Appendix Q

Organizations Comments

Ken Robertson
City of Hermosa Beach
(310) 318-0242
1315 Valley Drive
Hermosa Beach, CA 90254

Re: **E & B Oil Drilling and Production Project**

SCH # - 2013071038

Dear Mr. Robertson,

The undersigned represents Citizens Advocating Rational Development ("CARD"), a non-profit corporation dedicated to issues in development and growth.

This letter contains comments on the Draft Environmental Impact Report on the E & B Oil Drilling and Production Project, in accordance with CEQA and the Notice of Completion and Availability. Please ensure that these comments are made a part of the public record.

ENERGY

The DEIR does not discuss any requirements that the Project adopt energy saving techniques and fixtures, nor is there any discussion of potential solar energy facilities which could be located on the roofs of the Project. Under current building standards and codes which all jurisdictions have been advised to adopt, discussions of these energy uses are critical; an onshore drilling and production site using directional drilling to access oil and gas reserves in the tidelands and uplands within the Torrance Oil Field, with 30 production wells, 4 water injection well, liquid and gas separating equipment, and gas processing unit., will devour copious quantities of electrical energy, as well as other forms of energy. CARD-1

WATER SUPPLY

CARD-2

The EIR (or DEIR – the terms are used interchangeably herein) does not adequately address the issue of water supply, which in California, is a historical environmental problem of major proportions.

What the DEIR fails to do is:

1. Document wholesale water supplies;

2. Document Project demand;

3. Determine reasonably foreseeable development scenarios, both near-term and long-term;

4. Determine the water demands necessary to serve both near-term and long-term development and project build-out.

5. Identify likely near-term and long-term water supply sources and, if necessary, alternative sources;

7. Identify the likely yields of future water from the identified sources;

8. Determine cumulative demands on the water supply system;

9. Compare both near-term and long-term demand to near-term and long-term supply options, to determine water supply sufficiency;

10. Identify the environmental impacts of developing future sources of water; and

11. Identify mitigation measures for any significant environmental impacts of developing future water supplies.

12. Discuss the effect of global warming on water supplies.

There is virtually no information in the DEIR which permits the reader to draw reasonable conclusions regarding the impact of the Project on water supply, either existing or in the future.

For the foregoing reasons, this EIR is fatally flawed.

AIR QUALITY/GREENHOUSE EMISSIONS/CLIMATE CHANGE

CARD-3

The EIR lacks sufficient data to either establish the extent of the problem which local emissions contribute to deteriorating air quality, greenhouse emissions or the closely related problem of global warming and climate change, despite the fact that these issues are at the forefront of scientific review due to the catastrophic effects they will have on human life, agriculture, industry, sea level risings, and the many other serious consequences of global warming.

This portion of the EIR fails for the following reasons:

1. The DEIR does not provide any support or evidence that the Guidelines utilized in the analysis are in fact supported by substantial evidence. References to the work of others is inadequate unless the document explains in sufficient detail the manner and methodology utilized by others.

2. Climate change is known to affect rainfall and snow pack, which in turn can have substantial effects on river flows and ground water recharge. The impact thereof on the project's projected source of water is not discussed in an acceptable manner. Instead of giving greenhouse emissions and global warming issues the short shrift that it does, the EIR needs to include a comprehensive discussion of possible impacts of the emissions from this project.

3. Climate change is known to affect the frequency and or severity of air quality problems, which is not discussed adequately.

4. The cumulative effect of this project taken with other projects in the same geographical area on water supply, air quality and climate change is virtually missing from the document and the EIR is totally deficient in this regard.

For the foregoing reasons, the EIR is fatally flawed.

ALTERNATIVE ANALYSIS

CARD-4

The alternative analysis fails in that the entire alternatives-to-the-project section provides no discussion of the effects of the project, or the absence of the project, on surrounding land uses, and the likely increase in development that will accompany the completion of the project, nor does it discuss the deleterious effects of failing to update the project upon those same surrounding properties and the land uses which may or have occurred thereon.

Thank you for the opportunity to address these factors as they pertain to the referenced DEIR.

Very truly yours,

CITIZENS ADVOCATING RATIONAL DEVELOPMENT

NICK R. Green

President

CD attached with referenced info.

RECEIVED
APR 14 2014
COMMUNITY DEV. DEPT.

CENTER *for* BIOLOGICAL DIVERSITY

April 11, 2014

Via Federal Express
CD of Attachments Provided with Hard Copy

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Re: Comments on the Draft Environmental Impact Report for the E&B Oil Drilling and Production Project

Dear Mr. Robertson,

The Center for Biological Diversity ("Center") submits the following comments on the E&B Oil Drilling and Production Project ("project") Draft Environmental Impact Report ("DEIR"). The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center also works to reduce greenhouse gas emissions to protect biological diversity, our environment, and public health. The Center has more than 675,000 members and online activists, including 25,000 who live in Los Angeles County. Center members have an interest in ensuring that public and environmental health is protected in this area.

The project would place extensive oil and gas exploration, development, and production activities very close to residences and the ocean. It would also create tremendous dangers to public health and the environment, including threats to air quality, water quality, and biological resources. Moreover, it would produce carbon-intensive fossil fuels at a time when we need to be moving as quickly as possible to clean and renewable energy resources. Hermosa Beach should reject the project. CBD-1

In addition, the DEIR fails to meet CEQA's requirements. In particular, it provides an inadequate project description, improperly segments the project, employs an unlawful environmental baseline, fails to adequately mitigate the project's potential significant impacts, fails to analyze and disclose all of the project's potential direct, indirect, and cumulative impacts, and fails to analyze a reasonable range of alternatives. As a result of these problems, the City must re-draft and re-circulate the DEIR for public comment. CBD-2

Arizona • California • Nevada • New Mexico • Alaska • Oregon • Montana • Illinois • Minnesota • Vermont • Washington, DC

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I. THE DEIR'S PROJECT DESCRIPTION IS INADEQUATE

An EIR must include a legally adequate project description. "[O]nly through an accurate view of the project may the public, interested parties and public agencies balance the proposed project's benefits against its environmental cost, consider appropriate mitigation measures, assess the advantages of terminating the proposal and properly weigh other alternatives . . . ."[1] A "finite project description is indispensible to an informative, legally adequate EIR", and "a curtailed, enigmatic or unstable project description draws a red herring across the path of public input."[2] In particular, "[a] narrow view of a project could result in the fallacy of division . . . , that is, overlooking its cumulative impact by separately focusing on isolated parts of the whole."[3] Thus, CEQA prohibits agencies from dividing single projects into smaller projects or ignoring elements of a project, such that significant environmental effects are obscured.[4] Here, the DEIR fails to provide an adequate project description because it fails to disclose important aspects of the project.

CBD-3

The DEIR fails to provide an adequate project description because it does not describe the enhanced recovery techniques E&B may use to produce oil and gas at the Project site. These techniques include fracking; water flooding; acidization; thermal recovery techniques, such as cyclic steam injection and steam flooding; frac packing; enzyme enhanced recovery; and gas lifting. E&B's assertion that it will not frack as part of the project does not excuse the DEIR's failure to include fracking in the project description or its failure to describe the other enhanced recovery techniques that could be employed. CEQA defines the future expansion of a project as part of the initial project if the expansion is a reasonably foreseeable consequence of the initial project.[5] This not only requires the agency to consider the impacts of this future expansion, but also requires that the project description reflect the project's reasonably foreseeable consequences.[6] Here, fracking is undoubtedly a reasonably foreseeable consequence of the approval the City is contemplating. Oil and gas companies often frack California wells.[7] E&B indicates that fracking will not be necessary because the target geologic zones are permeable;[8] however, it is common for companies to frack such wells in order to increase long-term production.[9] Thus, if E&B moves forward with the project, it is reasonably foreseeable that it will decide that fracking is necessary or will be helpful to produce the wells. That an additional

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[1] *San Joaquin Raptor Rescue Center*, 149 Cal.App.4th at 655 (quoting *City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1438, 1454).
[2] *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 199; *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 655 (quoting *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 198).
[3] *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 730 (internal quotation marks omitted).
[4] *Orinda Ass'n v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, at 1171 (citing *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal.App.3d 188, 195-196).
[5] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal. 3d 376, 396.
[6] *Id.* at 394 n.6.
[7] *See, e.g.*, California Department of Oil, Gas, and Geothermal Resources, Well Treatment Notices for 2014, available at http://www.conservation.ca.gov/dog/Pages/IWST_disclaimer.aspx (to access the records, agree to the Department's Data Disclaimer).
[8] DEIR at 2-20.
[9] PetroWiki, Fracturing high=permeability formations, http://petrowiki.spe.org/index.php?title=Fracturing_high-permeability_formations&printable=yes (last accessed April 11, 2014) ("PetroWiki").

permit or approval may be necessary to allow E&B to frack does not prevent reasonably foreseeable fracking from being part of the project at issue here because the term "project" under CEQA does not mean each individual project approval. CEQA Guidelines § 15378(c).

The DEIR's project description is also inadequate because it does not disclose the downstream activities that the project's production and sale of oil and gas could induce. The DEIR indicates that the produced oil and gas will be transported to the Torrance Refinery,[10] but it provides no information on how this may affect the Torrance Refinery's operations and thus its air pollution emissions and many other impacts. Similarly, there is no description of what impacts may result from the end uses of the fuels. The DEIR's failure to provide this information makes its project description legally inadequate.

II. THE DEIR IMPROPERLY SEGMENTS THE PROJECT

CEQA requires that lead agencies consider a project's full environmental impacts "at the earliest possible stage" and "that environmental considerations do not become submerged by chopping a large project into many little ones . . . ."[11] "In part, CEQA avoids such a result by defining the term 'project' broadly."[12] A "project" for CEQA purposes "means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."[13] More specifically, "[t]he term 'project' refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term 'project' does not mean each separate governmental approval."[14] Consequently, the California Supreme Court has held that the future expansion of a project must be considered in the initial analysis if the expansion is a reasonably foreseeable consequence of the initial project.[15] CBD-4

Here, the DEIR unlawfully segments the project by failing to disclose and analyze the impacts of enhanced recovery techniques the project may employ in the future. As noted above, these techniques include fracking; water flooding; acidization; thermal recovery techniques, such as cyclic steam injection and steam flooding; frac packing; enzyme enhanced recovery; and gas lifting. The use of techniques such as these is common in California and would not be barred by the use permit contemplated here.[16] Indeed, the DEIR's mitigation measures contemplate the use of "secondary recovery operations."[17] As a result the use of these techniques is a reasonably

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[10] DEIR at 1-1.
[11] *Carmel-by-the-Sea v. Bd. of Supervisors* (1986) 183 Cal.App.3d 229, 242; *City of Antioch v. City Council* (1986) 187 Cal.App.3d 1325, 1333; *Bozung v. Local Agency Formation Comm'n* (1975) 13 Cal.3d 263, 283-84; *Rural Landowners Ass'n v. City Council* (1983) 143 Cal.App.3d 1013, 1024.
[12] *Citizens Ass'n for Sensible Development of Bishop Area v. County of Inyo* (1985) 172 Cal.App.3d 151, 165 (citing CEQA Guidelines § 15002(d), which states that "[t]he term 'project' has been interpreted to mean far more than the ordinary dictionary definition of the term.").
[13] CEQA Guidelines § 15378(a); *see also* Cal. Pub. Res. Code § 21065.
[14] CEQA Guidelines § 15378(c).
[15] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal. 3d 376, 396.
[16] California Department of Conservation Division of Oil, Gas and Geothermal Resources, Well Treatment Notices for 2014;California Department of Conservation Division of Oil, Gas and Geothermal Resources, excerpts of website pertaining to UIC Data, available at http://www.conservation.ca.gov/dog/Pages/Index.aspx; PetroWiki.
[17] DEIR at 8-25.

foreseeable consequence of E&B's proposed project and the DEIR must analyze the potential impacts of their use. The DEIR's failure to do so unlawfully segments the project under CEQA.

III. THE DEIR EMPLOYS AN UNLAWFUL BASELINE

It is well established that the purpose of an EIR is to provide public agency decision-makers and members of the public with an informational document that explains potentially significant environmental impacts and feasible mitigation measures.[18] In order to be useful, however, the EIR must accurately identify potential significant impacts. "[T]he significance of a project's impacts can be ascertained only if the agency first establishes the physical conditions against which those impacts are to be measured."[19] The idea is to compare "what will happen if the project is built with what will happen if the site is left alone."[20]

The rule for what constitutes an environmental baseline is set forth in Guidelines section 15125(a), which provides that:

> An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.[21]

CBD-5

Further, the California Supreme Court has held that the baseline for a CEQA analysis is existing physical conditions, and not some hypothetical future state.[22]

The DEIR fails to employ a lawful baseline. For instance, the DEIR includes the potential emissions from the combustion of the oil and gas the project will produce as part of the environmental baseline, meaning that the DEIR assumes that those combustion emissions would occur anyway.[23] Consequently, the DEIR concludes that the end use of this oil and gas will not have any greenhouse gas impact.[24] This baseline violates CEQA because it relies on hypothetical future occurrences in the oil and gas market that are speculative at best.

IV. THE DEIR FAILS TO ADEQUATELY MITIGATE THE PROJECT'S POTENTIALLY SIGNIFICANT IMPACTS

CBD-6

CEQA requires that agencies "mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so."[25]

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[18] Cal. Pub. Res. Code § 21002.1; CEQA Guidelines § 15121; *Carmel Valley View, Ltd. v. Board of Supervisors* (1976) 58 Cal.App.3d 817, 821-822.
[19] Michael H. Remy et al., Guide to CEQA California Environmental Quality Act, 198 (11th ed., Solano Press 2007).
[20] *Woodward Park Homeowners Assn, Inc. v. City of Fresno* (2007) 58 Cal.Rptr.3d 102, 119.
[21] CEQA Guidelines § 15125(a).
[22] *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal. 4th 310, 322.
[23] DEIR at 4.2-56 – 4.2-57.
[24] *Id.*
[25] Pub. Res. Code § 21002.1(b).

Mitigation of a project's significant impacts is one of the "most important" functions of CEQA.[26] Therefore, it is the "policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures which will avoid or substantially lessen the significant environmental effects of such projects."[27] Importantly, mitigation measures must be "fully enforceable through permit conditions, agreements, or other measures" so "that feasible mitigation measures will actually be implemented as a condition of development."[28] Moreover, an EIR may not defer mitigation by "put[ting] off mitigation or order[ing] a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR."[29]

The DEIR fails to set forth legally adequate mitigation. For example, to mitigate the project's impacts to birds, the DEIR requires a survey for nesting birds must be completed prior to vegetation removal or other construction activities, and that if nesting birds are observed, then the project must establish buffers of 100 feet for non-raptor species and 500 feet for raptor species. This mitigation is unlikely to be effective because the buffers are insufficient to prevent the disturbance of nesting birds. Even very small increases in anthropogenic noise can negatively affect bird species, and in particular, can reduce nesting species' density and richness.[30] Here, the large and significant increases in noise levels generated by the project will not be sufficiently mitigated by the buffer zones to prevent significant impacts to nesting birds. Moreover, it is unclear that the surveys will even successfully identify nesting birds in the area. This is in part due to the fact that the survey requirement is unenforceably vague because it does not even describe what activities must be included in the survey, let alone require that the survey be done by a qualified biologist.

Similarly, the DEIR's requirement that the project produce an emergency response plan that, among other things, provides for the formulation of habitat restoration when "habitat disturbance cannot be avoided," defers actual mitigation and is unenforceably vague. None of the requirements associated with the emergency response plan are clear enough to ensure effective enforcement by the City or the actual mitigation of impacts. CBD-7

Also, the DEIR's attempt to "limit flaring to a total of 5 hours per day at the full flaring capacity . . . during all emergency or routine flaring events" is enigmatic and inadequate because it appears to be contradicted by the DEIR's other direction that the project "shall at all times have a . . . flare at the site and connected for immediate use to circulate out and combust *any gas encountered during drilling*."[31] Thus, if the project encounters a substantial amount of gas – which is reasonably likely because the DEIR forecasts that the project will produce substantial amounts of natural gas – the project may exceed the 5-hour-per-day limit on flaring.[32] This scenario could result in emissions of large volumes of air pollution emissions and additional significant impacts to air quality. CBD-8

[26] *Sierra Club v. Gilroy City Council*, 222 Cal.App.3d 30, 41 (1990).
[27] Pub. Res. Code § 21002.
[28] *Federation of Hillside & Canyon Ass'ns v. City of Los Angeles*, 83 Cal.App.4th 1252, 1261 (2000).
[29] *City of Long Beach v. Los Angeles Unified Sch. Dist.* (2009)176 Cal.4th 889, 915.
[30] U.S. Fish and Wildlife Service, The Effect of Noise on Wildlife, available at http://www.fws.gov/windenergy/docs/noise.pdf.
[31] DEIR at 8-11 (emphasis added).
[32] DEIR at 2-10.

The DEIR's reliance on the purchase of offsets to mitigate any greenhouse gas emissions over 10,000 metric tons per year also violates CEQA. While offsets could be effective mitigation if there is certainty that the offsets will in fact reduce greenhouse gas emission by the claimed amount, the programs the DEIR cites as providing reliable offsets do not provide this certainty. For example, many credits listed on the CAPCOA credits exchange fail to represent additional reductions because the reductions resulted from economic incentives unrelated to the greenhouse gas offsets market.[33] The CAPCOA program also fails to ensure the permanence of many of its credits and does not sufficiently account for the leakage of greenhouse gas emissions.[34] Thus, the DEIR's requirement that E&B purchase offsets is the type of speculative mitigation measure that fails to comply with CEQA.[35] An additional problem with the offsets mitigation is that it subjects Hermosa Beach to additional air pollution. Greenhouse gases are emitted along with co-pollutants that are harmful to human health. Thus, reducing greenhouse gas emissions at the project site would also lower emissions of co-pollutants, benefiting community health, but by allowing the purchase of offsets, the DEIR fails to ensure that this would happen. The DEIR should avoid these problems by requiring that E&B offset its greenhouse gas emissions by funding specific programs near the project site that would cut greenhouse gas emissions. CBD-9

Additionally, the DEIR's requirement that the project install a leak detection system for the crude pipeline will not effectively limit the size of spills. This is because substantial spills can result from a hole in a pipeline as small as a pinhole, which would not release enough oil to be detected by the required leak detection system.[36] Indeed, such systems fail to identify spills so regularly that spills are often noticed by local residents, rather than the oil company.[37] Indeed, a Wall Street Journal survey found that "[l]eak-detection software, special alarms and 24/7 control room monitoring discovered leaks just 19.5 percent of the time."[38] CBD-10

[33] Center for Biological Diversity Letter to CAPCOA re: CAPCOA GHG Rx—Listing of Non-Compliant Credits (Feb. 18, 2014).
[34] Center for Biological Diversity letter to South Coast Air Quality Management District re: CAPCOA GHG Rx Forestry Protocols (Jan. 23, 2014).
[35] *California Clean Energy Committee v. City of Woodland* (Feb. 28, 2014) 2014 Cal. App. LEXIS 300, 44; CEQA Guidelines § 15126.4(a)(2) ("Mitigation measures must be fully enforceable").
[36] CBC News, No coverup in N.W.T. pipeline leak: Enbridge (Jun. 7, 2011), available at http://www.cbc.ca/news/canada/north/no-coverup-in-n-w-t-pipeline-leak-enbridge-1.1029611.
[37] *See, e.g.*, Swift, Anthony, The Keystone XL tar sands pipeline leak detection system would have likely missed the 63,000 gallon Norman Wells pipeline spill, Anthony Swift's Blog, Natural Resources Defense Counsel (Jun. 10, 2011), available at http://switchboard.nrdc.org/blogs/aswift/the_keystone_xl_tar_sands_pipe.html; Valentine, Katie, Only You Can Discover Oil Pipeline Spills, Since 80 Percent Of The Time The Companies Miss Them, Climate Progress (Jan. 21, 2014), available at http://thinkprogress.org/climate/2014/01/21/3186261/pipeline-spills-discovered-people/ ("Valentine 2014")
[38] Valentine 2014.

V. THE DEIR FAILS TO DISCLOSE AND ANALYZE THE FULL RANGE OF THE PROJECT'S SIGNIFICANT IMPACTS

A. The DEIR Fails to Identify Or Properly Analyze the Project's Impacts from Air Pollution Emissions

1. The DEIR Underestimates the Project's Potential Natural Gas Emissions

The DEIR assumes that the operations at issue will result in very low levels of natural gas emissions. In estimating the rate at which the project will emit natural gas, the DEIR takes the SCAQMD's default emissions factors – which unmodified result in an emissions rate of about 1.5 percent – and reduce these emissions rates by 80 percent.[39] This results in an ultimate emissions rate of about 0.3 percent. This rate is far too low. Recent studies show that oil and gas operations in general emit large amounts of natural gas.[40] Despite the DEIR's assumption that things are somehow different in Los Angeles County and in areas within jurisdiction of the SCAQMD, a recent study of natural gas emissions in Los Angeles County found a striking 17 percent of total production had been leaked to the atmosphere.[41] In light of this high emissions rate, the DEIR's estimated natural gas emissions rate is unsupported and unrealistically low. As a result, the DEIR's estimates of harmful air pollutant emissions and greenhouse gas emissions levels are unsupported and far too low. CBD-11

Natural gas emissions contain large amounts of VOCs and non-methane hydrocarbons ("NMHCs") that are dangerous to human health.[42] VOC emissions make up about 3.5 percent of the natural gas emitted by oil or gas operations.[43] VOC emissions include what are known as "BTEX compounds" – a combination of benzene, toluene, ethyl benzene, and xylene – which are HAPs, subject to regulation by both the United States Environmental Protection Agency (US EPA) and the California Air Resources Board (CARB).[44] The Health effects associated with each of these compounds can be severe, and in combination are even more troubling. For example, some of the more severe health effects associated with benzene alone include "acute and chronic nonlymphocytic leukemia, acute myeloid leukemia, chronic lymphocytic leukemia, anemia, and other blood disorders and immunological effects."[45] Further, maternal exposure to benzene has

[39] DEIR at 4.2-43.
[40] Natural Resources Defense Council, Leaking Profits (2012) ("NRDC, Leaking Profits"); U.S. Environmental Protection Agency, Natural Gas STAR Program, Basic Information, Major Methane Emission Sources and Opportunities to Reduce Methane Emissions (2012) ("USEPA, Basic Information"); *see also* Petron, Gabrielle, et al., Hydrocarbon emissions characterization in the Colorado Front Range: A pilot study, 117 Journal of Geophysical Research (2012); Karion, Anna *et al.*, Methane emissions estimate from airborne measurements over a western United States natural gas field, doi: 10.1002/grl.50811, American Geophysical Union (2013); Williams, Megan & Cindy Copeland, Earthjustice, Methane Controls for the Oil and Gas Production Sector (2010) at 6.
[41] Peischl, J. *et al.*, Quantifying sources of methane using light alkanes in the Los Angeles basin, California (2013); *see also* Jeong, Seongeun, A multitower measurement network estimate of California's methane emissions, 118 Journal of Geophysical Research: Atmospheres 11, 339–11,351, doi:10.1002/jgrd.50854 (2013).
[42] *See,* Brown, Heather, Memorandum to Bruce Moore, USEPA/OAQPS/SPPD re Composition of Natural Gas for Use in the Oil and Natural Gas Sector Rulemaking at 3 (Jul. 28, 2011) ("Brown Memo")
[43] Brown Memo at 3.
[44] 42 U.S.C. § 7412(b).
[45] McKenzie, Lisa et al., Human Health Risk Assessment of Air Emissions form Development of Unconventional Natural Gas Resources, Sci Total Environ (2012) doi:10.1016/j.scitotenv.2012.02., ("McKenzie 2012") at, 2.

been associated with an increase in birth prevalence of neural tube defects.[46] Acute, short-term exposure to ethyl benzene has been known to cause both respiratory and neurological effects including throat irritation, chest contractions and dizziness,[47] and the same levels of exposure to xylene can also cause eye, nose, and throat irritation, difficulty in breathing, impaired lung function, and nervous system impairment.[48] In fact, many of the volatile chemicals associated with drilling and oil and gas waste are associated with serious effects to the respiratory, nervous, or circulatory systems.[49]

NMHCs are also associated with multiple negative health effects, including, even at very low concentrations, effects to the endocrine system.[50] NMHCs generally make up almost 18 percent of produced natural gas, and operations ultimately emit large amounts of these pollutants. Moreover, like VOCs and NO_X, NMHCs are ozone precursors.

In light of the hazardous emissions oil and gas operations generate, and particularly in light of the increased use of particularly harmful chemicals in drilling operations, it is unsurprising that living close to oil and gas wells is associated with serious negative health outcomes. One study found that "proximity to wells reduces birth weight and gestation length on average and increases the prevalence of low birth weight and premature birth."[51] Another study "observed an association between density and proximity of natural gas wells within a 10-mile radius of maternal residence and prevalence of [congenital heart defects] and possibly [neural tube defects]."[52]

In addition to containing air pollutants that are harmful to human health, natural gas is also about 95 percent methane.[53] Methane is a powerful greenhouse gas that has a global warming potential that is approximately 34 times that of carbon dioxide over a 100 year time frame and 86 times that of carbon dioxide over a 20 year time frame.[54] Thus, by greatly underestimating the amount of natural gas the project could emit, the DEIR also underestimates the project's potential greenhouse gas impacts.

2. The DEIR Ignores Other Potential Sources of Emissions

CBD-12

The DEIR also ignores other potential sources of harmful air pollutants that are not necessarily related to combustion engines or natural gas emissions. A recent study sampling air

[46] *Id.*
[47] *See*, United States Environmental Protection Agency Hazard Summary re Ethylbenzene (2000), available at: http://www.epa.gov/ttnatw01/hlthef/ethylben.html.
[48] *Id.*
[49] Colborn, Theo et al., Natural Gas Operations from a Public Health Perspective, 17 Human and Ecological Risk Assessment 1047 (2011) ("Colborn 2011").
[50] Colborn, Theo, *et al.*, An Exploratory Study of Air Quality near Natural Gas Operations (2012) ("Colborn 2012").
[51] Hill, Elaine, The Impact of Oil and Gas Extraction on Infant Health In Colorado (2013) ("Hill 2013").
[52] McKenzie, Lisa M. *et al.*, Birth Outcomes and Maternal Residential Proximity to Natural Gas Development in Rural Colorado, Environmental Health Perspectives (2014) ("McKenzie 2014").
[53] Enbridge, Components of Natural Gas, available at https://www.enbridgegas.com/gas-safety/about-natural-gas/components-natural-gas.aspx (last accessed April 11, 2014)
[54] Intergovernmental Panel on Climate Change, Working Group I Contribution to the IPCC Fifth Assessment Report (AR5), Climate Change 2013: The Physical Science Basis at 8-58 (2013).

quality near Colorado gas wells found methylene chloride in high concentrations.[55] The study states that for the wells tested "[m]ethylene chloride, a toxic solvent not reported in products used in drilling or hydraulic fracturing, was detected 73% of the time; several times in high concentrations," including one reading of 1730 ppbv.[56] While the source of the methylene chloride was not entirely clear, the study reported that it is commonly stored on well pads for cleaning purposes. The DEIR errs in ignoring such potential emissions; this is precisely the type of harm that must be fully investigated in the CEQA document.

B. The DEIR Fails to Account for Greenhouse Gas Emissions from Downstream Activities Resulting from the Project's Production of Oil and Gas

The DEIR refuses to analyze the downstream effects of the project's production of oil and gas, including, but not limited to, the refining and processing of the produced oil and the ultimate combustion of the refined or processed product. As a result, the analysis fails to analyze or disclose many of the project's potentially significant effects.

The consideration of downstream impacts is important because the refining of the oil and processing of the gas the project seeks to produce are likely to result in impacts that are more severe than those associated with an average unit of oil and gas. This is because the oil at the project site is most likely heavy oil and there is a significant chance that the gas is sour.[57] With respect to heavy oil, one paper notes: CBD-13

> Life-cycle greenhouse gas emissions increase the heavier the oil and the lower its API gravity—heavier oils emit more carbon than their lighter counterparts . . . . Chemically, they are bound up with more carbon and yield greater volumes of bottom-of-the-barrel residual products, such as petroleum coke and heavy fuel oil.[58]

Moreover, heavier oil can result in additional emissions of sulfur, particulate matter, and heavy metals and other toxic substances.[59] The processing of sour gas, especially if older processing equipment is used, can result in emissions of sulfur dioxide, which "can form very fine suspended particles (aerosol sulphate) that penetrate deep into the lungs potentially causing

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[55] Colborn 2012.
[56] *Id.*
[57] DEIR at 4.8-59 – 4.8-60 (the oil is predicted to have an API gravity of 18 and the gas is assumed to have a H_2S concentration of up to 100 ppm); Gordon, Deborah, Understanding Unconventional Oil (2012) ("Gordon 2012a"); Gordon, Deborah, The Carbon Content of Global Oils at 6 (2012) ("Gordon 2012b") (heavy oil has a typical API gravity of 14-22); Tantaline, Sour Gas Corrosion, available at http://www.tantaline.com/sour-gas-corrosion-/-h2s-corrosion-490.aspx (gas is considered sour if H_2S levels are above 4 ppm); U.S. Environmental Protection Agency, Natural Gas Processing, available at http://www.epa.gov/ttnchie1/ap42/ch05/final/c05s03.pdf ("USEPA Natural Gas") (gas is sour if H_2S concentrations exceed 5.7 milligrams per cubic meter, which is equivalent to 4 ppm).
[58] Gordon 2012a at 13.
[59] Karras, Greg, Combustion Emissions from Refining Lower Quality Oil: What Is the Global Warming Potential?, 44 Environ. Sci. Technol. 9584 (2010) ("Karras 2010"), available at http://pubs.acs.org/doi/full/10.1021/es1019965; Peeples, Lynne, Keystone XL Risks Harm To Houston Community: 'This Is Obviously Environmental Racism', HuffPost Green (2013) ("Peeples 2013"), available at http://www.huffingtonpost.com/2013/03/27/keystone-xl-pipeline-houston-air-pollution_n_2964853.html.

respiratory distress," and also H_2S emissions.[60] By failing to consider these effects, the DEIR ignored potentially significant impacts of the project.

