."

The original environmental organizations who petitioned for this process may have other or more specific reasons.

Bruce Jensen
Alameda County Planning Department
224 West Winton Avenue, Room 111

Hayward, CA 94544
(510) 670-5400

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From: Philip Wente [mailto:Philip.Wente@wentevineyards.com]
Sent: Friday, February 20, 2015 10:09 AM
To: Jensen, Bruce, CDA; 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jplittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'; Kevin Zollinger
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Bruce,

If the oil resources are so limited, why do we need this ordinance ?

Philip R Wente | Vice Chairman, Fourth Generation Winegrower
Wente Family Estates| *Family Owned. Five Generations. Certified Sustainable.*
5565 Tesla Road | Livermore, CA 94550
e: Philip.Wente@wentevineyards.com | t: 925.766.3670

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From: Jensen, Bruce, CDA [mailto:bruce.jensen@acgov.org]
Sent: Friday, February 20, 2015 7:14 AM
To: 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen';

'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Philip Wente; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hi, Darrel – the evidence suggests that the known oil reserves are limited in the East County and generally only show up on a very small area near Patterson Pass Road based on the scientific and empirical data available. Well over 100 wells have been drilled in Alameda County to date, and most were nonproductive, while the remainder are mostly depleted. I admit, it was a speculative assumption on my part – however, in the practical sense, it appears to me that there is not much oil to be had in this region. But you are correct – whether or not oil is present, it would prevent a new prospective operator from drilling.

Bruce Jensen
Alameda County Planning Department
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(510) 670-5400

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From: Darrel Sweet [mailto:dsweet@cattlemen.net]
Sent: Thursday, February 19, 2015 5:59 PM
To: Jensen, Bruce, CDA; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Bruce...thanks for that clarification about the notice. One more question... based on your reply...why would this proposed ordinance not affect most land owners? Wouldn't it affect anyone in Alameda County who wanted to drill for oil/natural gas in the future? Thanks Darrel

From: Jensen, Bruce, CDA [mailto:bruce.jensen@acgov.org]
Sent: Thursday, February 19, 2015 1:55 PM

To: 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; Bob Vieira
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hi, Darrel – we were careful to advertise with an 1/8th page ad in the Tri Valley Herald, among others. Another one will appear of the Board meeting on March 10, which we expect to continue to without discussion . The great majority of landowners in the East County are likely to be unaffected by this proposal as the oil field is demonstrated to be very small, and right now being fully exploited, by and large. Existing operations would be largely unaffected by the proposal.

Bruce Jensen
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From: dsweet@cattlemen.net [mailto:dsweet@cattlemen.net]
Sent: Thursday, February 19, 2015 1:35 PM
To: Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Jensen, Bruce, CDA; Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; Bazar, Chris, CDA; McElligott, Elizabeth, CDA; kirk@calcattlemen.org; Bob Vieira
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Thank you Bruce and Maria for sending this package out. Can either of you tell me in what news paper was the attached legal notice actually published? Over the years it has repeatedly been something rural land owners have pointed out to county staff ...that often such notices get published only in news papers that are only available in the

heavily urbanized western parts of Alameda County. However the subject of the notices are like this one which mostly affect rural eastern Alameda County consequently we get these types of "surprises". Even if published in a paper that is widely available to the rural areas there is also an assumption that people actually read the legal notices. I realize that is not necessarily the County's problem but getting information out the the affected parties is. Thank you.

Darrel Sweet
925.443.7692

From: Palmeri, Maria, CDA [mailto:maria.palmeri@acgov.org]
Sent: Thursday, February 19, 2015 12:40 PM
To: (Bevspin1@aol.com); (dtegner@nnym.org); (Guy.warren@sbcglobal.net); (jtownsend@ebparks.org); A.J. Major; Abbie Batteate; Alyson Aquino; Andy Ross; Ault, Linda; b_raymond@netzero.net; Bazar, Chris, CDA; Beckie Pheng; Brenda Vieux; Brian Morrison; bswift@ci.pleasanton.ca.us; C Moore; Carvalho, Diana; Chris Chandler; Chris Tarantino; chuck; Clayton Koopmann; Connie Jess ; David Houts; David Najarian; Dennis Gutierrez ; Dimitris Kastriotis (Argochartering@aol.com); Dolores Bengston; Duarte, Edmund, CDA; Edward Magee; Farm Bureau; frfld@aol.com; G. Broadman (gbroadman@sbcglobal.net); gail shearer; Georganne Benesch (georganne@centerlinefarms.com); info@rebuildca.org; Irwin Tiessen (tiessen@mindspring.com); James Martin; Jason Preece; Jeff Schwing (jeffsch1@pacbell.net); Jim Panico; Joan Hall (Heasy2do@aol.com); Joe Ciolek; Joe Fereira; John & Kristy Peixoto; jpittsc@aol.com; karin rivard; Katherine Boxer 925-371-0154 ext 111; kmillie9@aol.com; Larry Gosselin (GosselinDVM@aol.com); Larry Tong (ltong@ebparks.org); Laura McDowell-Boyer; Leslie Koenig; Linda Ault; Lopez, Albert, CDA; Marilynn Terstegge ; McElligott, Elizabeth, CDA; Michael Gatzman; Mindy Lunn (melinda4lunn@sbcglobal.net); morrisranching@aol.com; Nick Chapman (nick-cha@comcast.net); Paulsen, Scott, CDA; peter; Philip Wente; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; Richard Warren (rgwarren1@comcast.net); richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; Sheila Barry; Sheila Elworthy; Susan Ellsworth; sweet karen; Sweet, Karen; Teresa McLaughlin (teresamc55@aol.com); Terri Herigstad ; Tim Koopman (Tkoopman@sfwater.org); tony
Cc: Jensen, Bruce, CDA
Subject: FW: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Good afternoon, Interested Parties – attached, please find all recent key documents that were sent as the package for the Planning Commission hearing of February 17, 2015, on proposed Oil and Gas Restrictions in Alameda County. The Planning Commission hearing began at 3:00 pm on February 17, 2015, at the Auditorium Room 160, 224 West Winton Avenue, Hayward, CA 94544. The Planning Commission considered a recommendation to the Board of Supervisors to adopt amendments to the General Plan and Zoning Ordinance which would make oil and gas drilling and extraction a non-conforming land use in the unincorporated County; however ***no recommendation was made at this hearing*** pending further examination of legal issues by County Counsel and additional clarification of effects on existing oil operations by Planning Staff. The hearing has been continued to the March 2, 2015 Planning Commission session, to be held at 6 p.m. on that date at the location stated above.

Please forward this message to anybody else you feel may be interested. If you have any question, please leave a message for me at this e-mail or at 510-670-6527, and I will respond as soon as I can. Thank you for your interest in this matter.

Bruce Jensen
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544
(510) 670-5400

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Jensen, Bruce, CDA

From: Jensen, Bruce, CDA
Sent: Monday, February 23, 2015 9:50 AM
To: 'Laura McDowell-Boyer'; Sblendorio, Sblend A.; Michael A. Gatzman; Philip.Wente@wentevineyards.com; dsweet@cattlemen.net; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; amajor@vtdcpa.com; Allison@BatteateRanch.com; Alyson.Aquino@ca.usda.gov; rossandya@gmail.com; Cedarmtn@wt.net; b_raymond@netzero.net; Bazar, Chris, CDA; bpheng@ebparks.org; bvieux@att.net; brian@bamorrison.com; bswift@ci.pleasanton.ca.us; cmoore@gracelandequestriancenter.com; cchandler@ivwine.org; chris@ctarantino.com; chuk@xintex.com; walkingClivestck@aol.com; jessranch99@yahoo.com; dhouts@zone7water.com; David.Najarian@ParamountExport.net; dgutierrez@gseconstruction.com; Argochartering@aol.com; grannydolo@comcast.net; Duarte, Edmund, CDA; emagee@cv-access.com; alamedafb@att.net; frfld@aol.com; gbroadman@sbcglobal.net; tazetta@sbcglobal.net; georganne@centerlinefarms.com; info@rebuildca.org; tiessen@mindspring.com; Jim.Martin@MartinLandCo.Com; chg893@gmail.com; jeffsch1@pacbell.net; JimPanico@gmail.com; Heasy2do@aol.com; jciolek@yahoo.com; jfereira@sbcglobal.net; kristyrity@coldwellbanker.com; jpittsc@aol.com; karinrivard@hotmail.com; Katherine.boxer@acrcd.org; kmillie9@aol.com; GosselinDVM@aol.com; ltong@ebparks.org; Leslie.koenig@ca.nacdnet.net; blanche@wt.net; Lopez, Albert, CDA; marenpony@hotmail.com; McElligott, Elizabeth, CDA; melinda4lunn@sbcglobal.net; morrisranching@aol.com; nick-cha@comcast.net; Paulsen, Scott, CDA; peter@coolearthsolar.com; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; rgwarren1@comcast.net; richs59354@aol.com; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; sbarry@ucdavis.edu; ranchinc@sbcglobal.net; susan.ellsworth@acrcd.org; ksweet@cattlemen.net; teresamc55@aol.com; marstad@aol.com; Tkoopman@sfwater.org; tony@coolearthsolar.com
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; vieiraranch@gmail.com; Kevin.Zollinger@wentevineyards.com
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Good morning, Laura and others – there have been several legislative actions and ballot measures statewide to limit hydraulic fracturing and, in some cases, overall oil production on a County-by-County basis. I will not go into them all here, although the Powerpoint we prepared discusses a handful of them. A Google search will bring up several examples across California.

I cannot speculate as to whether or not this local effort in Alameda County is connected to any other efforts or activist motivations statewide. For the best information County Staff has at the present time, I refer you and everyone to the Staff Analysis and Powerpoint presentation we have sent around in previous e-mails.

Bruce Jensen
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From: Laura McDowell-Boyer [mailto:mcdboyerl@gmail.com]
Sent: Saturday, February 21, 2015 12:28 AM
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Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; vieiraranch@gmail.com; Kevin.Zollinger@wentevineyards.com
Subject: Re: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Correct me if this is not in any way related to this topic, but there were a couple of measures voted on in San Benito and Santa Barbara last November, that sound eerily familiar to this Proposed Ordinance. http://ballotpedia.org/San_Benito_County_Fracking_Ban_Initiative,_Measure_J_(November_2014), http://ballotpedia.org/Santa_Barbara_County_Fracking_Ban_Initiative,_Measure_P_(November_2014). It appears there is a very close link between the petitioners behind the present Ordinance, and the authors of those November 2014 initiatives. One passed, one didn't. I think the measures were sold as anti-fracking measures, possibly to "whip up a little hysteria" as was claimed by an opponent, but actually are much broader than that. It's been surmised that this is part of a scheme by the petitioners, who failed at the state level, to go county by county to shut down most oil production in California, under the guise of protecting the environment from technologies that have not been proven infallible. So is this Proposed Ordinance a part of the scheme to shut down most oil production in California (where we currently produce about 37% of the oil we use), working at the county level, or is this truly about trying to ban technologies that are potentially harmful to Alameda County water resources? If it's the former, I have a problem with the County potentially trampling on private property/mineral rights for ideological purposes. With regard to the latter, I'd be interested to know where the County specifically feels that the state regs fall short with regard to protection of water resources during oil exploration and development, especially with regard to Alameda County.

Laura McDowell-Boyer

From: Jensen, Bruce, CDA
Sent: Friday, February 20, 2015 4:18 PM
To: Sblendorio, Sblend A. ; Michael A. Gatzman ; Philip.Wente@wentevineyards.com ; dsweet@cattlemen.net ; Palmeri, Maria, CDA ; Bevspin1@aol.com ; dtegner@nnym.org ; Guy.warren@sbcglobal.net ; jtownsend@ebparks.org ; amajor@vtdcpa.com ; Allison@BatteateRanch.com ; Alyson.Aquino@ca.usda.gov ; rossandya@gmail.com ; Cedarmtn@wt.net ; b_raymond@netzero.net ; Bazar, Chris, CDA ; bpheng@ebparks.org ; bvieux@att.net ; brian@bamorrison.com ; bswift@ci.pleasanton.ca.us ; cmoore@gracelandequestriancenter.com ; cchandler@lvwine.org ; chris@ctarantino.com ; chuk@xintex.com ; walkingClivestck@aol.com ; jessranch99@yahoo.com ; dhouts@zone7water.com ; David.Najarian@ParamountExport.net ; dgutierrez@gseconstruction.com ; Argochartering@aol.com ; grannydolo@comcast.net ; Duarte, Edmund, CDA ; emagee@cv-access.com ; alamedafb@att.net ; frfld@aol.com ; gbroadman@sbcglobal.net ; tazetta@sbcglobal.net ;

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Cc: Wilson, Shawn, BOS Dist 1 ; Arguta, Dawn, BOS Dist 1 ; kirk@calcattlemen.org ; vieiraranch@gmail.com ; Kevin.Zollinger@wentevineyards.com
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Bruce,
A couple of questions and comments.
The Proposed Ordinance states specific potential dangers from "exploration and development" or oil and gas wells. Is there a scientific basis for this?

Hi, Mike - In general, oil operations have the potential to be dangerous in the ways cited. Are they always this way? Locally, probably not. Their product, however, and it's processing results in many hazardous materials which end up in the environment. I cannot provide any stats at this time, but the secondary effects of petroleum production and combustion are well known.

Are the dangers enumerated greater or lesser than grading a pad, installing the required driveway with a 200 ft. setback, drilling a water well, and installing a septic system for a rural residence?

For the comparable activities involved in the creation of an oil production facility, probably not. However, oil production also includes the pumping up of a hazardous material (Petroleum), the use of various acidic and caustic chemicals even when fracking is not implemented, and the reinjection to ground of large amounts of wastewater (up to 10 barrels of water per barrel of oil yielded, if I understand it right), even when fracking is not implemented. I cannot say whether it is possible to predict with certainty that this wastewater will not contaminate local high-quality aquifers, but based on the unfortunate Central Valley experience, among others, it's not always certain.

If the objective was to eliminate Hydraulic Fracking, then the Proposed Ordinance should be restricted to this technique.

We considered this possibility, however, County Counsel has opined that this may not be legally viable, as state law and caselaw does not permit local regulation of down-the-hole operations. Staff received direction from the Board T&P Committee to develop something legally well-founded, as discussed in the Staff Analysis, which we have attempted to do.

Secondly, the Planning Department generally presents this type of issue to the Agricultural Advisory Committee early in the process, not after a meeting notice has been filed for a hearing. I am sure the AAC would welcome the continuance of this procedure.

Comment is noted. As already discussed, there is another PC hearing on March 2, at which a continuance is possible, and a first full Board hearing probably in May; hopefully, there will be enough time in that framework for everyone to review and comment.

Bruce Jensen

Mike Gatzman

---Original Message---
From: Jensen, Bruce, CDA, CDA <bruce.jensen@acgov.org>
To: 'Philip Wente' <Philip.Wente@wentevineyards.com>; 'dsweet@cattlemen.net' <dsweet@cattlemen.net>; Palmeri,

Maria, CDA, CDA <maria.palmeri@acgov.org>; Bevspin1 <Bevspin1@aol.com>; dtegner <dtegner@nnym.org>; Guy.warren <Guy.warren@sbcglobal.net>; jtownsend <jtownsend@ebparks.org>; 'A.J. Major' <amajor@vtdcpa.com>; 'Abbie Batteate' <Allison@BatteateRanch.com>; 'Alyson Aquino' <Alyson.Aquino@ca.usda.gov>; 'Andy Ross' <rossandya@gmail.com>; 'Ault, Linda' <Cedarmtn@wt.net>; b_raymond <b_raymond@netzero.net>; Bazar, Chris, CDA, CDA <chris.bazar@acgov.org>; 'Beckie Pheng' <bpheng@ebparks.org>; 'Brenda Vieux' <bvieux@att.net>; 'Brian Morrison' <brian@bamorrison.com>; bswift <bswift@ci.pleasanton.ca.us>; 'C Moore' <cmoore@gracelandequestriancenter.com>; Carvalho, Diana <diana@acpwa.org>; 'Chris Chandler' <cchandler@lvwine.org>; 'Chris Tarantino' <chris@ctarantino.com>; 'chuck' <chuk@xintex.com>; 'Clayton Koopmann' <walkingClivestck@aol.com>; 'Connie Jess ' <jessranch99@yahoo.com>; 'David Houts' <dhouts@zone7water.com>; 'David Najarian' <David.Najarian@ParamountExport.net>; 'Dennis Gutierrez ' <dgutierrez@gseconstruction.com>; 'Dimitris Kastriotis' <Argochartering@aol.com>; 'Dolores Bengston' <grannydolo@comcast.net>; Duarte, Edmund, CDA, CDA <Edmund.Duarte@acgov.org>; 'Edward Magee' <emagee@cv-access.com>; 'Farm Bureau' <alamedafb@att.net>; frfld <frfld@aol.com>; 'G. Broadman' <gbroadman@sbcglobal.net>; 'gail shearer' <tazetta@sbcglobal.net>; 'Georganne Benesch' <georganne@centerlinefarms.com>; info <info@rebuildca.org>; 'Irwin Tiessen' <tiessen@mindspring.com>; 'James Martin' <Jim.Martin@MartinLandCo.Com>; 'Jason Preece' <chg893@gmail.com>; 'Jeff Schwing' <jeffsch1@pacbell.net>; 'Jim Panico' <JimPanico@gmail.com>; 'Joan Hall' <Heasy2do@aol.com>; 'Joe Ciolek' <jciolek@yahoo.com>; 'Joe Fereira' <jfereira@sbcglobal.net>; 'John & Kristy Peixoto' <kristyrlty@coldwellbanker.com>; jpittsc <jpittsc@aol.com>; 'karin rivard' <karinrivard@hotmail.com>; 'Katherine Boxer 925-371-0154 ext 111' <Katherine.boxer@acrcd.org>; kmillie9 <kmillie9@aol.com>; 'Larry Gosselin' <GosselinDVM@aol.com>; 'Larry Tong' <ltong@ebparks.org>; 'Laura McDowell-Boyer' <mcdboyerl@gmail.com>; 'Leslie Koenig' <Leslie.koenig@ca.nacdnet.net>; 'Linda Ault' <blanche@wt.net>; Lopez, Albert, CDA, CDA <Albert.Lopez@acgov.org>; 'Marilynn Terstegge ' <marenpony@hotmail.com>; McElligott, Elizabeth, CDA, CDA <elizabeth.mcelligott@acgov.org>; 'Michael Gatzman' <magatzman@aol.com>; 'Mindy Lunn' <melinda4lunn@sbcglobal.net>; morrisranching <morrisranching@aol.com>; 'Nick Chapman' <nick-cha@comcast.net>; Paulsen, Scott, CDA, CDA <scott.paulsen@acgov.org>; 'peter' <peter@coolearthsolar.com>; Ramirez, Tim - Sfwater.org <tramirez@sfwater.org>; Rank, Elke, Zone7, Zone7 <erank@zone7water.com>; reininhrse <reininhrse@aol.com>; 'Richard Warren' <rgwarren1@comcast.net>; richs59354 <richs59354@aol.com>; Sblendorio, Sblend A. <SAS@hogefenton.com>; Schultheis, Carla - sfwater.org <Cschultheis@sfwater.org>; scstewart <scstewart@ci.livermore.ca.us>; 'Sheila Barry' <sbarry@ucdavis.edu>; 'Sheila Elworthy' <ranchinc@sbcglobal.net>; 'Susan Ellsworth' <susan.ellsworth@acrcd.org>; 'sweet karen' <ksweet@cattlemen.net>; 'Teresa McLaughlin' <teresamc55@aol.com>; 'Terri Herigstad ' <marstad@aol.com>; 'Tim Koopman' <Tkoopman@sfwater.org>; 'tony' <tony@coolearthsolar.com>
Cc: Wilson, Shawn, BOS Dist 1, BOS Dist 1 <Shawn.Wilson@acgov.org>; Argula, Dawn, BOS Dist 1, BOS Dist 1 <dawn.argula@acgov.org>; kirk <kirk@calcattlemen.org>; 'Bob Vieira' <vieiraranch@gmail.com>; Kevin Zollinger <Kevin.Zollinger@wentevineyards.com>
Sent: Fri, Feb 20, 2015 10:18 am
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hello, Philip – The official staff position on the need for this ordinance is outlined in the Staff Analysis and the draft PC Resolution, both of which are subject to amendment. To recap – from Staff Analysis, Page 3:

"Based on continued progress in the oil industry to increase extraction of existing oil and gas resources and expand into new areas, there is a need to address the potential for this activity to expand in Alameda County. Oil and gas exploration and development raises the following public health, safety and welfare concerns: pollution of air, soil, surface water, and groundwater; the depletion of water supplies; noise pollution; and seismic hazards. In addition, greenhouse gas emissions resulting from oil and gas exploration and burning fossil fuel are warming the planet and contributing to climate change with potential public health, safety, welfare, economic, and social impacts in Alameda County, including increased risk of flooding and inundation, extreme storm events, erosion, water shortages, loss of biodiversity, heat waves, and wildfires."

The original environmental organizations who petitioned for this process may have other or more specific reasons.

Bruce Jensen
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To: Jensen, Bruce, CDA; 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Beyspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfid@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'; Kevin Zollinger
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Bruce,

If the oil resources are so limited, why do we need this ordinance ?

Philip R Wente | Vice Chairman, Fourth Generation Winegrower
Wente Family Estates| *Family Owned. Five Generations. Certified Sustainable.*
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From: Jensen, Bruce, CDA [mailto:bruce.jensen@acgov.org]
Sent: Friday, February 20, 2015 7:14 AM
To: 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Beyspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfid@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Philip Wente; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan

Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hi, Darrel – the evidence suggests that the known oil reserves are limited in the East County and generally only show up on a very small area near Patterson Pass Road based on the scientific and empirical data available. Well over 100 wells have been drilled in Alameda County to date, and most were nonproductive, while the remainder are mostly depleted. I admit, it was a speculative assumption on my part – however, in the practical sense, it appears to me that there is not much oil to be had in this region. But you are correct – whether or not oil is present, it would prevent a new prospective operator from drilling.

Bruce Jensen
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From: Darrel Sweet [mailto:dsweet@cattlemen.net]
Sent: Thursday, February 19, 2015 5:59 PM
To: Jensen, Bruce, CDA; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sbiendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Bruce...thanks for that clarification about the notice. One more question... based on your reply...why would this proposed ordinance not affect most land owners? Wouldn't it affect anyone in Alameda County who wanted to drill for oil/natural gas in the future? Thanks Darrel

From: Jensen, Bruce, CDA [mailto:bruce.jensen@acgov.org]
Sent: Thursday, February 19, 2015 1:55 PM
To: 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA;

'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; Bob Vieira
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hi, Darrel – we were careful to advertise with an 1/8th page ad in the Tri Valley Herald, among others. Another one will appear of the Board meeting on March 10, which we expect to continue to without discussion . The great majority of landowners in the East County are likely to be unaffected by this proposal as the oil field is demonstrated to be very small, and right now being fully exploited, by and large. Existing operations would be largely unaffected by the proposal.

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From: dsweet@cattlemen.net [mailto:dsweet@cattlemen.net]
Sent: Thursday, February 19, 2015 1:35 PM
To: Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Jensen, Bruce, CDA; Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; Bazar, Chris, CDA; McElligott, Elizabeth, CDA; kirk@calcattlemen.org; Bob Vieira
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Thank you Bruce and Maria for sending this package out. Can either of you tell me in what news paper was the attached legal notice actually published? Over the years it has repeatedly been something rural land owners have pointed out to county staff ...that often such notices get published only in news papers that are only available in the heavily urbanized western parts of Alameda County. However the subject of the notices are like this one which mostly affect rural eastern Alameda County consequently we get these types of "surprises". Even if published in a paper that is widely available to the rural areas there is also an assumption that people actually read the legal notices. I realize that is not necessarily the County's problem but getting information out the the affected parties is. Thank you.

Darrel Sweet
925.443.7692

From: Palmeri, Maria, CDA [mailto:maria.palmeri@acgov.org]
Sent: Thursday, February 19, 2015 12:40 PM

To: (Bevspin1@aol.com); (dtegner@nnym.org); (Guy.warren@sbcglobal.net); (jtownsend@ebparks.org); A.J. Major; Abbie Batteate; Alyson Aquino; Andy Ross; Ault, Linda; b_raymond@netzero.net; Bazar, Chris, CDA; Beckie Pheng; Brenda Vieux; Brian Morrison; bswift@ci.pleasanton.ca.us; C Moore; Carvalho, Diana; Chris Chandler; Chris Tarantino; chuck; Clayton Koopmann; Connie Jess ; David Houts; David Najarian; Dennis Gutierrez ; Dimitris Kastriotis (Argochartering@aol.com); Dolores Bengston; Duarte, Edmund, CDA; Edward Magee; Farm Bureau; frfld@aol.com; G. Broadman (gbroadman@sbcglobal.net); gail shearer; Georganne Benesch (georganne@centerlinefarms.com); info@rebuildca.org; Irwin Tiessen (tiessen@mindspring.com); James Martin; Jason Preece; Jeff Schwing (jeffsch1@pacbell.net); Jim Panico; Joan Hall (Heasy2do@aol.com); Joe Ciolek; Joe Fereira; John & Kristy Peixoto; jpittsc@aol.com; karin rivard; Katherine Boxer 925-371-0154 ext 111; kmillie9@aol.com; Larry Gosselin (GosselinDVM@aol.com); Larry Tong (ltong@ebparks.org); Laura McDowell-Boyer; Leslie Koenig; Linda Ault; Lopez, Albert, CDA; Marilynn Terstegge ; McElligott, Elizabeth, CDA; Michael Gatzman; Mindy Lunn (melinda4lunn@sbcglobal.net); morrisranching@aol.com; Nick Chapman (nick-cha@comcast.net); Paulsen, Scott, CDA; peter; Philip Wente; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; Richard Warren (rgwarren1@comcast.net); richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; Sheila Barry; Sheila Elworthy; Susan Ellsworth; sweet karen; Sweet, Karen; Teresa McLaughlin (teresamc55@aol.com); Terri Herigstad ; Tim Koopman (Tkoopman@sfwater.org); tony
Cc: Jensen, Bruce, CDA
Subject: FW: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Good afternoon, Interested Parties – attached, please find all recent key documents that were sent as the package for the Planning Commission hearing of February 17, 2015, on proposed Oil and Gas Restrictions in Alameda County. The Planning Commission hearing began at 3:00 pm on February 17, 2015, at the Auditorium Room 160, 224 West Winton Avenue, Hayward, CA 94544. The Planning Commission considered a recommendation to the Board of Supervisors to adopt amendments to the General Plan and Zoning Ordinance which would make oil and gas drilling and extraction a non-conforming land use in the unincorporated County; however ***no recommendation was made at this hearing*** pending further examination of legal issues by County Counsel and additional clarification of effects on existing oil operations by Planning Staff. The hearing has been continued to the March 2, 2015 Planning Commission session, to be held at 6 p.m. on that date at the location stated above.

Please forward this message to anybody else you feel may be interested. If you have any question, please leave a message for me at this e-mail or at 510-670-6527, and I will respond as soon as I can. Thank you for your interest in this matter.

Bruce Jensen
Alameda County Planning Department
224 West Winton Avenue, Room 111
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(510) 670-5400

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Jensen, Bruce, CDA

From: Jensen, Bruce, CDA
Sent: Friday, February 20, 2015 12:11 PM
To: 'rgwarren1@comcast.net'
Cc: Philip Wente; dsweet@cattlemen.net; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; warren, guy; jtownsend@ebparks.org; A.J. Major; Abbie Batteate; Alyson Aquino; Andy Ross; Linda' 'Ault; b raymond; Bazar, Chris, CDA; Beckie Pheng; Brenda Vieux; Morrison, Brian; bswift@ci.pleasanton.ca.us; Moore, Chuck; Carvalho, Diana; Chris Chandler; Chris Tarantino; chuck; Koopmann, Clayton; Connie Jess; David Houts; David Najarian; Dennis Gutierrez; Dimitris Kastriotis; Dolores Bengston; Duarte, Edmund, CDA; Edward Magee; Farm Bureau; frfid@aol.com; G. Broadman; gail shearer; Georganne Benesch; info@rebuildca.org; Irwin Tiessen; Martin, Jim; Jason Preece; Jeff Schwing; Jim Panico; Joan Hall; Joe Ciolek; Joe Fereira; John & Kristy Peixoto; jpittsc@aol.com; karin rivard; Katherine Boxer 925-371-0154 ext 111; kmillie9@aol.com; Larry Gosselin; Larry Tong; Laura McDowell-Boyer; Leslie Koenig; Linda Ault; Lopez, Albert, CDA; Marilynn Terstegge; McElligott, Elizabeth, CDA; Michael Gatzman; Mindy Lunn; morrisranching@aol.com; Nick Chapman; Paulsen, Scott, CDA; peter; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; Sheila Barry; elworthy, sheila; Susan Ellsworth; sweet karen; Teresa McLaughlin; Terri Herigstad; Tim Koopman; tony; Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; Bob Vieira; Kevin Zollinger
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hi, Rex – The proposed approach to make oil and gas development non-conforming did not originate with staff. In short, the Board T&P Committee directed staff to find a way to reduce oil and gas development activities, including to the extent possible fracking. Staff is following the T&P Committee's lead.

The reason we are not attempting to ban fracking is based on case law. As explained in the staff analysis, County Counsel advises us that, while local jurisdictions have the legal ability to regulate *land use*, we do not have the legal ability to regulate what happens "down the hole" – that falls within the domain of State regulation. Other jurisdictions have tried and not succeeded. Thus, we using the approach that bets satisfies the T&P Committee's direction as well as case law.

Please have a look at the material I sent, including the staff report and Powerpoint presentation. Most of this is explained pretty well in those documents (both the oil companies and the environmentalists have given us high marks on the Powerpoint presentation, one oil company geologist saying it was the best presentation he's seen on the issue).

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From: rgwarren1@comcast.net [mailto:rgwarren1@comcast.net]
Sent: Friday, February 20, 2015 11:03 AM
To: Jensen, Bruce, CDA

Cc: Philip Wente; dsweet@cattlemen.net; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; warren, guy; jtownsend@ebparks.org; A.J. Major; Abbie Batteate; Alyson Aquino; Andy Ross; Linda' 'Ault; b raymond; Bazar, Chris, CDA; Beckie Pheng; Brenda Vieux; Morrison, Brian; bswift@ci.pleasanton.ca.us; Moore, Chuck; Carvalho, Diana; Chris Chandler; Chris Tarantino; chuck; Koopmann, Clayton; Connie Jess; David Houts; David Najarian; Dennis Gutierrez; Dimitris Kastriotis; Dolores Bengston; Duarte, Edmund, CDA; Edward Magee; Farm Bureau; frfld@aol.com; G. Broadman; gail shearer; Georganne Benesch; info@rebuildca.org; Irwin Tiessen; Martin, Jim; Jason Preece; Jeff Schwing; Jim Panico; Joan Hall; Joe Ciolek; Joe Fereira; John & Kristy Peixoto; jpittsc@aol.com; karin rivard; Katherine Boxer 925-371-0154 ext 111; kmillie9@aol.com; Larry Gosselin; Larry Tong; Laura McDowell-Boyer; Leslie Koenig; Linda Ault; Lopez, Albert, CDA; Marilynn Terstegge; McElligott, Elizabeth, CDA; Michael Gatzman; Mindy Lunn; morrisranching@aol.com; Nick Chapman; Paulsen, Scott, CDA; peter; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; Sheila Barry; elworthy, sheila; Susan Ellsworth; sweet karen; Teresa McLaughlin; Terri Herigstad; Tim Koopman; tony; Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; Bob Vieira; Kevin Zollinger
Subject: Re: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Bruce, as per your email back to me the petition from the environmental groups was for a ban on the "enhanced well stimulation techniques, such as hydraulic fracturing (aka fracking), steam injection and acidization." Staff instead has taken a different approach with a proposed ban on all drilling and extaction? To the best of the your knowledge there have been no recent documented incidents of local problems with any oil development in Alameda County and no one uses or has proposed to use the enhanced well stimulation techniques. Why not instead try to regulate the enhanced well stimulation techniques that was called for in the petition?

Rex Warren
(925) 570-4819

From: "Bruce Jensen, CDA" <bruce.jensen@acgov.org>
To: "Philip Wente" <Philip.Wente@wentevineyards.com>, "dsweet@cattlemen.net" <dsweet@cattlemen.net>, "Maria Palmeri, CDA" <maria.palmeri@acgov.org>, Bevspin1@aol.com, dtegner@nnym.org, "Guy warren" <Guy.warren@sbcglobal.net>, jtownsend@ebparks.org, "A.J. Major" <amajor@vtdcpa.com>, "Abbie Batteate" <Allison@BatteateRanch.com>, "Alyson Aquino" <Alyson.Aquino@ca.usda.gov>, "Andy Ross" <rossandya@gmail.com>, "Linda' 'Ault" <Cedarmtn@wt.net>, "b raymond" <b_raymond@netzero.net>, "Chris Bazar, CDA" <chris.bazar@acgov.org>, "Beckie Pheng" <bpheng@ebparks.org>, "Brenda Vieux" <bvieux@att.net>, "Brian Morrison" <brian@bamorrison.com>, bswift@ci.pleasanton.ca.us, "C Moore" <cmoore@gracelandequestriancenter.com>, "Diana Carvalho" <diana@acpwa.org>, "Chris Chandler" <cchandler@lvwine.org>, "Chris Tarantino" <chris@ctarantino.com>, "chuck" <chuk@xintex.com>, "Clayton Koopmann" <walkingClivestck@aol.com>, "Connie Jess" <jessranch99@yahoo.com>, "David Houts" <dhouts@zone7water.com>, "David Najarian" <David.Najarian@ParamountExport.net>, "Dennis Gutierrez" <dgutierrez@gseconstruction.com>, "Dimitris Kastriotis" <Argochartering@aol.com>, "Dolores Bengston" <grannydolo@comcast.net>, "Edmund Duarte, CDA" <Edmund.Duarte@acgov.org>, "Edward Magee" <emagee@cv-access.com>, "Farm Bureau" <alamedafb@att.net>, frfld@aol.com, "G. Broadman" <gbroadman@sbcglobal.net>, "gail shearer" <tazetta@sbcglobal.net>, "Georganne Benesch" <georganne@centerlinefarms.com>, info@rebuildca.org, "Irwin Tiessen" <tiessen@mindspring.com>, "James Martin" <Jim.Martin@MartinLandCo.Com>, "Jason Preece" <chg893@gmail.com>, "Jeff Schwing" <jeffsch1@pacbell.net>, "Jim Panico" <JimPanico@gmail.com>, "Joan Hall" <Heasy2do@aol.com>, "Joe Ciolek" <jciolek@yahoo.com>, "Joe Fereira" <jfereira@sbcglobal.net>, "John & Kristy Peixoto" <kristyrlty@coldwellbanker.com>, jpittsc@aol.com, "karin rivard" <karinrivard@hotmail.com>, "Katherine Boxer 925-371-0154 ext 111"

<Katherine.boxer@acrcd.org>, kmillie9@aol.com, "Larry Gosselin" <GosselinDVM@aol.com>, "Larry Tong" <ltong@ebparks.org>, "Laura McDowell-Boyer" <mcdboyerl@gmail.com>, "Leslie Koenig" <Leslie.koenig@ca.nacdnet.net>, "Linda Ault" <blanche@wt.net>, "Albert Lopez, CDA" <Albert.Lopez@acgov.org>, "Marilynn Terstegge" <marenpony@hotmail.com>, "Elizabeth McElligott, CDA" <elizabeth.mcelligott@acgov.org>, "Michael Gatzman" <magatzman@aol.com>, "Mindy Lunn" <melinda4lunn@sbcglobal.net>, morrisranching@aol.com, "Nick Chapman" <nick-cha@comcast.net>, "Scott Paulsen, CDA" <scott.paulsen@acgov.org>, "peter" <peter@coolearthsolar.com>, "Tim Ramirez - Sfwater.org" <tramirez@sfwater.org>, "Elke Rank, Zone7" <erank@zone7water.com>, reininhrse@aol.com, "Richard Warren" <rgwarren1@comcast.net>, richs59354@aol.com, "Sblend A. Sblendorio" <SAS@hogefenton.com>, "Carla Schultheis - sfwater.org" <Cschultheis@sfwater.org>, scstewart@ci.livermore.ca.us, "Sheila Barry" <sbarry@ucdavis.edu>, "Sheila Elworthy" <ranchinc@sbcglobal.net>, "Susan Ellsworth" <susan.ellsworth@acrcd.org>, "sweet karen" <ksweet@cattlemen.net>, "Teresa McLaughlin" <teresamc55@aol.com>, "Terri Herigstad" <marstad@aol.com>, "Tim Koopman" <Tkoopman@sfwater.org>, "tony" <tony@coolearthsolar.com>
Cc: "Shawn Wilson, BOS Dist 1" <Shawn.Wilson@acgov.org>, "Dawn Argula, BOS Dist 1" <dawn.argula@acgov.org>, kirk@calcattlemen.org, "Bob Vieira" <vieiraranch@gmail.com>, "Kevin Zollinger" <Kevin.Zollinger@wentevineyards.com>
Sent: Friday, February 20, 2015 10:14:21 AM
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hello, Philip – The official staff position on the need for this ordinance is outlined in the Staff Analysis and the draft PC Resolution, both of which are subject to amendment. To recap – from Staff Analysis, Page 3:

"Based on continued progress in the oil industry to increase extraction of existing oil and gas resources and expand into new areas, there is a need to address the potential for this activity to expand in Alameda County. Oil and gas exploration and development raises the following public health, safety and welfare concerns: pollution of air, soil, surface water, and groundwater; the depletion of water supplies; noise pollution; and seismic hazards. In addition, greenhouse gas emissions resulting from oil and gas exploration and burning fossil fuel are warming the planet and contributing to climate change with potential public health, safety, welfare, economic, and social impacts in Alameda County, including increased risk of flooding and inundation, extreme storm events, erosion, water shortages, loss of biodiversity, heat waves, and wildfires."

The original environmental organizations who petitioned for this process may have other or more specific reasons.

Bruce Jensen
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544
(510) 670-5400

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From: Philip Wente [mailto:Philip.Wente@wentevineyards.com]
Sent: Friday, February 20, 2015 10:09 AM
To: Jensen, Bruce, CDA; 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org;

Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'; Kevin Zollinger
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Bruce,

If the oil resources are so limited, why do we need this ordinance ?

Philip R Wente | Vice Chairman, Fourth Generation Winegrower
Wente Family Estates| *Family Owned. Five Generations. Certified Sustainable.*
5565 Tesla Road | Livermore, CA 94550
e: Philip.Wente@wentevineyards.com | t: 925.766.3670

wentefamilyestates.com
Celebrating 130 years as the country's oldest, continuously operated family-owned winery

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From: Jensen, Bruce, CDA [mailto:bruce.jensen@acgov.org]
Sent: Friday, February 20, 2015 7:14 AM
To: 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; Philip Wente; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hi, Darrel – the evidence suggests that the known oil reserves are limited in the East County and generally only show up on a very small area near Patterson Pass Road based on the scientific and empirical data available. Well over 100 wells have been drilled in Alameda County to date, and most were nonproductive, while the remainder are mostly depleted. I admit, it was a speculative assumption on my part – however, in the practical sense, it appears to me that there is not

much oil to be had in this region. But you are correct – whether or not oil is present, it would prevent a new prospective operator from drilling.

Bruce Jensen
Alameda County Planning Department
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From: Darrel Sweet [mailto:dsweet@cattlemen.net]
Sent: Thursday, February 19, 2015 5:59 PM
To: Jensen, Bruce, CDA; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; 'Bob Vieira'
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Bruce...thanks for that clarification about the notice. One more question... based on your reply...why would this proposed ordinance not affect most land owners? Wouldn't it affect anyone in Alameda County who wanted to drill for oil/natural gas in the future? Thanks Darrel

---

From: Jensen, Bruce, CDA [mailto:bruce.jensen@acgov.org]
Sent: Thursday, February 19, 2015 1:55 PM
To: 'dsweet@cattlemen.net'; Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tiessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; kirk@calcattlemen.org; Bob Vieira
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Hi, Darrel – we were careful to advertise with an 1/8th page ad in the Tri Valley Herald, among others. Another one will appear of the Board meeting on March 10, which we expect to continue to without discussion . The great majority of landowners in the East County are likely to be unaffected by this proposal as the oil field is demonstrated to be very small, and right now being fully exploited, by and large. Existing operations would be largely unaffected by the proposal.

Bruce Jensen
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544
(510) 670-5400

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From: dsweet@cattlemen.net [mailto:dsweet@cattlemen.net]
Sent: Thursday, February 19, 2015 1:35 PM
To: Palmeri, Maria, CDA; Bevspin1@aol.com; dtegner@nnym.org; Guy.warren@sbcglobal.net; jtownsend@ebparks.org; 'A.J. Major'; 'Abbie Batteate'; 'Alyson Aquino'; 'Andy Ross'; 'Ault, Linda'; b_raymond@netzero.net; Bazar, Chris, CDA; 'Beckie Pheng'; 'Brenda Vieux'; 'Brian Morrison'; bswift@ci.pleasanton.ca.us; 'C Moore'; Carvalho, Diana; 'Chris Chandler'; 'Chris Tarantino'; 'chuck'; 'Clayton Koopmann'; 'Connie Jess '; 'David Houts'; 'David Najarian'; 'Dennis Gutierrez '; 'Dimitris Kastriotis'; 'Dolores Bengston'; Duarte, Edmund, CDA; 'Edward Magee'; 'Farm Bureau'; frfld@aol.com; 'G. Broadman'; 'gail shearer'; 'Georganne Benesch'; info@rebuildca.org; 'Irwin Tlessen'; 'James Martin'; 'Jason Preece'; 'Jeff Schwing'; 'Jim Panico'; 'Joan Hall'; 'Joe Ciolek'; 'Joe Fereira'; 'John & Kristy Peixoto'; jpittsc@aol.com; 'karin rivard'; 'Katherine Boxer 925-371-0154 ext 111'; kmillie9@aol.com; 'Larry Gosselin'; 'Larry Tong'; 'Laura McDowell-Boyer'; 'Leslie Koenig'; 'Linda Ault'; Lopez, Albert, CDA; 'Marilynn Terstegge '; McElligott, Elizabeth, CDA; 'Michael Gatzman'; 'Mindy Lunn'; morrisranching@aol.com; 'Nick Chapman'; Paulsen, Scott, CDA; 'peter'; 'Philip Wente'; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; 'Richard Warren'; richs59354@aol.com; Sblendorio, Sblend A.; Schulthels, Carla - sfwater.org; scstewart@ci.livermore.ca.us; 'Sheila Barry'; 'Sheila Elworthy'; 'Susan Ellsworth'; 'sweet karen'; 'Teresa McLaughlin'; 'Terri Herigstad '; 'Tim Koopman'; 'tony'
Cc: Jensen, Bruce, CDA; Wilson, Shawn, BOS Dist 1; Argula, Dawn, BOS Dist 1; Bazar, Chris, CDA; McElligott, Elizabeth, CDA; kirk@calcattlemen.org; Bob Vieira
Subject: RE: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Thank you Bruce and Maria for sending this package out. Can either of you tell me in what news paper was the attached legal notice actually published? Over the years it has repeatedly been something rural land owners have pointed out to county staff ...that often such notices get published only in news papers that are only available in the heavily urbanized western parts of Alameda County. However the subject of the notices are like this one which mostly affect rural eastern Alameda County consequently we get these types of "surprises". Even if published in a paper that is widely available to the rural areas there is also an assumption that people actually read the legal notices. I realize that is not necessarily the County's problem but getting information out the the affected parties is. Thank you.

Darrel Sweet
925.443.7692

From: Palmeri, Maria, CDA [mailto:maria.palmeri@acgov.org]
Sent: Thursday, February 19, 2015 12:40 PM
To: (Bevspin1@aol.com); (dtegner@nnym.org); (Guy.warren@sbcglobal.net); (jtownsend@ebparks.org); A.J. Major; Abbie Batteate; Alyson Aquino; Andy Ross; Ault, Linda; b_raymond@netzero.net; Bazar, Chris, CDA; Beckie Pheng; Brenda Vieux; Brian Morrison; bswift@ci.pleasanton.ca.us; C Moore; Carvalho, Diana; Chris Chandler; Chris Tarantino; chuck; Clayton Koopmann; Connie Jess ; David Houts; David Najarian; Dennis Gutierrez ; Dimitris Kastriotis (Argochartering@aol.com); Dolores Bengston; Duarte, Edmund, CDA; Edward Magee; Farm Bureau; frfld@aol.com; G.

Broadman (gbroadman@sbcglobal.net); gail shearer; Georganne Benesch (georganne@centerlinefarms.com); info@rebuildca.org; Irwin Tiessen (tiessen@mindspring.com); James Martin; Jason Preece; Jeff Schwing (jeffsch1@pacbell.net); Jim Panico; Joan Hall (Heasy2do@aol.com); Joe Ciolek; Joe Fereira; John & Kristy Peixoto; jpittsc@aol.com; karin rivard; Katherine Boxer 925-371-0154 ext 111; kmillie9@aol.com; Larry Gosselin (GosselinDVM@aol.com); Larry Tong (ltong@ebparks.org); Laura McDowell-Boyer; Leslie Koenig; Linda Ault; Lopez, Albert, CDA; Marilynn Terstegge ; McElligott, Elizabeth, CDA; Michael Gatzman; Mindy Lunn (melinda4lunn@sbcglobal.net); morrisranching@aol.com; Nick Chapman (nick-cha@comcast.net); Paulsen, Scott, CDA; peter; Philip Wente; Ramirez, Tim - Sfwater.org; Rank, Elke, Zone7; reininhrse@aol.com; Richard Warren (rgwarren1@comcast.net); richs59354@aol.com; Sblendorio, Sblend A.; Schultheis, Carla - sfwater.org; scstewart@ci.livermore.ca.us; Sheila Barry; Sheila Elworthy; Susan Ellsworth; sweet karen; Sweet, Karen; Teresa McLaughlin (teresamc55@aol.com); Terri Herigstad ; Tim Koopman (Tkoopman@sfwater.org); tony
Cc: Jensen, Bruce, CDA
Subject: FW: Most Recent Documents related to hearings on Oil and Gas Restrictions in Alameda County

Good afternoon, Interested Parties – attached, please find all recent key documents that were sent as the package for the Planning Commission hearing of February 17, 2015, on proposed Oil and Gas Restrictions in Alameda County. The Planning Commission hearing began at 3:00 pm on February 17, 2015, at the Auditorium Room 160, 224 West Winton Avenue, Hayward, CA 94544. The Planning Commission considered a recommendation to the Board of Supervisors to adopt amendments to the General Plan and Zoning Ordinance which would make oil and gas drilling and extraction a non-conforming land use in the unincorporated County; however *no recommendation was made at this hearing* pending further examination of legal issues by County Counsel and additional clarification of effects on existing oil operations by Planning Staff. The hearing has been continued to the March 2, 2015 Planning Commission session, to be held at 6 p.m. on that date at the location stated above.

Please forward this message to anybody else you feel may be interested. If you have any question, please leave a message for me at this e-mail or at 510-670-6527, and I will respond as soon as I can. Thank you for your interest in this matter.

Bruce Jensen
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544
(510) 670-5400

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No virus found in this message.
Checked by AVG - www.avg.com
Version: 2013.0.3495 / Virus Database: 4257/9145 - Release Date: 02/19/15

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Version: 2013.0.3495 / Virus Database: 4257/9145 - Release Date: 02/19/15

Alameda Creek Alliance

P.O. Box 2626 • Niles, CA • 94536
Phone: (510) 499-9185
E-mail: alamedacreek@hotmail.com
Web: www.alamedacreek.org

Via Electronic Mail

Bruce Jensen
Alameda County Planning Department
Alameda County Administration Building
224 West Winton Avenue, Rm. 111
Hayward, CA 94544
Bruce.jensen@acgov.org

Re: Proposal to Amend General Plan to Strike References to Oil and Gas Development

Dear Mr. Jensen:

As an Alameda County organization strongly dedicated to the protection of our natural resources, the Alameda Creek Alliance fully supports the Planning Department's proposal to amend the General Plan to remove all references to oil and gas development in the County. As the Planning Department and Office of County Counsel have explained, these revisions would prohibit future oil and gas exploration in the County.

The proposal comes at a critical time. The state is entering its fourth straight year of serious drought, which has made our freshwater resources more precious than ever. Oil and gas development threatens our water in numerous ways. Water-intensive techniques like hydraulic fracturing (fracking) and cyclic steam injection can use millions of gallons of freshwater and contaminate it to the point where it cannot be reused for other purposes. Moreover, the wastewater from oil and gas extraction contains a number of toxins such as benzene, an extremely dangerous carcinogen. Recently, our state oil and gas regulators have admitted that there is widespread illegal injection of this harmful wastewater into aquifers that were supposed to be protected under federal and state law. Close to 500 wastewater disposal wells have been injecting billions of gallons of toxic wastewater into aquifers around the state.

Oil and gas development can also harm air quality due to the large amount of harmful pollutants emitted into the air. Dozens of air toxics are used in fracking and other forms of well stimulation and other stages of oil and gas development. Numerous studies show that residents living close to active wells have higher rates of cancer, birth defects, and other serious illnesses.

In addition, hazardous chemicals must be transported to and from the well sites, creating increased traffic and congestion, damage to roads, and the risk of serious accidents involving trucks carrying dangerous material. Such accidents typically require special training and equipment to respond to.

Oil and gas development also take a toll on wildlife through habitat destruction, noise and light pollution, exposure to wastewater pits, and direct harm from trucks and other equipment. The potential harm from decreased water quality, water depletion, and air pollution all contribute to harm to our ecosystems.

Oil and gas activity, particularly the injection of wastewater, is also increasingly linked to

increased seismic activity. Last year, Oklahoma surpassed California as the most earthquake-prone state. Scientists attribute the increased seismic activity – including a magnitude 5.7 earthquake – to the expanded use of wastewater injection in the state. Here in California, where our faults are more numerous and have a prolific history of causing massive earthquakes, we can ill afford to increase the risk of seismic activity.

Finally, allowing oil and gas development does not align with the state and county's goals for greenhouse gas reduction. At a time when we should be moving away from fossil fuels, it is illogical to allow oil and gas activities to continue in the County. The drilling, production, and combustion of these dirty sources of energy will only serve to undo the progress we have made toward greenhouse gas emission reduction goals.

Opponents to these commonsense measures to protect public health and the environment attempt to confuse the issue by questioning the County's authority or even suggesting that the County might be liable for lost profits if oil companies are not allowed to act as they please. These scare tactics do not affect the underlying legal support for local governments to act to protect the public.

The State Supreme Court and State Attorney General have stated clearly that local governments may use their zoning authority to ban certain activities within their jurisdiction. The State Constitution provides that "[a] county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws." (Cal. Const. Art. XI, § 7.) Neither state nor federal law preempts a local government from deciding where or whether oil and gas activity should take place. These decisions are rightly reserved for local decision-makers.

Oil and gas advocates also claim that prohibitions on oil and gas will lead to claims for lost profits. Yet such claims are rarely successful, given that the U.S. Supreme Court sets a very high standard to find a "regulatory taking." In addition, where an activity poses a risk to public health and safety, the right to continue to operate is further unlikely to apply.

For all of these reasons, the Board of Supervisors should work with the Planning Department to adopt the amendments proposed by the Planning Department and end oil and gas activity in the County. Thank you for your efforts on this important matter.

Sincerely,

Jeff Miller
Director

Dorsi Diaz
26646 Colette St.
Hayward, Ca.
94544

Alameda County Planning Commission
% Bruce Jensen, Senior Planner
Alameda County Planning Dept
224 W. Winton Ave, Room 111
Hayward CA 94544-1215

Dear Commissioners:

I am writing to you in support of eliminating as permitted uses any new or expanded oil and gas exploration and production activities in the Alameda County General Plan and the East County Area Plan, and removing oil and gas exploration, production, and extraction as permitted uses from the Alameda County Zoning Ordinance, all as recommended by county staff in your public hearing on February 17, 2015.

>>>Oil and gas operations are dirty, noisy, smelly, and sometimes generate 24/7 truck traffic.

>>>Oil and gas operations are notorious for improper disposal of their waste products, often in unlined pits and pits which overflow with storm water, which results in contamination of surface water such as streams, and of aquifers which until contaminated by the oil and gas operations contained clean water suitable for crop irrigation and drinking. Once water is contaminated with the by-products of oil and gas operations, it is extremely detrimental to wildlife, crops, and people.

>>>Oil and gas operations emit methane, a greenhouse gas which generates over eighty (80) times as much global warming as carbon dioxide. The science has been settled for at least twenty years—human-caused increases in emissions of greenhouse gasses are responsible for the climate disruption and sea level rise which our planet has been experiencing, and which is known will get worse.

>>>Oil and gas operations which utilize hydrofracking and other extreme extraction methods are known to have contaminated fresh groundwater and caused earthquakes in other states. **California is in an extreme drought where we cannot afford to have our precious fresh water contaminated, and we certainly don't need any more earthquakes.**

>>>Oil and gas operations are not good neighbors to farms, ranches, vineyards, homes, schools, businesses, and other inhabited places. They adversely affect the health of children and adults who live or work nearby, and often result in damage to nearby crops.

We urge you to protect the environment, and the health and safety of animals and people in Alameda County by adopting the changes to the General Plans and Zoning Ordinance as recommended by county staff on February 17, 2015.

Dorsi Diaz

cc: Alameda County Board of Supervisors
1221 Oak St. Suite 536
Oakland CA 94612

Alameda County Against Fracking

Mission: We must ban fracking in Alameda County. Fracking poses a direct and immediate threat to the drinking water, air, food, health, wildlife, climate and economy of Alameda County and California. Alameda County is home to six oil wells that are not currently being fracked. As a county we should ban fracking before it starts and take a stand for our essential resources by keeping Alameda County frack-free.

Member Organizations:
Sierra Club San Francisco Bay Chapter
350 Bay Area
MoveOn.org
Food & Water Watch
Center For Biological Diversity
California Native Plants Society East Bay Chapter
UAW 2865-Berkeley, the UC Student-Workers Union
Asian Pacific Environmental Network
Northern California Recycling Association
League of Conservation Voters of the East Bay
Hayward Demos Democratic Club
Greenlining Institute
Wellstone Democratic Renewal Club
Wholly H20
Earth Passages
Planting Justice
KyotoUSA
inNative
Alameda Creek Alliance
Global Community Monitor
Green Party of Alameda County
Bay Localize
Local Clean Energy Alliance
Labrys Healthcare Circle
Klassy Kat Productions
Strawberry Creek Lodge
Network of Spiritual Progressives
Newark Teachers Association
SPLASH Team of Montclair Presbyterian Church

ACDCC RESOLUTION IN SUPPORT OF A BAN ON FRACKING IN ALAMEDA COUNTY

WHEREAS, hydraulic fracturing, commonly referred to as "fracking," is a technique that drills wells vertically and often horizontally deep under the earth's surface and injects a mixture of water, sand and toxic chemicals into the wells at high pressure to crack shale and dense rock formations to extract gas or oil; and

WHEREAS, fracking uses large amounts of water thereby reducing its availability for agriculture and other public use, uses large amounts of toxic chemicals some of which can cause cancer, creates wastewater that brings these chemicals and other deep earth contaminants (sometimes radioactive) to the surface and can pollute the drinking water supply either directly or through leaky wells, releases methane gas into the air that exacerbates climate change, and may cause earthquakes; and

WHEREAS, fracking is only one of the better known and more destructive techniques of oil and gas exploration and extraction that is currently minimally regulated or not regulated at all, both in Alameda County and the State of California and is exempt from federal regulation under an exception in the Safe Drinking Water Act whereby the chemicals used are treated as secret corporate property and are not tested or made public, and the locations of the wells are also not tested or made public

THEREFORE, BE IT RESOLVED that the Alameda County Democratic Party supports the imposition of a ban on all new permitting and entitlements for oil and gas exploration and extraction, including fracking, in Alameda County through methods including but not limited to the removal of an existing policy of the Alameda County General Plan[1] that presently allows the Alameda County Board of Supervisors to conditionally approve new use permits for petroleum resource exploration and extraction; and

BE IT FURTHER RESOLVED, that the Alameda County Democratic Party send a copy of this resolution to the Alameda County Board of Supervisors.

Adopted by the Alameda County Democratic Central Committee on March 4, 2015

Respectfully submitted,
Andy Kelley and Igor Tregub, AD15
Co-Sponsored by the Wellstone Democratic Renewal Club

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[1] Alameda County General Plan, East County Area Plan (ECAP), Policy 167 presently states: "The County shall impose conditions of approval on new Petroleum Resource Exploration and Extraction conditional use permits to protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction; potential impacts include but are not limited to traffic, noise, dust, health and safety, and visual impacts, as well as land contamination, surface and groundwater contamination, improper disposal of petroleum wastes, and improper site reclamation. The conditions should at least include, but not be limited to, those developed through the California Environmental Quality Act review process, and shall be monitored accordingly. "

Jensen, Bruce, CDA

From: Colleen Saia [csaiacv@aol.com]
Sent: Monday, March 16, 2015 7:47 PM
To: Jensen, Bruce, CDA
Subject: Attn: Alameda County Planning Commission - No Fracking!

Colleen Saia
4191 Veronica Ave.
Castro Valley, CA 94546

Alameda County Planning Commission
% Bruce Jensen, Senior Planner
Alameda County Planning Dept
224 W. Winton Ave, Room 111
Hayward CA 94544-1215

Dear Commissioners:

I am writing to you because I want neither new nor more fracking, oil or gas exploration, production or extraction in Alameda County. I'm concerned about the environmental and social impacts of such activities and don't want it in my backyard.

Specifically, I'm in support of eliminating as permitted uses any new or expanded oil and gas exploration and production activities in the Alameda County General Plan and the East County Area Plan, and removing oil and gas exploration, production, and extraction as permitted uses from the Alameda County Zoning Ordinance, all as recommended by county staff in your public hearing on February 17, 2015.

Oil and gas operations are dirty, noisy, smelly, and sometimes generate 24/7 truck traffic.

Oil and gas operations are notorious for improper disposal of their waste products, often in unlined pits and pits which overflow with storm water, which results in contamination of surface water such as streams, and of aquifers which until contaminated by the oil and gas operations contained clean water suitable for crop irrigation and drinking. Once water is contaminated with the by-products of oil and gas operations, it is extremely detrimental to wildlife, crops, and people.

Oil and gas operations emit methane, a greenhouse gas which generates over eighty (80) times as much global warming as carbon dioxide. The science has been settled for at least twenty years--human-caused increases in emissions of greenhouse gasses are responsible for the climate disruption and sea level rise which our planet has been experiencing, and which is known will get worse.

Oil and gas operations which utilize hydrofracking and other extreme extraction methods are known to have contaminated fresh groundwater and caused earthquakes in other states. California is in an extreme drought where we cannot afford to have our precious fresh water contaminated, and we certainly don't need any more earthquakes.

