Memorandum

Date: March 21, 2016

To: Baldwin Hills Community Advisory Panel (CAP)

From: Luis Perez, Timothy Stapleton

Subject: Correspondence Regarding California Council on Science and Technology (CCST) on County Public Health Community Health Assessment on Inglewood Oil Field Communities (Health Study)

Attached please find the following correspondence regarding the CCST comments on the Health Study prepared by County Public Health as discussed at the February 25, 2016 CAP meeting.

From	To	File Name	Summary
BOS Second District Mark Ridely-Thomas	CCST	BOS 2nd to CCST 10July15.pdf	Comments on CCST discussion of the Public Health Study in the CCST *Independent Scientific Assessment of Well Stimulation in California*
BOS Second District Mark Ridely-Thomas	Public Health	BOS 2nd to Public Health 17July15.pdf	Request for review of and comments on the CCST discussion of the Public Health Study in the CCST *Independent Scientific Assessment of Well Stimulation in California*
CCST	BOS Second District Mark Ridely-Thomas	CCST to BOS 2nd 23July15.pdf	Response to BOS 2nd District comments on CCST discussion of the Public Health Study in the CCST *Independent Scientific Assessment of Well Stimulation in California*
Public Health	BOS Second District Mark Ridely-Thomas	Public Health to BOS 2nd 27July15.pdf	Response to BOS 2nd District comments on CCST discussion of the Public Health Study in the CCST *Independent Scientific Assessment of Well Stimulation in California*

MRS staff will provide an overview of the correspondence noted above and the health studies conducted to date at the Inglewood Oil Field at the March 24, 2016 CAP meeting.

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MARK RIDLEY-THOMAS
SUPERVISOR, SECOND DISTRICT

July 10, 2015

Ms. Susan Hackwood
Executive Director
California Council on Science and Technology
1130 K Street, Suite 280
Sacramento, CA 95814-3965

RE: Independent Scientific Assessment of Well Stimulation in California

Dear Ms. Hackwood:

I write to thank the California Council on Science & Technology for your extensive research on well stimulation, including hydraulic fracking, in California.

As you know, the Inglewood Oil Field (IOF), which is located in the heart of my district, is one of the largest urban oilfields in the nation. I am concerned that your report may have not taken into consideration the extensive amount of environmental review and monitoring that has been done, and is required on an ongoing basis, to ensure that the IOF continues to operate in a manner that protects the health, safety and wellbeing of surrounding residents.

In 2008, the Los Angeles County Board of Supervisors adopted a Community Standards District (CSD) to regulate drilling and related operations at the field. The CSD was put in place after a comprehensive Environmental Impact Report was prepared that evaluated the impacts of drilling activities over a 30 year period. Included in the CSD are hundreds of requirements, including a 400 foot buffer from developed areas, 800 feet from sensitive developed areas unless special conditions are met, as well as ongoing monitoring of air quality, seismic activity and ground water.

However, when I came into office following adoption of the CSD, I was concerned that the CSD did not go far enough. In coordination with environmental and community advocates, the City of Culver City and the oilfield operator, 15 additional mitigations were put in place in 2011 to provide the surrounding communities with assurances that the IOF would operate in a manner that protects public health and safety. These additional mitigations included a comprehensive peer-reviewed community health

assessment, a study of the impacts of hydraulic fracking, as well as a multi-year long air quality monitoring study of the perimeter of the oil field that addressed air toxics. These studies have been completed and found no significant health or environmental impacts that could be correlated with drilling activities. These documents, and other required reports can be reviewed at http://planning.lacounty.gov/baldwinhills.

It is important to note that besides from two wells which were hydraulically fractured (one in September 2011 and one in January 2012) for the purposes of completing a required study on the impacts of hydraulic fracking, no other wells have since been hydraulically fractured at the Inglewood Oil Field. High pressure gravel pack well completions also ceased at the IOF in August 2013. The County is not aware of any plans for future hydraulic fracturing at the IOF. In fact, no drilling has occurred at the IOF since June 2014.

My team welcomes the opportunity to further discuss your report in order to ensure that you have the most accurate and up-to-date information regarding drilling activities at the IOF.

With hope,

Mark Ridley-Thomas

MARK RIDLEY-THOMAS
Supervisor, Second District

c: Members of the Los Angeles County Board of Supervisors
United States Congressmember Karen Bass
California State Senator Holly Mitchell
California State Assemblymember Sebastian Ridley-Thomas
Los Angeles City Councilmember Herb Wesson, President
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MARK RIDLEY-THOMAS
SUPERVISOR, SECOND DISTRICT

July 17, 2015

Ms. Cynthia Harding
Interim Director
Los Angeles County Department of Public Health
313 N. Figueroa Street, Room 708
Los Angeles, CA 90012

RE: California Council on Science and Technology Report on Well Stimulation in California

Dear Ms. Harding,

As you may be aware, last week the California Council on Science and Technology (CCST) issued a report entitled "An Independent Scientific Assessment of Well Stimulation in California" which provided a comprehensive statewide analysis of well stimulation activities and their known and potential environmental impacts.