The DEIR also refuses to consider emissions associated with the end use of the produced oil and gas on the basis of the unsupported assumption that if the project were not to move forward, the amount of oil and gas entering the market would remain unchanged. As explained above, CEQA prohibits the DEIR from relying on such an assumption because it constitutes an unlawful baseline. The assumption is also unlawful because it results in the DEIR ignoring many impacts that are likely to result from the project. As previously discussed, the project will likely produce heavy oil and sour gas and the processing of this oil and gas will have different effects from the processing of other oil and gas. In fact, the impacts are likely to be more severe.[61] Moreover, there is no evidence supporting the DEIR's assumption that if this oil and gas is left in the ground that the effect on the market price will be such that an equivalent amount of oil and gas will nevertheless be produced. Among other things, "[w]e have five times as much oil and coal and gas on the books as climate scientists think is safe to burn, [and] [w]e'd have to keep 80 percent of those reserves locked away underground to avoid" catastrophic climate change."[62] Clearly allowing the project to move forward irreversibly shrinks our limited remaining carbon budget.

C. The DEIR Fails to Account for the Potential that the Project Will Encounter Wet Gas

The DEIR assumes that the project's flaring will not result in H_2S emissions.[63] However, if the operation encounters wet gas, the flare may not fully combust the H_2S in the gas, resulting in hazardous emissions of H_2S.[64] As the DEIR acknowledges, the health effects associated with H_2S emissions can be severe. The DEIR must consider the health effects associated with the project encountering wet gas. CBD-14

D. The DEIR Fails to Analyze and Disclose the Project's Significant Impacts from the Use of Enhanced Recovery Techniques.

The DEIR fails to adequately analyze and disclose the Project's potential significant direct and indirect impacts resulting from E&B's use of enhanced recovery techniques. As explained above, the use of enhanced recovery methods is clearly foreseeable. Such methods include water flooding; acidization; thermal recovery techniques, such as cyclic steam injection and steam flooding; frac packing; enzyme enhanced recovery; and gas lifting. They also include fracking, even though E&B has stated that it does not intend to frack. CBD-15

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[60] USEPA Natural Gas; The University of Calgary Environmental Science Program, Impacts of Airborne Pollution from the Sour Gas Industry on Southern Alberta (2003-04) ("Calgary Environmental Science Program 2003-04"), available at http://newton.phas.ucalgary.ca/~annlisen/sgimpacts2.html#AirModeling_.
[61] *See, e.g.*, California Air Resources Board, Staff Report: Initial Statement of Reasons for Proposed Rulemaking Proposed Amendments to the Low Carbon Fuel Standard (2011); *id.* at Appendix C.
[62] McKibben, Bill, Global Warming's Terrifying New Math (2012).
[63] DEIR, Appendix B.
[64] Calgary Environmental Science Program 2003-04.

While the DEIR indicates that water flooding may be part of the project, but does not describe what those water injection operations may involve or what impacts may result.[65] This is a serious oversight because water flood operations can involve the use of a range of harmful chemicals such as corrosion inhibitors, scale inhibitors, polymers, biocides, oxygen scavengers, surfactants, and flocculants.[66] For example, a commonly used corrosion inhibitor is formaldehyde, exposure to which is associated with, among other things, lung and nasopharyngeal cancer.[67] Methylisothiazolinone (2-methyl-4-isothiazolin-3-one) is a commonly used biocide, and there is evidence that prolonged exposure to low levels of the chemical has damaging effects on developing nervous systems.[68] The U.S. EPA states that "Methylisothiazolinone is moderately to highly acutely toxic in oral, dermal, eye irritation, dermal irritation, and inhalation acute toxicity studies."[69] Also, ethylbenzene and xylene are commonly used surfactants, and both chemicals are associated with serious dangers to human health.[70] Exposure to relatively low concentrations of ethylbenzene can result in serious ear and kidney damage, and long-term is suspected of causing cancer in humans.[71] Exposure to xylene can cause "headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance" as well as "irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties; stomach discomfort; and possibly changes in the liver and kidneys."[72] Exposure to very high levels of xylene can cause death.[73] CBD-16

Acidization in particular has been used with increasing regularity around California. The technique involves the injection of large amounts of acid – commonly hydrochloric acid – into the well. This acid can spill or leak into the environment.[74] Exposure to hydrochloric acid can be harmful. It is corrosive to the eyes, skin, and mucous membranes.[75] It is also listed as a hazardous air pollutant under the Clean Air Act,[76] and exposure to hydrochloric acid fumes can cause irritation of the respiratory system and pulmonary edema in humans.[77] Hydrofluoric acid is

[65] DEIR at 4.7-22, 4.7-33, 8-25.
[66] Carson DIER Excerpt at 4-59.
[67] South Coast Air Quality Management District, Chemical Disclosure Data ("SCAQMD Data"); U.S. Environmental Protection Agency, Formaldehyde, available at http://www.epa.gov/ttn/atw/hlthef/formalde.html.
[68] SCAQMD Data; He, Kai *et al.*, Methylisothiazolinone, A Neurotoxic Biocide, Disrupts the Association of Src Family Tyrosine Kinases with Focal Adhesion Kinase in Developing Cortical Neurons, 317 J. of Pharmacology and Experimental Therapeutics 3, 1320 (2006)
[69] U.S. Environmental Protection Agency, R.E.D. Facts, Methylisothiazolinone at 3 (1998), available at http://www.epa.gov/oppsrrd1/REDs/factsheets/3092fact.pdf.
[70] SCAQMD Data.
[71] U.S. Agency for Toxic Substances and Disease Registry, Ethylbenzene, available at http://www.atsdr.cdc.gov/toxprofiles/tp110-c1.pdf.
[72] U.S. Agency for Toxic Substances and Disease Registry, Xylene, available at http://www.atsdr.cdc.gov/toxfaqs/tfacts71.pdf.
[73] *Id.*
[74] Detrow, Scott, 4,700 Gallons Of Acid Spill At Bradford County Drilling Site, StateImpact Pennsylvania, NPR (July 5, 2012), available at http://stateimpact.npr.org/pennsylvania/2012/07/05/4700-gallons-of-acid-spill-at-bradford-county-drilling-site/.
[75] U.S. Environmental Protection Agency, Hydrochloric Acid (Hydrogen Chloride) (Jan. 2000), http://www.epa.gov/ttnatw01/hlthef/hydrochl.html ("EPA Hydrochloric Acid")
[76] U.S. Environmental Protection Agency, The Clean Air Act Amendments of 1990 List of Hazardous Air Pollutants, http://www.epa.gov/ttnatw01/orig189.html.
[77] EPA Hydrochloric Acid.

also used, and is also extremely dangerous.[78] In addition, acid treatments, just like hydraulic fracturing, can contain other hazardous additives, including *inter alia* corrosion inhibitors, surfactants, solvents, iron control agents, and non-emulsifiers,[79] creating the risk that these substances could escape into the environment.

Steam injection is also dangerous, with use of the technique associated with the creation of "large temperature variations and formation movements," putting extreme pressure on the ground and well, and sometimes resulting in well failure or the migration of fluids and steam.[80] In fact, the practice can deform the ground so much as to result in "surface expressions," which is another way of saying that the steam, oil, gas, and whatever else might be mixed in underground have come bubbling to, or even exploding out of the surface of the ground.[81] Such a surface expression formed in Kern County's Midway-Sunset oil field as a result of cyclic steam injection and killed a Chevron worker who went to investigate steam coming from the surface expression.[82] The worker fell into a sinkhole while approaching the plume of steam when the ground gave way.[83] It is also important for DOGGR to analyze ahead of time whether the Project will employ steam injection because the process of creating the steam for injection is energy and water intensive and results in large amounts of air pollution emissions.[84] Moreover, compared to lighter varieties of oil, the heavy oil steam injection is used to produce is more difficult to process and refine, resulting in those processes having more severe environmental impacts.[85]

Finally, even though the DEIR states that the Project will not involve hydraulic fracturing, the DEIR must still consider the potential impacts of fracking. CEQA requires that an agency consider the future expansion of a project if that expansion is a reasonably foreseeable CBD-17

[78] Collier, Robert, Part 1: The Most Dangerous Chemical You've Never Heard Of, Next Generation (August 8, 2013), available at http://www.thenextgeneration.org/blog/post/monterey-shale-series-distracted-by-fracking; Collier, Robert, Part 2: The Most Dangerous Chemical You've Never Heard Of, Next Generation (August 15, 2013), available at http://thenextgeneration.org/blog/post/monterey-shale-series-the-most-dangerous-chemical.
[79] Frenier, Wayne W. et al., Abstract: Effect of Acidizing Additives on Formation Permeability During Matrix Treatments, OnePetro, Society of Petroleum Engineers (Feb. 2002), available at http://www.onepetro.org/mslib/servlet/onepetropreview?id=00073705.
[80] *See, e.g.*, Xie, Jueren, Analysis of Casing Deformations in Thermal Wells (2008); Kulakofsky, David, Achieving Long-Term Zonal Isolation in Heavy-Oil Steam Injection Wells, a Case History (2008)..
[81] California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, Report of Occurrences, The Chevron Fatality Accident, June 21, 2011, and Area Surface Expression Activity, Pre and Post Accident, Sections 21 & 22 T.32S./R.23E., Midway-Sunset Oil Field, Kern County (May 2012) ("Accident Report"); California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, Reports of Occurrence: Surface Expressions in Bakersfield (2011) ("Spill Binder").
[82] Department of Conservation Division of Oil, Gas and Geothermal Resources, Executive Summary of Report of Occurrences: The Chevron Fatality Accident June 21, 2011 and Area Surface Expression Activity Pre and Post Accident – Sections 21 & 22 T.32S./R.23E., Midway-Sunset Oil Field Kern County (May 2012). ("Accident Report ES"); Accident Report at 2.
[83] Accident Report at 2.
[84] California Air Resources Board, Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Low Carbon Fuel Standard, Appendix C – Calculation of Baseline Crude Average Carbon Intensity Value (2011); Mark, Jason, Oil drilling could be new nadir for Pinnacles National Park, Earth Island Journal,(Mar 3, 2013), available at http://www.salon.com/2013/03/03/oil_drilling_could_be_new_nadir_for_pinnacles_national_park_partner/; Gordon 2012a.
[85] Karras 2010; Peeples 2013.

consequence of the approval.[86] Here, especially because companies commonly frack wells in California, fracking is undoubtedly a reasonably foreseeable consequence of the approval the City is contemplating. E&B may ultimately decide that fracking is necessary or would be helpful to produce the wells. That another approval may be required for fracking to occur does not eliminate the need to consider the impacts of fracking because courts have repeatedly determined that future expansion can be reasonably foreseeable even if the expansion is dependent upon the occurrence of certain conditions, such as the issuance of a permit.[87]

It is particularly important that the DEIR analyze the impacts of fracking now because the potential harms of fracking are severe. The evidence is overwhelming that fracking degrades air quality in ways that threaten human health, for instance, by emitting carcinogenic and hazardous pollutants.[88] Among other effects, this air pollution results in negative health effects for infants living near fracked wells.[89] Also, the exploration, development, and production of oil and gas from fracked wells releases large amounts of greenhouse gases, such as methane, which operations vent and leak to the atmosphere.[90] Fracking also negatively affects water resources. The fracking of a single well can require millions of gallons of water, and as a result, fracking can deprive communities and farmers of water.[91] Moreover, fracking generates huge amounts of dangerous fluids, such as fracking fluid and waste water, that can leak or be spilled into the environment, contaminating surface or ground water with pollutants that, among other things, can affect the cardiovascular, endocrine, and nervous systems and cause cancer.[92] Activities associated with fracking, particularly the underground injection of wastewater from fracking operations, can even result in large earthquakes.[93] Shale oil produced by fracking also appears to

[86] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal. 3d 376, 396.
[87] *See, e.g.*, *Joy Road Area Forest & Watershed Assn. v. California Dept. of Forestry & Fire Protection* (2006) 142 Cal.App.4th 656, 679-80; *Christward Ministry v. Superior Court* (1986) 184 Cal.App.3d 180, 194-95; *Whitman v. Board of Supervisors* (1979) 88 Cal.App.3d 397, 402-03, 414-15.
[88] *See, e.g.*, Colborn2011; McKenzie 2012; Center for Biological Diversity, Dirty Dozen: The 12 Most Commonly Used Air Toxics in Unconventional Oil Development in the Los Angeles Basin (2013).
[89] McKenzie 2014; Hill 2013
[90] *See, e.g.*, Howarth, Robert, et al., Methane and the greenhouse-gas footprint of natural gas from shale formations, Climactic Change, doi 10.1007/s10584-011-0061-5 (Mar. 31, 2011); Howarth, Robert, et al., Venting and Leaking of Methane from Shale Gas Development: Response to Cathles et al. (2012); Tollefson, Jeff, Methane leaks erode green credentials of natural gas (2013), available at http://www.nature.com/news/methane-leaks-erode-green-credentials-of-natural-gas-1.12123.
[91] *See, e.g.*, U.S. Government Accountability Office, Information on Shale Resources, Development, and Environmental and Public Health Risks GAO-12-732 (Sep. 2012); Entrekin, Sally, Rapid expansion of natural gas development poses a threat to surface waters, 9 Front Ecol Environ 503-511 (2011); Freyman, Monika, Hydraulic Fracturing and Water Stress: Water Demand by the Numbers (2014); Freyman, Monika & Ryan Salmon, Hydraulic Fracturing & Water Stress: Growing Competitive Pressure for Water (2013).
[92] *See, e.g.*, Christopher D. Kassotis, et al. Estrogen and Androgen Receptor Activities of Hydraulic Fracturing Chemicals and Surface and Ground Water in a Drilling-Dense Region. Endocrinology (2013); Fontenot, Brian E. *et al.*, An evaluation of water quality in private drinking water wells near natural gas extraction sites in the Barnett Shale Formation, doi: 10.1021/es4011724 Environmental Science & Technology at 4 (2013); Vidic, R.D. *et al.*, Impact of Shale Gas Development on Regional Water Quality, Science 340 (2013); U.S. Environmental Protection Agency, Draft Investigation of Ground Water Contamination near Pavillion, Wyoming (2011); Myers, Tom, Assessment of Groundwater Sampling Results Completed by the U.S. Geological Survey (2012); Myers, Tom, Potential Contamination Pathways from Hydraulically Fractured Shale to Aquifers (2012); Bamberger, Michelle & Robert E. Oswald, Impacts of Gas Drilling on Human and Animal Health, 22 New Solutions 1, 51-77 (2012).
[93] *See, e.g.*, Kim, Won-Young, Induced seismicity associated with fluid injection into a deep well in Youngstown, Ohio (2013); BC Oil and Gas Commission, Investigation of Observed Seismicity in the Horn River Basin (Aug.

be more explosive and flammable than traditional crude oil.[94] Indeed, there have been multiple recent rail accidents involving oil produced through fracking, including one in Quebec that leveled a town and left 47 people dead.[95]

E. The DEIR Fails to Consider Sufficiently the Potential Impacts Associated with Contamination Events and Accidents

While the DEIR acknowledges that the project could result in a contamination event that causes significant impacts, the DEIR fails to disclose and analyze some of the ways that contamination events may occur.

An important oversight is the DEIR's failure to consider the possibility that a well failure could contaminate groundwater.[96] In particular, although it is unclear how often wells in California fail because DOGGR has not tracked these data, industry reports elsewhere indicate that the failure rate could be high. For instance, statistics from the U.S. Minerals Management Service – now the Bureau of Ocean Energy Management, Regulation and Enforcement – indicate that after thirty years, up to sixty percent of offshore wells in the Gulf of Mexico experience sustained casing pressure, which is a significant problem indicating that there is communication to the annulus from a sustained pressure source due to inadequate zonal isolation. This rate is so high that even if California wells are significantly less likely to experience well integrity problems, a serious threat would still exist. CBD-18

Moreover, the analysis fails to account for the possibility that the project's wastewater injection wells could fail. The analysis assumes that regulation will prevent wastewater injection wells from contaminating the environment, but ignores the substantial evidence that wastewater injection wells, including those in California, regularly fail.[97] Indeed, the U.S. EPA has found DOGGR's Class II underground injection well program to be insufficiently protective of groundwater resources.[98]

2012); Keranen, Katie, Potentially induced earthquakes in Oklahoma, USA: Links between wastewater injection and the 2011 MW 5.7 earthquake sequence, doi: 10.1130/G34045.1, Geology (March 26, 2013); van der Elst, Nicholas J. *et al.*, Enhanced Remote Earthquake Triggering at Fluid-Injection Sites in the Midwestern United States, 341 Science 164 (2013).

[94] U.S. Department of Transportation, Safety Alert -- January 2, 2014, Preliminary Guidance from Operation Classification (2014), available at http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/1_2_14%20Rail_Safety_Alert.pdf ; Krauss, Clifford & Jad Mouawad, Accidents Surge as Oil Industry Takes the Train, The New York Times (Jan 25, 2014), available at http://www.nytimes.com/2014/01/26/business/energy-environment/accidents-surge-as-oil-industry-takes-the-train.html?hp&_r=0; Ayers, Christin, Explosive Fracked Oil Destined For Bay Area; Neighbors Rail Against Chemical Trains (2014), available at http://sanfrancisco.cbslocal.com/2014/01/11/trains-carrying-fracked-oil-may-pose-dangers-to-bay-area/.

[95] Ayers, Christin, Explosive Fracked Oil Destined For Bay Area, CBS San Francisco (Jan. 11, 2014), http://sanfrancisco.cbslocal.com/2014/01/11/trains-carrying-fracked-oil-may-pose-dangers-to-bay-area/.

[96] *See* DEIR at 4.9-16 – 4.9-17.

[97] U.S. General Accounting Office, Drinking Water: Safeguards are not Preventing Contamination from Injected Oil and Gas Wastes (Jul. 1989), available at http://www.gao.gov/assets/150/147952.pdf; Mall at 25; Lustgarten, Abrahm, Injection Wells: The Poison Beneath Us (2012).

[98] Walker, James, California Class II Underground Injection Control Program Review, Final Report submitted to USEPA Region 9 (Jun. 2011) at 119; *see also* U.S. Environmental Protection Agency, Letter to California Division

The DEIR also underestimates the likelihood of a pipeline oil spill, as well as the potential volume and impacts of such a spill. It underestimates the potential for a spill by failing to recognize that the produced oil is likely to be more corrosive than usual. Because the target formation at issue likely contains high levels of sulfur,[99] the oil the project produces is likely to also contain H_2S, making it highly corrosive to "pipes, valves and fittings," risking "a breakdown of gas and oil gathering systems [that poses] a serious threat to employees and the public."[100] The DEIR must take this into account when estimating the likelihood of a spill, but fails to do so. CBD-19

Further, the DEIR underestimates the potential volume and impacts of a pipeline spill by assuming that a spill will be identified and halted quickly and by failing to account for past injuries and deaths associated with such spills. As discussed above, oil spills are usually identified by the public, not the oil company, and leak detection systems have not been able to reliably limit the volume of spills. Thus, the DEIR must analyze the effects of larger spills. Also, the DEIR incorrectly states:

> A total of 41 injuries have occurred associated with crude oil pipelines since 1986 nationwide, with all of them being employees except a single incident in 1987 in Texas where work on a crude oil pipeline within a mobile home park sparked a fire causing eight injuries. This demonstrates the low probability that a crude oil spill from a pipeline could produce fatalities or injuries.[101] CBD-20

Yet, due to just one recent spill, "[m]ore than 300 people reported symptoms consistent with exposure to benzene."[102] The DEIR's estimate of the likelihood of an injury or death resulting from an oil pipeline accident is unsupported.

The DEIR underestimates the likelihood of a natural gas pipeline explosion. The analysis underestimates this possibility because it fails to account for the potential of H_2S to corrode the pipeline. Sulfur is highly corrosive and could be present in high concentrations in the natural gas the project produces.[103] As a result, the DEIR's use of general statistics regarding the likelihood of the natural gas pipeline leaking is unsupported and results in an underestimate of the possibility of an accident. CBD-21

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of Oil, Gas, and Geothermal Resources (Jul. 18, 2011); Miller, Elena, Letter from Elena Miller, State Oil and Gas Supervisor, to Fran Pavley, California State Senator (Feb 16, 2011).

[99] DEIR at 4.8-59.

[100] Michigan Department of Licensing and Regulatory Affairs, Hydrogen Sulfide & Sour Crude Oil.

[101] DEIR at 4.8-84.

[102] McDiarmid, Jessica, Can we count on high-tech pipeline leak detection? Toronto Star (Oct 23, 2013), available at http://www.thestar.com/news/gta/torontopipeline/2013/10/23/can_we_count_on_hightech_pipeline_leak_detection.html; *see also* Stover, Richard & Center for Biological Diversity, America's Dangerous Pipelines (2014), available at http://www.biologicaldiversity.org/campaigns/americas_dangerous_pipelines/.

[103] Fang, H. *et al.*, Corrosion of Mild Steel in the Presence of Elemental Sulfur, Paper No. 08637 presented at NACE International Corrosion Conference and Expo (2008), available at http://www.corrosioncenter.ohiou.edu/documents/publications/8172.pdf; DEIR at 4.8-59.

VI. THE DEIR FAILS TO ADEQUATELY ANALYZE OR DISCLOSE THE PROJECT'S CUMULATIVE IMPACTS

One of the most vital elements of a CEQA analysis is the cumulative impacts section.[104] An EIR must "discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable."[105] Furthermore, a lead agency must find "that a project may have a significant effect on the environment" when "[t]he project has possible environmental effects that are individually limited but cumulatively considerable." [106] The Guidelines define "cumulatively considerable" to mean "that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."[107] The purpose of this analysis is to avoid considering projects in a vacuum, wherein seemingly benign impacts could lead to severe environmental harm, in light of the environmental context.[108] In addition to considering activities that will occur at the same time as the project, CEQA also requires that a cumulative impacts analysis include consideration of reasonably foreseeable future actions.[109] CBD-22

As explained above, it is reasonably foreseeable that future activities at the project site will include the use of enhanced recovery techniques including, but not limited to fracking, water flooding, acidization, thermal recovery techniques, such as cyclic steam injection and steam flooding, frac packing, enzyme enhanced recovery, and gas lifting. The DEIR's failure to consider the potential impacts of the use of these techniques as part of the cumulative impacts analysis violates CEQA.

The DEIR's analysis of cumulative impacts to air quality also fails to satisfy CEQA's requirements. The DEIR concludes the cumulative air quality impacts would not be significant because the project would be consistent with the SCAQMD's long-term goals for air quality.[110] However, cumulative impacts to air quality would clearly be significant because the local air quality fails to meet multiple air quality standards, including standards for particulate matter and ozone. The DEIR must analyze significant cumulative air quality impacts. CBD-23

The DEIR also concludes that cumulative impacts to biology would not be significant, even though it acknowledges that "[a]s the Proposed Project would produce significant impacts, cumulative impacts could also be significant" and that other projects "could potentially result in degradations to water quality and biological resources."[111] Thus, cumulative impacts to biological resources clearly could be significant and the DEIR violated CEQA by failing to analyze those effects. CBD-24

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[104] *See* Pub.Res.Code § 21082 (referring to the CEQA Guidelines §§ 15130(a)(1) and 15355 for the applicable definition of cumulative impacts); *see also*, *Bozung v. Local Agency Formation Commission* (1975) 13 Cal.3d 263, 283

[105] CEQA Guidelines § 15130(a) (emphasis added).

[106] CEQA Guidelines § 15065(a).

[107] *Id.*

[108] *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th at 720.

[109] *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal. App. 4th 859, 870.

[110] DEIR at 4.2-68.

[111] DEIR at 4.3-25.

Also, for other impacts, the DEIR concludes that cumulative impacts could be significant, but fails to actually provide an analysis of those impacts.[112] This does not satisfy CEQA's requirement that the agency analyze and disclose the project's potentially significant cumulative impacts.

VII. THE DEIR FAILS TO EVALUATE THE MERITS OF A REASONABLE RANGE OF ALTERNATIVES AS REQUIRED BY CEQA

A thorough and complete analysis of alternatives is vital to an EIR's purpose of providing the public and government agencies the information needed to make informed decisions, thus protecting "not only the environment but also informed self-government."[113] As courts have noted, "if the EIR is the 'heart' of CEQA, the mitigation and alternatives discussion forms the EIR's 'core.'"[114] Although "an EIR need not consider every conceivable alternative to a project, . . . it must consider a reasonable range of potentially feasible alternatives that will foster informed decision decision-making and public participation."[115] Additionally, the "key to the selection of the range of alternatives is to identify alternatives that meet most of the project's objectives but have a reduced level of environmental impacts."[116] The DEIR fails to present a reasonable range of alternatives sufficient to allow for informed decisionmaking and to comply with the requirements under CEQA.

When developing a reasonable range of alternatives in an alternatives analysis, under CEQA, only alternatives "that the lead agency determines could feasibly attain most of the basic objectives of the project" must be considered. [117] Despite CEQA's use of the word "most," a narrowly-delineated purpose nonetheless limits the range of alternatives. Here, the DEIR limits the project's purpose so strictly, that it prevents an adequate analysis of alternatives. Specifically, a number of the project objectives are based on an asserted need to develop a specific reservoir of oil and gas. Thus, the project's objectives are divorced from public needs, such as the development of energy resources that do not result in emissions of massive amounts of greenhouse gases and that do not pose a tremendous threat to public health and safety. CBD-25

Instead, the City should include objectives intended to further the public's interest. It should also consider other types of energy projects in the alternatives analysis that do not involve the development of fossil fuels, such as projects that would promote conservation or the construction of renewable energy infrastructure. Such an analysis is particularly important here where the citizens of Hermosa Beach are being asked to determine whether they should sacrifice the public's safety and welfare for private gain.

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[112] *See, e.g.*, DEIR at 4.9-19 (water quality impacts).
[113] *In re Bay-Delta etc.* (2008) 43 Cal.4th 1143, 1162.
[114] *California Oak Foundation v. Regents of University of California* (2010) 188 Cal. App. 4th 227, 274; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.
[115] Guidelines § 15126.6(a).
[116] *Watsonville Pilots Assn. v. City of Watsonville* (2010) 183 Cal. App. 4th 1059, 1089.
[117] 14 C.C.R. § 15126.6(f)).

VIII. THE CITY MUST RE-DRAFT AND RE-CIRCULATE THE DEIR

A lead agency must re-circulate an EIR for further public comment under any of four circumstances:

> (1) When the new information shows a new, substantial environmental impact resulting either from the project or from a mitigation measure;
> (2) When the new information shows a substantial increase in the severity of an environmental impact, except that recirculation would not be required if mitigation that reduces the impact to insignificance is adopted;
> (3) When the new information shows a feasible alternative or mitigation measure that clearly would lessen the environmental impacts of a project and the project proponent declines to adopt the mitigation measure; or
> (4) When the draft EIR was "so fundamentally and basically inadequate and conclusory in nature" that public comment on the draft EIR was essentially meaningless.[118]

CBD-26

The comments provided above identify new, significant environmental impacts, demonstrate that the severity of impacts are much greater than the impacts analyzed in the DEIR, and show that the DEIR was fundamentally inadequate. It is therefore clear that the City must re-draft and re-circulate the DEIR.

CONCLUSION

Thank you for the opportunity to submit these comments. Please contact David Hobstetter, dhobstetter@biologicaldiversity.org, (415) 632-5321, if you have any questions or would like to discuss these issues further.

Respectfully submitted,

David Hobstetter
Staff Attorney
Center for Biological Diversity

Encls:

List of References Cited and Attached to Comments

[118] 14 Cal Code Regs. § 15088.5.

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EARTHWORKS

April 14, 2014

Mr. Ken Robertson
Community Development Director
City of Hermosa Beach
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Attn: DRAFT ENVIRONMENTAL IMPACT REPORT, PURSUANT TO THE E&B OIL DRILLING AND PRODUCTION PROJECT

Dear Mr. Robertson,

Thank you for the opportunity to submit written comments on the Draft Environmental Impact Report (DEIR), as required by the California Environmental Quality Act (CEQA) Public Resources Code §21000 et seq. CEQA requires that the environmental impacts of proposed projects be evaluated, and that feasible methods to reduce, avoid, or eliminate significant adverse impacts of these projects be identified and implemented.

Earthworks is a nonprofit organization dedicated to protecting communities and the environment from the impacts of irresponsible mineral and energy development, while seeking sustainable solutions. For twenty-five years, we have worked nationwide to advance policy reforms, improve corporate practices, and safeguard land and public health. Founded in 1999, the Oil & Gas Accountability Project (OGAP) of Earthworks works with local communities, landowners, organizations, agencies, and elected officials to advance these goals, while also providing information and support to citizens and groups conducting public awareness and advocacy efforts at the local and state level.

E&B Natural Resources Management Corporation (E&B), is proposing an oil and gas facility to develop a portion of the Torrance Oil Field. The proposed project (project) is a 1.3-acre site located at 555 6th Street in the City of Hermosa Beach (Hermosa Beach), consisting of 34 directionally drilled wells (30 oil producing wells and 4 water injection wells), a laydown site for heavy equipment and supply staging/storage, and a parking lot. Additionally, underground oil and gas pipelines will be constructed on and off site for the transportation of processed crude to refineries and purchasers. These pipelines will extend from the project site, and cross the Cities of Redondo Beach and Torrance. The project is predicted to produce 8,000 barrels of oil per day, and 2.5 million standard cubic feet of natural gas per day.

The project is moving forward pursuant to the March 2, 2012 Settlement Agreement between Hermosa Beach, E&B, and Macpherson Oil Company. Once the Final EIR is completed, a ballot measure will be placed in the next election, allowing the local electorate to decide whether or not to approve the project, along with a Development Agreement to vest the project, so that, if approved, it cannot be later invalidated by the people. The proposed site is owned by Hermosa Beach, and is currently being used as the city's maintenance yard. Should the project move forward, the maintenance yard would have to be relocated.

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We recognize the tremendous time and expertise that staff at the City of Hermosa Beach has invested in preparing the DEIR. The subsequent Final EIR must be consistent with the requirements of CEQA (Public Resources Code Division 13, commencing with Section 21000) and the State CEQA Guidelines (California Code of Regulations Chapter 3, commencing with Section 15000). The Final EIR must provide the public with detailed information, and thoroughly and fully evaluate the potential effects associated with oil and gas development within the proposed scope of the project.