Oil and gas operations are not good neighbors to farms, ranches, vineyards, homes, schools, businesses, and other inhabited places. They adversely affect the health of children and adults who live or work nearby, and often result in damage to nearby crops.

I urge you to protect the environment, and the health and safety of animals and people in Alameda County by adopting the changes to the General Plans and Zoning Ordinance as recommended by county staff on February 17, 2015.

Sincerely,
Colleen Saia

cc: Alameda County Board of Supervisors
1221 Oak St. Suite 536
Oakland CA 94612

March 16, 2015

Alameda County Planning Commission
% Bruce Jensen, Senior Planner
Alameda County Planning Dept
224 W. Winton Ave, Room 111
Hayward CA 94544-1215

Re: Proposed General Plan and Zoning Ordinance Amendments Regarding Restriction of Oil and Natural Gas Exploration and Extraction

Dear Commissioners,

I strongly support a ban on new and expanded old and gas production, including a ban on all fracking in Alameda County. Fracking is of primary concern, due to the potential contamination of water supplies, the use of vast quantities of water during a time of serious drought, and the risk of earthquakes.

We need to act NOW to wean ourselves off of oil and gas as energy sources and instead promote 100% clean electricity, improved mass transit, and the overall protection of our water, air, soil, and all of life.

Please adopt the changes to the General Plans and Zoning Ordinance as recommended by county staff on February 17, 2015.

Sincerely,

Carol Bardoff
978 Begier Avenue
San Leandro, CA 94577
510-382-1639
kairu22@gmail.com

CALIFORNIA CATTLEMEN'S ASSOCIATION

1221 H STREET - SACRAMENTO, CALIFORNIA - 95814-1910

SERVING THE CATTLE COMMUNITY SINCE 1917

PHONE: (916) 444-0845
FAX: (916) 444-2194
www.calcattlemen.org

March 17, 2015

Submitted via email to bruce.jensen@acgov.org

Alameda County Agricultural Advisory Committee
Attn: Bruce Jensen, Senior Planner
224 West Winton Avenue, Room 111
Hayward, California 94544

Re: Proposal to modify specific text in the East County Area Plan (ECAP) and the Alameda County Code of Ordinances (ACZO) to remove all references to oil, petroleum, and drilling, exploration, and extraction thereof

Dear Agricultural Advisory Committee Members:

The California Cattlemen's Association (CCA) appreciates the opportunity to comment on the Alameda County Agricultural Advisory Committee's (AAC) consideration of whether or not to recommend that the Alameda County Board of Supervisors remove all references to oil and gas exploration and extraction from the ECAP and ACZO. CCA strongly opposes these amendments, as they are overbroad, would amount to an unconstitutional taking of private property rights without just compensation, and are preempted by State law. CCA is a statewide trade organization representing more than 1,750 cattle ranchers throughout the state, including more than 100 members in the Alameda/Contra Costa area, some of whom possess mineral rights estates within the county and would be directly impacted by the proposed amendments.

I. The proposed ECAP and ACZO amendments are overbroad

Director Bazar's memo to the AAC notes that "[t]he Board Committee directed staff to develop the proposal after community members expressed concerns regarding enhanced well stimulation techniques commonly referred to as 'fracking.'" However, the proposed amendments are broad enough to ban much more than that which is of concern to the community. That is, rather than merely banning 'fracking' (which, as the memo notes, is not even "currently practiced or foreseen as necessary by existing operators in Alameda County), the proposed amendments would ban all oil and gas exploration and extraction. The result is a broad regulatory change which severely impacts private property rights without remedying any perceived threat to the community (whether such perception is reasonable or otherwise). Because the proposed amendments would curtail private property rights beyond what is necessary to achieve the County's stated purpose, the AAC should not recommend their adoption by the Board.

BILLY FLOURNOY
PRESIDENT
LIKELY

ROB VON DER LIETH
TREASURER
COPPEROPOLIS

BILLY GATLIN
EXECUTIVE VICE PRESIDENT
HERALD

RICH ROSS
SECOND VICE PRESIDENT
LINCOLN

MARK LACEY
SECOND VICE PRESIDENT
INDEPENDENCE

DAVE DALEY
FIRST VICE PRESIDENT
CHICO

BILL BRANDENBERG
FEEDER COUNCIL CHAIR
EL CENTRO

JACK LAVERS
SECOND VICE PRESIDENT
GLENNVILLE

MIKE SMITH
FEEDER COUNCIL VICECHAIR
SELMA

II. The proposed amendments would amount to an unconsititutional taking of private property without just compensation

The Fifth Amendment to the United States Constitution states that private property shall not "be taken for public use, without just compensation," a prohibition which has been applied to state and municipal governments under the Fourteenth Amendment. Because the proposed amendments ban virtually all conventional oil extraction in addition to banning 'fracking,' application of the amendments would render exercise of a property owners' mineral rights estate commercially impracticable, thereby effecting a regulatory taking for which Alameda County would owe the property owner just compensation.

The U.S. Supreme Court has held that a regulatory taking necessarily occurs where a regulation deprives a property owner of "all economically beneficial use of property," but the Court has also held that a regulatory taking can occur even where regulation "leaves the property owner some economically beneficial use of his property."

Under both state and federal law, mineral rights are a distinct property interest protected by the Fifth and Fourteenth Amendments. In California, courts have found that "undue restriction" of a mineral estate holder's right to drill for oil "is as much a taking for constitutional purposes as appropriating or destroying" the underlying property itself. Where an individual possesses only the mineral estate (as distinct from the surface estate), the court will focus its inquiry upon whether the regulation makes it "commercially impracticable" to profitably exercise those mineral rights.

As noted in Director Bazar's memo to the AAC, the effect of the proposed amendments would be that "Alameda County would no longer have any oil or gas extraction land uses, including potential enhanced well stimulation," except for currently permitted operations so long as they do not become idle for a six-month period. Thus, all economically beneficially use of mineral rights estates would be prohibited. However, the extent of Alameda County's takings liability would not be confined to existing operations, as it would still deprive mineral estate holders *not currently exercising their mineral rights* of all future economically-beneficial use of their property; this is a property interest for which the County would still be liable for just compensation for taking.

III. The proposed amendments are likely preempted by existing State legislation and regulation

In jurisdictions where "fracking" bans have been overturned, they have been overturned largely on the basis that the bans are preempted by state laws allowing and comprehensively regulating oil and gas extraction. Such fracking bans have been overturned on this basis in Longmont and Fort Collins, Colorado, and challenged on this basis in lawsuits in Denton, Texas and elsewhere.

In Longmont, Colorado, for instance, the court found that the town's fracking ban was operationally preempted by state law. Legislative findings sought to "[f]oster the responsible, balanced development, production, and utilization of natural resources of oil and gas in the state

of Colorado" and to "protect against waste" of those resources.[1] Longmont's fracking ban, however, "[did] not prevent waste; instead, it cause[d] waste. Because of the ban, mineral deposits were left in the ground that otherwise could have been extracted . . . . Mineral deposits are being left in the ground by all the wells that are not being drilled due to the fracking ban."[2] The court found that Longmont's ban was irreconcilably in conflict with the state interests codified by the Colorado legislature, and thus Longmont's fracking ban was overturned as preempted by state law.

Though the decisions of Colorado courts are not controlling in California, of course, there are clear parallels between the Longmont case and the Alameda County proposal, and the legal analysis is instructive of how California courts might approach the case. In California, as in Colorado, the Legislature has declared "preventing waste" and increasing "the ultimate recovery of oil and gas" as among the priorities of the state of California.[3] And as in the city of Longmont, Alameda County's proposed ban, if implemented, would irreconcilably conflict with this state policy by zoning out oil and gas production within the County (in fact, Alameda's ban would be *more restrictive*, as it is not limited to fracking, as was Longmont's). As state law is superior to county ordinance, and as Alameda's proposed ban is irreconcilable with the findings of the California Legislature, the proposed amendments must fall. Because the proposed amendments are at odds with and are preempted by state law, we urge the AAC to recommend *against* their adoption by the Board.

IV. The form of the amendments does not immunize the County from legal challenge

Finally, Director Bazar's memo notes that "[t]he Office of County Counsel has advised that any *new ordinance language specifically banning* all oil extraction activity…or enhanced well stimulation techniques could place the County at risk of legal action" (emphasis added). Presumably, then, the proposed amendments removing references to oil and gas are intended to provide the County protection against legal action. However, this tactic in no way broadly immunizes the County from legal challenge. While the form of the amendments may diminish the potential of a *facial* challenge to the ECAP and ACZO, the *effect* of the amendments would still be a prohibition of all oil and gas extraction, and if enforced would still permit legal challenge to the law *as applied*. Furthermore, Director Bazar's memo makes it abundantly clear that the *intent* of the amendments—regardless of their form—is a ban on all oil and gas exploration and extraction in response to community concerns which were limited to "fracking."

Conclusion

CCA appreciates the opportunity to comment on the proposed amendments to Alameda County's General Plan and Zoning Ordinance. We urge that the AAC suggest that the Board of Supervisors reject the proposed amendments because of the undue burden they would place on private property owners, especially mineral rights estate holders. Additionally, we urge the

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[1] Order Granting Motions for Summary Judgment, *Colorado Oil & Gas Ass'n v. City of Longmont*, Dist. Court of Boulder County, Case No. 2013CV63 at p. 14, July 24, 2014, *available at* http://media.bizj.us/view/img/3280941/longmont-fracking-ruling-072414.pdf.
[2] *Id.* at p. 15.
[3] California Public Resources Code § 3630.

rejection of the amendments because they are overbroad and are likely unconstitutional both on takings and preemption grounds.

Sincerely,

Kirk Wilbur
Director of Government Relations
California Cattlemen's Association

CENTER *for* BIOLOGICAL DIVERSITY

working through science, law and creative media to secure a future for all species, great or small, hovering on the brink of extinction.

March 18, 2014

Via Electronic Mail

Alameda County Board of Supervisors
County of Alameda Administrative Building
1221 Oak St. # 536
Oakland, CA 94612

Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544

Attn: Bruce Jensen, Senior Planner
E-Mail: bruce.jensen@acgov.org

Re: Support for Revisions to Alameda County General Plan Pertaining to Oil and Gas

Dear Honorable Supervisors and Commissioners:

On behalf of the Center for Biological Diversity and its members, I am writing to strongly support the proposed amendments to the Alameda County General Plan, East County Area Plan (ECAP), and the Alameda County Zoning Ordinance (Alameda County Code of Ordinances, Title 17 - Zoning) to remove references to oil and gas and eliminate land use for new oil exploration, drilling and extraction activities in Alameda County.

These are commonsense and forward-thinking changes that will help protect our air, water, climate, and health from the harms of oil and gas development. Such activities have been associated with significant local impacts, including adverse health effects, air pollution, water contamination, water resource depletion, land degradation, light and noise pollution, increased traffic, and aesthetics. A long history of accidents and spills makes the oil and gas industry even more dangerous for surrounding communities. In addition, continued reliance on fossil fuels is inimical to the state and county's goals to reduce greenhouse gas emissions to avoid the worst effects of climate change.

Restricting oil and gas activity is well within the authority of local governments under longstanding state law. The California Constitution clearly reserves such power to local decision-makers: "A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws."[1]

A prohibition on oil and gas activity is not preempted by state law. There is no express or implied preemption that would limit local governments in deciding whether or where to allow oil and gas development to occur. In fact, state law *expressly reserves* the power to regulate the conduct and location of oil activities:

[1] California Const. art. XI, sec. 7.

> This [oil and gas]chapter shall not be deemed a preemption by the state of any existing right of cities and counties to enact and enforce laws and regulations regulating the conduct and location of oil production activities, including, but not limited to, zoning, fire prevention, public safety, nuisance, appearance, noise, fencing, hours of operation, abandonment, and inspection.[2]

The California Supreme Court confirmed that local zoning ordinances prohibiting the production of oil are an "unquestioned right,"[3] and that such authority is "well settled." [4] The U.S. Supreme Court has recognized a local government's zoning authority as its "least limitable" power.[5]

In short, the County's ability to adopt the proposed changes to its General Plan is supported by ample legal precedent. Other states are following suit. New York's highest state court recently affirmed the power of local governments to enact bans on oil and gas development.

Claims that the proposed amendments would result in a taking of private property are without merit. Neither state nor federal law is likely to lead a court to find that the County's effort to protect health and safety constitutes a regulatory taking. First, a court is very unlikely to find that a property owner must be compensated even where the value of the property is diminished. Even a 95% loss in value is not enough, in some cases, to merit compensation.[6] Second, the proposed amendments are a commonsense measure to protect the general welfare of Alameda County residents from the real and documented dangers of oil and gas activity. Courts typically do not find takings where, as here, there is a harm or nuisance being prevented.

In conclusion, we applaud the Planning Commission and Board of Supervisors for prioritizing Alameda County residents' health and well being. The County's authority to adopt and implement these changes is well established, and we look forward to working with you to move further toward a healthier and safer Alameda County.

Thank you for your attention to this important matter.

Sincerely,

Hollin Kretzmann
Staff Attorney
Center for Biological Diversity
351 California St., Ste. 600
San Francisco, CA 94104
(415) 436-9682

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[2] Cal. Pub. Res. Code § 3690 (emphasis added).
[3] *Pac. Palisades Ass'n v. City of Huntington Beach*, 196 Cal. 211 (Cal. 1925).
[4] *Beverly Oil Co. v. City of Los Angeles*, 40 Cal.2d 552 (Cal. 1953).
[5] *Chicago & Alton R. Co. v. Tranbarger*, 238 U.S. 67, 78 (1915).
[6] *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003.

Jensen, Bruce, CDA

From: Rock Zierman [rock@cipa.org]
Sent: Friday, March 20, 2015 1:06 PM
To: Jensen, Bruce, CDA
Subject: Alameda PowerPoint on Oil and Gas
Attachments: Powerpoint - Oil and Gas Overview 3-19-15.pdf

Bruce—

My name is Rock Zierman and I am the CEO of the California Independent Petroleum Association, of which E&B Natural Resources is a member. Please find below my comments on your revised PowerPoint presentation:

1. Slide 7 discusses "acidization." That is a generic term that really has no specific meaning and can refer to very different processes. Recognizing this, the state, through Senate Bill 4 (Pavley, 2013), defined well stimulation that uses acid. One is "Acid Fracking", where acid is used instead of gel/water to fracture the formation. Your Slide 7 states "In California, where acidization is a common form of fracking..." This is an incorrect statement. No acid fracking is currently occurring in CA. The second form of stimulation defined under SB 4 is "Acid Matrix Stimulation" which is the process you are describing on Slide 8 as "corroding the rock formation" although we would say "dissolving the formation." While used in CA, it too is quite rare. Hydraulic fracturing is clearly the most common form of well stimulation which has occurred over 2,000 times in the last three years compared to just a handful of Acid Matrix Stimulations and no acid fracking.
2. Also on slide 8, you state "...although acid is used to remove mineral deposits from conduits." This is correct, but it may be helpful for your Board members to know that acid is a very common fluid used in the maintenance of facilities of many different industries in Alameda County including water wells, swimming pools, various pipelines, not to mention common household cleaners used by janitorial services to clean buildings, including County buildings.
3. On Slide 8, it is not accurate to state that cyclic steam is considered "chemical-free fracking." Cyclic steam injection is more similar to steam flooding except steam is injected and oil is produced out of the same well using an alternating sequence of injection and production. It is not always injected above the frac gradient pressure.
4. On slide 11, you mention the SF Chron article that states "Oil companies in the Central Valley have, for years, pumped wastewater from their operations into aquifers that had been clean enough for people to drink." You are correct that SF Chron said that, however, that statement from that article was widely discredited by regulators from both DOGGR and the State Water Board at a hearing of the Senate Natural Resources Committee on March 10 in the State Capitol. While the issue of whether produced water has been allowed to be injected into "protected aquifers" is a valid once, there has not been even one instance where injection has been detected into any aquifer "suitable for drinking." All the aquifers we are injecting into have high concentrations of naturally occurring boron, benzene, mercury, arsenic, not to mention oil and gas, making the water not suitable for drinking or irrigation. I realize this is a very nuanced and complicated issue, but it is simply inaccurate to state that any regulator, state or federal, has found we have been injecting into "water suitable for drinking." A "protected aquifer" under the Safe Drinking Water Act is any aquifer under 10,000 ppm Total Dissolved Solids that has not explicitly been exempted by USEPA. Drinking water is water less than 500 TDS with no high levels of boron, benzene, and the other constituents I mentioned earlier. Let me know if you want more information on this issue.
5. It may be helpful for your presentation to include the fact that oil production in CA consists mainly of produced brackish water. Typically, over 95% of what comes out of the ground through an oil production well is brackish water and less than 5% is oil and natural gas. The oil and gas are removed from the fluid and the fluid is then reinjected back into the ground, usually right back into the same formation from where it came. This fluid is not "wastewater" because it is not a waste that has been generated during the oil and gas production process. It is "produced water", simply the water that was naturally comingled with the oil and gas deep underground. When HF is used, it is true that a very small amount of added chemicals are part of the fluid stream, but so small that it

can't be detected. As you accurately pointed out however, there is no HF in Alameda County. As a result, only naturally occurring produced water is injected through permitted Class II wells in Alameda County.

6. On slide 15, you quote the LA Times "California DWR officials, responding to concerns about groundwater contamination..." As mentioned before, no actual contamination has ever been found. State regulators in their press releases said they acted out of "an abundance of caution" not in response to actual contamination. They also stated that numerous water testing results concluded no contamination had occurred.
7. Slide 23 you mention Carson and Compton placed moratoria on production, but you fail to mention both cities have since reversed their decisions. You do mention the lawsuit in Compton on the next slide, but not the result which was the city council reversing their decision as a negotiated settlement with WSPA.
8. It may be helpful to mention that while Beverly Hills did ban HF, they still allow conventional methods of Enhanced Oil Recovery (EOR) like the ones found in Alameda County such as steam injection. Beverly Hills has fairly significant oil production and they deliberately wrote the ordinance to allow conventional operations.

Thanks for the opportunity to give my input. Please feel free to contact me if you have any questions. Best,

Rock Zierman
Chief Executive Officer
California Independent Petroleum Association
1001 K Street, 6th Floor
Sacramento, CA 95814
916-447-1177
916-447-1144 Fax
rock@cipa.org

Castro Valley Democratic Club
Post Office Box 20866
Castro Valley CA 94546

March 24, 2015

Alameda County Planning Commission

% Bruce Jensen, Senior Planner

Alameda County Planning Dept

224 W. Winton Ave, Room 111

Hayward CA 94544-1215

Dear Commissioners:

We are writing to you in support of eliminating as permitted uses any new or expanded oil and gas exploration and production activities in the Alameda County General Plan and the East County Area Plan, and removing oil and gas exploration, production, and extraction as permitted uses from the Alameda County Zoning Ordinance. These changes are recommended by county staff in your public hearing on February 17, 2015 and the Castro Valley Democratic Club hereby endorses the resolution presented on that date.

Oil and gas operations that are increasingly using hydrofracking methods use significant amounts of precious water that Alameda County and California can simply not afford to waste in this time of extreme drought. Once hydrofracking is started it must performed on a continuous basis thus using even more water resources.

The use of enhanced methods to develop oil and gas supplies does work but we must question why we are using resources to produce more dirty oil and gas that then detracts from efforts to produce clean renewable and other alternative energy sources. The profits that result from oil and gas production benefits a small few at significant consequences to the public at large.

Oil and gas operations are notorious for improper disposal of their waste products, often in unlined pits and pits which overflow with storm water, which results in contamination of surface water such as streams. Groundwater aquifers have already been impacted by improper disposal into wells, many of these in areas that once contained clean water suitable for crop irrigation and drinking. Once water is contaminated with the by-products of oil and gas operations, it is extremely detrimental to wildlife, crops, and people.

Oil and gas operations emit methane, a greenhouse gas which causes significantly more global warming effects than carbon dioxide. The climate change we are helping cause by continued hydrofracking here will have a large economic effects in Alameda County due to sea level rise and even more damaging effects of larger storms and flooding events.

Oil and gas operations are not good neighbors to farms, ranches, vineyards, homes, schools, businesses, and other inhabited places. They adversely affect the health of children and adults who live or work nearby, and often result in damage to nearby crops.

We urge you to protect the environment, and the health and safety of animals and people in Alameda County by adopting the changes to the General Plans and Zoning Ordinance as recommended by county staff on February 17, 2015.

By: David Siegel

President Castro Valley Democratic Club

cc: Alameda County Board of Supervisors

1221 Oak St. Suite 536

Oakland CA 94612

Castro Valley Democratic Club Membership by e-mail

THE COUNTY PLANNING COMMISSION OF ALAMEDA COUNTY
HAYWARD, CALIFORNIA

~ DRAFT ~ RESOLUTION NO. 15- - AT MEETING HELD FEBRUARY 17, 2015

RECOMMENDATION FOR EAST COUNTY AREA PLAN (ECAP) GENERAL PLAN AMENDMENT AND ORDINANCE AMENDING CHAPTER 17.06 OF THE ALAMEDA COUNTY GENERAL ORDINANCE CODE REGARDING RESTRICTION OF DRILLING FOR AND REMOVAL OF OIL, GAS AND OTHER HYDROCARBON SUBSTANCES

Introduced by Commissioner
Seconded by Commissioner

WHEREAS, one of the basic objectives of the County's General Plan and Zoning regulations is to promote the public health, safety and; and

WHEREAS, the land use activity of drilling for and extraction of oil, gas and hydrocarbons has been conducted in Alameda County for several decades, subject to issuance of discretionary conditional use permits; and

WHEREAS oil and gas exploration and development raises a number of public health, safety and welfare concerns, including pollution of air, soil, surface water, and groundwater; the depletion of water supplies; noise pollution; and seismic hazards; and

WHEREAS greenhouse gas emissions resulting from oil and gas exploration and burning fossil fuel are contributing to climate change with potential public health, safety, welfare, economic, and social impacts in Alameda County, including increased risk of flooding and inundation, extreme storm events, erosion, water shortages, loss of biodiversity, heat waves, and wildfires; and

WHEREAS the proposed General Plan Amendment and Ordinance Revision would render these activities nonconforming uses; and in this way, the existing uses would be able to continue to proceed as originally approved, but could not expand or change significantly; and,

WHEREAS the proposed General Plan Amendment and Ordinance Revision would, as a result, progressively reduce and restrict future oil and gas production land uses on all lands within the unincorporated area of Alameda County, thus helping to reduce the likelihood of the risks of oil and gas production described above; and

WHEREAS with the proposed actions, the Alameda County Board of Supervisors intends to prohibit oil and gas exploration and extraction in all districts.

WHEREAS this Planning Commission held a duly noticed public hearing on the proposal to amend the East County Area Plan (ECAP) and the General Ordinance Code, Section 17.06 at the hour of 3:00 p.m. on Tuesday, the 17th day of February, 2015, in the Auditorium of the Alameda County Building, 224 Winton Avenue, Hayward, California; and

WHEREAS the Review Documents, testimony submitted in writing and at the public hearing and other items in the public record have been considered by the Planning Commission prior to this action; and

WHEREAS this Planning Commission does find that amendment of the Alameda County General Plan and Section 17.06 of the General Ordinance Code for the purpose of restriction of drilling and removal of oil, gas and other hydrocarbon substances is in the interest of the public health, safety, and welfare.

NOW THEREFORE,

BE IT RESOLVED that the Planning Commission does hereby recommend to the Board of Supervisors amendment of the Alameda County General Plan, East County Area Plan, specifically that the following Policy be removed in its entirety:

> *ECAP Policy 167: The County shall impose conditions of approval on new **Petroleum Resource Exploration and Extraction** conditional use permits to protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction; potential impacts include but are not limited to traffic, noise, dust, health and safety, and visual impacts, as well as land contamination, surface and groundwater contamination, improper disposal of petroleum wastes, and improper site reclamation. The conditions should at least include, but not be limited to, those developed through the California Environmental Quality Act review process, and shall be monitored accordingly.*

BE IT FURTHER RESOLVED that the Planning Commission does hereby recommend to the Board of Supervisors that the Alameda County Code of Ordinances, Title 17 - Zoning, Section 17.06.040, Conditional uses—Board of zoning adjustments, Paragraph I be repealed as follows:

> ~~I. Drilling for and removal of oil, gas or other hydrocarbon substances;~~

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOE:

EXCUSED:

ABSENT:

ABSTAINED:

ALBERT LOPEZ - PLANNING DIRECTOR & SECRETARY
COUNTY PLANNING COMMISSION OF ALAMEDA COUNTY

BOS, CAO

Castro Valley Democratic Club
Post Office Box 20866
Castro Valley CA 94546

CLERK, BOARD OF
SUPERVISORS' OFFICE
15 MAR 30 PM 4:34
COUNTY OF ALAMEDA

March 24, 2015

Alameda County Planning Commission

% Bruce Jensen, Senior Planner

Alameda County Planning Dept

224 W. Winton Ave, Room 111

Hayward CA 94544-1215

Dear Commissioners:

We are writing to you in support of eliminating as permitted uses any new or expanded oil and gas exploration and production activities in the Alameda County General Plan and the East County Area Plan, and removing oil and gas exploration, production, and extraction as permitted uses from the Alameda County Zoning Ordinance. These changes are recommended by county staff in your public hearing on February 17, 2015 and the Castro Valley Democratic Club hereby endorses the resolution presented on that date.

Oil and gas operations that are increasingly using hydrofracking methods use significant amounts of precious water that Alameda County and California can simply not afford to waste in this time of extreme drought. Once hydrofracking is started it must performed on a continuous basis thus using even more water resources.

The use of enhanced methods to develop oil and gas supplies does work but we must question why we are using resources to produce more dirty oil and gas that then detracts from efforts to produce clean renewable and other alternative energy sources. The profits that result from oil and gas production benefits a small few at significant consequences to the public at large.

Oil and gas operations are notorious for improper disposal of their waste products, often in unlined pits and pits which overflow with storm water, which results in contamination of surface water such as streams. Groundwater aquifers have already been impacted by improper disposal into wells, many of these in areas that once contained clean water suitable for crop irrigation and drinking. Once water is contaminated with the by-products of oil and gas operations, it is extremely detrimental to wildlife, crops, and people.

C DM

Oil and gas operations emit methane, a greenhouse gas which causes significantly more global warming effects than carbon dioxide. The climate change we are helping cause by continued hydrofracking here will have a large economic effects in Alameda County due to sea level rise and even more damaging effects of larger storms and flooding events.

Oil and gas operations are not good neighbors to farms, ranches, vineyards, homes, schools, businesses, and other inhabited places. They adversely affect the health of children and adults who live or work nearby, and often result in damage to nearby crops.

We urge you to protect the environment, and the health and safety of animals and people in Alameda County by adopting the changes to the General Plans and Zoning Ordinance as recommended by county staff on February 17, 2015.

By: David Siegel

President Castro Valley Democratic Club

cc: Alameda County Board of Supervisors

1221 Oak St. Suite 536

Oakland CA 94612

Castro Valley Democratic Club Membership by e-mail

THE COUNTY PLANNING COMMISSION OF ALAMEDA COUNTY
HAYWARD, CALIFORNIA

~ DRAFT ~ RESOLUTION NO. 15- - AT MEETING HELD FEBRUARY 17, 2015

RECOMMENDATION FOR EAST COUNTY AREA PLAN (ECAP) GENERAL PLAN AMENDMENT AND ORDINANCE AMENDING CHAPTER 17.06 OF THE ALAMEDA COUNTY GENERAL ORDINANCE CODE REGARDING RESTRICTION OF DRILLING FOR AND REMOVAL OF OIL, GAS AND OTHER HYDROCARBON SUBSTANCES

Introduced by Commissioner
Seconded by Commissioner

WHEREAS, one of the basic objectives of the County's General Plan and Zoning regulations is to promote the public health, safety and; and

WHEREAS, the land use activity of drilling for and extraction of oil, gas and hydrocarbons has been conducted in Alameda County for several decades, subject to issuance of discretionary conditional use permits; and

WHEREAS oil and gas exploration and development raises a number of public health, safety and welfare concerns, including pollution of air, soil, surface water, and groundwater; the depletion of water supplies; noise pollution; and seismic hazards; and

WHEREAS greenhouse gas emissions resulting from oil and gas exploration and burning fossil fuel are contributing to climate change with potential public health, safety, welfare, economic, and social impacts in Alameda County, including increased risk of flooding and inundation, extreme storm events, erosion, water shortages, loss of biodiversity, heat waves, and wildfires; and

WHEREAS the proposed General Plan Amendment and Ordinance Revision would render these activities nonconforming uses; and in this way, the existing uses would be able to continue to proceed as originally approved, but could not expand or change significantly; and,

WHEREAS the proposed General Plan Amendment and Ordinance Revision would, as a result, progressively reduce and restrict future oil and gas production land uses on all lands within the unincorporated area of Alameda County, thus helping to reduce the likelihood of the risks of oil and gas production described above; and

WHEREAS with the proposed actions, the Alameda County Board of Supervisors intends to prohibit oil and gas exploration and extraction in all districts.

WHEREAS this Planning Commission held a duly noticed public hearing on the proposal to amend the East County Area Plan (ECAP) and the General Ordinance Code, Section 17.06 at the hour of 3:00 p.m. on Tuesday, the 17th day of February, 2015, in the Auditorium of the Alameda County Building, 224 Winton Avenue, Hayward, California; and

WHEREAS the Review Documents, testimony submitted in writing and at the public hearing and other items in the public record have been considered by the Planning Commission prior to this action; and

WHEREAS this Planning Commission does find that amendment of the Alameda County General Plan and Section 17.06 of the General Ordinance Code for the purpose of restriction of drilling and removal of oil, gas and other hydrocarbon substances is in the interest of the public health, safety, and welfare.

NOW THEREFORE,

BE IT RESOLVED that the Planning Commission does hereby recommend to the Board of Supervisors amendment of the Alameda County General Plan, East County Area Plan, specifically that the following Policy be removed in its entirety:

> *ECAP Policy 167: The County shall impose conditions of approval on new **Petroleum Resource Exploration and Extraction** conditional use permits to protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction; potential impacts include but are not limited to traffic, noise, dust, health and safety, and visual impacts, as well as land contamination, surface and groundwater contamination, improper disposal of petroleum wastes, and improper site reclamation. The conditions should at least include, but not be limited to, those developed through the California Environmental Quality Act review process, and shall be monitored accordingly.*

BE IT FURTHER RESOLVED that the Planning Commission does hereby recommend to the Board of Supervisors that the Alameda County Code of Ordinances, Title 17 - Zoning, Section 17.06.040, Conditional uses—Board of zoning adjustments, Paragraph I be repealed as follows:

> ~~I. Drilling for and removal of oil, gas or other hydrocarbon substances;~~

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOE:

EXCUSED:

ABSENT:

ABSTAINED:

ALBERT LOPEZ - PLANNING DIRECTOR & SECRETARY
COUNTY PLANNING COMMISSION OF ALAMEDA COUNTY

Mr. David Siegel
3787 Brookdale Blvd.
Castro Valley, CA 94546

OAKLAND
CA 945
27 MAR '15
PM 6.1

Alameda County Board of Supervisors
1221 Oak Street, Suite 536
Oakland, CA 94612

CLERK BOARD OF
SUPERVISORS' OFFICE
15 MAR 30 PM 4:33

9461242549 9

Statewide Scientific Study: No Oil and Gas Wells Should Be Allowed Near Where People Live, Work, and Go to School

Shallow Fracking Near Water Supplies Must Also Be Stopped

Prepared by the Center for Biological Diversity for Californians Against Fracking

August 2015

INTRODUCTION

Two years ago, amid calls from scientists, health professionals, and the public to ban fracking, Governor Jerry Brown pleaded with Californians to "give science a chance before deciding on a ban on fracking."[1] Instead of prohibiting the hazardous practice, which blasts water and toxic chemicals underground at high pressures to crack rocks and release oil and gas, Governor Brown pushed forward with fracking, issuing permits for thousands of fracking operations across the state.

Now, the science is in: A major new report from the California Council on Science and Technology shows the clear dangers of fracking in California, including risks to public health and safety and the environment. Among the many recommendations in the scientists' report, the panel called for an end to dangerous shallow-depth fracking and open waste disposal pits that contaminate water supplies.

Scientists also warned that California must institute a setback requirement to stop *all* oil and gas well drilling and production near homes, schools and other places where people are at risk from the harmful air pollution.

BACKGROUND

In September 2013, the State Legislature passed Senate Bill 4 (SB 4), which Governor Brown signed into law. SB 4 called for an independent scientific study on the environmental effects of fracking and other well stimulation techniques to be completed by January 1, 2015. The Natural Resources Agency retained the California Council on Science and Technology (CCST) to conduct the study.

However, the science panel completed only the first volume of its study, *An Independent Scientific Assessment of Well Stimulation in California* (the report), by the statutory deadline. The first volume

only described well stimulation activity in California and provided no information about the risks to health and the environment.

On July 9, 2015, more than six months after the statutory deadline, the CCST released Volumes II and III of the report, which evaluate the potential environmental impacts of hydraulic fracturing (fracking) and acid stimulations in the state. After reviewing hundreds of peer-reviewed studies, CCST experts explained just how dangerous fracking in California is. The risks include substantial harm to air and water quality, public health, marine ecosystems, and the potential for inducing earthquakes.

In fact, the report cautions that fracking in California may be even more dangerous than in other states because wells in California are much closer to densely populated areas, active faults, older wells, and groundwater.

In light of the serious risks of fracking in California, the CCST recommends that all oil and gas wells be prohibited near places people may be exposed to toxic chemicals and recommends that no permits be issued for shallow fracking near protected groundwater.

CCST LAYS OUT EXISTING EVIDENCE OF DANGERS OF FRACKING

Risks to Water

CCST Recommendation: Prohibit fracking at shallow depths unless and until operators can demonstrate that groundwater would be protected.

CCST Recommendation: End the use of percolation pits.

The report identifies a number of ways in which fracking can cause water contamination. Fracking in California's unique geology potentially creates a greater risk to groundwater than elsewhere in the country.

First, the majority of fracking in California, roughly 75 percent, occurs at very shallow depths, mostly within 1,000 feet of the surface.[2] In many areas, this means fracking is taking place at the same depths as groundwater.[3] Moreover, because California has many older and sometimes undocumented oil and gas wells, there is potential for older wells to act as conduits and allow chemicals to migrate to sources of groundwater.

The science panel also states that groundwater monitoring "does not ensure protection of water, nor will it necessarily detect contamination should it occur," and concludes that groundwater monitoring "does nothing to stop contamination from occurring in any case."[4]

The report calls for an end to fracking at shallow depths near groundwater unless operators can confirm that groundwater will not be contaminated.[5] Such assurance would be difficult if not impossible to demonstrate given that California's regulators have already admitted to widespread violations of federal law leading to groundwater contamination by the oil industry.[6]

California has also allowed operators to dispose of wastewater, which contains a toxic mix of fracking fluid and naturally occurring chemicals, into unlined pits.[7] The use of disposal pits allows chemicals to escape into the air, threatening nearby communities, and to percolate into the soil beneath, potentially migrating to nearby surface water or groundwater. The report confirms that the use of percolation pits has resulted in water contamination in California.[8]

Given the danger of these pits, the CCST recommends that the use of percolation pits be phased out unless it can be shown that hazardous materials are not a part of the discharged wastewater.[9]

Risks to Human Health

CCST Recommendation: Prohibit all oil and gas drilling and production close to homes, schools, hospitals, or other sensitive receptors

There are no state regulations that restrict where a well may be drilled. Thus, in many parts of the state, active wells are located only a few feet from homes, schools, daycare facilities, churches or other places people are exposed to the air pollution from the wells.

The report sets forth established scientific evidence that the closer a population is to active oil and gas development, the more elevated the risk to that population.[10] Exposure to toxic airborne chemicals can occur up to 2 miles from an active well, and people living within a half mile from an active well are at significantly higher risk of getting sick.[11]

In California, there are many densely populated areas near or even on top of active oil fields, increasing the risk of exposure to the population. According to the report, "Approximately half a million people live within one mile of a stimulated well, and many more live near oil and gas development of any type."[12] In the Los Angeles basin alone, about 1.7 million people live, and hundreds of schools, elderly facilities, and daycare facilities are located, within one mile of an active oil and gas well.[13] More than 32,000 people live within 100 meters (328 feet) of such a well.[14]

People/Places within 1 mile of at least one active oil well in the South Coast Air Basin

Schools	348
Daycare Centers	524
Elderly facilities	[illegible]
Children under 5	[illegible]
Over 75	[illegible]
All residents	[illegible]

(CCST Vol. [illegible]

Some dangerous chemicals—like benzene, a carcinogen—are common to both fracked and conventional wells.[15] The report emphasizes the need for a science-based minimum setback distance between oil and gas wells and homes, schools, hospitals, and other places where people could be exposed to the harmful chemicals used in oil and gas production.[16]

The report also stresses a disturbing fact:

"[T]he scientific literature is clear that certain sensitive and vulnerable populations (e.g., children, asthmatics, those with pre-existing cardiovascular or respiratory conditions, and populations already exposed to elevated air pollution) are more susceptible to health effects from exposures to environmental pollutants known to be associated with oil and gas development."[17]

The closer people are to oil and gas activities, the report emphasizes, the higher their potential exposure to toxic air emissions and the higher the risk of associated health effects.[29] The harmful emissions "could present health hazards to nearby communities in California."[30]

Existing emissions data do not distinguish between pollution from well stimulation and that from other stages of oil and gas production. However, the oil and gas industry in the San Joaquin Valley, largely enabled today by fracking, is responsible for more than 30 percent of man-made, regional sulfur dioxide emissions and 70 percent of hydrogen sulfide emissions.[31]

Given the lack of data on air emissions, the CCST recommends that the State measure the toxicity of the air near active wells and restrict the types and quantities of air toxics that may be used.[32]

Seismic Hazards

Fracking and the injection of wastewater produced from fracking and similar processes have the potential to cause earthquakes in California, as they already have in other states.
Two factors contribute to the potential for induced seismic activity to be "at least as high in California" as elsewhere in the country.[33]

First, California has a large number of active faults with high "loading rates"—faults that are close to movement at any given time and that are susceptible to induced seismic activity in response to relatively low changes in pressure or shear stress perturbations.[34] In other words, even lower levels of disturbance by fracking and related activity could trigger earthquakes in California.

Second, fracking and wastewater injection in California take place at much shallower depths than in other parts of the country. These activities occur "within about the same depth range" as the faults that cause the bulk of seismic activity in California.[35] The CCST reviewed seismic data and wastewater injection records in the Santa Maria basin in California and found a link between injection at two wastewater disposal wells and a cluster of earthquakes that "suggested a relationship between the [earthquake activity] and the combined effect of the pressure increase in these wells."[36]

Taken together, "the overall potential for seismicity to be induced by wastewater injection may be at least as high in California as in the central U. S. Furthermore, some magnitude 5 to 6 earthquakes are observed to occur at relatively shallow depths in California, which suggests that induced earthquakes could be *at least as large* as those experienced to date in the continental interior."[37]

Risks to Wildlife and Vegetation

Hundreds of federally and state-protected species live in habitats in or near oil fields where fracking happens regularly.[38]

The report estimates that 33,000 hectares (81,545 acres) have been harmed so far by fracking and other well stimulation.[39] The majority of habitat loss caused by fracking has occurred in Kern and Ventura counties. In Ventura County, oil fields fall partially within the Los Padres National Forest, which provides habitat for more than 100 federal or state listed species.[40] Areas in which substantial

amounts of fracking-enabled oil development has occurred overlap with critical habitat for the California condor and steelhead salmon.[41]

The report notes that habitat damage is permanent—restoration work and natural revegetation do not restore sites to their pre-disturbance value for native species.[42]

Besides habitat destruction, the report lists several other ways in which fracking harms wildlife, including exposure to toxic wastewater, spills into surface waters, increased traffic, invasive species, diverting water sources, noise and light pollution, and litter ingestion.[43]

The CCST notes that percolation pits are of particular concern because they attract wildlife and expose them to harmful chemicals. While mandatory protective netting prevents some harm, the study estimated that only 24 percent of pits have protective netting.[44]

Risks from Offshore Fracking

Oil companies have fracked hundreds of offshore wells in state and federal waters off the California coast, and the report was critical of the lack of information available about these activities. While operators in federal water are allowed to discharge fracking wastewater directly into the ocean, there are no studies on this waste fluid's effects on the marine environment.[45] Federal regulators do not even keep track of fracking offshore.[46]

The lack of toxicity data for 31 of the 48 chemicals known to be used in offshore fracking presents a "significant problem," according to the report.[47] The CCST also reports that offshore spills are commonplace. From 2009 to 2014, there were 170 spill incidents offshore.[48] Given the lack of data on offshore fracking, the science panel recommends more studies be conducted to assess its potential harms and any alternatives to ocean disposal.[49]

CONCLUSION

The CCST report confirms what other studies have previously demonstrated: fracking and other oil and gas activities present substantial risks to our health, drinking water, and safety. While there are still major data gaps that prevent the public from knowing the true extent of the dangers, existing studies provide ample evidence that the risks are simply unacceptable. Governor Brown's plea to give science a chance has been answered, and the science shows conclusively that fracking is an unsafe practice for numerous reasons.

Based on the science, the only way to protect the public and the environment from the dangers of fracking is to prohibit the practice. In addition, science-based setbacks to prohibit all wells near where people are exposed to the dangerous air pollution from all phases of oil and gas production must be instituted immeditately.

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[1] Lynn Doan, "California Fracking Study May Take 18 Months, Brown Says," *Bloomberg Business*, Oct. 28, 2013.
[2] CCST Vol. II, p. 38 (endnote page numbers for Vol. II unless otherwise noted.).
[3] 121.
[4] 38.

[5] Ibid.
[6] Jonathan Bishop, Deputy Secretary, State Water Resources Control Board, March 10, 2015 testimony at California Senate Joint Committee Hearing, stating, "any injection [of wastewater] into the aquifers … has contaminated those aquifers."
[7] 51, 107.
[8] 107.
[9] 25.
[10] 414.
[11] Ibid.
[12] 413.
[13] Volume III, 212.
[14] Ibid.
[15] 377.
[16] 433.
[17] Ibid.
[18] Ibid.
[19] Ibid.
[20] 374.
[21] 70.
[22] 76.
[23] 50.
[24] 81-82, 390.
[25] 18.
[26] 183.
[27] 409.
[28] 410.
[29] 44.
[30] Ibid.
[31] 207, 220.
[32] 44.
[33] 280.
[34] 277.
[35] 280.
[36] 295.
[37] 280 (emphasis added)
[38] 314.
[39] 327.
[40] 316.
[41] 341.
[42] 364.
[43] 311.
[44] 345.
[45] Vol. III, p. 29
[46] Id. at 59.
[47] Id. at 95.
[48] Id. at 76.
[49] Id. at 104.

August 16, 2015

Alameda County Planning Department
Alameda County Administration Building
224 West Winton Avenue, Rm 111
Hayward, CA 94644

ATTN: Bruce Jensen

Dear Mr. Jensen:

Any activity by the oil companies have far ranging effects for all of us whether we live in Alameda County or not..

Protect our environment and especially our agricultural areas.

All the best,

Denise D'Anne

Denise D'Anne
351 Guerrero St.
San Francisco, CA 94103
Ddanne1@sbcglobal.net

Dr. David Schneider
OPTOMETRIST
(510) 848-6733 • ds6956@earthlink.net

1736 HEARST AVENUE • BERKELEY, CA 94703

DEAR MS. PETS P. D. —

I ASK THAT YOU SUPPORT

AN OIL - FREE COUNTY.

PLEASE NO OIL EXTRACTION

THANK YOU —

DAVID SCHNEIDER, OD

E&B Natural Resources

September 14, 2015

Supervisor Scott Haggerty
County of Alameda Administration Building
1221 Oak Street #536
Oakland, CA 94612

Dear Supervisor Haggerty:

In April, E&B Natural Resources requested Alameda County to defer further public hearings on possible changes to the Alameda County Area Plan until the completion and public release of independent studies mandated by SB 4 under the auspices of the California Natural Resources Agency.

The final two volumes of the study were released July 9, 2015. More than 800 pages provided extensive analyses that have been thoroughly vetted by scientists, regulators and parties of interest. Its key findings include:

- No evidence was found that chemicals used in hydraulic fracturing have harmed the environment.
- No evidence was found that hydraulic fracturing in California has contaminated groundwater.
- Fluids injected into oil formations during hydraulic fracturing operations are not likely to cause earthquakes.
- 95 percent of the hydraulic fracturing in California occurs in Kern County with nearly all limited to just four oil fields. If hydraulic fracturing expands in California it will most likely be in the existing oil fields of Kern County where the technology has been used for many decades.
- The amount of water used in hydraulic fracturing operations is small compared to other human water uses.

The study identifies significant gaps in data and research that are needed to complete the outstanding, unanswered questions about the effects of well-stimulation enabled oil and gas production in California. It recommends the California Natural Resources Agency establish a standing advisory committee to counsel on decisions about oil and gas regulation.

These state studies indicate E & B Natural Resources is in full compliance with applicable state laws and standards. Further, the state has the primary jurisdiction in matters of regulation, coordination and enforcement.

E & B Natural Resources is the sole oil producer in the county. Our oil and natural gas leases are owned by 15 different mineral and royalty owners, most of whom reside in Alameda County and would like to ensure their mineral rights are protected.

www.ebresources.com
1600 Norris Road, Bakersfield, CA 93308; phone (661) 679-1700

We have no plans to hydraulically fracture. In the unlikely future event we did, the state must thoroughly analyze and issue or deny the application in full compliance with CEQA which would provide an opportunity for public agency and community input.

For these reasons, we respectfully submit there is no need or reason for further, costly county planning department action. Thank you for your consideration.

Sincerely,

Joyce Holtzclaw

Joyce Holtzclaw
VP Western Division

SIERRA CLUB
FOUNDED 1892

September 18, 2015

Transportation and Planning Committee
Alameda County Board of Supervisors
224 West Winton Avenue, Room 111
Hayward, California 94544

Re: Regulating Oil and Gas Operations in Alameda County

The Sierra Club strongly urges Alameda County to eliminate hydraulic fracturing (fracking) as a permitted means for the extraction of oil and/or natural gas.

Fracking poses unacceptable risks to our communities, environment, and climate. Oil and gas production has contaminated aquifers, notably in the Central Valley; given the Tri-Valley's heavy dependence on groundwater, it makes no sense to increase the likelihood of contamination through spills, injection well failures, or other mishaps; clean up after such events would be difficult, if not impossible.

The Sierra Club also urges Alameda County to work towards foreclosing any expansion of crude oil and natural gas production using either conventional or unconventional methods. Oil and gas operations, regardless of extraction method, emit methane, a greenhouse gas 86 times more potent than carbon dioxide over a 20-year period, which is a major contributor to climate change and results in significant climate-disruption impacts. Therefore, continuing to permit greenhouse gas emitting practices in Alameda County runs contrary to its Climate Action Plan, which sets the County on a path toward reducing emissions to 15 percent below 2005 levels by 2020 and 80 percent below 1990 levels by 2050. As the County's Climate Action Plan is incorporated into the General Plan, the County has an opportunity to further amend its General Plan to conform with its Climate Action Plan and establish environmentally-friendly land use policies that promote the development of clean energy.

We appreciate the opportunity to comment on this matter and we look forward to continuing to work with you to cut greenhouse gas emissions and tackle climate change.

Sincerely,

Luis Amezcua
Co-Chair, Energy-Climate Committee
Sierra Club San Francisco Bay Chapter

Dave McCoard
Co-Chair, Energy-Climate Committee
Sierra Club San Francisco Bay Chapter

Copy: Alameda County Board of Supervisors
Alameda County Planning Commission
Alameda County Agricultural Advisory Committee

Dr. David Schneider
OPTOMETRIST
(510) 848-6733 • dr6956@earthlink.net

1736 HEARST AVENUE • BERKELEY, CA 94703

DEAR ALCETS P.D. —

I ASK THAT YOU SUPPORT

AN OIL - FREE COUNTY.

PLEASE NO OIL EXTRACTION

THANK YOU —

DAVID SCHNEIDER, OD

21 October 2015

Supervisor Scott Haggerty
Alameda County Board of Supervisors
1221 Oak Street, Suite 536
Oakland, CA 94612

Dear Supervisor Haggerty,

In a letter to you dated September 14th, E & B Natural Resources responded to the findings in volume two of *An Independent Scientific Assessment of Well Stimulation in California.* The letter also included a recommendation to the County to take no further action to regulate hydraulic fracturing. Alameda County Against Fracking (ACAF) would like to take this opportunity to respond.

Overall, the company maintains that there is no evidence of harm from hydraulic fracturing. However, it should be noted that up until 2014, hydraulic fracturing was not tracked or regulated in California. Consequently, the absence of evidence of harm does not indicate the absence of damaging health effects from the use of this technology. To indicate otherwise is misleading. As the study found:

> This scientific literature review and hazard assessment, as well as other chapters in this volume, indicates that there are a number of potential human health hazards associated with well-stimulation-enabled oil and gas development in California with regards to air quality, water quality, and environmental exposure pathways.[1]

Our point-by-point response follows.

Sincerely yours,

Rebecca Franke

(for Alameda County Against Fracking)

cc: Bruce Jensen, Alameda County Planning Dept.

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[1] California Council on Science and Technology, "An Independent Scientific Assessment of Well Stimulation in California," July 2015, vol. 2, 437.

Alameda County Against Fracking (ACAF)
Response to E & B Natural Resources Letter

1) **E & B**: "No evidence was found that chemicals used in hydraulic fracturing have harmed the environment."

   ACAF: "No evidence" is a by-product of the oil industry's long resistance to regulation and secretiveness when it comes to disclosing the nature of the chemicals used in fracking operations. As the report states:

   > Currently, a large number of chemicals are used in well stimulation that have poor or unknown environmental profiles . . . There are few controls on what chemicals are being used in hydraulic fracturing, and some chemicals currently being used are toxic, potentially persistent in the environment, or may degrade to toxic or otherwise environmentally harmful products.[2]

   and further:

   > Measurement or publication of aquatic and mammalian toxicity data is currently not required prior to using chemicals in well stimulation. This lack of available data increases risk to human and environmental health, since the lack of information prevents the ability to make informed decisions and apply an appropriate response during failures and accidents.[3]

2) **E & B**: No evidence was found that hydraulic fracturing in California has contaminated groundwater.

   ACAF: The report's authors recognize the fundamental problem which renders this statement meaningless: detecting contaminated groundwater is difficult, and, when successful, may come too late:

   > However, groundwater monitoring alone does not ensure protection of water, nor will it necessarily detect contamination should it occur. The path followed by contamination underground can be hard to predict, and may bypass a monitoring well. Groundwater monitoring can give false negative results in these cases, and does nothing to stop contamination from occurring in any case.[4]

   and:

   > California has no recorded incidents of groundwater contamination due to stimulation. But neither have there been attempts to detect such contamination with targeted monitoring, nor studies to determine the extent of compromised wellbore integrity.[5]

   furthermore, while evidence for groundwater contamination via stimulation may be lacking, there is no cause for doubt when it comes to unlined pits (the most common disposal method in California):

   > There is ample evidence of groundwater contamination from percolation pits in California and other states . . . For example, in California, the Central Valley Regional Water Quality Control Board determined that several percolation pits in Lost Hills and North and South Belridge had impacted groundwater, and ordered their closure . . .[6]

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[2] Ibic.148.
[3] Ibid.156.
[4] Ibid, 38.
[5] Ibid, 39.
[6] Ibid., 112.

3) **E & B**: Fluids injected into oil formations during hydraulic fracturing operations are not likely to cause earthquakes.

ACAF: The statement omits mention of the impact of *wastewater injection*, a by-product of hydraulic fracturing, as well as of conventional oil production, which has been strongly linked to seismic activity. As the report states:

> In contrast to hydraulic fracturing, earthquakes as large as magnitude 5.7 have been linked to injection of large volumes of wastewater into deep disposal wells in the eastern and central United States.[7]

And goes on to say:

> Based just on the observed depths of earthquakes relative to injection depths in the reported cases of induced seismicity . . . it would appear that the overall potential for seismicity to be induced by wastewater injection may be at least as high in California as in the central U.S.[8]

4) **E & B**: 95% of the hydraulic fracturing in California occurs in Kern County with nearly all limited to just four oil fields. If hydraulic fracturing expands in California it will most likely be in the existing oil fields of Kern County where the technology has been used for many decades.

ACAF: Where hydraulic fracturing is currently occurring and whether it will expand at that location in the future is irrelevant to the actions of the Alameda County Board of Supervisors. E & B Natural Resources (or, for that matter, any other oil producer) may decide at any time to introduce fracking technology to existing or new wells in Alameda County. The proposed ordinance places the health and safety of County residents above such decisions.

5) **E & B**: The amount of water used in hydraulic fracturing operations is small compared to other human water uses.

ACAF: Compared to the hundreds of billions of gallons used yearly to water golf courses and flush toilets, the estimated millions-to-low-billions of gallons of water used in well stimulation and enhanced recovery is relatively small. However, to a farmer who is seeing his trees die or to a family with a water well gone dry, every drop is important. The demand for water used in oil production takes place in dry portions of the state, where competing interests put pressure on a scarce resource. With the current drought, the aquifers in the San Joaquin Valley are being overdrawn. Deep pocket oil companies can be expected to outbid farmers to secure the water they need. And, based on reporting by oil producers cited in the study, most of the water used in well stimulation – some 68% – is drawn from irrigation districts.[9]

Water access should be of particular concern to consumers in Zone 7, which only received 20% of its requested allocation from the State Water Project in 2015. This was considerably better than the 5% allocation in 2014, but still forced greater reliance on the region's groundwater.

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[7] Ibid., 267.
[8] Ibid., 280.
[9] Ibid., 57.

In looking at the impact of hydraulic fracturing, one should also consider the loss of fresh water supplies through contamination. As the report discusses, there are multiple avenues through which groundwater can become contaminated, and consequently unusable.

> . . . evaporation-percolation in unlined surface impoundments (percolation pits) is a common disposition method for produced water from stimulated wells in California . . . Because the primary intent of unlined pits is to percolate water into the ground, this practice provides a direct pathway for the transport of produced water constituents, including returned stimulation fluids, into groundwater.[10]

and while using injection wells may well be a better disposal method than unlined pits, it has become clear in recent years that freshwater aquifers have not been protected:

> However, there are significant concerns about whether California's Class II underground injection control (UIC) program is adequately protective of underground sources of drinking water (USDWs) – defined as groundwater aquifers that are used for water supply or could one day supply water for human consumption.[11]

Worth noting is that produced water currently is being provided to some farmers to irrigate their crops; the suggestion being that this creates a win-win solution for oil and agriculture. However, as the authors point out, there is no means today to determine if this water is safe to use:

> . . . at least seven cases were identified that allow produced water to be used in agricultural irrigation in the San Joaquin Valley, with testing and treatment protocols that are insufficient to guarantee that well stimulation and other chemical constituents are at sufficiently low concentrations not to pose public health and occupational (farm worker) risks.[12]

6) **E & B**: These studies indicate that E & B Natural Resources is in full compliance with applicable state laws and standards.

ACAF: The purpose of this statement is unclear, as the report assesses the use of hydraulic fracturing, which the company states it has no plans to utilize. In any case, certain of E & B Natural Resources' operations in California have been challenged as being in less than full compliance with regulations:

- In 2015, its Livermore operation failed to detect and properly address a leak which extended beyond its leased property and failed to determine if waste generated was hazardous and disposed of properly.[13] Additionally, in 2014, the Livermore operation was fined by the Bay Area Air Quality Management District.[14]

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[10] Ibid., 110.
[11] Ibid., 113.
[12] Ibid., 434.
[13] Alameda County Environmental Health, LUFT/SLIC Program, available at http://www.acgov.org/aceh/lop/ust.htm, Case#: RO0003181, accessed Oct. 15, 2015.
[14] Bay Area Air Quality Management District, "Board of Directors Regular Meeting," Sept. 3, 2014, 31, 33, http://tinyurl.com/opezh9m, accessed Oct. 15, 2015.

- In 2015, E & B Natural Resources was one of twelve oil companies required to shutdown injection wells in Kern County due to possible contamination of aquifers.[15]
- In 2014, the company was fined for disposing of 5,000 gallons of produced water and crude oil in two unlined pits at Poso Creek Oil Field in the San Joaquin Valley.[16]
- In 2014, it was one of four companies sued by Palla Farms in Kern County for damages to its "land, crops, and trees" from wastewater contaminating the aquifers from which it draws irrigation water.[17]

It is also clear that E & B Natural Resources has incurred regulatory penalties outside California. In 2015, members of the Kansas Corporation Commission agreed to fine the company for failure to comply with rules regulating injection wells.[18]

In addition to the content which E & B Natural Resources chose to highlight in its letter, there are a number of other areas of concern identified in the study. They include:

- Air toxics – emissions from wells contain a variety of chemicals, many known to cause harm to humans:

> Among *known* air contaminants, compounds of particular concern that are known to be emitted during the well-stimulation-enabled oil and gas development process (and from oil and gas development in general) are BTEX compounds (benzene, toluene, ethylbenzene, and xylene), formaldehyde; hydrogen sulfide; particulate matter (PM); nitrogen oxides (NOx); sulfur dioxide (SO2); polycyclic aromatic, aliphatic, and aromatic hydrocarbons; and volatile organic compounds (VOCs) that can contribute to tropospheric ozone formation.[19]

- Local disruption – fracked wells require more truck trips to transport supplies and equipment to and from the location:

> Well stimulation as practiced in California typically requires about a hundred to two hundred heavy truck trips per vertical well, and two hundred to four hundred trips per horizontal well, counting two trips for each truck traveling to the site. This is one-third to three-quarters of the heavy truck traffic required for well pad construction and drilling.[20]

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[15] Michael B Marois, Lynn Doan, "Chevron, Linn Told to Halt California Wells on Water Concern," *Bloomberg Business*, March 3, 2015, http://tinyurl.com/p5qwnwz.

[16] California Regional Water Quality Control Board Central Valley Region, "Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order R5-2014-0566 in the Matter of E&B Natural Resources Kern County," Oct. 16, 2014, http://tinyurl.com/oahyyg4.

[17] GlobalNewswire, "Family Farm Suing Over Pollution of Fresh Water Supply in the San Joaquin Valley," Sept. 16, 2014, http://tinyurl.com/nfnpe23.

[18] Kansas Corporation Commission, "Commission Meeting Minutes, Items of Consent Agenda" July 21, 2015, 5, http://kcc.ks.gov/commissionmeetings/minutes_20150721.pdf. Text of the regulations violated: General Rules and Regulations for the Conservation of Crude Oil and Natural Gas, H-1, H-11, http://www.kcc.state.ks.us/conservation/cons_rr_110308.pdf

[19] California Council on Science and Technology, "An Independent Scientific Assessment of Well Stimulation in California," July 2015, vol. 2, 410

[20] Ibid., 412.

ACAF strongly supports the Board and County staff in their efforts over the past 16 months to devise a proposal which works for the majority of residents.