I have sent the attached letter to the CCST which articulates my concern that the assessment may not have fully appreciated or considered the variety of studies, monitoring and assessments that have been completed or are required on an ongoing basis as part of the Baldwin Hills Community Standards District which regulates oil drilling and activities at the Inglewood Oil Field.

As you will note, their report draws particular criticism of the health assessment completed in 2011 by the Department of Public Health's Bureau of Toxicology and Environmental Assessment, which was peer-reviewed by epidemiologists from both John Hopkins University and the University of California, Los Angeles.

I would respectfully request that your team review the CCST report, in particular their assessment of the Inglewood Oil Field Communities Health Assessment, and report back to my office directly with your assessment.

With hope,

Mark Ridley-Thomas

MARK RIDLEY-THOMAS
Supervisor, Second District

Attachment (Letter to CCST dated July 10, 2015)

c: Richard Bruckner, Director of Regional Planning

CCST
CALIFORNIA COUNCIL ON SCIENCE & TECHNOLOGY

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July 23, 2015

Honorable Mark Ridley-Thomas
Board of Supervisors
County of Los Angeles
500 W. Temple Street Room 866
Los Angeles, CA 90012

Dear Supervisor Ridley-Thomas,

Thank you for your letter. We agree with your statements and offer the following explanations to clarify the findings in our report.

Let us first describe how the California Council on Science and Technology (CCST) organized and led the team that prepared the report, and some of the constraints that we applied to the scope of our study. We will then respond to the substance of your letter.

CCST's steering committee members, who had overall project oversight, were appointed based on technical expertise and a balance of viewpoints. One member was the principal investigator for the Inglewood Oil Field Hydraulic Fracturing Study (Dan Tormey, Ramboll Environ Corporation). A science team composed of staff at Lawrence Berkeley National Lab and a number of other research institutions studied each topic required by SB 4 and wrote Volumes I-III of the report, with final approval from the steering committee. The steering committee and science team then collaborated to develop a series of conclusions and recommendations that are provided in the Summary Report.

As specified in the contract between the California Natural Resources Agency and CCST, the report assesses environmental and public health issues associated with well stimulation in California from a scientific perspective. The report makes reference to regulations, but the authors did not perform a comprehensive analysis of regulatory adequacy. Specifically, you are correct that we did not describe the local regulatory framework that governs oil and gas development beneath the Baldwin Hills community, nor did we consider its ability to protect human health and the environment in that area.

We do appreciate that you spoke out on this important issue. We agree with you that the Inglewood field has more protections than other oil fields in the State. Our summary report cited the Inglewood Oil Field Hydraulic Fracturing Study as one study that already addresses some of the questions identified in our

report pertaining to emissions during a hydraulic fracturing operation, but not the suite of emissions that may be emitted during the whole oil and gas development process.

Most of the material in our report that concerns the Inglewood Oil Field can be found in the Summary Report and the Los Angeles Basin Case Study, with some discussion in other sections as well. We agree with the most recent dates that you cite in your letter for both hydraulic fracturing and frack-packing operations at Inglewood Oil Field.[1] For our report, we compiled a master list of reported cases of hydraulic fracturing in California from seven publicly available data sets.[2] Our master list included 90 records of hydraulic fracturing and 30 of frac-packing operations in the Inglewood Oil Field between March 2002 and August 2013. As you note, the most recent hydraulic fracture was reported on January 5, 2012; the most recent frac-pack was reported on August 1, 2013.

Our report primarily discusses past operations at the Inglewood Oil Field in two respects: impacts to groundwater and to air quality. We identified records of one frac-pack and one hydraulic fracturing operation that occurred less than 100 meters (some 300 feet) below protected groundwater in the Inglewood Oil Field, and a few hundred meters (approximately 1,000 feet) deeper than a nearby water well. Available statistics on fracturing height in other operations suggest these depth separations are too small to assume the fractures did not intersect protected groundwater. An intersection of a fracture with protected groundwater could cause an impact on its quality or availability.[3] However, we agree that groundwater monitoring at the field is a good step towards evaluating this connection. In addition, we address not just the direct impacts of hydraulic fracturing, but also of the oil and gas production it enables. In particular, emissions of toxic air contaminants are associated with the development of oil and gas in general.[4] These impacts continue long after the relatively brief hydraulic fracturing operation has ended.

We agree that the Los Angeles County Department of Public Health (LACDPH) study of public health effects around the Inglewood Oil Field did not show differences in prevalence of adverse health outcomes compared to prevalence of these health outcomes in Los Angeles as a whole. However, the study design

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[1] For the purposes of our report, we grouped frac-packs and high rate gravel packs and refer to them collectively as frac-packs.

[2] This master list of reported hydraulic fractures is given in Volume I, Appendix M; more detail on how the list was compiled is in Volume I, Chapter 3.