Although the DEIR addressed impacts that would result from conventional oil and gas extraction, the study failed to address the impacts of potential future well stimulation activities associated with unconventional extraction. E&B has stated that no unconventional well simulation would take place for the project, however, it is necessary to fully understand all risks as circumstances may change that would force unconventional extraction techniques to be employed. Practices such as hydraulic fracturing, acidizing, and gravel packing have been known to contaminate ground and surface water sources, cause increased air pollution, damage public health, and induce seismic activity. We wish to ensure that the Final EIR covers all the issue areas as required by CEQA. EWRK-1

A full life cycle analysis of development for the project, from planning, to construction, to production, to transport, and to use of the extracted hydrocarbons, must be included in order to present a full and clear picture of the process. When negative and adverse potential impacts are detected, mitigation measures and alternatives must be looked at to minimize the impacts to Hermosa Beach's people, economy, and environment.

Given the scale of the project that is envisioned by E&B, and the potentially harmful methods that are to be used, the City of Hermosa Beach, acting as the lead agency preparing the EIR, must conduct an in depth, comprehensive analysis of all possible extraction methods to ensure the protection of public health and the environment. Based on the history and records of environmental and health impacts caused by oil and gas development, the significant possibility exists that drilling more than two dozen production and wastewater injection wells in the city will have a detrimental impact on environmental quality and public health. EWRK-2

According to the DEIR, the proposed project would generate "potentially significant and unavoidable environmental impacts" in aesthetics, air quality, biology, hydrology, land use, noise, and recreation. Any use of unconventional well stimulation, such as fracking, would exacerbate these issues, and cause an unacceptable level of risk to the public, infrastructure, and property of Hermosa Beach. For example, active seismic faults are located approximately 2-3 miles offshore to the west of the project site, with another fault found approximate 3-4 miles to the south of the project site. Active fracking and injection has been shown to increase seismic activity as much as ten fold in states such as Texas and Oklahoma. In April 2014, a state investigation in Ohio directly linked fracking to earthquakes in the state. Increased production of the Torrance Oil Field puts the citizens of Hermosa Beach, and the surrounding communities, at risk. It is essential for the city to consider and guard against negative impacts of expanded oil and gas development — and thus protect people, economy, and the environment of the city. EWRK-3

As stated in the DEIR, the project will have significant impacts for the community and environment of Hermosa Beach. In order to prevent long-term damage, the following must be addressed:

• The City of Hermosa Beach recognizes the need to better understand the impacts oil and gas development. The Final EIR will likely reflect public comments and additional information not in the DEIR — resulting in new analyses of impacts and proposed mitigation measures. Because of this, <u>any ballot measure allowing the local electorate to decide whether or not to approve the project, should be postponed until a Final EIR is complete,</u> and all methods of conventional and unconventional extraction are clearly understood. <u>This is of particular importance since the voters</u> EWRK-4

will also be approving a Development Agreement, which would prevent invalidation of the project by voters in the future.

• Conventional and unconventional oil and gas extraction uses hundreds of thousands of gallons of water per well. The water that is used is often potable water from groundwater sources, which could also be utilized for human uses. Because of the extended drought currently being experienced by the State of California, the use of large quantities of water for oil and gas production would be detrimental to the communities of Hermosa Beach.

Although some methods of recycling make produced water from drilling activities available for agricultural uses, there is no guarantee on the quality of this water, and this water is classified as not safe for human or animal consumption. Clear plans for mitigating water quality and quantity issues are necessary to prevent negative environmental and economic impacts. EWRK-5

Additionally, a study of well casing and cementing procedures will help develop better mitigation measures when a failure occurs, thereby reducing the risk of contamination of groundwater resources. Poorly understood oil and gas development and reinjection activities may further degrade the quality of groundwater sources, and increase the possibility of related seismic activity.

• The City of Hermosa Beach lies over important groundwater sources for millions of Southern California residents, and on the shores of sensitive ocean ecosystems of the Pacific Ocean. The significant possibility exists that surface and groundwater quality would be contaminated due to spills and accidents. As stated in the DEIR, a release from the pipeline between the project site and Prospect Avenue, could produce a spill of 4,8000 gallons that could drain directly into the ocean through storm drains. Mitigation measures would be able to reduce the severity of any spill, however, "any impacts would remain significant and unavoidable." A clear and complete spill prevention plan must be on record before any drilling activities are allowed to commence in order to prevent damage to fragile ocean ecosystems. EWRK-6

• Urban areas, including the entire Los Angeles Basin, suffer from severe air pollution. Increased construction activities, traffic, long-term maintenance and operational activities of drilling, transport, and burning of extracted fossil fuels, will generate significant amounts of air pollutants. Facilities classified as sensitive receptors, such as schools and residences, are located very close to the planned area of development. According to the DEIR, the site is 160 feet away from businesses, 160 from residences, 55 from the Greenbelt, and 20 feet from public sidewalks. These areas will be exposed to high levels of exhaust and emissions from construction and operations.

The Final EIR must assess air emissions from all stages of oil and gas recovery, including drilling, completion, well stimulation, production, and disposal. Air toxics and hazardous air pollutants pose a serious risk to human health, and the Final EIR must consider the chemicals potentially used in these processes, as well as the heavy industrial activities themselves, and the possible effects of each chemical on public health and the environment. For example, construction activities associated with the project would result in increased emissions of carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), sulfur oxides (SOx), and particulate matter (PM) of 10 microns and PM2.5 microns. Cumulative contributions of emissions that will reduce air quality must be properly evaluated to ensure that public health is protected, and determine whether expanded oil and gas production will conflict with implementation of plans for air quality attainment under applicable state and federal laws. EWRK-7

• CEQA requires a discussion of "significant irreversible environmental changes, which would be involved in the proposed project should it be implemented" - CEQA Guidelines § 15126(c). Greenhouse gases have direct implications for global climate change. Passed in 2006, Assembly Bill 32 (AB32), The Global Warming Solutions Act, requires California to reduce GHG emissions to 1990 levels by 2020. Signed in 2008, Executive Order 14-08 requires California utilities to reach a EWRK-8

renewable energy goal of 33% by 2020. Use of natural gas and heavy crude from California's oil fields will be detrimental to achieving the goals of emissions reductions and increased use of renewables. Emissions such as methane (a powerful GHG with a global warming potential 86 times higher than carbon dioxide (CO2)), NOx, ozone, and CO2, will come from construction activities, increased operations from potential future development operations, as well as the combustion of petroleum and natural gas that is extracted, not to mention fugitive emissions from drilling activities.

In furtherance of both CEQA, and the stated goals of the state of California, the Final EIR should include an analysis of the impact the project would have on the emissions of greenhouse gases such as CO2, methane, chlorofluorocarbons, and ozone precursors. It must also include a discussion of the project's consistency with applicable policies and regulations, adopted to reduce greenhouse gases, as well as the measures and technologies that would be undertaken to keep these emissions to a minimum. A full life cycle analysis of GHG emissions is necessary to ensure compliance under California laws designed to reduce the impacts of climate change, reduce dependence on fossil fuels, and protect natural resources, public health, and other economically vital industries.

• Since the 1960s, scientists have known that injection of fluids at high pressures underground can trigger earthquakes. Scientific studies have directly linked fracking, and underground injection of oil and gas wastewater, to seismic events in Oklahoma and British Columbia. In areas where underground injection has increased, seismic activity has increased as much as ten fold. The National Academy of Sciences has recommended that states look into the effects of induced seismicity and underground injection. Under Ohio's new permit conditions, implemented in April 2014, "all new drilling sites within 3 miles of a known fault or seismic activity of 2.0 magnitude or higher will be conditioned on the installation of sensitive seismic-monitoring equipment." There are no plans for California to implement similar regulation in the near future. EWRK-9

The proposed project in Hermosa Beach is located approximately 2-3 miles to the east, and approximately 3-4 miles to the north of active seismic faults. The Southern California region lives in fear of when the "big one" will strike. Increased seismicity in Hermosa Beach would put the community's lives, property, and infrastructure at risk. A comprehensive analysis of all seismic faults in the area, along with the risks associated with increased underground injection, is necessary to safeguard the lives of all citizens in Hermosa Beach.

• The Final EIR must assess the environmental impacts of oil and gas recovery using the full range of chemicals used in the process. New technology and techniques for extraction, disposal, and stimulation rely heavily on harmful chemicals to achieve high rates of production. Only if these chemical ingredients are disclosed and known can an adequate assessment of risk occur, and the Final EIR must contemplate the need for such an assessment in order to protect public health and the environment. The Final EIR must disclose and consider the risk of any failure to obtain full knowledge of the chemicals used—and chemicals released—in these processes. The Final EIR must also consider the potential impact of the use of all chemicals used in activities related to the project on the environment, groundwater, surface water, ocean resources, and public health. EWRK-10

• The Final EIR must present an accurate environmental baseline. Under CEQA, the baseline conditions for determining "significant impacts" are those local and regional conditions that exist when the NOP is made available for review. See CEQA Guidelines, §15125(a) (an EIR must describe the "physical environmental conditions in the vicinity of the Project, as they exist at the time the notice of preparation is published . . . from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."). The final EIR must include not only a detailed analysis of the current levels of noise and air pollution, but also light pollution, water contamination, as well as traffic vibration, and make a realistic comparison of the environmental impacts of the proposed project versus the existing conditions. EWRK-11

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• The Final EIR must contain a comprehensive health risk assessment. This proposed project could generate a tremendous amount of potential air and water pollutants. The Final EIR should include a full emissions inventory with predicted future pollution levels and a full health risk assessment ("HRA") that includes the level of toxic risk, as well as pollution that the nearby communities will face from this proposed project. The HRA should identify all sensitive populations that could be impacted by the project, and accurately assess the toxic air contaminant and criteria air pollutant risks that neighboring residents, workers, and recreational users will have to bear as a result of project related activities. EWRK-12

The best analysis, by itself, cannot protect the public health and the environment from the impacts of energy development. It is necessary for the City of Hermosa Beach to consider all possible alternatives, including unconventional methods of extraction, as well as all the cumulative impacts associated with expansion of oil and gas development in the city. The Final EIR must include a comprehensive environmental review, a full economic analysis, a vigorous health impact study, and an extensive public review period to safeguard the public, the environment, and the sustainability of Hermosa Beach's economy. EWRK-13

Sincerely,

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April 14, 2014

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Re: Comments on Draft Environmental Impact Report for the E&B Oil Development Project

Dear Mr. Robertson:

On behalf of Heal the Bay, a non-profit environmental organization with over 15,000 members dedicated to making the Santa Monica Bay and Southern California coastal waters and watersheds safe, healthy, and clean, we welcome the opportunity to submit these comments on the Draft Environmental Impact Report (DEIR) for the E&B Oil Development Project (the proposed project). We are concerned about the precedent setting nature of opening up new oil operations in the Santa Monica Bay (the Bay), especially because the proposed project would involve revoking the current moratorium on oil drilling in Hermosa Beach. Heal the Bay has weighed in on our concerns and offered alternative suggestions regarding oil operations in the Santa Monica Bay before- we completed a careful analysis of the Chevron's Offshore Marine Terminal lease extension DEIR and Final EIR in 2010. In addition, we have attended community meetings in Hermosa Beach, including the EIR scoping meeting in July 2013, we also submitted written scoping comments on the proposed project in 2013. Many of Heal the Bay's volunteers and members are Hermosa Beach and South Bay residents. By slant drilling for oil underneath the Santa Monica Bay, the proposed project would be precedent-setting and it has the potential to undermine the many environmental improvements that your residents, Heal the Bay and many others have advanced over the past few decades. HEAL-1

Due to the substantial risk involved with operating an oil development project in a coastal city along the Bay, this proposed project and the associated DEIR should reflect careful and detailed research of environmentally superior alternatives and appropriate mitigation measures as an oil spill could significantly affect the physical and biological environments of the Bay. We cannot underscore the real risk of an oil spill, and how important it is for Hermosa Beach to thoroughly evaluate alternatives for this proposed project and properly identify mechanisms to minimize the risks. An oil spill in the Bay would be disastrous to the marine environment, and according to the DEIR would have "significant" and "unavoidable" impacts; residents and visitors who live near and recreate on Los Angeles County beaches; our local economy and tourism; water quality; and the health of marine life. HEAL-2

We are coordinating our EIR review efforts with other community and environmental groups that have expressed concerns regarding the proposed project. Overall, we consider the DEIR as a good first-step in identifying the many impacts associated with the proposed project, their significance, and that many of HEAL-3

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these impacts may be unavoidable - even with mitigation measures. However, we recommend that the final EIR incorporate a more robust analysis in certain areas, identify additional impacts, and strengthen some mitigation measures. Please see our comments below (***bold, italicized***) for specific suggestions (organized chronologically by DEIR section).

EXECUTIVE SUMMARY

We express several concerns related to the DEIR and recommended changes to the final EIR within this letter and we recommend updating Table ES-2, Summary of Environmental Impacts for the Proposed Project, to reflect changes made in the final EIR on specific sections and impacts detailed in the sections below. HEAL-4

1.0 INTRODUCTION

Page 1-6, 1.2.1.2 Introduction, State Agencies
Page 1-17, 1.8.2 Lawsuits and Settlement Agreement
"If the voters approve the Project, E&B will pursue additional permits and approvals from different state and regional agencies. The agencies are the California Coastal Commission, State Lands Commission, South Coast Air Quality Management District and state Division of Oil, Gas and Geothermal Resources." ***Should the State Lands Commission be included in the agencies list on page 1-6? They are not listed, but referenced later in the document as a permit needed (page 1-17), and page 2-2 states that there is a lease that allows drilling for 35 years. We request further clarification about whether the lease is valid in the final EIR, and if so, whether the 35 years commences from lease approval or from drilling initiation?*** HEAL-5

2.0 PROJECT DESCRIPTION

Page 2-5 and 2-6, 2.0 Project Description, Historical & Current Comparisons
"The Proposed Oil Project would drill into the western edge of the Torrance Oil Field (see Figure 2.2). Most of the production from the Torrance Oil Field has been generated from wells drilled in the City of Torrance, with some drilling in the Cities of Redondo Beach and Hermosa Beach." ***The historic and current map (Figure 2.2) is extremely cluttered and does not offer a clear picture of the current oil operations in the region. We request that a clearer and more illustrative map of current drilling operations in the region be provided in the final EIR.*** HEAL-6

Page 2-6, 2.0 Project Description, Historical & Current Comparisons HEAL-7

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"In 1930, an oil well (Stinnett Oil Well No. 1) was drilled in the western portion of the Project Site. The oil well was abandoned in 2005, consistent with the then-current standards of the DOGGR."
We recommend that the final EIR include further detail on the Stinnett well, as it is important in understanding the safety of proposed operations on the Project Site. Why was the oil well abandoned in 2005? When did it stop producing? Also, there are discrepancies between the DEIR and City of Hermosa Beach's records about this well. According to City of Hermosa Beach, Stinnett well #1 was shut down in 1988. Is this correct and/or different from abandonment?

Page 2-10, 2.4 Project Description, Proposed Oil Project Phases
"Prior to the initiation of each phase of the Proposed Oil Project, it would be required that plans be submitted by the Applicant to the City and other permitting authorities for review and approval. These would include coastal development permits, oil and gas well permits, demolition plans, grading plans, utility and electrical plans, cement/foundation plans, landscaping plans, street and ROW improvement/modification plans, and construction plans, amongst others."
We recommend that any safety plans be updated at each phase of the proposed project, using the most current information gathered to adequately represent the pending phase and findings from the previous phases of oil drilling associated at the project site. The proposed project's safety plans should be adaptive and build upon lessons learned from previous phases, as well as incorporate new information as it become available related to safety. Additionally, we recommend the mitigation plans and monitoring plans be reviewed and updated using best available science for oil spill response and cleanup plans before the next phase of the proposed project is initiated. HEAL-8

Page 2-11, 2.4.1.1 Project Description, Phase 1 Construction Activities
"Table 2.2 Proposed Oil Project Design Parameters."
We recommend that Table 2.2 be accompanied with additional information and description. By providing information broken down by Phase and by well, it is difficult to get a full picture of the proposed project. For example, water usage projections during construction are provided per day, while during operation, water usage projections are provided per well without a time frame. Additionally, the well redrill and workover information does not specify if it is projected for the entire proposed project or by well. If well workovers are projected by well, workovers could be occurring year-round, not just for 90 days. Furthermore, if well redrills are projected by well (not across all 34 wells), Table 2.2 reflects an underestimate of the maintenance activities at the site. We strongly recommend that more clarity is provided on water usage, well maintenance, and other proposed project design parameters and operation projections in the final EIR. HEAL-9

Page 2-20, 2.4.2.1 Project Description, Phase 2 Site Geology and Drilling Objectives
"The Proposed Oil Project would utilize directional drilling techniques to access the crude oil and gas reserves in the tidelands (offshore) and uplands (offshore) in the portions of the Torrance Oil Field within the City's jurisdiction. The Project Application states that "no hydraulic fracturing (or "fracking") of wells will occur because the geologic zones for the Proposed Project are permeable and capable of yielding oil and gas without hydraulic fracture stimulation." HEAL-10

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The proposed project proposes natural gas production during test well drilling (Phase 2) and production (Phase 4) in Table 2.2.; but, they do not propose fracking. Is this an accurate description? Later, the Project Application states that "no hydraulic fracturing (or "fracking") of wells will occur because the geologic zones for the Proposed Project are permeable and capable of yielding oil and gas without hydraulic fracture stimulation," but the sentence before that says it will access "gas reserves." This should be more clearly discussed in the final EIR, as it is unclear to the public about whether or not the proposed project will involve fracking to extract natural gas.

Page 2-31, 2.4.2.2 Project Description, Phase 2 Construction and Drilling Activities
"Drilling each well would require approximately 130,000 gallons (or 0.4 acre-feet) of water. The water would be reclaimed water provided by the West Basin Municipal Water District from an existing reclaimed water line serving the Greenbelt east of Valley Drive. The West Basin Municipal Water District has provided the Applicant with a "will serve" letter."
Does this water usage include drilling operations for all phases over the life of the proposed project? How much total water is needed for Phase 2? Are the reclaimed service lines capable of providing the volume of water demanded by the proposed project? Currently, what is West Basin Municipal Water Districts recycled water surplus? Given California's current drought, conservation of fresh water supplies should be taken whenever possible. At a minimum, 100% recycled water should be required for all drilling operations. We strongly urge the City of Hermosa to provide the West Basin Municipal Water District "will serve" letter as part of the final EIR. It is critical that the Water District understand the full commitment being requested of them to support the proposed project, and any agreements be transparent and available to the public. HEAL-11

Page 2-32, 2.4.2.2 Project Description, Phase 2 Construction and Drilling Activities
"The Proposed Oil Project would comply with the 1993 CUP conditions of approval, proposed operational practices, and proposed design features."
The CUP referenced in the DEIR is over 20 years old. It is likely that technology, environmental protections, and mitigation measures have advanced over the past few decades. Do the 1993 CUP conditions reflect current standards required for oil drilling operations? If not, we urge the City to highlight any discrepancies between the 1993 CUP and current practices in the final EIR. HEAL-12

3.0 Cumulative Projects

Thorough cumulative impact evaluation is an important element of an environmental impact report, and in-particular for a high-risk project, such as the proposed project. The cumulative projects section of the DEIR is severely lacking. We suggest that the final EIR consider additional projects that would generate cumulative impacts, and widen the geographic scope of the area to be considered for projects. We recommend that the final EIR include projects that have the potential to exacerbate community health and environmental impacts when cumulatively considered with the proposed project. HEAL-13

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Page 3-1, 3.0 Cumulative Projects

"For this Proposed Project, the cumulative impact study area includes the immediate vicinity surrounding the Oil Project Site and the proposed crude and gas pipelines in the City of Hermosa Beach, Redondo Beach and Torrance as well as the area around the Proposed City Maintenance Yard Project. Greenhouse gas (GHG) emissions would have cumulative impacts well beyond the region, and this analysis will consider Project-related GHG emissions relative to those on both a regional and statewide scale. Under risk of upset conditions and for impacts involving biological resources, geology, air quality, noise, traffic, and recreation, the cumulative impact study area would also encompass the communities of the City of Hermosa Beach, the City of Redondo Beach and Torrance (see Figure 2-1)."

The scope seems much too small for cumulative impacts related to risk of upset. We recommend the final EIR broaden the cumulative impact evaluation to include identification of projects within the greater Santa Monica Bay region– both onshore and offshore – from Palos Verdes to Malibu. For example, in the case of an oil spill or safety disturbance with the proposed project, environmental impacts related to emissions and release of oil and gas from the site could be exacerbated by industrial facilities in neighboring communities, as well as offshore at the Chevron Marine Terminal. For example, some projects that should be included and are missing include West Basin's Desalination project at Redondo Beach Sea Lab, and their other plans for desalination projects in the South Bay; cumulative oil impact projects, like Chevron's offshore marine terminal in El Segundo; and Chevron's oil refinery and associated pipelines in the South Bay (we believe there are many others that we haven't included as well). We strongly urge the City of Hermosa Beach to determine a larger range for cumulative impacts evaluation in the final EIR.

HEAL-14

Furthermore, we urge the City of Hermosa Beach to include an evaluation of potentially releasing contaminated sediments from the sea floor, particularly those from the Palos Verdes Shelf Superfund site in the final EIR. The Palos Verdes Shelf Superfund site is an area contaminated by millions of pounds of DDTs and PCBs that were discharged by the Montrose Chemical Corporation via their ocean outfalls off White Point. DDTs and PCBs are both toxic chemicals that are slow to break down in the environment, and can accumulate in plants and animals as they move up through the food web. It is estimated that more than 110 tons of DDTs and 11 tons of PCBs are present in the seafloor sediments off the Palos Verdes Shelf, and bioaccumulation of these chemicals has affected sea birds, fish, and other animals throughout the Southern California Bight. They also pose a threat to human health through contaminated fish consumption. Over the past decade, following a ten-year $140,200,000 settlement, extensive plans and projects to restore the natural resources have been implemented by a suite of restoration and monitoring actions addressing injuries to fishing and fish habitat, bald eagles, peregrine falcons and various seabirds. The DEIR identifies subsidence as a possible impact associated with the proposed project, therefore it is important to identify any contaminated sediments that may be at risk of being released during drilling operations. The potential release of contaminated sediments from the sea floor off the PV shelf and nearby harbors should be evaluated as a potential cumulative impact associated with the proposed project in the final EIR.

HEAL-15

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4.3 Biological Resources

The proposed project has very real potential for oil spills, upwards of a 34% chance as stated in Section 4.3 and 4.8, and the increase in risk compared to the current baseline is significant, given there are no current oil drilling operations in or under the Bay. Significant biological impacts would likely result from an oil spill, including increased exposure risks resulting from spilled oil and impacts to biota and habitats from the spill, cleanup, and remediation activities. Oil spills have the potential to significantly impact marine life and habitats in the Bay and throughout the Southern California Bight, in part because they can spread rapidly over great distances, and can be difficult to detect and cleanup. Our state and local community has made significant investments to protect and enhance marine and coastal habitats in the Bay- such as establishing marine protected areas (MPAs) in Malibu, Palos Verdes and Catalina Island; restoring Malibu Lagoon; the establishment of Santa Monica Bay as a National Estuary; and the planned restoration of Ballona Wetlands. An oil spill would directly undermine these long-term and important efforts.

HEAL-16

Page 4.3-1, 4.3 Biological Resources

"This following description of the affected marine and onshore environment is based on a reconnaissance-level field survey conducted October 23, 2013, queries of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), Project plans and graphic renderings, the City of Hermosa Beach Local Coastal Plan (LCP), and other relevant data sources, including environmental documents that examine the environmental conditions of the Santa Monica Bay and Southern California Bight (SCB) region (CDFG 2001, CDFG and CINMS 2001, SMBRC 2008)."

We suggest that the final EIR include other environmental documents, especially more recent, that examine the environmental conditions of Santa Monica Bay. In addition, using more current documentation from CDFW, rather than those referenced from 2001 would be advisable, as CDFW has implemented many important efforts and scientific studies in the following 13 years, including marine protected areas[1]. Specifically, we suggest referencing the Marine Life Protection Act South Coast Regional Profile, Marine Life Protection Act Science Advisory Team South Coast Species Likely to Benefit from MPAs list, and any survey information that has already been conducted through the South Coast Marine Monitoring Enterprise MPA Baseline surveys, as well as the local Audubon snowy plover study[2], Pepperdine University's grunion surveys for Southern California[3], and recent Southern California Coastal Water research Project Bight studies[4].

Additionally, we strongly recommend that a reconnaissance-level field survey be completed in the spring to identify important species in the proposed project impact region, not just one day in October, so that more nesting birds are present and documented in the survey.

HEAL-17

[1] https://www.dfg.ca.gov/marine/mpa/science1.asp
[2] http://losangelesaudubon.org/
[3] http://grunion.pepperdine.edu/
[4] http://www.sccwrp.org/researchareas/RegionalMonitoring/BightRegionalMonitoring.aspx

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Page 4.3-2, 4.3.1.1 Biological Resources, Onshore Resources, Urban/Landscaped
"The non-native trees and shrubs located within the Greenbelt include eucalyptus (*Eucalyptus spp.),* Peruvian pepper tree (*Schinus molle*), cape honeysuckle (*Tecoma capensis*), and acacia (*Acacia sp.)* ... The groundcover consists of non-native grasses, ice plant (*Carpobrotus edulis),* and Boston ivy (*Parthenocissus tricuspidata*). Although the Greenbelt consists primarily of non-native vegetation, these trees and shrubs do provide some limited resources for those wildlife species that are accustomed to heavily urbanized settings." HEAL-18
The DEIR states that the "Greenbelt consists primarily of non-native vegetation," to which you can infer that there is also native vegetation. Please also include a list of native species along the Greenbelt in the final EIR, rather than highlighting just the non-native species at the location.

Page 4.3-2, 4.3.1.1 Biological Resources, Onshore Resources, Urban/Landscaped
"These species, including possum *(Didelphis virginiana)* and raccoon *(Procyon lotor),* may use the accessibility and cover found on the greenbelt for a travel corridor between urban areas ...The trees and shrubs are also expected to provide canopy structure and cover suitable for numerous bird species for roosting, foraging, and nesting habitat. Bird species observed during the reconnaissance survey include mourning dove *(Zenaida macroura*), northern mockingbird *(Mimus polyglottos)* American crow *(Corvus brachyrhyncos),* house finch *(Carpodacus mexicanus),* and Anna's Hummingbird *(Calypte anna).* Such areas are important resources for perching, foraging, and nesting for raptor species that are capable of coexisting in urban areas, including the red-tailed hawk *(Buteo jamaicensis)* and American kestrel *(Falco sparverius)*." HEAL-19
When discussing impacts to local wildlife, the DEIR should lead with the bird species, not the urban mammals (small note: Didelphis virginiana is an "opossum" not a "possum"). We suggest that more thorough bird surveys be performed in the vicinity of the proposed project, the Greenbelt, and the nearby beach, conducted at different times of year, highlighting species that may be more sensitive to industrial noises and odors coming from the proposed project site. There may be some rarer species present that are worth highlighting (including White-tailed Kites and other raptors).

Page 4.3-2 to 4.3-3, 4.3.1.1 Biological Resources, Onshore Resources, Sandy Beach
"Sandy beach habitat is typically found between the intertidal zone and areas where vegetation becomes established, typically forming foredunes or pioneer dunes ... shorebirds that are most abundant during the fall and winter and include willet *(Tringa semipalmata*), sanderling (*Calidris alba),* western *(Calidris maudi*) and least (*Calidris minutilla*) sandpipers and various species of gull *(Larus spp.).* There was no vegetation observed along the sandy beach habitat or any signs of any additional vegetative communities in the general area." HEAL-20
The DEIR does not include western snowy plovers (Charadrius nivosus nivosus) in the list of shorebirds in the narrative for Sandy Beach, yet the species is listed later in the DEIR and in Table 4.3-1. As a federally threatened species found within Hermosa Beach, it is important that any threats to western snowy plovers are discussed and properly mitigated in the final EIR. The Hermosa Beach snowy plovers

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are the second largest roosting site in Los Angeles County. Please reference the Snowy Plover Survey, including USFWS critical habitat.[5]

Additionally, the sandy beach habitat analysis refers to signs of vegetative communities in the "general area." What constitutes the "general area"? Is there really no beach dune vegetation that could be threatened by the proposed project, including during a possible oil spill? We recommend the final EIR include further evaluation of impacts to beach and dune habitat in the region that could be affected by an oil spill, such as areas in Manhattan Beach and Dockweiler Beach, which we believe have some dune and natural beach habitat. HEAL-21

The DEIR does not include discussion of the importance of sandy beaches to grunion spawning, and how Santa Monica Bay's beaches are part of the limited California grunion range. From March through September along Southern California's sandy beaches, California grunion come ashore to spawn. California grunion are small silvery fish found only along the coast of southern California and northern Baja California. Unlike other fish, grunion come out of the water completely to lay their eggs in the wet sand of the beach, which then hatch at the next high tide, weeks later. Grunion are currently running and have been recently observed at yearly spawning events at the southern shore of Hermosa Beach (adjacent to the Herondo stormwater outfall), therefore we urge the City to include analysis of proposed project impacts to grunion in the final EIR. HEAL-22

Page 4.3-4, 4.3.1.2 Biological Resources, Offshore Resources, Marine Birds
"Seasonal population peaks vary among the taxa; most seabird rookeries in the region are located on offshore islands, predominately the northern Channel Islands; few, if any, seabirds nest on the mainland coast of the SCB (Carter et al. 1992)."
The statement that "few, if any, seabirds nest on the mainland coast of the SCB" is backed by a source over 20 years old. There have been great recoveries of marine and shorebird communities in the Southern California Bight since 1992- we strongly urge the City of Hermosa Beach to include a more up-to-date survey to reflect the current state of seabirds in the region, not only nesting, but also foraging grounds. The Redondo Canyon is a hotspot in the Santa Monica Bay for upwelling activity, which brings nutrient rich water to the sea surface, and often draws in prey species and foraging seabirds and marine mammals. Besides the snowy plover (Charadrius nivosus), the California least tern (Sternula antillarum browni) is the most observed of the sea birds to roost on coastal habitats (sandy beaches). The closest nesting colony to Hermosa Beach is in Venice, California. We recommend the final EIR provides further analysis of foraging, nesting, and roosting grounds that could be impacted by the proposed project, including during a worst-case spill scenario to identify appropriate mitigation measures. HEAL-23

[5] http://losangelesaudubon.org/images/stories/pdf/snplb24_2007_2009.pdf

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Page 4.3-5 to 4.3-6, 4.3.1.2 Biological Resources, Offshore Resources, Kelp Beds
"While historically more widespread, during the past decade, kelp beds near the Project area have been limited to the extreme northern and southern portions of Santa Monica Bay. The rocky bottoms found offshore Leo Carrillo State Beach, the Malibu coast, and along the Palos Verdes Shelf support the majority of the kelp stands within the Bay, although individual plants occasionally manage to gain a foothold on temporarily exposed rocks along the sandy, central portion of the Bay as well (MBC 1993).
When discussing how wide-spread kelp beds have historically been versus within the last decade, the DEIR cites a report over 20 years old- from 1993. Kelp beds are found throughout Santa Monica Bay- not just the two rocky ends. This section should be updated using the most current research on kelp forests in the Bay.[6]

HEAL-24

Page 4.3-8 to 4.3-9, 4.3.1.3 Biological Resources, Rare, Endangered, and Special Status Species
Table 4.3-1 Endangered, Threatened, and Special Status Species in Project Area
There is a typo in the El Segundo Blue Butterfly habitat box- "Malago" should be "Malaga."