We do remain convinced that a blanket restriction on all new oil production would have offered greater protection. As more research takes place on oil and gas development, it is becoming increasingly clear that people living close to wells can be exposed to adverse health effects. The state study cites U.S. Environmental Protection Agency findings concerning proximity to wells in general, not simply to fracked wells:

> Nevertheless, these results indicated that any potentially harmful community exposures could occur at 2,000 meters (1.25 miles) and as much as almost ~3,000 meters (~2 miles) from the source.[21]

However, the proposed ordinance does prohibit various forms of both well stimulation and enhanced recovery. The former prohibition eliminates the possibility of added chemicals, including acids, from polluting the ground and air. The latter helps to protect scarce water resources. Together, they will further the goals of the Tri-Valley region to preserve and encourage agriculture – with a production value of more than $46 million dollars in 2014 – while ensuring a healthier environment for all residents of Alameda County.[22]

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[21] Ibid., 419.

[22] Alameda County Community Development Agency, "Crop Report," memo to California Department of Food and Agriculture, July 27, 2015, https://www.acgov.org/cda/awm/resources/2014cropreport.pdf

February 27, 2016

To : Alameda County Board of Supervisors

I am writing to support a Vote Against Fracking.
Fracking is dangerous and unnecessary:

The oil industry in Alameda County has demonstrated negligence in operating in safe ways, and has contaminated the environment surrounding their operations. This has happened in sensitive areas where crops are grown.

• The oil industry in Alameda County has proven to be mistrustful, dodging responsibility and skirting accountability with regards to oilfield safety.

• Fracking is dangerous to human health, our food supply, waterways, air, and the environment.

• The companies who have been fracking statewide have proven time and again that they do not comply with regulations. This practice cannot be done safely, so must be banned.

• Governor Brown and other legislators are looking at local bans before they decide statewide policy.

It is your duty as officials who are stewards of the health or your constituents and of the land for the health of future generations.

Catherine Kessler
12701 Brookpark Rd
Oakland, CA 94619

March 2, 2016

Topic Ordinance to Ban Fracking in Alameda County

Dear Alameda County Planning Commission,

An ordinance banning fracking in Alameda County should be voted on by the Alameda County Board of Supervisors for the following reasons:

- The oil industry in Alameda County has demonstrated negligence in operating in safe ways, and has contaminated the environment surrounding their operations. This has happened in sensitive areas where crops are grown.

- The oil industry in Alameda County has proven to be mistrustful, dodging responsibility and skirting accountability with regards to oilfield safety.

- Fracking is dangerous to human health, our food supply, waterways, air, and the environment.

- The companies who have been fracking statewide have proven time and again that they do not comply with regulations. This practice cannot be done safely, so must be banned.

- Governor Brown and other legislators are looking at local bans before they decide statewide policy.

- Fracking bans have been passed in San Benito County and Humboldt County. We have an opportunity to make Alameda County the next one.

Fracking has been done in other states and other countries because of the negative impacts to human health. We have an opportunity to protect Alameda County residents in the same way.

Sincerely,

Albert M. Kueffner

Albert M. Kueffner

993 63rd Street, Ap. C

Oakland. CA 94608

510-290-1394

Mary Sue Meads
1741 Brandon Street
Oakland, CA 94611-4304

March 3, 30216
Alameda County Planning Commission
224 W. Winton Ave., Room 111
Hayward, CA 94544

Re: Outlaw Fracking

Dear Supervisors:

I understand you are considering the banning of fracking in Alameda County. I believe this is very important and the right thing to do. If we are to tackle global warming, we must get off of fossil fuels, no matter how difficult it is to do so. At the Paris climate conference many countries and smaller jurisdictions pledged to do this by 2020. But when do they plan to start? We must start right away, and one of the first places to start is by quitting fracking in our county, let alone in our state, and the country as a whole.

Fracking is dangerous. It has caused earthquakes from ground shifting. We live in a state that is already prone to quakes. Fracking requires a great deal of water which is infused with dangerous chemicals. We live in a state subject to drought, as we are experiencing presently, and thus we cannot afford to waste good and needed water for a bit of oil. Even when water used in fracking is recycled, it is sprayed on food crops, even though many of those dangerous chemicals have not been removed, regardless of claims otherwise, thus exposing numerous people to serious illness.

Fracking is an expensive method of obtaining oil not only because of the sides effects of earthquakes and ruined drinking water, but because it takes so much energy to crack the rock and extract its oil. I was told it took three barrels of energy (from oil) to extract five barrels of crude oil. If true, that's not very practical or even profitable. Unfortunately, the many actual costs of fracking often are not considered when deciding to go ahead for the sake of some energy independence. Considering true costs of extracting the last few drops of oil, spending time and money developing and installing clean energy sources (wind, solar, water) is a much better economic and healthful plan for the future: an investment which is good for us now and for our descendents.

Fossil fuel should be left in the ground. The companies operating these "mines" do not operate them safely and have been proven to disregard regulations. Other states and counties have banned fracking in their jurisdictions, and Alameda country should do the same for the health of its people and for the climate.

Sincerely,

Mary Sue Meads

Mary Sue Meads

manatt
manatt | phelps | phillips

Craig A. Moyer
Manatt, Phelps & Phillips, LLP
Direct Dial: (310) 312-4353
E-mail: cmoyer@manatt.com

March 31, 2016

Client-Matter: 23362-030

VIA EMAIL AND OVERNIGHT MAIL

Alameda County Planning Commission
224 W. Winton Avenue, Room 111
Hayward, CA 94544
Attn: Bruce Jensen, Senior Planner

Re: Proposed Alameda County Ordinance to Prohibit High-Intensity Oil and Gas Operations

Dear Honorable Chair Raddy and Honorable Commissioners:

I am writing on behalf of my client the California Independent Petroleum Association ("CIPA") to provide the County of Alameda with comments on information concerning potential legal repercussions of the proposed ordinance to amend Chapter 17.06 of the Alameda County General Ordinance Code to prohibit high-intensity oil and gas operations in unincorporated areas of the County ("Proposed Ordinance"). CIPA is a non-profit, non-partisan trade association representing approximately 500 independent crude oil and natural gas producers, royalty owners, and service and supply companies operating throughout California. Our members represent approximately 70% of California's total oil production and account for 90% of California's natural gas production. CIPA members own and lease substantial mineral rights and operate oil and gas facilities within and surrounding Alameda County.

CIPA is strongly opposed to the Proposed Ordinance and believes there are significant legal issues that have been overlooked and that must be addressed before the Proposed Ordinance should be considered by the County. First, this letter addresses why the Proposed Ordinance would likely effect a taking of our client's property without just compensation in violation of the Fifth Amendment to the U.S. Constitution and Article I, § 19 of the California Constitution. Second, this letter addresses why the Proposed Ordinance is preempted by existing state law. Third, the letter explains why the Proposed Ordinance is arbitrary and fails to provide reasonable justification as required by law. Lastly, this letter explains why the Proposed Ordinance must undergo California Environmental Quality Act ("CEQA") review.

I. Regulations Adversely Affecting The Economic Return of Property Can Give Rise To A Claim For Just Compensation

The state and federal Constitutions prohibit government from taking private property for public use without just compensation. (Cal. Const., Art. I, § 19; U.S. Const., Amend. 5; *Chicago, Burlington &c. R'd v. Chicago* (1897) 166 U.S. 226, 239 [applying the federal takings clause to the states].) In *Penna. Coal Co. v. Mahon* (1922) 260 U.S. 393, 415 (*Penna. Coal*), the United States Supreme Court recognized that a regulation of property that "goes too far" may effect a taking of that property. When a regulation does not result in a physical invasion and does not deprive the property owner of all economic use of the property, a reviewing court must evaluate the regulation in light of the "factors" the U.S. Supreme Court discussed in *Penn Central Transp. Co. v. New York City*. *Penn Central* emphasized three factors in particular: (1) "[t]he economic impact of the regulation on the claimant"; (2) "the extent to which the regulation has interfered with distinct investment-backed expectations"; and (3) "the character of the governmental action." (*Penn Central Transp. Co. v. New York City* (1978) 438 U.S. 104, 124.)

Subsequent cases, as well as a close reading of *Penn Central*, indicate other relevant factors in determining whether a taking has occurred, such as whether the regulation affects the existing or traditional use of the property and thus interferes with the property owner's "primary expectation" and whether the regulation "permit[s the property owner] . . . to profit [and] . . . to obtain a 'reasonable return' on . . . investment" (*Id.* at 125, 136.). "[T]he *Penn Central* inquiry turns in large part, albeit not exclusively, upon the magnitude of a regulation's economic impact and the degree to which it interferes with legitimate property interests." (*Lingle v. Chevron U.S.A. Inc.* (2005) 544 U.S. 528, 540.) Changes to zoning laws can be considered regulatory takings and can give rise to claims for just compensation.

Under the guise of prohibiting stimulation treatments such as hydraulic fracturing, the Proposed Ordinance would instead effectively ban all current and future oil and gas production on land within the County's unincorporated areas. For example, the Proposed Ordinance prohibits the use of "Enhanced Recovery Wells," which it speciously defines as "wells that are injected with brine, water, steam, polymers, carbon dioxide, or other gasses into oil-bearing formations to recover residual oil and in some limited applications natural gas...includ[ing] waterflood injection, steamflood injection, and cyclic steam injection." (Proposed Ordinance, § 17.06.100(B).) Furthermore, the Proposed Ordinance would preclude routine well cleaning and maintenance activities necessary for production, which require, for example, the use of anti-scaling agents, acids, and biocides. These are the same processes used to maintain groundwater supply wells. If existing wells were unable to perform such routine cleaning and maintenance activities, they would deteriorate and production would cease. As a consequence, the Proposed Ordinance would result in a compensable taking of property rights under state and federal law.

Most oil production in California entails utilizing techniques that involve re-injecting or recycling water that was originally produced from the oil production zone. These processes are not used for the same purpose as treatments such as hydraulic fracturing. Instead, produced water is simply re-injected into the same formation from which it came to sweep the oil towards the well bore where it is recovered at the surface in a closed loop system.

At the surface, the water and oil are separated into different tanks. The water is then treated and re-injected into the formation. Most reservoirs currently producing anywhere in the United States require use of these techniques for owners to access their resources and to exercise their property interests. If water from existing wells cannot be re-injected, produced water would be stranded and wells using these long-practiced and safe methods could no longer be utilized.

The use of diluted acids is also commonplace for well maintenance operations. Diluted acids are utilized to maintain the structural integrity of wells by keeping them clear of materials that would otherwise cause corrosion and eventual obstruction of wells, much like Lime-Away is used to prevent lime buildup in bathrooms. Acids also help clear out clogs resulting from the constant flushing of materials through the wellbore and help clean out mud and cement debris left behind when a new well is drilled. Obviously, small volumes of diluted acid are commonly used by nearly all industries for maintenance purposes including cleaning municipal pools, groundwater supply wells, household cleaning supplies, and utility pipeline maintenance operations, to name just a few. In our view it would be problematic and prejudicial for the County to allow the use of acid for other industries conducting downhole operations, but ban identical applications by the oil and gas industry.

The Proposed Ordinance would impact not only oil producers and well owners, but also property owners, mineral rights owners, and the County itself. Those who lose the value of their mineral assets, as well as owners of supporting infrastructure that may become idled, would have a takings claim against the County for just compensation. It should be noted that royalty holders and oil reserves often do not follow the County's boundaries, meaning that some of the impacted parties could lie in neighboring counties and jurisdictions. The Proposed Ordinance would also lead to a loss in value for the County's oil producing properties, for which well owners and the royalty holders would need to be compensated under long established law. Finally, any proposal that causes a large decrease in oil production where previously allowed or permitted would result in a diminution of property value with a concurrent drop in property tax assessments, leading to less revenue for the County.

While the County has inserted vague and ambiguous clauses into the Proposed Ordinance to account for potential takings claims, it fails to adequately define the hearing processes and the showing that existing property owners, however defined, must make to avoid losing their property. Despite these attempts to guard against takings claims, and should the appeals process

prove successful for vested owners, the County would nonetheless still expose itself to a temporary takings claim from property owners, who would seek restitution for all lost income, expenses, and fees incurred as a result. Royalty mineral estate owners who lose the value of their property interests would also have viable takings claims.

II. California State Law Preempts Local Regulation Of Oil And Gas Operations

Among its various impacts, the Proposed Ordinance proposes limitations on downhole activities, including critical well maintenance operations. State law comprehensively addresses oil and gas operations, including the drilling, construction, operation, and maintenance of oil and gas wells, and the technical question of whether to inject fluids to improve reservoir productivity. (Pub. Resources Code, § 3000 *et seq.*; Tit. 14, Cal. Code Regs., § 1712 *et seq.*) To the extent that issues associated with oil and gas operations have not been fully covered by state law, the Legislature has vested discretion over technical decisions with the State Oil and Gas Supervisor ("Supervisor"). (Pub. Resources Code, §§ 3013, 3222.) Moreover, state law evidences an intent to maximize the productivity of oil and gas operations, while addressing potential environmental effects thereof. (Pub. Resources Code, § 3106.) State law has therefore extensively covered the field of oil and gas operations as it relates to downhole oriented matters such as well stimulation, steam injection, and hydraulic fracturing. Recent passage of Senate Bill 4 ("SB 4") has further strengthened the scope of the state's regulation of well stimulation and further confirms that this subject has become exclusively a matter of State concern; as such, local regulation on this subject would therefore be preempted. (*Morehart v. County of Santa Barbara* (1994) 7 Cal. 4th 725, 751.) The passage of SB 4 and the subsequent development of implementing regulations included a thorough evaluation of how the law and its defined terms would affect existing oil and gas operations. (*See* Tit. 14, Cal. Code Regs., § 1781 (providing the state's definitions for regulation of well stimulation treatments).)

Under California law, local government regulations that conflict with State general law are preempted. (Cal. Const., Art. XI, § 7.) The preemption may be express or by implication. (*Candid Enterprises, Inc. v. Grossmont Union High School Dist.* (1985) 39 Cal. 3d 878, 885.) Express preemption exists where the Legislature has included in the statute a statement of intent to preempt local regulations. (52 Ops. Cal. Atty. Gen. 166, 168 (1969).) Implied preemption exists under any of the following circumstances: (1) the subject matter has been so fully and completely covered by the State general law as to clearly indicate that it has become exclusively a matter of state concern; (2) the subject matter has been partially covered by State general law, but the context clearly indicates that State concerns will not tolerate local regulation of the same subject; or (3) the subject matter has been partially covered by State general law, and the subject is of such a nature that the adverse effects of local regulation outweigh the possible benefits to the local government. (*Morehart,* 7 Cal. 4th at 751.) In determining whether the Legislature intended to occupy the entire field to the exclusion of all local regulation, a court will look to the

"whole purpose and scope of the legislative scheme," not only the language used in the statute. (*Tolman v. Underhill* (1952) 39 Cal. 2d 708, 712.) A local regulation that is preempted by State law is void and unenforceable. (*People ex rel. Deukmejian v. County of Mendocino* (1984) 36 Cal. 3d 476, 484.)

Consistent with its strong interest in oil and gas resources and intent to maximize the productivity of oil and gas wells, California has adopted statutes and regulations that comprehensively address oil and gas operations, including downhole activities. The statutory provisions for oil and gas law are contained within Division 3 ("Oil and Gas") of the Public Resources Code, encompassing sections 3100 through 3865. These statutes address oil and gas operational issues in detail, including notice of intent to drill and abandon (§§ 3202, 3229); bonding (§§ 3204- 3207); abandonment (§ 3208); recordkeeping (§§ 3210-3216); blowout prevention (§ 3219); casing (§ 3220); protection of water supplies (§§ 3222, 3228); repairs (§ 3225); regulation of production facilities (§ 3270); waste of gas (§§ 3300-3314); subsidence (§ 3315 *et seq.*); spacing of wells (§§ 3600-3609); unit operations (§§ 3635-3690); and regulation of oil sumps (§§ 3780-3787).

Notably, state law already addresses operational activities that involve the use of well stimulation, including definitions relevant to the Proposed Ordinance. For example, unless prohibited in an applicable lease or contract, state law authorizes a lessee or operator, with the approval of the Supervisor, to use reasonable and prudent methods to explore for and remove all hydrocarbons, including "the injection of air, gas, water, or other fluids into the productive strata, the application of pressure heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells." (Pub. Resources Code, § 3106, subd. (b).) State oil and gas law also contains provisions to address potential effects from hydraulic fracturing, including requirements pertaining to well casings, blowouts, and bore hole integrity (e.g., cementing). (Pub. Resources Code §§ 3208, 3219, 3220, 3270, 3300-3314, 3600-3609.) State law includes extensive regulation of possible environmental effects from oil and gas operations, including provisions that would address potential impacts from well stimulation. For example, the Supervisor is directed to prevent, as far as possible, damage to life, health, property and natural resources, and damage to underground and surface waters suitable for irrigation or domestic purposes by the infiltration of, or the addition of, detrimental substances. (Pub. Resources Code, § 3106(a).)

As further evidence of California's desire to keep the regulation of oil production at the state level, the California legislature recently enacted SB 4, a law that establishes a statutory framework for the regulation of hydraulic fracturing and other well stimulation techniques. SB 4's requirements were carried out at the state level, including the development of regulations and definitions concerning well stimulation techniques, the undertaking of a scientific study overseen

by the state to ascertain the health and environmental impacts of these activities, and the development of a state permitting scheme to govern them.

The Proposed Ordinance is so broad that it includes a ban on brine injection, which is a Class II injection activity monitored and audited by the United States Environmental Protection Agency ("U.S. EPA"). Pursuant to a Primacy Agreement, the Division of Oil, Gas & Geothermal Resources ("DOGGR") was given primary responsibility for regulating this activity after the state made a showing to the U.S. EPA that its proposed regulatory program complied with federal regulatory requirements. For the state to be able to make such a showing, it must be the sole authority with jurisdiction over this matter, and must preempt local efforts to create additional regulations in this area. Otherwise, the state is unable to make the necessary showing that the state program, as implemented, is compliant.

The County's findings in support of the Proposed Ordinance also fail to consider the state's laws that are already in place to accomplish the purported goals of the Proposed Ordinance. The Proposed Ordinance adds nothing more beyond these existing state laws, including for example, the California Porter-Cologne Water Quality Control Act and the California Safe Drinking Water Act. Moreover, experts at state agencies whom are tasked with enforcing and upholding these laws are the proper authorities for exercising such judgment. Existing laws substantively protect the County's interests, preempt the Proposed Ordinance, and provide for the protection of public health, safety, and the environment.

III. The Proposed Ordinance Arbitrarily Prohibits Oil And Gas Activities Without Providing Reasonable Justification

While counties maintain the power to enact zoning ordinances, they may not do so in arbitrary fashion and without providing a justification reasonably related to legitimate government objectives. (*Pacific Palisades Assn. v. City of Huntington Beach* (1925) 196 Cal. 211; *Marblehead Land Co. v. City of Los Angeles* (1931) 47 F.2d 528.) While the County attempts to justify the Proposed Ordinance by relying upon unproven and alleged environmental impacts from activities like hydraulic fracturing, these reasons are arbitrary and unreasonable to justify the Proposed Ordinance's overreaching provisions.

The Proposed Ordinance relies on a host of assumptions not only to ban techniques such as hydraulic fracturing, but also to prohibit traditional recovery methods that have been utilized throughout the state, and within the County, for decades in oil and gas operations. In short, the County fails to demonstrate why traditional recovery activities such as re-injecting produced water should be prohibited. The County's Proposed Ordinance is arbitrary because it fails to accurately distinguish between advanced well stimulation techniques (as defined by SB 4) with its own improper, overbroad, and arbitrary definition of "high-intensity oil and gas operations."

The County cannot arbitrarily prohibit activities that have taken place safely throughout California for at least 75 years without providing reasonable justification. Moreover, existing state laws adequately protect public health, safety, and the environment; therefore, the County's arbitrary prohibitions create serious costs without any concomitant benefits.

In cases involving the prohibition of oil and gas operations, the California Supreme Court has long held that "it is elementary that the enjoyment of property cannot be interfered with or limited arbitrarily" and must be supported with reasonable, non-arbitrary justifications. (*Pacific Palisades Assn.*, 196 Cal. at 216.) In its current form, the Proposed Ordinance would arbitrarily prohibit safe oil and gas operations in the County without providing reasonable justification for doing so.

IV. The County Fails To Provide Evidence Necessary To Exempt The Proposed Ordinance From CEQA Review

The County proposes to exempt the Proposed Ordinance from the requirements of the CEQA in violation of its obligation to analyze potential environmental impacts associated with the Proposed Ordinance. Within the Proposed Ordinance, the County cites four different exemptions from the CEQA Guidelines in an attempt to exempt the Proposed Ordinance from required CEQA review.

Without providing substantial evidence to support its contentions, the County claims that the Proposed Ordinance: (1) has no potential for causing a physical change in the environment; (2) will assure the maintenance and protection of natural resources and the environment, and (3) has no potential for causing a significant effect on the environment. Despite an agency's factual determination that a project qualifies for a CEQA exemption, such claims will only be upheld if supported by substantial evidence. (*Fairbank v. City of Mill Valley* (1999) 75 Cal. App. 4th 1243, 1251; *Citizens for Environmental Responsibility v. State ex rel. 14th Dist. Agric. Ass'n* (2014) 224 Cal. App. 4th 1542, 1555; *North Coast Rivers Alliance v. Westlands Water Dist.* (2014) 227 Cal. App. 4th 832, 852.) The Proposed Ordinance fails to provide necessary evidence to qualify for a CEQA exemption. Instead, the County only provides conclusory statements regarding potential impacts from activities such as hydraulic fracturing that do not support a determination that the Proposed Ordinance is exempt from CEQA, especially since the Proposed Ordinance prohibits far more than hydraulic fracturing.

V. Conclusion

In summary, I encourage the County to undertake a rigorous examination of the Proposed Ordinance to consider its legality, propriety, and potential repercussions. The Proposed Ordinance would arbitrarily prohibit oil and gas operations in the County without justification.

Moreover, the County has also failed to provide the evidence necessary to avoid CEQA review. Additionally, state law comprehensively covers the subject of oil and gas operations, including whether to use methods to stimulate reservoir productivity. This comprehensive regulation of oil and gas operations is consistent with California's strong interest in oil and gas resources, and intent to maximize the recovery of hydrocarbons from oil and gas reservoirs. A local regulation that attempts to prevent oil and gas operations is preempted by State law and unenforceable, and would most certainly be challenged on such basis.

The Proposed Ordinance's prohibition against "high intensity oil and gas operations" in the County of Alameda's unincorporated areas would effectuate a taking of property without just compensation in violation of the Fifth Amendment to the U.S. Constitution and Article I, § 19 of the California Constitution. The County's potential liability could be equivalent to the total value of all oil and gas that could no longer be extracted as a result of the Proposed Ordinance.

CIPA appreciates the opportunity to provide our input on this important matter. Please contact me should you have any questions at (310) 312-4353.

Sincerely,

Craig A. Moyer

cc: Brian Washington, Esq.

316708296.3

CENTER *for* BIOLOGICAL DIVERSITY

Because life is good.

working through science, law and creative media to secure a future for all species, great or small, hovering on the brink of extinction.

April 14, 2016

Via Electronic Mail

Bruce Jensen
Alameda County Planning Department
Alameda County Administration Building
224 West Winton Avenue, Rm. 111
Hayward, CA 94544
Bruce.jensen@acgov.org

Re: Changes to Proposed Alameda County General Ordinance Code to Ban High Intensity Oil and Gas Operations

Dear Mr. Jensen:

At the April 4, 2016 Alameda County Planning Commission meeting, many attendees were surprised to learn that the Planning Commission was considering voting on last-minute revisions to the Ordinance to Ban High Intensity Oil and Gas Operations. These changes, submitted by E&B Natural Resources on a Sunday one day before the hearing, constitute significant changes to the original ordinance drafted by County Staff. Given the untimely manner in which they were submitted and the inability for County staff, Commissioners, and the public to adequately respond to the changes, we believe such submissions were inappropriate for consideration and have resulted in unnecessary delay.

Nonetheless, since the Commission voted to postpone a vote on the Ordinance until May 2, 2016, it provides the Center an opportunity to discuss the oil company's proposed changes in further detail. E&B's April 3, 2016 letter to the Planning Commission proposes a number of significant changes that would undermine the purpose and effect of the Ordinance. E&B does not appear to recognize that the Oil and Gas Ordinance is intended to restrict more than just fracking; the prohibition would apply to a variety of high-intensity oil and gas operations that threaten the County's water, air, and public health.

Enhanced Recovery Wells

E&B suggests deleting the provision prohibiting Enhanced Recovery Wells. (Proposed Ordinance Section 17.06.100.) E&B does not explain why this particular provision should be removed, and there is no reason to do so. Enhanced Oil Recovery (EOR) techniques are dangerous, energy-intensive operations that introduce new risks to water, air, and health.

For example, one type of EOR, cyclic steam injection, involves injecting steam underground, often at pressures high enough to fracture the formation,[1] to heat and increase the flow of oil to the surface. Once

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[1] Oversight Hearing of the Senate Natural Resources and Water and Environmental Quality Committees, *Ensuring Groundwater Protection: Is the Underground Injection Control Program Working?: Background Information*, 12 (Mar. 10, 2015) ("Oversight Hearing Background Information") *available at* http://sntr.senate.ca.gov/sites/sntr.senate.ca.gov/files/3_10_14_uic_background.pdf.

the steam is injected, it "soaks" the oil in the subsurface before the well converts into a production well to recover the heated oil. Cyclic steam injection requires a vast amount of water and energy to heat that water into steam. These operations routinely cause sinkholes at the surface, which have been responsible for at least one worker fatality in California.[2]

All EOR techniques use substantial amounts of water. In the case of including steamflooding or waterflooding, water is injected into the formation through and injection well to increase the flow of oil at a separate production well. Operators can either use water from the same formation as the oil or water from an external source.[3] Other operators re-inject produced water into the same formation. While E&B and other operators charitably characterize this as a "closed loop" system, these operations routinely result in spills and leaks, including a spill at E&B's site in Alameda County that left the surrounding soil and potentially groundwater contaminated. [4]

The common link among EOR techniques is that they are highly energy- and water-intensive. They also present new and unique risks to air, water, climate, and public health and safety. The energy needed to conduct EOR result in higher emissions at the wellpad. As noted above, the changing pressures underground can cause subsidence or sinkholes that threaten public safety. They also facilitate oil and gas expansion by allowing operators to drill into areas that would otherwise be inaccessible or uneconomical by using traditional recovery methods.

Moreover, like fracking, EOR commonly employs harmful chemicals acting as surfactants, polymers, caustics, or biocides to facilitate the operation.[5] Operators do not disclose the identities of chemicals used in such injections. Any implication that EOR is simply the reuse of "water" is a gross mischaracterization that hides real risks from these high-intensity operations.

In addition to these chemicals, which are toxic by themselves, EOR also causes naturally occurring, yet harmful substances to migrate underground. These include chemicals that are found in the oil itself, as well as toxic minerals such as arsenic and other heavy metals. The purpose of EOR is to mobilize substances underground. But that mobility is unpredictable and creates a danger that toxic chemicals that were relatively stable will migrate to new areas of the formation.

This risk applies even when reinjecting fluids into the same formation it came from. These techniques threaten groundwater supplies. What E&B calls "produced water injection" is ambiguous and could refer to EOR like those processes described above, or simply to wastewater disposal, which does not lead to additional oil recovery. It is simply a cheap, yet dangerous method of getting rid of wastewater. Wastewater disposal carries its own set of risks. As documented in several studies, emplacing wastewater in formations can lead to increased seismic activity. In Alameda County, where residents are already at risk of severe seismic activity, injecting produced water is highly risky. E&B has operated at least two wastewater disposal wells in Alameda County. Groundwater contamination has also occurred throughout the state in

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[2] Michael Mishak, "Oil worker's death renews debate on safety of extraction method," *Los Angeles Times*, April 14, 2012, available at http://articles.latimes.com/2012/apr/14/local/la-me-oil-death-20120412

[3] California Council on Science and Technology (CCST), An Independent Scientific Assessment of Well Stimulation in California, Volume II, p. 59, available at https://ccst.us/projects/hydraulic_fracturing_public/SB4.php

[4] NBC Bay Area Investigation, available at http://www.nbcbayarea.com/investigations/Chemical-Leak-at-Livermore-Oil-Field-May-Have-Contaminated-Some-Alameda-County-Water-Supplies-353092171.html

[5] See, e.g., CCST Vol. II, p. 59-60, noting a significant portion of operators conducting EOR using "water combined with chemicals such as polymers.

cases where DOGGR allowed disposal to occur in aquifers that should have been protected under the Safe Drinking Water Act.

The increased dangers resulting from this type of expansion and intensification of oil and gas in Alameda County is precisely why the Ordinance was drafted to include a prohibition on EOR. It makes little sense to remove that prohibition on E&B unexplained, unsupported request.

Other Changes Would Increase the Risk of Environmental Harm

As discussed in the April 4, 2016 letter on behalf of Center for Biological Diversity, changes that would allow for expanded acidization would increase the risk of environmental harm by allowing E&B or future oil companies to transport, store, mix, and inject an array of toxic chemicals to produce more oil. Techniques like gravel packing and acid maintenance may be routine, but they are not safe. Acid maintenance, for example, uses some of the same chemicals that are used in fracking, in addition to toxic chemicals that are unique to acidizing. The lower volumes of fluid used in acidizing means that chemicals are more highly concentrated in the fluid mixture, which may make the fluid more dangerous that other types of treatment fluid. Furthermore, operators do not report which chemicals they use in such operations. This makes assessing the true extent of the risk extremely difficult.

Conclusion

Because Alameda County residents deserve clean air, water and soil, and because the County must prioritize public health and safety over the narrow interests of oil companies, we urge the Commission to approve the Ordinance that results in the most protection for residents and the environment.

Sincerely,

Hollin Kretzmann
Staff Attorney
Center for Biological Diversity
1212 Broadway Suite 800
Oakland, CA 94612

April 15, 2016

Alameda County Planning Commission
224 W. Winton Avenue, Room 111
Hayward, CA 94544
Attn: Bruce Jensen, Senior Planner

RE: Proposed Alameda County Ordinance to Prohibit High-Intensity Oil and Gas

Dear Chair Ratto and Commissioners:

Regarding Alameda County's proposed ordinance to Prohibit High-Intensity Oil and Gas, E&B submitted input on April 3, 2016 and received a few questions from the Planning Department after the recent hearing. Thank you for considering our comments. Our operation in Alameda County is very small, but we hope to continue our business so these are important issues for our company.

As previously communicated, **E&B does not utilize hydraulic fracturing techniques in Alameda County.** However, as originally drafted, certain portions of the ordinance could prevent E&B from conducting routine equipment maintenance and recycling produced water in our long-standing, permitted operation.

Specifically, to respond to the questions:

1. Does E&B use waterflood, cyclic and/or continuous steaming? If so, does E&B use external water resources?

E&B does not conduct cyclic or continuous steaming in our Livermore operations and has no plans to do so.

As previously communicated, our operations consist of pumping a mixture of oil and water to the surface from the underground reservoir. This oil and water mixture is separated and the oil is trucked from the site. Due to its characteristics, the water has no beneficial use and is returned to the reservoir in basically a closed loop process. **No new or external water is used in this process.**

Produced water injection is very common in oil field operations. In fact, much of the Central Valley's oil field produced water is disposed of through injection into underground formations. Our operation must have a means to dispose of produced water and the most environmentally protective approach is to return it to the reservoir.

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Water injection including water disposal and water flooding is permitted by the Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) under the Underground Injection Control (UIC) program. DOGGR considers a number of factors when issuing a permit, and if certain stringent conditions are met, subsequently issues the permit. The DOGGR also decides if the water is injected for disposal or water flooding purposes. **E&B's permit is for water disposal (Livermore Field, Greenville Sands). For our current operations, it is possible that the agency could reissue E&B's permit for water flooding.** For either permit classification, our current recycling of water is essentially the same whether the operation is classified as water disposal or water flooding. It is imperative that we continue to be able to return the produced water to the reservoir.

2. Does E&B plan to use any of these methods in the future? If so, will external water resources be required?

E&B is working with the DOGGR on an application for a waterflood permit for E&B's operation in Alameda County. No new or external water is planned to be used. Our plans include continuing to return the produced water to the reservoir.

3. Please provide a detailed description of these methods, and whether they require external water sources.

DOGGR's newly issued UIC discussion draft regulations specifically name injection disposal and waterflood injection as examples of a UIC project[1]:

"(e)"Underground injection project" means sustained or continual injection into one or more wells over an extended period in order to add fluid to a zone for the purpose of enhanced oil recovery, disposal, or storage. Examples of underground injection projects include waterflood injection, steamflood injection, cyclic steam injection, injection disposal, and gas storage projects." **E&B accomplishes this exclusively with water pumped out of and then returned to the existing oil reservoir and does not use new or external water for this operation.**

And, the state definition of well stimulation specifically excludes water flooding.[2]

"(b) Well stimulation treatments do not include steam flooding, water flooding, or cyclic steaming and do not include routine well cleanout work, routine well maintenance, routine removal of formation damage due to drilling, bottom hole pressure surveys, or routine activities that do not affect the integrity of the well or the formation."

[1] Updated Underground Injection Control Regulations, Pre-Rulemaking Discussion Draft, pg 2, 1720.1 (e)
[2] California Public Resources Code 3157(b)

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4. Regulations in place for these methods.

Oil and gas operations in California are highly regulated by approximately 18 separate and distinct agencies. The industry is also required to comply with new regulations as they are updated.

From the Department of Conservation, DOGGR webpage about the Underground Injection Control (UIC) Program Requirements[3].
"In California, wells that inject fluids associated with oil and natural gas production operations (Class II injection wells) are regulated by the Department of Conservation, DOGGR under its Underground Injection Control (UIC) Program. Injection operations regulated under the UIC Program include waterflood, steamflood, cyclic steam, water disposal, gas storage, and other enhanced oil recovery projects. DOGGR's UIC program is monitored and audited by the U.S. Environmental Protection Agency because in 1982 DOGGR entered into a primacy agreement with the U.S. EPA for regulation of Class II injection wells under the federal Safe Drinking Water Act (SDWA). The requirements of DOGGR's UIC Program are found in the Public Resources Code (PRC), the SDWA, and in the state and federal regulations. The main features of the UIC Program include permitting, inspection, enforcement, mechanical integrity testing, plugging and abandonment oversight, data management, and public outreach."

5. Would E&B continue to operate if the County passed the original draft ordinance?

As currently composed, specific definitions and prohibitions in the draft ordinance intended to disallow fracking anywhere in Alameda County would inadvertently prohibit both traditional and routine activities in our operation, even though they have nothing to do with fracking. **The resulting consequences prohibit E&B's current operations.**

We would like to thank for Planning Commission and staff for considering our comments. The Revised Draft Ordinance – Options regarding Section 17.06.100 was provided at the recent hearing. We would like to request consideration of a few clarifying edits to that revision that would allow us to continue our operations but not alter a fracking prohibition.

[3] http://www.conservation.ca.gov/dog/general_information/Pages/UICApplicationGuidance.aspx

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More specifically, our proposed amendments are attached and would do the following:

- Section II 17.06.100 Definitions
  - Align the language with the State of California definitions and High-Intensity Oil and Gas Operations to be clearly specific to fracking and more generally well stimulation.
  - Disposal or storage of wastewater and related substances: Add language clarifying the definition of "Pits and sumps" and related regulatory intent.

We respectfully request your affirmative action on this request and our staff is available to answer questions you may have. If you have any questions, please contact me at (661) 679-1700.

Sincerely,

Amy Roth

Amy Roth
Public and Government Affairs Director

Attachment

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Attachment

E&B Natural Resources (E&B) is an independent California-based oil producer with a very small operation in the eastern, unincorporated area of Alameda County. As originally drafted, certain portions of the ordinance could prevent E&B from conducting routine equipment maintenance and recycling wastewater in our long-standing, permitted operation.

The Revised Draft Ordinance – Options regarding Section 17.06.100 was provided at the recent hearing. We would like to request consideration of a few clarifying edits to that revision that would allow us to continue our operations but not alter a fracking prohibition.

REVISED DRAFT ORDINANCE - Options regarding Section 17.06.100

17.06.100 High-Intensity Oil and Gas Operations — Definition

1. For the purposes of this chapter, high-intensity oil and gas operations means any of the following uses:

   A. Well stimulation treatment — any treatment of a well designed to enhance oil or gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include~~, but are not limited to,~~ hydraulic fracturing treatments and acid well stimulation treatments, as defined in Title 14 California Code of Regulations Section 1761~~.~~:

   ~~B.~~ 1. Hydraulic fracturing or "fracking" — a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

   ~~C.~~ 2. Acid fracturing — a well stimulation treatment that, in whole or in part, includes pressurized injection of acid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

   ~~D.~~ 3. Acid matrix stimulation treatment — an acid treatment conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.

   ~~E.~~ 4. Acid well stimulation treatment - a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well

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stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.

B. ~~F.~~ Disposal or storage of the substances used in or the waste or byproducts of the uses listed in this section, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water, other than storage associated with transportation through the County for disposal or storage outside of the County. This section is not intended to prohibit disposal or storage of produced fluids in enclosed above ground storage tanks for injection into the formation (for oil and gas activities otherwise authorized).

C. ~~G.~~ Disposal or storage in pits or sumps of any wastewater or produced water that is a byproduct of the uses listed in 17.06.040(I). Pits or sumps do not include enclosed storage including but not limited to underground cellars and above ground secondary containment areas.

2. High-Intensity Oil and Gas Operations do not include 1) any use authorized under the UIC program for which a DOGGR permit has been obtained including produced water injection and water flooding, 2) storage tanks for produced water, and 3) routine well cleaning and maintenance activities including the use of acid under the Acid Volume Threshold as defined in Title 14 California Code of Regulations Section 1761.

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NATIONAL ASSOCIATION OF ROYALTY OWNERS–CALIFORNIA, INC.
Serving the Citizens Who Own California's Natural Resources

April 25, 2016

Alameda County Planning Commission
224 W. Winton Avenue
Hayward, CA 94544

RE: Proposed Alameda County Ordinance to Prohibit High-Intensity Oil and Gas Operations

Dear Chair Ratto and Commissioners:

I am writing on behalf of the California Chapter of the National Association of Royalty Owners (NARO-CA) and specifically representing members in Alameda County. NARO-CA is an organization dedicated to serving the needs of the people in California who own California's natural resources. In California, we represent over 600,000 private citizens who receive oil and/or gas royalty payments in this state including people in Alameda County. NARO-CA works to preserve and protect the well-established right of California's royalty owners to extract oil and gas from their property. A lesser known group are the men and women (Mostly women age 60 and above) who are dependent on the income that their property and mineral rights provide them. The vast majority are not "wealthy" people, but women and families that depend on this income to survive in an increasingly expensive world.

NARO-CA would like to provide the County of Alameda with several concerns on the proposed ordinance. It was disappointing to hear some of the comments made at the last Planning Commission hearing on April 4th. There has been some misinformation shared on hydraulic fracturing. What if banning of hydraulic fracturing had occurred nationwide years ago? The truth is that across this nation over the past seventy years hydraulic fracturing has been responsible for turning hundreds of thousands (perhaps millions) of private citizen mineral owners into royalty owners. In addition, hydraulic fracturing in the United States has benefited the environment by significantly reducing carbon emissions and made affordable energy abundant. This has helped agriculture, manufacturing and average citizens, especially those in the lower income brackets.

It would be a huge benefit for our state if many more mineral owners could become royalty owners. In order for this to happen, oil and gas producers need to be able to have access to the most modern and advanced technologies. Increased domestic production benefits our environment, economy and security.

Hydraulic fracturing, especially as it is done in California, has been proven safe, effective and environmentally sound after decades of use. The California Department of Conservation earlier this year issued a report examining data from well stimulation (WST) from January 1, 2014 through September 30, 2015*. During the state's review of nearly two years of operations, there were no spills, emergency responses or well failures associated with it or other oil well stimulation techniques. Additionally, there were no requests for confidential well status or trade secret protection. Out of more than 1,000 neighbors receiving notice of WST, only one requested water sampling. To deny mineral owners the use of this technology is wrong. Technology has advanced the industry incredibly and will continue to do so. Why limit the possibilities for future generations?

179 Niblick Road, #418 • Paso Robles, CA 93446-4845
Office: (805) 801-5877 • info@naro-ca.org • www.naro-us.org

I would like to bring your attention to a recent ballot measure in Santa Barbara County, Measure P. Measure P introduced as a fracking ban titled "Initiative to Ban Fracking", even though there was no fracking being used at that time in Santa Barbara County and no plans to do so. Like Alameda County's draft ordinance, Measure P also banned traditional recovery techniques such as water flooding. It would have shut down nearly all oil and gas production within just a few short years and cost thousands of jobs and loss of revenues for the local communities.

So, what did the people say? The people voted 61% against measure P. People do not support taking private property rights and banning a productive oil and gas industry.

In short, the proposed Alameda ordinance will harm the community and its members in a variety of ways. NARO-CA is strongly opposed to the proposed ordinance. This ordinance would take away the rights of property owners to access the full value of his or her land. Private property rights are some of the most highly protected rights our Constitution provides. The property owner may have no other choice but to sue the county and they will have claim not only to current value, but the value of the mineral deposit in its entirety.

The rural property owners in Alameda County (that NARO-California represents) are terrific stewards of their land. They are environmentalists who take care of the land and who want to make sure that these resources are passed down to future generations. This is why it doesn't make sense to approve such an ordinance. Oil and gas is currently produced in Alameda County under the strictest environmental regulations in the world. By shutting down oil operations, this ordinance would only increase our dependency on foreign oil and would pass all the economic incentives over to countries such as Iraq and Russia who have lesser regulations. Importing oil on super tankers from oceans far away is not a policy we should adhere to and is not a policy I want to pass on to future generations.

Sincerely,

EDWARD S. HAZARD
President

*http://www.conservation.ca.gov/index/Documents/Well%20Stimulation%20Treatment%20Report%202015%20-%20FINAL.PDF

14 April 2016

Bruce Jensen, Senior Planner
Alameda County Planning Department
224 W. Winton Ave., Room 111
Hayward, CA 94544

Dear Mr. Jensen:

Alameda County Against Fracking (ACAF) appreciates all of the work that has gone into the anti-fracking ordinance since Supervisor Haggerty directed its drafting in response to our request. We are almost at the finish line. We look forward to sitting down with you to provide input to the next draft and to assist in finalizing it in time for the meeting of the Planning Commission on May 2.

We also appreciate that E&B Natural Resources (E&B) has dropped its opposition to the ordinance. However, we remain concerned at E&B's explicit acceptance of all of the anti-local control arguments made by the California Independent Petroleum Association in the latter's letter of March 31.

ACAF recognizes and supports the position that it is not the intent of this ordinance to prevent E&B, "from conducting routine equipment maintenance and recycling wastewater in our long-standing, permitted operation," as stated in their April 3 response to the draft. Accordingly, some revisions are in order, which we have suggested below. However, in seeking adjustments to the current draft, E&B significantly weakens the protections from extreme oil extraction contained in the March 21 version.

Fracking, Enhanced Recovery, and Produced Water Injection

In its letter, E&B frames the purpose of the ordinance solely in terms of its anti-fracking provisions. While prohibiting hydraulic fracturing has indeed been the driving force behind the ordinance, it is critical that the ordinance prohibit other forms of extreme extraction, including those in 17.06.100(B). This section defines and provides examples of "Enhanced recovery wells." It responds to the findings in Section I underlying the need for the ordinance, specifically item 16. Additionally, it is, word for word, identical to a paragraph that appears in the anti-fracking initiative passed by San Benito voters in 2014. Yet, E&B has struck out this paragraph in their suggested edits.

Besides removal of 17.06.100(B), the company proposes on page 4 of their response that a paragraph be added. This paragraph would establish that none of the forms of extraction listed, such as cyclic steam injection and water flooding, fall under the subject of the ordinance: high-intensity oil and gas operations. Furthermore, it would place injection of produced water within the same category. Effectively, E&B is classifying these methods as not subject to local land use and health and safety regulation.

While injection of produced water can be used to enhance recovery, much of the time it is used for disposal only, which is the practice of E&B as described in its letter. It is also how its two injection wells at the Livermore site are identified in the DOGGR well database. The company

explains in its letter that after separating out any oil from water brought to the surface, it injects the produced water back into the reservoir from which it came. This water is not utilized further to recover oil. It should also be noted that *water flooding* is a distinct secondary recovery method in which the pressure of injected water is used to displace oil towards producing wells. Wells used in this way are identified as such in the DOGGR database. E&B is not using its wells in Livermore for this purpose.

ACAF is supportive of E&B's continued use of its injection wells for disposing of produced water. It makes sense to make this clear in a separate subsection describing what is not included under High-Intensity Oil and Gas Operations for the purposes of this ordinance.

"High-intensity oil and gas operations" has gained currency for referring to industry extraction methods – both stimulation and enhanced recovery – which localities in California are intent on regulating; for example, San Benito county. In the San Benito initiative, "High-Intensity Petroleum Operations" was defined as "(1) Well stimulation treatments and/or (2) the operation of Enhanced Recovery Wells." It has no technical meaning in the oil industry to support E&B's exclusions. In the case of steam especially, it would be hard to imagine a more highly intense process utilizing copious amounts of fresh water heated hundreds of degrees by a generator releasing pollutants into the air that create local health problems.

With these two critical edits, E&B leaves the door open for themselves and potentially other oil producers to expand beyond conventional primary recovery to include enhanced recovery techniques, e.g., water flooding or steam. Such scenarios would run counter to the intent of the ordinance. These changes to the current draft ordinance could also enable a significant expansion in E&B's current well operations and weaken the county's hand when renewing existing conditional use permits.

Rather than strike 17.06.100(B), it should absolutely remain in place to guide staff as they monitor compliance with current permits and review applications for future permits. It preserves and protects the county's water resources, among other purposes. In a climate increasingly characterized by drought, any technique that may result in greater use of water in Alameda County must be heavily scrutinized. Such techniques would fall outside E&B's current "traditional and routine activities." Should E&B disagree with this interpretation, the firm is entitled to seek an exemption as detailed in 17.06.140.

Use of Acids in Maintenance

The remainder of the new paragraph details different methods to maintain a well. E&B is particularly concerned that continued use of acids for maintenance would be prohibited under the ordinance. This interpretation is difficult to understand. Prohibitions on the use of acid are clear and described only within the context of well stimulation in 17.06.100(D,E,F).

Be that as it may, ACAF would recommend a clarification along the lines suggested by E&B: *"Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments but do not include the use of acid below the Acid Volume Threshold for wellbore cleanup, wellbore maintenance, and removal of formation damage."*

This statement aligns with the current use by DOGGR of the Acid Volume Threshold for distinguishing between a well stimulation treatment designed to increase the permeability of a formation and routine use of acid for maintenance purposes.

It should be pointed out that allowing an oil producer such as E&B to use acidizing chemicals is done so without full knowledge of their effects on the environment, including plants and animals. Operators were not required to report their use of acids to DOGGR until January 1, 2014. However, they are not required to report which chemicals are used or the quantity used. The press release attached to the Center for Biological Diversity's April 4 letter to the Planning Commission points to a just released study that examines the use of chemicals in acidizing California wells. It found that almost 200 chemicals have been used, at least 28 of which are hazardous. Of particular note is hydrofluoric acid, which is highly corrosive and toxic.

ACAF is unaware of whether E&B has notified the County's Environmental Health Dept. of the nature of the chemicals it uses for cleaning and maintenance or of the procedures E&B has in place for their safe transport, storage, mixing/use, and disposal. Nor do we know how the residual and neutralized chemicals are disposed of, e.g., through injection wells.

Storage and Disposal of Wastewater

E&B has inserted a sentence in 17.06.100(G) to clarify that it can continue to temporarily store produced water until it is injected. Making a change to this section does not seem necessary. Rather, clarifying the issue in a separate section describing what is not included under High-Intensity Oil and Gas Operations appears to address the need. However, the terms "wastewater" and "produced water" should be removed from 17.06.100(G). It would then read: *"Disposal or storage of the substances used in or the waste or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, or flowback fluid, other than storage associated with transportation through the County for disposal or storage outside of the County."*

E&B has also inserted a sentence in 17.06.100(H) to clarify what is meant by a pit or sump. This, too, appears unnecessary, as DOGGR definitions are quite clear. Nonetheless, this subsection could be replaced with a slightly elaborated definition:
"Disposal or storage in pits or sumps, lined or unlined, which enables any wastewater or produced water that is a byproduct of the uses listed in 17.06.040(I) to percolate into the ground or evaporate into the atmosphere."

High-Intensity Oil and Gas Operations Exclusions

A statement which enables E&B to feel confident that it can continue its current practices, yet without subverting the intent of the ordinance, seems appropriate:
"High-Intensity Oil and Gas Operations does not include: injection of produced water into the formation from which it was removed; use of storage tanks for temporary storage of produced water.

Next Steps

We propose that representatives from ACAF meet with County staff well before the meeting of the Planning Commission on May 2 to revise the March 21 version of the ordinance. Review

and editing should follow the same process as that conducted with E&B Natural Resources. Please contact me to set up a date and time.

Frank Burton
For Alameda County Against Fracking coalition

Planning Commissioners,

Most of the language in the proposed Alameda County Ordinance to regulate surface activities related to fracking and other extreme methods of oil and gas production, parallels the language in the ordinance passed by initiative in San Benito County in November, 2014.

An oil company filed a lawsuit challenging the San Benito ordinance, but withdrew it within about a month. Here's a story which appeared in the San Jose Mercury News in April, 2015 about the events in San Benito County:

Fracking: Oil company drops lawsuit attempting to overturn San Benito County ban

By Paul Rogers

POSTED: 04/07/2015 06:49:10 AM PDT | UPDATED: ABOUT A YEAR AGO

One month after mounting a legal challenge to San Benito County's ban on the controversial oil exploration practice of fracking, a Southern California oil company has withdrawn its lawsuit.

The decision now means that none of the local bans on fracking in California is under legal challenge, environmentalists said Monday, even as several more counties -- including Santa Clara, Monterey and Butte -- may see similar bans on next year's ballots.

"So much for the oil industry's empty threats against communities that fight fracking pollution," said Hollin Kretzmann, an attorney for the Center for Biological Diversity, an environmental group. "With frivolous lawsuits off the table, more California communities will use their authority to ban fracking and protect their water, air and health."

In the suit filed Feb. 27, Citadel Exploration, based in Newport Beach, attempted to overturn Measure J, approved by 59 percent of San Benito County voters in November. Calling Measure J "an illegal local statutory scheme," Citadel said only the state can regulate oil and gas drilling.

But on Friday, Citadel's attorney, Jeffrey Coleman, of Newport Beach, filed a one-page motion to dismiss the case. Calls to Coleman and Citadel's CEO, Armen Nahabedian, were not returned Monday.

Since the election, the company's stock has fallen 56 percent, from 25 cents a share to 11 cents on Monday, a time period when world oil prices also have plunged.

Measure J supporters say they are frustrated that Gov. Jerry Brown and state lawmakers haven't banned fracking, a technique in which water and chemicals are pumped underground to release oil and gas -- so they decided to go around them. Other counties and cities have followed suit, including Santa Cruz County, whose board of supervisors banned fracking last year, and Mendocino County, whose voters banned it in November.
Not every county has done so, however.

Last month, Monterey County supervisors voted 3-2 against a ban, and voters in La Habra Heights, in Los Angeles County, rejected a ban by 57-43 percent.

In the San Benito County campaign, supporters of Measure J said fracking increases the risk of groundwater pollution and could spoil the county's tourism and farming industries.

A coalition funded by Chevron, ExxonMobil, Occidental Petroleum and other oil giants donated $2.1 million to the opposition campaign, outspending supporters 14-1. The coalition also gave $5 million in Santa Barbara County, where voters rejected a ban in November.

Currently, there is no fracking in San Benito County. Most fracking in California is done in Kern County, near Bakersfield. There are 26 active oil wells in the southern part of San Benito County that produce about 5,700 barrels a year.

Citadel is not fracking in the county. But it took exception to a section of Measure J that also bans a process in which steam is injected into formations with heavy oil to allow its extraction.

Citadel planned to use that method to drill up to 1,000 wells on nearly 700 acres in a remote area south of Pinnacles National Park, near Bitterwater. In July, those plans were delayed when environmentalists sued and won a ruling requiring more study. The company has appealed.

At the time, Citadel's Nahabedian said the county was overreaching.

"It's an attack against property rights in San Benito County and every other county where these measures are on the ballot," he said.

Environmentalists said Monday local governments limit oil drilling and other industry activities all the time through zoning and other methods.

"It's pretty clear to me now that the oil industry was bluffing," said Andy Hsia-Coron, a retired schoolteacher in San Juan Bautista who helped run the Yes on J campaign. "As they examined their hand, they realized it was pretty weak."

Paul Rogers covers resources and environmental issues. Contact him at 408-920-5045.

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Here's a link to the Mercury News story online:
http://www.mercurynews.com/news/ci_27861090/fracking:-oil-company-drops-lawsuit-attempting-to-overturn-san-benito-county-ban

Frank Burton,
Hayward CA

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April 29, 2016

Client-Matter: 23362-030

VIA EMAIL AND OVERNIGHT MAIL

Alameda County Planning Commission
224 W. Winton Avenue, Room 111
Hayward, CA 94544
Attn: Bruce Jensen, Senior Planner

Re: Proposed Ordinance to Prohibit High-Intensity Oil and Gas Operations

Dear Honorable Chair Raddy and Honorable Commissioners:

I am writing on behalf of my client the California Independent Petroleum Association ("CIPA") to provide comments concerning the legal implications of the proposed ordinance to amend Chapter 17.06 of the Alameda County General Ordinance Code to prohibit high-intensity oil and gas operations in unincorporated areas of the County ("Proposed Ordinance"). CIPA is a non-profit, non-partisan trade association representing approximately 500 independent crude oil and natural gas producers, royalty owners, and service and supply companies operating throughout California. Our members represent approximately 70 percent of California's total oil production and account for 90 percent of California's natural gas production. CIPA members own and lease substantial mineral rights and operate oil and gas facilities within and surrounding Alameda County.

On March 31, 2016, I submitted a letter on CIPA's behalf (the "March 31 letter") explaining why the Proposed Ordinance scheduled to be heard by the Planning Commission on April 4, 2016, is subject to legal challenge. Attached is a copy of the March 31 letter, the comments of which are incorporated by reference and apply to all three versions of the Proposed Ordinance now being considered. Unfortunately, CIPA's efforts to cooperate and to assist in informing the County concerning the various issues in the Proposed Ordinance have been ineffective or ignored. The County has instead chosen to present three separate, albeit flawed, versions of the Proposed Ordinance for the Planning Commission to consider.

CIPA is strongly opposed to all three versions of the Proposed Ordinance and believes there are substantial legal challenges available in each option. As further detailed in the March 31 letter, CIPA believes all versions of the Proposed Ordinance would likely effect a taking of our client members' property without just compensation in violation of the Fifth Amendment to the U.S. Constitution and Article I, § 19 of the California Constitution. Additionally, the March 31 letter demonstrates why the Proposed Ordinance is preempted by existing state law. The

March 31 letter also documents why the Proposed Ordinance is arbitrary and fails to provide the reasonable justification as required by law. Finally, the March 31 letter explains why the Proposed Ordinance must undergo California Environmental Quality Act ("CEQA") review.

CIPA respectfully urges the County once again to contemplate the significant legal ramifications contained in the three versions of the Proposed Ordinance and avoid the complex and costly process required to resolve the potential claims. Based on other proposals that have been offered for compromise and that provide commensurate protection from perceived concerns, it is unclear why the County would adopt any of the three versions and reject proposals that have been acceptable throughout the state and do not threaten Alameda County's existing lawful operations. In addition to the March 31 letter, below are additional comments concerning the Proposed Ordinance.

I. Alameda County Lacks The Authority And Technical Expertise Necessary To Implement Proposed Ordinance Version C's Regulatory Oversight Of Waterflooding Techniques

Under California law, local government regulations that conflict with State general law are preempted. (Cal. Const., Art. XI, § 7.) The preemption may be express or by implication. (*Candid Enterprises, Inc. v. Grossmont Union High School Dist.* (1985) 39 Cal. 3d 878, 885.) Express preemption exists where the Legislature has included in the statute a statement of intent to preempt local regulations. (52 Ops. Cal. Atty. Gen. 166, 168 (1969).) Implied preemption exists under any of the following circumstances: (1) the subject matter has been so fully and completely covered by the State general law as to clearly indicate that it has become exclusively a matter of state concern; (2) the subject matter has been partially covered by State general law, but the context clearly indicates that State concerns will not tolerate local regulation of the same subject; or (3) the subject matter has been partially covered by State general law, and the subject is of such a nature that the adverse effects of local regulation outweigh the possible benefits to the local government. (*Morehart v. County of Santa Barbara (1994)* 7 Cal. 4th 725, 751.) In determining whether the Legislature intended to occupy the entire field to the exclusion of all local regulation, a court will look to the "whole purpose and scope of the legislative scheme," not only the language used in the statute. (*Tolman v. Underhill* (1952) 39 Cal. 2d 708, 712.) A local regulation that is preempted by State law is void and unenforceable. (*People ex rel. Deukmejian v. County of Mendocino* (1984) 36 Cal. 3d 476, 484.)

Consistent with its strong interest in oil and gas resources and intent to maximize the productivity of oil and gas wells, California has adopted statutes and regulations that comprehensively address oil and gas operations, including the permitting of underground injection control ("UIC") activities. Injection wells utilizing waterflood injection methods have been an integral part of California's oil and gas industry since production began in this state.

Despite the robust permitting scheme in place, Version C of the Proposed Ordinance would transform the County into a UIC regulatory body with the responsibility for overseeing waterflood injection methods used in the County. (See § 17.06.100(2).) As explained below, state law has fully occupied this field and clearly preempts such activity.

Waterflood injection methods are a Class II injection activity monitored and audited by the United States Environmental Protection Agency ("U.S. EPA"). Pursuant to a Primacy Agreement, experts at the California Division of Oil, Gas & Geothermal Resources ("DOGGR") were given primary responsibility for regulating this activity after the state made a showing to the U.S. EPA that its proposed regulatory program complied with federal regulatory requirements. In order for the state to make such a showing, the state must be the sole authority with jurisdiction over this matter, and must preempt local efforts to create additional regulations in this area. Otherwise, the state would be unable to make the necessary showing that the state program, as implemented, is compliant. Furthermore, Proposed Ordinance Version C would unlawfully place non-experts from Alameda County who lack the necessary scientific expertise in the position of determining when waterflooding can be utilized within the County. The County also fails to consider the economic investments necessary to retain such expertise.

As stated in the March 31 letter, the County has failed to consider existing state laws already in place that accomplish the purported goals of the Proposed Ordinance pertaining to waterflooding. The Proposed Ordinance adds nothing more beyond these existing state laws, including for example, the California Porter-Cologne Water Quality Control Act and the California Safe Drinking Water Act. Moreover, experts at state agencies tasked with enforcing and upholding these laws are the proper authorities for exercising such judgment, including the proper use of UIC activities such as waterflooding. Existing laws substantively protect the County's interests, preempt the Proposed Ordinance, and provide for the protection of public health, safety, and the environment.