[3] Please refer to the Summary Report, Conclusion 5.1, and specifically Figure S.3-10, as well as the Los Angeles Basin Case Study, Section 4.3.4 for more detail.

[4] Please see the Summary Report, Conclusions 6.1 and 6.2.

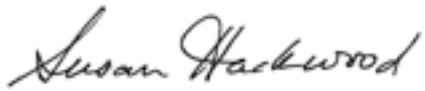
employed by the LACDPH had important limitations that may have obscured associations between exposure to environmental stressors from oil and gas development and health outcomes.[5]

Our study evaluated available information that suggests the potential for, but does not confirm with certainty, risks to human health from well stimulation specifically, and from oil and gas production in general. There are a number of risks that have not been sufficiently investigated to say conclusively whether or not there has been harm caused to human health.

The scientists involved with writing the report and with determining the recommendations are more than pleased to meet with you and your team in person, or by phone, to discuss in detail the issues you raise and the work we did to create this extensive report.

Please let us know if you would like to schedule a meeting, and thank you for reaching out to us to discuss these important issues.

Yours sincerely,



Susan Hackwood
Executive Director
California Council on Science and Technology

Jane Long
Steering Committee Chair, Well Stimulation Report
California Council on Science and Technology

cc:
Members of the Los Angeles County Board of Supervisors
United States Congressmember Karen Bass
California State Senator Holly Mitchell
California State Assemblymember Sebastian Ridley-Thomas
Los Angeles City Councilmember Herb Wesson, President
Los Angeles City Councilmember Marqueece Harris-Dawson
Members of the Culver City Council

[5] Please see Volume III, the Los Angeles Basin Case Study, Section 4.3.3.2 for more detail.

COUNTY OF LOS ANGELES
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July 27, 20015

Supervisor Mark Ridley-Thomas
Second Supervisorial District
866 Kenneth Hahn Hall of Administration
Los Angeles, CA 90012

Dear Supervisor Ridley-Thomas:

I am writing in response to your July 17, 2015 letter requesting our review of the California Council on Science and Technology (CCST) Report on Well Stimulation in California, and to comment specifically on the DPH Community Health Assessment of the Inglewood Oil Field (IOF) Communities.

As you recall, the DPH Health Assessment was designed to compare health outcomes in the communities near the IOF with health outcomes in the rest of Los Angeles County. DPH conducted a random telephone survey of 1,020 adults in the Inglewood communities, utilizing questions about health conditions from the Los Angeles County Health Survey. DPH also analyzed secondary data, including cancer reports from the USC Cancer Surveillance Registry; and birth defects, low-birth-weight births, and mortality data from both County and State databanks. DPH concluded that the health outcomes in the IOF Communities were similar to those found in the rest of the County.

The DPH Health Assessment was not designed to determine whether specific health outcomes were attributable to living near the Inglewood Oil Field; rather, it simply compared health outcomes in these communities to health outcomes in the rest of the County. To determine whether living near the IOF impacts the health of the community would require a prospective cohort study requiring several years of controlled research, typically involving a population size of tens of thousands of individuals. Such a study may be impractical and cost tens of millions of dollars. Even if such a study were performed, in this case, the study population for the IOF communities would simply be too small to generate meaningful results. For these reasons, concerns about community health risks are best addressed by continued monitoring and surveillance of the environment and oil field operations.

The California Council on Science and Technology (CCST) report correctly notes the limitations of the DPH Health Assessment, which were also noted in a written report submitted to your Board on April 11, 2012. These limitations listed below were also presented to the community at a public meeting on August 22, 2013. The three key limitations were:

1) The DPH Community Assessment was not designed to confirm whether oil drilling activities were associated with health outcomes.

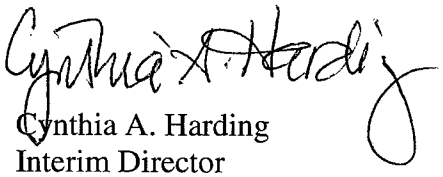
2) The DPH Community Assessment did not take into account other determinants of health such as behavioral risk factors (e.g., smoking, physical activity), social factors (e.g., education, income, access to care), and environmental exposures (e.g., traffic-related pollution).

3) The DPH Community Assessment was not designed to establish causal relationships between emissions and specific health outcomes.

We are in agreement with the CCST Report that more study is needed at the State and Federal level on the health and safety implications of oil well stimulation and related activities. This could include a comprehensive evaluation of emissions from the operation of equipment; assessment of potential discharges into water and air; and assessment of the risks of earthquakes and other geological impacts. The results of such studies should be interpreted in the context of all risks associated with oil field operations. A thorough review of the public health implications of oil field production would provide an overall sense of cumulative public health risks, and inform local decision-making related to existing or proposed oil field operations.

Please let me know if you have questions or need additional information.

Sincerely,



Cynthia A. Harding
Interim Director

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