The description under Habitat for Western snowy plover should identify Hermosa Beach as one of the few areas in Southern California that snowy plovers roost, and the second largest site in Los Angeles County.

The description under Habitat for Blue Whale should be updated with information on the increases in recent sightings and activity (including feeding) near Redondo and Hermosa Beaches within the past five years.

HEAL-25

Page 4.3-11, 4.3.1.3 Biological Resources, Rare, Endangered, and Special Status Species, Western Snowy Plover
"Historically, western snowy plovers nested on the Malibu beaches and a stretch of beach between Santa Monica and Redondo Beach (USFWS 2007) ... Nevertheless, critical habitat is designated for the species on a series of Pacific coastline beaches from Washington to Southern California (USFWS 2007). Other nearby sites are Dockweiler Beach South and Hermosa Beach between 2nd and 6th Streets."
This section should highlight the importance of Hermosa Beach as a roosting site for Western Snowy Plovers. We recommend that the final EIR include an update of the description with population trends since 2007. Los Angeles Audubon should be a good resource, as their survey numbers have indicated a more constant and increasing snowy plover population in Hermosa Beach.

HEAL-26

Page 4.3-11 to 4.3-12, 4.3.1.3 Biological Resources, Rare, Endangered, and Special Status Species, California Least Tern
"... Habitat loss in the early 1900s caused a drastic reduction in both breeding sites and breeding pairs. By the 1940s, the California least tern disappeared from Los Angeles and Orange Counties (Keane 1999).

HEAL-27

[6] http://www.santamonicabay.org/IntheOcean/KelpProject.html

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California least terns are known to have nested on the salt and mudflats at Playa del Rey since at least 1919, and small numbers remained there into the late 1970s. However, a program established in the early 1980s to protect least tern nesting grounds, including protective fencing and predator control on the north side of the entrance to Ballona Lagoon, at nearby Venice Beach (North Dockweiler State Beach), resulted in a preferential shift to that site. Since then, the Playa site has fallen into disuse, while the numbers of nesting pairs and fledglings at Venice Beach have tripled. Nesting pairs at the site increased from less than 100 in the late 1970s, to more than 400 by 2007. Meanwhile, from 1978 through 1994 the site contributed more than 10 percent of the fledglings statewide. The area currently remains one of only two permanent California least tern nesting sites in Los Angeles County; the other site is south of the Palos Verdes Peninsula at the Port of Los Angeles (Pier 400)."

It is inaccurate for the DEIR to say "currently" to describe its Least Tern population distribution characterization, as it uses sources from 1999 (and maybe 2007). We recommend the final EIR be updated with more current Least Tern population distribution in the Bay.[2]

Page 4.3-12, 4.3.1.3 Biological Resources, Rare, Endangered, and Special Status Species, Pinnipeds

"Only two of the pinniped species, the California sea lion (*Zalophus californianus*) and the harbor seal (*Phoca vitulina*), are expected to be encountered in the areas directly offshore of the Proposed Project Site with any regularity."

Elephant seal pups (weaners) are known to rest on beaches in the South Bay regularly in the late winter and spring (in addition to California sea lions and harbor seals). We recommend that the final EIR include actual records of pinnipeds in the Bay, rather than focusing on the breeding colonies at the islands. Stranding reports from NOAA-NMFS are a good source of data for this information.[7] HEAL-28

Page 4.3-12, 4.3.1.3 Biological Resources, Rare, Endangered, and Special Status Species, Cetaceans

"Five species, the California gray whale, humpback whale, blue whale, fin whale (*Balaenoptera physalus*), and minke whale (*Balaenoptera acutorostrata scammoni)* can be expected to occur within the Project area (Dohl et al. 1983, Carretta et al. 2005). The remaining three whale species are only rarely sighted in the SCB, or are generally found far offshore. Five of the whales are considered endangered under the FESA and the California Endangered Species Act."

The list of cetaceans present within the proposed project area provided in the DEIR is incomplete. We recommend the City of Hermosa Beach include a more comprehensive list of cetaceans that may occur within the proposed project area in the final EIR, including the species that may be impacted during upset or an oil spill event. For example, several dolphin species, including common, bottlenose, and Risso's dolphin are frequently observed in the Santa Monica Bay. Orca, Pacific white sided dolphin, Dall's porpoise, and northern right-whale dolphin have also been documented in the Santa Monica Bay.[8] ***We further recommend that the final EIR include more information about gray whales in the Bay, and how record numbers of gray whales have been observed in the Santa Monica Bay during recent years, especially 2013-2014. Also, we urge the City of Hermosa to include marine mammal foraging information in this section, including gray whale feeding patterns close to shore and Redondo*** HEAL-29

[7] http://www.nmfs.noaa.gov/pr/health/publications.htm
[8] http://www.oceanconservation.org/research/publications_pdf/cetacean_ecology_in_smb.pdf.

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Canyon as a cetacean foraging hotspot[9], since these are species that could be affected by the proposed project, and in particular during an oil spill. In addition, we suggest that the final EIR include and highlight more information on Blue Whales, since they have been sighted frequently during summer months in Santa Monica Bay in recent years.

Page 4.3-15 to 4.3-17, 4.3.2.2 State Resource Regulations

In addition to regulations listed, we suggest the final EIR include the Marine Life Protection Act and associated MPA regulations in Los Angeles County. HEAL-30

Page 4.3-18, 4.3.4 Project Impacts and Mitigation Measures

"Sensitive Habitats including Federal Wetlands: There are no sensitive wetland habitat, coastal scrub habitat, federally protected wetlands, or any other sensitive habitat in the general Project area, nor immediately downstream of the Project Site and therefore, the construction and operation phase of the Project is not expected to have adverse effects on any sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS"

We recommend the City of Hermosa Beach include discussion of the impact of oil spills on wetlands, specifically on Malibu Lagoon and Ballona Wetlands, and sand dunes in Santa Monica Bay in the final EIR. For example, Chevron's offshore marine terminal had an oil spill off El Segundo in the 1990's that spread up to Malibu Lagoon. According to a NOAA incident report of Chevron's 1991 oil spill, 307,000 gallons of diesel-like gas-oil were spilled resulting in a visible oil sheen for four to five miles. After the initial spill, wind and oceanic conditions carried oil to the shorelines between Las Flores Lagoon to Malibu Lagoon. The oil spill also caused wildlife casualties including dead and suffering oiled birds.[10] This oil spill incident from Chevron's Marine Terminal shows that oil spills can spread widely and across a great distance in Santa Monica Bay. We recommend oil spill mapping be done in Santa Monica Bay showing the potential routes of oil spills originating from E&B pipelines and operations for various spill volume scenarios that have the potential to be created by the proposed project. HEAL-31

Page 4.3-18, 4.3.4 Project Impacts and Mitigation Measures

"Wildlife Migratory Corridors: Construction activities would be temporary, and would be followed by some increased traffic along an already heavily used thoroughfare. Disturbances to any wildlife species attempting to move through the area would either be temporary in nature or similar to existing conditions and therefore, the construction and operation phase of the Project is not expected to have a substantial effect on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or interference with the use of native wildlife nursery sites." HEAL-32

We recommend the final EIR include an analysis of the impacts of an oil spill on migrating wildlife under this description. As identified under Section 4.3.1.3, there are many migratory species (avian, cetacean, etc.) that frequent the beaches and immediate offshore area of Hermosa Beach, and an oil spill would directly affect their migratory patterns and survival.

[9] http://www.smbrc.ca.gov/docs/sotb_report.pdf
[10] http://response.restoration.noaa.gov

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Page 4.3-19, 4.3.4 Project Impacts and Mitigation Measures
"Plan Consistency: The Project would not conflict with the provisions of any Conservation Planning program, Natural Community Conservation Planning program, or other approved local, regional, or state Habitat Conservation Planning program."
This section should identify and include restoration plans and fishery management plans. We recommend the final EIR include local wetland and kelp forest restoration efforts in Santa Monica Bay – such as those recently completed at Malibu Lagoon, in the design CEQA evaluation phase for Ballona Wetlands, and in the process at kelp forests in Palos Verdes. Additionally, we recommend the final EIR include reference and consistency analysis with the Santa Monica Bay Restoration Plan, as recently published by the Santa Monica Bay Restoration Commission. [11]We further recommend the final EIR include plan consistency evaluation of relevant fisheries regulations and planning processes, for example, the California Spiny Lobster regulations and Fishery Management Plan (in development), Market Squid regulations, saltwater bass regulations, threatened and endangered species recovery plans for wildlife that could be impacted by the proposed project and a potential oil spill associated with it (e.g. Southern Sea Otter Recovery Plan[12], Western Snowy Plover Recovery Plan[13]), and other relevant wildlife management plans. HEAL-33

Page 4.3-19, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.1
"Most of the wildlife species utilizing the urban setting and Greenbelt vegetation are currently exposed to high numbers of people walking through the area, traffic, traffic noise, pets, vegetation trimming, and regular maintenance ... It is expected that any Project related impacts to any plant or wildlife species in the area would be similar to existing conditions. No nests were visible in trees planned to be removed and/or trimmed near the facility yard during the non-nesting season site reconnaissance survey."
We are concerned that this section underestimates the impact of noise pollution to wildlife. Wouldn't similar impacts of noise pollution to humans (Section 4.11) also affect wildlife, and specifically nesting birds? It doesn't seem accurate to say that the noise and traffic would be similar to existing conditions given the proposed construction, drilling, and trucking operations associated with the proposed project. Plus, it is understandable that active nests weren't identified through the reconnaissance surveys conducted during the non-nesting season, but nests would likely be present at other times of the year. We recommend that seasonal nesting patterns be accounted for in the final EIR. HEAL-34

Page 4.3-20, 4.3.4 Project Impacts and Mitigation Measures, Mitigation Measure BIO.1
"To minimize potential impacts to nesting native bird species ... initial vegetation removal/trimming shall be done outside the breeding season (breeding season is defined herein as January 15 through August 31 for raptors and February 15 through August 31 for all non- raptor species). If vegetation removal/trimming must be completed during this period, then surveys for nesting birds must be conducted within 3 days prior to vegetation removal or other construction-related disturbances. If HEAL-35

[11] http://www.smbrc.ca.gov/about_us/smbr_plan/docs/smbrplan2013_adopted.pdf
[12] http://www.fws.gov/ventura/species_information/so_sea_otter/
[13] http://www.westernsnowyplover.org/recovery_plan.html

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nesting birds are observed within the project area, then a minimum 100-foot buffer from any non-raptor species and 500 foot buffer from any raptor nest would be established and maintained for the duration of vegetation removal/trimming activities or until nestlings fledge from the nest."
We support the mitigation measure to limit the vegetation removal period outside breeding season. However, we do not agree that trimming should be allowed if surveys of nesting birds are done within the breeding season. We believe this would be hard to enforce, and many unseen active nests would likely be affected- it would not reduce the impact to less than significant level. Therefore, we suggest limiting the vegetation removal/trimming to only outside the breeding season, identified as September 1 through January 14.

Page 4.3-20, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2
"A rupture or leak from oil Pipelines has the potential to result in a substantial adverse effect on native species and habitats, sensitive species, and biologically important habitats associated with the Pacific Ocean ... Spills and cleanup activities would potentially result in impacts to biological resources, with the only sensitive resources being associated with coastal habitats. Small leaks or spills, which are most likely, contained and remediated quickly, would result in minor or negligible impacts to biological resources."
We support the statement that "a rupture or leak from oil Pipelines has the potential to result in a substantial adverse effect on native species and habitats, sensitive species, and biologically important habitats associated with the Pacific Ocean." However, we believe that this statement: "the only sensitive resources being associated with coastal habitats," should be reworded to highlight the sensitivity of both coastal and marine habitats.

We are further concerned that the statement, "small leaks or spills, which are most likely, contained and remediated quickly," lacks substantiation. We recommend the City of Hermosa Beach include further justification for this conclusion in the final EIR, along with discussion on how spills would be detected, contained and remediated quickly.

HEAL-36

Page 4.3-21, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2
"A spill outside of the well location would drain into the storm drains. All storm drains in the area eventually flow to the ocean. Figure 4.8-3 (Section 4.8) shows a map of the storm drain systems in the area. Storm drains located in the curbs at the corner of Cypress Avenue and 6th Street flow through storm drain piping and connect to the main storm drain system that runs down Valley Drive, which connects to the storm drain system that then runs down Herondo Street and out to the beach area. The storm drain system that runs down Valley Drive has intermittent street drains for collecting storm water, with drains located near the corner of Valley Drive and 2nd Street. A spill at the drilling facility would need to travel through approximately 0.75 miles of storm drains to reach the ocean."
Although the DEIR states that, "A spill outside of the well location would drain into the storm drains" and that "a spill at the drilling facility would need to travel through approximately 0.75 miles of storm

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drains to reach the ocean," we recommend that the final EIR include time estimates for how long it would take oil to reach the ocean or beach via storm drains, both in dry weather or during a storm event.

Page 4.3-21, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2

"Impacts on resident biota could be short- to long-term, depending on the amount of oil spilled, environmental conditions at the time, containment and cleanup measures taken, and length of time for habitat recovery. Direct impacts on wildlife from oil spills include physical contact with the oil, ingestion of oil, and loss of food, critical nesting and foraging habitats. Organisms can be affected physically through smothering, interference with movements, coating of external surfaces with black coloration (leading to increased solar heat gain), and fouling of insulating body coverings (birds and mammals). Toxicity can occur via absorption through the body surface (skin, gills, etc.) or ingestion. Biological oxidation (through metabolism) can produce products more toxic than the original compounds. Sub-lethal effects include reduced reproductive success, narcosis, interference with movement, and disruption of chemosensory functions."

The multitude of negative effects an oil spill could have on local wildlife cannot be underscored enough, as the DEIR correctly states. Since dispersants and other chemicals are routinely used in oil spill clean-up processes, we further recommend that the final EIR include discussions of chemicals used in clean-up activities and associated wildlife impacts and mitigation measures. Such effects should be documented using recent science and studies of the effects following oil spills (including clean-up operations), such as those seen after the Deepwater Horizon spill.

HEAL-38

It appears that the statement on Page 4.3-21 is worded incorrectly when it states that, "Spills or disturbances resulting from cleanup efforts within the marine, sandy beach, and foredune Habitats..." Perhaps what is meant to be said is that "spills or disturbances resulting from accidents, spills, leaks, and cleanup efforts within..." Beyond cleanup efforts, the actual spills or leaks as a result of the proposed project- not the cleanup effort- would likely be the source of the main effects on wildlife and the environment.

HEAL-39

Page 4.3-21 to 4.3-22, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2

"Benthos. Oil represents a physical as well as a chemical hazard to benthic organisms, with impacts occurring through both physical smothering and hydrocarbon toxicity. Sessile species, such as barnacles, may be smothered while mobile animals, such as amphipods, may be immobilized and glued to the substrate or trapped in surface slicks ... The potential impacts of spilled oil to benthic communities are considered to be significant. When spilled oil reaches the shoreline or intertidal zone, it becomes concentrated in a narrow zone. Because of the shallower water depth, hydrocarbon concentrations can reach toxic levels. Thus, intertidal biota are exposed to higher concentrations of oil for a longer period of time than most other marine organisms. Similarly, spilled oil that does not evaporate or wash ashore, is eventually incorporated into bottom sediments where it can be ingested by benthic organisms, or incorporated by contact with their gill membranes."

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In addition to smothering and hydrocarbon toxicity effects on benthic communities, we urge the City of Hermosa to include discussion about impacts to marine life living within the sediments in the final EIR. This may include bio-accumulation of toxins up the food chain, as we have seen evidence from other toxins in the environment affecting species in the food chain, starting with those residing in the benthos. Are there any models or data from spills elsewhere that can describe persistence/retention of these oil toxins or remediation chemicals, such marine infauna and benthic organism impacts of the Exxon Valdez oil spill?

Page 4.3-22, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2

"Plankton ... oil spills have measurable effects upon marine phytoplankton and zooplankton. Impacts to phytoplankton include mortality, reduced growth, and reduced photosynthesis. Additionally, early life stages, such as eggs, embryos, and larvae of zooplankton, are considered to be more susceptible than adults to oil spill impacts because of their higher sensitivity to toxicants and higher likelihood of exposure to oil at the surface of the ocean ... Both lethal and sublethal effects of oil on plankton depend on the persistence of sufficiently high concentrations of petroleum hydrocarbons in the water column."

In addition to the discussion of oil's impacts on plankton, ties should be made to how Santa Monica Bay in particular is a nursery for a variety of species of phytoplankton and zooplankton- thus more impacts could be seen in the long-run for not only marine life in the Bay, but also in surrounding areas and rocky reefs. Redondo Beach Submarine Canyon is an important ocean habitat near the proposed project area and supports large populations of plankton, which in turn support endangered baleen whales that frequent Santa Monica Bay's waters. The DEIR states that "oil spills have measurable effects upon marine phytoplankton and zooplankton ... includ[ing] mortality, reduced growth, and reduced photosynthesis." Any impact to Santa Monica Bay's plankton population could have a strong effect on whales and other marine life in Santa Monica Bay. A study by NOAA found that areas with complex bathymetry and convergence of boundary currents can "entrain and concentrate zooplankton and thereby attract the blue whales."[14] Regions of upwelling along the California coast with steep topography (like Redondo Submarine Canyon) can accumulate and maintain large concentrations of krill, on which baleen whales feed.[15] [16] It is clear that there are ecological linkages between large concentrations of whales to upwelling conditions of the Southern California Bight and the appearance of plankton offshore in Santa Monica Bay. We recommend the final EIR include discussion of any negative plankton impacts may have on food-web dynamics as a result of the proposed project (including potential spills).

HEAL-41

Page 4.3-22, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2

"Fish. Adult fish, due to their mobility, may be able to avoid or minimize exposure to spilled oil. However, there is no conclusive evidence that fish will avoid spilled oil (NRC 1985). Egg and larval stages

HEAL-42

[14] Moore, S.E., W.A. Watkins, M.A. Daher, J.R. Davies and M.E. Dahlheim. 2002. *Blue Whale Habitat Associations in the Pacific: Analysis of Remotely-Sensed Data Using a Geographic Information System*. Oceanography, 15(3):19-25.

[15] Croll, D.A., B.R. Tershy, R. Hewitt, D. Demer, S. Hayes, P. Fiedler, J. Popp and V.L. Lopez. 1998. *An Integrated Approach to the Foraging Ecology of Marine Birds and Mammals.* Deep-Sea Res. II, 45:1353-1371.

[16] Fiedler, P.C., S.B. Reilly, R.P. Hewitt, D. Demer, V.A. Philbrick, S. Smith, W. Armstrong, D.A. Croll, B.R. Tershy and B.R. Mate. 1998. *Blue Whale Habitat and Prey in the California Channel Islands.* Deep-Sea Res. II., 45:1781-1801.

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would not be able to avoid exposure to spilled oil. The destruction of prey by a potential oil spill can also have significant impacts to fish productivity. Within the Project area, particularly vulnerable fish populations would be species that use estuaries or coastal wetlands, such as Ballona Lagoon, for part of their early life histories. These species, including game fishes, would be especially vulnerable because estuarine circulation tends to trap and recirculate pollutants at the sea water-fresh water interface. Because fish species can be economically important and because long term loss can result from an oil spill, impacts to fish are considered to be significant."

Overall, the fish paragraph is not as robust in its description of the effects of oil as other sections are. The final EIR should use more up-to-date scientific studies of the effects of oil on fish, rather than relying on a source almost 30 years old. Recent research from the Exxon Valdez and Deepwater Horizon impacts on fish should be referenced in the final EIR.

The paragraph discussing the effect of oil on fish opens with a weak statement that is promptly refuted: "Adult fish, due to their mobility, may be able to avoid or minimize exposure to spilled oil. However, there is no conclusive evidence that fish will avoid spilled oil (NRC 1985)." This paragraph should be re-worded to clarify potential fish impacts associated with the proposed project.

In addition, since other oil spills in Santa Monica Bay have spread to Malibu Lagoon, we recommend the final EIR characterize impact to fish species in areas throughout Santa Monica Bay, including Ballona Wetlands and Malibu Lagoon. Additionally, the statement would be more accurate if it referred to "Ballona Lagoon" as "Ballona Wetlands." HEAL-43

In the final sentence describing the impacts to fish, besides the importance of fish to the economy and potential long-term loss, the importance of fish to the overall health of Santa Monica Bay and local habitats, their role in the food web, and impacts to recreational fishermen should also be included. HEAL-44

Furthermore, there is no mention of grunion in the fish section. A description of the impacts to grunion should be included in this section, in addition to their unique spawning behavior and dependence on wide, sandy beaches. Grunion spawn along the southern shore of Hermosa Beach (adjacent to the Herondo stormwater outfall), and as beach spawners, impacts from the proposed project from grunion should be thoroughly evaluated in the final EIR, along with associated mitigation measures. HEAL-45

Lastly, we recommend that the final EIR discuss impacts to fisheries in this section and other relevant sections. The Santa Monica Bay hosts many commercial and recreational fisheries, including baitfish, sea urchin, sea cucumber, spiny lobster, halibut, saltwater bass, various shark species, kellets whelk, and others. Impacts to fished species, as well as potential economic impacts to fisheries from the proposed project should be evaluated in the final EIR. HEAL-46

Page 4.3-22, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2

"Shorebirds. Santa Monica Bay is a critical feeding area along the Pacific flyway used by up to one million shorebirds, including sandpipers, plovers, killdeer, oystercatchers, stilts, avocets and willets (Baird HEAL-47

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1993). Shorebirds are most abundant in winter and generally feed in shallow waters and flats of bays and estuaries, while some prefer to feed along sandy beaches and rocky shores. Although shorebirds are able to avoid oiling to some extent by retreating from exposed habitat, both bay and open coast feeding habitats will potentially be impacted by any Project-related oil spill if that oil was able to flow from the spill site, down through storm drains, and out into the ocean."

The impacts to shorebirds are downplayed in the DEIR, and the DEIR is missing the shoreline impacts to bird species, especially those that feed along the water's edge. This is a habitat that is already identified earlier as having a higher concentration of oil following a spill; thus some discussion of oil on the wet sand and shallow intertidal area, where shorebirds congregate, should be included along with appropriate mitigation measures in the final EIR.

Page 4.3-22 to 4.3-23, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2

"Marine Mammals. Marine mammals that could be impacted by an oil spill include cetaceans (whales and dolphins), pinnipeds (seals), and fissipeds (sea otters). Animals that are unable to avoid contact with oil could be impacted by fouling, inhalation, or ingestion that could result in sublethal or lethal effects. The marine mammal species that occur in the Project area exhibit varying degrees of vulnerability to oil spills. Impacts can be caused either by oil contact or by ingestion. There is evidence that some cetacean species may avoid contact with oil at sea; however, pinniped species and sea otters could potentially suffer lethal and long term sublethal effects resulting in significant impacts. Onshore cleanup activities, depending on location, could disrupt pinniped haul-out and rookery areas and could also result in significant impacts. As a result, impacts to marine mammals are considered to be significant." HEAL-48

A description of how prey species of marine mammals would be affected, and thus affect marine mammals should be included in this section. We further recommend that noise and vibration impacts associated with subsurface drilling to marine mammals be evaluated in the final EIR.

Page 4.3-23, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2

"Probability of a spill ... A spill that contacts the shoreline would also contaminate or increase mortality of invertebrates that are forage material for some sensitive species in the general area. Impacts to sensitive habitats and protected species resulting from spills related to from the proposed project would be considered significant." HEAL-49

The DEIR does not include a description of the effects of an oil spill on invertebrate species- this should include rocky intertidal invertebrates, invertebrates living in sandy bottom and subtidal rocky reef habitats, benthic infauna, and those that live along the shoreline, such as sand crabs and beach hoppers.

Page 4.3-23, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.2

"Probability of a spill ... the probability that there would be any sized spill at any point of the Pipeline over the 35 year life of the Project would be 34%. The probability of any sized spill in the Herondo area, which is closer to the ocean and sensitive biological resources, is estimated to be 14%. In order for flows to reach the marine habitats a spill would have to occur during a substantial rain event. The probability of a spill occurring during a 0.50 inch storm event in the Herondo area would be 0.4%. Therefore, the HEAL-50

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chance of any spill actually getting to the ocean and/or any sensitive receptor in the coastal area is exceptionally low."

We are concerned that although the chance of having any size of an oil spill along the pipeline is 34%, and at the Herondo drill site it is 14%, the calculation that there is only a .5% chance of an oil spill reaching the ocean may not be accurate and encompassing. We urge the City of Hermosa Beach to include a more detailed description of the assumptions and calculations behind these risk numbers in the final EIR. We are concerned that risk projections solely based on storm events underestimate the potential for a spill to reach the coast, as it does not account for dry weather flow in the storm drain system. Additionally, do these projections take into account seepages, faults, subsurface leaks, wells, and pipelines close to the ocean?

Page 4.3-24, 4.3.4 Project Impacts and Mitigation Measures, Mitigation Measure BIO.2

"The Applicant shall submit for City approval and shall implement an Emergency Response Plan that would address protection of biological resources and possible revegetation of any areas disturbed during an oil spill or cleanup activities. The Emergency Response Plan shall, at a minimum, include specific measures to avoid impacts to native vegetation and wildlife habitats, plant and animal species, and environmentally sensitive habitat areas during response and cleanup operations."

We are deeply concerned that the Emergency Response Plan is proposed to be submitted separate from the EIR. Many of the mitigation measures outlined in the DEIR are dependent upon the proposed Emergency Response Plan. How can the EIR be considered for certification without the emergency response plan? We strongly urge the City of Hermosa to include the Emergency Response Plan in the final EIR, or require it be submitted before the final EIR, so that the final EIR can include an assessment of whether or not it is adequate, and any potential amendments that need to be made to it.

HEAL-51

Furthermore, we strongly recommend that the Emergency Response Plan highlight sensitive habitats that should be prioritized for clean-up activities in the case of an oil spill. Additionally, we strongly recommend that agreements be put into place and made public related to any emergency response agencies referenced in the Emergency Response Plan, so that all parties are aware and capable of response in the case of an emergency. For example, has anyone spoken with the Hermosa Beach, Redondo Beach or Manhattan Beach Fire Departments about this issue? What is their Emergency Response Plan? When the Chevron Marine Terminal lease renewal was considered by State Lands Commission in 2010, the El Segundo Fire Department pointed out that they were written into the emergency response plan without consultation. This raised concerns, as they were listed as the authority to respond to a fire on the marine terminal, yet the El Segundo Fire Department does not have a boat or vessel to access the marine terminal. We hope that emergency response measures associated with the proposed project are more well-planned and proactive, but to avoid miscommunication with emergency response agencies, we recommend the emergency response plans be discussed in the final EIR.

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Page 4.3-24, 4.3.4 Project Impacts and Mitigation Measures, Mitigation Measure BIO.2
"Definition of the authorities, responsibilities, and duties of all entities involved in oil removal operations"
The Emergency Response Plan should also include agreements and statements from all external parties and entities involved in an oil response and removal operation, so they are aware of, have signed on to, and are part of the plan. HEAL-53

Page 4.3-24, 4.3.4 Project Impacts and Mitigation Measures, Mitigation Measure BIO.2
"Procedures for regular monitoring and inspections of pipelines and facilities [and] Procedures for early detection and timely notification of an oil discharge."
Many oil spills have resulted from facility and infrastructure malfunction, therefore monitoring and maintenance activities are critical to the safety of an operation. There should be specific minimum frequencies for facility and pipeline monitoring and inspections in the final EIR. HEAL-54

Page 4.3-24, 4.3.4 Project Impacts and Mitigation Measures, Mitigation Measure BIO.2
"The material required to quickly control, contain, and remove any discharged oil..."
The final EIR should include discussion of the various chemicals or dispersants that may be involved in emergency clean-up operations, along with potential environmental impacts of these materials. Furthermore, we urge the City of Hermosa Beach to include a list of recommended materials to control or remove oil in the final EIR based on the least environmental impacts possible, and in accordance with BMPs. HEAL-55

Page 4.3-24, 4.3.4 Project Impacts and Mitigation Measures, Mitigation Measure BIO.2
"The Emergency Response Plan shall be approved by the California Department of Fish and Game (CDFG) Office of Spill Prevention and Response (OSPR)."
Approved in 2012, and as of January 1, 2013, the California Department of Fish and Game (CDFG) is called the California Department of Fish and Wildlife (CDFW).[17] There are also inconsistencies throughout the DEIR, with reference to the CDFW or the CDFG and associated codes. These should be double-checked and verified for accuracy and consistency. Furthermore, as recommended above, we urge the City of Hermosa Beach to include requirement of the Emergency Response Plan prior to adoption of the final EIR, which will also allow for any recommendations on the plan from DFW and OSPR to be included in the final EIR. HEAL-56

4.7 Geological Resources/Soils

Page 4.7-5, 4.7.1.3 Geological Hazards, Faulting and Seismicity
Faulting. "[Earthquake] intensity if usually greater in areas underlain by unconsolidated material, such as the Proposed Project area, than in areas underlain by more competent rock...moderate to severe HEAL-57

[17] http://cdfgnews.wordpress.com/2012/12/31/department-name-change-effective-tomorrow/

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ground shaking will be experienced in the Proposed Project if a large magnitude earthquake occurs on one of the nearby active faults."

The DEIR lacks specific information about potentially active faults in the vicinity of the project area and does not mention faults within a 10-mile radius of the Project Site that have had Holocene (<11,700 a) displacement. Further, the report mentions a maximum moment magnitude of 7.7 from an earthquake generated by the Palos Verdes fault, but fails to include this type of information for other nearby active (late Quaternary) faults, such as the Newport-Inglewood, Charnock, and other unnamed offshore faults. Some of this information can be found in the CALIFORNIA DEPARTMENT OF CONSERVATION DIVISION OF MINES AND GEOLOGY OPEN-FILE REPORT 96-08 (1996) or from the Southern California Earthquake Data Center (SCEDC).[18] The final EIR needs to include specific information about maximum moment magnitudes that all nearby faults are capable of producing as well as recurrence intervals of significant earthquakes (>5.5 moment magnitude) on active faults.