II. The Proposed Ordinance's Procedure To Consider Vested Rights Has Fundamental Flaws And Is Subject To Challenge

In an effort to consider property owners whose property interests could be adversely affected by the Proposed Ordinance, the County has haphazardly crafted a section concerning vested rights. In short, this section fundamentally fails to provide adequate detail concerning the procedures and fails to consider the onerous process necessary for one to prove their vested rights. While the County has inserted vague and ambiguous clauses into the Proposed Ordinance to account for potential takings claims, it fails to adequately define the hearing processes and the showing necessary to avoid losing their property. Should the vested rights appeals process prove successful for vested owners, the County would nonetheless still expose itself to a temporary takings claim from property owners, who could seek restitution for all lost revenue, expenses,

and fees incurred as a result of the County's temporary taking. Royalty mineral estate owners who lose the value of their property interests would also have viable takings claims.

III. Conclusion

In summary, CIPA encourages the County to undertake a rigorous examination of the Proposed Ordinance to consider its legality, propriety, and potential repercussions. The Proposed Ordinance would arbitrarily prohibit oil and gas operations in the County without justification. Moreover, the County has also failed to provide the evidence necessary to avoid CEQA review. Additionally, state law comprehensively covers the subject of oil and gas operations, including whether to use methods to stimulate reservoir productivity. This comprehensive regulation of oil and gas operations is consistent with California's strong interest in oil and gas resources, and intent to maximize the recovery of hydrocarbons from oil and gas reservoirs. A local regulation that attempts to prevent oil and gas operations is preempted by State law and unenforceable, and would most certainly be challenged on such basis.

The Proposed Ordinance's prohibition against "high intensity oil and gas operations" in the County of Alameda's unincorporated areas would effectuate a taking of property without just compensation in violation of the Fifth Amendment to the U.S. Constitution and Article I, § 19 of the California Constitution. The County's potential liability could be equivalent to the total value of all oil and gas that could no longer be extracted as a result of the Proposed Ordinance.

CIPA appreciates the opportunity to provide our input on this important matter. Please contact me should you have any questions at (310) 312-4353.

Sincerely,

Craig A. Moyer

cc: Brian Washington, Esq.

Attachment

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March 31, 2016

Client-Matter: 23362-030

VIA EMAIL AND OVERNIGHT MAIL

Alameda County Planning Commission
224 W. Winton Avenue, Room 111
Hayward, CA 94544
Attn: Bruce Jensen, Senior Planner

Re: Proposed Alameda County Ordinance to Prohibit High-Intensity Oil and Gas Operations

Dear Honorable Chair Raddy and Honorable Commissioners:

I am writing on behalf of my client the California Independent Petroleum Association ("CIPA") to provide the County of Alameda with comments on information concerning potential legal repercussions of the proposed ordinance to amend Chapter 17.06 of the Alameda County General Ordinance Code to prohibit high-intensity oil and gas operations in unincorporated areas of the County ("Proposed Ordinance"). CIPA is a non-profit, non-partisan trade association representing approximately 500 independent crude oil and natural gas producers, royalty owners, and service and supply companies operating throughout California. Our members represent approximately 70% of California's total oil production and account for 90% of California's natural gas production. CIPA members own and lease substantial mineral rights and operate oil and gas facilities within and surrounding Alameda County.

CIPA is strongly opposed to the Proposed Ordinance and believes there are significant legal issues that have been overlooked and that must be addressed before the Proposed Ordinance should be considered by the County. First, this letter addresses why the Proposed Ordinance would likely effect a taking of our client's property without just compensation in violation of the Fifth Amendment to the U.S. Constitution and Article I, § 19 of the California Constitution. Second, this letter addresses why the Proposed Ordinance is preempted by existing state law. Third, the letter explains why the Proposed Ordinance is arbitrary and fails to provide reasonable justification as required by law. Lastly, this letter explains why the Proposed Ordinance must undergo California Environmental Quality Act ("CEQA") review.

I. Regulations Adversely Affecting The Economic Return of Property Can Give Rise To A Claim For Just Compensation

The state and federal Constitutions prohibit government from taking private property for public use without just compensation. (Cal. Const., Art. I, § 19; U.S. Const., Amend. 5; *Chicago, Burlington &c. R'd v. Chicago* (1897) 166 U.S. 226, 239 [applying the federal takings clause to the states].) In *Penna. Coal Co. v. Mahon* (1922) 260 U.S. 393, 415 (*Penna. Coal*), the United States Supreme Court recognized that a regulation of property that "goes too far" may effect a taking of that property. When a regulation does not result in a physical invasion and does not deprive the property owner of all economic use of the property, a reviewing court must evaluate the regulation in light of the "factors" the U.S. Supreme Court discussed in *Penn Central Transp. Co. v. New York City*. *Penn Central* emphasized three factors in particular: (1) "[t]he economic impact of the regulation on the claimant"; (2) "the extent to which the regulation has interfered with distinct investment-backed expectations"; and (3) "the character of the governmental action." (*Penn Central Transp. Co. v. New York City* (1978) 438 U.S. 104, 124.)

Subsequent cases, as well as a close reading of *Penn Central*, indicate other relevant factors in determining whether a taking has occurred, such as whether the regulation affects the existing or traditional use of the property and thus interferes with the property owner's "primary expectation" and whether the regulation "permit[s the property owner] . . . to profit [and] . . . to obtain a 'reasonable return' on . . . investment" (*Id.* at 125, 136.). "[T]he *Penn Central* inquiry turns in large part, albeit not exclusively, upon the magnitude of a regulation's economic impact and the degree to which it interferes with legitimate property interests." (*Lingle v. Chevron U.S.A. Inc.* (2005) 544 U.S. 528, 540.) Changes to zoning laws can be considered regulatory takings and can give rise to claims for just compensation.

Under the guise of prohibiting stimulation treatments such as hydraulic fracturing, the Proposed Ordinance would instead effectively ban all current and future oil and gas production on land within the County's unincorporated areas. For example, the Proposed Ordinance prohibits the use of "Enhanced Recovery Wells," which it speciously defines as "wells that are injected with brine, water, steam, polymers, carbon dioxide, or other gasses into oil-bearing formations to recover residual oil and in some limited applications natural gas...includ[ing] waterflood injection, steamflood injection, and cyclic steam injection." (Proposed Ordinance, § 17.06.100(B).) Furthermore, the Proposed Ordinance would preclude routine well cleaning and maintenance activities necessary for production, which require, for example, the use of anti-scaling agents, acids, and biocides. These are the same processes used to maintain groundwater supply wells. If existing wells were unable to perform such routine cleaning and maintenance activities, they would deteriorate and production would cease. As a consequence, the Proposed Ordinance would result in a compensable taking of property rights under state and federal law.

Most oil production in California entails utilizing techniques that involve re-injecting or recycling water that was originally produced from the oil production zone. These processes are not used for the same purpose as treatments such as hydraulic fracturing. Instead, produced water is simply re-injected into the same formation from which it came to sweep the oil towards the well bore where it is recovered at the surface in a closed loop system.

At the surface, the water and oil are separated into different tanks. The water is then treated and re-injected into the formation. Most reservoirs currently producing anywhere in the United States require use of these techniques for owners to access their resources and to exercise their property interests. If water from existing wells cannot be re-injected, produced water would be stranded and wells using these long-practiced and safe methods could no longer be utilized.

The use of diluted acids is also commonplace for well maintenance operations. Diluted acids are utilized to maintain the structural integrity of wells by keeping them clear of materials that would otherwise cause corrosion and eventual obstruction of wells, much like Lime-Away is used to prevent lime buildup in bathrooms. Acids also help clear out clogs resulting from the constant flushing of materials through the wellbore and help clean out mud and cement debris left behind when a new well is drilled. Obviously, small volumes of diluted acid are commonly used by nearly all industries for maintenance purposes including cleaning municipal pools, groundwater supply wells, household cleaning supplies, and utility pipeline maintenance operations, to name just a few. In our view it would be problematic and prejudicial for the County to allow the use of acid for other industries conducting downhole operations, but ban identical applications by the oil and gas industry.

The Proposed Ordinance would impact not only oil producers and well owners, but also property owners, mineral rights owners, and the County itself. Those who lose the value of their mineral assets, as well as owners of supporting infrastructure that may become idled, would have a takings claim against the County for just compensation. It should be noted that royalty holders and oil reserves often do not follow the County's boundaries, meaning that some of the impacted parties could lie in neighboring counties and jurisdictions. The Proposed Ordinance would also lead to a loss in value for the County's oil producing properties, for which well owners and the royalty holders would need to be compensated under long established law. Finally, any proposal that causes a large decrease in oil production where previously allowed or permitted would result in a diminution of property value with a concurrent drop in property tax assessments, leading to less revenue for the County.

While the County has inserted vague and ambiguous clauses into the Proposed Ordinance to account for potential takings claims, it fails to adequately define the hearing processes and the showing that existing property owners, however defined, must make to avoid losing their property. Despite these attempts to guard against takings claims, and should the appeals process

prove successful for vested owners, the County would nonetheless still expose itself to a temporary takings claim from property owners, who would seek restitution for all lost income, expenses, and fees incurred as a result. Royalty mineral estate owners who lose the value of their property interests would also have viable takings claims.

II. California State Law Preempts Local Regulation Of Oil And Gas Operations

Among its various impacts, the Proposed Ordinance proposes limitations on downhole activities, including critical well maintenance operations. State law comprehensively addresses oil and gas operations, including the drilling, construction, operation, and maintenance of oil and gas wells, and the technical question of whether to inject fluids to improve reservoir productivity. (Pub. Resources Code, § 3000 *et seq.*; Tit. 14, Cal. Code Regs., § 1712 *et seq.*) To the extent that issues associated with oil and gas operations have not been fully covered by state law, the Legislature has vested discretion over technical decisions with the State Oil and Gas Supervisor ("Supervisor"). (Pub. Resources Code, §§ 3013, 3222.) Moreover, state law evidences an intent to maximize the productivity of oil and gas operations, while addressing potential environmental effects thereof. (Pub. Resources Code, § 3106.) State law has therefore extensively covered the field of oil and gas operations as it relates to downhole oriented matters such as well stimulation, steam injection, and hydraulic fracturing. Recent passage of Senate Bill 4 ("SB 4") has further strengthened the scope of the state's regulation of well stimulation and further confirms that this subject has become exclusively a matter of State concern; as such, local regulation on this subject would therefore be preempted. (*Morehart v. County of Santa Barbara* (1994) 7 Cal. 4th 725, 751.) The passage of SB 4 and the subsequent development of implementing regulations included a thorough evaluation of how the law and its defined terms would affect existing oil and gas operations. (*See* Tit. 14, Cal. Code Regs., § 1781 (providing the state's definitions for regulation of well stimulation treatments).)

Under California law, local government regulations that conflict with State general law are preempted. (Cal. Const., Art. XI, § 7.) The preemption may be express or by implication. (*Candid Enterprises, Inc. v. Grossmont Union High School Dist.* (1985) 39 Cal. 3d 878, 885.) Express preemption exists where the Legislature has included in the statute a statement of intent to preempt local regulations. (52 Ops. Cal. Atty. Gen. 166, 168 (1969).) Implied preemption exists under any of the following circumstances: (1) the subject matter has been so fully and completely covered by the State general law as to clearly indicate that it has become exclusively a matter of state concern; (2) the subject matter has been partially covered by State general law, but the context clearly indicates that State concerns will not tolerate local regulation of the same subject; or (3) the subject matter has been partially covered by State general law, and the subject is of such a nature that the adverse effects of local regulation outweigh the possible benefits to the local government. (*Morehart,* 7 Cal. 4th at 751.) In determining whether the Legislature intended to occupy the entire field to the exclusion of all local regulation, a court will look to the

"whole purpose and scope of the legislative scheme," not only the language used in the statute. (*Tolman v. Underhill* (1952) 39 Cal. 2d 708, 712.) A local regulation that is preempted by State law is void and unenforceable. (*People ex rel. Deukmejian v. County of Mendocino* (1984) 36 Cal. 3d 476, 484.)

Consistent with its strong interest in oil and gas resources and intent to maximize the productivity of oil and gas wells, California has adopted statutes and regulations that comprehensively address oil and gas operations, including downhole activities. The statutory provisions for oil and gas law are contained within Division 3 ("Oil and Gas") of the Public Resources Code, encompassing sections 3100 through 3865. These statutes address oil and gas operational issues in detail, including notice of intent to drill and abandon (§§ 3202, 3229); bonding (§§ 3204- 3207); abandonment (§ 3208); recordkeeping (§§ 3210-3216); blowout prevention (§ 3219); casing (§ 3220); protection of water supplies (§§ 3222, 3228); repairs (§ 3225); regulation of production facilities (§ 3270); waste of gas (§§ 3300-3314); subsidence (§ 3315 *et seq.*); spacing of wells (§§ 3600-3609); unit operations (§§ 3635-3690); and regulation of oil sumps (§§ 3780-3787).

Notably, state law already addresses operational activities that involve the use of well stimulation, including definitions relevant to the Proposed Ordinance. For example, unless prohibited in an applicable lease or contract, state law authorizes a lessee or operator, with the approval of the Supervisor, to use reasonable and prudent methods to explore for and remove all hydrocarbons, including "the injection of air, gas, water, or other fluids into the productive strata, the application of pressure heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells." (Pub. Resources Code, § 3106, subd. (b).) State oil and gas law also contains provisions to address potential effects from hydraulic fracturing, including requirements pertaining to well casings, blowouts, and bore hole integrity (e.g., cementing). (Pub. Resources Code §§ 3208, 3219, 3220, 3270, 3300-3314, 3600-3609.) State law includes extensive regulation of possible environmental effects from oil and gas operations, including provisions that would address potential impacts from well stimulation. For example, the Supervisor is directed to prevent, as far as possible, damage to life, health, property and natural resources, and damage to underground and surface waters suitable for irrigation or domestic purposes by the infiltration of, or the addition of, detrimental substances. (Pub. Resources Code, § 3106(a).)

As further evidence of California's desire to keep the regulation of oil production at the state level, the California legislature recently enacted SB 4, a law that establishes a statutory framework for the regulation of hydraulic fracturing and other well stimulation techniques. SB 4's requirements were carried out at the state level, including the development of regulations and definitions concerning well stimulation techniques, the undertaking of a scientific study overseen

by the state to ascertain the health and environmental impacts of these activities, and the development of a state permitting scheme to govern them.

The Proposed Ordinance is so broad that it includes a ban on brine injection, which is a Class II injection activity monitored and audited by the United States Environmental Protection Agency ("U.S. EPA"). Pursuant to a Primacy Agreement, the Division of Oil, Gas & Geothermal Resources ("DOGGR") was given primary responsibility for regulating this activity after the state made a showing to the U.S. EPA that its proposed regulatory program complied with federal regulatory requirements. For the state to be able to make such a showing, it must be the sole authority with jurisdiction over this matter, and must preempt local efforts to create additional regulations in this area. Otherwise, the state is unable to make the necessary showing that the state program, as implemented, is compliant.

The County's findings in support of the Proposed Ordinance also fail to consider the state's laws that are already in place to accomplish the purported goals of the Proposed Ordinance. The Proposed Ordinance adds nothing more beyond these existing state laws, including for example, the California Porter-Cologne Water Quality Control Act and the California Safe Drinking Water Act. Moreover, experts at state agencies whom are tasked with enforcing and upholding these laws are the proper authorities for exercising such judgment. Existing laws substantively protect the County's interests, preempt the Proposed Ordinance, and provide for the protection of public health, safety, and the environment.

III. The Proposed Ordinance Arbitrarily Prohibits Oil And Gas Activities Without Providing Reasonable Justification

While counties maintain the power to enact zoning ordinances, they may not do so in arbitrary fashion and without providing a justification reasonably related to legitimate government objectives. (*Pacific Palisades Assn. v. City of Huntington Beach* (1925) 196 Cal. 211; *Marblehead Land Co. v. City of Los Angeles* (1931) 47 F.2d 528.) While the County attempts to justify the Proposed Ordinance by relying upon unproven and alleged environmental impacts from activities like hydraulic fracturing, these reasons are arbitrary and unreasonable to justify the Proposed Ordinance's overreaching provisions.

The Proposed Ordinance relies on a host of assumptions not only to ban techniques such as hydraulic fracturing, but also to prohibit traditional recovery methods that have been utilized throughout the state, and within the County, for decades in oil and gas operations. In short, the County fails to demonstrate why traditional recovery activities such as re-injecting produced water should be prohibited. The County's Proposed Ordinance is arbitrary because it fails to accurately distinguish between advanced well stimulation techniques (as defined by SB 4) with its own improper, overbroad, and arbitrary definition of "high-intensity oil and gas operations."

The County cannot arbitrarily prohibit activities that have taken place safely throughout California for at least 75 years without providing reasonable justification. Moreover, existing state laws adequately protect public health, safety, and the environment; therefore, the County's arbitrary prohibitions create serious costs without any concomitant benefits.

In cases involving the prohibition of oil and gas operations, the California Supreme Court has long held that "it is elementary that the enjoyment of property cannot be interfered with or limited arbitrarily" and must be supported with reasonable, non-arbitrary justifications. (*Pacific Palisades Assn.*, 196 Cal. at 216.) In its current form, the Proposed Ordinance would arbitrarily prohibit safe oil and gas operations in the County without providing reasonable justification for doing so.

IV. The County Fails To Provide Evidence Necessary To Exempt The Proposed Ordinance From CEQA Review

The County proposes to exempt the Proposed Ordinance from the requirements of the CEQA in violation of its obligation to analyze potential environmental impacts associated with the Proposed Ordinance. Within the Proposed Ordinance, the County cites four different exemptions from the CEQA Guidelines in an attempt to exempt the Proposed Ordinance from required CEQA review.

Without providing substantial evidence to support its contentions, the County claims that the Proposed Ordinance: (1) has no potential for causing a physical change in the environment; (2) will assure the maintenance and protection of natural resources and the environment, and (3) has no potential for causing a significant effect on the environment. Despite an agency's factual determination that a project qualifies for a CEQA exemption, such claims will only be upheld if supported by substantial evidence. (*Fairbank v. City of Mill Valley* (1999) 75 Cal. App. 4th 1243, 1251; *Citizens for Environmental Responsibility v. State ex rel. 14th Dist. Agric. Ass'n* (2014) 224 Cal. App. 4th 1542, 1555; *North Coast Rivers Alliance v. Westlands Water Dist.* (2014) 227 Cal. App. 4th 832, 852.) The Proposed Ordinance fails to provide necessary evidence to qualify for a CEQA exemption. Instead, the County only provides conclusory statements regarding potential impacts from activities such as hydraulic fracturing that do not support a determination that the Proposed Ordinance is exempt from CEQA, especially since the Proposed Ordinance prohibits far more than hydraulic fracturing.

V. Conclusion

In summary, I encourage the County to undertake a rigorous examination of the Proposed Ordinance to consider its legality, propriety, and potential repercussions. The Proposed Ordinance would arbitrarily prohibit oil and gas operations in the County without justification.

Moreover, the County has also failed to provide the evidence necessary to avoid CEQA review. Additionally, state law comprehensively covers the subject of oil and gas operations, including whether to use methods to stimulate reservoir productivity. This comprehensive regulation of oil and gas operations is consistent with California's strong interest in oil and gas resources, and intent to maximize the recovery of hydrocarbons from oil and gas reservoirs. A local regulation that attempts to prevent oil and gas operations is preempted by State law and unenforceable, and would most certainly be challenged on such basis.

The Proposed Ordinance's prohibition against "high intensity oil and gas operations" in the County of Alameda's unincorporated areas would effectuate a taking of property without just compensation in violation of the Fifth Amendment to the U.S. Constitution and Article I, § 19 of the California Constitution. The County's potential liability could be equivalent to the total value of all oil and gas that could no longer be extracted as a result of the Proposed Ordinance.

CIPA appreciates the opportunity to provide our input on this important matter. Please contact me should you have any questions at (310) 312-4353.

Sincerely,

Craig A. Moyer

cc: Brian Washington, Esq.

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April 29, 2016

VIA EMAIL
maria.palmeri@acgov.org

Alameda County Planning Commission
224 West Winton Avenue
Room 160
Hayward, CA 94544

Attention: Maria Palmeri, Clerk of Planning Department

Re: Proposed Ordinance to Prohibit High Intensity Oil and Gas Operations – May 2, 2016 Hearing

Dear Honorable Planning Commissioners for Alameda County:

We represent E&B Natural Resources Management Corp. ("E&B"), and we are writing to express our concerns regarding the three different versions of a proposed ordinance to prohibit "High Intensity Oil and Gas Operations." The proposed ordinance is scheduled to be heard by the Planning Commission on May 2, 2016. As you may know, E&B is one of the few oil and gas operators in the unincorporated area of Alameda County ("County"). E&B has been operating the County facilities since 2008, and has been doing so in compliance with the applicable regulatory requirements for both its production wells and its injection wells.

Nonetheless, the County has embarked on an effort to regulate oil and gas operations, which was originally presented as a prohibition on well stimulation activities (production wells), including fracturing operations (or "fracking"), but has now been expanded to prohibit water injection activities (injection wells) used for traditional oil and gas activities.

These two distinct activities – production and injection – are lumped together by these ordinances, although each activity should be examined separately as they are strictly regulated by different regulatory programs. Furthermore, the production activities sought to be banned – well stimulation – are not being used in E&B's operations, while E&B does have existing injection activities, all of which are properly permitted. *Injection of produced water back into the formation is an integral part of traditional oil and gas operations.*

Injection wells are strictly regulated by State's Department of Conservation, Division of Oil, Gas and Geothermal Resources ("DOGGR"), the State Water Resources Control Board ("State Board") and the applicable Regional Water Quality Control Board ("Regional Board") under the Underground Injection Control ("UIC") program, pursuant to the determination by U.S. Environmental Protection Agency ("U.S. EPA") that DOGGR has primary responsibility and authority for injection wells in the State. (1982 Memorandum of Agreement between Department of Conservation and U.S. EPA, and related documents ("1982 MOU" attached as Exhibit A); 1988 Memorandum of Agreement between State Board and DOGGR ("1988 MOU" attached as Exhibit B).) Furthermore, the State is undergoing efforts to update UIC regulations, which should provide the County with added assurance that the injection wells, with the proper permits, will be used appropriately and without harm to the water resources of the County.

E&B does not engage in well stimulation activities, but E&B does engage in injection activities under the UIC program, and no evidence exists that water quality has been impacted by the injection activities. To the contrary, water quality testing demonstrates that the water resources of the County have been protected.

We urge the County to refrain from banning any UIC activities. With respect to the three versions of the proposed ordinance (A, B and C), we believe that version B most closely achieves this objective. Version C attempts to splice off and ban certain portions of the UIC program, which we believe creates confusion and regulatory inconsistencies. We do have some clarifying suggestions to Version B, which we attach in redline as Exhibit C to this letter.

In the remainder of this letter, we describe in greater detail our concerns regarding the proposed ordinance, and to avoid repetition, we hereby incorporate by reference the prior letters from E&B and CIPA. (April 3, 2016 and April 15, 2016 letters from E&B to Planning Commission; March 31, 2016 and April 29, 2016 letters from California Independent Petroleum Association to Planning Commission.)

1. The State Regulatory Agencies with Expertise in Oil and Gas and Water Quality Are in the Best Position to Regulate UIC Activities and Injection Wells

As noted in prior correspondence by CIPA, the County's proposed ordinance is likely pre-empted by State and federal law, but perhaps more importantly for the County, the State agencies (DOGGR, State Board and Regional Board) are in the best position to regulate injection activities. In 1983, DOGGR received primacy from the U.S. EPA to regulate injection wells under the federal Safe Drinking Water Act. (1982 MOU, p. 2.) In 1988, DOGGR and the State Board entered into an MOU "to provide a coordinated approach resulting in a single permit satisfying the statutory obligations" of both DOGGR and the State Board. (1988 MOU, p. 1.)

The 1988 MOU prescribes procedures for underground injection including application requirements and review and consultation by DOGGR, the State Board and the Regional Board. (1988 MOU, p. 2.) The application must include an analysis, if appropriate, of both the fluid to be injected into the well and the fluid from the proposed zone of injection. (1988 MOU, p. 2.) The consultation among the agencies is required "to demonstrate that the proposed injection will not cause a water quality program." (1988 MOU, p. 2.) The UIC permit process also provides for a public comment period, as required by the MOU between EPA and DOGGR. (1982 MOU, pp. 5-6.) Importantly, the Regional Board has the responsibility for determining whether any proposed permit and its requirements "provide protection to ground and surface waters having present or anticipated beneficial uses." (1988 MOU, p. 3.)

In October 2015, DOGGR issued the Renewal Plan for Oil and Gas Regulation, which includes a review of all injection wells. ("2015 Plan" attached as Exhibit D, p. 5.) The plan also contemplates potential new regulations on UIC projects, including updated standards for well construction and allowable pressures for injection operations. (2015 Plan, p. 7.) A critical element of DOGGR's 2015 Plan is to strengthen the workforce and provide for more technical experts, and DOGGR has received budget increases for six consecutive cycles to help accomplish this action item. This comprehensive effort by DOGGR should provide added assurance to the County that the UIC program relies on the latest technology and best science – all future permits issued will integrate the requirements from the new program.

Despite this strict regulatory program (which will become even more stringent), the County's proposed ordinance seeks to regulate injection operations. (Also, it is important to note that Alameda County has not been granted primacy by U.S. EPA to regulate injection wells.) Some might assert that DOGGR's Plan is not sufficient, but there is no evidence that injection activities in the County have resulted in any water quality deficiencies. *In fact, water quality testing for E&B's facilities demonstrates that water resources have not been impacted.*

Given the specialized expertise needed to regulate UIC activities and the comprehensive UIC program overseen by DOGGR, the State Board and the Regional Board, the County should decline to regulate any UIC activities.

Version A of the proposed ordinance appears to prohibit all injection activities under the definition of "enhanced recovery wells." Given that this version A would appear to ban E&B's existing permitted activities, it is unacceptable to E&B. (Please note that the Staff Report (page 1) states that Version A would allow "reinjecting the produced water back into the original reservoir underground," but this is not supported by the language of Version A, which prohibits water injection, without exception.) Version B of the proposed ordinance best reflects an intent to avoid regulating UIC activities as it excludes the section on "enhanced recovery wells."

Version C of the proposed ordinance retains the section on "enhanced recovery wells" but then provides an exception for water injection and water flooding so long as the injection does not use "imported water, shallow well water or surface water and/or does not inject chemicals designed for well production increase (other than those found naturally in produced water or which are necessary for routine maintenance or clarifier use)." E&B certainly appreciates staff's effort to develop a compromise, but this conflicts with the UIC programs provisions, and creates significant regulatory uncertainty.

The UIC program does not provide for the exemption that would be created by version C, thereby creating uncertainty regarding the scope of any UIC permit. A closer examination of the definition of "enhanced recovery wells" and the exception present further uncertainty. For example, the definition of the prohibited "enhanced recovery wells" includes "brine," but does that mean that briny water injection is also prohibited? Does it depend on whether it is naturally occurring? Is it complicated by the fact that brine is a "chemical" solution and who will determine the level of sodium chloride that is "natural"? What happens if DOGGR requires the UIC permittee to add water to produced water for injection?

These are among the questions that would require the knowledge and expertise of DOGGR, the State Board and the Regional Board, and candidly, a more detailed regulatory program similar to the State's program. The County could certainly duplicate such regulatory expertise by hiring an oil and gas technical team and implementing its own regulatory program, but given the level of investment required, it would appear that the County would be better served by relying on the State agencies and utilizing the public process afforded to implement DOGGR's 2015 Plan or the public process afforded as a part of the UIC permit process.

We urge the Commission not to regulate UIC activities, which is best reflected in version B of the proposed ordinance, subject to the clarifying edits as noted in Exhibit C to this letter.

2. The Proposed Findings Do Not Support a Ban on Injection Activities

All three versions of the proposed ordinance contain the same findings, but the findings that purport to trigger the County's authority seem to focus on hydraulic fracturing or "fracking" (paragraphs 4, 18, 22), and not UIC activities (the UIC program is not even mentioned in the findings). In fact, none of the findings expressly relates to any alleged harm from the injection of produced water. The finding to support a "land use" action notes that "the uses of drilling for and removing oil and gas are distinct from storing and disposing of wastewater" (paragraph 16). And, even the vested rights provision in Section 17.06.140.C. refers to "a vested right to conduct well stimulation treatment operations."

Interestingly, the Staff Report for the May 2, 2016 hearing seems to conflate well stimulation activities and injection activities by citing a report with respect to well stimulation and improperly using it to support a ban on injection activities. More specifically, the Staff Report quotes a section of the report which is plainly discussing well stimulation, "fractures" and "fracturing," but then the Staff Report states that it is "probably generally applicable to any injected water operations." The report does not make that statement, and no citation is provided for this statement in the Staff Report.

There is no evidence to demonstrate or even suggest that the injection wells in the County have impacted the beneficial uses of groundwater. Vague statements regarding the need for more information in the State or across the country cannot serve as a substitute for a threshold justification by the County to regulate within its borders. The County should not intrude upon E&B's validly permitted activities without sufficient evidence to support such an action.

3. The Vested Rights Procedure Is Unconstitutional and Unfairly Singles Out Oil and Gas Operations Relative to Other Uses in the County

The vested rights provisions of all three versions of the proposed ordinance require those "claiming a vested right" to apply to the County to prove it, and once a determination has been made that a vested right exists, "the use may continue." This procedure seems to offend constitutional principles regarding vested rights. Not only does it improperly require the property owner to relinquish their vested rights during the determination process, it upends the vested rights doctrine by requiring the claimant to get a permit for rights that are supposedly vested. The provision attempts to salvage some of these deficiencies by stating that no enforcement action would be taken while the application is pending, but it does not confirm that the use may continue during this period (only that enforcement would be deferred).

The County's typical procedure for nonconforming uses is to allow the use to continue, and it is only upon the need for another permit or an expansion of the nonconforming use which triggers the vested rights analysis. (See Municipal Code Section 17.52.610 of the Municipal Code (nonconforming use "may continue"), Section 17.52.640 (expansion of nonconforming use), and Section 17.52.700 (new permits for nonconforming uses).) No other nonconforming use is required to prove the existence of vested rights under the County's Municipal Code, and a provision requiring a prove-up only of oil and gas vested rights unfairly discriminates and is improper.

We appreciate the opportunity to comment on the proposed ordinances, and E&B will be in attendance at the May 2, 2016 hearing. As reflected in this letter, E&B is very concerned about how this proposed action affects their operations in the County, and truly hopes to come to some reasonable accommodation that is respectful of the County's

regulatory authority and that recognizes E&B's rights to continue its legal and validly permitted operations.

Sincerely,

ALSTON & BIRD LLP

Nicki Carlsen

Attachments

cc: Albert Lopez
(w/attachments) [Via Email]
Bruce Jensen
(w/attachments) [Via Email]
Brian Washington
(w/attachments) [Via Email]
Sandy Rivera
(w/attachments) [Via Email]

EXHIBIT A

NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., GOVERNOR

DEPARTMENT OF CONSERVATION

Managing California's Working Lands

LEGAL OFFICE

801 K STREET • MS 24-03 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 323-6733 • **FAX** 916 / 445-9916 • **TDD** 916 / 324-2555 • **WEB SITE** conservation.ca.gov

February 6, 2015

Important Note Regarding The Memoranda Of Agreement On Primacy and Exempted Aquifers:

Questions have been raised about the precise contents of the Memorandum of Agreement (MOA) between the Department of Conservation and the United States Environmental Protection Agency respecting the exemtion of aquifers under the Safe Drinking Water Act. Unfortunately, historical files have disclosed two different versions of the MOA, each with the same signature page and dates (fully signed September 29, 1982.)

One of these MOAs has been on our web site for some time, and reflects, in Attachment 3 and related text, the denial of proposed exemptions for 11 key aquifers. That document appears first, below, as Document 1.

A second, competing version of the MOA also exists, which refers to only two attachments, and does not deny exemptions to the 11 aquifers. It was found in, among other places, US EPA documents disclosed September 30, 2014 pursuant to a Freedom of Information Act request. A December 13, 1982 memorandum from Region IX staff to US EPA headquarters, covers this competing version of the MOA, and refers to the MOA (and other enclosed documents) as resolving "all known issues" with California's primacy application. That document appears below, as Document 2.

Document 3 is a May 17, 1985 letter from US EPA to the Western Oil and Gas Association indicating, among other things, that no proposed exemptions of USDWs were denied at the time of the delegation of primacy. (Some aquifers did not receive exemptions simply because the water in question contained over 10,000 ppm TDS, and thus did not qualify.)

These documents are offered here together and, unless and until sufficient further, and more definitive documentation can be located, should be considered as a group.

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Document 1:

Memorandum of Agreement dated September 29, 1982, as originally posted to Department of Conservation FTP Site

Underground Injection Control Program
Memorandum of Agreement
Between
California Division of Oil and Gas
and
the United States Environmental Protection Agency
Region 9

I. General

This Memorandum of Agreement ("Agreement") establishes the responsibilities of and the procedures to be used by the Division of Oil and Gas ("Division") and the United States Environmental Protection Agency ("EPA") in administration of wells in the Class II portion ("Class II program") of the Underground Injection Control ("UIC") program in California. In general, this Agreement supplements the program described in the demonstration submitted in accordance with Section 1425(a) of the Safe Drinking Water Act ("1425 demonstration").

After it is signed by the Supervisor and the Regional Administrator, this Agreement shall become effective on the date notice of the Class II program approval is published in the Federal Register. The parties will review this Agreement at least once each year during preparation of the annual program update, during the State-EPA agreement ("SEA") process or at other times as appropriate (e.g. at mid-year review). The annual SEA shall be consistent with this Agreement and may not override this Agreement.

This Agreement may be modified upon the initiative of either party in order to ensure consistency with State or Federal statutory or regulatory modifications or supplements, or for any other purpose mutually agreed upon. Any such modifications or supplements must be in writing and must be signed by the Supervisor and Regional Administrator.

This Agreement shall remain in effect unless EPA determines that the Division's 1425 demonstration is no longer valid. Such a determination by EPA will be in accordance with Section 1425(c) of the Safe Drinking Water Act ("SDWA").

Nothing in this Agreement shall be construed to alter any requirements of SDWA or to restrict EPA's authority to fulfill its oversight and enforcement responsibilities under SDWA or other Federal laws, or to restrict the Division's authority to fulfill its responsibilities under State statutes. Nothing in this Agreement shall require or be construed to require EPA to violate Federal law or the Division to violate State law.

II.

A. Policy Statement

The purpose of the UIC program is to prevent any underground injection that endangers an underground source of drinking water ("USDW").

The Division has primary responsibility and authority over all Class II injection wells in the State of California. This includes Class II wells drilled and operated on Federally owned lands, but does not include such wells on Indian lands. The Division is responsible for administering the Class II program including but not limited to reports, permits, monitoring and enforcement actions. Implementation of the Class II program will be as described in the 1425 demonstration and will be supported by an appropriate level of staff and resources.

The Supervisor and the Regional Administrator agree to maintain a high level of cooperation and coordination between Division and EPA staff to assure successful and effective administration of the Class II program.

The Division shall promptly inform EPA of any proposed or pending modifications to laws, regulations, or guidelines, and any judicial decisions or administrative actions that might affect the program and the Division's authority to administer the program. The Division shall promptly inform EPA of any resource allocation changes (e.g. personnel, budget, equipment) that might affect its ability to administer the program.

EPA shall promptly notify the Division of the issuance, content, and meaning of Federal statutes, regulations, guidelines, standards, judicial decisions, policy decisions, directives, and other factors (including budgetary changes) that might affect the Class II program.

B. Information Sharing

1. Division

The Division agrees that all information and records obtained or used in the administration of the Class II program including all UIC permit files shall be available for inspection by EPA or its authorized representative upon request. Division records may be copied by the EPA only when they are required by EPA to bring an enforcement action or for other such specific purpose. Any information obtained from the Division by EPA that is subject to a claim of confidentiality shall be treated by EPA in accordance with EPA regulations governing confidentiality (40 CFR Part 2 and 40 CFR 122.19).

The Division shall retain records used in the administration of the program for at least three years (40 CFR 30 and 40 CFR 35). If an enforcement action is pending, then all records pertaining to such action shall be retained until such action is resolved or the previously mentioned time period is met.

2. EPA

Copies of any written comments about the Division's program administration received by EPA from regulated persons, the public, and Federal, State, and local agencies will be provided to the Supervisor within thirty (30) days of receipt.

3. Emergency Situations

Upon receipt of any information that any Class II injection operation is endangering human health or the environment and requires emergency response, the party in receipt of such information shall immediately notify by telephone the other party of the existence of such a situation.

C. Permits

1. Division

Within 10 working days of receipt, the Division shall provide a written response to any written notice of intent to commence drilling.

2. EPA

Upon receipt by EPA, any Class II permit application and supporting information shall be immediately forwarded to the Division.

Some facilities and activities may require permits from the Division and EPA (and/or other State agencies) under different programs. When appropriate, the Division and EPA will participate in a joint permit processing procedure. The procedure will be developed on a case by case basis.

D. Compliance, Monitoring and Enforcement

1. Division

The Division shall adhere to the compliance monitoring, tracking, and evaluation program described in the 1425 Demonstration. The Division shall maintain a timely and effective compliance monitoring system including timely and appropriate actions on non-compliance.

Each year, 100% of the disposal wells will be inspected for mechanical integrity.

2. EPA

EPA shall conduct periodic site and activity inspections on injection operations, giving priority to operations having the greatest potential to endanger public health.

EPA may participate with the Division in the inspection of wells or operator records. EPA shall notify the Division usually at least ten (10) days prior to any proposed inspection and shall describe the well(s) or record (s) to be inspected and the purpose of such inspection. If the Division fails to take adequate enforcement action against a person violating the requirements for a Class II well, EPA may take Federal enforcement action. Federal enforcement actions will be in accordance with the State, facility and public notification procedures in Section 1423 of SDWA.

3. Emergency Situations

Situations endangering human health will receive immediate and paramount attention by the Division and EPA. The party with initial knowledge of such situation shall immediately notify the other party by telephone.

E. Program Review and Evaluation

1. Division

The Division shall provide EPA with an annual report on the recent operation of the Class II program. Specific contents of the report are described in Attachment #1 and may be renegotiated from time to time. The period to be covered by the annual report shall be the calendar year ending December 31, with reports completed and available to EPA no more than 60 days later (March 1).

In addition, the Division shall provide a separate report of preventive actions taken by operators of new Class II wells. At minimum, this report shall include:

a. the number and general type (e.g. injection pressure limit) of preventive actions proposed in the applications;

b. the number and general type of preventive actions actually taken; and

c. if necessary, a brief summary explaining the reason(s) for any differences between proposed and actual preventive actions (e.g., pending actions).

The report is due within 3 months after the second anniversary of the effective date of this Agreement. The final format will be negotiated at least 3 months prior to the due date.

If the Division proposes to allow any mechanical integrity tests other than those specified or justified in the 1425 Demonstration, the Division shall provide in advance to EPA sufficient information about the proposed test that a judgment about its usefulness and reliability can be made.

2. EPA

EPA shall conduct mid-year evaluations at least during the first 2 years of the Division's operation of the program. In part, the mid-year evaluations will be based on the reports provided above. At least 10 days prior to the evaluation, EPA shall notify the Division regarding the information, material, and program areas that will be covered. This may include selected permit files, budget records and public notification and complaint files. The evaluation may be conducted at either the Division's headquarters or one of its district offices.

F. Public Participation

1. Division

The Division shall provide adequate public notice for its proposed actions as described in the Division's 1425 Demonstration. At minimum, the Division shall provide a 15 day public comment period, and make the non-confidential portions of the project plan and the representative Report on Proposed Operations available for review. If the Supervisor determines that a public hearing is necessary, public notice shall be provided at least 30-days prior to the public hearing.

If there are any substantial changes to the approved project plan or representative Report on Proposed Operations, additional public notice will be provided. Examples of substantial changes include significant increases in injection pressures, changes in injection zone, or significant changes in injection fluid.

Copies of such notices shall also be sent to:

a. Director, Water Management Division, EPA-Region 9;

b. Chairperson, State Water Resources Control Board; and

c. Chairperson of the affected Regional Water Quality Control Board.

The Division's final decision on proposed actions shall contain a response to comments that summarizes the substantive comments received and the disposition of the comments. This shall become a part of that particular project file.

At a minimum, the Division shall apply these public participation procedures to applications for new underground injection projects, significant modifications to existing permits, and to aquifer exemptions.

2. EPA

EPA shall participate at any scheduled public hearing at the request of the Division. Such requests shall be made at least 10 days prior to the hearing.

Any appropriate comments on the proposed action shall be made by EPA within the normal fifteen day comment period. The exception is the designation of exempted aquifers (see the section on Aquifer Exemptions).

G. Program Revision

A program revision may be necessary when the Division's or EPA's statutory authority is modified or when there is a substantial modification to the program. The procedure for revising the program shall be that described in 40 CFR 123.13(b).

H. Aquifer Exemption

An Underground Source of Drinking Water (USDW) may be exempted for the purposes of a Class II injection well if it meets the criteria in 40 CFR 146.04.

Aquifers exempted by the Division and EPA under this Agreement shall only be applicable for the injection of fluids related to Class II activities defined in 40 CFR 146.05(b).

Aquifer exemptions made subsequent to the effective date of this Agreement shall not be effective until approved by the Administrator or Regional Administrator (if delegated) in writing.

After the effective date of this Agreement, an aquifer exemption must be in effect prior to or concurrent with

the issuance of a Class II permit for injection wells into that aquifer.

Aquifers which were proposed for exemption in the 1425 Demonstration and exempted are identified in Attachment #2. Aquifers proposed for exemption in the 1425 Demonstration and not exempted will be phased out within 18 months of the effective date of this Agreement (Attachment #3). Any aquifer or portion of an aquifer denied an exemption may be resubmitted for consideration. At minimum, the resubmission should include either new data, new boundaries or other modification to the original proposal.

All exempted aquifers are subject to review by the Division and by EPA. For good reason and by mutual agreement between the Division and EPA, the exemption status of an aquifer can be withdrawn. The public participation procedures in the 1425 Demonstration shall be applied prior to the withdrawal of any exemption status.

1. EPA

Within 10 days after receipt of the information on the aquifer(s) proposed by the Division for exemption, EPA shall notify the Division if any additional information is deemed appropriate. EPA shall either approve or disapprove the aquifer exemption within 60 days after receipt of all appropriate information. Any disapproval by EPA shall state the reasons for the decision. Requests for additional information and final determinations on aquifer exemptions shall be in written form.

If the new aquifer proposed for exemption is a non-hydrocarbon bearing USDW, EPA will coordinate its public participation activities on aquifer exemptions with the Division's public participation activities during project review.

I. Other Agency Involvement

The Division shall administer the Class II program and maintain close cooperation with California's State Water Resources Control Board (SWRCB) and the Minerals Management Service.

J. Definitions

1. Class II well is defined in 40 CFR 146.05(b).

2. Aquifer is defined in 40 CFR 146.03 and 122.3.

3. Day in this Agreement is defined as a working day.

4. Underground Source of Drinking Water (USDW) is defined in 40 CFR 146.03 and 122.3.

5. 1425 Demonstration includes:

a. the Division's primacy application dated April, 1981;

b. the additional information provided by letter dated March, 1982; and

c. the clarifying information provided by letter dated September, 1982.

Sonia F. Crow
Regional Administrator
Environmental Protection Agency
Region 9

Sept. 29, 1982
Date

for Simon Cordova
M.G. Mefferd
State Oil and Gas Supervisor
California Division of Oil and Gas

Sept. 28, 1982
Date

Attachment 1

Annual Report Contents

At a minimum, the Annual Report shall include:

a. an updated inventory;

b. a summary of surveillance programs including results of monitoring and mechanical integrity testing, the number of inspections conducted, the number of new wells, corrective actions ordered and witnessed, instances of wells out of compliance and their current status;

c. an account of all complaints reviewed by the Division and the actions taken;

d. results of the review of existing wells made during the year;

e. a summary and status of the enforcement actions taken;

f. number of emergency permits issued and current status; and

g. instances of variances and discretionary exemptions during the year.

Attachment 2

Exempted 1425 Demonstration Aquifers

All oil and gas producing aquifers identified in Volumes I, II, and III of the California Oil and Gas Fields submitted in the 1425 Demonstration dated April 20, 1981 are exempted.

In addition, the following aquifers are also exempted.

DISTRICT	FIELD	FORMATION/ZONE
2	Ramona	Pico
2	Oat Mountain	Undiff.
2	Simi	Sespe
3	San Ardo	Santa Margarita
3	San Ardo	Monterey "D" Sand
3	San Ardo	Monterey "E" Sand
3	Monroe Swell	Santa Margarita
4	Buena Vista	Tulare
4	Kern Bluff	Vedder
4	Kern River	Vedder*
4	Mountain View	Kern River
4	Pleito	Chanac
4	Pleito	Kern River
4	Poso Creek	Santa Margarita
5	Coalinga	Santa Margarita
5	Coalinga	Etchegoin-Jacalitos
5	Guijarral Hills	Etchegoin-Jacalitos*
5	Helm	Tulare-Kern River
5	Riverdale	Pliocene
5	Turk Anticline	San Joaquin
6	Sutter Buttes Gas	Kione*

* oil and/or gas producing

Attachment 3

1425 Demonstration Aquifers Not Exempted

DISTRICT	FIELD	FORMATION/ZONE
2	South Tapo Canyon	Pico
4	Blackwell's Corner	Tumey
4	Kern Bluff	Kern River
4	Kern Front	Santa Margarita
4	Kern River	Chanac
4	Kern River	Santa Margarita
4	Mount Poso	Walker
4	Round Mountain	Olcese
4	Round Mountain	Walker
6	Bunker Gas	Undiff.
6	Wild Goose	Undiff.

Document 2:

December 13, 1982 Memorandum From Region IX Staff To US EPA Headquarters Enclosing Competing MOA With No Exemptions Denied

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Protection Agency
Region 1X
215 Fremont St.
San Francisco, CA. 94105

DEC 13 1982

California's Application for Primacy Over Class II Wells in the Underground Injection Control (UIC) Program

William M. Thurston
Chief, Water Supply Section, Region 9

Phil Tate
UIC Review Coordinator
State Program Division (WH-550)

Attached are the State Attorney General's response to the UIC Review Team's comments dated November 5, 1982 and a copy of the Memorandum of Agreement between the Division of Oil and Gas and EPA, Region 9.

With the addition of these attachments, all known issues regarding the primacy application have been resolved. If you have any questions, please don't hesitate to call Nathan Lau at 454-8274 or me at 454-8221.

Attachments

CONCURRENCES

YMBOL		W-3	W-2	PSB				
URNAME	N. Lau	Reames	Thurston	Mail out				
ATE	12/13/82	12/13/82	12/13/82	DEC 13 1982				

PA Form 1320-1 (12-70)

OFFICIAL FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Environmental Protection Agency
Region 1X
215 Fremont St.
San Francisco, CA. 94105

DEC 13 1982

California's Application for Primacy Over Class II Wells in the Underground Injection Control (UIC) Program

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EPA Form 1320-1 (12-70)

OFFICIAL FILE COPY

State of California
Department of Justice
George Deukmejian
(PRONOUNCED DUKE-MAY-GIN)
Attorney General

U.S.E.P.A.
REGION 9
COMM CNTR
DEC 6 10 54 AM '82

1950 WEST 7TH BLVD
LOS ANGELES 90010
(213) 736-2125

December 3, 1982

Richard E. Reavis, Chief
California Branch
Region IX
United States Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

Re: California Application for Primacy,
Class II UIC Program

Dear Mr. Reavis:

The Headquarters Underground Injection Control (UIC) Primacy Review Team reviewed the responses made by the California Division of Oil and Gas (CDOG) to comments made by the Environmental Protection Agency (EPA) on CDOG's primacy application. Except for items 2 and 4, the CDOG's responses were found to be adequate. With respect to items 2 and 4, the Review Team indicated that the responses would be adequate if it could obtain from the California Attorney General's office, the legal representative of the CDOG, assurances on two matters. The first matter on which assurance is sought is that the CDOG can enforce the conditions set out in the letter of approval, which is the first step in the CDOG's two-step permitting process for underground injection. The second matter on which assurance is sought is that compliance by the operator with the letter of approval does not relieve the operator from compliance with all applicable statutes and regulations. We are able to give you the assurances you seek.

Under section 1724.6 of Title 14 of the California Administrative Code, prior approval of any underground injection or disposal project must be obtained from the CDOG before the project can begin. This prior approval is in the form of a letter setting forth the conditions upon which the approval to proceed is given. Failure of an operator to comply with any conditions set forth in the letter of approval would constitute proceeding with the project without the approval of the CDOG. This would be a violation by the operator of section 1724.6 of Title 14 of the California Administrative Code which would enable the CDOG to invoke the enforcement procedures available to it to

compel compliance with the terms of the letter of approval.

The letter of approval may set forth special operational requirements that relate specifically to the project being approved. These requirements are in addition to, not in lieu of, the requirements of statutes and regulations applicable to underground injection and disposal projects. All operators must comply with applicable provisions of the statutes and regulations, and the CDOG has no authority to exempt an operator from such compliance. The statutes and regulations (see for example section 1724.10 of Title 14 of the California Administrative Code) provide general requirements for underground injection projects. However, unique characteristics of each project site may necessitate, in addition, site-specific requirements which is the function of the letter of approval to provide.

If this office can be of any further assistance in the process of obtaining EPA approval of the CDOG's primacy application, please do not hesitate to call.

Very truly yours,

Alan V. Hager
Deputy Attorney General

AVH:mjp
cc: M. G. Mefferd

Underground Injection Control Program
Memorandum of Agreement
Between
California Division of Oil and Gas
and
the United States Environmental Protection Agency
Region 9

I. General

This Memorandum of Agreement ("Agreement") establishes the responsibilities of and the procedures to be used by the Division of Oil and Gas ("Division") and the United States Environmental Protection Agency ("EPA") in administration of wells in the Class II portion ("Class II program") of the Underground Injection Control ("UIC") program in California. In general, this Agreement supplements the program described in the demonstration submitted in accordance with Section 1425(a) of the Safe Drinking Water Act ("1425 demonstration").

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A. Policy Statement

The purpose of the UIC program is to prevent any underground injection that endangers an underground source of drinking water ("USDW").

The Division has primary responsibility and authority over all Class II injection wells in the State of California. This includes Class II wells drilled and operated on Federally owned lands, but does not include such wells on Indian lands. The Division is responsible for administering the Class II program including but not limited to reports, permits, monitoring and enforcement actions. Implementation of the Class II program will be as described in the 1425 demonstration and will be supported by an appropriate level of staff and resources.

The Supervisor and the Regional Administrator agree to maintain a high level of cooperation and coordination between Division and EPA staff to assure successful and effective administration of the Class II program.

The Division shall promptly inform EPA of any proposed or pending modifications to laws, regulations, or guidelines, and any judicial decisions or administrative actions that might affect the program and the Division's authority to administer the program. The Division shall promptly inform EPA of any resource allocation changes (e.g. personnel, budget, equipment) that might affect its ability to administer the program.

EPA shall promptly notify the Division of the issuance, content, and meaning of Federal statutes, regulations, guidelines, standards, judicial decisions, policy decisions, directives, and other factors (including budgetary changes) that might affect the Class II program.

B. Information Sharing

1. Division

The Division agrees that all information and records obtained or used in the administration of the Class II program including all UIC permit files shall be available for inspection by EPA or its authorized representative upon request. Division records may be copied by the EPA only when they are required by EPA to bring an enforcement action or for other such specific purpose. Any information obtained from the Division by EPA that is subject to a claim of confidentiality shall be treated by EPA in accordance with EPA regulations governing confidentiality (40 CFR Part 2 and 40 CFR 122.19).

The Division shall retain records used in the administration of the program for at least three years (40 CFR 30 and 40 CFR 35). If an enforcement action is pending, then all records pertaining to such action shall be retained until such action is resolved or the previously mentioned time period is met.

2. EPA

Copies of any written comments about the Division's program administration received by EPA from regulated persons, the public, and Federal, State, and local agencies will be provided to the Supervisor within thirty (30) days of receipt.

3. Emergency Situations

Upon receipt of any information that any Class II injection operation is endangering human health or the environment and requires emergency response, the party in receipt of such information shall immediately notify by telephone the other party of the existence of such a situation.

C. Permits

1. Division

Within 10 working days of receipt, the Division shall provide a written response to any written notice of intent to commence drilling.

2. EPA

Upon receipt by EPA, any Class II permit application and supporting information shall be immediately forwarded to the Division.

Some facilities and activities may require permits from the Division and EPA (and/or other State agencies) under different programs. When appropriate, the Division and EPA will participate in a joint permit processing procedure. The procedure will be developed on a case by case basis.

D. Compliance, Monitoring and Enforcement

1. Division

The Division shall adhere to the compliance monitoring, tracking, and evaluation program described in the 1425 Demonstration. The Division shall maintain a timely and effective compliance monitoring system including timely and appropriate actions on non-compliance.

Each year, 100% of the disposal wells will be inspected for mechanical integrity.

2. EPA

EPA shall conduct periodic site and activity inspections on injection operations, giving priority to operations having the greatest potential to endanger public health.

EPA may participate with the Division in the inspection of wells or operator records. EPA shall notify the Division usually at least ten (10) days prior to any proposed inspection and shall describe the well(s) or record (s) to be inspected and the purpose of such inspection. If the Division fails to take adequate enforcement action against a person violating the requirements for a Class II well, EPA may take Federal enforcement action. Federal enforcement actions will be in accordance with the State, facility and public notification procedures in Section 1423 of SDWA.

3. Emergency Situations

Situations endangering human health will receive immediate and paramount attention by the Division and EPA. The party with initial knowledge of such situation shall immediately notify the other party by telephone.

E. Program Review and Evaluation

1. Division

The Division shall provide EPA with an annual report on the recent operation of the Class II program. Specific contents of the report are described in Attachment #1 and may be renegotiated from time to time. The period to be covered by the annual report shall be the calendar year ending December 31, with reports completed and available to EPA no more than 60 days later (March 1).

In addition, the Division shall provide a separate report of preventive actions taken by operators of new Class II wells. At minimum, this report shall include:

a. the number and general type (e.g. injection pressure limit) of preventive actions proposed in the applications;

b. the number and general type of preventive actions actually taken; and

c. if necessary, a brief summary explaining the reason(s) for any differences between proposed and actual preventive actions (e.g., pending actions).

The report is due within 3 months after the second anniversary of the effective date of this Agreement. The final format will be negotiated at least 3 months prior to the due date.

If the Division proposes to allow any mechanical integrity tests other than those specified or justified in the 1425 Demonstration, the Division shall provide in advance to EPA sufficient information about the proposed test that a judgment about its usefulness and reliability can be made.

2. EPA

EPA shall conduct mid-year evaluations at least during the first 2 years of the Division's operation of the program. In part, the mid-year evaluations will be based on the reports provided above. At least 10 days prior to the evaluation, EPA shall notify the Division regarding the information, material, and program areas that will be covered. This may include selected permit files, budget records and public notification and complaint files. The evaluation may be conducted at either the Division's headquarters or one of its district offices.

F. Public Participation

1. Division

The Division shall provide adequate public notice for its proposed actions as described in the Division's 1425 Demonstration. At minimum, the Division shall provide a 15 day public comment period, and make the non-confidential portions of the project plan and the representative Report on Proposed Operations available for review. If the Supervisor determines that a public hearing is necessary, public notice shall be provided at least 30-days prior to the public hearing.

If there are any substantial changes to the approved project plan or representative Report on Proposed Operations, additional public notice will be provided. Examples of substantial changes include significant increases in injection pressures, changes in injection zone, or significant changes in injection fluid.

Copies of such notices shall also be sent to:

a. Director, Water Management Division, EPA-Region 9;

b. Chairperson, State Water Resources Control Board; and

c. Chairperson of the affected Regional Water Quality Control Board.

The Division's final decision on proposed actions shall contain a response to comments that summarizes the substantive comments received and the disposition of the comments. This shall become a part of that particular project file.

At a minimum, the Division shall apply these public participation procedures to applications for new underground injection projects, significant modifications to existing permits, and to aquifer exemptions.

2. EPA

EPA shall participate at any scheduled public hearing at the request of the Division. Such requests shall be made at least 10 days prior to the hearing.

Any appropriate comments on the proposed action shall be made by EPA within the normal fifteen day comment period. The exception is the designation of exempted aquifers (see the section on Aquifer Exemptions).

G. Program Revision

A program revision may be necessary when the Division's or EPA's statutory authority is modified or when there is a substantial modification to the program. The procedure for revising the program shall be that described in 40 CFR 123.13(b).

H. Aquifer Exemption

An Underground Source of Drinking Water (USDW) may be exempted for the purposes of a Class II injection well if it meets the criteria in 40 CFR 146.04.

Aquifers exempted by the Division and EPA under this Agreement shall only be applicable for the injection of fluids related to Class II activities defined in 40 CFR 146.05(b).

Aquifer exemptions made subsequent to the effective date of this Agreement shall not be effective until approved by the Administrator or Regional Administrator (if delegated) in writing.

After the effective date of this Agreement, an aquifer exemption must be in effect prior to or concurrent with

the issuance of a Class II permit for injection wells into that aquifer.

Aquifers which were proposed for exemption in the 1425 Demonstration and exempted are identified in Attachment #2. Any aquifer or portion of an aquifer denied an exemption may be resubmitted for consideration. At minimum, the resubmission should include either new data, new boundaries or other modification to the original proposal.

All exempted aquifers are subject to review by the Division and by EPA. For good reason and by mutual agreement between the Division and EPA, the exemption status of an aquifer can be withdrawn. The public participation procedures in the 1425 Demonstration shall be applied prior to the withdrawal of any exemption status.

1. EPA

Within 10 days after receipt of the information on the aquifer(s) proposed by the Division for exemption, EPA shall notify the Division if any additional information is deemed appropriate. EPA shall either approve or disapprove the aquifer exemption within 60 days after receipt of all appropriate information. Any disapproval by EPA shall state the reasons for the decision. Requests for additional information and final determinations on aquifer exemptions shall be in written form.

If the new aquifer proposed for exemption is a non-hydrocarbon bearing USDW, EPA will coordinate its public participation activities on aquifer exemptions with the Division's public participation activities during project review.

I. Other Agency Involvement

The Division shall administer the Class II program and maintain close cooperation with California's State Water Resources Control Board (SWRCB) and the Minerals Management Service.

J. Definitions

1. Class II well is defined in 40 CFR 146.05(b).

2. Aquifer is defined in 40 CFR 146.03 and 122.3.

3. Day in this Agreement is defined as a working day.

4. Underground Source of Drinking Water (USDW) is defined in 40 CFR 146.03 and 122.3.

5. 1425 Demonstration includes:

a. the Division's primacy application dated April, 1981;

b. the additional information provided by letter dated March, 1982; and

c. the clarifying information provided by letter dated September, 1982.

Sonia F. Crow
Regional Administrator
Environmental Protection Agency
Region 9

Sept. 29, 1982
Date

for Simon Cordova
M.G. Mefferd
State Oil and Gas Supervisor
California Division of Oil and Gas

Sept. 28, 1982
Date

Attachment 1

Annual Report Contents

At a minimum, the Annual Report shall include:

a. an updated inventory;

b. a summary of surveillance programs including results of monitoring and mechanical integrity testing, the number of inspections conducted, the number of new wells, corrective actions ordered and witnessed, instances of wells out of compliance and their current status;

c. an account of all complaints reviewed by the Division and the actions taken;

d. results of the review of existing wells made during the year;

e. a summary and status of the enforcement actions taken;

f. number of emergency permits issued and current status; and

g. instances of variances and discretionary exemptions during the year.

Attachment 2

Exempted 1425 Demonstration Aquifers

All oil and gas producing aquifers identified in Volumes I, II, and III of the California Oil and Gas Fields submitted in the 1425 Demonstration dated April 20, 1981 are exempted.

In addition, the following aquifers are also exempted.

DISTRICT	FIELD	FORMATION/ZONE
2	Ramona	Pico
2	Oat Mountain	Undiff.
2	South Tapo Canyon	Pico
2	Simi	Sespe
2	San Ardo	Santa Margarita
3	San Ardo	Monterey "D" Sand
3	San Ardo	Monterey "E" Sand
3	Monroe Swell	Santa Margarita
4	Blackwell's Corner	Tumey
4	Kern Bluff	Kern River
4	Kern Front	Santa Margarita
4	Kern River	Chanac
4	Kern River	Santa Margarita
4	Mount Poso	Walker
4	Round Mountain	Olcese
4	Round Mountain	Walker
4	Buena Vista	Tulare
4	Kern Bluff	Vedder
4	Kern River	Vedder*
4	Mountain View	Kern River
4	Pleito	Chanac
4	Pleito	Kern River
4	Poso Creek	Santa Margarita
5	Coalinga	Santa Margarita
5	Coalinga	Etchegoin-Jacalitos
5	Guijarral Hills	Etchegoin-Jacalitos*
5	Helm	Tulare-Kern River
5	Riverdale	Pliocene
5	Turk Anticline	San Joaquin
6	Sutter Buttes Gas	Koine*
6	Bunker Gas	Undiff.
6	Wild Goose	Undiff.

*Oil and/or gas producing

Document 3: May 17, 1985 letter from US EPA to the Western Oil and Gas Association Reflecting No Denials of Exemptions in Original Primacy Delegation

RECEIVED
JUN 10 1985
DIVISION OF OIL & GAS
BAKERSFIELD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

Mr. Tom Cornwell
Western Oil and Gas Association
727 West 7th Street
Los Angeles, CA 90017

17 MAY 1985

Dear Mr. Cornwell:

The staffs of EPA-Region 9 and the California Division of Oil and Gas (CDOG) have been meeting with members of the Western Oil and Gas Association (WOGA), the California Independent Producers Association (CAIPA), and the Independent Oil Producers Agency (IOPA) to determine how wells injecting specific types of oil field fluids will be regulated under the Underground Injection Control (UIC) program in California. The purpose of this letter is to clarify:

1. how wells injecting filter backwash (diatomaceous earth or multi-media filter backwash), water softener regeneration brine, or air scrubber waste will be classified and regulated under the UIC program in California;

2. the requirements, especially the regulatory deadlines for the submission of permit applications and inventory information for existing wells, for different classes of wells; and

3. which formations identified by CDOG in its primacy application were verified as Underground Sources of Drinking Water (USDW) and exempted and which formations were determined not to be USDWs and did not need to be exempted when primacy for CDOG was approved.

In general, the classification and regulation scheme for wells injecting filter backwash, water softener regeneration brine, or air scrubber wastes under the UIC program in California is:

* wells which inject filter backwash are Class II wells and are regulated by CDOG;

* wells which inject either water softener regeneration brine or air scrubber wastes for the purpose of enhancing oil or natural gas recovery are Class II wells and are regulated by CDOG; and

* wells which inject either water softener regeneration brine

or air scrubber wastes for disposal are either Class I or Class V wells and are regulated by EPA.

Attachment 1 provides: a precise statement about these well classifications; a brief description of each of the fluids being injected; clarification of how wells used to inject commingled fluids will be regulated; and a diagram which outlines how wells injecting the different types of fluids will be regulated and by whom in California.

Some, but not all, of the relevant requirements for Class I, II, and III wells under the UIC program implemented in California are:

- Class I wells - for existing wells (wells in operation prior to June 25, 1984) complete permit applications must be submitted to EPA by June 25, 1985 (40 CFR 144.31[c][1] and 147.251[B])

  - for new wells, permits must be in effect prior to any construction (40 CFR 144.11)

- Class II wells - CDOG has been delegated this portion of the UIC program and regulates this class of wells

- Class V wells - for existing wells, a completed inventory form and the required additional information must be submitted to EPA by June 25, 1985 (40 CFR 144.26[d][1] and 147.251[B])

  - for new wells, a complete inventory form and the required additional information should be submitted to EPA prior to construction.

Complete permit applications for existing Class I wells must be submitted to EPA by June 25, 1985. Considering the delays in classifying wells injecting filter backwash, water softener regeneration brine, or air scrubbing waste, allowances may be made for the submission of additional clarifying information after June 25, 1985. However, allowances can only be considered if an application has been been submitted by June 25, 1985 and if the application represents a reasonable and substantial effort toward a complete permit application.

Attachment 2 provides the exact definitions for the different classes of wells and other pertinent definitions in the UIC program. Attachment 3 and 4 are copies of the permit application and Class V Inventory Notification, respectively.

There appears to be some confusion about which formations in oil and gas fields are USDWs and which formations in oil and gas fields are not USDWs under the UIC program. When CDOG submitted

its application for the Class II portion of the UIC program, it submitted information about a large number of formations in oil fields to be considered for aquifer exemptions. These included formations which produced oil or gas and formations which did not produce any oil or gas. After reviewing the information from CDOG supporting the aquifer exemptions requests, all formations which were USDWs and produced oil or gas were exempted but only some of the formations which did not produce any oil or gas were granted aquifer exemptions. These latter formations were not exempted because the supporting information demonstrated that they were not USDWs as defined by the UIC program. They yielded water which had a Total Dissolved Solids concentration greater than 10,000 milligrams per liter.

Maps showing the lateral extent of any formation which was exempted can be found in California Oil and Gas Fields (Volumes I, II, and III) and Appendix B of CDOG's primacy application. They are available for review at the EPA office in San Francisco or at any of the CDOG district offices. A list of those formations, which did not produce any oil or gas and were considered for aquifer exemptions, is provided as Attachment 5. A list of those formations, which did not produce any oil or gas and which were USDWs and exempted, is provided as Attachment 6.

I would like to take this opportunity to thank those of your members who met and worked with us to clarify these points in the UIC program. If you have any further questions or need other points of clarification, please call Pete Uribe of my staff at (415) 974-7285.

Sincerely,

for Frank M. Covington, Director
Water Management Division

ATTACHMENTS

1 - Well Classification and Regulation Scheme	(3 pages)
2 - UIC Definitions	(3 pages)
3 - Permit Application	(10 pages)
4 - Class V Inventory Notification	(7 pages)
5 - List of Formations Considered for Exemption	(3 pages)
6 - List of Formations Exempted	(1 page)

cc: M.G. Mefferd, CDOG
J. B. Braden, CAIPA
Les Clark, IOPA
Jim Cornelius, SWRCB
Bill Pfister, CVRWQCB
John Atcheson, EPA HQ

Policy Statement on Well Classifications

Wells which inject filter backwash (diatomaceous or multi-media filter backwash) are Class II wells.

Wells which inject water softener regeneration brine or air scrubber waste are not Class II wells, unless injection is for enhanced recovery, in which case the wells are Class II wells.

Wells which inject water softener regeneration brine or air scrubber waste commingled with other fluids (e.g. produced water or filter backwash) are not Class II wells, unless injection is for enhanced recovery, in which case the wells are Class II wells.

Description of Fluids being Injected

Filter backwash is a fluid with an elevated concentration of suspended solids which were removed from produced water. In general, produced water is passed through either diatomaceous or multi-media filters to remove suspended solids. Periodically, these filters are washed with either fresh or produced water, which has no additives, to remove the suspended solids concentrated in the filter resulting in a filter backwash.

Water softener regeneration brine is a fluid with high concentrations of total dissolved solids, especially calcium, magnesium, and chloride. In general, produced water is softened by passing it through a resin which replaces calcium and magnesium ions in the water with sodium ions. Periodically, the resin in the water softener unit is regenerated with concentrated solutions of sodium chloride, which replaces the calcium and magnesium ions captured on the resin with sodium ions in the solution, yielding a water softener regeneration brine.

Air scrubber waste is sulfur dioxide scrubber blowdown (also commonly known as scrubber liquor) with high concentrations of total dissolved solids (much greater than 10,000 ppm) In general, crude oil is burned for power to produce steam, which is injected to enhance the recovery of extremely heavy crude oil. Air scrubbers are required when the crude oil is burned because Kern County is a Non-Attainment Area for air quality with respect to sulfur dioxide.

Clarifying the Classification of Wells

Injecting Commingled Fluids

Wells injecting only filter backwash or filter backwash commingled with produced water will be Class II wells and will be regulated by CDOG.

Wells injecting fluids with either water softener regeneration brine or air scrubber wastes into oil and gas producing formations for the purpose of enhanced recovery will be Class II wells and will be regulated by CDOG.

Wells injecting only water softener regeneration brine or only air scrubber wastes into non-oil and gas producing formations are not Class II wells and will be directly regulated by the regional office as a Class I or V well.

Wells injecting either water softener regeneration brine or air scrubber wastes together with produced water into non-oil and gas producing formations are not Class II wells and will be directly regulated by the regional office as a Class I or V well.

On the next page is chart which summarizes whether CDOG or EPA is responsible for any given well based on the type of injectate and the injection formation.

FLUID INJECTED	PURPOSE OF INJECTION	INJECTION ZONE	WELL CLASSIFICATION	UIC PERMIT AGENCY
A. Diatomaceous Earth Filter Backwash	Disposal or Enhanced Recovery	Above or into a USDW* Below lowermost USDW	Class II	CDOG
B. 1. Water Softener Regeneration Brine 2. Air Scrubber Waste	Disposal	Above or into a USDW	Class V	EPA**
		Below lowermost USDW	Class I	EPA
	Enhanced Recovery		Class II	CDOG
C. The following wastes commingled with with produced fluids: 1. Water Softener Regeneration Brine 2. Air Scrubber Waste	Disposal	Above or into a USDW	Class V	EPA**
		Below lowermost USDW	Class I	EPA
	Enhanced Recovery		Class II	CDOG

* USDW (Underground Source of Drinking Water)- an aquifer or its portion that contains fewer than 10,000 mg/l total dissolved solids and is not an exempted aquifer (see 40 CFR 144.3 for full definition)

** EPA requirements for Class V wells are: submission of inventory information to EPA by operator (40 CFR 144.26) and that EPA assessment of those wells to determine the need for requirements or regulations (40 CFR 146.52(b)) There are currently no permitting requirements for Class V wells under EPA's UIC program. However, EPA has the option to require and the operator has the option to request a permit. EPA cannot preclude the State (CDOG) from regulating these wells under State laws or regulations, so CDOG's existing state program applies.

Region 9 UIC Program Information Sheet

General Information about the Underground Injection Control Program

The Safe Drinking Water Act (SDWA) of 1974, as amended, requires the U.S. Environmental Protection Agency (EPA) to establish a program which provides for the safety of our nation's drinking water. One part of this program, Underground Injection Control (UIC), has been established to prevent contamination of underground sources of drinking water due to improper design, construction and operation of injection wells. Although not recognized, the injection of waste materials is a very common practice. For example, the oil and gas industry operates tens of thousands of wells nationwide which inject brine or brackish wastewater in the production of oil and gas. Other types of injection wells include hazardous waste disposal operations wells, industrial waste disposal wells, municipal disposal operations wells, and nuclear storage and disposal wells.

Underground Sources of Drinking Water

By definition, an Underground Source of Drinking Water (USDW) is an aquifer or a portion of an aquifer:

which supplies any public water system; or

which contains significant quantity of ground water to supply a public water system; and

currently supplies drinking water for human consumption; or

contains fewer than 10,000 mg/l total dissolved solids (TDS) and is not an exempted aquifer.

An aquifer is a geological formation that is capable of yielding a significant amount of water to a well or to a springs. An exempted aquifer is an aquifer that cannot now and will not in the future serve as a source of drinking water, as determined by EPA.

Well Classification

A well is defined as a bored, drilled or driven shaft or dug hole whose depth is greater than the largest surface dimension. There are five classes of injection wells which are regulated by the UIC program. A specific well classification is made by determining the type of fluid to be injected and the geologic area into which the fluid is to be injected. Injection well classes are summarized as follows:

Class I — Class I wells are municipal and industrial disposal wells (including wells used by generators of hazardous waste and owners of hazardous waste management facillities) which inject fluids below the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

Class II	Class II wells are associated with oil and gas production or liquid hydrocarbon storage. These wells inject fluids which are brought to the surface for the enhanced recovery of oil and natural gas and for the storage of hydrocarbons.
Class III	Class III wells inject fluids for the extraction of minerals and are used in conjunction with solution mining of minerals.
Class IV	Class IV wells are used by generators of hazardous and radioactive wastes. These wells inject into a formation which within one quarter of a mile of the well contains an underground source of drinking water. Class IV wells are prohibited.
Class V	Class V wells are wells which do not meet the criteria listed for classes I through IV. Generally, wells covered under this classification inject non-hazardous fluids into or above formations that contain underground sources of drinking water. Class V wells include the following, but are not limited to these types of wells:

1. air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump (Questionnaire II);

2. cesspools including multiple dwelling, community or regional cesspools, or other devices that receive wastes which have an open bottom and sometimes have perforated sides. The UIC requirements do not apply to single family residential cesspools nor to non-residential cesspools which receive solely sanitary wastes and have the capacity to serve fewer than 20 persons a day (Questionnaire II);

3. cooling water return flow wells used to inject water previously used for cooling (Questionnaire II);

4. dry wells used for injection of wastes into a subsurface formation (Questionnaire II);

5. drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation (Questionnaire II);

6. recharge wells used to replenish the water in an aquifer (Questionnaire II);

7. salt water intrusion barrier wells used to inject water into a fresh water aquifer to prevent the intrusion of of salt water in the fresh water (Questionnaire II);

8. sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines regardless of whether or not it is a radioactive waste (Questionnaire II);

9. septic system wells used to inject the waste of effluent from a multiple dwelling, business establishment, community or regional business establishment septic tank. The UIC requirements do not apply to single family residential septic system wells, nor to non-residential septic system wells which are used solely for the disposal of sanitary wastes and have the capacity to serve fewer than 20 persons a day (Questionnaire II);

10. subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producting zone to reduce or eliminate subsidence associated with the overdraft of fresh water (Questionnaire II);

11. radioactive waste disposal wells other than Class IV (Questionnaire I);

12. injection wells associated with the recovery of geothermal energy for heating, aquaculture, and production of electric power (Questionnaire I);

13. wells used for solution mining of conventional mines such as stopes leaching (Questionnaire I);

14. wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts (Questionnaire I);

15. injection wells used in experimental technologies (Questionnaire I);

16. injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale (Questionnaire II);

17. agricultural drainage wells (Questionnaire II);

18. air scrubber waste disposal wells (except if injection is for enhanced recovery of oil and gas in California); and

19. water softener regeneration brine waste disposal wells (except if injection is for enhanced recovery of oil and gas in California).

Attachment 3

Form Approved. OMB No. 2000-0042. Expires 9-30-86
GSA No.

Form 4 UIC

EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

UNDERGROUND INJECTION CONTROL PERMIT APPLICATION

(Collected under the authority of the Safe Drinking Water Act, Sections 1421, 1422, 40 CFR 144)

I. EPA ID NUMBER

		T/A	C
U			

READ ATTACHED INSTRUCTIONS BEFORE STARTING

FOR OFFICIAL USE ONLY

Application approved mo	day	year	Date Received mo	day	year	Permit/Well Number	Comments

II. FACILITY NAME AND ADDRESS

Facility Name

Street Address

City | State | ZIP Code

III. OWNER/OPERATOR AND ADDRESS

Owner/Operator Name

Street Address

City | State | ZIP Code

IV. OWNERSHIP STATUS *(Mark 'x')*

☐ A. Federal ☐ B. State ☐ C. Private

☐ D. Public ☐ E. Other *(Explain)*

V. SIC CODES

VI. WELL STATUS *(Mark 'x')*

☐ A. Operating — Date Started: mo | day | year

☐ B. Modification/Conversion ☐ C. Proposed

VII. TYPE OF PERMIT REQUESTED *(Mark 'x' and specify if required)*

☐ A. Individual ☐ B. Area

Number of Existing wells | Number of Proposed wells | Name(s) of field(s) or project(s)

VIII. CLASS AND TYPE OF WELL *(see reverse)*

A. Class(es) *(enter code(s))* | B. Type(s) *(enter code(s))* | C. If class is "other" or type is code 'x,' explain | D. Number of wells per type (if area permit)

IX. LOCATION OF WELL(S) OR APPROXIMATE CENTER OF FIELD OR PROJECT

C	A. Latitude			B. Longitude			Township and Range							
	Deg	Min	Sec	Deg	Min	Sec	Twsp	Range	Sec	¼ Sec	Feet from	Line	Feet from	Line
I														

X. INDIAN LANDS *(Mark 'x')*

☐ Yes ☐ No

XI. ATTACHMENTS

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)

FOR CLASSES I, II, III (and other classes) complete and submit on separate sheet(s) Attachments A — U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application:

XII. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (Ref. CFR 122.6)

A. Name and Title *(Type or Print)* | B. Phone No. *(Area Code and No.)*

C. Signature | D. Date Signed

Continued on Reverse

Well Class and Type Codes

Class I	Wells used to inject waste below the deepest underground source of drinking water.
Type "I"	Nonhazardous industrial disposal well
"M"	Nonhazardous municipal disposal well
"W"	Hazardous waste disposal well injecting below USDWs
"X"	Other Class I wells (not included in Type "I," "M," or "W")
Class II	Oil and gas production and storage related injection wells.
Type "D"	Produced fluid disposal well
"R"	Enhanced recovery well
"H"	Hydrocarbonn storage well (excluding natural gas)
"X"	Other Class II wells (not included in Type "D," "R," or "H")
Class III	Special process injection wells.
Type "G"	Solution mining well
"S"	Sulfur mining well by Frasch process
"U"	Uranium mining well (excluding solution mining of conventional mines)
"X"	Other Class III wells (not included in Type "G," "S," or "U")
Other Classes	Wells not included in classes above.
	Class V wells which may be permitted under §144.12
	Wells not currently classified as Class I, II, III, or V.

INSTRUCTIONS - Form 4 - Underground Injection Control (UIC) Permit Application

Form 4 must be completed by all owners or operators of Class I, II, and III injection wells and others who may be directed to apply for a UIC permit by the Director.

I. EPA I.D. NUMBER - Fill in your EPA Identification Number. If you do not have a number, leave blank.

II. FACILITY NAME AND ADDRESS - Name of well, well field or company and address.

III. OWNER/OPERATOR NAME AND ADDRESS - Name and address of owner/operator of well or well field.

IV. OWNERSHIP STATUS - Mark the appropriate box to indicate the type of ownership.

V. SIC CODES - List at least one and no more than four Standard Industrial Codes (SIC) that best describe the nature of the business in order of priority.

VI. WELL STATUS - Mark Box A if the well(s) were operating as injection wells on the effective date of the UIC Program for the State. Mark Box B if the well(s) existed on the effective date of the UIC Program for the State but were not utilized for injection. Box C should be marked if the application is for an underground injection project not constructed or not completed by the effective date of the UIC Program for the State.

VII. TYPE OF PERMIT - Mark "Individual" or "Area" to indicate the type of permit desired. Note that area permits are at the discretion of the Director and that wells covered by an area permit must be at one site, under the control of one person and do not inject hazardous waste. If an area permit is requested the number of wells to be included in the permit must be specified and the wells described and identified by location. If the area has a commonly used name, such as the "Jay Field", submit the name in the space provided. In the case of a project or field which crosses State lines, it may be possible to consider an area permit if EPA has jurisdiction in both States. Each such case will be considered individually, if the owner/operator elects to seek an area permit.

VIII. CLASS AND TYPE OF WELL - Enter in these two positions the Class and type of injection well for which a permit is requested. Use the most pertinent code selected from the list on the reverse side of Form 4. When selecting type X please explain in the space provided.

IX. LOCATION OF WELL - Enter the latitude and longitude of the existing or proposed well expressed in degrees, minutes, and seconds or the location by township, and range, and section, as required by 40 CFR 146. If an area permit is being requested, give the latitude and longitude of the approximate center of the area.

X. INDIAN LANDS - Place an "X" in the box if any part of the facility is located on Indian lands.

XI. ATTACHMENTS - Note that information requirements vary depending on the injection well class and status. Attachments for Class I, II, and III are described on pages 3-7 of this document and listed by Class on page 8. Place EPA ID number in the upper right hand corner of each page.

XII. CERTIFICATION - All permit applications (except Class II) must be signed by a responsible corporate officer for a corporation, by a general partner for a partnership, by the proprietor of a sole proprietorship, and by a principal executive or ranking elected official for a public agency. For Class II, the person described above should sign, or a representative duly authorized in writing.

INSTRUCTIONS - Attachments to Form 4

Attachments to be submitted with permit application for Class I, II, III and other wells.

A. AREA OF REVIEW METHODS - Give the methods and, if appropriate, the calculations used to determine the size of the area of review (fixed radius or equation). The area of review shall be a fixed radius of 1/4 mile from the well bore unless the use of an equation is approved in advance by the Director.

B. MAPS OF WELLS/AREA AND AREA OF REVIEW - Submit a topographic map, extending one mile beyond the property boundaries, showing the injection well(s) or project area for which a permit is sought and the applicable area of review. The map must show all intake and discharge structures and all hazardous waste, treatment, storage, or disposal facilities. If the application is for an area permit, the map should show the distribution manifold (if applicable) applying injection fluid to all wells in the area, including all system monitoring points. Within the area of review, the map must show the following:

Class I

The number, or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads, and faults, if known or suspected. Only information of public record is required to be included on this map;

Class II

In addition to requirements for Class I, include pertinent information known to the applicant. Requirement does not apply to existing Class II wells;

Class III

In addition to requirements for Class I, include public water systems and pertinent information known to the applicant.

C. CORRECTIVE ACTION PLAN AND WELL DATA - Submit a tabulation of data reasonably available from public records or otherwise known to the applicant on all wells within the area of review, including those on the map required in B, which penetrate the proposed injection zone.

Such data shall include the following:

Class I

A description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Director may require. In the case of new injection wells, include the corrective action proposed to be taken by the applicant under 40 CFR 144.55.

Class II

In addition to requirements for Class I, in the case of Class II wells operating over the fracture pressure of the injection formation, all known wells within the area of review which penetrate formations affected by the increase in pressure. This requirement does not apply to existing Class II wells.

Class III

In addition to requirements for Class I, the corrective action proposed under 40 CFR 144.55 for all Class III wells.

D. MAPS AND CROSS SECTIONS OF USDW'S - Submit maps and cross sections indicating the vertical limits of all underground sources of drinking water within the area of review (both vertical and lateral limits for Class I), their position relative to the injection formation and the direction of water movement, where known, in every underground source of drinking water which may be affected by the proposed injection. (Does not apply to Class II wells.)

E. NAME AND DEPTH OF USDW'S (CLASS II) - For Class II wells, submit geologic name, and depth to bottom of all underground sources of drinking water which may be affected by the injection.

F. MAPS AND CROSS SECTIONS OF GEOLOGIC STRUCTURE OF AREA - Submit maps and cross sections detailing the geologic structure of the local area (including the lithology of injection and confining intervals) and generalized maps and cross sections illustrating the regional geologic setting. (Does not apply to Class II wells.)

G. GEOLOGICAL DATA ON INJECTION AND CONFINING ZONES (CLASS II) - For Class II wells, submit appropriate geological data on the injection zone and confining zones including lithologic description, geological name, thickness, depth and fracture pressure.

H. OPERATING DATA - Submit the following proposed operating data for each well (including all those to be covered by area permits): (1) average and maximum daily rate and volume of the fluids to be injected; (2) average and maximum injection pressure; (3) nature of annulus fluid; (4) for Class I wells, source and analysis of the chemical, physical, radiological and biological characteristics, including density and corrosiveness, of injection fluids; (5) for Class II wells, source and analysis of the physical and chemical characteristics of the injection fluid; (6) for Class III wells, a qualitative analysis and ranges in concentrations of all constituents of injected fluids. If the information is proprietary, maximum concentrations only may be submitted, but all records must be retained.

I. FORMATION TESTING PROGRAM - Describe the proposed formation testing program. For Class I wells the program must be designed to obtain data on fluid pressure, temperature, fracture pressure, other physical, chemical, and radiological characteristics of the injection matrix and physical and chemical characteristics of the formation fluids.

For Class II wells the testing program must be designed to obtain data on fluid pressure, estimated fracture pressure, physical and chemical characteristics of the injection zone. (Does not apply to existing Class II wells or projects.)

For Class III wells the program must be designed to obtain data on fluid pressure, fracture pressure, and physical and chemical characteristics of the formation fluids if the formation is naturally water bearing. Only fracture pressure is required if the formation is not water bearing. (Does not apply to existing Class III wells or projects.)

J. STIMULATION PROGRAM - Outline any proposed stimulation program.

K. INJECTION PROCEDURES - Describe the proposed injection procedures including pump, surge, tank, etc.

L. CONSTRUCTION PROCEDURES - Discuss the construction procedures (according to §146.12(b) for Class I) to be utilized. This should include details of the casing and cementing program, logging procedures, deviation checks, and the drilling, testing and coring programs, and proposed annulus fluid. (Request and submission of justifying data must be made to use an alternative to a packer for Class I.)

M. CONSTRUCTION DETAILS - Submit schematic or other appropriate drawings of the surface and subsurface construction details of the well.

N. CHANGES IN INJECTED FLUID - Discuss expected changes in pressure, native fluid displacement, and direction of movement of injected fluid. (Class II and III wells only.)

O. PLANS FOR WELL FAILURES - Outline contingency plans (proposed plans, if any, for Class II) to cope with all shut-ins or well failures, so as to prevent migration of fluids into any USDW.

P. MONITORING PROGRAM - Discuss the planned monitoring program. This should be thorough, including maps showing the number and location of monitoring wells as appropriate and a discussion of monitoring devices, sampling frequency, and parameters measured. If a manifold monitoring program is utilized, pursuant to §146.23(b)(5), describe the program and compare it to individual well monitoring.

Q. PLUGGING AND ABANDONMENT PLAN - Submit a plan for plugging and abandonment of the well including: (1) describe the type, number, and placement (including the elevation of the top and bottom) of plugs to be used; (2) describe the type, grade, and quantity of cement to be used; and (3) describe the method to be used to place plugs, including the method used to place the well in a state of static equilibrium prior to placement of the plugs. Also for a Class III well that underlies or is in an exempted aquifer, demonstrate adequate protection of USDW's.

R. NECESSARY RESOURCES - Submit evidence such as a surety bond or financial statement to verify that the resources necessary to close, plug or abandon the well are available.

S. AQUIFER EXEMPTIONS - If an aquifer exemption is requested, submit data necessary to demonstrate that the aquifer meets the following criteria: (1) does not serve as a source of drinking water; (2) cannot now and will not in the future serve as a source of drinking water; and (3)

the TDS content of the ground water is more than 3,000 and less than 10,000 mg/l and is not reasonably expected to supply a public water system. Data to demonstrate that the aquifer is expected to be mineral or hydrocarbon producing, such as general description of the mining zone, analysis of the amenability of the mining zone to the proposed method, and time table for proposed development must also be included. For additional information on aquifer exemptions, see 40 CFR 144.7 and 146.04.

T. EXISTING EPA PERMITS - List program and permit number of any existing EPA permits, for example, NPDES, PSD, RCRA, etc.

U. DESCRIPTION OF BUSINESS - Give a brief description of the nature of the business.

Attachments to Permit Application

Class	Attachments
I	
new well	A, B, C, D, F, H - S, U
existing	A, B, C, D, F, H - U
II	
new well	A, B, C, E, G, H, M, Q, R; optional - I, J, K, N, O, P, U
existing	A, E, G, H, M, Q, R - U; optional - J, K, N, O, P, Q
III	
new well	A, B, C, D, F, H, I, J, K, M - S, U
existing	A, B, C, D, F, H, J, K, M - U
Other Classes	To be specified by the permitting authority

Attachment 4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

Re: Information on Class V Injection Wells for Underground Injection Control Program of the Environmental Protection Agency (EPA)

To whom it may concern:

As required by EPA regulations [Title 40 of the Code of Federal Regulations (CFR), Section 144.26], owners and operators of all Class V injection wells in American Samoa, Arizona, California, Hawaii, Nevada, and the Trust Territories must submit information about these wells to the EPA by June 25, 1985.

A well is defined as a "bored, drilled or driven shaft, or dug hole, whose depth is greater than the largest surface dimension (40 CFR 146.3)." Class V wells include a diverse group of wells used for residential, municipal or industrial purposes. A more detailed list of the types of Class V wells is enclosed (see attachment A).

Please provide EPA, Region 9 with information regarding Class V wells within your jursidiction or operation. Include information on all injection wells located in the states mentioned above. Questionnaire I should be completed for radioactive waste disposal wells, geothermal energy recovery wells, brine return flow wells, municipal and industrial disposal wells (other than those classified as Class I as defined in the enclosed attachment), air scrubbers waste disposal wells (except if injection is for enhanced recovery of oil and gas in California), water softener regeneration brine waste disposal wells (except if injection is for enhanced recovery of oil and gas in California), wells used in experimental technologies and solution mining. Questionnaire II should be completed for all other well types of Class V wells.

Please complete either or both of these questionnaires to the best of your ability and return the information in the self-addressed envelope by June 25, 1985. If you do not have any or know of any Class V wells, please note on the questionnaires that you have no or know of no Class V wells. Your cooperation in this effort will be greatly appreciated. This information could result in the prevention or improvement of a water quality problem in the ground water in your area. If you have any questions, please contact Jayne Carlin of my staff at (415) 974-7116.

Sincerely,

Pete Uribe, Chief
Underground Injection Control Section
Water Management Division

Enclosures

QUESTIONNAIRE I

1. Facility Name: _____

Facility Address: _____

(Include County) _____

Telephone Number: ( ) _____

Name of Legal Contact: _____

Address of Legal Contact: _____

_____

Name of Owner: _____

Address of Owner: _____

_____

If subsidiary, name of parent co.: _____

Address of parent company: _____

_____

2. Ownership: ____ Private ____ Public ____ State ____ Federal ____ Indian Lands

3. Provide general information about the well(s):

Name or Identification of the well	Exact Location of Well*	Type of Well**	Status of Well***

****

* Exact Location of Well by Latitude and longitude to the nearest second; or by Township, Range, Section, Quarter-Sections; or by street address if located at a private address.

** For assistance in determining type of well, see Attachment A - pages 2 and 3.

***Codes for Well Status:

UC = under construction
AC = active
TA = temporarily plugged (no longer used but not plugged)
PA = permanently plugged & abandoned and approved by state

4. Explain the construction features of the well(s):

Name or Identification of Well	Date of Completion of Well	Casing and Cementing Records	Total Depth of Well	Average and Maximum Injection Pressure at Well Head	Date of Last Mechanical Integrity Test*

5. List the nature and volume of the fluids injected into the well:

Name or Identification of Well	Description of Injected Fluids**	Identification and Depth of Formation into which well is injected	Average and Maximum Injection Rate

6. Are any of the following fluids injected into the well(s)? If so, what is the volume and frequency of the injected fluid?

Washdown:

Stormwater:

Spills:

7. Identify and discuss each location, purpose, frequency of use and depth of all disposal wells on the site:

_____

_____

_____

8. Name and Title of Preparer of Questionnaire _____

* Liquid and gas pressure tests, annulus pressure tests etc. which test for leaks in casing, tubing or packer or significant movement into an underground source of drinking water through vertical channels adjacent to injection well bore.

** Include in your answer the process or business that produces the fluid and the chemical constituents of the fluid.

QUESTIONNAIRE II

Facility Name: _____

Facility Address: _____

(Include County) _____

Telephone Number: ( ) _____

Name of Legal Contact: _____

Address of Legal Contact: _____

_____

Name of Owner: _____

Address of Owner: _____

_____

Ownership: ____ Private ____ Public ____ State ____ Federal ____ Indian Lands

Number of Well(s)	Type of Well(s)*	Location of Well(s)	Status of Well(s)**

Name and Title of Preparer of Questionnaire _____

****

* For assistance in determining type of well, see Attachment A - page 2 and 3.

**Codes for Well Status:

UC = under construction
AC = active
TA = temporarily abandoned (no longer used but not plugged)
PA = permanently plugged & abandoned and approved by state

ATTACHMENT A

Region 9 UIC Program Information Sheet

General Information about the Underground Injection Control Program

The Safe Drinking Water Act (SDWA) of 1974, as amended, requires the U.S. Environmental Protection Agency (EPA) to establish a program which provides for the safety of our nation's drinking water. One part of this program, Underground Injection Control (UIC), has been established to prevent contamination of underground sources of drinking water due to improper design, construction and operation of injection wells. Although not recognized, the injection of waste materials is a very common practice. For example, the oil and gas industry operates tens of thousands of wells nationwide which inject brine or brackish wastewater in the production of oil and gas. Other types of injection wells include hazardous waste disposal operations wells, industrial waste disposal wells, municipal disposal operations wells, and nuclear storage and disposal wells.

Underground Sources of Drinking Water

By definition, an Underground Source of Drinking Water (USDW) is an aquifer or a portion of an aquifer:

which supplies any public water system; or

which contains significant quantity of ground water to supply a public water system; and

currently supplies drinking water for human consumption; or

contains fewer than 10,000 mg/l total dissolved solids (TDS) and is not an exempted aquifer.

An aquifer is a geological formation that is capable of yielding a significant amount of water to a well or to a springs. An exempted aquifer is an aquifer that cannot now and will not in the future serve as a source of drinking water, as determined by EPA.

Well Classification

A well is defined as a bored, drilled or driven shaft or dug hole whose depth is greater than the largest surface dimension. There are five classes of injection wells which are regulated by the UIC program. A specific well classification is made by determining the type of fluid to be injected and the geologic area into which the fluid is to be injected. Injection well classes are summarized as follows:

Class I — Class I wells are municipal and industrial disposal wells (including wells used by generators of hazardous waste and owners of hazardous waste management facillities) which inject fluids below the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

Class II — Class II wells are associated with oil and gas production or liquid hydrocarbon storage. These wells inject fluids which are brought to the surface for the enhanced recovery of oil and natural gas and for the storage of hydrocarbons.

Class III — Class III wells inject fluids for the extraction of minerals and are used in conjunction with solution mining of minerals.

Class IV — Class IV wells are used by generators of hazardous and radioactive wastes. These wells inject into a formation which within one quarter of a mile of the well contains an underground source of drinking water. Class IV wells are prohibited.

Class V — Class V wells are wells which do not meet the criteria listed for classes I through IV. Generally, wells covered under this classification inject non-hazardous fluids into or above formations that contain underground sources of drinking water. Class V wells include the following, but are not limited to these types of wells:

1. air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump (Questionnaire II);

2. cesspools including multiple dwelling, community or regional cesspools, or other devices that receive wastes which have an open bottom and sometimes have perforated sides. The UIC requirements do not apply to single family residential cesspools nor to non-residential cesspools which receive solely sanitary wastes and have the capacity to serve fewer than 20 persons a day (Questionnaire II);

3. cooling water return flow wells used to inject water previously used for cooling (Questionnaire II);

4. dry wells used for injection of wastes into a subsurface formation (Questionnaire II);

5. drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation (Questionnaire II);

6. recharge wells used to replenish the water in an aquifer (Questionnaire II);

7. salt water intrusion barrier wells used to inject water into a fresh water aquifer to prevent the intrusion of of salt water in the fresh water (Questionnaire II);

8. sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines regardless of whether or not it is a radioactive waste (Questionnaire II);

9. septic system wells used to inject the waste of effluent from a multiple dwelling, business establishment, community or regional business establishment septic tank. The UIC requirements do not apply to single family residential septic system wells, nor to non-residential septic system wells which are used solely for the disposal of sanitary wastes and have the capacity to serve fewer than 20 persons a day (Questionnaire II);

10. subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producting zone to reduce or eliminate subsidence associated with the overdraft of fresh water (Questionnaire II);

11. radioactive waste disposal wells other than Class IV (Questionnaire I);

12. injection wells associated with the recovery of geothermal energy for heating, aquaculture, and production of electric power (Questionnaire I);

13. wells used for solution mining of conventional mines such as stopes leaching (Questionnaire I);

14. wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts (Questionnaire I);

15. injection wells used in experimental technologies (Questionnaire I);

16. injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale (Questionnaire II);

17. agricultural drainage wells (Questionnaire II);

18. air scrubber waste disposal wells (except if injection is for enhanced recovery of oil and gas in California); and

19. water softener regeneration brine waste disposal wells (except if injection is for enhanced recovery of oil and gas in California).

NONHYDROCARBON-PRODUCING ZONE INJECTION DATA

DIST.	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJECTI STARTEI
1	Belmont Offshore	Repetto	30,800			
1	Huntington Beach	Lakewood				
		Alpha 1	37,200			
		Alpha 2	12,500			
1	Sawtelle	Puente	25,500			
1	Seal Beach	Repetto	29,700			
		Recent Sands	30,200			
1	Wilmington	Gaspur	28,200			
1	"	River Gravels	30,800			
2	Ramona	Pico	5,000	15,300 ppm NaCl	1,793,000	6/51
2	South Tapo Canyon	Pico	1,900 ppm NaCl	600 ppm NaCl	1,903,000	1/48
2	Oat Mountain	Undiff.	4,800	23,800 ppm NaCl	91,000	4/56
2	Simi	Sespe	4,300	25,500 ppm NaCl	695,000	6/48
3	Guadalupe	Knoxville	30,500			
3	Lompoc	Lospe	119,000			
3	Lompoc	Knoxville	30,500			
3	Russell Ranch	Branch Canyon	13,000			
3	San Ardo	Santa Margarita	3,700	5,600	81,800,000	11/66
3	"	Monterey "D" Sand	4,600	5,600	13,795,000	7/59
3	"	Monterey "E" Sand	6,400	5,600	6,057,000	3/68
3	Santa Maria Valley	Lospe-Franciscan	119,000			
3	Monroe Swell	Santa Margarita	3,700 ppm NaCl	9,600	?	1981
3	Point Conception	Camino Cielo	26,200			
3	Guadalupe	Franciscan	30,500			
4	Bellevue	Etchegoin	26,500 (Analysis from adjacent field)			
4	Bellevue, West	Tulare	12,000*			
4	"	Etchegoin	26,500 (Analysis from adjacent field)			
4	Blackwell's Corner	Tumey	2,100 -2,600*	29,000 ppm NaCl	400,000	5/75
4	Buena Vista	Tulare	9,200	5,300-36,500	50,798,000	11/72
4	Cal Canal	Tulare-San Joaquin	Excess of 10,000*	22,000	537,000	5/79
4	Canfield Ranch	Etchegoin	≈12,800-26,500 (Analysis from adjacent fields)			

*"Y" log calculation

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Attachment 5
Page 1 of 3

DIST.	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJECT STARTE
4	North Coles Levee	Tulare	12,900			
4	"	San Joaquin	40,000-45,600			
4	"	Etchegoin	30,100			
4	South Coles Levee	Tulare	12,000-13,300			
4	"	San Joaquin	12,000-16,900			
4	Greeley	Etchegoin	26,500			
4	Kern Bluff	Kern River	= 400- 900 (From Kern River Field)	600	551,500	7/80
4	"	Vedder	= 7,800-16,100 "	11,700-213,000	4,099,000	3/80
4	Kern Front	Santa Margarita	2,300	1,100		9/75
4	Kern River	Chanac	238- 925	374- 865	1,071,000	6/77
4	"	Santa Margarita	600- 2,600	475- 16,200	154,994,000	9/73
4	"	Vedder	7,800-16,200		33,204,000	
4	Lakeside	San Joaquin	21,500			
4	Los Lobos	Tulare	33,300*			
4	Midway-Sunset	Alluvium	No water	3,600- 25,700		7/59
4	Mount Poso	Walker	2,800*	830- 1,440	22,632,000	9/75
4	Mountain View	Kern River	4,660*	1,200- 3,800	3,681,000	12/65
4	Pleito	Chanac & Kern River	7,900-11,800	12,800-30,800	889,000	8/74
4	Poso Creek	Vedder	12,500			
4	Rio Viejo	San Joaquin	21,000*			
4	Rosedale	Etchegoin	26,500 (Analysis from adjacent field)			
4	Round Mountain	Olcese	2,700	1,337- 1,965	29,797,000	7/74
4	"	Walker	1,930	1,660 - 2,100	203,319,000	8/72
4	Seventh Standard	Etchegoin	17,100-30,000 (NaCl only)			
4	Strand	Etchegoin	8,600 (NaCl only)		1,195,000	7/62
4	"	San Joaquin	33,400	16,500-25,600 (NaCl only)		
4	Ten Section	San Joaquin	12,900			
5	Burrel	Santa Margarita	35,000 (Analysis from Helm field)			
5	"	Tulare-Kern River	20,500 (Analysis from S.E. Burrel field)			
5	Southeast Burrel	Tulare-Kern River	20,500			
5	Coalinga	Santa Margarita	8,244	3,100- 3,500	(145,000,000	2/63
5	"	Etchegoin-Jacalitos	2,650- 2,900	2,650-2,700	(	2/63
5	Gill Ranch Gas	Zilch	14,500			

"E" log calculation

DIST.	FIELD	FORMATION & ZONE	TDS OF ZONE WATER PRIOR TO INJECTION	TDS OF INJECTED WATER	VOLUME INJECTED (Barrels)	INJECT STARTE
5	Guijarral Hills	Etchegoin-Jacalitos	9,400	20,500	931,000	4/67
5	Helm	Santa Margarita	35,900		(143,000,000	
5	"	Tulare-Kern River	5,100-23,900	11,600-43,400	(	12/52
5	Jacalitos	Etchegoin-Jacalitos	33,749	5,500 (Cl only)	180,000	10/78
5	Kettleman North Dome	San Joaquin-Etchegoin	10,000	23,800-31,200	48,608,000	8/64
5	Raisin City	Pliocene	12,800-34,000			
5	"	Santa Margarita	35,000 (Analysis from Helm field)			
5	Riverdale	Pliocene	4,788-16,200		(72,626,000	7/57
5	"	Santa Margarita	35,900 (Analysis from Helm field)		(	
5	San Joaquin	Pliocene	17,100			
5	San Joaquin, Northwest	Basal McClure	90,000	18,500	Test well-no injection	
5	Turk Anticline	San Joaquin	3,700- 4,440	9,500- 9,800	466,000	11/76
6	Bunker Gas	Undiff.	1,200	11,000	388,000	1/75
6	Grimes Gas	Kione	16,800			
6	Grimes, West, Gas	Kione	34,000*			
6	La Honda (South Area)	Vaqueros	41,000			
6	Lathrop Gas	Starkey	15,400*			
6	River Break Gas	Capay	6,900*	7,000	93,000	7/75
6	Roberts Island Gas	Undiff.	18,000*			
6	Sutter Buttes Gas	Kione	2,500	4,600-23,000	644,000	7/77
6	Union Island Gas	Mokelumne River	5,000-6,000*	7,800	471,000	7/77
6	Wild Goose	Undiff.	2,800-5,000*	21,400	823,000	11/69

* "E" log calculation

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Attachment 6
Page 3 of 3

Attachment 2

Exempted 1425 Demonstration Aquifers

All oil and gas producing aquifers identified in Volumes I, II, and III of the California Oil and Gas Fields submitted in the 1425 Demonstration dated April 20, 1981 are exempted.

In addition, the following aquifers are also exempted.

DISTRICT	FIELD	FORMATION/ZONE
2	Ramona	Pico
2	Oat Mountain	Undiff.
2	South Tapo Canyon	Pico
2	Simi	Sespe
2	San Ardo	Santa Margarita
3	San Ardo	Monterey "D" Sand
3	San Ardo	Monterey "E" Sand
3	Monroe Swell	Santa Margarita
4	Blackwell's Corner	Tumey
4	Kern Bluff	Kern River
4	Kern Front	Santa Margarita
4	Kern River	Chanac
4	Kern River	Santa Margarita
4	Mount Poso	Walker
4	Round Mountain	Olcese
4	Round Mountain	Walker
4	Buena Vista	Tulare
4	Kern Bluff	Vedder
4	Kern River	Vedder*
4	Mountain View	Kern River
4	Pleito	Chanac
4	Pleito	Kern River
4	Poso Creek	Santa Margarita
5	Coalinga	Santa Margarita
5	Coalinga	Etchegoin-Jacalitos
5	Guijarral Hills	Etchegoin-Jacalitos*
5	Helm	Tulare-Kern River
5	Riverdale	Pliocene
5	Turk Anticline	San Joaquin
6	Sutter Buttes Gas	Kione*
6	Bunker Gas	Undiff.
6	Wild Goose	Undiff.

*Oil and/or gas producing

EXHIBIT B

MEMORANDUM OF AGREEMENT
BETWEEN THE
STATE WATER RESOURCES CONTROL BOARD
AND THE
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

Purpose

The purpose of this Memorandum of Agreement (MOA) is to outline the procedures for reporting proposed oil, gas, and geothermal field discharges and for prescribing permit requirements. These procedures are intended to provide a coordinated approach resulting in a single permit satisfying the statutory obligations of both parties to this MOA. These procedures will ensure that construction or operation of oil, gas, and geothermal injection wells and surface disposal of waste water from oil and gas and geothermal production does not cause degradation of waters of the State of California.

General

Responsibilities of the Agencies

The Department of Conservation, Division of Oil and Gas (CDOG) has the statutory responsibility to prevent, as far as possible, damage to underground and surface waters suitable for irrigation or domestic purposes resulting from the drilling, operation, maintenance, or abandonment of oil, gas, and geothermal wells (Public Resources Code Sections 3106 and 3714). In March 1983, CDOG received primacy from the Environmental Protection Agency (EPA) pursuant to the provisions of Section 1425(a) of the federal Safe Drinking Water Act that gives CDOG additional authority and responsibility to regulate Class II wells in the State. Class II wells are used to inject fluids into the subsurface that are related to oil and gas production.

The State Water Resources Control Board (SWRCB) and the nine California Regional Water Quality Control Boards (collectively RWQCB) have statutory responsibility to protect the waters of the State and to preserve all present and anticipated beneficial uses of those waters (Water Code, Division 7, Chapters 1 through 7).

Scope of Agreement

The following procedures have been formulated and adopted by the CDOG and SWRCB to: (1) simplify reporting of proposed waste discharges by the oil, gas, and geothermal operators; (2) achieve coordination of activity; and, (3) eliminate duplication of effort among the State agencies. As far as these agencies are concerned, the method of reporting proposed oil, gas, and geothermal underground injection and surface discharges will be uniform throughout the State. The attached maps show district and regional boundaries and office addresses.

The following procedures will not generally be applicable to injection wells or surface disposal methods used by operators to dispose of wastes other than produced water and fluids defined by the EPA as Class II. Other discharges (e.g., refinery wastes) must be issued waste discharge requirements or waivers through the appropriate Regional Water Quality Control Board (Water Code, Division 7, Chapter 4). Such discharges will not be subject to regulation by CDOG unless the subject disposal well is within the administrative limits of an oil, gas, or geothermal field. In such case, the CDOG must also issue a permit for the well construction (Public Resources Code Sections 3008 and 3203). The conditions of this permit should be in agreement with the waste discharge requirements for this well.

The CDOG personnel shall report all pollution problems, including spills to the ground surface or surface streams, to the appropriate Regional Board.

Procedures

Underground Injection

1. Application: Oil, gas, or geothermal operators must file an application for all proposed injection projects with the appropriate CDOG District office. The District office will forward a copy of the application to the appropriate Regional Board for its review and comment. Data to be included with the application shall include: (1) a chemical analysis, as appropriate, to characterize the proposed injection fluid considering the source of the fluid and/or the exposures the fluid has or will undergo before disposal; (2) a chemical analysis, as appropriate, from the proposed zone of injection considering the characteristics of the zone (to include name, location, depth and formation for well from which zone fluid was sampled); and, (3) depth, location, and injection formation of the proposed well. If the Regional Board wishes to comment prior to the issuance of a draft permit for review, comments shall be received by CDOG within 14 days.

2. Review and Consultation: During the review of the application, the CDOG, the Regional Board and the State Board shall consult with one another and local agencies, as necessary, and may require the applicant to submit additional data, as necessary, to demonstrate that the proposed injection will not cause a water quality problem. Additional data required by the RWQCB, if reasonably available, shall be forwarded upon request. Data regarded as confidential by CDOG, or the applicant, will be identified and kept confidential by the RWQCB.

3. Permit Preparation and Issuance:

   a. CDOG will prepare a draft permit, including monitoring requirements, for the injection in accordance with statutory obligations, furnishing a copy of the draft document to the appropriate Regional Board.

   b. The Regional Board will have the opportunity to comment on the draft requirements during the public review period established pursuant to the Memorandum of Agreement (MOA) between the CDOG and the Environmental Protection Agency (EPA).

   c. The Regional Board shall determine whether or not the draft requirements provide protection to ground and surface waters having present or anticipated beneficial uses. If the draft requirements are not adequate, the Regional Board shall, within 30 days, propose conditions or revisions which would satisfy Regional Board concerns. CDOG will not issue final requirements until Regional Board concerns have been satisfied.

      If no response is received from the Regional Board by the end of the public comment period, the requirements will be presumed to be acceptable to the Regional Board.

      CDOG will furnish a copy of the final requirements to the Regional Board.

Surface Discharge

1. Application: The oil, gas, or geothermal operator shall file a Report of Waste Discharge with the appropriate Regional Board. The Regional Board will review the Report of Waste Discharge in accordance with applicable state and federal requirements, including 40 CFR Part 435. No report need be filed when such a requirement is waived by the Regional Board pursuant to Water Code Section 13269.

   When a Report of Waste Discharge is not adequate in the judgment of the Regional Board, the Board may require the applicant to supply additional information as it deems necessary. If a surface disposal site is within the administrative limits of an oil, gas, or geothermal field, the Regional Board shall send a copy of the Report of Waste Discharge to the CDOG for review and comment when the report is complete. If CDOG wishes to comment, the Regional Board should receive comments within 14 days to ensure consideration of these comments during the drafting of waste discharge requirements.

2. Preparation and Adoption of Waste Discharge Requirements:

a. The Regional Board will prepare draft waste discharge requirements for the disposal of production waters by surface discharge. If a surface disposal site is within the administrative limits of an oil, gas, or geothermal field, a copy of the draft document shall be furnished to the appropriate CDOG District office.

b. The CDOG shall determine whether or not the draft requirements fulfill CDOG's statutory obligations related to water quality. If the draft requirements are not adequate, the CDOG shall, within 30 days, propose conditions to the Regional Board which would meet these statutory obligations. The Regional Board will not issue final requirements until CDOG concerns have been satisfied.

If no response is received from CDOG by the end of the public comment period, the requirements will be presumed to be acceptable to CDOG. The Regional Board will furnish a copy of the final requirements to CDOG.

Enforcement Coordination

After construction, CDOG will notify the appropriate Regional Board of any pollution problems noticed during its inspection activities. The Regional Boards will notify CDOG of any suspected violations of CDOG requirements uncovered during the Regional Boards' inspection activities.

If a determination is made by CDOG, or by the Regional Board, or the SWRCB, that an injection or surface disposal operation is violating the terms of its permit or is causing an unacceptable water quality problem, the permitting agency shall take any necessary actions to assure that compliance is achieved, or that the practice causing water pollution is abated forthwith. If necessary, the permitting agency shall order work to be done and/or order operation to be halted. Enforcement actions involving both statutory authorities should be coordinated among the parties involved in this MOA, but neither agency is precluded from taking independent enforcement action.

Modification of this Agreement

This agreement will be effective upon signature by the designated parties. The agreement may be modified upon the initiative of either party for the purpose of ensuring consistency with State or Federal statutes or regulations, or for any other purpose mutually agreed upon. Any such modifications must be in writing and must be signed by the Director of the Department of Conservation, the State Oil and Gas Supervisor, and the Chairman of the SWRCB.