Page 4.7-6, 4.7.1.3 Geologic Hazards, Faulting and Seismicity

Earthquakes and Petroleum Facilities.

Given the active seismicity of southern California and the likelihood for earthquake damage to the proposed project, the faulting and seismicity section in the final EIR needs to be expanded. In its current state, this section is poorly researched, utilizes references that are out of date, and does not specifically state how the types of structures proposed at the site will respond to earthquakes. The only reference cited in this section is over 25+ years old; technology and amount of available data has greatly improved since the CDMG 1988 report, yet the DEIR makes no mention of this information. In addition, the DEIR focuses only on large earthquakes (M >6.4) damaging oil facilities, yet smaller earthquakes have also caused significant damage. For example, the 1941 Torrance-Gardena earthquakes (both M 4.8) caused damage to several oil wells and ruptured a 55,000-gallon oil storage tank.[19] The proposed project site is in close proximity to active faults capable of producing large earthquakes; large earthquakes can cause serious damage to storage tanks, internal piping, and containment berms at petroleum facilities. HEAL-58

We are concerned that onsite oil and water tanks as well as containment berms used during phases II and IV are incapable of handling large earthquake events. How can we be sure that an earthquake event will not cause large infrastructure failures leading to un-mitigable impacts (such as the release of 8,000 barrels of oil and/or 16,000 barrels of wastewater)? Furthermore, the DEIR fails to address the environmental impacts from multiple onsite tank failures. We recommend the final EIR address all worst case scenario projections, such as when multiple storage tanks rupture and containment berms fail. HEAL-59

Page 4.7-6, 4.7.1.3 Geologic Hazards, Secondary Seismic Hazards

Liquefaction, Lateral Spreading, Differential Settlement. "Liquefaction is a type of ground failure that occurs as a result of loss of shear strength or shearing resistance in loose and sometimes medium dense, HEAL-60

[18] http://www.data.scec.org/
[19] http://www.data.scec.org/significant/torrance1941.html

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cohesionless soils, due to seismically induced ground shaking. Liquefaction typically occurs in sediments where static, relatively widespread groundwater is less than 50 feet (15 m) below ground surface."
This section greatly downplays the potential risk of liquefaction at the Project Site during and following an earthquake. The report states that liquefaction occurs in "loose to sometimes medium dense, cohesionless soils...in sediments where static, relatively widespread groundwater is less than 50 feet (15 m) below ground surface." The DEIR concludes that the underlying material and depth to groundwater suggest that liquefaction potential at the project site is low. This conclusion seems entirely based on the location of the study area on the CDMG 1999 Seismic Hazard zone map (Fig. 4.7-2) and does not appear to take into account the type of substrate or depth to groundwater at the Project Site. Using only the CDMG 1999 Seismic Hazard zone map to assess liquefaction potential is poorly researched and misleading, as the first footnote on this map reads:

IMPORTANT - PLEASE NOTE

1) This map may not show all areas that have the potential for liquefaction, landsliding, strong earthquake ground shaking or other earthquake and geologic hazards. Also, a single earthquake capable of causing liquefaction or triggering landslide failure will not uniformly affect the entire area zoned.

Based on the composition of the subsurface material at the Project site described in the NMG Geotechincal 2012 report (0-45 feet Holocene sand [medium to very dense] overlying inert landfill material [loose to unconsolidated]), and the depth to groundwater (47.7–49.3 feet), it is likely that the liquefaction potential during an earthquake is greater than the DEIR suggests. The final EIR needs to address the potential for liquefaction, lateral spreading, and differential settlement during an earthquake at and around the Project Site.

Page 4.7-7, 4.7.1.3 Geologic Hazards, Secondary Seismic Hazards
Oil Field Induced Seismicity. "A seismic study has been conducted for the Proposed Oil Project area in order to identify past seismic activity that may have coincided with and been a result of past nearby oil field operations (Geosyntec 2012). The results of the study concluded that past seismic activity did not coincide with past oil field operations (such as drilling, fracturing, oil extraction, or water injection) and there were no patterns of seismic activity relative to those past oil field operations."
This portion of the DEIR is poorly researched and needs to be expanded. It fails to cite the numerous worldwide and local case studies on oil field induced seismicity.[20] A nexus between oil field operations and seismicity has been identified; yet the DEIR fails to identify this. Furthermore, it is unclear how the seismic study to identify past seismic activity was conducted. Did the study only look at historical nearby oil field operations? What types of oil extraction techniques were addressed in the study? It is essential that the same oil extraction procedures be investigated and analyzed before the conclusion is made that the proposed project will not induce seismic events. Furthermore, the above statement on page 4.7-7 directly contradicts the statement made on page 4.7-21, stating that "there are examples of past oil field operations in the Los Angeles Basin inducing seismic events" and notes the adjacent Wilmington Oil Field.

HEAL-61

[20] See Suckale 2009, 2010 for a list of multiple examples of oil field induced seismicity or Ellsworth 2013 Science article

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Page 4.7-9, Section 4.7.1.3 Geologic Hazards, Secondary Seismic Hazards
"Significant land subsidence can occur in oil fields due to the lowering of reservoir pressures and the subsequent compaction of reservoir materials, which results in a lowering of the overlying land surface (Geosyntec 2012). Generally, damage to structures and underground utilities occurs only where a substantial amount of subsidence occurs. Past subsidence due to oil extraction from the late 1940s to the late 1960s has been documented in the adjacent Wilmington Oil Field to the south, with measured subsidence up to 29 feet during that timeframe. Subsidence stopped when water injection into the pumped oil reservoir occurred, thereby filling the voids resulting from the oil extraction." HEAL-62
The Proposed project plans to decrease the likelihood of regional subsidence by injecting production water (i.e. wastewater) into oil producing formations. The DEIR does not state the volume of injection water needed to prevent subsidence; does the volume of water injected need to equal the volume of liquid (oil and production water) extracted from the formation? The final EIR needs to address how injection water volume will be calculated to prevent subsidence. Furthermore, the final EIR should address similarities and differences between the Wilmington Oil Field and Torrance Oil Field. Will wastewater injection result in similar results to both of these oil fields? Is there any evidence that wastewater injection in the Torrance Oil Field will reduce or stop subsidence?

Page 4.7-13, 4.7.3.2 Proposed Project Design Features, Phase 1
"The surface of the Project Site would be covered with crushed aggregate base material to serve as a dust inhibitor and driving surface. The grading would ensure storm water from up to a 100-year event would not leave the Project Site and soil erosion would not occur." HEAL-63
It is unclear what would be underlying the crushed aggregate base material at the Project Site. Given the permeability of crushed aggregate base material, we have concerns that hazardous chemicals used onsite may come into contact with underlying soils and eventually reach groundwater. Furthermore, what was the reasoning for using the 100-year storm event? How can we be sure that site grading will capture the 100-year event onsite?

Page 4.7-16, 4.7.3.2 Proposed Project Design Features, Phase 3
"Some of the tanks, equipment, and walls in the northern and northeastern portions of the Project Site would be located in the vicinity of the former landfill and the contaminated soil would be remediated with the implementation of the RAP. This area would be subject to potential seismic settlements of up to 3.5 inches as a result of the landfill material left in place." HEAL-64
How was a seismic settlement of up to 3.5 inches calculated? Is a margin of safety used to calculate seismic settlement?

Page 4.7-17, 4.7.3.2 Proposed Project Design Features, Phase 4
"A comprehensive Induced Seismicity Monitoring Program would be implemented as a part of the Proposed Oil Project in order to monitor seismic activity in the area during oil extraction and water injection. The Program would monitor seismic activity using the Southern California Seismic Network (SCSN). The primary objective of the Program would be to measure, if it occurs, potentially induced seismicity that might result from drilling activities and water injection, collect information that would HEAL-65

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allow for a determination of the causes of any measurable seismicity, and implement defined action level requirements, thus minimizing the potential for continued induced seismicity. If activity is detected and the overseeing agencies consider it necessary, the Proposed Oil Project operations would be modified or ceased."

It is unclear how the decision to modify or cease operation would be made. Who are the overseeing agencies that make this decisions and what is the threshold that triggers modification or termination of proposed project operations? We recommend that if induced seismic activity is detected from the proposed project, proposed project operations be immediately stopped to prevent further seismic impacts.

Page 4.7-17, 4.7.3.4 Impacts

No discussion of sea level rise influence on offshore impacts.

The DEIR fails to address the environmental impacts to offshore reaches when coupled with sea level rise. The final EIR needs to discuss how offshore subsidence coupled with sea level rise and/or increased storm events can potentially increase shoreline retreat and impact coastal ecology. HEAL-66

Page 4.7-19 to 4.7-20, 4.7.3.4 Impacts, Mitigation Measures GEO.1

"The drilling operator shall cease operations and inspect all onsite oil field-related pipelines, storage tanks, and other infrastructure following any seismic event that exceeds a ground acceleration at the Project Site of 13 percent of gravity (0.13 g). The drilling operator shall not reinstitute operations at the Project Site and associated pipelines until it can be determined that all oil field infrastructure is structurally sound ... GEO-1c A Registered Civil Engineer and Certified Engineering Geologist shall complete a geotechnical investigation specific to the Proposed City Maintenance Yard Project structures. All geotechnical recommendations provided in the report shall be followed during grading and construction at the site. The geotechnical evaluation shall include, but not be limited to, an estimation of both vertical and horizontal anticipated peak ground accelerations." HEAL-67

The DEIR requires the applicant to cease operations if ground acceleration exceeds 0.13g, or 13% of gravity. Is this industry standard? Further, the details on how the accelerometer will be used are unclear. Is this an automated system that shuts down when ground acceleration is exceeded, or is it the responsibility of the facilities operator to manually monitor the accelerometer? Also, Mitigation Measure GEO-1c states that geotechnical investigations shall be completed following grading and construction at the site; shouldn't this occur regularly during normal operations as well?

Page 4.7-21, 4.7.3.4 Impacts, Impact GEO.2

"A study by Geosyntec (2012) indicated that the closest fault, Offshore Fault 103, is located at a sufficient distance from the proposed wastewater injection wells such that injected water-induced seismicity along this fault is not expected." HEAL-68

Offshore Fault 103 is located 1.4 miles from the proposed project site; what distance is needed to ensure that wastewater injection wells will not induce seismicity along this fault? Furthermore, a total of 34 wells will be drilled on the proposed project site. Given the close proximity of this fault to the proposed project site, the number of wells, and the volume of liquid being extracted/injected on a

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daily basis, how can we be sure that seismicity will not be induced? 1.4 miles is extremely close for the proposed project to have no impact on seismicity. Is there a federal or state methodology to determine what 'sufficient distance' is? In addition, increased pore fluid pressures at wastewater injection well reservoirs may induce seismicity on previously inactive, unidentified faults. A thorough study of subsurface faults in the vicinity of injection wells is necessary in the final EIR to assess the potential for water-induced seismicity. Additionally, detailed maps of all onshore and offshore drilling well locations (oil producing and water injection) need to be included in the final EIR.

Page 4.7-21, 4.7.3.4 Impacts, Impact GEO.2

"Based on California Code of Regulations Title 14, Division 2, Section 1724.10, an accurate, operating pressure gauge or pressure recording device would be available at all times, and all injection wells would be equipped for installation and operation of such a device. To determine the maximum allowable surface injection pressure, a step-rate test would be conducted prior to sustained liquid injection. A step rate test involves incrementally increasing the injection pressure on a given well until fracture pressures are reached. Maximum allowable surface injection pressure would be less than the fracture pressure, thereby minimizing the potential for earthquakes and surface ground cracking."

We are concerned that injection wells proposed for the project will be similar to hydraulic fracturing operations (i.e. fracking) seen in other parts of the State. What is the difference between high pressure water injection and hydraulic fracturing operations? What is the minimum surface injection pressure that characterizes hydraulic fracturing? What is the foreseen surface injection pressure of the proposed project's produced water injection wells? We are concerned that injection pressure used for hydraulic fracturing around the State may be similar to injection pressure used for production water disposal wells. This high pressure may effectively weaken the frictional resistance along faults, allowing them to slip at lower stress levels. Furthermore, all injection wells should be equipped with operating pressure gauges or pressure recording devices to ensure that surface injection pressure does not reach fracture pressure during injection. HEAL-69

Page 4.7-24, 4.7.3.4 Impacts, Impact GEO.4

"The Proposed Oil Project will remove an unknown volume of oil, gas, and associated water. In the absence of injection of produced water back into the subsurface, the potential for settlement of overlying infrastructure increases. Similarly, most of the subsidence could occur offshore, as oil would be extracted beneath offshore waters and most of the initial water reinjection is planned for portions of reservoir zones located beneath onshore areas."

Stating that there is an "unknown volume" of oil, gas, and associated water is not acceptable for an EIR assessing impacts from extraction activity and contradicts logic. Given E&B's pursuit of oil drilling in Hermosa Beach, one would reason that there is available estimation of the potential amount of oil & gas that can be extracted. Furthermore, it is likely that E&B has already conducted thorough background research on this oil reservoir and has completed a detailed cost-benefit analysis, which would include an estimate of the potential production volumes. This information should be included in the final EIR. HEAL-70

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We are concerned that offshore subsidence may cause shoreline retreat as undercutting occurs offshore. This could dramatically alter the coastline and cause unforeseen impacts to regional beaches. The DEIR states that Hermosa Pier is vulnerable to offshore subsidence; the final EIR needs to address impacts subsidence would have on the Hermosa Pier. We also recommend the final EIR analyze subsidence impacts on shoreline retreat and the potential for compounding impacts of subsidence and projected sea level rise. Additionally, the DEIR states that water injection is planned for the reservoir zone located onshore. Where is this underlying reservoir located onshore? The final EIR should include maps of the portions of the reservoir onshore. HEAL-71

How close is the onshore portion of the reservoir to the underlying freshwater aquifers? We are concerned that wastewater injection may impact the underlying groundwater that is a municipal drinking water supply used by millions of Angelinos on a daily basis. HEAL-72

Page 4.7-26, 4.7.3.4 Impacts, Mitigation Measures GEO-4b

"In the event that the Global Position System monitoring indicates that subsidence is occurring in and/or around the Proposed Project area, wastewater or water reinjection operations shall be increased to alleviate such subsidence. The Applicant shall coordinate with the California Division of Oil, Gas and Geothermal Resources in determining appropriate increased levels of wastewater reinjection operations. The Applicant will also coordinate with the City of Hermosa Beach, Public Works Department, to verify that subsidence has been mitigated sufficiently." HEAL-73

In the event that subsidence is occurring in <u>any region overlying the oil producing formation</u>, proposed project operations should be put on hold until coordination between California Division of Oil, Gas and Geothermal Resources, the City of Hermosa Beach Public Works Department, and the project applicant have determined a protective resolution. If additional water is required for injection, only recycled water should be used. Furthermore, subsidence cannot be mitigated once it has occurred, which should be stated in the final EIR.

The DEIR does not explicitly state the degree of offshore subsidence monitoring that will occur. Given the potential impacts offshore subsidence can have to the region, the subsidence monitoring program needs to be expanded to include more offshore portions impacted by the project (i.e. farther offshore than the Hermosa Pier) in the final EIR. HEAL-74

Page 4.7-27, 4.7.3.4 Impacts, Impact GEO.5

"Grading and construction activities would temporarily increase the amount of suspended solids in surface flows derived from the Project Site during storm events, due to sheet erosion of exposed soil, thus potentially resulting in significant water quality impacts to the nearby Pacific Ocean, located approximately seven blocks to the west of the Project Site. The temporary retention basin would reduce offsite siltation of surface runoff by allowing sediment in the runoff to settle to the bottom of the basin prior to discharge. The Applicant submitted a Preliminary Standard Urban Stormwater Mitigation Plans (SUSMPs) prepared for Phases 2 and 4 of the Project that were provided as Attachment F of the Response to the Planning Application Completeness Review submitted to the City on 4/11/2013. As HEAL-75

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discussed, no surface runoff from within the perimeter fencing during Phase 2 and the perimeter wall in Phase 4 would be allowed to leave the Project Site. Therefore, no onsite or offsite erosion or siltation would occur as a result of the Proposed Project."

The most recently adopted Los Angeles County Municipal Separate Storm Sewer System Discharges permit (Order No. R4-2012-0175) establishes new performance criteria for new development and redevelopment projects within coastal watersheds. The final EIR needs to reflect these updated performance criteria for all proposed project phases. Phase I and III will contribute greatly to surface water quality impacts; discharges to municipal separate storm sewer systems should be avoided at all costs to minimize impacts around ocean outfall locations. In addition, the project proponent must secure and comply with a NPDES construction stormwater permit.

4.9 Hydrology and Water Quality

Page 4.9-1, 4.9 Hydrology and Water Quality

No environmental impacts to hydrology and water quality from aerial deposition included in DEIR.

The DEIR does not discuss any impacts from the proposed project with regards to wet and dry pollutant deposition (aerial deposition). Atmospheric deposition is the transfer of substances (including pollutants such as sulfur dioxide, nitrogen dioxide, carbon monoxide; heavy metals; and particles smaller than 2.5 microns (PM2.5)) from the air to the varied surfaces like soil, vegetation, water, pavement, vehicles, and buildings. UCLA's Institute on the Environment's 2006 Southern California Environmental Report Card stated that "because the wet and dry deposition rates for most gases and for very small particles are slow, atmospheric deposition has largely been neglected in considering the effect of air pollutants on human health. Yet atmospheric deposition can be a major environmental problem: acid rain is the most well-known problem of atmospheric deposition." Given the significant increases in pounds per day generation of Volatile Organic Compounds, Nitrogen producing compounds, and Sulfur producing compounds from the proposed project, there should be an explanation on the fate and transport of these compounds to receiving bodies of land/water, the impacts to water quality, water quality compliance, and biological resources created from this proposed project.

HEAL-76

Page 4.9-5, 4.9.1.6 Water Quality

"The Basin Plan identifies water quality objectives and beneficial uses of groundwater for the West Coast Basin. The designated beneficial uses for groundwater within the West Coast Basin include: municipal, agriculture, and industrial. The water quality objectives for the West Coast Basin are: 800 mg/L total dissolved solids, 250 mg/L sulfate, 250 mg/L chloride, and 1.5 mg/L boron."

Section 4.9.1.6 needs to include industrial process supply and industrial service supply as a beneficial uses of the West Coast Basin. In addition, existing water quality objectives for nitrogen, chemical constituents and radioactivity, bacteria, and taste and odor for the West Coast Basin should be discussed. Furthermore, we recommend the final EIR discuss beneficial uses and water quality objectives for surface waters of the coastal zone.

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Page 4.9-5, 4.9.2.1 Federal Regulations and Policies, Total Maximum Daily Loads
Section 4.9.2.1 did not include all total maximum daily loads in effect in Santa Monica Bay.
Please include the Santa Monica Bay Total Maximum Daily Loads for DDTs and PCBs as well as Santa Monica Bay Nearshore and Offshore Debris Total Maximum Daily Loads in the final EIR. HEAL-78

Page 4.9-7, 4.9.2.2 State Policies and Regulations, State Water Resources Control Board
"The City of Hermosa Beach lies within Region 4, the Los Angeles Regional Water Quality Control Board. The SWRCB has elected to adopt a Statewide General Permit serving as an NPDES permit, in compliance with CWQ Section 402, to regulate discharge. The General Permit Order 2009-0009-DWQ regulates discharges of storm water associated with construction sites. The general permit authorizes discharges of storm water and non-storm water associated with the construction activity so long as the discharges comply with the requirements and provisions in the permit." HEAL-79
The Statewide General Construction Permit has been re-adopted. Please change the above section to reflect Water Quality Order No. 2012-0006-DWQ and its requirements.

Page 4.9-7, 4.9.2.2, State Policies and Regulations, State Water Resources Control Board
The DEIR is missing discussion on obtaining an industrial NPDES/WDR permit, either an individual permit or the Industrial General Storm Water Permit.
Please include discussion in Section 4.9.2.2 about the Proposed Projects applicability to the Industrial Storm Water regulations and permitting. It is imperative that all storm water policies be discussed in the final EIR. HEAL-80

Page 4.9-8, 4.9.2.3 Local Policies and Regulations, Standard Urban Stormwater Mitigation Plan
"The Standard Urban Stormwater Mitigation Plan is part of the Development Planning Program of the NPDES, Phase I, Stormwater Permit for the County of Los Angeles. The Standard Urban Stormwater Mitigation Plan (SUSMP) applies to development and redevelopment projects within the County that fall within specific categories. The County of Los Angeles has developed a SUSMP Manual that includes the permitting and inspection process for projects required to meet SUSMP regulations. The objective of the SUSMP is to effectively prohibit non-storm water discharges and reduce the discharge of pollutants from storm water conveyance systems to the maximum extent practicable statutory standards. The SUSMP defines hydrology standards for designing volumetric and flow rate-based Best Management Practices." HEAL-81
A new Los Angeles County Municipal Separate Storm Sewer System Discharges permit (Order No. R4-2012-0175) became effective on December 28, 2012. The permit establishes new performance criteria for new development and redevelopment projects in the coastal zone. The final EIR needs to be changed to reflect the updated performance criteria. In addition as a result of the new regulations, Hermosa Beach has drafted the "City of Hermosa Beach Storm Water Management and Pollution Control Ordinance." This ordinance and its applicability to the proposed project should be discussed in the final EIR.

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Page 4.9-9, 4.9.2.3 Local Policies and Regulations, 2012 Los Angeles County NPDES Permit
The Los Angeles Regional Water Quality Control Board adopted the NPDES Municipal Separate Storm Sewer System Discharge Permit that became effective December 28, 2012. The permit established more stringent performance requirements for projects that fall under new development and redevelopment criteria.
The following statement on page 4.9-9 of the DEIR should be updated accordingly; "Depending on when the proposed project proceeds, it may be subject to SUSMP requirements or even more stringent requirements in the 2012 permit. Currently, the SUSMP is still required, but the rules may become more stringent in the near future." All new development and redevelopment projects that occur after the effective date of the order are required to follow the performance criteria establish in the 2012 permit.

HEAL-82

Page 4.9-11, 4.9.4.2 Proposed Project Design Features, Potential Tank Spills
"The tank area would be surrounded by a containment berm, sufficient in height to retain 110 percent of the volume of the largest tank, as well as any contingency for rainwater and other liquids."
We are concerned the tank area containment berm will not retain liquids onsite during worst case scenarios. The containment berm is only designed to hold 110 percent of the volume of the largest onsite tank. How will the proposed project contain liquids onsite in the event of the largest tank rupturing coupled with back to back severe storms? 110 percent of the largest tank volume does not seem adequate to account for this volume. Was any margin of safety included to the true worst case scenarios? Furthermore, multiple tanks will be used to store oil, water, and gas onsite. The proposed tank containment berm is incapable of retaining the combined volume of these tanks in the event of multiple storage tank failures. Worst case scenarios, such as these, need to be addressed in the final EIR.

HEAL-83

Page 4.9-16, 4.9.4.4 Impacts, Impact HWQ.2
"Up to 30 oil/gas wells and four wastewater injection wells would be drilled at the Proposed Project Site, from two separate well cellars. The produced oil and gas would be separated into gas, oil, and water streams. The oil would be processed to remove any remaining water and then the dry oil would be temporarily stored in tanks and shipped via pipeline or trucks to local Los Angeles area refineries (during Phase 2) or transported by pipeline (Phase 4). The produced water would be conveyed to onsite injection wells, where the water would be injected back into the producing formation."
Oil processing will be completed onsite to separate oil, water, and gas. Initially processed oil will be stored onsite in tanks before being shipped offsite via trucks or pipeline. What is the potential and mitigation for an oil spill during the time the oil is extracted from the formation to when it reaches the offsite oil processing facility? How will offsite and onsite oil spills be mitigated?

HEAL-84

We are concerned about the quality of produced water being injected into the producing formation during phases II and IV. It is unclear to what water quality standards the produced water is being treated. Section 4.7.3.4 states that initial water injection will occur onshore; what onshore portions of the reservoirs will be targeted by injection wells? We ask that the final EIR include maps of these

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areas. The West Coast Basin underlies much of the region and provides a reliable, local water supply to millions of Angelinos. Onshore injection may commingle with groundwater resulting in irreversible impacts; water quality standards established for this groundwater basin should be applied to injected wastewater.

Page 4.9-17, 4.9.4.4 Impacts, Impact HWQ.2

"The Applicant has indicated that no high volume/high pressure fracking, i.e., hydraulic fracturing, would occur during oil and gas production activities, thus minimizing inadvertent migration of crude oil and/or drilling fluids above the producing geologic formations."

How has the applicant defined hydraulic fracturing? How does planned wastewater injection for the proposed project differ from hydraulic fracturing as defined in Article 3 of Chapter 1, Division 3 of the Public Resources Code? It is our understanding that high volumes of wastewater at high pressure will be injected into producing formations during daily facility operations. Furthermore, is there any possibility of the proposed project using any additive chemical during oil drilling, extraction, or injection? If so, this should be discussed in detail in the final EIR.

HEAL-86

Page 4.9-17, 4.9.4.4 Impacts, Impact HWQ.2

"According to Section 4.8, Safety, Risk of Upset, and Hazards section, under worst-case conditions, maximum estimated spill volumes at the Project Site would be from a catastrophic failure of one of the oil shipping tanks to be constructed during Phase 3, which would have a capacity of 2,900 barrels. The tank area would be surrounded by a containment berm, sufficient in height to retain 110 percent of the volume of the largest tank, as well as any contingency for rainwater and other liquids."

The containment berm that surrounds onsite storage tanks should be designed to contain all onsite storage tank volumes on top of a 100-year storm event. The project applicants need to account for all worst case scenarios to prevent un-mitigable impacts, such as multiple tank ruptures and large storms. Furthermore, as stated in the DEIR on page 4.7-24, the applicant is unsure of oil, water, and gas volumes the formations may produce. Because of this, containment berm design volume should not be limited to 2,900 barrels.

HEAL-87

Page 4.9-17, 4.9.4.4 Impacts, Mitigation Measures HWQ.2

"HWQ-2d: Oil spills shall be contained and cleaned according to measures outlined in the then-current California Stormwater Quality Association Best Management Practice Handbook."

In addition to following measures outlined in the most current California Stormwater Quality Association Best Management Practices Handbook, the applicant should include notification protocols to appropriate agencies as well as City of Hermosa Beach and spill monitoring protocols.

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4.14 Water Resources

Page 4.14-2, 4.14.1.2 Water Supply
"Given recent concerns over future reliability of these imported supplies, West Basin has been increasing its development of local supplies. Groundwater production within the West Basin service area includes the West Coast Groundwater Basin and pumping from the Central Groundwater Basin into the West Basin service area. West Basin is projecting to more than double current recycled water supplies by 2035, as well as invest in over 20,000 acre-feet per year (AFY) of ocean water desalination supply. These sources, coupled with an additional doubling of conserved supply through water use efficiency programs, are expected to cut the overall imported water use nearly in half from 2008 to 2020." HEAL-89
The West Basin service area depends heavily upon the West Coast Groundwater Basin for its potable water supply. The proposed project intends to inject wastewater into onshore and offshore reservoirs; injection wells have been identified to pass through freshwater lenses of the underlying aquifer. We have concerns that groundwater quality may be contaminated from wastewater injection if there is a casing failure and/or fault act as a conduit. The final EIR needs to address how groundwater quality may be impacted by the quality of wastewater used for the injection wells.

At this time, it is uncertain if the West Basin service area is going to invest in ocean desalination for future water supplies. The final EIR should state that, at this time the region should not rely on ocean water desalination for portions of its water supply. Further, the final EIR should discuss the reduction in local water supplies as a result of this proposed project. HEAL-90

Page 4.14-2, 4.14.1.3 Surface Runoff, Project Site
"A portion of the runoff from the Herondo Street storm drain is diverted to the sanitary sewer system prior to ocean outflow, thus reducing discharge of poor water quality from the storm drain (E&B Natural Resources 2012)." HEAL-91
We are unsure if the Herondo Street storm drain is still diverting flow to the sanitary sewer system. Please verify this practice is currently occurring, and to what extent, in the final EIR.

What volume of runoff from the Herondo Street storm drain is diverted to the sanitary sewer system? Is the diversion seasonal or weather dependent? How is runoff diverted and what is the maximum volume of runoff that can be diverted? In the event of an on- or offsite oil spill, would the Herondo Street storm drain diversion have the capacity to divert the spill to the sanitary sewer system? HEAL-92

Page 4.14-3, 4.14.1.4 Groundwater
"There are no domestic water supply wells located in the vicinity of the Project Site. However, there is at least one nearby well that pumps water for on-site industrial water. This pumping counteracts the inflow from the seawater intrusion barriers (Cal Water 2011)." HEAL-93
Section 4.14.1.4 states that there are no domestic water supply wells located in the vicinity of the project site; however, the section fails to identify that the underlying aquifer has a designated

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municipal use. The final EIR should discuss impacts to future municipal water supply wells near the project site.

Page 4.14-4, 4.14.2.2 State Policies and Regulations
The DEIR is missing discussion on the Industrial General Storm Water Permit.
Please include discussion in Section 4.9.2.2 about the proposed project's applicability to the Industrial Storm Water regulations and permitting. It is imperative that all storm water policies be discussed in the final EIR.

HEAL-94

Page 4.14-4, 4.14.2.2 State Policies and Regulations, Disposal of Oil Field Waste
"Oil field waste materials, including but not limited to drilling muds, oily wastes, and brines, generally contain toxic substances and materials that could significantly impair the quality of usable waters and generally constitute Group I wastes. Such waste, which is ordinarily deposited at Class I or Class II-1 disposal sites, may be disposed by other means if such operations do not unreasonably affect water quality because of the type of waste and disposal operation, or an operation is in compliance with ordinances or regulations of other governmental agencies which adequately protect water quality. In 1980, Congress added section 1425 to the Safe Drinking Water Act, which controls underground injection of waste, giving the states the authority to demonstrate that they maintain an effective program to prevent underground injection which endangers drinking water sources. The Los Angeles Regional Water Quality Control Board authorizes such disposal options."
Has the project applicant contacted the Los Angeles Regional Water Quality Control Board regarding the disposal of production fluids via injection wells? We are unsure if the quality of proposed injection water is sufficient to protect groundwater supplies if subsurface commingling occurs.