Randall W. Ward	3-9-88
State Department of Conservation	Date
W. E. Neffland	3-4-1988
State Oil and Gas Supervisor	Date
W. Don Maughan	MAY 19 1988
Chairman, State Water Resources Control Board	Date
James D. Walton	MAY 19 1988
Executive Director, State Water Resources Control Board	Date

0895A/0028A

STATE WATER RESOURCES CONTROL BOARD
P. O. Box 100, Sacramento, CA 95801

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARDS

NORTH COAST REGION (1)

1440 Guerneville Road
Santa Rosa, CA 95403
(707) 576-2220

SAN FRANCISCO BAY REGION (2)

1111 Jackson Street, Rm. 6040
Oakland, CA 94607
(415) 464-1255

CENTRAL COAST REGION (3)

1102-A Laurel Lane
San Luis Obispo, CA 93401
(805) 549-3147

LOS ANGELES REGION (4)

107 South Broadway, Rm. 4027
Los Angeles, CA 90012
(213) 620-4460

CENTRAL VALLEY REGION (5)

3443 Routier Road
Sacramento, CA 95827-3098
(916) 361-5600

Fresno Branch Office

3614 East Ashlan Ave.
Fresno, CA 93726
(209) 445-5116

Redding Branch Office

100 East Cypress Avenue
Redding, CA 96002
(916) 225-2045

LAHONTAN REGION (6)

2092 Lake Tahoe Boulevard
P. O. Box 9428
South Lake Tahoe, CA 95731
(916) 544-3481

Victorville Branch Office

15371 Bonanza Road
Victorville, CA 92392
(619) 241-6583

COLORADO RIVER BASIN REGION (7)

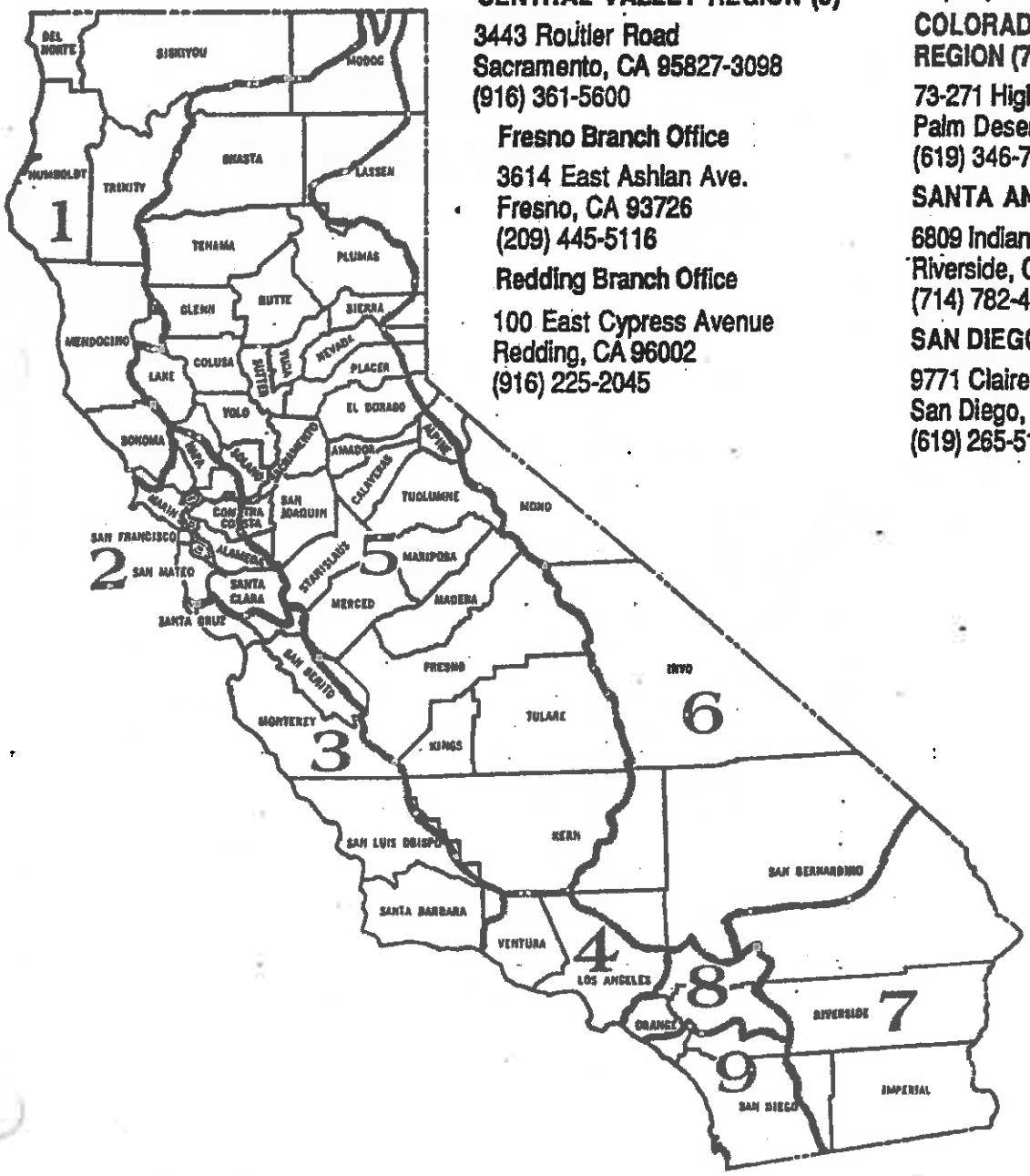
73-271 Highway 111, Ste. 21
Palm Desert, CA 92260
(619) 346-7491

SANTA ANA REGION (8)

6809 Indiana Avenue, Ste. 200
Riverside, CA 92506
(714) 782-4130

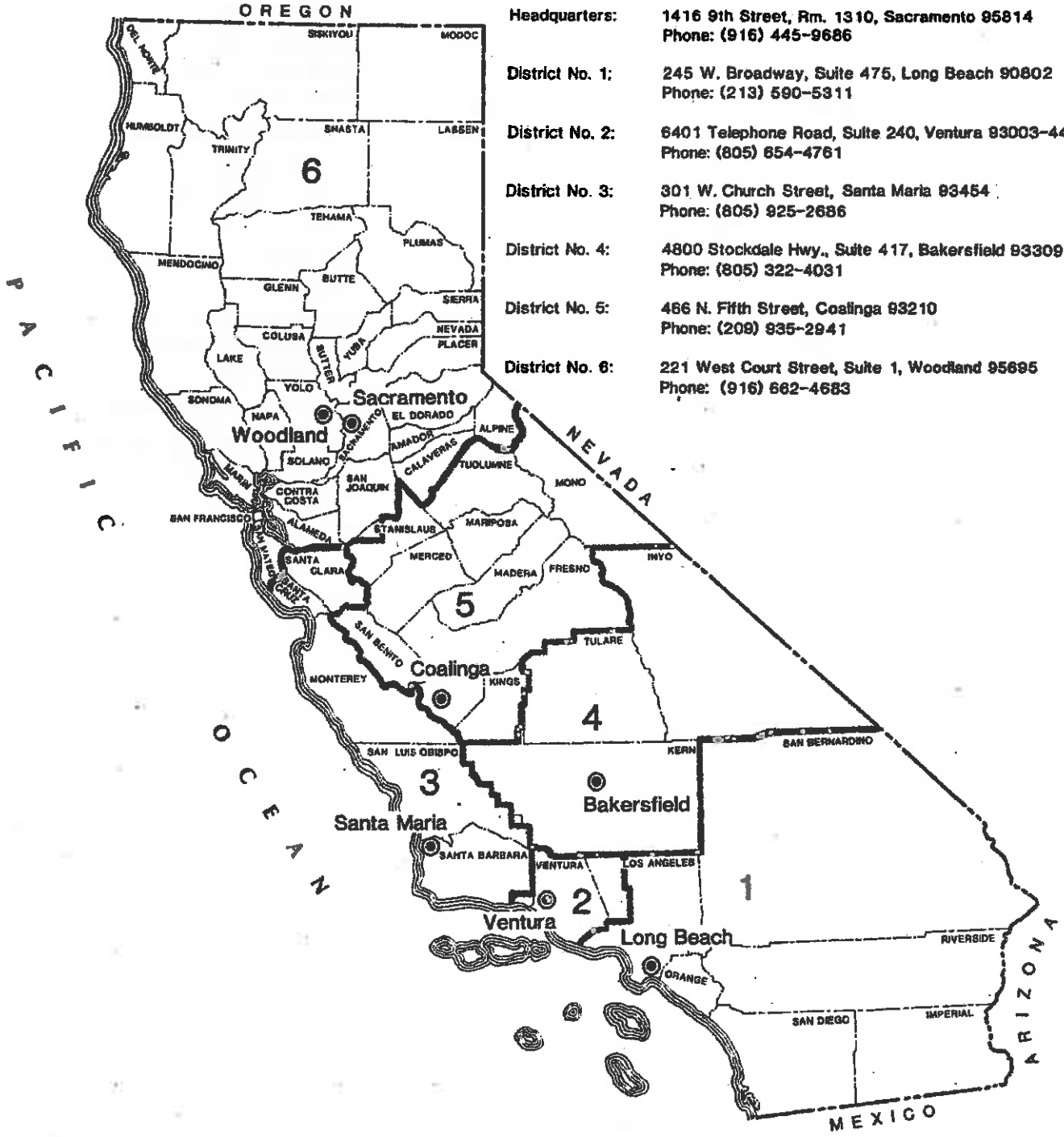
SAN DIEGO REGION (9)

9771 Clairemont Mesa Blvd. Ste. B
San Diego, CA 92124
(619) 265-5114



8-87

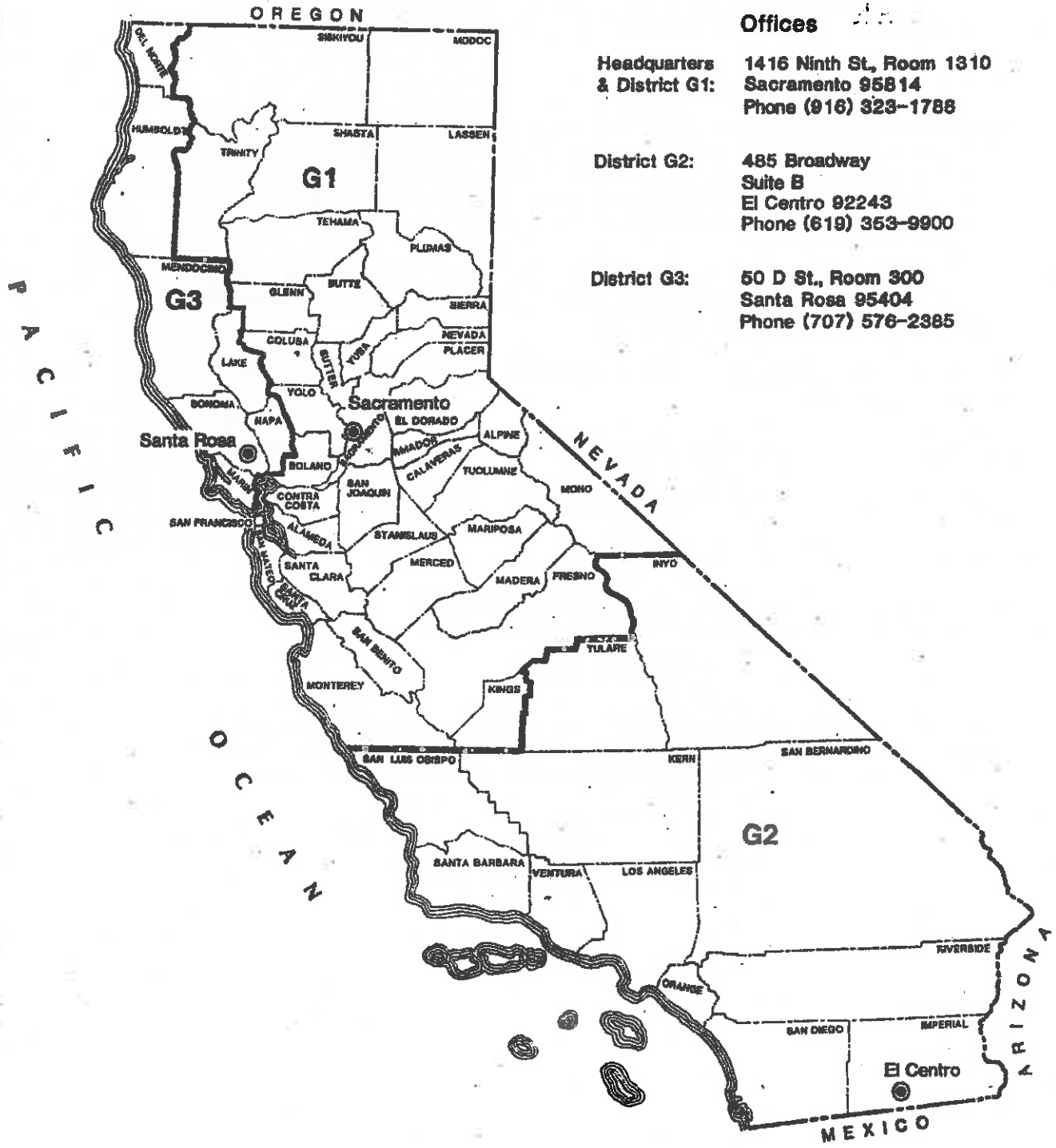
OIL AND GAS DISTRICT BOUNDARIES
of the
Division of Oil and Gas



Offices

Headquarters:	1416 9th Street, Rm. 1310, Sacramento 95814 Phone: (916) 445-9686
District No. 1:	245 W. Broadway, Suite 475, Long Beach 90802 Phone: (213) 590-5311
District No. 2:	6401 Telephone Road, Suite 240, Ventura 93003-4458 Phone: (805) 654-4761
District No. 3:	301 W. Church Street, Santa Maria 93454 Phone: (805) 925-2686
District No. 4:	4800 Stockdale Hwy., Suite 417, Bakersfield 93309 Phone: (805) 322-4031
District No. 5:	466 N. Fifth Street, Coalinga 93210 Phone: (209) 935-2941
District No. 6:	221 West Court Street, Suite 1, Woodland 95695 Phone: (916) 662-4683

GEOTHERMAL DISTRICT BOUNDARIES
of the
Division of Oil and Gas



Offices

Headquarters & District G1:
1416 Ninth St., Room 1310
Sacramento 95814
Phone (916) 323-1788

District G2:
485 Broadway
Suite B
El Centro 92243
Phone (619) 353-9900

District G3:
50 D St., Room 300
Santa Rosa 95404
Phone (707) 576-2385

OG61 (12/87/DWRR/1M)

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION 88- 61

APPROVAL OF AMENDMENTS TO THE MEMORANDUM OF AGREEMENT BETWEEN THE STATE WATER RESOURCES CONTROL BOARD AND THE DEPARTMENT OF CONSERVATION, DIVISION OF OIL AND GAS REGARDING CLASS II INJECTION WELLS

WHEREAS:

1. The State Water Resources Control Board (State Board) and the Department of Conservation, Division of Oil and Gas executed a Memorandum of Agreement (MOA) in August 1982 that outlined the procedures for reporting proposed oil, gas, and geothermal field discharges and the procedures for prescribing permit requirements for said discharges.

2. The CDOG received primacy to administer the federal Underground Injection Control Program for Class II wells in California from the U.S. Environmental Protection Agency (EPA) in March 1983.

3. The EPA revised its classification of materials that are considered Class II fluids in July 1987.

4. The EPA revised classification requires revisions to the MOA for consistency.

5. Additional revisions to the MOA are necessary to clarify procedures.

THEREFORE BE IT RESOLVED:

That the State Board approves the revised MOA with CDOG and directs the Chairman and Executive Director to sign said agreement.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on

MAY 19 1988

Maureen Marche'
Administrative Assistant to the Board

File: MOU-- MAY 11 1988

STATE WATER RESOURCES CONTROL BOARD MEETING
SACRAMENTO, CALIFORNIA
MAY 19, 1988

ITEM: 5

SUBJECT: CONSIDERATION OF AMENDMENTS TO THE MEMORANDUM OF AGREEMENT BETWEEN THE STATE WATER RESOURCES CONTROL BOARD AND THE DEPARTMENT OF CONSERVATION, DIVISION OF OIL AND GAS REGARDING CLASS II INJECTION WELLS

DIS-CUSSION: In August 1982, the State Water Resources Control Board (State Board) and the Department of Conservation, Division of Oil and Gas (CDOG) signed a Memorandum of Agreement that outlined the procedures for reporting proposed oil, gas, and geothermal field discharges and the procedures for prescribing permit requirements to ensure coordination and cooperation between the State and Regional Boards and CDOG. In March 1983, CDOG received primacy from the U.S. Environmental Protection Agency (EPA) to administer the federal Underground Injection Control Program for Class II wells in California. In July 1987, EPA revised its classification of materials that are considered Class II fluids to include air scrubber blowdown, water softener regeneration brine, and those fluids that are an integral part of oil and gas production operations that do not constitute a hazardous waste under 40 CFR Part 261. This change by EPA necessitates minor revisions in the State Board/CDOG Memorandum of Agreement. Staff has worked closely with CDOG and the Regional Board staffs in the development of proposed revisions to the Memorandum of Agreement that address EPAs changes in the classification of materials. The proposed revisions also include language believed necessary to clarify procedures between the Regional Boards and the CDOG Districts. The revised Memorandum of Agreement has already been signed by CDOG.

POLICY ISSUES: Should the State Board approve the revised Memorandum of Agreement with CDOG.

FISCAL IMPACT: Staff work associated with or resulting from this action is not expected to materially change and can be accommodated within budgeted resources.

REGIONAL BOARD IMPACT: Yes, all Regional Boards.

STAFF RECOMMEN-DATION: That the State Board approve the revised Memorandum of Agreement with CDOG and direct the Chairman and Executive Director to sign said agreement.

Policy
Fiscal
Legal

EXHIBIT C

Attachment

E&B Natural Resources (E&B) is an independent California-based oil producer with a very small operation in the eastern, unincorporated area of Alameda County. As originally drafted, certain portions of the ordinance could prevent E&B from conducting routine equipment maintenance and recycling wastewater in our long-standing, permitted operation.

The Revised Draft Ordinance – Options regarding Section 17.06.100 was provided at the recent hearing. We would like to request consideration of a few clarifying edits to that revision that would allow us to continue our operations but not alter a fracking prohibition.

REVISED DRAFT ORDINANCE - Options regarding Section 17.06.100

17.06.100 High-Intensity Oil and Gas Operations — Definition

1. For the purposes of this chapter, high-intensity oil and gas operations means any of the following uses:

   A. Well stimulation treatment — any treatment of a well designed to enhance oil or gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include~~, but are not limited to,~~ hydraulic fracturing treatments and acid well stimulation treatments, as defined in Title 14 California Code of Regulations Section 1761~~.~~:

   ~~B.~~ 1. Hydraulic fracturing or "fracking" — a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

   ~~C.~~ 2. Acid fracturing — a well stimulation treatment that, in whole or in part, includes pressurized injection of acid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

   ~~D.~~ 3. Acid matrix stimulation treatment — an acid treatment conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.

   ~~E.~~ 4. Acid well stimulation treatment - a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well

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stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.

B. ~~F.~~ Disposal or storage of the substances used in or the waste or byproducts of the uses listed in this section, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water, other than storage associated with transportation through the County for disposal or storage outside of the County. This section is not intended to prohibit disposal or storage of produced fluids in enclosed above ground storage tanks for injection into the formation (for oil and gas activities otherwise authorized).

C. ~~G.~~ Disposal or storage in pits or sumps of any wastewater or produced water that is a byproduct of the uses listed in 17.06.040(I). Pits or sumps do not include enclosed storage including but not limited to underground cellars and above ground secondary containment areas.

2. High-Intensity Oil and Gas Operations do not include 1) any use authorized under the UIC program for which a DOGGR permit has been obtained including produced water injection and water flooding, 2) storage tanks for produced water, and 3) routine well cleaning and maintenance activities including the use of acid under the Acid Volume Threshold as defined in Title 14 California Code of Regulations Section 1761.

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EXHIBIT D

California Department of Conservation
Division of Oil, Gas, and Geothermal Resources

RENEWAL PLAN FOR OIL AND GAS REGULATION

CHANGING PAST PRACTICES TO USHER IN A NEW ERA OF OIL AND GAS REGULATION

October 2015

David Bunn, PhD, Director
Steven R. Bohlen, PhD, State Oil and Gas Supervisor

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INTRODUCTION

The Department of Conservation's Division of Oil, Gas, and Geothermal Resources (Division) was established in 1915 as a regulator of oil and gas industry practices. The initial focus of regulation was the protection of oil and gas resources in the state from production practices that could harm the ultimate level of hydrocarbon recovery. Primary examples include well spacing requirements and authority to limit production rates. However, those regulations and the focus of the Division evolved and came to include the protection of public health, safety, and the environment.

California oil and gas operators produce approximately 600,000 barrels of oil each day. About 35 percent of the oil used in California comes from California oil and gas reservoirs. These resources are produced through more than 80,000 active oil and gas wells owned and operated by more than 450 operators and service companies. Most of the production comes from the San Joaquin Valley, but operators also produce oil and gas from coastal areas like the Los Angeles Basin, Ventura, Santa Barbara, and around Santa Maria. The Division oversees that production from 6 field offices with a present staff of over 275.

As the Division approached its 100th year, the need for thorough assessment of its performance and capacity became apparent. The call for that review came in many forms. In 2010, the Division requested an independent U.S. Environmental Protection Agency audit, and in 2011 that audit identified shortcomings in the Underground Injection Control (UIC) Program. Growing public concern about the practice of hydraulic fracturing raised questions about the Division's data collection and transparency. State lawmakers began to express concern that the Division's regulations and practices were inadequate to address modern industry activities. In 2012, as a part of the FY12-13 budget development process, the Department of Conservation described the changes needed to improve the policies, practices, and regulations administered by the Division to match society's current expectations.

All of these developments have helped to shape this Renewal Plan for the Division. The Plan will guide Division reforms over the next two years and accelerate the progress under way since 2012. It will serve as a means of measuring progress toward the goal of an effective regulatory program that ensures the protection of public health and the environment in the oil fields of California.

The Renewal Plan features four themes, each with multiple objectives:

- Regulatory Overhaul
- New Regulations for New Realities
- Modernized Data Management
- Ensuring a High-Quality Workforce

SUMMARY OF RENEWAL PLAN SCHEDULE

OBJECTIVE 1: REGULATORY OVERHAUL

Activity	Start	Finish	Status
Action 1.1 – Review Injection Projects			
Injection Project Reviews (all districts)	10/15/15	April '17	
Revisions to PALs, if needed (all districts)	Varies	Oct. '18	
Action 1.2 – Aquifer Exemption Review			
Obtain Exemption or Shut-In Injection Wells in Non-Exempt Aquifers	June '14	Feb. '17	IP
Action 1.3 – Review / Revise Existing Regulatory Standards			
Phase 1 Rulemakings	July '15	Dec. '16	IP
Phase 2 Rulemakings	Fall '16	Early '18	

Key: ✓ = Complete IP = In Progress

OBJECTIVE 2: NEW REGULATIONS FOR NEW REALITIES

Activity	Start	Finish	Status
Action 2.1 – Adopt New Rules for Well Stimulation (WST)			
Adopt Interim WST Regulations	12/13/13	1/1/14	✓
Adopt Permanent WST Regulations	11/15/13	7/1/15	✓
Action 2.2 – Adopt New Rules for Cyclic Steaming			
Cyclic Steam Rulemaking	July '15	Dec. '16	IP
Action 2.3 – Develop Capacity to Anticipate Regulatory Needs			
Establish Emerging Technologies and Regulations Unit	July '14	Feb. '16	IP

Key: ✓ = Complete IP = In Progress

OBJECTIVE 3: MODERNIZE DATA MANAGEMENT

Activity	Start	Finish	Status
Action 3.1 – Improve Well Information Management System and Business Processes	July '15	Middle '18 *	IP
Action 3.2 – Improve Transparency of Division Data			
Interim Well Stimulation Treatment Notice System Implemented	Oct. '13	March '14	✓
Well Finder Application Launched	Oct. '13	Jan. '14	✓
SB4-Compliant Post-WST Chemical Disclosure Site On-Line	Oct. '13	1/1/16	IP
SB1281 Reporting On-line	Oct '14	8/12/15	✓
Action 3.3 – Develop e-Permitting Functionality	July '15	Late '18 *	IP

Key: ✓ = Complete IP = In Progress

** = Dates are rough estimates/targets for IT development project*

SUMMARY OF RENEWAL PLAN SCHEDULE (CONT.)

OBJECTIVE 4: ENSURE HIGH-QUALITY WORKFORCE

Activity	Start	Finish	Status
Action 4.1 – Obtain Adequate Staffing			
FY10-11 -> FY12-13 BCPs			✓
FY14-15 -> FY15-16 BCPs		Spring '16	IP
Action 4.2 – Improve Recruitment and Outreach			
Develop on-line exam functionality for technical job classes	Fall '14	Spring '15	✓
Improve recruitment beyond traditional efforts	Spring '14	Ongoing	IP
Review/revise classifications to recognize work experience	July '15	Jan '16	IP
Action 4.3 – Reorganize Division			
Administrative reorganization under existing authority	Sept. '15	Sept. '16	IP
Review statutory organizational requirements for necessity	Sept. '15	Nov. '15	IP
Action 4.4 – Implement Comprehensive and Continuous Training			
Hire Technical Training Coordinator	Sept. 15	Dec. '15	IP
Improve Training Plan	July '15	Fall '15	IP
Establish safety video library and mandatory training	Sept. '15	May '16	IP
Action 4.5 – Develop Best Practices for Staff / Managers			
Internal assessment of current policies and procedures	Mar. '15	June '16	
Development of Best Practice Standards	Fall '15	July '16	IP
Implementation of Best Practice Standards	July '16	Ongoing	

Key: ✓ = Complete IP = In Progress

OBJECTIVE 1:

OBJECTIVE 1: REGULATORY OVERHAUL

The Division's existing regulations—and how they are applied—are under review. Some regulations have been in effect without change for decades. Some fail to take into account advances in drilling technology and our understanding of environmental and public health protection. The Division enforced some regulations inconsistently and, in some cases, incorrectly—such as permitting injection wells into areas not previously approved for injection. To correct the Division's past practices on underground injection control, oilfield operators will either: (1) receive authorization to continue to inject into formations because the formation fluids were already unsuitable for drinking or agricultural use; or (2) operators will be ordered to cease injection into those formations.

Action Item 1.1: Review Injection Projects

Under the Underground Injection Control (UIC) Program, oil and gas operators apply to conduct "projects," which usually comprise multiple wells drilled as a part of an overall system to extract oil and gas. Some wells in a "project" inject water, steam, or other gas into a hydrocarbon formation. That injection moves oil and gas toward production wells that are also part of the "project" and that bring the oil to the surface. A project may also include disposal wells. Thousands of projects have been approved since 1983, the year the U.S. EPA recognized the Division's UIC Program as being suitable to meet the requirements of the federal Safe Drinking Water Act for injection of fluids associated with oil and gas production.

The Division will conduct a review of every project it has approved. This review will examine all active injection projects in the state to determine if project files contain all required documentation and that the project reflects appropriate protection of groundwater sources.. Mechanical integrity tests will be confirmed. If additional conditions or reporting requirements are identified as necessary during the review, new Project Approval Letters (PAL)—which describe Division requirements of individual operators on each project—will be required.

Timeline:

Activity	Start	Finish	Status
Injection Project Reviews	10/15/15		
Districts 3 (Orcutt) and 6 (Sacramento)		May '16	
Districts 2 (Ventura) and 5 (Coalinga)		July '16	
District 1 (Cypress)		Aug. '16	
District 4 (Bakersfield)		April '17	
Revisions to PALs (if needed)			
Districts 3 (Orcutt) and 6 (Sacramento)		April '17	
Districts 2 (Ventura) and 5 (Coalinga)		Oct. '17	
District 1 (Cypress)		Feb. '18	
District 4 (Bakersfield)		Oct. '18	

Key: ✓ = Complete IP = In Progress

Note: Reviews to be conducted at the Division's District Office level. Schedule for completion varies by district because of the varied number of projects in each district and available staffing.

Action Item 1.2: Aquifer Exemption Review

In 1983, the U.S. EPA found that the Division's UIC Program meets federal Safe Drinking Water Act provisions related to injection of Class II fluids into the ground and delegated to the Division primary responsibility, or "primacy," in the regulation of Class II injection. Class II fluids are those associated with the production of oil and gas, most commonly salty water that comes to the surface with the oil and gas from the underground oil reservoir. Certain underground formations were identified by the Division and U.S. EPA as appropriate to receive injection of Class II fluids. These are called "exempt aquifers" because they are formations/aquifers that contain water that meets the standard for protection under the Safe Drinking Water Act, but some other characteristic makes the water in that formation unsuitable for drinking (i.e., it contains oil or some other naturally-occurring chemical like arsenic or boron). However, over the 30-year history of the UIC Program, the Division has permitted injection into some formations that were not approved to receive such injection.

The Division identified this problem to the U.S. EPA in mid- 2014. Since then, the Division, U.S. EPA and the State Water Resources Control Board have developed a plan to address wells injecting into non-exempt aquifers. The wells injecting into non-exempt aquifers have been identified, categorized by type (water disposal or enhanced oil recovery), and prioritized by the relative risk the wells pose to existing water supply wells. Some wells were found to pose an immediate threat and, as a result, the Division either ordered shut or obtained permit relinquishment for 23 of the 5,625 wells reviewed. As the review continues, the Division may order further wells immediately shut down to protect groundwater, though it is important to note that most of the remaining wells are injecting into known oil-bearing formations. For the other wells injecting into non-exempted formations, two paths exist. Either sufficient evidence must be presented by operators that the formation should be exempted by the U.S. EPA under the Safe Drinking Water Act, or the Division will order the operators to cease injection through those wells.

Timeline:

Activity	Start	Finish	Status
Obtain Exemption or Shut-In Injection Wells in Non-Exempt Aquifers	June '14		IP
WD Wells into sub-3000 mg/L TDS aquifers		10/15/15	✓
WD or EOR Wells into Historically Treated As Exempt Aquifers		12/31/16	IP
WD Wells into Non-Oil-Containing Aquifers With Water 3,000-10,000 mg/L TDS		2/15/17	
EOR Wells into Oil-Containing, sub-10,000 mg/L TDS Aquifers		2/15/17	

Key: ✓ = Complete IP = In Progress

- Shut-In Orders can and have been issued prior to the target completion dates above
- WD = Water Disposal well and is generally not into an oil-bearing formation.
- EOR = Enhanced Oil Recovery Injection for these projects is implicitly into a hydrocarbon bearing zone, the water within which could only be fit for beneficial use following extensive and expensive purification.

Action Item 1.3: Review / Revise Existing Regulatory Standards

All regulations administered by the Division are being reviewed and evaluated. In some cases, regulations that previously left broad latitude for interpretation will be made more specific. In other cases, new regulations are needed to address new technologies and to facilitate best practices. Some practices that were once too expensive for operators are now, thanks to improved technology, financially feasible and need to be regulated.

The Division will consider revision to existing regulations in two phases. In the first phase, the Division intends to address the following:

- Clarification of standards for zonal isolation of injection projects
- Clarification of the quality of water to be protected when constructing wells
- Update of well construction standards
- Clarification of the process and standards for setting maximum allowable pressures for injection operations.

In the second phase, the Division will address these following issues:

- Codification of ongoing UIC project review requirements
- Establishment of standards for securing idle wells
- Revision of idle well testing requirements

Timeline:

Activity	Start	Finish	Status
Phase 1 Rulemakings (*incl. informal and formal*)	July '15		
Identify interested parties and soliciting concerns and/or suggestions		Oct. '15	IP
Draft proposed regulations and conduct pre-regulatory consultations		Nov. '15	
Begin formal rulemaking processes		Jan. '16	
Conclude rulemaking		Dec. '16	
Phase 2 Rulemakings (*incl. informal and formal*)	Fall '16		
Identify interested parties and soliciting concerns and/or suggestions		Early '17	
Draft proposed regulations and conduct pre-regulatory consultations		Early '17	
Begin formal rulemaking processes		Early '17	
Conclude rulemaking		Early '18	

Key: ✓ = Complete IP = In Progress

Objective 2:

OBJECTIVE 2: NEW REGULATIONS FOR NEW REALITIES

Until 2013, the Division regulated the oil and gas industry under a statutory and regulatory construct that had changed little in the preceding four or five decades—while industry practice evolved steadily over those years. In some cases, the Division simply continued to apply existing general rules to practices that warranted specific rules. In other cases, existing rules loosely fit the evolving practice, and new regulations should have been developed to regulate those practices. The Division lacked the staff, skills, and processes to monitor evolving industry production practices and thus did not adequately anticipate or adapt to changing industry operations.

Action Item 2.1: Adopt New Rules for Well Stimulation (WST)

Prior to 2010, hydraulic fracturing and other forms of formation stimulation (often called "well stimulation") were considered "downhole" maintenance practices that did not require specialized regulation. To prevent damage to groundwater, the Division relied upon existing rules governing well integrity and provisions against fluid migration out of intended zones. In 2012, the Legislature gave clear direction to the Department of Conservation (Department) to begin rulemaking for hydraulic fracturing and the Department began such a process. In December 2012, Senate Bill 4 (Pavley) was introduced to require permitting for hydraulic fracturing and other forms of "well stimulation." Senate Bill 4 set aggressive deadlines for Department implementation of regulations.

The Department launched a rulemaking process for SB 4 almost as soon as it was signed into law in September 2013. The Department also drafted Emergency Interim Regulations that took effect the same date as SB 4—January 1, 2014. Those Interim Regulations were extended twice by the Department and once by the Legislature until July 1, 2015. Along with the adoption of Interim Regulations, the Division initiated and completed a lengthier, formal rulemaking process by the statutory deadline of January 1, 2015. Those formal regulations went into effect on July 1, 2015, the day after the expiration of the Interim Regulations, and they are the strongest well stimulation regulations in the nation.

Timeline:

Activity	Start	Finish	Status
Adopt Interim WST Regulations			
Initiate rulemaking		12/13/13	✓
Issue Interim Rules		12/13/13	✓
Interim Rules effective		1/1/14	✓
Adopt Permanent WST Regulations			
Initiate rulemaking	11/15/14		✓
Circulate draft regulations for public review/comment, including public hearings	11/15/13	1/14/14	✓
Circulate second draft of regulations for public review/comment, including public hearings	6/13/14	7/28/14	✓
Circulate third draft of regulations for public review	10/9/14	10/24/14	✓
Office Of Administrative Law approves regulations		12/30/14	✓
Permanent Regulations effective (by statute)		7/1/15	✓

Key: ✓ = Complete IP = In Progress

Action Item 2.2: Adopt New Rules for Cyclic Steaming

Oil operators have applied cyclic steaming to oil reservoirs since the 1980s to heat the oil-bearing formations so that the oil can flow more easily to the well and be pumped to the surface. Traditional enhanced oil recovery (EOR) techniques involve application of water or steam into a formation by one well and production through another well. In a cyclic steam operation, injection and production operations alternate or "cycle" through the same well. Steam might be injected for several hours or days, allowed to remain in the formation for some time, and then the well is put into production to bring oil to the surface. The Division has long regulated cyclic steam operations as if they were EOR operations. Cyclic steaming, however, poses potential risks that regular EOR operations may not experience. Cycling of hot and cooler periods may affect well bore integrity. In shallow formations, steam can migrate out of the intended injection zone, sometimes impacting the surface or presenting hazards to workers.

To ensure that cyclic steam operations do not damage wells, allow fluids to migrate into zones not intended for injection led to failures of zonal isolation, or harm oil field workers, the Division needs more specific and robust regulations for cyclic steam operations. The Division has started the process for adopting new regulations specific to cyclic steam operations. Those regulations are expected to be completed by December 2016.

Timeline:

Activity	Start	Finish	Status
Cyclic Steam Rulemaking	July, '15		
Identify interested parties and solicit concerns and/or suggestions		Oct., '15	IP
Draft proposed regulations and conduct pre-regulatory consultations		Nov. '15	
Begin formal rulemaking processes		Jan. '16	
Conclude rulemaking		Dec. '16	

Key: ✓ = Complete IP = In Progress

Action Item 2.3: Develop Capacity to Anticipate Regulatory Needs

The Division historically has reacted to changes in oil and gas production industry practices by applying existing regulations and trusting that risks have been ameliorated. The Division has been slow to react to emerging production trends. In the case of hydraulic fracturing, for example, the Division was focused on application of current law instead of strategizing how regulation should evolve with production practice.

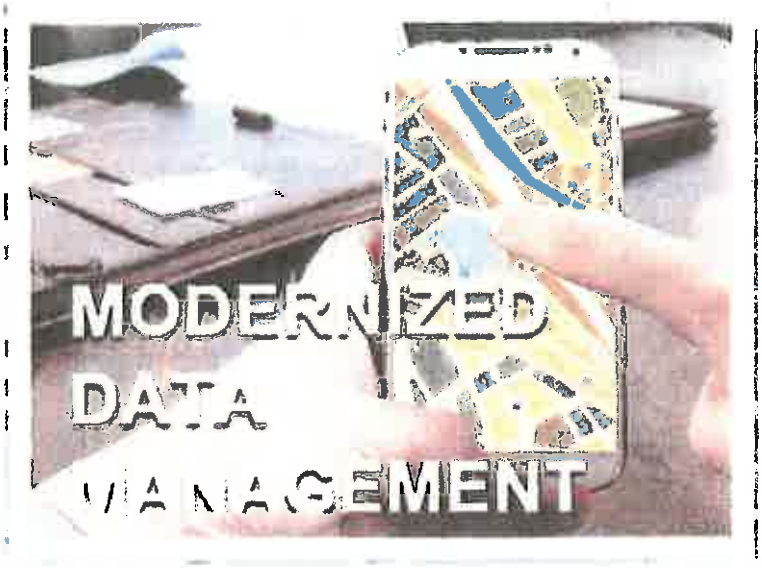
To create a regulatory culture that proposes solutions to risks posed by evolving production practices, the Division is creating a new "Emerging Technologies and Regulations" unit. A precursor is the "New Program Development" unit, which was charged with leading the development of well-stimulation regulations in 2013-14. This unit works with the industry, academia, and others to identify emerging production techniques, assess corresponding risks, and determine whether existing regulations sufficiently guard against risk. Where they do not, this unit is charged with developing draft regulations and working to adopt appropriate changes.

Timeline:

Activity	Start	Finish	Status
Establish Emerging Technologies and Regulations Unit			
Formation of New Program Development Unit in headquarters	July '14	Dec. '14	✓
Reorganization of Division	Sept. '15	Sept. '16	
Formal establishment of ETR Unit	Sept. '15	Feb. '16	

Key: ✓ = Complete IP = In Progress

OBJECTIVE 3:
MODERNIZE DATA MANAGEMENT



OBJECTIVE 3: MODERNIZE DATA MANAGEMENT

For decades, the Division relied upon paper filing to manage information. Oil production was tracked electronically, but other data about permitting of wells, well construction details, and well logs were maintained in paper form. Operators submit applications to drill wells on paper forms, for instance, and Division staff enter some of the data manually into Division systems. New regulations for well stimulation will require review of sophisticated industry analyses, including 3-dimensional subsurface modeling. The Division lacks the technology to recreate such models, which limits its ability to independently verify industry submittals. Lack of digital record-keeping hampers the Division's ability to analyze data and respond to public, legislative, and public inquiries.

Action Item 3.1: Improve Well Information Management System and Business Processes

The Division has begun the process to overhaul all business and information technology systems. The Division is working with the California Department of Technology to evaluate current data management systems and develop a plan to meet future data needs. At the same time, the Division is reviewing the various business processes employed within different Division districts. In some cases, the Division is creating business processes where none existed. These scoping and business process identification efforts form the foundation of the new well information system design. Subsequent steps in the procurement process include identifying a suitable data management solution from options that include (1) purchase of off-the-shelf software, (2) modification of off-the-shelf software, or (3) development of custom, stand-alone software. Development, testing and validation must occur before the final launch of the information system to users. However, those processes may occur somewhat in parallel -- instead of sequentially -- provided the Division and the Department of Technology can identify appropriate processes to manage project development risk. Once the system is usable for new data intake from permits and other ongoing Division activities, the Division will need to migrate legacy data from more than a century of well drilling history into the system.

Timeline:

Activity	Start	Finish	Status
Scoping of Well Information Management System	July '15	Nov '15	IP
Identifying/defining business processes	June '15	Nov '15	IP
Selection of business solution	Feb. '16		
Development	Feb '16	Dec. '16*	
Testing and validation	Middle '16*	Jan. '17*	
Launch	Middle '16*		
Legacy data ,migration	Nov. '15*	Middle '18*	

Key: ✓ = Complete IP = In Progress

** = Dates are rough estimates/targets for IT development project*

Action Item 3.2: Improve Transparency of Division Data

For most of the Division's history, the Division publicly presented data about the oil and gas industry once a year through an Annual Report of the Supervisor. The Division answered inquiries about particular wells (1) in an ad hoc manner or (2) by allowing operators or members of the public to review data on microfiche files physically held in district offices. The Division began scanning well records to PDF format files in 2004, though some districts experienced difficulties with the contractors who conducted the scanning jobs. Once those files were scanned to PDF format, however, the data were not significantly more useful than when it had been on microfiche. Data were available online, eliminating the need to travel to a district office to view a paper or microfiche file, but the PDF files were no more searchable than paper, making analysis of data an insurmountable chore.

With the 2013 enactment of Senate Bill 4 (Pavley), the Division is required to make more information available to the public. The Division met the requirement to begin providing disclosure of chemicals used in well stimulation jobs in an interim fashion. SB 4 envisions additional functionality being built into the disclosure system by January 1, 2016. The Department's information technology staff worked with the Division to develop a Well Finder application that works in conjunction with the disclosure webpage to provide a degree of web-based GIS capability for the public. Additionally, the Department is placing oil operators' water use records online, as reported under the provisions of SB 1281 (Pavley), enacted in 2014. Initial publication of those records has been complicated by the volume of data required, as well as operators' difficulty in gathering data, although the first quarter 2015 results now have been posted. The Division will further development its systems to increase transparency of data and the amount of data available, as well as enhance its online GIS capabilities.

Timeline:

Activity	Start	Finish	Status
Interim Well Stimulation Treatment Notice System	Oct. '13	March '14	✓
"WellFinder" application	Jan. '13	Jan. '14	✓
Interim post-WST chemical disclosure site on-line	Oct '13	Jan '14	✓
SB4-compliant post-WST chemical disclosure site on-line	Oct. '13	1/1/16	IP
SB1281 Reporting On-line	Oct. '14	8/12/15	✓

Key: ✓ = Complete IP = In Progress

Action Item 3.3: Develop e-Permitting Functionality

While many operators submit digital applications to drill wells or perform other oil field activities, the Division still incorporates the information by hand, sometimes printing the application and re-entering data. In some cases, the Division can accept electronic files from operators, provided the operators format the data in a manner that can be read by the Division's data management systems. In such cases, the electronic filing is conducted not by design of the permitting process, but as a work-around alternative to hand-entering the data.

The Division needs to establish electronic permitting. This would free Division staff to perform more productive regulatory duties, such as reviewing and analyzing proposals and conducting field inspections. Electronic functionality is being built as part of the overall Well Information Management System discussed in Action 3.1, and the timetable is not different than the final launch deliverable.

Timeline:

Activity	Start	Finish	Status
Incorporate e-permitting in Well Information Management System	July '15	Late '18	IP

Key: ✓ = Complete IP = In Progress

Objective 4:
Ensure High Quality Workforce

OBJECTIVE 4: ENSURE HIGH-QUALITY WORKFORCE

Until recent budget cycles, the Division did not request—and therefore was not given—additional staff and resources necessary to fulfill its growing mandates. The result was a dramatically understaffed organization that had to (1) take short-cuts, (2) establish work-around solutions to meet regulatory requirements, or (3) simply not complete the requirements. The staff in the Division have not received consistent high-quality training about the role of the regulator or about the industry practices they regulate. The industry work experience some staff brought to the Division is now outdated. Current industry pay rates far exceed entry-level pay rates for civil service, and retention of new staff is difficult. Lack of consistent training about evolving industry practices puts the Division at a disadvantage when staff evaluate proposed permits or conduct field inspections. Furthermore, the Division's organizational structure is outdated, having been built at a time when communication was slower and permitting decisions had to be made independently in district offices proximate to oil fields. That structure fostered insular thinking, a lack of cooperation, and inconsistent application of statewide rules.

Action Item 4.1: Obtain Adequate Staffing

The Division has requested resources for additional staff in six consecutive budgets and has been granted those staff. Some staff have been dedicated to UIC Program review and reform, others to implement recent legislation such as SB 4 (Pavley) from 2013 and SB 1281 (Pavley) from 2014.

These are welcome steps toward the Division having sufficient resources to meet workload requirements. However, bolstering staff is a slow process. Civil service hiring processes must be completed and new staff must be trained.

Newly-hired staff need to be brought to a functioning level before it can be determined whether resource levels need adjustment. The assessment is complicated when the Division is, at the same time, taking on new regulatory duties. The renewal process for the Division must proceed in a step-wise manner that allows for time to implement the last new mandate before imposing the next.

Timeline:

Activity	Start	Finish	Status
FY10-11 Budget Change Proposal (BCP) for UIC Program (34 PY)			✓
FY 11-12 BCP for Permitting and Enforcement staffing (36PY (6LT))			✓
FY 12-13 BCP for Compliance and Support staff (18PY)			✓
FY 14-15 BCP for SB 4 Implementation (65 PY (5LT))	July '14	March '16	IP
FY 15-16 BCP for UIC Program (23 PY)	July '15	June '16	IP
FY 15-16 BCP for Oil and Gas Data Management (21 LT PY)	July '15	June '16	IP

Key: ✓ = Complete IP = In Progress

Action Item 4.2: Improve Recruitment and Outreach

Technical positions such as Associate Oil and Gas Engineer and Senior Oil and Gas Engineer are critical to the Division's mission. Exams have been offered in the past, and the number and quality of candidates have been low. As a result, the Division lacked enough qualified candidates to fill all of its vacancies. Division recruitment and outreach have been limited to posting job announcements in publications obscure to most non-governmental employees.

To get better-qualified job candidates, the Division contracted with the Department of Human Resources (CalHR) to create an online exam series for two, specialized and technical classifications. The Division and CalHR entered into an agreement in late 2014 to create online exams continuously open to applicants. Development of the exams was expected to require approximately 12 months. The Division and CalHR dramatically shortened this timeline. These exams are now online and generating applicants continuously.

To improve the reach of the Division's recruitment efforts, the Division is embarking on outreach in non-traditional (for government agencies) venues. The Division has posted notices in professional journals targeting petroleum engineers and geologists. Department Human Resources staff visit undergraduate and graduate student recruitment fairs. Most recently, the Division consulted with LinkedIn about using the online professional networking site to promote Division employment to people with experience in engineering, petroleum geology, and related subjects.

In addition, the Division has learned through interviews and discussions with interested candidates that the technical competence required for these specialized classifications may be acquired in ways other than education and earning of degrees. Work experience may meet the classification specifications for knowledge, skills, and abilities, but the educational minimum requirements disqualify some otherwise experienced potential candidates. The Department is reviewing with CalHR the minimum educational qualifications to determine if work experience can be substituted in certain cases. We expect to have this process completed in the next six months to generate even more qualified candidates for our vacant positions.

Timeline:

Activity	Start	Finish	Status
Develop on-line exam functionality for technical job classes	Fall '14	Spring '15	✓
Improve recruitment beyond traditional efforts	Spring '14	Ongoing	IP
Review/revise classifications to recognize work experience	July '15	Jan '16	IP

Key: ✓ = Complete. IP = In Progress

Action Item 4.3: Reorganize Division

Currently, the Division is organized into six districts, each with a district office. These districts are geographically-based and structured around California's oil fields. Historically, district offices, headed by a "District Deputy," were authorized to make decisions on behalf of the State Oil and Gas Supervisor—a necessary feature of implementing statewide permitting requirements. The alternative would have created slow permitting processes as applications made their way to Sacramento before the Internet.

A review of Division business processes shows that this district model can lead to inconsistent application of statewide rules. There are some rules for which legitimate differences exist field-by-field. For instance, an oil field where wells are drilled to productive depths of 6,000 feet might legitimately have different well casing requirements than a field with wells drilling to 800-foot depths. However, some programs do require statewide consistency.

In spite of the challenges a district model poses, the district model must be maintained for other reasons. Division staff must regularly visit wells for inspections. Division district staff must be familiar with industry operations in order to be effective regulators, and familiarity requires frequent, direct contact.

The Division is reviewing options for reorganization to improve cooperation and consistency among districts, improve technical and programmatic leadership, and allow more focused, consistent application of specific regulatory programs with statewide application. Such programs include the UIC program, Well Stimulation regulation, Idle Well Management, Abandoned Well Remediation, Technical Training, and others. This envisioned reorganization will maintain district presence in the oil fields, but will recognize efficiency in modern travel options and in modern communication tools. Reorganization also will ensure a more consistent application of statewide priorities.

Division leadership believe effect reorganization can occur under existing authority. However, the full scope of intended reorganization may require revisiting the statutory construct that calls for "six districts." Reorganization likely will require input from many stakeholders as the Division balances needs including access to field operations, and access to the Division by the public and operators.

Timeline:

Activity	Start	Finish	Status
Administrative reorganization under existing authority	Sept. '15	Sept. '16	
Review statutory organizational requirements	Sept. '15	Nov. '15	

Key: ✓ = Complete IP = In Progress

Action Item 4.4: Implement Comprehensive and Continuous Training

The Division's technical staff have had little opportunity for professional training. As a result, many of the Division's regulatory staff are significantly less aware of the industry practices they regulate than are the operators the Division regulates.

The Division is establishing the position of a Technical Training Coordinator who will implement the Division's training plan. That plan will be developed in late 2015 and will include necessary training requirements for each level of engineer or other professional staff, as well as a list of knowledge, skills, and abilities that the Division will require professional staff person to maintain.

Training opportunities will include regular cross-district meetings of Division staff to develop teamwork and share important information gained from field oversight and observations. This forum also will serve as a means of sharing information gained from independent training courses completed by professional staff. In particular, the Division is exploring establishing ongoing training course commitments with academic and/or research institutions to ensure that Division personnel have the highest-level, current state-of-the-industry understanding of the production practices the Division regulates.

The Division already has begun implementing some training. The Department of General Services has agreed to produce a video safety library. The videos will provide safety training for field engineers, with emphasis on practices related to well abandonments and blow-out prevention equipment.

Timeline:

Activity	Start	Finish	Status
Hire Technical Training Coordinator	Sept. 15	Dec. '15	IP
Improve training plan	July '15	Fall '15	IP
Establish safety video library and mandatory training	Sept. '15	May '16	IP

Key: ✓ = Complete IP = In Progress

Action Item 4.5: Develop Best Practices for Staff / Managers

The Division has been reviewing its internal practices. The review occurred as a result of the establishment of new leadership in the Division in 2014, but also as a part of the review of internal business processes for use in establishing new data management systems. These reviews made clear that detailed, up-to-date training manuals for new employees did not exist. Further, Division practices differed widely among districts for implementation of Division regulations, for worker safety, or for administrative processes.

The Division has taken active steps in implementing best practices policies and procedures for its employees. The ongoing efforts include a comprehensive assessment of current Division practices, the development of best practice standards, and implementation of standardized policies and training to define best practices and increase Department effectiveness.

The initial step in improving the department's practices was a comprehensive internal assessment of current policies and procedures. The Division now seeks to achieve consistent "Best Practices" standards and procedures across the Division. When they are completed, these standards will be applied across the Division.

Timeline:

Activity	Start	Finish	Status
Internal assessment of current policies and procedures	Mar. '15	June '16	IP
Development of Best Practices Standards	Fall '15	July '16	IP
Implementation of Best Practices Standards	July '16	Ongoing	

Key: ✓ = Complete IP = In Progress

CONCLUSION

As the Division pursues the Objectives of this Plan, it will become a modern, efficient, collaborative, science-driven agency that intelligently and consistently regulates state oil and gas activities. The Division will use modern field tools, integrated with advanced data management systems, to raise the bar on oversight of the oil and gas industry. Safety will become an integrated cultural norm. Further, the Division will be much better connected with oil and gas-related research activities in industry, academia, and national laboratories. This will help the Division anticipate regulatory challenges and apply regulations with a higher level of understanding of the practices subject to regulation.

The Division will better be able to perform its duties with integrated collaboration of other state agencies to reduce the environmental impact of oil and gas development. Internal monitoring and compliance will be routine and fully integrated with all that the Division does so that our performance can be measured objectively. We will be able to support all interested parties because we will have a higher degree of transparency, allowing stakeholders, decision-makers and the public to more routinely observe Division activities and retrieve information of interest.

CLEAN WATER ACTION
CALIFORNIA

May 16, 2016

Alameda County Planning Commission
399 Elmhurst St # 141,H
Hayward, CA

Subject: Proposed Sections 17.06.100 Through 17.06.140 Of The Alameda County General Ordinance Code

Dear Commissioners:

These comments are submitted regarding proposed modifications to the Alameda County Zoning Ordinance to prohibit high intensity oil and gas operations in unincorporated areas of Alameda County. We are pleased to see that you are having this discussion. Clean Water Action's mission is to protect our environment, health, economic well-being and community quality of life. We are a national organization with over one million members. We have over 9,000 members in Alameda County.

Because of the undeniable threats of climate change, we believe it is vital to keep fossil fuels in the ground and to phase out their production as soon as possible. Therefore we strongly support Version A, as described in the May 2 2016 planning commission meeting, to place restrictions on oil and gas extraction activities that can be conducted within the County.

We are also concerned about the current practice of injecting oil production wastewater into the subsurface within the regulatory framework of the Underground Injection Control (UIC) Program. The Division of Oil and Gas and Geothermal Resources has approved over 6,000 oil and gas industry injection projects in violation of the federal Safe Drinking Water Act, putting potential drinking water resources at risk of contamination. It is our understanding that E&B Natural Resources currently operates one wastewater injection well in the Livermore field (API #00120031). In the face of dwindling water resources, additional injection activities should not be permitted in the County.

It is important that local authorities, such as Alameda County, provide leadership on the issues of oil and gas extraction and wastewater injection. Standing firm will show the state and federal government that prioritizing public and environmental health in policy decisions is good governance.

Sincerely,

Keith Nakatani

Keith Nakatani
Oil and Gas Program Manager

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www.cleanwateraction.org/ca

NATIONAL ASSOCIATION OF ROYALTY OWNERS–CALIFORNIA, INC.
Serving the Citizens Who Own California's Natural Resources

May 17, 2016

Alameda County Planning Commission
224 W. Winton Avenue
Hayward, CA 94544

RE: Proposed Alameda County Ordinance to Prohibit High-Intensity Oil and Gas Operations

Dear Chair Ratto and Commissioners:

I am writing on behalf of the California Chapter of the National Association of Royalty Owners (NARO-CA) and specifically representing members in Alameda County. NARO-CA is strongly opposed to this ordinance because of the negative impact it will have on mineral and royalty owners in Alameda County. The vast majority of people who are impacted by bans on oil and gas operations are the men and women (mostly women age 60 and above) who are dependent on the income that their property and mineral rights provide them. This lesser known group is not comprised of "wealthy" people, but of women and families that depend on this income to survive in an increasingly expensive world.

This ordinance would take away the rights of property owners to access the full value of his or her land. Private property rights are some of the most highly protected rights our Constitution provides. Every safe and permitted technology that the County bans, including water injection, could take away the income that royalty owners rely on. This is fundamentally wrong and unconstitutional. **If this passes, they may have claim not only to current value, but to value of the mineral deposit in its entirety.**

The rural property owners in Alameda County (that NARO-California represents) are environmentalists who take care of their resources and who want to make sure that it is passed down to future generations. I encourage you to "do the right thing" and stand with the property owners of Alameda County and not recommend this ordinance.

NARO-CA is an organization dedicated to serving the needs of the people in California who own California's natural resources. In California, we represent over 600,000 private citizens who receive oil and/or gas royalty payments in this state, including people in Alameda County.

Sincerely,

Edward S. Hazard
President

179 Niblick Road, #418 • Paso Robles, CA 93446-4845
Office: (805) 801-5877 • info@naro-ca.org • www.naro-us.org

May 17, 2016

Alameda County Planning Commission
224 W. Winton Avenue, Room 111
Hayward, CA 94544
Attn: Bruce Jensen, Senior Planner

RE: Proposed Alameda County Ordinance to Prohibit High-Intensity Oil and Gas

Dear Chair Ratto and Commissioners:

As you know, **E&B does not conduct hydraulic fracturing in Alameda County.** However, it appears that, with the objective of prohibiting fracking, the County is potentially expanding its reach by regulating water injection that sometimes may be referred to as "waterflooding". Our operations are permitted by a variety of federal, state and local agencies based on applications that can be more than 100 pages long, and that are additionally accompanied by lengthy, technical studies. **Instead of regulating water injection activities, we request that the County participate in the regulatory public process.**

During your last hearing, E&B was asked about the detrimental impacts of Version A on our normal operations. They are summarized as follows with more detailed information below.

1. Version A prohibits a means to dispose of produced water.
2. The proposed findings do not support banning water injection.
3. Version A prohibits routine maintenance using diluted acid.
4. Version A creates new definitions for standard, regulatory terms.
5. Vested rights process unfairly penalizes E&B.

1. **Version A prohibits a means to dispose of produced water.**
   This term "waterflooding" is causing confusion because it is a very general term that is applied to a variety of oil producing scenarios. While some may envision "flood" as a natural disaster introducing excess amounts of water to a location, there is no such "flood" in our case. For E&B, the "flooding" provides an environmental means of disposing of our produced water.

   E&B currently has permits to recycle our produced water to the oil reservoir. However, **our recycling of produced water could be reclassified by the Department of Conservation Division of Oil, Gas and Geothermal Resources (DOGGR) as waterflooding** pending the outcome of statewide

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1600 Norris Road, Bakersfield, CA 93308; phone (661) 679-1700

regulatory reviews they are undertaking. Water disposal and waterflooding need to be allowed for E&B to have certainty about our current operations.

Based on the discussions and direction from DOGGR, we are planning to apply for a waterflood permit even though our operations will not materially change. This will return the produced water deeper into the reservoir and reassign the function of up to two existing wells to water injection. The current injection well would be reassigned to the function of production. No external water is or will be used.

2. **The proposed findings do not support banning water injection.**
The proposed findings discuss well stimulation. Unfortunately, considerable confusion seems to exist about the differences between fracking and water injection as applied by E&B in Livermore. For the record and to be clear, these are completely different activities and regulated under separate regulatory regimes.

Produced water injection is very common in oil field operations. About 60 percent of California's oil production is a result of water injection wells[1].

At your last meeting, Alameda County Against Fracking (ACAF), who demands the banning of waterflooding, was asked what harm has come from waterflooding and could not cite even one example of proven groundwater contamination in Alameda County or the state.

DOGGR is currently conducting an extensive review of all injection wells related to oil and gas production in the state. During this review process, DOGGR has stated that there are no health issues associated with the current Underground Injection Control (UIC) program in California: "the analytical data from the water supply wells that the State ordered to be tested have not shown any contamination of the water supply wells by oil and gas injection activities."[2]

In cooperation with the County, we facilitated the sampling and testing of the groundwater. The tests confirmed that there was no impact whatsoever to the groundwater. After decades of oil field operations and water injection in Alameda, there has been absolutely no groundwater contamination during this entire time.

3. **Version A prohibits routine maintenance using diluted acid.**
E&B must remove scale build up in the pipes to prevent clogging about once a year. There is a regulatory definition for "Acid Volume Threshold." Any use

[1] http://www.conservation.ca.gov/dog/general_information/Pages/class_injection_wells.aspx.
[2] Letter from DOGGR to U.S. EPA, Page 5 (Feb. 6, 2015).

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of a volume equal to or greater than the Acid Volume Threshold for the operation is assumed to be a well stimulation treatment. E&B keeps our routine maintenance diluted acid use under this threshold volume. Allowance for continued use of routine maintenance below the Acid Volume Threshold should be referenced in the ordinance.

It should be noted that this type of acid use is common in a number of settings, such as swimming pools and jacuzzi tubs. The acid E&B uses converts to inert products, water and carbon dioxide, and poses no threat to the environment.

4. **Version A creates new definitions for standard, regulatory terms.**
Version A either fails to provide definitions or creates new definitions which are different from existing regulatory definitions.

Imposing definitions that differ from those of the regulatory agencies currently authorized to govern oil operations creates uncertainty at best and potential legal complications if they conflict. One example is "well stimulation". The ordinance has taken sections from the regulatory definition of "well stimulation" and "well stimulation treatment". Hydraulic fracturing, acid stimulation and acid well maintenance are examples of well stimulation according to State regulation. For your reference, the Department of Conservation California Code of Regulation Chapter 4, Sections 1761 and 1781 define these terms.

Another example is not including a regulatory definition of ponds or sumps, yet they are proposed to be prohibited in traditional oil and gas operations. An "oil sump" is defined in state regulations as "...any open depression or basin in the ground, whether manmade or natural, which contains oil or a combination of oil and water."[3]

E&B recommends that the State language should simply be referenced in the County Ordinance.

5. **Vested rights process unfairly penalizes E&B.**
E&B does not deserve to be swept into this anti-fracking ordinance and we hope traditional oil operation activities will not be prohibited. If it does occur, as the only operator, this section unfairly singles out E&B with a requirement to prove vested rights.

[3] Public Resources Code, Section 3780.

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It is typical for the County to allow a business to operate as a non-conforming use without proving their rights. We estimate that it would cost us in excess of $100,000 to prove our vested rights. This seems punitive to our small business. Further, with such a process there is no guarantee that such rights will be granted and we may have to suffer further detrimental consequences related to operations that continue while going through what could be a lengthy process.

While E&B does not conduct fracking, we do conduct permitted water injection activities. This activity is heavily regulated by agencies with the resources to do so.

As Version A was presented at the hearing, specific definitions and prohibitions in the draft ordinance intended to disallow fracking anywhere in Alameda County would inadvertently prohibit both traditional and routine activities in our operation, even though they have nothing to do with fracking. **The resulting consequences prohibit E&B's current operations.**

We respectfully request your affirmative action to exclude our traditional operations from prohibitions in this ordinance and our staff is available to answer questions you may have.

Sincerely,

Amy Roth

Amy Roth
Public and Government Affairs Director

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May 19, 2016

Alameda County Planning Commission
224 W. Winton Avenue Room 111
Hayward, CA 94544
Attn: Bruce Jensen, Senior Planner

RE: Alameda County Ordinance to Prohibit High-Intensity Oil and Gas

Dear Chair Ratto and Commissioners:

In a letter to you dated May 17th, E & B Natural Resources wrote of perceived detrimental effects to its business posed by the proposed ordinance banning fracking and enhanced oil recovery methods. Alameda County Against Fracking would like to respond to several points made in E&B's letter.

Sincerely yours,

Rebecca Franke

(for Alameda County Against Fracking)

As ACAF has clarified previously, the draft ordinance has always prohibited stimulation methods, such as hydraulic fracturing, and enhanced oil recovery (EOR) methods, such as waterflooding. While we appreciate E&B's apparent acceptance of a ban on fracking, that alone is not sufficient to protect the health and safety of Alameda County residents.

We oppose measures to allow waterflooding. And we are not confused in our understanding of the terms "wastewater injection" and "waterflooding." The former is for disposal of produced water. The latter is for specifically boosting oil production, sometimes involving the use of chemicals, as well as the possible use of fresh water from outside sources. There are two injection wells listed in the DOGGR database for E&B's Livermore operation (though only one may be operating currently, according to E&B's representative.) These two wells are identified distinctly as "WD" (water disposal), not "WF" (water flood).

By applying for a waterflooding permit, E&B crosses a threshold, beyond its current operations in two respects. Waterflooding can involve the use of chemicals. This point was discussed in an April 14 letter from the Center for Biological Diversity to the Planning Department:

> "Moreover, like fracking, EOR commonly employs harmful chemicals acting as surfactants, polymers, caustics, or biocides to facilitate the operation. Operators do not disclose the identities of chemicals used in such injections. Implying that EOR is simply the reuse of "water" is a gross mischaracterization that hides real risks from these high-intensity operations.
>
> In addition to these chemicals, which are toxic by themselves, EOR also causes naturally occurring, yet harmful substances to migrate underground. These include chemicals that are found in the oil itself, as well as toxic minerals such as arsenic and other heavy metals. The purpose of EOR is to mobilize substances underground. But that mobility is unpredictable and creates a danger that toxic chemicals that were relatively stable will migrate to new areas of the formation."[1]

Waterflooding can also involve the use of water from external sources, for example, from an irrigation district. The California Council on Science and Technology issued a report on well stimulation in 2015. While its focus was on fracking, it did touch on EOR, estimating that well operators used "from 2 to 15 times more freshwater for EOR than they used for well stimulation in 2013."[2]

While E&B may deny that it has any intent to use anything other than its produced water, its perceived future business needs may outweigh any such pledge made today.