HEAL-95

Page 4.14-6, 4.14.2.3 Local Policies and Regulations, City of Hermosa Beach
The city of Hermosa Beach is currently drafting a Low Impact Development ordinance that establishes new storm water best management practices performance criteria for new development and redevelopment projects. The final EIR should include mention and discussion of the city of Hermosa Beach's new Low Impact Development ordinance, which would apply to the proposed project, along with how the proposed project plans to comply with this ordinance.

HEAL-96

Page 4.14-6, 4.14.4.1 Introduction
"The Proposed Oil Project would require new off-site water supplies at the Project Site for Phase 1 and 3 construction, as well as Phase 2 and 4 operations, with well drilling requiring the most water. However, these actions would not substantially deplete water supplies or require new or expanded water entitlements."
The DEIR states the proposed project will not "substantially" deplete water supplies or require new or expanded water entitlements; how does the project applicant define substantial? Southern California does not have a reliable local water supply; water conservation and recycling need to be emphasized throughout the EIR. Furthermore, it is unclear what percentage of the proposed project's water demand is coming from recycled sources. We ask that the final EIR identify the percentage of recycled

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water being used by the proposed project; at a minimum, all non-potable uses should require 100 percent recycled water. We also request that the final EIR detail how much potable water will be used by the proposed project.

Page 4.14-7, 4.14.4.2 Proposed Project Design Features, Oil Reservoir Wastewater; Page 4.14-10, 4.14.4.3 Impacts, Impact WR.2:
"During Phase 2 and 4, water would be separated from the oil and gas stream by a three-phase separator. The water would then be pumped into a treatment system to remove excess oil, including a gas flotation unit and a filter unit. The primary objective of these units would be to clean the water of oil and solids, such as sand. In addition, the extracted water would be tested for sulfate reducing bacteria (SRB) and treated by a biocide if SRB is detected.... Upon exiting the filter unit, the water would enter a water surge tank and then be sent to the water injection pumps for injection into the oil-producing reservoir, through an injection well. Operators would be onsite 24 hours per day, seven days per week, to monitor this oil/gas/water separation process."
The EIR should include more information on the three-phase separation process. Are there any environmental risks associated with the three-phase process or community nuisance concerns? Does the separation process require additional water supplies? How would the by-products be handled? It is important that the proposed process is thoroughly vetted to ensure that the surrounding area is not impacted by onsite oil processing.

HEAL-98

We have concerns regarding the quality and quantity of wastewater produced by the proposed project. Upon exiting the filtering unit, what is the water chemistry of wastewater? Are any chemicals added to injected wastewater at the facility? Does any water quality testing occur after wastewater is treated? What is the annual volume of wastewater the proposed project is expecting to inject? Are specific water quality criteria required for treatment? What is the maximum daily amount of wastewater that can be injected during phase IV? How does this volume compare to the amount of daily wastewater produced during phase IV? Have any operational or environmental problems been identified at similar wastewater injection operations in Southern California? The DEIR is extremely vague when describing volumes of wastewater, oil, and gas generated from the facility. It is difficult to assess all environmental impacts when important information is not included. The final EIR should, at a minimum, estimate annual water, oil, and gas extraction volumes to provide reviewers with appropriate scale of operations.

HEAL-99

Page 4.14-7, 4.14.4.2 Proposed Project Design Features, Oil Reservoir Wastewater
"In the event of a spill during the water separation and wastewater injection process, runoff would be collected and pumped into the water processing system for injection into the oil reservoir."
In the event of an onsite oil spill, how would the spill be collected and pumped back into the water processing system? When spills occur during oil transport, how will spill runoff be contained? Will a similar process be used offsite?

HEAL-100

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Page 4.14-8, 4.14.4.2 Proposed Project Design Features, Water Supply
"Domestic water demand, i.e., for drinking and restrooms, for Phases 2, 3, and 4 would be provided by Cal Water. Water supplies for drilling would be provided by West Basin, via extension of an existing water line serving the Greenbelt east of Valley Drive."
It is unclear if the water provided by West Basin will be recycled water. We ask that the final EIR specify the quality and quantity of water coming from each water provider.

HEAL-101

Page 4.14-9, 4.14.4.3 Impacts, Impact WR.1, Proposed Oil Project
"It is unclear whether the existing City sewer along 6th Street, as well as downstream Sanitation Districts of Los Angeles County sewer and wastewater treatment facilities, has the capacity to support the increased sewage volume associated with the Proposed Oil Project. Overloading sanitary sewer systems can ultimately result in releases of untreated sewage to surface waters and/or the ocean. Therefore, impacts are considered *potentially significant*."
Overloading of the sanitary sewer system would cause surface water impairments to the receiving water. It is important that during the evaluation of the existing sewer line system, the worst case scenario be identified and tested to find the maximum capacity of the system. Worst case scenario could be, but is not limited to, peak flow during a severe storm event including a margin of safety.

HEAL-102

Page 4.14-11, 4.14.4.3 Impacts, Impact WR.3
"Up to four injection wells have been proposed at the Project Site for disposal of produced water, which is mainly salty water trapped in the reservoir rock and brought up along with oil or gas during production. This water can contain minor amounts of chemicals added downhole during production. In addition, produced waters exist under high pressures and temperatures and usually contain oil and metals; therefore, the water must be treated prior to being discharged. Produced water can also contain high concentrations of salts, metals, hydrocarbon and organic compounds, sulfur, treatment and workover chemicals, dissolved gases (particularly carbon dioxide), bacteria and other living organisms, dispersed solid particles, scales, and other pollutants. However, the particular concentrations of these components vary greatly among different oil fields. This salt water can be very damaging if it is discharged into surface water."
The description above is very vague and does not provide for a clear understanding of the wastewater. From the description, produced water does not appear to be mainly salty water trapped in reservoir rock brought to the surface from oil and gas extraction as is stated. The physical and chemical composition of this water is extremely unclear; what type of monitoring occurs between water, oil, gas separation and water injection? Furthermore, what chemicals are added downhole during drilling production and for what purpose? Are these chemicals monitored? If produced water were to be discharged to surface water, significant impacts could occur.

HEAL-103

Produced water must be treated before being discharged; to what standards is this water being treated to? Furthermore, what is the required monitoring frequency of produced water being injected (i.e. continual, hourly, daily, etc.)? All water quality standards, including water quality standards outlined for the West Basin Groundwater Basin in the Los Angeles Region Basin Plan must be met in

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produced water being injected to onshore and offshore reservoirs to safeguard against possible vertical and horizontal migration of injected liquids or accidental discharge.

Page 4.14-11, 4.14.4.3 Impacts, Impact WR.3
"The U.S. EPA classifies oil and gas injection wells as Class II wells. There are approximately 167,000 oil and gas injection wells in the United States and 25,000 such wells in California, most of which are used for the secondary recovery of oil, because the injection of the brine can have the effect of enhancing production of oil and gas from the formations. However, some injection wells are used solely as a disposal well for excess production fluids."
Although Class II injection wells are widespread throughout the United States and California, we are unsure if they are commonly located in dense, coastal, urban communities such as Hermosa Beach. Are Class II injection wells commonly located in metropolitan areas? If so, have any environmental risks been identified? We recommend that additional analysis be provided in the final EIR as to the suitability of Class II well placement in densely populated residential areas. HEAL-105

It is unclear if injection wells will be used to enhance production of oil and gas from the formation or to dispose of production fluids. The final EIR needs to specify how injection wells for the proposed project will be used. If Injection wells are used to stimulate oil and gas formations to enhance resource extraction, will injection wells also stimulate connectivity between oil and gas formations and underlying aquifers? Have injection wells been identified to impair coastal groundwater basins? HEAL-106

The West Coast Basin consists of three aquifers that reach depths of over 1,500 feet. At what depths will injection wells be disposing of produced waste water? This analysis is important to inform potential for aquifer contamination associated with the proposed project. HEAL-107

Page 4.14-12, 4.14.4.3 Impacts, Impact WR.3
"Three major fresh water aquifers comprise the West Coast Basin: the 200-Foot Sand (Gage Aquifer), the Silverado Aquifer, and the Lower San Pedro/Pico Aquifer. Groundwater depth in these predominantly confined aquifers reaches more than 1,500 feet in the West Coast Basin, although water production wells generally are not this deep. The injection wells would pass through these fresh water deposits, creating potential water quality impacts as a result of well leakage and/or inadvertent migration of wastewater from the point of injection upward through the formation, as a result of frac-outs, which are uncontrolled releases of produced water from the formation. Frac-outs are not to be confused with fracking (i.e., hydraulic fracturing), which is an oil production method whereby a sandy slurry is purposely injected into the oil producing formation, at very high pressures, in an effort to artificially fracture the formation and increase oil flow to the wellbore."
The West Coast Basin is designated by the Los Angeles Region Basin Plan for municipal use. The three aquifers that comprise the West Coast Basin provide a reliable water supply to millions of Angelinos on a daily basis; any contamination of these aquifers from well injection would significantly impact the region. Injection wells passing through municipal water supplies are a huge concern; well leakage and/or inadvertent migration of produced water threaten the sustainability of this water source. HEAL-108

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Possible frac-outs of produced water into municipal supplies are un-mitigable. The final EIR needs to expand the discussion of environmental impacts from frac-outs contaminating municipal water sources.

We are concerned that production water injection will be similar to hydraulic fracturing. Injection wells for the proposed project will be injecting large volumes of water (with an unknown chemical or physical composition) at high pressure into onshore and offshore formations. Although the applicant has stated that hydraulic fracturing will not occur, it is our understanding that onsite injection wells can be used stimulate oil and gas formations to enhance well production. The process by which the applicant proposes to dispose of produced water appears to be very similar to hydraulic fracturing. The final EIR needs to go into more detail about how well injection used onsite for the proposed project differs from hydraulic fracturing. HEAL-109

Page 4.14-12, 4.14.4.3 Impacts, Impact WR.3
"The current mechanism that is creating a stratigraphic and/or structural trap for oil accumulation within the Miocene Puente Formation (the target oil producing formation) would similarly prevent upward migration of injected wastewater (i.e., potential frac-outs) into the overlying aquifers. There are no domestic water supply wells located in the vicinity of the Project Site, thus further minimizing the potential for impairment of beneficial groundwater as a result of produced water injection."
In section 4.7.3.4, the DEIR states that injection wells will initially target onshore formations to decrease the likelihood of subsidence at and around the drilling site. Are these onshore formations part of the Miocene Puente Formation? What is the depth of targeted onshore locations for well injection? What are the depths of the overlying West Coast Basin aquifers? The West Coast Basin has known fresh water deposits at depths greater than 1500 feet; possible impairment of this deep water municipal supply needs to be addressed in the final EIR. Regional fresh water supplies are limited in the Los Angeles Basin; all municipal sources need to be protected even if they are not in production. HEAL-110

As stated no domestic water supply wells are located in the vicinity of the Project Site; however, over 100 municipal production wells have been used to pump groundwater from the West Coast Basin. 64, 468 acre-feet per year is adjudicated to the groundwater basin. Produced water injection could significantly impact active municipal production wells. The absence of domestic water supply wells in the vicinity of the Project Site does not minimize the potential for groundwater impairments to the groundwater basin. HEAL-111

Page 4.14-12, 4.14.4.3 Impacts, Impact WR.3
"The DOGGR regularly review water reinjection pressures, quantities, and schedules in order to prevent subsidence beneath the drilling site. All injection wells are monitored by the DOGGR to ensure that the wells are operating 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). HEAL-112

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Are injection wells monitored regularly for frac-out? Will the applicant monitor surface and subsurface waters for frac-out? Surface and subsurface water monitoring needs to occur to ensure that water bodies are not impacted.

Page 4.14-13, 4.14.4.3 Impacts, Impact WR.3

"In summary, proposed injection wells would pass through and beneath fresh water-bearing sediments within the West Coast Groundwater Basin. Produced water would be treated for excessive solids content prior to reinjection; however, the produced water would be highly saline and could potentially impair groundwater quality in the unlikely event that an injection well leaks in the area near the groundwater. Because 1) the injection wells would be required to meet the DOGGR rules and regulations regarding design and operation; 2) the existing mechanism that is creating the oil trap would prevent upward migration of produced water into overlying water-bearing sediments; 3) and the produced water and other drilling wastes (i.e., incidental spills of petroleum based fluids) would be injected back into the reservoir below the effective base of fresh water, the impacts of injection on groundwater quality would be considered adverse but less than significant."

HEAL-113

We disagree with the finding that "the impacts of injection on groundwater quality would be considered adverse, but less than significant". The fact that injected production water can frac-out into the municipal water supplies will cause a significant impact to the region. Further, production wastewater being injected does not appear to be treated to any water quality standards. Harmful chemicals are commonly found in production water that can impair surface and groundwater. Treatment of production water, as described in the DEIR, only removes excessive solids and does not address the harmful toxins. DOGGR rules and regulations apply to reservoir capacity and facility operations, but do not ensure lateral and vertical migration of injected fluids is not occurring. The oil trap discussed in the DEIR may not apply to onshore portions of the oil formations. Additionally, the underlying fresh water aquifer reaches depths greater than 1,500 feet. The depth of injection wells has not been identified in the DEIR; how can we be certain that injected wastewater would indeed be below the base of fresh water lenses and not impair groundwater quality? The potential to impair a municipal water source in a region that lacks sufficient local water supplies is a big concern. Because of this, the impact to groundwater quality associated with the proposed project would be significant.

Page 4.14-13&14, 4.14.4.3 Impacts, Impact WR.4

The primary water demand by the Proposed Oil Project would occur during Phases 2 and 4 in association with drilling, which would result in a projected water use of 4.8 acre-feet per year (AFY) over the 30- to 35-year life of the Proposed Oil Project. Drilling of each well would require approximately 130,000 gallons of water (0.4 acre-feet). Four wells are proposed in Phase 2, including three production wells and one water injection/disposal well, and the drilling would occur over a period of four months. The remaining 30 production wells and four injection/disposal wells are proposed in Phase 4 and the drilling would occur over a period of 30 months. Since each well takes approximately one month to drill, during Phase 4, approximately 12 wells would be drilled each year. This would result in a potential water usage of approximately 4.8 AFY for drilling.

HEAL-114

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If the majority of the water-use is "in association with drilling" and drilling is scheduled to "occur over a period of 30 months [2.5 years]," then why is 4.8 AFY (1.565 million gallons per year) of recycled water required for years four (4) through 35? Does the proposed project anticipate needing to drill beyond year four? Given that 4.8 AFY is equivalent to 12 drills per year, and the life of this proposed project is 30 to 35 years, is the community to understand that there could be anywhere from 360 to 420 drilling wells over the life of this proposed project?

Page 4.14-14, 4.14.4.3 Impacts, Impact WR.4

"Phase 4 of the Proposed Oil Project would be designed for a maximum capacity of 8,000 barrels of oil per day. Therefore, 8,000 barrels of oil per day could be extracted from the oil reservoir during Phase 4. However, up to 16,000 barrels per day of produced water would be available to inject back into the reservoir, such that it is unlikely that a supplemental water source would be required for replacement water to prevent regional ground subsidence from occurring in the vicinity of the Proposed Project."

A maximum of 8,000 barrels of oil will be produced and up to 16,000 barrels of water will be available for reservoir injection per day during phase four of the proposed project. Is the DEIR implying a 2:1 ratio of water to oil extraction on a daily basis? We are concerned that this ratio does not accurately capture the volume of water that will be extracted from the Miocene formation during oil extraction. How was the water to oil ratio derived for the proposed project? Anterra[21] —one of the proposed project's potential contractors—states on their webpage that "For every barrel of oil produced, an oil well generates about 10 barrels of salt water." Anterra goes on to state that "About 15 times more water than oil is produced from California's oil and gas fields." Applying these ratios to the proposed project, the projected 'produced' water generated from 8,000 barrels of oil is estimated to be 80,000 to 120,000 barrels per day (3.4 to 5.04 million gallons per day). Further, the DEIR cites the Produced Water Society and USEPA's assessment that "Produced water generally increases as oil and gas is depleted from any given well." (DEIR 4.14.11) Given this, the generation ratio may increase over time. Further analysis of produced water volumes is needed to inform the final EIR.

HEAL-115

During phase four, approximately 24,000 barrels of liquids will be held onsite. Is the containment berm surrounding these tanks sufficient to retain 24,000 barrels of liquid in the event of multiple storage tank failure? The proposed project and final EIR should address worst case scenarios such as multiple tank failures and large back-to-back storms.

HEAL-116

The proposed project plans on injecting up to 16,000 barrels of produced water on a daily basis. This means that over 500,000 gallons of water is going to be injected into underlying reservoirs daily. What is the injection rate to the injection wells? Is each well going to be injecting the same volume of water? We are also concerned about the time it takes for extracted water, oil, and gas to be separated; what is the rate by which this occurs? Also, what is the rate by which the produced water is treated? Lastly, what is the onsite holding capacity for produced water? It is extremely unclear how

HEAL-117

[21] Anterra is an oilfield waste management company based in Ventura and Kern County. Anterra provides the oil and gas industries with collection, transportation, construction, and waste management services. http://anterraservices.com/

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much produced water can be extracted, separated, and treated on a daily basis. The final EIR needs to go into greater depth regarding the water budget of produced waste water.

Page 4.14-14, 4.14.4.3 Impacts, WR.4
"Water supplies for drilling would be provided by West Basin Municipal Water District, via extension of an existing recycled water line serving the Greenbelt east of Valley Drive. West Basin has provided the Applicant with a "will serve" letter, which is substantial evidence of sufficient water supply."
California is currently facing a drought and Southern California does not have sufficient regional fresh water supplies. Conservation of fresh water supplies should be taken whenever possible. At a minimum, 100 percent recycled water should be required for all drilling operations. Furthermore, we strongly urge the City of Hermosa to provide the West Basin Municipal Water District "will serve" letter as part of the final EIR. It is critical that the Water District understand the full commitment being requested of them to support the proposed project, and any agreements be transparent and available to the public. HEAL-118

5.0 Alternatives Screening

Were the landowners of the properties considered in the Alternatives Screening consulted? HEAL-119

Attachment A

Page A-98, Section A-102, Attachment E: Waste Generation and Disposal
The table states that Phase II waste generation associated with 'drill cuttings' and 'waste mud and other liquids' will be respectively 1,000 tons (823 cubic yards) and 8,400 barrels (352,800 gallons). In Phase IV, this type of waste generation will increase to 7,500 tons (6,172 cubic yards) and 63,000 barrels (2.646 million gallons). In addition, the footnote for this section states that "unless otherwise indicated, the quantity is for the entire duration of the phase of the proposed project." HEAL-120

More clarity is needed related to waste generation associated with the proposed project in Attachment A. Are the Phase IV volumes stated above the total volumes for the entire 30 to 35 year lifetime of the proposed project, or annual volumes for each year during the lifetime of the proposed project? If the volumes apply to the entire 30-35 year operation, what are the projected annual waste streams for these to specific elements in the short-term?

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The proposed project is of great concern to Heal the Bay's staff, members, and volunteers. The precedent setting nature of opening up new oil operations in Santa Monica Bay and the risk of this proposed project significantly affecting the physical and biological environments of our coast warrants a very comprehensive final EIR that considers worst-case scenarios and cumulative effects. The proposed project, and potential oil spills, would significantly affect our local economy and tourism, water quality, the greater Los Angeles community, and the health of marine life. The DEIR has identified many of the impacts of the proposed project as significant, and that many of these impacts may be unavoidable, even with mitigation measures. Although the proposed mitigation measures may serve to reduce some environmental impacts associated with the proposed project, the DEIR correctly identifies that there are multiple environmental impacts that would have very significant and relatively un-mitigable consequences. We urge the City of Hermosa Beach to strengthen the final EIR with additional research and analysis associated with the proposed drilling operation, its environmental impacts, and mitigation measures. HEAL-121

Thank you for the opportunity to provide comments; please feel free to contact us if you have any questions.

Sincerely,

Dana Roeber Murray
Marine & Coastal Scientist

Peter Shellenbarger
Science & Policy Analyst, Water Quality

Sarah Abramson Sikich
Science & Policy Director, Coastal Resources

Kirsten James
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April 14, 2014

Ken Robertson
Community Development Department
1315 Valley Drive
Hermosa Beach, CA 90254
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RE: E & B Oil Drilling & Production Project: Draft Environmental Impact Report

Dear Mr. Robertson,

On behalf of Los Angeles Waterkeeper ("Waterkeeper"), we submit the following comments to the City of Hermosa Beach ("City") on the E & B Oil Drilling & Production Project: Draft Environmental Impact Report ("DEIR") to assess potential significant environmental impacts of the proposed oil development project in the City ("Project"). Our review of the DEIR reveals that the report fails to provide full disclosure and adequate analysis of several potential sources of discharge that could significantly impact water quality and suffers from other deficiencies under CEQA. Specifically, the DEIR does not include a thorough assessment of the Project's water quality and water resources impact, as well as impacts resulting from oil spills and other hazardous conditions. As a result, the DEIR falls short of CEQA directives and cannot serve as an informational document that will apprise the public of environmental impacts and guide decision-makers in evaluating the Project. Pub. Resources Code, § 21061. The DEIR should be extensively revised to address these shortcomings. WKPR-1

I. CEQA REQUIREMENTS

Under CEQA, an Environmental Impact Report (EIR) must provide decision makers and the public with information related to a project's significant effects on the environment, mitigation options, and project alternatives. *See* Pub. Resources Code § 21061 ("The purpose of an [EIR] is to provide . . . detailed information about the effect which a proposed project is likely to have on the environment."); 14 CCR § 15151. A "significant effect on the environment" is a potential effect from the current project or cumulative effect from multiple projects that could degrade the quality of the environment or cause substantial adverse effects on human beings. Pub. Resources Code §§ 21068, 21083, 21060.5. In the event that a possible significant effect is deemed not significant, the EIR must provide a brief explanation of why the effect is not significant. 14 CCR § 15128. WKPR-2

An EIR's legal sufficiency is based on the adequacy and completeness of information provided in the document. 14 CCR § 15151. To satisfy these requirements, an EIR must present information "in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project," and should not scatter analysis throughout the report. Habitat and Watershed Caretakers v. City of Santa Cruz, 152 Cal. Rptr. 3d 888, 902 (Cal. App. 6th Dist. 2013). Courts have found that an agency's failure to include relevant information in an EIR is "a prejudicial abuse of discretion . . . [when] the failure … precludes informed decision making and informed public participation . . . ." *E.g.* Plan. and Conservation League v. Castaic Lake Water Agency, 103 Cal. Rptr. 3d 124, 152-53 (Cal. App.

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2d Dist. 2009). Moreover, an agency must not approve a project without assessing feasible alternatives and mitigation measures. Pub. Resources Code § 21002. "To ensure that all reasonable alternatives . . . are thoroughly assessed . . . , [an] EIR must contain facts and analysis, not just the agency's bare conclusions or opinions." Al Larson Boat Shop, Inc. v. Bd. of Harbor Commissioners, 22 Cal. Rptr. 2d 618, 623 (Cal. App. 2d Dist. 1993) WKPR-2 continued

Unfortunately, as discussed in detail below, the DEIR for the Project fails to present and consider all the relevant information and facts and therefore lacks analysis related to numerous foreseeable environmental impacts of the Project. The DEIR should therefore be revised.

II. Hydrology and Water Quality

a) 4.9.1.6 Water Quality

Page 5, Water Quality

The DEIR fails to meet the requirements of CEQA by not including facts and analysis related to impacts that a discharge from the proposed Project would have on the water quality and beneficial uses of Hermosa Beach and the Santa Monica Bay (Bay) generally. A discharge from the Project may include such pollutants as salt water, hydrochloric acid (HCL) and other chemicals added to injected water, oil, dissolved gases such as carbon dioxide, bacteria, other living organisms, metals, sulfur, and other pollutants. DEIR at 4.14-11. A discharge from the Project to the Bay would therefore negatively impact the following beneficial uses that are not mentioned in the DEIR, water contact recreation (REC 1), marine habitat (MAR), wildlife habitat (WILD), commercial and sport fishing (COMM), and shellfish harvesting (SHELL). Los Angeles Basin Plan p. 2-27 & 32; Ocean Plan p. 4-10.[1] WKPR-3

The DEIR's omission of the Bay's water quality standards and beneficial uses is inconsistent with CEQA Guidelines because the DEIR does not consult with the Ocean Plan and L.A. Basin Plan. CEQA Appendix G: Environmental Checklist Form at 7. Moreover, because the DEIR does not provide the beneficial uses, water quality standards, or analyze the impacts of discharge from the Project on these metrics, the public and the lead agency cannot accurately assess the significant effects that the Project might have on environment, the need for mitigation efforts, or the desirability of seeking project alternatives. Therefore, to comply with CEQA, the DEIR must be revised to include an analysis of potential effects on beneficial uses of the Bay. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d at 152-53.

b) 4.9 Water Quality

Page 1-19, Water Quality

The DEIR fails to meet the requirements of CEQA because it does not mention or analyze potential impacts stemming from the hydrologic connection between the West Coast Groundwater Basin (Basin) and the Bay. *See* Pub. Resources Code § 21061 (the EIR must provide "detailed information about the effect which a proposed project is likely to have on the environment"). The DEIR does mention the connection between groundwater and ocean water in the vicinity of the Project. DEIR at 4.9-4. However, no analysis is provided of the potentially significant impacts from this connection on the water quality of the Bay, including degradation of water quality and violations of water quality standards that may result from contamination discharged as a result of WKPR-4

[1] Confusingly, however, the DEIR does consider beneficial uses of the West Coast Groundwater Basin (Basin). DEIR at 4.9-5.

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the Project into the Basin which is connected with the Bay. By omitting this information, decision makers and the public have not been informed that the Bay could be significantly affected by contaminated groundwater through submarine groundwater discharge (SGD).[2] Moreover, because the EIR does not consider SGD, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. Therefore, if the EIR is not revised to include an analysis of possible impacts from SGD to the Bay, a court will likely find there has been an abuse of discretion because information related to significant environmental impacts was not communicated to decision-makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d at 152-53. WKPR-4 continued

c) 2.4.2.1 Phase 2 Site Geology and Drilling Objectives
Page 20; Phase 2 Site Geology and Drilling Objectives

The DEIR fails to meet the requirements of CEQA by not mentioning or analyzing the impacts of all possible well stimulation to be utilized by the Project. E&B's application mentions two well stimulation techniques that are not considered or analyzed in the DEIR: high rate gravel pack (gravel packing) and the use of acid (acidizing). E&B, Attachments to Project Description, C6-C9. By omitting this information, decision-makers and the public have not been informed about two practices that could have significant effects on the environment.

Gravel packing is a well stimulation technique that introduces high pressure and sand to the oil producing zone. This practice can create fractures that allow oil, gas, and contaminated water to migrate vertically to the Basin, the Bay, or the City. Acidizing creates a risk that dangerous chemicals, i.e. hydrochloric acid (HCL),[3] could be introduced to the surrounding environment in the event of a spill. By not including the possible use of well stimulation techniques, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. Therefore, if the EIR is not revised to include an analysis of the possible impacts of well stimulation techniques that will be used at the Project, a court will likely find there has been an abuse of discretion by the City because information related to significant environmental impacts was not communicated to decision makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d 152-53. WKPR-5

d) 2.4.5.1 Phase 4 Processing and Operations
Page 60-62, Phase 4 Processing and Operations
2.4.5.1 Phase 4 Processing and Operations
Page 68, Table 2.12 Phase 4 Drilling Chemicals
2.4.2.2 Phase 2 Construction and Drilling Activities
Page 37, Table 2.6 Phase 2 Testing Chemicals WKPR-6

The DEIR fails to meet the requirements of CEQA by not providing a list of all chemicals to be used and injected into oil producing zones. By failing to provide this information, the DEIR

[2] Knee and Paytan, *Submarine Groundwater Discharge: A Source of Nutrients, Metals, and Pollutants to the Coastal Ocean*, 4 TREATISE ON ESTUARINE AND COASTAL SCIENCE 205–233 (2011).
[3] According to its Material Safety Data Sheet (MSDS), HCL (H3880) is "Corrosive. Causes skin and eye burns. May be fatal if swallowed or inhaled. Prolonged exposure may cause chronic effects. . . . Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment." OSHA requires manufacturers and distributors of chemicals to issue MSDS. 29 CFR 1910.1200.

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does not allow for an adequate assessment of the effects a spill of fluids containing these chemicals would have on water quality of the Bay or Basin. While general information about chemicals in produced groundwater is provided in Section 4.14 at page 11, this generalized information cannot inform decision makers and the public about the impact of any chemicals that will be injected to wells at the Project. By omitting this information, decision makers and the public do not have enough information to adequately assess the potential significant effects on the environment because they are not being informed that dangerous chemicals, such as hydrochloric acid (HCL), are going to be introduced to the environment. Moreover, by not analyzing the chemicals that E&B will be injecting, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. Therefore, if the EIR is not revised to include an analysis of chemicals that will be injected to the oil producing zone, a court will likely find there has been an abuse of discretion by the City because information related to significant environmental impacts was not communicated to decision makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d 152-53. WKPR-6 continued

e) 2.4.1.1 Phase 1 Construction Activities

Page 11, Table 2.2 Proposed Oil Project Design Parameters

The DEIR fails to meet the requirements of CEQA by not including facts and analysis of water quality impacts related to the pressures that will be achieved in the oil producing zones. The use of high pressure in an oil producing zone can create fractures that create pathways for oil, gas, and contaminated water to migrate vertically to the Basin, the Bay, or the City. By omitting this information, decision makers and the public will not have the information needed to assess the significant effects on the water quality that high pressure oil extraction techniques can create. Moreover, by not providing this information, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. Therefore, if the EIR is not revised to include an analysis of the significant effects associated with high pressure oil extraction, a court will likely find there has been an abuse of discretion by the City because information related to significant environmental impacts were not communicated to decision makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d 152-53. WKPR-7

f) 2.4.5 Drill Remaining Wells

Page 2-59, Re-Drilling of Wells

The DEIR falls short of CEQA requirements because it fails to provide an adequate description of the re-drilling process or analyze the impacts re-drilling might have on the environment and water resources. The DEIR merely states that re-drilling is unlikely to occur, but does not provide any information that allows decision-makers and the public to properly assess the likelihood of additional re-drilling or what the re-drilling process is. Further, the DEIR makes no effort to analyze significant effects that might be unique to re-drilling compared to drilling. Without this information, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. Therefore, if the EIR is not revised to include an adequate description and an analysis of the impacts of re-drilling, a court will likely find there has been an abuse of discretion by the City because information related to an activity that may cause significant environmental impacts has not been communicated to decision makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d 152-53. WKPR-8

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g) 2.4.2.2 Phase 2 Construction and Drilling Activities

Page 36, Facility Storm Drain system

"The Proposed Oil Project Site is designed to retain, process, and inject storm water within the perimeter fence or wall for a 100-year storm event. All rainwater falling on the site would be collected and pumped into the water processing system for injection into the oil reservoir. In addition, any spills on the site would also be contained, both within process system walls/berms around equipment and site walls/berms around the site. Process walls/berms would be designed to contain at least 110 percent of the largest vessel plus the precipitation generated by a 100-year storm event."