In its letter, E&B asks for an example of groundwater contamination caused by waterflooding. Already the state has identified 10 water flood wells that have been injecting into underground sources of drinking water.[3] These aquifers contain high quality groundwater that was supposed to receive protections from water flooding and other injections pursuant to the Safe Drinking Water Act. Federal courts have explained that the Safe Drinking Water Act protects aquifers

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[1] Hollin Kretzmann, "Changes to Proposed Alameda County General Ordinance Code to Ban High Intensity Oil and Gas Operations," emailed to Bruce Jensen, April 14, 2016.
[2] California Council on Science and Technology, "An Independent Scientific Assessment of Well Stimulation in California," July 2015, vol. 2, 61.
[3] Steve Bohlen and Jonathan Bishop to Michael Montgomery, Joint letter to USEPA re Category II UIC wells, Oct. 15, 2015.

from all types of injections because even "injections of clean water into the ground can cause the movement of contaminants into an aquifer. For example, contaminants may dissolve into clean water as the injected water passes through the soil on its way to an aquifer."[4]

Instead, the state allowed these injections to occur for years. When the state legislature asked the Deputy Director of the State Water Board about the harm from these illegal injections, he responded, "Let me be clear so that it's not a misunderstanding. We believe that any injection into the aquifers that are not exempt has contaminated those aquifers."[5]

It's also worth noting the futility of groundwater monitoring measures, as described in the CCST report:

> However, groundwater monitoring alone does not ensure protection of water, nor will it necessarily detect contamination should it occur. The path followed by contamination underground can be hard to predict, and may bypass a monitoring well. Groundwater monitoring can give false negative results in these cases, and does nothing to stop contamination from occurring in any case."[6]

The best way to stop possible contamination is not to undertake risky and unnecessary operations, such as waterflooding, in the first place.

E&B mentions that while the company "... does not conduct fracking, we do conduct permitted activities. This activity is heavily regulated by agencies with the resources to do so." E&B has considerably more confidence in the Division of Oil, Gas, and Geothermal Resources (DOGGR) than the County should have.

As the result of an audit of Class II wells in 2011 by the U.S. Environmental Protection Agency (EPA), it was discovered that DOGGR had allowed oil companies to use approximately 2500 injection wells for disposal and enhanced recovery into aquifers which should have been off limits. The EPA found that the state's Class II Underground Injection Control (UIC) Program was not in compliance with the requirements of the Safe Drinking Water Act. The state is still working to remedy this situation by February 2017.

The EPA itself is seriously lagging in enforcement according to a report from the U.S. Government Accountability Office (GAO) published in 2016:

> "EPA has not collected inspection and enforcement information, or consistently conducted specific oversight activities, to assess whether state and EPA-managed programs are protecting underground sources of drinking water."[7]

And DOGGR itself found through an internal audit that it does not provide consistent oversight. The Los Angeles Times reported in 2015 that:

- "Since 2007, most oil projects in the L.A. area have not been subject to a required annual review."

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[4] United States v. King (9th Cir. 2011) 660 F.3d 1071, 1078.
[5] Joint Oversight Hearing: Senate Natural Resource and Water and Environmental Quality Committees, "Ensuring Groundwater Protection: Is the Underground Injection Control Program Working?" Jonathan Bishop speaking, March 10, 2015.
[6] California Council on Science and Technology, "An Independent Scientific Assessment of Well Stimulation in California," July 2015, vol. 2, 38.
[7] "Drinking Water EPA Needs to Collect Information and Consistently Conduct Activities to Protect Underground Sources," Report to Congressional Requesters, Feb. 2016, 16, http://www.gao.gov/products/GAO-16-281 (accessed May 17, 2016).

- "Testing and methods to ensure that fluids injected into the ground don't contaminate aquifers or drinking water sources are inadequate and need to be updated."
- "Well records were often incomplete or missing. At least 47% of the files did not contain information about well casing that is vital to understanding the integrity of wells."
- "To complete reports, regulators relied on self-reported information from operators rather than on information the agency could independently verify."[8]

It should be noted that E&B was one of several oil companies ordered by DOGGR to shutdown two of its injection wells in Kern County in 2015 for injecting into a protected aquifer and potentially contaminating a nearby water well.[9]

While Alameda may look to state agencies to provide strong regulation of any oil producer operating in the County, that expectation may not be met in practice. The reality is that state regulators have repeatedly demonstrated that they cannot be relied upon to protect our state's water resources.

E&B also states in its letter that "In cooperation with the County, we facilitated the sampling and testing of the groundwater. The tests confirmed that there was no impact whatsoever to the groundwater." This statement presumably refers to the drilling of monitoring wells in response to the leak from a tank at E&B's facilities detected last year. These tests were required by the Alameda County Department of Environmental Health as part of the remediation agreement signed onto by E&B. This agreement included the company paying a fine.

Environmental Health has overseen cleanup of the contamination and placement of the monitoring wells – not any state agency. And the effort was not undertaken at E&B's initiative; the County responded to a complaint from the surface property owner in the area. It should also be pointed out that the monitoring wells were drilled at appropriate locations for detecting any contamination caused by the leak. It is not possible to draw any broader conclusions pertaining to possible groundwater contamination from E&B's operations in Livermore.[10]

E&B makes the claim that "After decades of oil field operations and water injection in Alameda, there has been absolutely no groundwater contamination during this entire time." E&B has no basis for making this statement. To the best of our knowledge, the company acquired the wells in Livermore in the mid-2000's. We also suspect that there is little to no ongoing monitoring of the many capped production wells that operated in the County in the last century. In addition, regulation of the oil industry was extremely lax in the 1960s and 1970s; the UIC program did not begin until 1980.

It is worth noting that it is more straightforward to detect contamination stemming from surface activity than from underground activity. As noted in the CCST report:

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[8] Cart, Julie, "Oil well oversight in LA basin is 'inconsistent,' audit finds," *Los Angeles Times*, Oct. 8 2015, http://www.latimes.com/local/california/la-me-oil-report-health-20151009-story.html (accessed May 18, 2016).

[9] Michael B Marois, Lynn Doan, "Chevron, Linn Told to Halt California Wells on Water Concern," *Bloomberg Business*, March 3, 2015, http://tinyurl.com/p5qwnwz (accessed May 17, 2016).

[10] For more information about the leak and its remediation: Alameda County Environmental Health, LUFT/SLIC Program, available at http://www.acgov.org/aceh/lop/ust.htm, Case#: RO0003181, (accessed May 19, 2016).

> There is ample evidence of groundwater contamination from percolation pits in California and other states . . . For example, in California, the Central Valley Regional Water Quality Control Board determined that several percolation pits in Lost Hills and North and South Belridge had impacted groundwater, and ordered their closure . . .[11]

In this regard, we call your attention to the fact that E&B is in the midst of assessing whether water from its disposal pits at Poso Creek in Kern County contaminated groundwater. The California Regional Water Quality Control Board, Central Valley Region, issued a Cleanup and Abatement Order in 2015. The order requires E&B "to determine whether the discharge of wastewater has caused or threatens to cause a threat or condition of pollution or nuisance to groundwater."[12]

Groundwater is precious. As the GAO commented in reviewing EPA regulation of injection wells in 1989:

> "Once contaminated, groundwater can be difficult and expensive to clean. Unlike rivers and streams, groundwater moves very slowly; therefore, contaminants remain concentrated for long periods of time. Cleansing an aquifer contaminated by brines could entail either pumping fresh water into it, to accelerate its flow into the body of water into which the aquifer normally discharges, or pumping the water out of the aquifer. If contamination is extensive, however, and covers a large area, rehabilitation may be extremely costly. In these cases, if the aquifer is left to cleanse itself, the process can take as long as 250 years."[13]

A strong ordinance that prohibits both well stimulation and enhanced oil recovery will best serve Alameda County. It will encourage agriculture – worth a production value of more than $46 million dollars in 2014 – and ensure a healthier environment for all residents.[14]

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[11] California Council on Science and Technology, "An Independent Scientific Assessment of Well Stimulation in California," July 2015, vol. 2, 112.
[12] State Water Resources Control Board, GeoTracker program, available at http://geotracker.waterboards.ca.gov/search.asp, Case#: T10000006597, (accessed May 17, 2016).
[13] "Drinking Water Safeguards Are Not Preventing Contamination from Injected Oil and Gas Wastes," Report to the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, July 1989, 11, http://www.gao.gov/products/RCED-89-97.
[14] Alameda County Community Development Agency, "Crop Report," memo to California Department of Food and Agriculture, July 27, 2015, https://www.acgov.org/cda/awm/resources/2014cropreport.pdf

May 19, 2016

Alameda County Planning Commission
224 W. Winton Avenue, Room 111
Hayward, CA 94544
Attn: Bruce Jensen, Senior Planner

RE: Proposed Alameda County Ordinance to Prohibit High-Intensity Oil and Gas

Dear Chair Ratto and Commissioners:

We received the staff report and while we appreciate the effort and time spent by staff, we have serious concerns over the recommended ordinance.

To be clear, the ordinance version recommended by County staff seeks to ban our operations. We believe that we have the vested right to continue our operation and make small changes to our injection activities which could be defined by DOGGR as water disposal or waterflooding. We have explained in our prior letters why our proposed injection operations may be classified as waterflooding, and there is no material difference between these proposed activities and our current activities.

We do not frack but we do conduct permitted water injection and have done so for years without any detrimental consequence. The staff report identifies optional language which purports to authorize waterflood activities under certain conditions, although these conditions are not in any of the State laws or regulations, nor does the ordinance indicate how these conditions would be enforced. The optional language is unacceptable and encroaches into our permitted activities. It is also concerning that the County would be undertaking the task of becoming a regulator without authority to do so -- DOGGR has the authority to permit water injection. What will the County do when it is sued to enforce these conditions? **The County should eliminate any reference to injection activities from this proposed ordinance** and rely on the State agencies with the resources and expertise to evaluate and monitor injection wells – DOGGR and the State Water Board.

The need to rely on these State agencies is demonstrated by the staff report's use of the term "Waterflood Well Stimulation" to describe waterflood activities. Waterflooding is not well stimulation. The state regulatory definition of Well Stimulation specifically excludes waterflooding. Waterflooding has a completely separate and distinct regulatory regime.

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The general plan allows oil production under Conditional Use Permits. It is typical for an oil and gas operation to start with primary recovery and follow with secondary recovery (i.e. waterflooding). We will not use external water. **There is no evidence in the findings that water injection including waterflooding is high intensity, unsafe or there is an increased health risk.** This should be excluded from this proposed ordinance. Without evidence to support a ban on water injection including waterflooding, any action by the Planning Commission to prohibit such activities does not meet fundamental requirements for local regulation.

The staff report indicates that increasing oil production contributes to the use of oil generally. California only produces 38% of the oil the state requires. The state does not use less because it makes less. It imports the rest from the Middle East and Latin America. We are proud to supply our California produced oil to local Bay area refineries which provides local residents fuel for their vehicles.

We respectfully request your affirmative action to exclude our traditional injection operations from prohibitions in this ordinance. Our technical team will be available at the hearing to answer questions you may have.

Sincerely,

Amy Roth

Amy Roth
Public and Government Affairs Director

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ATTACHMENT E:

In-Depth Discussion of Underground Injection, Wastewater Injection and Waterflood Enhancement, Groundwater Impacts and Seismicity

Attachment E: In-Depth Discussion of Underground Injection, Wastewater Injection and Waterflood Enhancement, Groundwater Impacts and Seismicity

The following is intended to provide information in some detail about the above topics. Much of it is taken verbatim from the sources, mostly official government websites and communications with regulatory agencies (identified in the citations). In some cases, Staff has added emphasis in the form of ***bold italics.*** All of the information is current as of 2016 except as otherwise noted.

Introduction: Comparison of Wastewater Injection with Waterflood Well Enhancement

Much recent discussion on the Alameda County High Intensity Oil and gas Operations Ordinance has centered on whether waterflood well enhancement should be permitted, allowing E&B Natural Resources to continue producing oil after the most easily accessible oil is depleted. The optional language in Attachment B addresses this issue.

Currently, E&B has a DOGGR permit for primary oil extraction, and is permitted to inject produced wastewater back into the oil-bearing formation from which it came. E&B reports that for every barrel of oil produced, approximately nine (9) barrels of produced incidental water must be disposed by injection.

In general, wastewater injection is performed using an ordinary deep well and usually done at some pressure greater than gravity flow. It may be injected into the original formation from which it came, or it may be injected into a different, previously tapped or untapped formation (E&B injects the wastewater back into the original formation). Because the goal of DOGGR and other agencies is to ensure that injected water does not laterally migrate beyond the formation for which it is intended, before use, injection wells are "step-tested" to ensure that the formation may accept the projected amount of water and pressure without fracturing; after that, wells are pressure tested every year to ensure integrity of both the formation and the well casings. There are limitations on the chemical composition of the fluids that may be reinjected. Typically, wastewater injection produces no well enhancement at nearby production wells.

Injection wells are common statewide. There are an estimated 52,000 Class II injection wells in California alone, and of these, approximately 20% are Class II disposal wells. The other 80% are for waterflood, steamflood and cyclic steam. Waterflood enhancement resembles wastewater injection in most practical ways, but there are some differences. The table below on Page 2 describes these differences. Because waterflood enhancement increases oil production, it also contributes to use of that oil, which in turn increases the potential for resulting pollutant air emissions, including greenhouse gases methane and carbon dioxide.

Although the 52,000 California wells have presumably been initially step-tested and tested annually or semiannually for integrity, and estimated 6,000 of these wells do not meet the standards of the Federal Safe Drinking Water Act.

Wastewater Injection	Waterflood Well Stimulation
Typically performed using an ordinary Class II deep well, usually at some pressure greater than natural gravity flow	Typically performed using an ordinary Class II deep well, usually at some pressure greater than natural gravity flow
May be injected into original formation, or may be injected into a different formation	Water always injected into the *same formation* from which oil is produced
Wells initially "step-tested" to ensure that the formation may accept water and pressure without fracturing; thereafter, wells are pressure tested *every year*	Wells initially "step-tested" to ensure that the formation may accept water and pressure without fracturing; thereafter, wells are pressure tested *every OTHER year or as desired by operator*
Pressure limited to 95% of Step-Test determined formation fracture limit	Pressure limited to 95% of Step-Test determined formation fracture limit
Limitations on the chemical composition of the fluids that may be reinjected	Limitations on the chemical composition of the fluids that may be reinjected
Uses no water other than produced water from the oil production wells	*Sometimes uses imported water, surface water or groundwater* not derived from the oil production wells.
Produces no well enhancement at nearby production wells	*Produces well enhancement* at nearby production wells in the form of increased oil production
Approximately 20% of existing Class II wells statewide	A portion of approximately 80% of Class II wells statewide

The following resources describe in much greater detail the concepts of underground injection, wastewater injection and waterflood well enhancement.

A: California Department of Conservation, Division of Oil, Gas and Geothermal Resources, Oil, Gas & Geothermal - Injection Wells – website: (http://www.conservation.ca.gov/dog/general_information/Pages/class_injection_wells.aspx)

Injection wells have been an integral part of California's oil and gas operations for over 50 years. Currently, close to 52,000 oilfield injection wells are operating in the state. Injection wells are used to increase oil recovery and to safely dispose of the salt and fresh water produced with oil and natural gas.

Injection wells are classified by the U.S. Environmental Protection Agency into six classes according to the type of fluid they inject and where the fluid is injected, as follows:

- **Class I wells:** inject hazardous and non-hazardous wastes below the lowermost underground source of drinking water (USDW). Injection occurs into deep, isolated rock formations that are separated from the lowermost USDW by layers of impermeable clay and rock.
- **Class II wells:** inject fluids associated with oil and natural gas production operations. Most of the injected fluid is brine that is produced when oil and gas are extracted from the earth. *[These are the kinds of wells operated by E&B and other operators for water injection – Staff]*
- **Class III wells:** inject super-heated steam, water, or other fluids into formations to extract minerals. The injected fluids are then pumped to the surface and the minerals in solution are extracted. Generally, the fluid is treated and re-injected into the same formation.

- **Class IV wells:** inject hazardous or radioactive wastes into underground sources of drinking water. These wells are banned under the Underground Injection Control (UIC) program because they directly threaten public health.
- **Class V wells:** are injection wells that are not included in the other 4 classes. Some Class V wells are wastewater disposal wells used by the geothermal industry, but most are wells such as septic systems and cesspools. Generally, they are shallow and depend upon gravity to drain or "inject" liquid waste into the ground.
- **Class VI wells:** inject carbon dioxide (CO2) into deep underground subsurface rock formations for long-term storage, or geologic sequestration. The Division does not have primacy to regulate Class VI wells. Class VI wells are permitted and regulated though the US EPA.

In California, all Class II injection wells are regulated by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources, under provisions of the state Public Resources Code and the federal Safe Drinking Water Act. Class II injection wells fall under the Division's [Underground Injection Control] (UIC) program, which is monitored and audited by the U.S. Environmental Protection Agency. In 1983, the Division received EPA primary authority, *primacy,* to regulate Class II wells. The main features of the UIC program include permitting, inspection, enforcement, mechanical integrity testing, plugging and abandonment oversight, data management, and public outreach.

Frequently Asked Questions

How Many Injection Wells Are Used in Oil and Gas Operations In California? About 52,000 injection wells are used for waterflood, steamflood, cyclic steam, and water disposal. These wells are referred to as Class II injection wells in the Underground Injection Control (UIC) program.

Where Are They? Injection wells are found in many oil and gas fields located in the counties where oil and gas are produced. *[E&B has been permitted a single injection well as of May 2016 for wastewater injection – Staff]*

What Are They For? Class II injection wells are used to safely dispose of the salt and fresh water produced with oil and gas. Injection is often accomplished in a manner that will increase oil and gas production. About 15 times more water than oil is produced from California's oil and gas fields.

Does Injected Water Serve a Useful Purpose? Yes. In more than 95 percent of the Class II injection wells, water is injected into petroleum reservoirs to increase oil production. About 60 percent of California's oil production is a result of Class II injection wells.

Is Anything Besides Water Injected? Current state and federal regulations allow nonhazardous fluids produced from oil or gas wells and several other nonhazardous fluids associated with the production process to be injected into a Class II well. These other fluids include diatomaceous earth-filter backwash, thermally enhanced oil recovery cogeneration plant fluid, water-softener regeneration brine, air scrubber waste, drilling mud filtrate, naturally occurring radioactive materials (NORM), slurrified crude-oil, saturated soils, and tank bottoms.

What Is An Injection Well Like? After a well is drilled, sometimes to depths over 5,000 feet, steel pipe called casing is cemented in the hole. The casing and cement prevent fluids in different zones from mixing with each other or with injected fluids. The casing and cement are perforated opposite the injection zone. To provide an extra layer of protection, tubing is placed in the well to a point just above the perforations and a packer is used near the bottom of the tubing to seal it against the casing. The packer

prevents water from entering the space between the tubing and casing when water is injected down the tubing. Several tests are run to make sure the well is operating properly and the injected fluids are confined to the intended injection zone, and repeated on a periodic schedule.

What Is An Injection Zone Like? An injection zone is usually sandstone, a rock porous and permeable enough to accept injected fluids. Rock beds chosen for injection zones are covered by impermeable beds, like shale, that act as cap rocks, confining injected liquids in the porous beds.

How Is Produced Water Handled? After oil and gas are separated from the produced water at the producing well, the water is piped or trucked to the injection site. There, the water is transferred to holding tanks and filtered and pumped down a Class II injection well.

How Often Are Injection Wells Checked? All injection wells are monitored by [DOGGR] engineers to ensure the wells are operated properly and have mechanical integrity. Monitoring includes reviewing operational data and running tests like Mechanical Integrity Tests (i.e., spinner, temperature, and pressure tests and tracer surveys). In addition, most well sites are inspected annually by Division engineers. Samples of the injected fluids may be taken at any time to confirm compliance.

How Are Injection Wells Permitted? Operators of Class II injection wells must file for a permit with the Division. Before a permit is issued, the proposed injection project is studied by Division engineers and reviewed by the appropriate Regional Water Quality Control Board. Division engineers evaluate the geologic and engineering information, solicit public comments, and may hold a public hearing, if necessary. Injection project permits include many conditions, such as approved injection zones, allowable injection pressures, and testing requirements.

Are Injection Wells Safe? Yes. Class II injection wells provide a viable and safe method to enhance oil and gas production and dispose of produced fluids and other fluids associated with oil- and gas-production operations. In California, Class II injection wells have an outstanding record for environmental protection. A peer review conducted by a national organization, the Ground Water Protection Council, found the Division has an excellent program that effectively protects underground sources of drinking water.

B: U.S. Environmental Protection Agency, Underground Injection Control (UIC), Class II Oil and Gas Related Injection Wells – Website: https://www.epa.gov/uic/class-ii-oil-and-gas-related-injection-wells

Use of Class II Wells

Class II wells are used only to inject fluids associated with oil and natural gas production. Class II fluids are primarily brines (salt water) that are brought to the surface while producing oil and gas. It is estimated that over 2 billion gallons of brine are injected in the United States every day. Most oil and gas injection wells are in Texas, California, Oklahoma, and Kansas.

The number of Class II wells varies from year to year based on fluctuations in oil and gas demand and production. Approximately 180,000 Class II wells are in operation in the United States.

Class II wells fall into one of three categories.

- Disposal wells

- Enhanced recovery wells
- Hydrocarbon storage wells

Class II Well Types

Disposal wells

During oil and gas extraction, brines are also brought to the surface. Brines are separated from hydrocarbons at the surface and reinjected into the same or similar underground formations for disposal. Wastewater from hydraulic fracturing activities can also be injected into Class II wells.

Class II disposal wells make up about 20 percent of the total number of Class II wells.

Enhanced recovery wells

Fluids consisting of brine, freshwater, steam, polymers, or carbon dioxide are injected into oil-bearing formations to recover residual oil and in limited applications, natural gas.

The injected fluids thin (decrease the viscosity) or displace small amounts of extractable oil and gas. Oil and gas is then available for recovery. In a typical configuration, a single injection well is surrounded by multiple production wells that bring oil and gas to the surface.

The UIC program does not regulate wells that are solely used for production. However, EPA does have authority to regulate hydraulic fracturing when diesel fuels are used in fluids or propping agents. During hydraulic fracturing, another enhanced recovery process, a viscous fluid is injected under high pressure until the desired fracturing is achieved, followed by a proppant such as sand. The pressure is then released and the proppant holds the fractures open to allow fluid to return to the well.

Enhanced recovery wells are the most numerous type of Class II wells. They represent as much as 80 percent of the total number of Class II wells.

C. Justin L. Rubinstein (U.S. Geological Survey, Menlo Park, California) and Alireza Babaie Mahani (Pacific Geoscience Center, Geological Survey of Canada, Sidney, British Colombia, Canada), Myths and Facts on Wastewater Injection, Hydraulic Fracturing, Enhanced Oil Recovery, and Induced Seismicity, June 2015 https://profile.usgs.gov/myscience/upload_folder/ci2015Jun1012005755600Induced_EQs_Review.pdf

Wastewater Disposal: Waste fluids are often a byproduct of many oil and gas extraction operations. At times these fluids can be cleaned and reused or applied for other purposes. In other instances they are unsuitable for other uses and must be disposed. When waste fluids must be disposed, they are often injected deep underground into high-permeability formations, usually deeper than the production reservoirs, for permanent sequestration and isolation from oil/gas reservoirs and drinking-water aquifers (Fig. 2c). The wells in which these fluids are disposed are known as wastewater wells or salt-water disposal wells.

Underground disposal of wastewater has a lengthy history because it is typically considered an economic and safe option (Ferguson, 2015). The contents of wastewater can be highly variable. In some places, it is primarily spent hydraulic-fracturing fluid (e.g., Ohio and Arkansas), whereas in other locations wastewater

often consists mostly of formation brines that come to the surface at the same time as the oil and gas that is extracted. For instance, in Oklahoma, only 10% of the fluid injected into disposal wells is spent fluid that was initially used in hydraulic fracturing and cannot be reused (Murray, 2013). These formation brines (also termed produced water or wastewater) are typically salt water that is trapped in the same pore space as the oil and gas and comes up with the oil and gas. This salt water is often laden with dissolved salts, minerals, and occasionally other materials that make it unsuitable for other uses.

Injection rates of disposal wells range widely, with some wells injecting 100 barrels (16 m3)/month and other wells with rates exceeding one million barrels (160,000 m3/month). The Denver earthquakes of the 1960s, caused by injection of chemical waste at the Rocky Mountain Arsenal, were the first earthquakes to be identified as related to deep, underground injection (Evans, 1966; Healy et al., 1968). The largest earthquake in the sequence wasM4.9 (Herrmann et al., 1981). Many more injection-induced earthquakes have been identified since this sequence, the largest being the August 2011 M 5.3 Trinidad, Colorado, earthquake (Rubinstein et al., 2014) and the November 2011 M 5.6 Prague, Oklahoma, earthquake (Keranen et al., 2013).

Enhanced Oil Recovery: Enhanced oil recovery is a suite of injection techniques used by the oil and gas industry to allow or encourage more oil and gas to be produced from a reservoir than would come out on its own (Murray, 2013) (Fig. 2d). The techniques typically involve the injection of water, steam, or carbon dioxide into the production formation. Water flooding (the injection large amounts of water) improves production by sweeping the oil and gas toward the production wells. The injection of steam and carbon dioxide is undertaken to improve production by reducing the viscosity of oil. ***Enhanced oil-recovery operations typically aim to keep the fluid pressure in the reservoir at or below its original level.*** [Emphasis added – Staff]

D: Society of Petroleum Engineers, Waterflooding – Website: http://petrowiki.org/Waterflooding

Waterflooding is the use of water injection to increase the production from oil reservoirs. Use of water to increase oil production is known as "secondary recovery" and typically follows "primary production," which uses the reservoir's natural energy (fluid and rock expansion, solution-gas drive, gravity drainage, and aquifer influx) to produce oil.

The principal reason for waterflooding an oil reservoir is to increase the oil-production rate and, ultimately, the oil recovery. This is accomplished by "voidage replacement"—injection of water to increase the reservoir pressure to its initial level and maintain it near that pressure. [Emphasis added - Staff] The water displaces oil from the pore spaces, but the efficiency of such displacement depends on many factors (e.g., oil viscosity and rock characteristics). In oil fields such as Wilmington (California, US) and Ekofisk (North Sea), voidage replacement also has been used to mitigate additional surface subsidence. In these cases, the high porosity of the unconsolidated sandstones of the Wilmington oil field's reservoirs and of the soft chalk reservoir rock in the Ekofisk oil field had compacted significantly when the reservoir pressure was drawn down during primary production.

Key points concerning waterflooding are:

- ***Waterflooding is the most commonly used secondary oil recovery method.*** [Emphasis added – Staff] This is because water is inexpensive and readily available in large volumes and because water is very effective at substantially increasing oil recovery.
- The level of effectiveness of a waterflood depends on the mobility ratio between the oil and water, and the geology of the oil reservoir. Waterflooding is effective because almost all reservoir rocks

are either water-wet or mixed-wet. The depositional and diagenetic characteristics of a reservoir control major aspects of the water/oil displacement process. These characteristics can either enhance waterflood performance or have detrimental effects on the WOR as a function of time. Often, the details of a reservoir's internal geology are not known until production wells start producing injected water.

- Gravity effects—i.e., the interplay between the gravity/density effects and the geologic layering of a reservoir—are important in waterfloods because at reservoir conditions, oil always is less dense than connate brine or injected water. This interplay can either help or hurt waterflood performance relative to a homogeneous system.
- ***Waterflooding is a process that typically takes several decades to complete.*** [Emphasis added – Staff] Hence, continuous, routine field production and pressure data must be taken for monitoring and analyzing waterflood performance. There are opportunities to modify the original waterflood design and operating guidelines on the basis of analysis of the actual field production data. Occasionally, more-expensive, special-data acquisition programs (i.e., 3D- or 4D-seismic data) are run to assist the evaluation process. A variety of engineering tools have been developed to analyze waterflood performance, ranging from simple plots of field production data to full-field numerical-reservoir-simulation models.
- Waterfloods are dynamic processes the performance of which, as production wells respond to the injection of water, can be improved by modification of operations by the technical team. Such modifications include changing the allocation of injection water among the injection wells and the waterflooded intervals, drilling additional wells at infill locations, and/or modifying the pattern style.
- Waterflooding has been used successfully in oil fields of all sizes and all over the world, in offshore and onshore oil fields.

E. HAYNES, R. J., T. A. BOGGS, R. E. MILLEMANN, R. J. FLORAN, and S. G. HILDEBRAND. 1979. Enhanced oil recovery: Environmental issues and state regulatory programs ORNL/TM-6943. Oak Ridge National Laboratory, Oak Ridge, Tennessee – Website: http://www.osti.gov/scitech/servlets/purl/5931143

During 1977-78, Oak Ridge National Laboratory (ORNL) prepared environmental assessments for nine EOR demonstration projects located in six states, and reviewed the oil regulations for all oil-producing states. These evaluations revealed a number of potentially important environmental impacts associated with EOR, including: (1) loss of vegetation, (2) excessive air emissions from thermal operations, (3) excessive erosion and sedimentation (mostly in hilly terrain) and subsequent deterioration of surface-water quality, (4) pollution of land and surface waters from spills or leaks of oil or other chemicals, and (5) contamination of groundwater aquifers. Potential groundwater impacts include: (1) production of toxic and carcinogenic substances from synergistic interactions among chemicals used primarily in micellar-polymer flooding; (2) formation of acid waters with small amounts of oil and residues of metals and metal oxides from in situ combustion; and (3) corrosion of well casings and potential leaks of hydrogen sulfide, primarily from injection of miscible carbon dioxide.

Groundwater Contamination

Enhanced oil recovery processes use water-soluble chemicals, which may be toxic to organisms and carcinogenic to man if transported in sufficient quantities to ground or surface waters…Groundwater can be contaminated by: (1) thermal processes that increase subsurface temperatures and pressures leading to increased solubility of potentially hazardous compounds contained in underground formations; (2) carbon

dioxide containing hydrogen sulfide; (3) seepage of chemicals and brine from waste disposal pits, especially those that are unlined; (4) escape of brines and chemical-laden produced water from oil-depleted reservoirs or disposal formations; and (5) long-term migration of chemicals by natural flow out of the reservoir into freshwater aquifers and eventually to surface waters (Braxton et al. 1976, Collins 1971). The last mechanism may cause problems long after completion of the project.

For groundwater to become contaminated, communication must exist between the pollution source and the groundwater system, or between saltwater and freshwater aquifers that are hydraulically connected. Communication and translocation of potential contaminants (e.g., brine, oil, chemicals) can occur from broken or corroded well casings in both active and abandoned wells, and through underground drainage channels, fractures, and faults (Fig. 6). In addition to extraction of contaminated groundwater from wells, freshwater zones that become polluted may have natural surface outlets (springs) that are used for drinking by humans and wildlife. In active oil fields, operators generally inspect and maintain well casings on a regular basis to reduce the possibility of well failure. Yet, casing failures with subsequent leakage do occur, as evidenced by the long-standing pollution of freshwater aquifers in and near some oil fields. Failure of well casings has been a major operational problem in several EOR demonstration projects (Noran 1978).

The potential for groundwater contamination depends on the EOR process, the age of the wells, and other interrelated site-specific characteristics such as local geochemical conditions, the number of oil wells, and seismic activity (Braxton et al. 1976). The EOR method used may increase the risk of groundwater pollution by accelerating corrosion of well casings and by further increasing fluid pressure at depth, leading to the formation and propagation of fractures. The chances of well failures also increase with age of the wells (Braxton et al. 1976)...

In summary, the possibility of groundwater contamination during EOR operations deserves close attention and will be a serious concern in areas where groundwater is a principal component of the water supply, e.g., central and coastal California. Federal legislation (e.g., Federal Water Pollution Control Act) and state regulations have provided rules and guidelines for the protection of water quality, but more data are needed on the concentration, toxicity, carcinogenicity, and synergistic reactions of chemicals that remain in the oil reservoir or appear in effluents. ***In areas with freshwater aquifers, groundwater monitoring programs should be instituted on a routine basis for all planned EOR projects*** [Emphasis added – Staff] (Booz-Allen and Hamilton 1978).

[Note from Staff – although this study is now almost 40 years old, its final recommendation is in line with that of the 2015 CCST Study prepared for Hydraulic Fracturing issues in California, that is, a more comprehensive testing and monitoring program for all types of impacts, especially surface and groundwater, needs to be implemented.

Reference for CCST study - Jane C. S. Long, PhD; Jens T. Birkholzer, PhD; Laura C. Feinstein, PhD; - An Independent Scientific Assessment of Well Stimulation in California - Executive Summary: An Examination of Hydraulic Fracturing and Acid Stimulations in the Oil and Gas Industry, July 2015 – Website: https://ccst.us/publications/2015/2015SB4-v2ES.pdf]

F. Specific source information unavailable – Website: https://www.princeton.edu/~ota/disk3/1978/7807/780708.PDF

"Ground Water potential for ground water contamination resulting from fluid injections associated with [Enhanced Oil Recovery] EOR operations appears minimal. This conclusion is supported by the lack of ground water contamination problems associated with conventional waterfloods. Only 74 ground water injection problems resulted from operating 44,000 injection wells in Texas between 1960 and 1975 (an

incidence rate of 1.1/10,000 per year); only 3 of these occurred during the last decade (an incidence rate of .02/10,000 per year). Similar safe operating records exist in the other major oil-producing States with large numbers of waterfloods. Because EOR injection operations are basically the same as waterfloods, often using the same injection wells in the same formations, an increase in the rate of ground water contamination is not expected. In fact, it is anticipated that the safety record will improve because EOR injection fluids are more costly than the water now used in waterfloods and operators could be expected to take additional precautions to prevent loss of these fluids during the EOR process. ***As with surface waters, use of water from aquifers for EOR operations could put a strain on freshwater supplies in areas where reserves were limited.*** [Emphasis added – Staff] In areas where the rate of consumption exceeds the rate of recharge, the impacts would be severe. Recent field tests indicate that brine tolerant EOR processes are feasible, and could significantly reduce the impact of EOR operations on freshwater aquifers if used."

G. Steve Bohlen, State Oil and Gas Supervisor, Division of Oil, Gas, and Geothermal Resources; and Jonathan Bishop, Chief Deputy Director, State Water Resources Control Board - letter to Mr. Michael Montgomery, United States Environmental Protection Agency – Region IX, 75 Hawthorne Street, San Francisco, CA, regarding Category 2 Underground Injection Control (UIC) enhanced oil recovery (EOR) wells that were permitted to inject into non-exempt aquifers (letter attached).

"Risk-Based Approach - As detailed in our July 31, 2015 letter, the State has employed a risk-based approach to its review three EOR techniques– water flood, steam flood, and cyclic steam – the State has determined that ***water flood operations present the highest potential risk to groundwater since they involve injection of a high volume of water, relative to thermal operations. Given the use of a higher volume of water, there is a greater potential injectate could impact nearby groundwater resources used for beneficial uses. Following this logic, the State considers steam flood operations to pose a greater potential risk to groundwater than cyclic steam operations.*** [Emphasis added – Staff. This discussion gets to the relative risks of each type of injection activity for well enhancement.]…

Water Flood

…Due to the higher quantities of water injected in water flood operations, there is a higher risk that fluids could migrate away from the area of injection. Accordingly, the state is using more conservative screening criteria to identify water supply wells that may be impacted by water flood operations…Activities potentially impacting water supply wells include injection wells that meet either of the following criteria: (1) the uppermost depth of the injection zone is less than 1,500 feet below ground surface (regardless of whether any existing supply wells are in the vicinity of the injection well), or (2) the injection depth is within 500 feet vertically and 1 mile horizontally of the screened portion of any existing water supply well…"

[The letter goes on to describe enforcement actions the State intends to take for wells that are out of compliance.- Staff]

H. DOGGR formal response to e-mail questions sent by Staff, via spokesperson Brady Van Engelen, May, 2016

Staff Question: We understand that water injection for the purpose of wastewater disposal includes clarification of produced water and injection of that water back into a depleted oil formation, either the same or a different formation. Can you tell us if this is usually done under only gravitational pressure, or if additional PSI is added to the injection process?

Answer: The Division requires a step rate test to determine the pressure that the formation will breakdown. Once we determine this pressure the Division limits the operator to less than 95% of that pressure. Many times the injection pressure is far below the fracture pressure.

Q: Is the pressure at depth supposed to be the same as it was when oil filled the reservoir cavities?

A: Not necessarily…The Division's program is predicated upon the principle that the injected fluid will be confined to the intended zone of injection.

Q: We understand that waterflood injection involves injecting clarified water into a portion of a partially depleted reservoir some horizontal distance away from a production well, and the pressure of that water at depth is used to push or float the oil toward the production well so that it can be more easily extracted. Can you tell us if this is usually done under only gravitational pressure, or if additional PSI is added to the injection process?

A: Typically at greater pressure than gravity flow. See answer from previous question.

Q: Is the pressure at depth supposed to be the same as it was when oil filled the reservoir cavities? Is our understanding of this method correct? (This question went unanswered, but is explicitly answered above under Item C, last paragraph.)

Q: If waterflood is used to enhance well production, can it sometimes be done with only produced water from the existing well field, or must water be imported or taken from a local aquifer in order to carry out the process?

A: Many waterflood operations only use produced water in their operations. Most operators would like to replace the volume of fluid that is represented by the oil production.

Q: If the former, would DOGGR ever mandate that imported water be used despite the availability of ample produced water?

A: We don't mandate that additional water be used. If an operator proposes an operation, we specify what conditions must be met to meet our statutes and regulations.

Q: Considering the foregoing answers, would the pressures at depth due to water injection for either reason ever exceed the original natural pressure of the formation + fluid at depth, and if so, would this place the formation or the well casing at risk of fracturing, fissuring, or otherwise allowing injected water to escape to volumes of earth that are not part of the formation?

A: The Division's program is predicated upon the principle that the injected fluid will be confined to the intended zone of injection.

Q: If so, how is this potential normally avoided?

A: The Division requires annual tests for water disposal wells and once every two years for waterflood wells to ensure mechanical integrity of the well. Before a well can be used for injection, it has to be pressure tested to verify there are no leaks in the well. The Division performs site visits periodically to ensure injection pressure are maintained below fracture pressures.

Q: Assuming our understanding of these two processes are essentially correct, Other than the fact that waterflooding uses injected water to move oil in a specified direction underground for easier extraction, what other practical or substantive differences are there between wastewater injection and waterflood well enhancement?

A: Very little. With water disposal we are more concerned with lateral confinement because you are adding fluid and not taking any out. For waterflood, water injected will move towards the pressure sink which is the producing wells.

I. Katie Brown, PhD, States Well Ahead of EPA on Underground Wastewater Disposal Regulations, February 13, 2015 – Website: http://energyindepth.org/national/states-well-ahead-of-epa-on-underground-wastewater-injection-regulations/

"The reports of induced seismicity associated with hydraulic fracturing are actually related to long-duration, high-volume injection of waste fluids in disposal wells. Hydraulic fracturing is a short-duration production well stimulation treatment. **In California, existing Underground Injection Control regulations already address sustained injection pressures in waste fluid disposal wells that would exceed the natural fracture limit of the formation. Therefore, induced seismicity has not been an issue in California.**" (Emphasis added - Staff)

J. Rubinstein and Mahani, Myths and Facts on Wastewater Injection, Hydraulic Fracturing, Enhanced Oil Recovery, and Induced Seismicity, June 2015 https://profile.usgs.gov/myscience/upload_folder/ci2015Jun1012005755600Induced_EQs_Review.pdf

COMMON MISCONCEPTIONS ABOUT FLUID INJECTION AND EARTHQUAKES

The media commonly report on induced earthquakes incorrectly, and consequently policy makers and the public have an incorrect or incomplete understanding of how and why they occur. Here, we list common misconceptions about induced earthquakes and then correct them.

1. Misconception: Hydraulic fracturing is causing all of the induced earthquakes.
Correction: Hydraulic fracturing is directly causing a small percentage of the felt-induced earthquakes observed in the United States. In contrast, felt earthquakes induced during hydraulic fracturing operations are more common in western Canada. ***Most induced earthquakes in the United States are a result of the deep disposal of fluids (wastewater) related to oil and gas production.*** [Emphasis added – Staff]

2. Misconception: The wastewater injected in disposal wells is spent hydraulic fracture fluid.
Correction: The amount of spent hydraulic fracturing fluid injected into wastewater disposal wells is highly variable. The fluids disposed of near earthquake sequences in Youngstown, Ohio, and Guy, Arkansas, are

believed to consist largely of spent hydraulic fracturing fluid (Horton, 2012; Kim, 2013). In contrast, in Oklahoma spent hydraulic fracturing fluid represents 10% or less of the fluids disposed of in salt-water disposal wells in Oklahoma (Murray, 2013). ***The vast majority of the fluid that is disposed of in disposal wells in Oklahoma is produced water.*** [Emphasis added – Staff] Produced water is the salty brine from ancient oceans that was entrapped in the rocks when the sediments were deposited. This water is trapped in the same pore space as oil and gas, and as oil and gas is extracted, the produced water is extracted with it. Produced water often must be disposed in injection wells because it is frequently laden with dissolved salts, minerals, and occasionally other materials that make it unsuitable for other uses.

3. Misconception: There would be no need for wastewater disposal if hydraulic fracturing was not used.
Correction: ***Salt water is produced at virtually all oil wells,*** [Emphasis added – Staff] whether the wells were hydraulically fractured or not. In fact, hydraulic fracturing is not used in the Hunton Dewatering Play in central Oklahoma, yet it is one of the largest producers of salt water in the United States (Walsh and Zoback, 2015).

4. Misconception: Induced seismicity only occurs close to the injection well and at a similar depth as injection.
Correction: Seismicity can be induced at distances of 10 km or more away from the injection point and at significantly greater depths than injection. In the classic case of injection-induced seismicity at the Rocky Mountain Arsenal, seismicity was induced at distances of at least 10 km laterally from the well and at depths of at least 4 km greater than the depth of injection (Healy et al., 1968; Herrmann et al., 1981; Hsieh and Bredehoeft, 1981). More recent reports have argued that seismicity may be induced at 20 km or more from the injection point (Keranen et al., 2014).

5. Misconception: All injection wells (hydraulic fracturing, wastewater disposal, and enhanced oil recovery) induce earthquakes.
Correction: ***Most injection wells do not cause felt earthquakes*** [Emphasis added – Staff]. There are approximately 35,000 active wastewater disposal wells, 80,000 active enhanced oil-recovery wells, and tens of thousands of wells are hydraulically fractured every year in the United States. Only a few dozen of these wells are known to have induced felt earthquakes. A combination of many factors is necessary for injection to induce felt earthquakes. These include faults that are large enough to produce felt earthquakes, stresses that are large enough to produce earthquakes, the presence of fluid pathways from the injection point to faults, and fluid pressure changes large enough to induce earthquakes. It is likely that some of these criteria are not met in areas that have very few or no earthquakes that may be induced by wastewater injection, such as the Williston Basin in North Dakota (Frohlich et al., 2015), the Michigan Basin, and the Gulf Coast of Texas and Louisiana (Weingarten et al., 2015). More injection wells may be inducing earthquakes, but current studies are limited to the largest earthquakes and those with the best seismological and industrial data available. Further study of other earthquake sequences may reveal that additional felt earthquakes are induced. It is likely that smaller induced earthquakes are occurring and are too small to detect. In some sense, all hydraulic fracturing induces earthquakes, although typically microearthquakes. When production engineers hydraulically fracture, they are intentionally cracking the rock, causing microearthquakes that are typically smaller than M 0.

6. Misconception: Wells injecting at zero injection pressure at the wellhead (i.e., wells where the formation readily accepts fluid without requiring the fluid to be pushed into the formation) cannot induce earthquakes.
Correction: Wells injecting under gravity feed (i.e., wells where you can pour fluid down the well without added pressure) increase the fluid pressure within the injection formation and thus can induce earthquakes. For example, the vast majority of wells in the Raton Basin are injecting under gravity feed and have induced an earthquake sequence that is ongoing since 2001 and includes an M 5.3 earthquake and an M 5.0 earthquake (Barnhart et al., 2014; Rubinstein et al., 2014).

Share link: https://dochub.com/frankburton34db7e59/XjbNWM/doggr-ca-water-boards-ltr-to-epa-re-cat-2-we

Edmund G. Brown Jr., Governor

Department of Conservation
Division of Oil, Gas, and Geothermal Resources

Water Boards

October 15, 2015

Mr. Michael Montgomery
United States Environmental Protection Agency – Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Montgomery:

On July 31, 2015, the Division of Oil, Gas, and Geothermal Resources (Division) and the State Water Resources Control Board (State Water Board) submitted findings from a review of Category 2 Underground Injection Control (UIC) wells. After discussions with your office, we are providing additional information regarding the analysis conducted by the State. For reference, Category 2 wells are those UIC enhanced oil recovery (EOR) wells that were permitted to inject into non-exempt aquifers. The State identified 5,625 wells that fit these criteria, and created two subgroups: (1) wells associated with a UIC project (2,021 wells) (Attachment 1), and (2) wells not associated with a UIC project (3,604 wells) (Attachment 2).

Risk-Based Approach

As detailed in our July 31, 2015 letter, the State has employed a risk-based approach to its review process to help assure early determination of potential risks to groundwater with a current beneficial use. Of the three EOR techniques– water flood, steam flood, and cyclic steam – the State has determined that water flood operations present the highest potential risk to groundwater since they involve injection of a high volume of water, relative to thermal operations. Given the use of a higher volume of water, there is a greater potential injectate could impact nearby groundwater resources used for beneficial uses. Following this logic, the State considers steam flood operations to pose a greater potential risk to groundwater than cyclic steam operations.

Screening Criteria

Accordingly, the State has employed different screening criteria, based on the type of operation at issue, to identify Category 2 wells that pose a potential risk to groundwater with a current beneficial use.

Water Flood

In contrast to thermal EOR operations, the quantities of water injected in water flood operations is relatively high. The Division's review of 2014 production data shows that the total volume of water injected in the State via water flood operations is more than twice the volume of water injected in all steaming operations (2014 Preliminary Report of California Oil and Gas Production Statistics, DOC-DOGGR, July 2015, page 3). Due to the higher quantities of water injected in water flood operations, there is a higher risk that fluids could migrate away from the area of injection. Accordingly, the state is using more conservative screening criteria to identify water supply wells that may be impacted by water flood operations. For water flood wells, the State is using the criteria outlined in footnote two of Enclosure D to its February 6, 2015 letter to the US EPA:

using more conservative screening criteria to identify water supply wells that may be impacted by water flood operations. For water flood wells, the State is using the criteria outlined in footnote two of Enclosure D to its February 6, 2015 letter to the US EPA:
Share link: https://dochub.com/frankburton34db7e59/XjbNWM/doggr-ca-water-boards-ltr-to-epa-re-cat-2-well-review-findings-2015-1015?dt=ft17jxqet5eyrx15

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DOGGR/CA Water Boards ltr to EPA re Cat 2 Well Review Findings, 2015-1015

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Activities potentially impacting water supply wells include injection wells that meet either of the following criteria: (1) the uppermost depth of the injection zone is less than 1,500 feet below ground surface (regardless of whether any existing supply wells are in the vicinity of the injection well), or (2) the injection depth is within 500 feet vertically and 1 mile horizontally of the screened portion of any existing water supply well.

Thermal Wells

Thermal injectors (cyclic steam and steam flood) inject steam into the oil-producing zone to lower oil viscosity and increase oil mobility such that it flows into production wells. In the case of cyclic steam wells, the injection well is also the producing well. Steam, by its nature, does not travel far from its injection point. Because of heat dissipation in the rock formation, steam injectors are located relatively close to production wells to optimize oil sweep. This distance is typically less than 150 feet for cyclic steam wells.

With close proximity to production wells, it is expected that the migration of steam outside of the production-injection pattern is negligible since the production-induced pressure drawdown keeps injected fluid within the pattern. A sample fluid analysis of feedstock water that is converted to steam is shown in Attachment 3. The total dissolved solids (TDS) value of the feedstock is commonly less than the formation TDS. The quality of the fluid used for steam, measured in TDS, after conversion to steam, is expected to be even better (lower TDS) since some of the TDS constituents are eliminated in the conversion process.

Steam Flood

For steam flood wells, the State is screening for water supply wells within one-quarter mile of the injection well, which represents the Division's determination of the lateral zone of endangering influence (ZEI) for these types of wells; in other words, the greatest lateral distance the injected steam is expected to travel from the point of injection.

Cyclic Steam

For cyclic steam wells, the State is screening for water supply wells within 300 lateral feet of the injection well, which represents two times the Division's determination of the lateral ZEI influence for these types of wells. Given the small ZEI for cyclic steam wells and the fact that these wells are located in oil fields that are typically at some distance from neighboring water users, the state has decided to incorporate a buffer zone (twice the ZEI) to screen in more wells to review for potential impacts.

Review of Water Flood Wells

The initial State review identified nineteen (19) water flood wells that were permitted to inject into non-exempt aquifers. Of those, nine (9) were subsequently identified by the Division as injecting into formations greater than 10,000 TDS, which do not require an aquifer exemption. The remaining ten (10) water flood wells were screened using the Enclosure D criteria described above. Based on this screening, the State has identified three (3) water flood wells.

The State Water Board, in collaboration with the appropriate Regional Water Quality Control Boards (Regional Boards), plans to issue orders to the operators of the three (3) wells at issue under Water Code section 13267 to gather more information on these injection wells and to take appropriate action to protect nearby water supplies if necessary. With regard to the water flood wells not subject

Code section 13267 to gather more information on these injection wells and to take appropriate action to protect nearby water supplies if necessary. With regard to the water flood wells not subject

to informational orders at this time, the State may further analyze these wells later if they are within an aquifer for which an exemption is being considered.

Review of Thermal Wells

Our review identified that 5,475 of the 5,625 EOR wells are thermal injection wells. Of those, 4,780 are cyclic steam wells. Using the criteria described above, two (2) cyclic steam wells are located within 300 feet laterally (two times the ZEI) of identified water supply wells. Of the 695 steam flood wells under review, one (1) is within one-quarter mile laterally of water supply wells.

Based on the results of this review, the State Water Board, in collaboration with the appropriate Regional Boards, plans to issue orders to the operators of these three (3) thermal injection wells under Water Code section 13267 in order to gather more information on these wells. Upon reviewing the information provided by these operators, the State will take appropriate action to protect nearby water supplies, including, if necessary, issuing shut in orders to cease injection activities. In the future, the State may further analyze these injection wells if warranted, such as an aquifer exemption proposal.

***

The State of California is very concerned about the protection of water that may be used for beneficial use, and is actively working with operators to collect additional information to identify any potential threats to protected water. Based on data collected by the operators pursuant to the planned 13267 orders, we will determine if there is a potential risk to groundwater with a current beneficial use. If we determine that there is a potential risk to protected water, we will take appropriate action to address these risks.

Sincerely,

Steve Bohlen
State Oil and Gas Supervisor
Division of Oil, Gas, and Geothermal Resources

Sincerely,

Jonathan Bishop
Chief Deputy Director
State Water Resources Control Board

Attachments

cc: Cliff Rechtschaffen, Senior Advisor, Governor's Office
John Laird, Secretary, California Natural Resources Agency
Matthew Rodriquez, Secretary, California Environmental Protection Agency
David Bunn, Director, California Department of Conservation

ATTACHMENT F:

Three (3) most recent Planning Commission Staff Analyses and Planning Commission Resolution of May 23, 2016

ALAMEDA COUNTY COMMUNITY DEVELOPMENT AGENCY
PLANNING DEPARTMENT

STAFF REPORT

TO: PLANNING COMMISSION
HEARING DATE: APRIL 4, 2016

GENERAL INFORMATION

PROPOSED ZONING ORDINANCE AMENDMENT: Modify the Alameda County Zoning Ordinance (ACZO) to prohibit high intensity oil and gas operations in the unincorporated area, including Well stimulation by increasing the permeability of the formation; enhanced recovery wells that are injected with brine, water, steam, polymers, carbon dioxide, or other gasses into oil-bearing formations to recover residual oil and in some limited applications natural gas; hydraulic fracturing; acid fracturing; acid matrix stimulation treatment; acid well stimulation treatment; and disposal or storage of the substances used in or the waste or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water. Modify the ACZO to prohibit Disposal or storage in pits or sumps of any wastewater or produced water that is a byproduct of any oil and gas operations (uses listed in 17.06.040(I)).

ZONING: All parcels zoned "A-Agriculture" would be affected

GENERAL PLAN DESIGNATION: All "LPA" (Large Parcel Agriculture), "WM" (Water Management) and "RM" (Resource Management) designations would be affected.

ENVIRONMENTAL REVIEW: This action would be exempt from the requirements of the California Environmental Quality Act (CEQA), CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment." The action would result in no new physical impacts to the environment.

RECOMMENDATION

That the Planning Commission recommend approval to the Board of Supervisors regarding the proposed amendments to the Alameda County Zoning Ordinance.

DESCRIPTION OF PROPOSAL

Sections 17.06.100 through Section 17.06.140 are proposed to be added to the Alameda County General Ordinance Code and read as follows:

17.06.100 High-Intensity Oil and Gas Operations – Definition

For the purposes of this chapter, high-intensity oil and gas operations means any of the following uses:

A. Well stimulation treatment – any treatment of a well designed to enhance oil or gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments.
B. Enhanced recovery wells - wells that are injected with brine, water, steam, polymers, carbon dioxide, or other gasses into oil-bearing formations to recover residual oil and in some limited applications natural gas. The injected fluid thins (decreases the viscosity) or displaces small amounts of extractable oil and gas, which is then available for recovery. Examples include waterflood injection, steamflood injection, and cyclic steam injection.
C. Hydraulic fracturing or "fracking" – a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.
D. Acid fracturing – a well stimulation treatment that, in whole or in part, includes pressurized injection of acid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.
E. Acid matrix stimulation treatment – an acid treatment conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.
F. Acid well stimulation treatment - a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.
G. Disposal or storage of the substances used in or the waste or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water, other than storage associated with transportation through the County for disposal or storage outside of the County.

17.06.110 High-Intensity Oil and Gas Operations – Prohibited Use

High-intensity oil and gas operations are prohibited in the unincorporated areas of the County. The development, construction, installation, or use of any facility, appurtenance, or above-ground equipment, whether temporary or permanent, mobile or fixed, accessory or principal, in support of high-intensity oil and gas operations is prohibited in the unincorporated areas of the County.

17.06.120 High-Intensity Oil and Gas Operations – Amortization Period

A. Within one year of the effective date of this section, the owners and operators of any existing high-intensity oil and gas operations shall bring land uses into conformity with this ordinance.

B. The one-year amortization period permitted by Subsection A may be extended on a case-by-case basis if the Planning Commission determines that a high-intensity oil and gas operations owner or operator has shown that one year is not a reasonable amortization period pursuant to state law and

Section 17.06.130. Any extension may be only for the minimum length of time necessary to provide a reasonable amortization period.

17.06.130 High-Intensity Oil and Gas Operations – Consistent with State and Federal Law

The provisions of sections 17.06.100 through 17.06.120 shall not be applicable to the extent, but only to the extent, they would violate the constitution or laws of the United States or of the State of California.

In the event a property owner contends that application of these provisions effects an unconstitutional taking of property, the property owner may request, and the Planning Commission may grant, an exception to application of these provisions in accordance with Section 17.06.140.

17.06.140 High-Intensity Oil and Gas Operations – Nonconforming uses

A. A person claiming a vested right to uses prohibited by Sections 17.06.100 through 17.06.120 must apply to the County for a determination that the vested right exists. Notice of the hearing shall be made in accordance with the procedures provided by section 17.54.830. The determination shall be made by the Planning Commission, following a public hearing. Upon a determination that the vested right exits, the use may continue subject to the sections of this title concerning nonconforming uses (17.52.610 through 17.52.730). The determination shall be appealable to the Board of Supervisors pursuant to sections 17.54.670-17.54.710.

B. The applicant for any exemption shall submit as part of the application any and all evidentiary support reasonably available sufficient to establish the basis for the claim of exemption.

C. A determination of exemption application shall be approved or conditionally approved only if the review authority first makes the following findings:

1. The applicant obtained prior to the effective date of this section, a vested right to conduct well stimulation treatment operations;
2. Approving or conditionally approving the application is required because the applicant has shown that a one year amortization period is not a reasonable amortization period pursuant to state law; and
3. The extension is no longer than the minimum length of time necessary to provide a reasonable amortization period.

No enforcement action shall be taken against any owner or operator of an existing facility if an application for a determination of exemption has been filed in compliance with this Section and the application has not expired, or final action to deny the application has not occurred.

STAFF ANALYSIS

The Board of Supervisors' Transportation and Planning Committee has directed staff to develop amendments to the County General Plan and Zoning documents that would enable the County to reduce and potentially prohibit high-intensity oil and gas operations as a land use in the County.

The Board Committee directed staff to develop the proposal after community members expressed concerns regarding a collection of enhanced well stimulation techniques commonly referred to as "fracking" but which include not only hydraulic fracturing but also mild acid injection and steam injection techniques.

This item has been before the Planning Commission twice before, both times in 2015. At the last Planning Commission hearing on this matter in May, 2015, Planning Staff and the Office of the County Counsel had tentatively concluded that an effective and legally defensible way to achieve the goals defined by the Board T&P Committee would be to remove the language addressing oil and gas activities from the documents governing land use, thus making these activities nonconforming uses; this way, the existing uses would be able to continue to proceed as originally approved, but could not expand or change significantly, and no new permits could be issued. Expired permits and activities at facilities that have not been operated for at least six months would be considered abandoned as uses and could not be reinstated. If well stimulation techniques were to be proposed for existing wells, it would require a modification of the existing permit, and in addition to the other findings required for such an approval, findings would need to be made that the new procedures neither significantly altered nor expanded the existing nonconforming use.

The Office of the County Counsel had advised that any new ordinance language specifically banning all oil extraction activity (including existing uses) or enhanced well stimulation techniques could place the County at risk of legal action. Lawsuits have been brought in other California jurisdictions, although staff knows of no conclusive decisions as of this date.

However, based partially on testimony from various residents of the unincorporated East County and the Oil and Gas Industry, the Planning Commission directed Staff to consult the County Agricultural Committee to obtain its input.

Presentation to the Agricultural Advisory Committee (AAC)

Staff brought the matter to the Agricultural Committee on two occasions. The Committee was concerned that removing language conditionally permitting oil and gas operations, and thus effectively discontinuing that use, would prohibit landowners from exercising mineral and property rights (this is more thoroughly summarized in the May 2015 Staff analysis, attached) . After an additional presentation at the Board of Supervisors Transportation & Planning Committee in September, 2015, Staff brought back to the Agricultural Committee a revised and more complex ordinance that does not change provisions for oil and gas operations generally and as practiced historically, but which prohibits High Intensity Operations including Fracking and other Well Stimulation types. That draft ordinance was substantially the same ordinance that the Commission now has under consideration. The Agricultural Committee was satisfied at its second meeting (October 27, 2015) that this new draft meets its needs, and no longer withheld its support for the idea.