The DEIR fails to provide a clear description of the facility's capacity to contain spills. The DEIR seems to assume that all spills and storm-water will be contained onsite and injected into the ground after Phase 1. However, it is unclear that the site has the capacity to contain all spills based on conflicting and confusing qualitative statements in the DEIR. Some portions of the DEIR indicate there will be 110 percent containment capacity for each vessel at the Project. DEIR at 2-36. While other portions state there will be containment capacity equal to 110 percent of the largest vessel. DEIR 4.9-11. Moreover, while in the discussion on impacts to water quality from spills, the DEIR states that small onsite spills would be contained, the report has no discussion about bigger onsite spills but rather jumps straight to a discussion on large pipeline spills. DEIR 4.9-16. WKPR-9

Therefore, the DEIR fails to provide decision makers and the public with the information needed to properly assess the significant effects that an onsite spill could have on the environment and water quality in the Bay and the Basin. Moreover, by not providing a clear description and thorough analysis of onsite spill containment capacity, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. Therefore, if the EIR is not revised to include a clear description and analysis of the proposed site's containment capacity, ideally with a quantitative analysis of all possible spill volumes and containment volumes at each phases, a court will likely find there has been an abuse of discretion by the City because information related to significant environmental impacts was not communicated clearly to decision makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d 152-53.

h) 4.9 IMPACT # HWQ.2

Page 17, Mitigation Measures

"According to Section 4.8, Safety, Risk of Upset, and Hazards section, under worst-case conditions, maximum estimated spill volumes at the Project Site would be from a catastrophic failure of one of the oil shipping tanks to be constructed during Phase 3, which would have a capacity of 2,900 barrels. The tank area would be surrounded by a containment berm, sufficient in height to retain 110 percent of the volume of the largest tank, as well as any contingency for rainwater and other liquids."

The DEIR fails to meet the requirements of CEQA by failing to provide facts and adequate analysis for a worst-case onsite spill. In Section 4.9, while referencing Section 4.8, the DEIR states that the worst-case scenario for an on-site spill is a release of 2,900 barrels from a shipping tank. However, section 4.8 indicates that the worst-case scenario would be a drilling blowout. Moreover, the DEIR seems to ignore the possibility that a spill could occur as a consequence of multiple Project components, such as all shipping tanks on site and drilling blowout, failing at the same time which could occur as a result of human error or seismic activity for example. WKPR-10

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Therefore, the DEIR fails to provide decision makers and the public with information needed to properly assess the significant effects that an onsite spill could have on the environment. Moreover, by not providing a clear description and thorough analysis of onsite spill potential, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. Therefore, if the EIR is not revised to include a clear description and analysis of onsite spill capacity, a court will likely find there has been an abuse of discretion by the City because information related to significant environmental impacts was not communicated to decision makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d 152-53. WKPR-10 continued

i) 4.9 IMPACT # HWQ.1

Page 15, Proposed City Maintenance Yard Project Site

"However, construction would be completed in accordance with a standard SWPPP, as described above, such that impacts would be less than significant."

The DEIR fails to independently provide and analyze BMPs for the Proposed City Maintenance Yard Project Site and BMPs specific to the Proposed Pipeline for the Project. The DEIR concludes that construction activity at the three locations of the Project do not pose a significant risk to water quality by analyzing BMPs for just the Proposed Project Site and then stating that similar BMPs will be adopted for the Maintenance Yard and the Pipeline. As a result, neither decision-makers nor the public have the information needed to properly assess significant effects that construction activity could have on the environment at either the Maintenance Yard or Pipeline. Moreover, by not providing a clear description and analysis of the BMPs for the Maintenance Yard and the Pipeline, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. WKPR-11

For the Maintenance Yard, referring to the Project Site's BMPs is inappropriate because the structures built at maintenance yard are different than the structures built at an oil field and the physical characteristics of the two sites are different, i.e. topography, what is currently located at the sites, and the surrounding environment. For the Proposed Pipeline, referring to the Project Site's BMPs is inappropriate because a pipeline structure is different than the structures typically built at an oil field and the pipeline will be built over a long distance at the surface while the Project Site will be confined to the site lot. Therefore, if the EIR is not revised to include specific BMPs for construction activates at the Maintenance Yard and the Pipeline, a court will likely find there has been an abuse of discretion by the City because information related to significant environmental impacts was not communicated to decision makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d 152-53.

j) Section ES, Executive Summary

Page 9, Hydrology (see also 4.9 IMPACT # HWQ.2, Page 19, Residual Impacts)

"[A] release from the pipeline between the Project Site and Prospect Avenue, near the corner of Herondo Street and Valley Drive, could produce a spill of 4,800 gallons that could drain directly into subsurface soils and/or to the ocean through storm drains. Mitigation measures, in addition to those listed for Biology, include spill training, the required spill control equipment, the installation of a check valve into the crude oil pipeline at Herondo Street and the installation of an oil separator in storm drain systems of Herondo Street. These mitigation WKPR-12

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measures would reduce the frequency or severity of a spill reaching the ocean, but impacts would remain significant and unavoidable."

The DEIR fails to provide facts and analysis related to possible alternatives for the capture device to be installed at the Herondo Street storm drain. While the DEIR provides a vague description of the capture device, there is no discussion of the device's oil capturing capacity, or other factors such as the cost of the device or whether better available technology exists. Therefore, the DEIR is not in compliance with CEQA, and the EIR should be revised to include sufficient facts and analysis to demonstrate that the Project is not being approved without examining better feasible alternatives or mitigation efforts.

k) 2.4.2.1 Phase 2 Site Geology and Drilling Objectives

Page 20, Phase 2 Site Geology and Drilling Objectives

"The Proposed Oil Project would utilize directional drilling techniques to access the crude oil and gas reserves in the tidelands (offshore) and uplands (offshore) in the portions of the Torrance Oil Field within the City's jurisdiction. The Project Application states that "no hydraulic fracturing (or "fracking") of wells will occur because the geologic zones for the Proposed Project are permeable and capable of yielding oil and gas without hydraulic fracture stimulation."

The DEIR fails to meet the requirements of CEQA by failing to inform the public that if the Project is approved, it will be contingent on the fact that hydraulic fracturing will not occur unless a process that allows for public participation is mandated. While the DEIR states that E&B does not intend to conduct hydraulic fracturing at the present time, the report fails to inform the public of what legal mechanism would keep E&B from changing their minds and changing the Project to include hydraulic fracturing after receiving approval. Therefore, as it is currently written, the DEIR precludes the public's ability to make an informed decision with regards to any potential use of hydraulic fracturing in the future. To comply with CEQA, the City should revise the EIR to inform the public that the Project will be approved under the condition that hydraulic fracturing will not occur, and what process will apply in the event that E&B seeks to change the Project. *See* 14 CCR § 15151; In re Bay-Delta Programmatic Envtl. Impact Rpt. Coordinated Proceedings, 184 P.3d 709, 722 (Cal. 2008) ("The purpose of an EIR is to give the public and government agencies information needed to make informed decisions, thus protecting not only the environment but also informed self-government.").

WKPR-13

l) 2.4.5 Drill Remaining Well

Page 2-59; Re-Drilling Wells

"[F]or the purpose of providing a worst-case analysis, the Applicant estimates that up to 30 re-drills could occur over the life of the Proposed Oil Project."

The DEIR fails to meet the requirements of CEQA by failing to inform the public that if the Project is approved, it will be contingent on the fact that no more than 30 re-drillings will occur unless a process that allows for public participation is mandated. While the DEIR states that E&B does will not re-drill more than 30 times, the report fails to inform the public of what legal mechanism would keep E&B from changing their minds and changing the Project to allow for more than 30 re-drillings after receiving approval. Therefore, as it is currently written, the DEIR precludes the public's ability to make an informed decision with regards to the use of extensive re-drillings in the future. To comply with CEQA, the City should revise the EIR to inform the

WKPR-14

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public that the Project will be approved under the condition that no more than 30 re-drillings will occur, and what process will apply in the event that E&B seeks to change the Project.

III. Oil Spill Response and Other Emergency Response

a) Section 4.6, Fire Protection and Emergency Response

Page 17, Response Capabilities and Response Time

"However, equipment and training for a crude oil spill (for the pipeline route) and Hazmat response would be needed as a minimum. This would be a significant impact for Hazmat response."

Page 18, Response Capabilities and Response Time

"(FP-1d) The Applicant shall develop emergency response plans addressing the facility's fire-fighting capabilities pursuant to the most recent NFPA requirements, Los Angeles County Fire Code, LACFD, California Code of Regulation, and API requirements, in coordination with and to the satisfaction of the LACFD and the City of Hermosa Beach Fire Department. These plans shall include, but not be limited to, fire monitor placement, water capabilities, fire detection capabilities, fire foam requirements, facility condition relating to fire-fighting ease and prevention, and measures to reduce impacts to sensitive resources. The plan should also address coordination with local emergency responders and area schools and daycare facilities." WKPR-15

An emergency response plan for oil spill that reaches beach and ocean habitats is needed in addition to the land-based emergency response plan that is the focus of this EIR.

Regarding Hermosa Beach Fire and emergency response personnel, training and equipment for beach containment and cleanup is needed in addition to response operations occurring on land. Ocean spill containment and cleanup will likely be contracted through an Oil Spill Response Organization (OSRO). WKPR-16

Because, as discussed throughout the DEIR, the proposed Project is a facility that could impact marine water of the state, it is a "marine facility" under Section 8670.3(j)(1) of the Government Code. As such the Project is required to prepare an emergency response plan for marine spills pursuant to Section 8670.29 of the Government Code. An oil spill contingency plan would need to be approved by California Department of Fish and Wildlife Office of Spill Prevention and Response (OSPR). Please see Cal. Gov. Code Section 8670.29:

> 8670.29. (a) In accordance with the rules, regulations, and policies established by the administrator pursuant to Section 8670.28, an owner or operator of a marine facility, small marine fueling facility, or mobile transfer unit, prior to operating in the marine waters of the state or where an oil spill could impact marine waters; shall prepare and implement an oil spill contingency plan that has been submitted to, and approved by, the administrator pursuant to Section 8670.31. An oil spill contingency plan shall ensure the undertaking of prompt and adequate response and removal action in case of an oil spill, shall be consistent with the California oil spill contingency plan, and shall not conflict with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). WKPR-17

In fact, the previous applicant for this project, Macpherson Oil, would have been required to prepare an oil spill contingency plan under an approved Coastal Development Permit by California Coastal Commission.

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b) 4.8, Safety, Risk of Upset, and Hazards

Page 8, Failure Frequencies

"An examination of facilities regulated by the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) (formerly the Minerals Management Service [MMS]) in the Gulf of Mexico over the past 10 years shows that equipment failure rates actually decrease even as the average equipment age increases." WKPR-18

As of 2011, the BOEMRE is no longer in existence. The previous functions of BOEMRE and MMS are now divided between Bureau of Safety and Environmental Enforcement (BSEE) and the Bureau of Ocean Energy Management (BOEM). Please see http://www.boemre.gov/.

c) 4.8.1.5 Existing Site Spill Potential

Page 36, Existing Site Spill Potential

"A spill outside of the facility would drain into the storm drains. All storm drains in the area eventually flow to the ocean. Figure 4.8-3 shows a map of the storm drain systems in the area." WKPR-19

The DEIR gives the distance that spills must travel from the City Maintenance Yard to reach the ocean, but it does not give the distance that spills must travel from the proposed drilling site to the ocean. This is inconsistent and if the information were given, it would be much clearer and more informative for Hermosa Beach residents.

d) 4.8.3, Significance Criteria

Page 54, Regulatory Oversight Responsibilities, Table 4.8-9

The Oversight Area "Cleanup of spills" fails to list the appropriate agencies if the spill reaches the ocean. In this case the Federal Coast Guard and State Department of Fish and Wildlife Office of Spill Prevention and Response (OSPR), are the agencies with Regulatory Oversight Responsibilities. WKPR-20

e) 4.8.4.2 CUP Requirements

Page 57, bullet point 19

"An emergency response plan, including a blowout prevention and control plan, shall be prepared for review and approval by the Division of Oil and Gas and the Hermosa Beach Fire Department." WKPR-21

Because a spill could reach the ocean through a diversity of causes, the applicant should be required to prepare an emergency response plan for the marine environment. This requires OSPR approval, and contracting an Oil Spill Response Organization, amongst other marine plan requirements.[4]

[4] In addition, please use a numbered list format, rather than bullet points for the CUP requirements and other similar lists. It is much easier to review and refer to during written and verbal comments, and discussion amongst Hermosa Beach residents.

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f) 4.8.4.8, Proposed Project Impacts
Page 77, Near Schools

"However, the crude oil pipeline, due to the heavy nature of the crude oil, is not anticipated to produce significant public risk."

This statement is factually incorrect and in direct contradiction to other areas of the EIR, where the air and water quality impacts are described. It is a significant public risk, especially to school children, who are more sensitive to the effects of oil-based air and water pollution, significantly impacting their growth and development. This statement is dangerously misleading to Hermosa Beach residents, who may be directly and significantly impacted by a spill of heavy crude oil. WKPR-22

g) 4.8.4.8, Proposed Project Impacts
Page 78, Hazardous Materials

"As discussed above, the drilling activities could produce offsite risks if they encounter pressurized areas of the reservoirs. Although it is not known at this time what areas, or if any areas, of the drilling will encounter pressure that could produce a blowout, historical data from drilling in Redondo Beach indicates that there is the potential for some of the wells to produce pressure and the potential for a blowout."

This impact is listed as significant and unavoidable. Given the impacts to the urban area and environment, the EIR should require that a study be performed regarding this and the possible locations of higher probability blowout. The executive summary appropriately states this risk, but adds that *"impacts when drilling is not occurring would be less than significant with mitigation."* Also the Executive Summary and DEIR state that *"wells would be pressurized for a short period after drilling."* Due to the apparent lack of geological knowledge regarding areas of pressure in the Torrance Oil Field combined with historical data from drilling in Redondo Beach showing the potential for blowout, is it not logical to assume that the risk of spills when not drilling is still significant and unavoidable due to the combination of the environmental setting and pressurization of the wells? WKPR-23

The DEIR is inconsistent as on page 78 then agrees with the logic that risks are significant even when not drilling. *"The Applicant has proposed three features to reduce these risks, including the use of offshore-equivalent-style blow out preventer (BOP), venting to flare and non-cascading shutdown systems. However, blowout scenarios can still occur due to the potential for a pressurized reservoir and the potential for BOP failures, and these are difficult to mitigate and would be significant."* Because of this, the impacts to Safety and Risk of Upset during operations (not just drilling) must be changed to significant and unavoidable.

h) 4.8.4.8, Proposed Project Impacts
Page 81, Spill Risks of the Proposed Oil Project Site and Pipelines WKPR-24

"A crude oil spill from the tanks or equipment at the Project Site would require a subsequent failure of the bermed area or drainage system at the facility in order to impact the environment. The facility is proposed to be designed so that all spills would be captured by berms and the

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facility drain system and directed into the crude oil/water processing system for disposal down the injection wells or recovered into the crude processing stream. This system could fail with a catastrophic scenario, such as a major earthquake causing failure of the retaining walls."

A major earthquake could disrupt this system, causing a massive oil spill that will need a marine emergency response plan. It appears that an earthquake scenario is within the limits of a 'reasonable worst case' impact according to a 1998 California Coastal Commission staff report on the previous drilling application in Hermosa Beach by Macpherson Oil.[5]

WKPR-24 continued

> *(1998 CCC report, p.57)* "The potential risk of a well casing and hydrogen treatment system failure due to an earthquake is underscored by a report submitted by Macpherson, entitled "Geologic Hazards Investigation," prepared by Ryland Associates, Inc., dated June 10, 1994. The report states that the site of the proposed project is subject to the effects of major regional earthquakes on the Newport–Inglewood, Palos Verdes, San Andreas, Whittier, Norwalk, and various other regional faults. The report states that the site is dominated by its proximity to the Palos Verdes; and Newport–Inglewood Faults and that these fault systems are assigned maximum earthquakes of magnitude 7 and 7.5, respectively. The Ryland report also states that the San Andreas Fault generated one of the largest earthquakes in California history in 1857 with a magnitude in excess of 8, and concludes that a recurrence of this event is quite possible or probable during the lifetime of the project. Based on dating studies, such earthquakes occur every 130 years, on the average."

One hundred and fifty seven years have passed since the 1857 earthquake. It is reasonable to assume that this worst case scenario may become a reality in the lifetime of this proposed oil project, and it should not be treated as an unlikely scenario in the DEIR.

Page 81, Spill Risks of the Proposed Oil Project Site and Pipelines

"A blowout during drilling at the facility, if the wells are pressurized, could send crude oil up into the air, which could cause impacts outside of the site as well as spill crude oil into the site area. The volumes of crude oil spilled offsite would most likely be a few barrels as most crude oil would affect onsite areas."

WKPR-25

It appears unlikely that a pressurized well, capable of producing up to 8,000 bbls per day would only spill *"a few barrels"* from a catastrophic blowout, especially in the event of a disaster, such as a large earthquake. It is likely that oil and/or produced water would continue to flow, impacting the immediate site, and flowing downhill a given distance, depending on spill volume, impacting the public, immediate environment, and possibly the ocean (if large enough volume is spilled).

i) 4.8.4.8, Proposed Project Impacts

Page 81, Spill Risks of the Proposed Oil Project Site and Pipelines

"Another potential spill scenario would be a subsurface release from the borehole. Incidents of this type have been recorded in the offshore environment, as indicated in Table 4.8-11, with 7% of offshore "loss of well control" incidents involving release from nearby the platform from subsurface. All but one of these incidents occurred during drilling and all of them involved releases coming to the surface within a few hundred feet from the drilling location. Once the wellbore has entered an area that is beneath the seafloor (see Figure 2.8), the wellbore would be more than 1,500-2,000 feet beneath the seafloor. A release from the wellbore to the ocean would

WKPR-26

[5] Available at: http://www.coastal.ca.gov/pdf/e9628.pdf (accessed 4/11/14)

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have to occur through fissures or other cracks in the geology of the area and would require substantial well pressures as well. Discussions with California State Land Commissions (CSLC 2014) indicate that this scenario would be a very low probability release."

Although considered a low probability release by California State Lands Commission, it is possible that oil could leak through the seafloor into the ocean. This is another reason to require a comprehensive marine spill response plan.

WKPR-26 continued

j) 4.8.4.8, Proposed Project Impacts

Page 83, Spill Risks of the Proposed Oil Project Site and Pipelines

"Table 4.8-14 shows the potential spill volumes at different locations along the pipeline. The Herondo Street and Valley Drive location would be the worst case spill volume along the pipeline for spills closer to the ocean. A crude oil rupture at the intersection of Herondo Street and Valley Drive could enter storm drains that flow about 1500 feet to an ocean outfall on the beach (see Figure 4.8-2 and 4.8-3)."

WKPR-27

The Worst Case Discharge from a pipeline at Herondo St. and Valley Dr. is calculated at 4,826 gallons (Table 4.8-14, p.83). The DEIR does concede that *"This assumes that everything operates correctly and that operators respond accordingly (4.8-82)."* The design capacity of the pipeline is 8,000 barrels per day (336,000 gallons per day). Therefore it is reasonable to assume that a Worst Case Discharge from a pipeline is a significantly larger volume than 4,826 gallons that is given in the DEIR.

k) 4.8.4.8, Proposed Project Impacts

Page 83, Spill Risks of the Proposed Oil Project Site and Pipelines

"Since crude oil would be temporarily transported by truck during Phase 2, crude oil could spill if an accident, such as a rollover, caused a rupture of the truck tank. A spill of crude oil would produce environmental impacts if the spill drained into culverts or drainage areas that lead to creeks, the ocean or other sensitive areas (see Sections 4.3, Biological Resources, and 4.9, Hydrology and Water Resources). Truck spill volumes would be limited to about 6,700 gallons, which would be the capacity of a crude oil truck. If an accident were to occur with a resulting spill along Valley Drive or along Herondo Street, and the spill were to enter into the storm drain system, the crude oil could reach the ocean."

WKPR-28

The DEIR states that trucks carrying oil from the site could also spill oil that reaches the ocean. This is another reason to require a marine spill response plan.

***l)* 4.8.4.8, Proposed Project Impacts**

Page 84, Spill Risks of the Proposed Oil Project Site and Pipelines

"A spill near Herondo Street and Valley Drive, whether from a truck or the pipeline, would most likely be directed into the storm drain system. The storm drain system, from that point, drains about 1,500 feet through storm drain piping into an ocean discharge (See Figure 4.8-4). This particular discharge is a long cement "tunnel" that, during rains, allows storm water to drain under the beach into the surf without disturbing too much of the beach sand area (the discharge

WKPR-29

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is located about 150 feet from the surf line, depending on tide). During dry periods, sand builds up around the mouth of the discharge making a sort of containment area that might trap a crude oil spill depending on the amount of sand build-up and the standing water inside the discharge tunnel. However, during rains, crude oil would readily flow with the rain water through the storm drains, through the discharge "tunnel" to the ocean."

WKPR-29 continued

Assuming that the sand berm might "*trap a crude oil spill*" is an understatement that should be deleted from the DEIR. It is a misleading statement that only refers to a small subset of spills, large enough to reach the ocean yet small enough to be trapped by the sand berm. In the event of a large spill, oil will very likely reach the ocean from this drilling project despite the sand berm at the mouth of the storm drain. Rain will only facilitate a smaller spill in reaching the surf zone, thereby making this circumstance of trapping a crude oil spill even less likely.

V. WATER RESOURCES

A proposed project should pursue water conservation to minimize individual and cumulatively considerable significant effects on the environment. Pub. Resources Code, § 21061, 21068, 21083, 21060.5. Similarly, the California Coastal Act (CCA) requires that projects pursue water conservation. Pub. Resources Code § 30231. Moreover, "to ensure that all reasonable alternatives . . . are thoroughly assessed . . . , [an] EIR must contain facts and analysis, not just the agency's bare conclusions" relating to significant effects on the environment. Al Larson Boat Shop, Inc. v. Bd. of Harbor Commissioners, 22 Cal. Rptr. 2d 618, 623 (Cal. App. 2d Dist. 1993). Finally, an agency must not approve a project where feasible alternatives or mitigation measures exists. Pub. Resources Code § 21002.

WKPR-30

The DEIR fails to comply with CEQA and properly inform decision-makers and the public about the Project's potential to use large volume of water down-well and onsite during a time of statewide officially declared drought.

a) 4.14.4.3 Impacts

Page 14, Water Demand, IMPACT WR.4

"[I]t is unlikely that a supplemental water source would be required for replacement water to prevent regional ground subsidence from occurring in the vicinity of the Proposed Project."

The DEIR fails to meet the requirements of CEQA by omitting facts and analysis relating to the Project's potential to use a significant volume water down-well in light of Southern California's water scarcity problem. The DEIR states that 8,000 barrels of oil will be extracted each day, but nowhere does the DEIR state that the oil's displaced volume might need to be replaced with supplemental water to prevent subsidence—the amount of oil displaced would be 2.9 million gallons per year or nine acre feet per year. Instead of notifying the public of this possibility, the DEIR vaguely states that the use of water to replace oil is unlikely. Moreover, the DEIR only mentions that water would be used down-well to prevent subsidence but fails to mention water could also be used to pressure in the oil producing zones to improve well production.

WKPR-31

Given Southern California's current drought conditions and persistent water scarcity problems, the possibility that this Project could use 2.9 gallons of down-well water per year

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should be considered a cumulatively considerable effect on the environment along with other projects that will consume large volumes of water. Pub. Resources Code §§ 21061, 21068, 21083, 21060.5, 30231. Moreover, if additional water might be used to pressurize wells, then this fact should be added to the DEIR. Because the DEIR fails to inform decision makers and the public about a significant effect on the environment, the EIR should be revised to include facts and analysis that will allow for an accurate assess the Project's effects on the environment, the need for mitigation efforts, and desirability of project alternatives. Pub. Resources Code §§ 21061; 14 CCR § 15151. WKPR-31 continued

b) 4.14.4.2 Proposed Project Design Features

Page 7, Sanitary Wastewater

"In the event that Phase 3 is completed, the same sewer lateral would be used by a 650 square foot office building and associated restrooms to be constructed onsite, for 181 personnel for an estimated 14 month period. These restrooms would continue to be used during Phase 4, for 86 personnel over a 30 to 35 year period."

The DEIR fails to comply with CEQA and CCA by not including an analysis of alternative design measures that might reduce water consumption for office use, landscaping, and other activities. While the DEIR provides a description of the expected water use, there is no analysis of alternatives to reduce water consumption onsite. The implementation of water conserving technology or practices would create significant reductions in the Project's water consumption over the project's 30 to 35 year expected life. Water conservation efforts at the Project taken together with other projects in the area, could avoid cumulatively considerable effects on the environment by helping alleviate Southern California's water scarcity problem. Therefore, the DEIR is not in compliance with CEQA or CCA because it does not consider water conserving alternatives. WKPR-32

V. CUMULATIVE IMPACTS

To evaluate a proposed project's "significant effect on the environment" the EIR must analyze all cumulatively considerable effects, including effects from past projects. Pub. Resources Code § 21083. Where an agency finds that past projects may have a significant effect on the environment, they must include this finding in the EIR. *Id.*

a) 2.3, Historical and Current Operations

Page 6, Historical and Current Operations

"In 1930, an oil well (Stinnett Oil Well No. 1[, API 03716902]) was drilled in the western portion of the Project Site. The oil well was abandoned in 2005, consistent with the then-current standards of the DOGGR." WKPR-33

The DEIR fails to meet the requirements of CEQA by not analyzing the cumulative impact of past oil drilling projects in the area. In close proximity to the Project are seven abandoned oil

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wells.[6] Because the Project will utilize horizontal drilling, it is possible that abandoned wells within reach of horizontal drilling from the project could act as pathways for vertical migration. Moreover, because some wells are almost a century old, they are more likely to be in a state of decay from seismic activity or other causes. By not analyzing these abandoned wells in the DEIR, the City has overlooked a possible significant effect, vertical migration alongside abandoned oil wells.

By not making a finding that these past projects represent either a significant or insignificant effect on the environment, the City has not carried out its statutory duty under CEQA. Pub. Resources Code § 21083; 14 CCR § 15128. Moreover, the City has failed to accurately inform decision makers and the public of a significant effect on the environment. Further, by not providing an analysis of past project impacts, decision makers and the public cannot accurately assess the need for mitigation efforts or project alternatives. Therefore, if the EIR is not revised to include an analysis of the possible significant effects on the environment that might occur as a consequence of past projects in the area, a court will likely find there has been an abuse of discretion by the City because information related to significant environmental impacts were not communicated to decision makers and the public. *See* Conservation League v. Castaic Lake, 103 Cal. Rptr. 3d 152-53. WKPR-33 continued

In conclusion, given the DEIR shortcomings and failures to consider and analyze all available relevant information regarding the Project's foreseeable significant environmental impacts, we urge the City to revise the DEIR in order to address all the comments outlined above. Please contact Brian Meux at bmeux@lawaterkeeper.org and Tatiana Gaur at tgaur@lawaterkeeper.org or via telephone at 310-394-6162 if you have questions or would like to discuss this letter. WKPR-34

Sincerely,

Brian Meux
Marine Program Manager
Los Angeles Waterkeeper

Tatiana K. Gaur

Tatiana Gaur
Senior Attorney
Los Angeles Waterkeeper

[6] The APIs of the wells in close proximity to the proposed project are: 03716902, 03718525, 03717352, 03717000, 03716878, 03717803, and 03700347

NRDC
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NATURAL RESOURCES DEFENSE COUNCIL

April 14, 2014

Via Email (oilproject@hermosabch.org) and U.S. Mail

Mr. Ken Robertson
City of Hermosa Beach
Community Development Department
1315 Valley Drive
Hermosa Beach, CA 90254

Re: Comments on Draft Environmental Impact Report for Proposed E&B Oil Production Project in Hermosa Beach

Dear Mr. Robertson:

On behalf of the Natural Resources Defense Council (NRDC), we submit these comments on the draft Environmental Impact Report (DEIR) for the proposed E&B Natural Resources Management Corp. (E&B) Oil Drilling and Production Project (Project). NRDC is a national environmental nonprofit organization with more than 1.4 million members and online activists, thousands of whom live in Los Angeles County. We have been following this project closely because it involves two of our top priorities here in southern California: protecting communities from the health and environmental impacts of oil drilling and other risky well stimulation and production activities, and protecting our fragile coastal communities and ecosystems.