Minutes of the October 27 meeting are attached.

Specifics of the Proposed Ordinance.

The proposed ordinance would define high intensity oil and gas operations in the unincorporated area, including Well stimulation by increasing the permeability of the formation; enhanced recovery wells that are injected with water and/or various chemicals into oil-bearing formations to recover residual oil and in some limited applications natural gas; hydraulic fracturing; acid fracturing; acid matrix stimulation treatment; acid well stimulation treatment; and disposal or storage of the substances used in or the waste

or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water.

The Proposed Ordinance would prohibit these uses, including equipment necessary to conduct them.

The Proposed Ordinance would provide an amortization period of one (1) year in which any existing such operations could be brought into compliance with the new requirements.

The Proposed Ordinance requires itself to be consistent with State and Federal law.

The Proposed Ordinance would provide a procedure for any operator to demonstrate that a vested right exists to conduct the prohibited activities, and that an exemption should be granted by the Planning Commission. In order to prove the vested right, the following findings would need to be made:

1. The applicant obtained prior to the effective date of this section, a vested right to conduct well stimulation treatment operations;
2. Approving or conditionally approving the application is required because the applicant has shown that a one year amortization period is not a reasonable amortization period pursuant to state law; and
3. The extension is no longer than the minimum length of time necessary to provide a reasonable amortization period.

Finally, the Proposed Ordinance would prohibit the use of storage or percolation pits for disposal of waste water from any oil and gas operation.

Past and Existing Oil and Gas Activity in Alameda County.

Past and existing oil activity was discussed in the February 2015 staff analysis, which is attached.

Comment Letters and E-Mails Received

Numerous comment letters and e-mails were received on this matter in 2015, and all are described in the May, 2015 staff analysis (attached). A small number of new letters have been received since that date, and these are also attached.

Conformance with the General Plan

No passages in the General Plan support or restrict oil or gas exploration, extraction or production. Policy 167 conditionally permits the oil and gas use. The changes proposed would continue general oil and gas operations as a conditionally permitted use, and would be in conformance with the General Plan.

Environmental Review

This action is exempt from the requirements of CEQA, based on the following:

(1) This Ordinance Amendment is not a project within the meaning of Section 15378 of the CEQA Guidelines, because it has no potential for resulting in physical change in the environment, directly or ultimately; and

(2) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15307, Class 7, "Actions by Regulatory Agencies for Protection of Natural Resources" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of natural resources; and

(3) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of the environment; and

(4) This Ordinance Amendment is not subject to CEQA under the general rule stated in CEQA Guidelines Section 15061(b)(3) that CEQA applies only to projects which have the potential for causing a significant effect on the environment. For the reasons set forth in subparagraphs (1), (2) and (3), it can be seen with certainty that there is no possibility that this Ordinance Amendment will have a significant effect on the environment.

CONCLUSION

Staff recommends that the Planning Commission recommend to the Board of Supervisors the proposed amendments to the Alameda County Zoning Ordinance as described above.

PREPARED BY:
Bruce Jensen, Senior Planner

REVIEWED BY:
Albert Lopez, Planning Director

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ATTACHMENTS

Draft Ordinance Change for Zoning Ordinance, Section 17
Previous Staff Analysis for February, 2015
Previous Staff Analysis for May, 2015
Minutes of Meeting – Agricultural Committee, October 27, 2015
Comment Letters since March, 2015

ALAMEDA COUNTY COMMUNITY DEVELOPMENT AGENCY
PLANNING DEPARTMENT

STAFF REPORT

TO: PLANNING COMMISSION
HEARING DATE: MAY 2, 2016

GENERAL INFORMATION

PROPOSED ZONING ORDINANCE AMENDMENTS	Modify the Alameda County Zoning Ordinance (ACZO) to prohibit high intensity oil and gas operations in the unincorporated area.
ZONING:	All parcels zoned "A-Agriculture" would be affected
GENERAL PLAN DESIGNATION:	All "LPA" (Large Parcel Agriculture), "WM" (Water Management) and "RM" (Resource Management) designations would be affected.
ENVIRONMENTAL REVIEW:	This action would be exempt from the requirements of the California Environmental Quality Act (CEQA), CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment." The action would result in no new physical impacts to the environment.

RECOMMENDATION

That the Planning Commission recommend to the Board of Supervisors the proposed amendments to the Alameda County Zoning Ordinance of its choice.

DESCRIPTION OF PROPOSAL

Staff presents three possible options to the Planning Commission for its consideration; each one varies from the others in modest but important ways. In all three cases, Sections 17.06.100 through Section 17.06.140 are proposed to be added to the Alameda County General Ordinance Code and are designed to place restrictions on a variety of oil and gas extraction activities considered as "High-Intensity."

Version A (the original drafted ordinance, Attachment 1) would disallow almost any oil and gas extraction activity that goes beyond simple pumping of the oil/water mixture from the ground, separating and clarifying the mixture into oil and water, and exporting the oil while reinjecting the produced water back into the original reservoir underground.

Version B (a new version for this session, Attachment 2) omits from the overall prohibition a specific class of action, Enhanced Recovery Wells (Paragraph B of Section 17.06.100 "Definitions" of the original draft Version A), including such activities as waterflood and steam injection / cyclic steam techniques. Version B then adds an exemption paragraph immediately below the definitions that exclude from the prohibited definitions "traditional (non-high-intensity) oil and gas operations." In other words, Version B would not disallow waterflood and steam injection / cyclic steaming to be implemented).

Version C (a new version, Attachment 3) keeps Paragraph B "Enhanced Oil Recovery" as a definition, but very specifically allows waterflood techniques under limited conditions (specifically, no use of water that is not produced from the well extraction itself – in other words, no imported water, clean groundwater or surface water may be used in the waterflood process; also, no added chemicals designed to increase oil production, such as those used in hydraulic fracturing, would be permitted, although routine well maintenance and clarification chemicals as used for regular well extraction could be used.) Steam injection and cyclic steaming would be prohibited.

The Commissioners are referred to these three attachments for specific language.

STAFF ANALYSIS

Specifics of the Proposed Ordinance.

The original proposed ordinance (Version A, Attachment 1) would define high intensity oil and gas operations in the unincorporated area, including well stimulation by increasing the permeability of the formation; enhanced recovery wells that are injected with water and/or various chemicals into oil-bearing formations to recover residual oil and in some limited applications natural gas; hydraulic fracturing; acid fracturing; acid matrix stimulation treatment; acid well stimulation treatment; and disposal or storage of the substances used in or the waste or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water.

The Proposed Ordinance would prohibit these uses, including equipment necessary to conduct them.

The Proposed Ordinance would provide an amortization period of one (1) year in which any existing such operations could be brought into compliance with the new requirements.

The Proposed Ordinance requires itself to be consistent with State and Federal law.

The Proposed Ordinance would provide a procedure for any operator to demonstrate that a vested right exists to conduct the prohibited activities, and that an exemption should be granted by the Planning Commission. In order to prove the vested right, the following findings would need to be made:

1. The applicant obtained prior to the effective date of this section, a vested right to conduct well stimulation treatment operations;
2. Approving or conditionally approving the application is required because the applicant has shown that a one year amortization period is not a reasonable amortization period pursuant to state law; and
3. The extension is no longer than the minimum length of time necessary to provide a reasonable amortization period.

Finally, the Proposed Ordinance would prohibit the use of storage or percolation pits for disposal of waste water from any oil and gas operation.

The two variants of the proposed ordinance (Attachments 2 and 3) would maintain most of these requirements, but would each allow some level of waterflood enhancement to allow the existing operator to maintain production levels in its existing well field.

History Before the Planning Commission

This item has been before the Planning Commission three times before, most recently on April 4, 2016. At the last Planning Commission hearing on this matter in April, Planning Staff and the Office of the County Counsel had provided two possible drafts for Planning Commission approval:

- The original draft, as described above and as shown in Attachment A; and
- A revised draft, which is an earlier version of that shown in Attachment B but which more specifically addressed waterflood and certain other water injection activities as being exempt from the restriction.

At the April 4, 2016 meeting, after Staff presentation and public testimony, the Planning Commission deliberated briefly, and a motion and second were made in support of the revised draft that would have exempted waterflood from the overall prohibition. However, the Chair continued the hearing to May 2, 2016 in response to concerns that the revised draft had not had adequate public review.

Since that time Staff has produced two similar but differing revisions that achieve the ability for the existing operators to continue using waterflood enhancement practices. These two revisions were made public on April 27, 2016.

Significant Elements of the Prior Revised Version

Based on the public record, the original draft ordinance was found to be acceptable by the environmental community, but challenged continued oil field operations by restricting use of waterflood enhancement. The revision sought to solve this problem by specifically exempting waterflood enhancement from the restriction, along with a clarification of traditional wastewater reinjection to the spent underground reservoir. This exemption was not acceptable to a large segment of the audience.

In Staff's view, the main issue of waterflood enhancement centers on whether the injected produced wastewater is simply disposed of by reinjection, or is used to flood an underground oil deposit to move the oil from one location to another where it may be more easily extracted. On the land surface, assuming that no imported water or added chemicals are used, the activity is fundamentally the same – clarified water from earlier oil production is reinjected back into the underground reservoir. However, if it is simply disposed of, then it presumably remains more or less stationary at depth without affecting any remaining oil; if it is used for waterflood, then oil moves by force of water behind it, meaning that some pressure redistribution presumably occurs at depth.

Water Quality

In terms of risk to surface and groundwater quality, wastewater disposal by reinjection and waterflood are so similar that the relative risk levels are probably nearly identical. Produced water injection activities, regardless of the reason for them, have some risks associated with them. In July 2015, the Lawrence Berkeley Laboratory and California Council on Science and Technology (CCST) released a voluminous peer-reviewed independent scientific assessment that discusses how hydraulic fracturing and acid well stimulation could affect water, atmosphere, seismic activity, wildlife and vegetation, and human health in California ("An Independent Scientific Assessment of Well Stimulation in California - An Examination of Hydraulic Fracturing and Acid Stimulations in the Oil and Gas Industry", Jane C *S. Long, PhD; Jens T. Birkholzer, PhD; Laura C. Feinstein, PhD;* July 2015). The complete report may be found here, including a link to Chapter 2, in which water issues are addressed:

http://ccst.us/projects/hydraulic_fracturing_public/SB4.php

The report also identifies knowledge gaps and alternative practices that could avoid or mitigate these possible impacts. Volume II, Chapter 2 of the report contains the following discussion of possible risks to surface and groundwater:

> "Several plausible mechanisms and pathways associated with well stimulation can lead to release of contaminants into surface and groundwater. The release mechanisms of highest priority result from operations that are part of historically accepted practices in the California oil and gas industry, such as disposal of produced water in unlined pits, injection of produced water into potentially protected groundwater, reuse of produced water for irrigation, and disposal of produced water into sewer systems. The concerns related to produced water are relevant to well stimulation because (1) produced water from stimulated wells can contain returned stimulation fluids, and (2) the quality of formation water from stimulated reservoirs could differ from that of conventional reservoirs, and the extent to which they differ is currently unknown. *Other concerns of medium priority are accidental releases, some of which need to be better studied. These include the possibility of fractures to serve as leakage pathways (since fracturing depths are much shallower in California than in other parts of the country), leakage through degraded inactive or active wells, and accidents leading to spills or leaks. Finally, there are other releases of low priority, such as operator error and illegal discharges that can be controlled with proper training, oversight, and monitoring.*"

The first portion of the paragraph above relates primarily to fractured wells. **Alameda County's ordinance** would prohibit unlined pits, would prohibit injection of produced water into groundwater, and would not reuse water for irrigation. No produced water would be placed into sewer systems. It is probably fair to say that these four pathways for contaminant release can be ruled out. However, the text shown in italics is probably generally applicable to any injected water operations, which can and do happen in Alameda County.

Accidental releases to the surface can happen; Staff feels that the oil field operator should explain its methods for monitoring and dealing with such spills. This information, described in its DOGGR permit applications and permits, should be submitted to the County Planning Director upon completion of each document.

Fracturing is NOT practiced in Alameda County, but the idea that injected water could leak into aquifers shallower than those associated with oil deposits is still potentially valid. If a well casing is old or of questionable integrity, this could be a problem.

Operator error and illegal discharges are unpredictable, but should be addressed somehow. The CCST analysis goes on to say, in multiple following paragraphs:

"The environmental impacts of discharging oil and gas wastewater into Class II wells in California are not entirely understood...A recent detailed review of California requirements for Class II injection wells suggested that current rules may not be adequate for protection of all beneficial uses of groundwater (Walker, 2011). In addition, EPA is expected to release (in 2015) recommendations for best practices for limiting induced seismicity associated with wastewater injection by the oil and gas industry (Folger and Tiemann, 2014).

"Baseline data on groundwater quality have not been collected at appropriate locations and in a systematic manner to allow the impacts of oil and gas development on groundwater resources in California to be determined. Improved collection and organization of groundwater data would be a better

practice...Developing specific programs examining groundwater impacts of oil and gas development would be a better practice."... "The State Water Resources Control Board (SWRCB) is issuing groundwater monitoring regulations, due to take effect on July, 2015.

"Peer-reviewed studies investigating the possibility of contaminant transport due to fracturing operations have not been conducted in California. Studies conducted in other areas have suggested contamination is possible or has occurred, but the applicability of those results to California cannot be determined without more investigation, due to the unique conditions existing in California. "

"Fracturing has been practiced in California for decades (Walker et al., 2002), but fundamental studies of fracturing behavior, fracture propagation, and the orientation of fractures relative to reservoir depth for California geology are lacking. Fully understanding this behavior is particularly important in California due to the possibility of relatively shallow fracturing depths (200–300 m [650– 1,000 ft] from surface) compared to other regions using hydraulic fracturing technology. "

(The report goes on to say that monitoring and data collection have been completely inadequate in CA, and that the record on water contamination is very incomplete. While fracturing is not practiced here in Alameda County, the discussion does imply the idea that underground pathways for contamination are not adequately characterized locally).

These are important considerations for water quality, and it is clear that topic deserves much further investigation if oil extraction is to continue statewide, but it is also likely that whether or not wastewater injection is simply used for disposal (as is practiced now in Alameda County) or for waterflood enhancement (as potentially proposed by the operator), the relative risks to ground and surface water are about the same.

Conformance with the General Plan

No passages in the General Plan support or restrict oil or gas exploration, extraction or production. Policy 167 conditionally permits the oil and gas use. The changes proposed would continue general oil and gas operations as a conditionally permitted use, and would be in conformance with the General Plan.

Environmental Review

This action is exempt from the requirements of CEQA, based on the following:

(1) This Ordinance Amendment is not a project within the meaning of Section 15378 of the CEQA Guidelines, because it has no potential for resulting in physical change in the environment, directly or ultimately; and

(2) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15307, Class 7, "Actions by Regulatory Agencies for Protection of Natural Resources" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of natural resources; and

(3) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of the environment; and

(4) This Ordinance Amendment is not subject to CEQA under the general rule stated in CEQA Guidelines Section 15061(b)(3) that CEQA applies only to projects which have the potential for causing a significant effect on the environment. For the reasons set forth in subparagraphs (1), (2) and (3), it can be seen with certainty that there is no possibility that this Ordinance Amendment will have a significant effect on the environment.

CONCLUSION

Version A is favored by those wishing to see the greatest degree of limitation on high-intensity operations. Version B allows the greatest degree of flexibility for existing and prospective oil and gas operators, who may argue that risks are low and accidents and operator error can be easily addressed if they should occur. Version C focuses on the issue of waterflooding and allows the activity under specified conditions. It allows operators to continue using waterflood to dispose of process water, and to potentially seek new State permits to use waterflood for extraction.

Staff recommends that the Planning Commission recommend to the Board of Supervisors the proposed amendments to the Alameda County Zoning Ordinance it determines best address the variety of stakeholder input and concerns. In making this determination, the Commission should take into account the trade-offs between operational safety with respect to water quality and water use, the degree of caution that is appropriate to apply to this activity, and the vested right of the operator to continue operations on its current permitted oil field.

PREPARED BY:
Bruce Jensen, Senior Planner

REVIEWED BY:
Albert Lopez, Planning Director

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ATTACHMENTS

Draft Ordinance Change for Zoning Ordinance, Section 17, Version A
Draft Ordinance Change for Zoning Ordinance, Section 17, Version B
Draft Ordinance Change for Zoning Ordinance, Section 17, Version C
Draft Resolution
Comment Letters since April 4, 2016 (5 total)

VERSION A: ORDINANCE NO.: _____

AN ORDINANCE AMENDING CHAPTER 17.06 OF THE ALAMEDA COUNTY GENERAL ORDINANCE CODE TO PROHIBIT HIGH-INTENSITY OIL AND GAS OPERATIONS

The Board of Supervisors of the County of Alameda, State of California, does ordain as follows:

SECTION I

The Board of Supervisors makes the following findings in support of this Ordinance:

1. One of the basic objectives of the County's Zoning regulations is to promote public health and safety; and

2. The land use activity of drilling for and extraction of oil, gas and hydrocarbons has been conducted in Alameda County for several decades, subject to issuance of discretionary conditional use permits; and

3. Recent advances in technologies used for oil and gas exploration have made it feasible to extract oil and gas that was previously considered trapped within shale formations; and

4. The recent development and increasing prevalence of high-intensity oil and gas operations, which may use well stimulation treatments such as hydraulic fracturing, commonly called "fracking," and acid fracturing have raised concerns regarding public health, safety and welfare, including pollution of air, soil, surface water, and groundwater, the depletion of water supplies, noise pollution, traffic, and seismic hazards; and

5. Great interest has been shown by the oil and gas industry in extracting oil and gas from the Monterey Shale Formation, which has been estimated to contain 600 million barrels of recoverable oil; and

6. Portions of the Monterey Shale Formation, and other rocks potentially containing oil and gas resources, may underlie portions of the County; and

7. Although no such high-intensity oil and gas operations currently exist within the County, technologically feasible and economically viable approaches may be discovered by the oil and gas industry to tap potential accumulations of oil and gas resources in the Monterey Shale Formation or other rocks containing oil and gas resources, and interest could turn from the developed resource areas in southern California to other parts of the State, including this County; and

8. The practice of storing wastewater or produced water from oil and gas operations, which may contain hazardous concentrations of chemicals, at or near the surface in pits or sumps may result in environmental damage if the chemicals seep into surrounding soils and water sources; and

9. Article XI, Section 7 of the California Constitution permits a county to make and enforce all local police, sanitary and other ordinances and regulations not in conflict with general laws; and

10. The County has the authority to regulate the intensity of land uses pursuant to California Government Code Section 65850; and

11. The State of California adopted SB4 in 2013 and regulations in 2015 (Title 14, Ch. 4, Sections 1751 et seq.) concerning well stimulation activities such as fracking and has adopted regulations regarding the disposal of wastewater, but the State has not limited a local agency's jurisdiction to govern appropriate uses of land within its boundaries; and

12. This Ordinance Amendment does not contradict or duplicate state law because, while the state law imposes requirements for such operations, it does not require that such operations be permitted in any and all parts of the State; and

13. This Ordinance Amendment does not tread into a field fully occupied by state law, because the state law does not impose restrictions or requirements with respect to local land use; and

14. This Ordinance Amendment is not anticipated to effectuate a taking of private property because no high-intensity oil and gas operations currently exist in the County and any affected land will almost certainly retain some economically viable use consistent with the agricultural character of the district such as viticulture, farming, ranching, animal boarding, production of renewable energy, open space and conservation easements, and some residential uses; and

15. Currently, drilling for and removal of oil, gas or other hydrocarbon substances is only permitted in the Agricultural district of the County if a conditional use permit is approved pursuant to Ordinance Code section 17.06.040(I); and

16. High-intensity oil and gas operations constitute a land use separate and distinct from those uses permitted by Ordinance Code section 17.06.040(I) because drilling for and removal of oil, gas or other hydrocarbon substances generally involves drilling wells through which oil or gas flows naturally under its own pressure or through which oil is pumped up to the surface, whereas high-intensity oil and gas operations, typically include high-pressure injections of solvents, acids, and other chemicals, and/or steam to fracture, heat, or dissolve into the land in order to free oil and/or natural gas from underground formations and the uses of drilling for and removing oil and gas are distinct from storing and disposing of wastewater; and

17. In adopting the South Livermore Plan in 1993, the East County Area Plan (ECAP) in 1994, and Measure D in 2000, the Board of Supervisors and the voters have been reducing industrial uses in the East County in favor of agricultural uses, open space uses, and uses that would enhance the development of the region as a wine region; and

18. High-intensity oil and gas operations, including hydraulic fracturing, endanger the County's public health and safety and the environment; and

19. This Ordinance Amendment is consistent with ECAP policy 167 in that it continues to "protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction," and

20. The potential harm associated with the prohibited activities could affect not only the human communities of the County but also the agricultural and open space uses, including potential negative effects on the water and food sources for horses, cattle and wildlife; and

21. This Ordinance Amendment would restrict all current and future land uses within the unincorporated area of Alameda County from expanding to include high-intensity oil and gas operations, thus helping to reduce the likelihood of the risks described above; and

22. With this action, the Alameda County Board of Supervisors intends to prohibit high-intensity oil and gas operations such as fracking in all districts; and

23. This action is exempt from the requirements of CEQA, based on the following:

(1) This Ordinance Amendment is not a project within the meaning of Section 15378 of the CEQA Guidelines, because it has no potential for resulting in physical change in the environment, directly or ultimately; and

(2) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15307, Class 7, "Actions by Regulatory Agencies for Protection of Natural Resources" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of natural resources; and

(3) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of the environment; and

(4) This Ordinance Amendment is not subject to CEQA under the general rule stated in CEQA Guidelines Section 15061(b)(3) that CEQA applies only to projects which have the potential for causing a significant effect on the environment. For the reasons set forth in subparagraphs (1), (2) and (3), it

can be seen with certainty that there is no possibility that this Ordinance Amendment will have a significant effect on the environment.

SECTION II

Sections 17.06.100 through Section 17.06.140 are hereby added to the Alameda County General Ordinance Code and read as follows:

17.06.100 High-Intensity Oil and Gas Operations – Definition

For the purposes of this chapter, high-intensity oil and gas operations means any of the following uses:

A. Well stimulation treatment – any treatment of a well designed to enhance oil or gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments.
B. Enhanced recovery wells - wells that are injected with brine, water, steam, polymers, carbon dioxide, or other gasses into oil-bearing formations to recover residual oil and in some limited applications natural gas. The injected fluid thins (decreases the viscosity) or displaces small amounts of extractable oil and gas, which is then available for recovery. Examples include waterflood injection, steamflood injection, and cyclic steam injection.
C. Hydraulic fracturing or "fracking" – a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.
D. Acid fracturing – a well stimulation treatment that, in whole or in part, includes pressurized injection of acid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.
E. Acid matrix stimulation treatment – an acid treatment conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.
F. Acid well stimulation treatment - a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.
G. Disposal or storage of the substances used in or the waste or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or

produced water, other than storage associated with transportation through the County for disposal or storage outside of the County.

H. Disposal or storage in pits or sumps of any wastewater or produced water that is a byproduct of the uses listed in 17.06.040(I).

17.06.110 High-Intensity Oil and Gas Operations – Prohibited Use

High-intensity oil and gas operations are prohibited in the unincorporated areas of the County. The development, construction, installation, or use of any facility, appurtenance, or above-ground equipment, whether temporary or permanent, mobile or fixed, accessory or principal, in support of high-intensity oil and gas operations is prohibited in the unincorporated areas of the County.

17.06.120 High-Intensity Oil and Gas Operations – Amortization Period

A. Within one year of the effective date of this section, the owners and operators of any existing high-intensity oil and gas operations shall bring land uses into conformity with this ordinance.
B. The one-year amortization period permitted by Subsection A may be extended on a case-by-case basis if the Planning Commission determines that a high-intensity oil and gas operations owner or operator has shown that one year is not a reasonable amortization period pursuant to state law and Section 17.06.140. Any extension may be only for the minimum length of time necessary to provide a reasonable amortization period.

17.06.130 High-Intensity Oil and Gas Operations – Consistent with State and Federal Law

The provisions of sections 17.06.100 through 17.06.120 shall not be applicable to the extent, but only to the extent, they would violate the constitution or laws of the United States or of the State of California.

In the event a property owner contends that application of these provisions effects an unconstitutional taking of property, the property owner may request, and the Planning Commission may grant, an exception to application of these provisions in accordance with Section 17.06.140.

17.06.140 High-Intensity Oil and Gas Operations – Nonconforming uses

A. A person claiming a vested right to uses prohibited by Sections 17.06.100 through 17.06.120 must apply to the County for a determination that the vested right exists. Notice of the hearing shall be made in accordance with the procedures provided by section 17.54.830. The determination shall be made by the Planning Commission, following a public hearing. Upon a determination that the vested right exits, the use may continue subject to the sections of this title concerning nonconforming uses (17.52.610 through 17.52.730). The determination shall be appealable to the Board of Supervisors pursuant to sections 17.54.670-17.54.710.

B. The applicant for any exemption shall submit as part of the application any and all evidentiary support reasonably available sufficient to establish the basis for the claim of exemption.

C. A determination of exemption application shall be approved or conditionally approved only if the review authority first makes the following findings:
   1. The applicant obtained prior to the effective date of this section, a vested right to conduct well stimulation treatment operations;
   2. Approving or conditionally approving the application is required because the applicant has shown that a one year amortization period is not a reasonable amortization period pursuant to state law; and
   3. The extension is no longer than the minimum length of time necessary to provide a reasonable amortization period.

D. No enforcement action shall be taken against any owner or operator of an existing facility if an application for a determination of exemption has been filed in compliance with this Section and the application has not expired, or final action to deny the application has not occurred.

SECTION III

This ordinance shall take effect and be in force thirty (30) days from and after the date of passage and before the expiration of fifteen (15) days after its passage it shall be published once with the names of the members voting for and against the same in the Inter-City Express, a newspaper published in the County of Alameda.

Adopted by the Board of Supervisors of the County of Alameda, State of California, on the ____ day of _____, 2016, by the following called vote:

AYES:
NOES:
EXCUSED:

_____
, President of the Board of Supervisors
of the County of Alameda,
State of California

_____
, Clerk of the Board of Supervisors
of the County of Alameda,
State of California

Approved as to Form:

Donna R. Ziegler, County Counsel

By: _____

ALAMEDA COUNTY COMMUNITY DEVELOPMENT AGENCY
PLANNING DEPARTMENT

STAFF REPORT

TO: PLANNING COMMISSION
HEARING DATE: MAY 23, 2016

GENERAL INFORMATION

PROPOSED ZONING ORDINANCE AMENDMENTS	Modify the Alameda County Zoning Ordinance (ACZO) to prohibit high intensity oil and gas operations in the unincorporated area.
ZONING:	All parcels zoned "A-Agriculture" would be affected
GENERAL PLAN DESIGNATION:	All "LPA" (Large Parcel Agriculture), "WM" (Water Management) and "RM" (Resource Management) designations would be affected.
ENVIRONMENTAL REVIEW:	This action would be exempt from the requirements of the California Environmental Quality Act (CEQA), CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment." The action would result in no new physical impacts to the environment.

RECOMMENDATION

That the Planning Commission recommend the Proposed Ordinance to the Board of Supervisors without the optional language that would allow waterflood well enhancement.

DESCRIPTION OF PROPOSAL

Staff presents an amendment to Section 17.06.100 through Section 17.06.140, proposed to be added to the Alameda County General Ordinance Code, and designed to place restrictions on a variety of oil and gas extraction activities considered as "High-Intensity."

The drafted ordinance, Attachment 1, would disallow almost any oil and gas extraction activity that goes beyond simple pumping of the oil/water mixture from the ground, separating and clarifying the mixture into oil and water, and exporting the oil while reinjecting the produced water back into the original reservoir underground.

The draft includes optional highlighted language that, if adopted, would keep Paragraph B "Enhanced Oil Recovery" as a definition, but would specifically allow waterflood techniques under limited conditions (specifically, no use of water that is not produced from the well extraction itself – in other words, no imported water, clean groundwater or surface water may be used in the waterflood process; also, no added chemicals designed to increase oil production, such as those used in hydraulic fracturing, would be permitted, although routine well maintenance and clarification chemicals as used for regular well extraction could be used.) Steam injection and cyclic steaming would be prohibited.

The Commissioners are referred to Attachment A for the precise language.

STAFF ANALYSIS

Specifics of the Proposed Ordinance.

The proposed ordinance would define high intensity oil and gas operations in the unincorporated area, including well stimulation by increasing the permeability of the formation; enhanced recovery wells that are injected with water and/or various chemicals into oil-bearing formations to recover residual oil and in some limited applications natural gas; hydraulic fracturing; acid fracturing; acid matrix stimulation treatment; acid well stimulation treatment; and disposal or storage of the substances used in or the waste or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water.

The Proposed Ordinance would prohibit these uses, including equipment necessary to conduct them.

The Proposed Ordinance would provide an amortization period of one (1) year in which any existing such operations could be brought into compliance with the new requirements.

The Proposed Ordinance requires itself to be consistent with State and Federal law.

The Proposed Ordinance would provide a procedure for any operator to demonstrate that a vested right exists to conduct the prohibited activities, and that an exemption should be granted by the Planning Commission. In order to prove the vested right, the following findings would need to be made:

1. The applicant obtained prior to the effective date of this section, a vested right to conduct well stimulation treatment operations;
2. Approving or conditionally approving the application is required because the applicant has shown that a one year amortization period is not a reasonable amortization period pursuant to state law; and
3. The extension is no longer than the minimum length of time necessary to provide a reasonable amortization period.

Finally, the Proposed Ordinance would prohibit the use of storage or percolation pits for disposal of waste water from any oil and gas operation.

The optional highlighted language shown in Attachment A would maintain most of these requirements, but would allow a limited level of waterflood enhancement to allow the existing operator to maintain production levels in its existing well field.

History Before the Planning Commission

This item has been before the Planning Commission four times before, most recently on May 2, 2016. At that meeting, after Staff presentation and public testimony, the Planning Commission deliberated briefly, and a motion and second were made in support of the Proposed Ordinance with minor added language. However, a majority vote could was not achieved and the Chair continued the hearing to a future, date, now noticed for May 23, 2016 in response to concerns by Commissioner Goff that uncertainty remained about waterflood enhancement.

Comparison of Wastewater Injection with Waterflood Well Enhancement

Currently, the sole Alameda County operator, E&B Natural Resources, has a DOGGR permit for primary oil extraction, and is permitted to inject produced wastewater back into the oil-bearing formation from which it came. E&B reports that produced water exceeds produced oil by a factor of about 9:1, or for every barrel of oil produced, approximately nine (9) barrels of water must be disposed by injection.

In general, wastewater injection is performed using an ordinary deep well, designated Class II by DOGGR, and usually done at some pressure greater than natural gravity flow. It may be injected into the original formation from which it came, or it may be injected into a different, previously tapped or untapped formation, depending on the permit (E&B injects the wastewater back into the original formation). Because the goal of DOGGR and other agencies is to ensure that injected water does not laterally migrate beyond the formation for which it is intended, before use, injection wells are "step-tested" to ensure that the formation may accept the projected amount of water and pressure without fracturing; after that, wells are pressure tested every year to ensure integrity of both the formation and the well casings. There are limitations on the chemical composition of the fluids that may be reinjected. Typically, wastewater injection produces no well enhancement at nearby production wells.

There are an estimated 52,000 Class II injection wells in California alone, and of these, approximately 20% are Class II disposal wells. The other 80% are for waterflood, steamflood and cyclic steam.

Waterflood enhancement resembles wastewater injection in most practical ways. However, there are some potential differences. In waterflood, wastewater is injected into the same formation from which oil is produced, typically at pressure greater than gravity flow. With waterflood, produced water is often used, but it can be augmented with imported water to ensure that the oil remaining in the formation is completely replaced (if E&B requests a permit for waterflood well enhancement, it has stated that it proposes to use only produced water in the foreseeable future). Lateral migration of injected water is still avoided by initial step testing, but because the ambient formation pressures in waterflood are usually lower than in wastewater injection wells, the testing is required only every two years (the operator may test as often as desired for economic reasons). Because waterflood enhancement is designed to enhance well production in adjacent wells, it typically results in greater oil production at a given location(s).

Wastewater Injection	**Waterflood Well Stimulation**
Typically performed using an ordinary Class II deep well, usually at some pressure greater than natural gravity flow	Typically performed using an ordinary Class II deep well, usually at some pressure greater than natural gravity flow
May be injected into original formation, or may be injected into a different formation	Water always injected into the *same formation* from which oil is produced
Wells initially "step-tested" to ensure that the formation may accept water and pressure without fracturing; thereafter, wells are pressure tested *every year*	Wells initially "step-tested" to ensure that the formation may accept water and pressure without fracturing; thereafter, wells are pressure tested *every OTHER year or as desired by operator*
Pressure limited to 95% of Step-Test determined formation fracture limit	Pressure limited to 95% of Step-Test determined formation fracture limit
Limitations on the chemical composition of the fluids that may be reinjected	Limitations on the chemical composition of the fluids that may be reinjected
Produces no well enhancement at nearby production wells	*Produces well enhancement* at nearby production wells in the form of increased oil production
Approximately 20% of existing Class II wells statewide	A portion of approximately 80% of Class II wells statewide

Although the 52,000 California wells have presumably been initially step-tested and tested annually or semiannually for integrity, some fraction of these wells do not meet the standards of the Federal Safe Drinking Water Act. Clean Water Action, a not-for-profit organization, puts this number of wells at about 6,000 statewide, or about 12% (see Letter, Attachment D).

Because waterflood enhancement increases oil production, it also contributes to use of that oil, which in turn increases the potential for resulting pollutant air emissions, including greenhouse gases methane and carbon dioxide.

Attachment C presents a more thorough discussion of these two procedures, with reference citations.

Recent Letters since the Previous Planning Commission Hearing

Staff has received three letters since the previous Planning Commission Hearing, Attachment D.

1. Amy Roth, Government and Public Affairs Director, E&B Natural Resources – the letter reiterates and builds upon prior comments by E&B, asserting that:

   - The most restrictive ordinance prohibits E&B from being able to dispose of wastewater.
   - The proposed findings do not support a ban on water injection.
   - The most restrictive ordinance prohibits routine maintenance using dilute acid.
   - It also creates new definitions for standard regulatory terms.
   - The vested rights process unfairly panelizes E&B, and makes it costly and difficult to show that their existing operations do not violate the new rules.

   Staff believes that most of the substantive issues in this letter are addressed by the current language in the proposed ordinance.

2. Keith Nakatani, Oil and Gas Program Manager, Clean Water Action – The letter urges the adoption of the strongest restriction on high-intensity oil and gas operations, citing the threat of climate change and the necessity to keep fossil fuels in the ground, and asserting that The Division of Oil and Gas and Geothermal Resources has approved over 6,000 oil and gas industry injection projects in violation of the federal Safe Drinking Water Act, putting potential drinking water resources at risk of contamination.

3. Edward S. Hazard, President, California Chapter of the National Association of Royalty Owners (NARO-CA) – This letter expresses opposition to the proposed ordinance "because of the negative impact it will have on mineral and royalty owners in Alameda County." The letter continues, "This ordinance would take away the rights of property owners to access the full value of his or her land…Every safe and permitted technology that the County bans, including water injection, could take away the income that royalty owners rely on. This is fundamentally wrong and unconstitutional. If this passes, they may have claim not only to current value, but to value of the mineral deposit in its entirety."

Conformance with the General Plan

No passages in the General Plan support or restrict oil or gas exploration, extraction or production. Policy 167 conditionally permits the oil and gas use. The changes proposed would continue general oil and gas operations as a conditionally permitted use, and would be in conformance with the General Plan.

Environmental Review

This action is exempt from the requirements of CEQA, based on the following:

(1) This Ordinance Amendment is not a project within the meaning of Section 15378 of the CEQA Guidelines, because it has no potential for resulting in physical change in the environment, directly or ultimately; and
(2) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15307, Class 7, "Actions by Regulatory Agencies for Protection of Natural Resources" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of natural resources; and
(3) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of the environment; and
(4) This Ordinance Amendment is not subject to CEQA under the general rule stated in CEQA Guidelines Section 15061(b)(3) that CEQA applies only to projects which have the potential for causing a significant effect on the environment. For the reasons set forth in subparagraphs (1), (2) and (3), it can be seen with certainty that there is no possibility that this Ordinance Amendment will have a significant effect on the environment.

CONCLUSION AND STAFF RECOMMENDATION

That the Planning Commission recommend the Proposed Ordinance to the Board of Supervisors without the optional highlighted language that would allow waterflood well enhancement. This recommendation would allow the current operator to continue exploration and primary oil extraction by currently employed methods permitted under its permit from the Division of Oil, Gas and Geothermal Resources (DOGGR), but would prohibit other forms of well enhancement and support environmental protection by minimizing the potential for lateral wastewater migration and greenhouse gas emissions.

Although it is not fracturing per se, waterflood activity could be a new activity and potentially could extend the life of production wells. Given that the probable impact of wastewater disposal and water flood are mostly relatively similar (but done for different reasons) the optional highlighted language would provide E&B more flexibility moving forward should they decide to pursue a water flood permit. If the Commission believes the existing regulatory scheme via DOGGR/UIC is sufficient to mitigate any uncertainty as to environmental and groundwater protection, the optional language should be considered for inclusion.

PREPARED BY:
Bruce Jensen, Senior Planner

REVIEWED BY:
Albert Lopez, Planning Director

H:\Hydraulic Fracturing Fracking and Related \PC packet 5-23-16 \PC Staff Report 2016-5-23 Fracking Prohibition\doc

ATTACHMENTS

A. Draft Ordinance Change for Zoning Ordinance, Section 17, with optional highlighted language
B. Draft Resolution
C. In-Depth Discussion of Underground Injection, Wastewater Injection and Waterflood Enhancement
D. Comment Letters since May 2, 2016 (3 total)

EXHIBIT "A"

RESOLUTION NO. 16-07 - AT MEETING HELD MAY 23, 2016

RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF ALAMEDA REGARDING AN ORDINANCE AMENDING CHAPTER 17.06 OF THE ALAMEDA COUNTY GENERAL ORDINANCE CODE TO PROHIBIT HIGH-INTENSITY OIL AND GAS OPERATIONS

Introduced by Commissioner Moore
Seconded by Commissioner Goff

WHEREAS One of the basic objectives of the County's Zoning regulations is to promote public health and safety; and

WHEREAS the land use activity of drilling for and extraction of oil, gas and hydrocarbons has been conducted in Alameda County for several decades, subject to issuance of discretionary conditional use permits; and

WHEREAS Recent advances in technologies used for oil and gas exploration have made it feasible to extract oil and gas that was previously considered trapped within shale formations; and

WHEREAS he recent development and increasing prevalence of high-intensity oil and gas operations, which may use well stimulation treatments such as hydraulic fracturing, commonly called "fracking," and acid fracturing have raised concerns regarding public health, safety and welfare, including pollution of air, soil, surface water, and groundwater, the depletion of water supplies, noise pollution, traffic, and seismic hazards; and

WHEREAS great interest has been shown by the oil and gas industry in extracting oil and gas from the Monterey Shale Formation, which has been estimated to contain 600 million barrels of recoverable oil; and

WHEREAS portions of the Monterey Shale Formation, and other rocks potentially containing oil and gas resources, may underlie portions of the County; and

WHEREAS although no such high-intensity oil and gas operations currently exist within the County, technologically feasible and economically viable approaches may be discovered by the oil and gas industry to tap potential accumulations of oil and gas resources in the Monterey Shale Formation or other rocks containing oil and gas resources, and interest could turn from the developed resource areas in southern California to other parts of the State, including this County; and

WHEREAS The practice of storing wastewater or produced water from oil and gas operations, which may contain hazardous concentrations of chemicals, at or near the surface in pits or sumps may result in environmental damage if the chemicals seep into surrounding soils and water sources; and

WHEREAS Article XI, Section 7 of the California Constitution permits a county to make and enforce all local police, sanitary and other ordinances and regulations not in conflict with general laws; and

WHEREAS the County has the authority to regulate the intensity of land uses pursuant to California Government Code Section 65850; and

WHEREAS the State of California adopted SB4 in 2013 and regulations in 2015 (Title 14, Ch. 4, Sections 1751 et seq.) concerning well stimulation activities such as fracking and has adopted regulations regarding the disposal of wastewater, but the State has not limited a local agency's jurisdiction to govern appropriate uses of land within its boundaries; and

WHEREAS this Ordinance Amendment does not contradict or duplicate state law because, while the state law imposes requirements for such operations, it does not require that such operations be permitted in any and all parts of the State; and

WHEREAS this Ordinance Amendment does not tread into a field fully occupied by state law, because the state law does not impose restrictions or requirements with respect to local land use; and

WHEREAS this Ordinance Amendment is not anticipated to effectuate a taking of private property because no high-intensity oil and gas operations currently exist in the County and any affected land will almost certainly retain some economically viable use consistent with the agricultural character of the district such as viticulture, farming, ranching, animal boarding, production of renewable energy, open space and conservation easements, and some residential uses; and

WHEREAS currently, drilling for and removal of oil, gas or other hydrocarbon substances is only permitted in the Agricultural district of the County if a conditional use permit is approved pursuant to Ordinance Code section 17.06.040(I); and

WHEREAS high-intensity oil and gas operations constitute a land use separate and distinct from those uses permitted by Ordinance Code section 17.06.040(I) because drilling for and removal of oil, gas or other hydrocarbon substances generally involves drilling wells through which oil or gas flows naturally under its own pressure or through which oil is pumped up to the surface, whereas high-intensity oil and gas operations, typically include high-pressure injections of solvents, acids, and other chemicals, and/or steam to fracture, heat, or dissolve into the land in

order to free oil and/or natural gas from underground formations and the uses of drilling for and removing oil and gas are distinct from storing and disposing of wastewater; and

WHEREAS in adopting the South Livermore Plan in 1993, the East County Area Plan (ECAP) in 1994, and Measure D in 2000, the Board of Supervisors and the voters have been reducing industrial uses in the East County in favor of agricultural uses, open space uses, and uses that would enhance the development of the region as a wine region; and

WHEREAS high-intensity oil and gas operations, including hydraulic fracturing, endanger the County's public health and safety and the environment; and

WHEREAS this Ordinance Amendment is consistent with ECAP policy 167 in that it continues to "protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction," and

WHEREAS the potential harm associated with the prohibited activities could affect not only the human communities of the County but also the agricultural and open space uses, including potential negative effects on the water and food sources for horses, cattle and wildlife; and

WHEREAS this Ordinance Amendment would restrict all current and future land uses within the unincorporated area of Alameda County from expanding to include high-intensity oil and gas operations, thus helping to reduce the likelihood of the risks described above; and

WHEREAS with this action, the Alameda County Board of Supervisors intends to prohibit high-intensity oil and gas operations in all districts; and

WHEREAS this action is exempt from the requirements of CEQA, based on the following:

(1) This Ordinance Amendment is not a project within the meaning of Section 15378 of the CEQA Guidelines, because it has no potential for resulting in physical change in the environment, directly or ultimately; and

(2) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15307, Class 7, "Actions by Regulatory Agencies for Protection of Natural Resources" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of natural resources; and

(3) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of the environment; and

(4) This Ordinance Amendment is not subject to CEQA under the general rule stated in CEQA Guidelines Section 15061(b)(3) that CEQA applies only to projects which have the potential for causing a significant effect on the environment. For the reasons set forth in subparagraphs (1), (2) and (3), it can be seen with certainty that there is no possibility that this Ordinance Amendment will have a significant effect on the environment; and

WHEREAS notice of public hearing was given as required by law; and

WHEREAS it is the finding of this Commission that amendment to the Zoning Ordinance herein described is in the public interest for the reasons that it is consistent with County plans and policies for oil and gas production, and consistent with the interests of the health, safety and welfare of the citizens of Alameda County.

NOW, THEREFORE:

BE IT RESOLVED that this Commission does hereby recommend to the Board of Supervisors that Section 17.06 of the Zoning Ordinance of Alameda County be amended to read as follows [Sections 17.06.100 through Section 17.06.140 are hereby added to the Alameda County General Ordinance Code and read as follows:]

17.06.100 High-Intensity Oil and Gas Operations – Definition

1. For the purposes of this chapter, high-intensity oil and gas operations means any of the following uses:

   A. Well stimulation treatment – any treatment of a well designed to enhance oil or gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments, as defined in Title 14 California Code of Regulations Section 1761.
   B. Enhanced recovery wells - wells that are injected with brine, water, steam, polymers, carbon dioxide, or other gasses into oil-bearing formations to recover residual oil and in some limited applications natural gas. The injected fluid thins (decreases the viscosity) or displaces small amounts of extractable oil and gas, which is then available for recovery. Examples include waterflood injection that uses imported water, shallow well water or surface water and/or injects chemicals designed for well production increase (other than those found naturally in produced water or which are necessary for routine well maintenance or clarifier use), steamflood injection, and cyclic steam injection.
   C. Hydraulic fracturing or "fracking" – a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

D. Acid fracturing – a well stimulation treatment that, in whole or in part, includes pressurized injection of acid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

E. Acid matrix stimulation treatment – an acid treatment conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.

F. Acid well stimulation treatment - a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.

G. Disposal or storage of the substances used in or the waste or byproducts of the uses listed above, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water, other than storage associated with transportation through the County for disposal or storage outside of the County.

H. Disposal or storage in pits or sumps of any wastewater or produced water that is a byproduct of the uses listed in 17.06.040(I).

2. High-Intensity Oil and Gas Operations do not include produced water injection, storage tanks for produced water, and routine well cleaning and maintenance activities. Waterflood injection that does not use imported water, shallow well water or surface water and/or does not inject chemicals designed for well production increase (other than those found naturally in produced water or which are necessary for routine well maintenance or clarifier use) is excluded and does not constitute high-intensity oil and gas operations, as long the injection complies with all applicable state law and regulations.

17.06.110 High-Intensity Oil and Gas Operations – Prohibited Use

High-intensity oil and gas operations are prohibited in the unincorporated areas of the County. The development, construction, installation, or use of any facility, appurtenance, or above-ground equipment, whether temporary or permanent, mobile or fixed, accessory or principal, in support of high-intensity oil and gas operations is prohibited in the unincorporated areas of the County.

17.06.120 High-Intensity Oil and Gas Operations – Amortization Period

A. Within one year of the effective date of this section, the owners and operators of any existing high-intensity oil and gas operations shall bring land uses into conformity with this ordinance.

B. The one-year amortization period permitted by Subsection A may be extended on a case-by-case basis if the Planning Commission determines that a high-intensity oil and gas operations owner or operator has shown that one year is not a reasonable amortization

period pursuant to state law and Section 17.06.140. Any extension may be only for the minimum length of time necessary to provide a reasonable amortization period.

17.06.130 High-Intensity Oil and Gas Operations – Consistent with State and Federal Law

The provisions of sections 17.06.100 through 17.06.120 shall not be applicable to the extent, but only to the extent, they would violate the constitution or laws of the United States or of the State of California.

In the event a property owner contends that application of these provisions effects an unconstitutional taking of property, the property owner may request, and the Planning Commission may grant, an exception to application of these provisions in accordance with Section 17.06.140.

17.06.140 High-Intensity Oil and Gas Operations – Nonconforming uses

A. A person claiming a vested right to uses prohibited by Sections 17.06.100 through 17.06.120 must apply to the County for a determination that the vested right exists. Notice of the hearing shall be made in accordance with the procedures provided by section 17.54.830. The determination shall be made by the Planning Commission, following a public hearing. Upon a determination that the vested right exits, the use may continue subject to the sections of this title concerning nonconforming uses (17.52.610 through 17.52.730). The determination shall be appealable to the Board of Supervisors pursuant to sections 17.54.670-17.54.710.

B. The applicant for any exemption shall submit as part of the application any and all evidentiary support reasonably available sufficient to establish the basis for the claim of exemption.

C. A determination of exemption application shall be approved or conditionally approved only if the review authority first makes the following findings:
   1. The applicant obtained prior to the effective date of this section, a vested right to conduct high-intensity oil and gas operations;
   2. Approving or conditionally approving the application is required because the applicant has shown that a one year amortization period is not a reasonable amortization period pursuant to state law; and
   3. The extension is no longer than the minimum length of time necessary to provide a reasonable amortization period.

D. No enforcement action shall be taken against any owner or operator of an existing facility if an application for a determination of exemption has been filed in compliance with this Section and the application has not expired, or final action to deny the application has not occurred.

ADOPTED BY THE FOLLOWING VOTE:

AYES:	**Commissioners Gin, Goff, Kastriotis, Moore, Ratto, Rhodes**
NOE:	**None**
EXCUSED:	**None**
ABSENT:	**None**
ABSTAINED:	**None**

Chris Bazar, Community Development Director, and
Albert Lopez, Secretary to the County Planning Commission of Alameda County

VERSION B: ORDINANCE NO.: _____

AN ORDINANCE AMENDING CHAPTER 17.06 OF THE ALAMEDA COUNTY GENERAL ORDINANCE CODE TO PROHIBIT HIGH-INTENSITY OIL AND GAS OPERATIONS

The Board of Supervisors of the County of Alameda, State of California, does ordain as follows:

SECTION I

The Board of Supervisors makes the following findings in support of this Ordinance:

1. One of the basic objectives of the County's Zoning regulations is to promote public health and safety; and

2. The land use activity of drilling for and extraction of oil, gas and hydrocarbons has been conducted in Alameda County for several decades, subject to issuance of discretionary conditional use permits; and

3. Recent advances in technologies used for oil and gas exploration have made it feasible to extract oil and gas that was previously considered trapped within shale formations; and

4. The recent development and increasing prevalence of high-intensity oil and gas operations, which may use well stimulation treatments such as hydraulic fracturing, commonly called "fracking," and acid fracturing have raised concerns regarding public health, safety and welfare, including pollution of air, soil, surface water, and groundwater, the depletion of water supplies, noise pollution, traffic, and seismic hazards; and

5. Great interest has been shown by the oil and gas industry in extracting oil and gas from the Monterey Shale Formation, which has been estimated to contain 600 million barrels of recoverable oil; and

6. Portions of the Monterey Shale Formation, and other rocks potentially containing oil and gas resources, may underlie portions of the County; and

7. Although no such high-intensity oil and gas operations currently exist within the County, technologically feasible and economically viable approaches may be discovered by the oil and gas industry to tap potential accumulations of oil and gas resources in the Monterey Shale Formation or other rocks containing oil and gas resources, and interest could turn from the developed resource areas in southern California to other parts of the State, including this County; and

8. The practice of storing wastewater or produced water from oil and gas operations, which may contain hazardous concentrations of chemicals, at or near the surface in pits or sumps may result in environmental damage if the chemicals seep into surrounding soils and water sources; and

9. Article XI, Section 7 of the California Constitution permits a county to make and enforce all local police, sanitary and other ordinances and regulations not in conflict with general laws; and

10. The County has the authority to regulate the intensity of land uses pursuant to California Government Code Section 65850; and

11. The State of California adopted SB4 in 2013 and regulations in 2015 (Title 14, Ch. 4, Sections 1751 et seq.) concerning well stimulation activities such as fracking and has adopted regulations regarding the disposal of wastewater, but the State has not limited a local agency's jurisdiction to govern appropriate uses of land within its boundaries; and

12. This Ordinance Amendment does not contradict or duplicate state law because, while the state law imposes requirements for such operations, it does not require that such operations be permitted in any and all parts of the State; and

13. This Ordinance Amendment does not tread into a field fully occupied by state law, because the state law does not impose restrictions or requirements with respect to local land use; and

14. This Ordinance Amendment is not anticipated to effectuate a taking of private property because no high-intensity oil and gas operations currently exist in the County and any affected land will almost certainly retain some economically viable use consistent with the agricultural character of the district such as viticulture, farming, ranching, animal boarding, production of renewable energy, open space and conservation easements, and some residential uses; and

15. Currently, drilling for and removal of oil, gas or other hydrocarbon substances is only permitted in the Agricultural district of the County if a conditional use permit is approved pursuant to Ordinance Code section 17.06.040(I); and

16. High-intensity oil and gas operations constitute a land use separate and distinct from those uses permitted by Ordinance Code section 17.06.040(I) because drilling for and removal of oil, gas or other hydrocarbon substances generally involves drilling wells through which oil or gas flows naturally under its own pressure or through which oil is pumped up to the surface, whereas high-intensity oil and gas operations, typically include high-pressure injections of solvents, acids, and other chemicals, and/or steam to fracture, heat, or dissolve into the land in order to free oil and/or natural gas from underground formations and the uses of drilling for and removing oil and gas are distinct from storing and disposing of wastewater; and

17. In adopting the South Livermore Plan in 1993, the East County Area Plan (ECAP) in 1994, and Measure D in 2000, the Board of Supervisors and the voters have been reducing industrial uses in the East County in favor of agricultural uses, open space uses, and uses that would enhance the development of the region as a wine region; and

18. High-intensity oil and gas operations, including hydraulic fracturing, endanger the County's public health and safety and the environment; and

19. This Ordinance Amendment is consistent with ECAP policy 167 in that it continues to "protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction," and

20. The potential harm associated with the prohibited activities could affect not only the human communities of the County but also the agricultural and open space uses, including potential negative effects on the water and food sources for horses, cattle and wildlife; and

21. This Ordinance Amendment would restrict all current and future land uses within the unincorporated area of Alameda County from expanding to include high-intensity oil and gas operations, thus helping to reduce the likelihood of the risks described above; and

22. With this action, the Alameda County Board of Supervisors intends to prohibit high-intensity oil and gas operations such as fracking in all districts; and

23. This action is exempt from the requirements of CEQA, based on the following:

(1) This Ordinance Amendment is not a project within the meaning of Section 15378 of the CEQA Guidelines, because it has no potential for resulting in physical change in the environment, directly or ultimately; and

(2) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15307, Class 7, "Actions by Regulatory Agencies for Protection of Natural Resources" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of natural resources; and

(3) This Ordinance Amendment is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308, Class 8, "Actions by Regulatory Agencies for Protection of the Environment" as an regulatory action taken by the County pursuant to its police power to assure maintenance and protection of the environment; and

(4) This Ordinance Amendment is not subject to CEQA under the general rule stated in CEQA Guidelines Section 15061(b)(3) that CEQA applies only to projects which have the potential for causing a significant effect on the environment. For the reasons set forth in subparagraphs (1), (2) and (3), it

can be seen with certainty that there is no possibility that this Ordinance Amendment will have a significant effect on the environment.

SECTION II

Sections 17.06.100 through Section 17.06.140 are hereby added to the Alameda County General Ordinance Code and read as follows:

17.06.100 High-Intensity Oil and Gas Operations – Definition

1. For the purposes of this chapter, high-intensity oil and gas operations means any of the following uses:

A. Well stimulation treatment – any treatment of a well designed to enhance oil or gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments, as defined in Title 14 California Code of Regulations Section 1761.

B. Hydraulic fracturing or "fracking" – a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

C. Acid fracturing – a well stimulation treatment that, in whole or in part, includes pressurized injection of acid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing the production of oil or gas from a well.

D. Acid matrix stimulation treatment – an acid treatment conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.

E. Acid well stimulation treatment - a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.

F. Disposal or storage of the substances used in or the waste or byproducts of the uses listed in this section, including but not limited to hydraulic fracturing fluid, acid well stimulation fluid, well stimulation treatment fluid, flowback fluid, wastewater or produced water, other than storage associated with transportation through the County for disposal or storage outside of the County.

G. Disposal or storage in pits or sumps of any wastewater or produced water that is a byproduct of the uses listed in 17.06.040(I).

2. High-Intensity Oil and Gas Operations do not include traditional (non-high-intensity) oil and gas operations that are allowed as a permitted use pursuant to Section 17.06.040.I and comply with applicable DOGGR regulations, including, but not limited to produced water injection, storage tanks for produced water, and routine well cleaning and maintenance activities.

17.06.110 High-Intensity Oil and Gas Operations – Prohibited Use

High-intensity oil and gas operations are prohibited in the unincorporated areas of the County. The development, construction, installation, or use of any facility, appurtenance, or above-ground equipment, whether temporary or permanent, mobile or fixed, accessory or principal, in support of high-intensity oil and gas operations is prohibited in the unincorporated areas of the County.

17.06.120 High-Intensity Oil and Gas Operations – Amortization Period

A. Within one year of the effective date of this section, the owners and operators of any existing high-intensity oil and gas operations shall bring land uses into conformity with this ordinance.
B. The one-year amortization period permitted by Subsection A may be extended on a case-by-case basis if the Planning Commission determines that a high-intensity oil and gas operations owner or operator has shown that one year is not a reasonable amortization period pursuant to state law and Section 17.06.140. Any extension may be only for the minimum length of time necessary to provide a reasonable amortization period.

17.06.130 High-Intensity Oil and Gas Operations – Consistent with State and Federal Law

The provisions of sections 17.06.100 through 17.06.120 shall not be applicable to the extent, but only to the extent, they would violate the constitution or laws of the United States or of the State of California.

In the event a property owner contends that application of these provisions effects an unconstitutional taking of property, the property owner may request, and the Planning Commission may grant, an exception to application of these provisions in accordance with Section 17.06.140.

17.06.140 High-Intensity Oil and Gas Operations – Nonconforming uses

A. A person claiming a vested right to uses prohibited by Sections 17.06.100 through 17.06.120 must apply to the County for a determination that the vested right exists. Notice of the hearing shall be made in accordance with the procedures provided by section 17.54.830. The determination shall be made by the Planning Commission, following a public hearing. Upon a determination that the vested right exits, the use may continue subject to the sections of this title concerning nonconforming uses (17.52.610 through 17.52.730). The determination shall be appealable to the Board of Supervisors pursuant to sections 17.54.670-17.54.710.

B. The applicant for any exemption shall submit as part of the application any and all evidentiary support reasonably available sufficient to establish the basis for the claim of exemption.

C. A determination of exemption application shall be approved or conditionally approved only if the review authority first makes the following findings:
   1. The applicant obtained prior to the effective date of this section, a vested right to conduct well stimulation treatment operations;
   2. Approving or conditionally approving the application is required because the applicant has shown that a one year amortization period is not a reasonable amortization period pursuant to state law; and
   3. The extension is no longer than the minimum length of time necessary to provide a reasonable amortization period.

D. No enforcement action shall be taken against any owner or operator of an existing facility if an application for a determination of exemption has been filed in compliance with this Section and the application has not expired, or final action to deny the application has not occurred.

SECTION III

This ordinance shall take effect and be in force thirty (30) days from and after the date of passage and before the expiration of fifteen (15) days after its passage it shall be published once with the names of the members voting for and against the same in the Inter-City Express, a newspaper published in the County of Alameda.

Adopted by the Board of Supervisors of the County of Alameda, State of California, on the ____ day of _____, 2016, by the following called vote:

AYES:
NOES:
EXCUSED:

_____
, President of the Board of Supervisors
of the County of Alameda,
State of California

_____
, Clerk of the Board of Supervisors
of the County of Alameda,
State of California

Approved as to Form:

Donna R. Ziegler, County Counsel

By: _____