We have been engaged in this CEQA process from the beginning, attending the scoping meeting and submitting written comments, and are coordinating our EIR review efforts with other community and environmental groups that have expressed concern regarding the Project. These groups include Heal the Bay, Surfrider Foundation, Sierra Club, Keep Hermosa Hermosa, and LA Waterkeeper. In addition to our comments below, we agree with the comments of the above groups and incorporate them as our own. NRDC-1

I. PROJECT DESCRIPTION (Section 2.0)

The project description in the DEIR lacks sufficient detail about well completion and workover activities, including the use of reservoir stimulation techniques such as hydraulic fracturing and acidizing. Consequently, the potential environmental impacts of these activities are not adequately evaluated. NRDC-2

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The completion process is discussed only briefly on page 2-31 of the DEIR: "The well is then 'completed', which is a series of activities that allow for the production fluids to flow into the well bore inside the casing and to the surface. Appendix A provides additional details on this process." However, no such information is contained in Appendix A. Attachment C of the Project Description provides only minimally more information about the completion practices that may be employed at the site. The project applicant only indicates that sand control techniques, such as gravel packing and high-rate gravel packing (a.k.a. frac-pack), and stimulation techniques, such acid washing or matrix acidizing, may be used. No further details are provided. NRDC-3

Stimulation and sand control practices can require significant volumes of water and use a variety of chemical additives, some of which can be toxic or otherwise hazardous. The DEIR contains no information on water and chemical use for completion or workover activities. Disclosures about reservoir stimulation activities made to the California Department of Conservation, Division of Oil, Gas and Geothermal Resources pursuant to requirements in Senate Bill 4 reveal that the average stimulation job in California is anticipated to use approximately 200,000 gallons of water per well. Stimulation and sand control activities also use many chemical products, which may include acids, corrosion inhibitors, solvents, iron control agents, anti-sludge agents, surfactants, and others. These products are composed of a variety of chemical additives, some of which may be harmful to human health or the environment. The potential impacts of this water and chemical use have not been evaluated in the DEIR. NRDC-4

South Coast Air Quality Management District (SCAQMD) Rule 1148.2 requires oil and gas operators to notify the SCAQMD about drilling, well completion, or rework of onshore oil or gas wells and also subsequently disclose the chemicals used in those operations. These chemical reports reveal that operators in the Torrance Oil Field are employing acidizing as part of well completion and rework activities. E&B, the project applicant, has also used acidizing as part of rework activities in the adjacent Wilmington oil field, which produces oil from the same geologic formations as those targeted for production in the Torrance field. Chemical additives used in these acidizing jobs include hydrochloric acid, hydrofluoric acid, methanol, 2-butoxyethanol, xylene, ethylbenzene, and toluene. All of these chemicals are air toxics and can have negative effects on human health or the environment. A complete list of chemicals used in the aforementioned acidizing jobs and disclosed to SCAQMD is appended.[1] NRDC-5

Well completion and workover practices, including reservoir stimulation and sand control techniques, can have negative environmental and human health impacts, including but not limited to possible impacts to air quality, biological resources, geologic resources/soils, and water quality. The potential impacts must be evaluated in the EIR. NRDC-6

[1] NRDC is not responsible for the accuracy or completeness of information found in the event notification or chemical disclosure reports filed with SCAQMD pursuant to Rule 1148.2. Reports were accessed April 7, 2014 at http://xappprod.aqmd.gov/r1148pubaccessportal/Home/Index

II. AIR QUALITY AND GREENHOUSE GASES (Section 4.2)

Air pollution from the oil and natural gas sector is a serious problem that currently threatens the health of communities across the country. Flaring, venting, leaking and release of contaminants throughout the production, processing, transmission, and distribution systems are significant sources of air pollution. Pollutants identified by EPA as being related to the process of producing oil and capturing the associated hydrocarbons include, but are not limited to, alkanes, benzene, toluene, ethylbenzene, xylenes, and methanol. These toxic air contaminants and smog-forming volatile organic compounds (VOCs and NO_x) threaten local communities and regional air quality.

These problems are exacerbated by the fact that the Project Site is within the South Coast Air Basin, one of the most polluted air sheds in the country. The air basin is currently designated as being in "severe nonattainment" status for the federal 8-hour ozone ambient air quality standard, which means that ambient levels of ozone – a deep lung irritant that reduces the respiratory system's ability to fight infection – are extremely high and dangerous to public health. The basin in also in nonattainment for PM 2.5, *i.e.,* particulate matter measuring 2.5 microns or less in diameter, which penetrates the respiratory system and can cause lung disease and decreased lung function. Given the already high ambient levels of air pollution in the South Coast Basin, criteria pollutants and toxic air contaminants emitted from the Project should be reduced to the maximum extent possible. NRDC-7

4.2.4.2 Conditional Use Permit (CUP) Requirements

While requiring the Project to comply with the conditions of approval in the 1993 Conditional Use Permit is sensible and a good start, those conditions have likely become outdated over the last 21 years. The EIR should evaluate the CUP requirements and provide an objective analysis as to whether those conditions are adequate to ensure that the Project is not significantly impacting air quality. In addition, not all of the air quality-related applicable requirements from the CUP appear to be listed in the DEIR. For example, while Section 4.2.4.2 includes the CUP provision limiting truck trips to 18 round trips per day, it does not include the provision limiting deliveries to daylight hours (9 am to 3 pm) Monday through Friday, or the provision limiting the operation of earthmoving equipment to daytime hours between 8 am and 6 pm. The City should go through the 1993 CUP and ensure that all provisions relating to air quality are listed as applicable requirements in the DEIR. NRDC-8

4.2.4.3 Construction Criteria Pollutant Emissions

With respect to reducing construction-related emissions, we are concerned that Mitigation Measure AQ-1b does not represent the cleanest technology available. As stated previously, the emission of criteria pollutants from the Project should be minimized to the greatest extent possible to avoid exacerbating the regional air basin's chronic air pollution problems. To that end, the Applicant should be required, as part of NRDC-9

its NO_x reduction program, to meet Tier 4 NO_x requirements for all off-road diesel construction equipment. The Tier 4 standards reduce PM and NO_x emissions by about 90%, often through the use of control technologies such as advanced exhaust gas after-treatment. Moreover, according to the South Coast Air Quality Management District (SCAQMD), construction equipment meeting Tier 4 non-road emission standards became available beginning in 2011, so this technology has been in use and should be required here. NRDC-9 continued

Further, the Project does not have any requirements related to the use of zero or near zero emissions trucks. The City should require a combination of different types of incentives to encourage the applicant to procure this type of truck.

At the very least, if construction equipment with Tier 4 engines or zero or near zero emissions trucks cannot reasonably be employed for this Project, the Applicant should be required to use only equipment that has been fitted with a diesel particulate filter (DPF), also known as a soot filter or diesel emission control strategy (DECS). A DECS uses technology that reduces harmful air pollution from diesel engine exhaust before it is emitted into the air. The California Air Resources Board (ARB) evaluates and approves DECS to meet specific particulate matter (PM) or nitrogen oxide (NO_x) emission reductions, so only ARB-verified (approved) devices should be allowed for use during the Project's construction phases. NRDC-10

4.2.4.4 Operational Criteria Pollutant Emissions

With regard to Mitigation Measure AQ-5d, the requirement that the Applicant develop and implement an air monitoring plan, the language is vague as to what it means to provide for monitoring "at all perimeter locations of the facility." The measure should either specify or require the Applicant to consult with SCAQMD and affected residents regarding the minimum number of monitors to be used and where they should be placed or how far apart they should be spaced. NRDC-11

4.2.4.5 Potential Operations Greenhouse Gas Emissions

CEQA requires a discussion of "significant irreversible environmental changes which would be involved in the proposed project should it be implemented." CEQA Guidelines § 15126(c). CEQA further requires that, where they can be reasonably estimated, indirect effects be analyzed. Indirect effects of the Project reasonably include greenhouse gas (GHG) emissions associated with the Project's energy use as well as emissions from the Project's "lifecycle." *See* CEQA Guidelines §§ 15064(d); 15126; Appendix F, "Energy Conservation." Such lifecycle effects include, *e.g.,* emissions associated with raw materials used to build the project and the emissions related to the end use (*i.e.,* combustion) of the produced crude oil products and any related natural gas. NRDC-12

The DEIR's categorical exclusion of end use GHG emissions is inconsistent with CEQA regulations. The end use effects of the Project are both knowable and significant.

Indeed, the DEIR at page 4.2-57 calculates that the Project would generate, over its life, an average amount of crude oil that would generate 535,000 MTCO2e per year, from the combustion of natural gas and crude oil products. This is an emissions amount a full magnitude higher than the estimated impact per year of the Project itself, and exclusion of this significant source of GHG emissions is misleading and misrepresents the environmental impact of the Project.

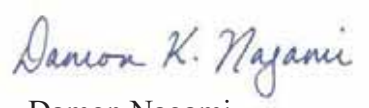
Greenhouse gases have direct implications for global climate change. Ignoring GHG emissions from these indirect sources will have real impacts, undermining California's ability to combat warming and to achieve the aggressive reductions required by Assembly Bill 32. As Executive Order S-3-05 explains, California is particularly vulnerable to the impacts of climate change, and increased temperatures threaten to greatly reduce the Sierra snowpack—one of the State's primary sources of water—and to further exacerbate California's air quality problems and adversely impact human health by increasing heat stress and related deaths, the incidence of infectious disease, and the risk of asthma, respiratory and other health problems. Rising sea levels threaten California's 1,100 miles of coast, and an increase in temperatures and diminished water supply threatens to affect the abundance and distribution of pests and pathogens, and result in variations in crop quality and yield.

NRDC-13 continued

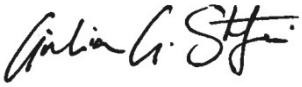
A full lifecycle analysis of GHG emissions is necessary to ensure compliance under California laws to reduce the impacts of climate change, dependence on fossil fuels, protect natural resources, protect industries such as agriculture, and protect public health.

Thank you for considering these comments.

Very truly yours,



Damon Nagami
Senior Attorney



Giulia Good Stefani
Project Attorney

Attachment

TORRANCE OIL FIELD

Date Stored	Time Stored	Event ID	Facility ID	Facility Name	Operator Name	Well Name/ID	API Well Number	County	ZIP	Lattitude	Longitude	Well Type	Activity	Activity Type	Trade Name	Chemical Ingredient	CAS#	Total Mass	Total Volume	Density	Max Conc (% mass)	Purpose	Air?
1/31/2014	8:40 AM	1085	82513	BREA CANON OIL COMPANY INC	BREA CANON OIL CO., INC.	JOUGHIN 14-B	04-037-20285	LOS ANGELES	90710	33.814231	-118.302096	Oil	Well Completion	Acidizing	A 205 IN HCLI	METHANOL	67571	31.2			60	CORROSION INHIBITOR	
															AI 205 IN HCL/HF	METHANOL	67561	31.2			60	CORROSION INHIBITOR	
															MISOL IN HF	METHANOL	67561	145.2			60	SOLVENT	
															SSD 921 IN HCL	SOLVENT NAPHTHA (PETROLEUM), HEAVY AROM.	64742945	48			100	SOLVENT DISPERSANT	
															SS 20 IN HCL	METHANOL	67561	33			60	WETTING SURFACTANT	
															PA 50 IN HCL	P-MENTHA-1,8-DIENE	138863	227.1			100	SOLVENT	
															ISA 100 IN HCL	P-MENTHA-1,8-DIENE	138863	82.7			50	IRON CONTROL	N
															ISA 100 IN HCL/HF	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	82.7			50	IRON CONTROL	N
															SW 211 IN AMMONIUM CHLORIDE	METHANOL	67561	22.9			60	CLAY STABILIZER	Y
															SW 211 IN HCL	METHANOL	67561	22.9			60	CLAY STABILIZER	Y
															SSA 63	SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.	64742956	22.5			60	ASPHALTENE DISPERSANT	N
															HCL	HYDROGEN CHLORIDE	7647010	8091.8			15	WELL STIMULATION	Y
															HCL/HF	HYDROGEN CHLORIDE	7647010	8364.9			13.5	WELL STIMULATION	Y
															AMMONIUM CHLORIDE	AMMONIUM CHLORIDE ((NH4)CL)	12125029	20805			3	DISPLACEMENT FLUID	N
1/24/2014	7:19 AM	1049	82513	BREA CANON OIL COMPANY INC	BREA CANON OIL CO., INC.	JOUGHIN 3-D	04-037-17631	LOS ANGELES	90710	33.807798	-118.296627	Oil	Well Completion	Acidizing	AI 205 IN HCL	METHANOL	67561	62.4			60	CORROSION INHIBITOR	Y
															AI 205 IN HCL/HF	METHANOL	67561	62.4			60	CORROSION INHIBITOR	Y
															MISOL IN HF	METHANOL	67561	290.4			60	SOLVENT	Y
															SSD 921 IN HCL	SOLVENT NAPHTHA (PETROLEUM), HEAVY AROM.	64742945	80.2			100	SOLVENT DISPERSANT	N
															PA 50 IN HCL	P-MENTHA-1,8-DIENE	138863	454.2			100	SOLVENT	N
															ISA 100 IN HCL/HF	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	165.4			50	IRON CONTROL	N
															SW 211 IN HCL	METHANOL	67561	45.9			60	CLAY STABILIZER	Y
															SW 211 IN AMMONIUM CHLORIDE	METHANOL	67561	38.3			60	CLAY STABILIZER	Y
															SSA 63	SOLVENT NAPHTHA (PETROLEUM), LIGHT AROM.	64742956	45			60	ASPHALTENE DISPERSANT	N
															HCL	HYDROGEN CHLORIDE	7647010	16200.2			15	WELL STIMULATION	Y
															HCL/HF	HYDROGEN CHLORIDE	7647010	16825			12	WELL STIMULATION	Y
															AMMONIUM CHLORIDE	AMMONIUM CHLORIDE ((NH4)CL)	12125029	20850			3	DISPLACEMENT FLUID	N
1/20/2014	7:52 AM	1009	82513	BREA CANON OIL COMPANY INC	BREA CANON OIL COMPANY INC.	JOSEPHINE 3	04-037-30051	LOS ANGELES	90710	33.801802	-118.288395	Oil	Well Completion	Acidizing	AI 205 IN HCL	METHANOL	67561	78			60	CORROSION INHIBITOR	Y
															MISOL IN HCL	METHANOL	67561	544.5			60	CORROSION INHIBITOR	Y
															ISA 100 IN HCL	CITRI ACID	77921	129.3			50	IRON CONTROL	N
															SW 211 IN HCL	METHANOL	67561	57.4			60	CLAY STABILIZER	Y
															SW 211 IN NH4CL	METHANOL	67511	43.4			60	CLAY STABILIZER	N
															NSF 37 IN HCL	METHANOL	67561	127.7			10	FOAMING AGENT	Y
															NSF 37 IN NH4CL	METHANOL	67561	96.5			10	FOAMING AGENT	Y
															HCI SOLUTION	HYDROCHLORIC ACID	6747010	20458.6			15	WELL STIMULATION	N
															AMMONIUM CHLORIDE	AMMONIUM CHLORIDE ((NH4)CL)	12125029	15762.6			3	DISPLACEMENT FLUID	N
1/10/2014	9:49 AM	1009	82513	BREA CANON OIL COMPANY INC	BREA CANON OIL COMPANY INC.	JOSEPHINE 3	04-037-30051	LOS ANGELES	90710	33.801802	-118.288395	Oil	Well Completion	Acidizing	WATER	WATER	7732185	1			100	MIXER	N
															AROMATIC AMINES	Trade Secret							N
															NONYPHENOL ETHOXYLATE								N
															AROMATIC AMINE, TOFA SALT								N
															IONIC SURACTANT								N
															AMID SURFACANT								N
															AMID SURFACTANT, PHOSPHATE ESTER SALT								N
															AMID SURFACTANT, PHOSPHATE ACID SALT								N
															NONYPHENOL ETHOXYLATE								N
															SURFACTANT BLEND								N
6/6/2014	6:09 AM	923	82513	BREA CANON OIL COMPANY INC	BREA CANON OIL CO., INC.	JOSEPHINE 4	04-037-30052	LOS ANGELES	90710	33.80185	-118.28844	Oil	Well Completion	Acidizing	WATER	WATER	7732185	91			90	MIX	N
															IONIC SURFACTANT	Trade Secret							N
1/22/2013	10:26 AM	882	82513	BREA CANON OIL COMPANY INC	BREA CANON OIL CO., INC	JOSEPHINE 2	04-037-27359	LOS ANGELES	90710	33.806081	-118.299154	Oil	Well Completion	Acidizing	AI 205 IN HCL	METHANOL	67561	31.2			60	CORROSION INHIBITOR	Y
															AI 205 IN HCL/HF	METHANOL	67561	46.8			60	CORROSION INHIBITOR	Y
															MISOL IN HCL	METHANOL	67561	217.8			60	SOLVENT	Y
															ISA 100 IN HCL	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	51.7			50	IRON CONTROL	N
															ISA 100 IN HCL/HF	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	77.6			50	IRON CONTROL	N
															SW 211 IN HCL	METHANOL	67561	22.9			60	CLAY STABILIZER	Y
															SW 211IN NH4CL	METHANOL	67561	91.8			60	CLAY STABILIZER	Y
															HCI SOLUTION	HYDROCHLORIC ACID	6747010	8233.4			15	WELL STIMULATION	N
															HCI /HF SOLUTION	HYDROCHLORIC ACID	6747010	12660.8			12	WELL STIMULATION	N
															AMMONIUM CHLORIDE	AMMONIUM CHLORIDE	1212502	33360			3	DISPLACEMENT FLUID	N
10/10/2013	9:42 AM	789	82513	BREA CANON OIL COMPANY INC	BREA CANON OIL CO., INC.	JOSEPHINE 3	04-037-30051	LOS ANGELES	90710	33.801802	-118.288395	Oil	Well Rework	Acidizing	AI 205 IN HCL	METHANOL	67561	46.8			60	CORROSION IHIBITOR	Y
															AI 205 IN HCL/HF	METHANOL	67561	23.4			60	CORROSION IHIBITOR	Y
															MISOLIN HCL	METHANOL	67561	217.8			60	CORROSION IHIBITOR	Y
															MISOL IN HCL/HF	METHANOL	67561	72.6			60	CORROSION IHIBITOR	Y
															ISA 100 IN HCL	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	51.7			50	IRON CONTROL	N
															ISA 100 IN HCL/HF	CITRIC ACID	77921	25.9			50	IRON CONTROL	N
															SW 211 IN HCL	METHANOL	67561	30.6			30	CLAY STABILIZER	Y
															SW 211 IN NH4CL	METHANOL	67561	46.3			30	CLAY STABILIZER	Y
															HCI SOLUTION	HYDROCHLORIC ACID	6747010	8208.4			15	WELL STIMULATION	N
															HCI/HF SOLUTION	HYDOCHLORIC ACID	6747010	4214.9			12	WELL STIMULATION	N
															AMMONIUM CHLORIDE	AMMONIUM CHLORIDE ((NH4)CL)	12125029	12610.1			3	DISPLACEMENT FLUID	N
7/7/2013	8:02 AM	694	82513	BREA CANON OIL COMPANY INC	BREA CANON OIL CO., INC.	JOSEPHINE 2	04-037-27359	LOS ANGELES	90710	33.806081	-118.299154	Oil	Well Completion	Acidizing	AI 205 IN HCL	METHANOL	67561	46			60	CORROSION INHIBITOR	Y
															AI 205 IN HCL/HF	METHANOL	67561	91			60	CORROSION INHIBITOR	Y
															MISOL IN HCL	METHANOL	67561	318			60	CORROSION INHIBITOR	Y
															MISOL IN HCL/HF	METHANOL	67561	423			60	CORROSION INHIBITOR	Y
															ISA 100 IN HCL	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	75			50	IRON CONTROL	N
															ISA 100 IN HCL/HF	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	151			50	IRON CONTROL	N
															SW 211 IN HCL	METHANOL	67561	34			60	CLAY STABILIZER	Y
															SW 211 IN NH4CL	METHANOL	67561	92			60	CLAY STABILIZER	Y
															HCI SOLUTION	HYDROCHLORIC ACID	6747010	12024			15	WEEL STIMULATION	N
															HCI/HF SOLUTION	HYDROCHLORIC ACID	6747010	24644			12	WELL STIMULATION	N
															AMMONIUM CHLORIDE	AMMONIUM CHLORIDE ((NH4)CL)	12125029	33360			2	DISPLACEMENT FLUID	N
7/2/2013	10:46 AM	322	82513	BREA CANON OIL COMPANY INC	REY JAVIER	JOUGHIN UNIT/17-F	04-037-18014	LOS ANGELES	90710	33.804662	-118.290055	Oil	Well Completion	Acidizing	AMMONIUM CHLORIDE	AMMONIUM CHLORIDE	12125209		3000	1.11	3	WELL ACIDIZING	N
															HYDROCHLORIC ACID	HYDROCHLORIC ACID	7647010		2364	1.11	13.5	WELL ACIDIZING	N
															HYDROCHLORIC ACID	HYDROCHLORIC ACID	7647010		2400	9.83	13.5	WELL ACIDIZING	N
															HYDROFLURORIC	HYDROFLURORIC	7664393		36	1.11	1.5	WELL ACIDIZING	Y

WILMINGTON OIL FIELD

Date Stored	Time Stored	Event ID	Facility ID	Facility Name	Operator Name	Well Name/ID	API Well Number	County	ZIP	Lattitude	Longitude	Well Type	Activity	Activity Type	Trade Name	Chemical Ingredient	CAS#	Total Mass	Total Volume	Density	Max Conc (% mass)	Purpose	Ingredient Secret
2/12/2014	8:08 AM	1169	165309	E&B NATURAL RESOURCES MANAGEMENT CORP	E&B NATURAL RESOURCES	WNF-I 27	04-037-22673	LOS ANGELES	90745	33.805006	-118.274254	Oil	Well Rework	Acidizing	AI 205	METHANOL	67561	76.4			60	CORROSION INHIBITOR	Y
															AI205	ETHYL OCTYNOL	5477429	76.4			5	CORROSION INHIBITOR	N
															AI205	PROPYN-1-OL	107197	76.4			5	CORROSION INHIBITOR	N
															AI205	PINE OIL	8002093	76.4			5	CORROSION INHIBITOR	N
															AI205	ISOQUINOLINE	119653	76.4			5	CORROSION INHIBITOR	N
															AI205	QUINALDINE	91634	76.4			5	CORROSION INHIBITOR	N
															MISOL	METHANOL	67561	232.3			60	SOLVENT	Y
															MISOL	2-BUTOXY ETHANOL	111762	232.3			30	SOLVENT	Y
															XYLENE	XYLENE	1330207	617.1			100	SOLVENT	Y
															XYLENE	ETHYLBENZENE	100414	617.1			30	SOLVENT	Y
															XYLENE	TOLUENE	108883	617.1			0.9	SOLVENT	Y
															SID 921	SOLVENT NAPHTHA (PETROLEUM), HEAVY AROM.	64742945	54.5			100	DISPERSANT	N
															SS 20	METHANOL	67561	6.1			60	SURFACTANT	Y
															SS 20	WATER	7732185	99			40	SURFACTANT	N
															ISA 100	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	170.6			50	IRON CONTROL	N
															ISA 100	WATER	7732185	170.6			50	IRON CONTROL	N
															SW 211	METHANOL	67561	24.5			60	CLAY STABILIZER	Y
															HCL	HYDROGEN CHLORIDE	7647010	6362.6			15	STIMULATION	Y
															HCL	WATER	732185	6362.6			85	STIMULATION	N
															MUD ACID	HYDROGEN CHLORIDE	7647010	13351			6	STIMULATION	Y
															MUD ACID	HYDROFLUORIC ACID	7664393	13351			3	STIMULATION	Y
															MUD ACID	WATER	7732185	13351			91	STIMULATION	N
															AMMONIUM CHLORIDE WATER	AMMONIUM CHLORIDE ((NH4)CL)	12125029	13344			3	DISPLACEMENT	N
															AMMONIUM CHLORIDE WATER	WATER	7732185	13344			97	DISPLACEMENT	N
															IONIC SURFACTANTS	Trade Secret							N
															AMIDE SURFACTANT								N
															AMIDE SURFACTANT, PHOPHATE ACID SALT								N
															AMIDE SURFACTANT, PHOSPHATE ESTER SALT								N
															AROMATIC AMINES								N
															AROMATIC AMINE, TOFA SALT								N
															NONYLPHENOL ETHOXYLATE								N
11/6/2013	11:10 AM	922	165309	E&B NATURAL RESOURCES MANAGEMENT CORP	TONY QUINTANILLA	WNF I 25	04-037-23042	LOS ANGELES	90745	33.805004	-118.274198	Oil	Well Rework	Acidizing	AI 205	METHANOL	67561	115.4			60	CORROSION INHIBITOR	Y
															AI205	ETHYL OCTYNOL	5477429	115.4			5	CORROSION INHIBITOR	N
															AI205	PROPYN-1-OL	107197	115.4			5	CORROSION INHIBITOR	N
															AI205	PINE OIL	8002093	115.4			5	CORROSION INHIBITOR	N
															AI205	ISOQUINOLINE	119653	115.4			5	CORROSION INHIBITOR	N
															AI205	QUINALDINE	91634	115.4			5	CORROSION INHIBITOR	N
															MISOL	METHANOL	67561	319.4			60	SOLVENT	Y
															MISOL	2-BUTOXY ETHANOL	111762	319.4			30	SOLVENT	Y
															XYLENE	XYLENE	1330207	1089			100	SOLVENT	Y
															XYLENE	ETHYLBENZENE	100414	1089			30	SOLVENT	Y
															XYLENE	TOLUENE	108883	1089			0.9	SOLVENT	Y
															SID 921	SOLVENT NAPHTHA (PETROLEUM), HEAVY AROM.	64742945	96.2			100	DISPERSANT	N
															SS 20	METHANOL	67561	99			60	SURFACTANT	Y
															SS 20	WATER	732185	99			40	SURFACTANT	N
															ISA 100	2-HYDROXY-1,2,3-PROPANETRICARBOXYLIC ACID	77929	268.8			50	IRON CONTROL	N
															ISA 100	WATER	7732185	268.8			50	IRON CONTROL	N
															SW 211	METHANOL	67561	33.7			60	CLAY STABILIZER	Y
															HCL	HYDROGEN CHLORIDE	7647010	11200.6			15	STIMULATION	Y
															HCL	WATER	732185	11200.6			85	STIMULATION	N
															MUD ACID	HYDROGEN CHLORIDE	7647010	18372.1			6	STIMULATION	Y
															MUD ACID	HYDROFLUORIC ACID	7664393	18372.1			3	STIMULATION	Y
															MUD ACID	WATER	7732185	18372.1			91	STIMULATION	N
															AMMONIUM CHLORIDE WATER	AMMONIUM CHLORIDE ((NH4)CL)	12125029	18348			3	DISPLACEMENT	N
															AMMONIUM CHLORIDE WATER	WATER	7732185	18348			97	DISPLACEMENT	N
															IONIC SURFACTANTS	Trade Secret							N
															AMIDE SURFACTANT								N
															AMIDE SURFACTANT, PHOPHATE ACID SALT								N
															AMIDE SURFACTANT, PHOSPHATE ESTER SALT								N
															AROMATIC AMINES								N
															AROMATIC AMINE, TOFA SALT								N
															NONYLPHENOL ETHOXYLATE								N

Otten & Joyce, LLP

Attorneys at Law

RECEIVED
APR 16 2014
COMMUNITY DEV. DEPT.

April 14, 2014

VIA E-MAIL & U.S. MAIL
Ken Robertson, Director
Community Development Department
1315 Valley Drive
Hermosa Beach, CA 90254
oilproject@hermosabch.org

Re: Comments on DEIR for the E&B Oil Development Project

Dear Mr. Robertson,

We respectfully submit the following comments on behalf of our client, Stop HB Oil, on the Draft Environmental Impact Report for the E&B Development Project ("Project"). Stop HB Oil also joins in the comments submitted by Heal the Bay, Surfrider Foundation, Sierra Club, Dr. Tom Williams, and Rick Pruetz regarding the Draft EIR. The below is no way meant to be exhaustive, but instead highlights some of Stop HB Oil's primary concerns as well as issues not fully addressed in other comment letters submitted in connection with the Project.

Improper Project Approval

On March 2, 2102, the City of Hermosa Beach entered into a settlement agreement with E&B Oil under which the E&B Oil would advance $17.5 million on behalf of the City towards the total settlement amount of $30 million (to Macpherson Oil Company), $14 million of which would be "forgiven" if the City issues the required drilling permits in connection with the Project.

Stop HB Oil contends the Project was "approved" by the City under CEQA by the signing of this settlement agreement prior to proper environmental review. As detailed below, a future condition requiring the preparation of an EIR does not save a project that is approved by an agency without the required CEQA review.

OTTJ-1

The lead agency is responsible for most decisions regarding the proper manner of complying with CEQA in considering and carrying out a project. (Pub Res C § 21067; 14 Cal Code Regs § 15050.) Here, the lead agency is the City of Hermosa Beach. "While an agency may adjust its rules so as to set '[t]he exact date of approval' [on a project], an agency has no discretion to define approval so as to make its commitment to a project precede the required preparation of an EIR." (*Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116, 132 citing Cal. Code Regs., tit. 14, § 15352, subd. (a).) Further, "a CEQA compliance condition can be a legitimate ingredient in a preliminary public-private agreement for exploration of a proposed project, but if the agreement, viewed in light of all the surrounding circumstances, commits the public agency as a practical matter to the project, the simple insertion of a CEQA compliance condition will not save the agreement from being considered an approval requiring prior environmental review. (*Id.*) Approval under CEQA occurs when the agency first exercises its discretion to execute a contract or grant financial

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assistance, not when the last such discretionary decision is made. An agency may "approve" a project for CEQA purposes even though further discretionary governmental decisions would be needed before any environmental change could occur. (*Id.* at 134.)

OTTJ-1 continued

Here, the City has a strong pecuniary and biased interest in the final approval of the Project. This is supported by the fact the City hired an outside Public Relations firm to assist it in obtaining final voter and public approval. The City, as the lead agency, is required to ensure proper environmental review under CEQA which Stop HB Oil contends is impossible as it already "approved" the Project for all intensive purposes in connection with the settlement agreement. Stop HB Oil contends an EIR should have been created in conjunction with the settlement agreement, and approved prior to its signing, and not put off until a later point in time. How can the City act as a neutral lead agency, as required by law, when it is facing forgiveness of a $14 million debt should the Project be approved?

Deferred Mitigation

Many of the EIR's mitigation measures are inadequate because they just require the Applicant to develop a plan for mitigation, without any performance standards for the mitigation called for by the plan. This violates CEQA Guidelines § 15126.4(a)(1)(B), which prohibits deferred mitigation. "Impermissible deferral of mitigation measures occurs when an EIR puts off analysis or orders a report without either setting standards or demonstrating how the impact can be mitigated in the manner described in the EIR." (*City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 915. *See also Communities for a Better Env't v. City of Richmond* (2010 184 Cal.App.4th 70, 95.)

Examples of mitigation measures in the EIR in which mitigation is impermissibly deferred are:

OTTJ-2

- AQ-5c: development and implementation of an Odor Minimization Plan. The EIR contains no criteria for the plan.
- BIO-2 and HWQ-2e: the Emergency Response Plan and Oil Spill Contingency Plan to be developed for use after an oil spill lack performance criteria. They should require cleanup to levels specified in the EIR.
- GEO-4a: there are no performance criteria for the proposed Subsidence Monitoring and Avoidance Program. How much subsidence is required to trigger the remediation measures specified in GEO-4b?

Of particular concern is the fact the Emergency Response Plan and Oil Spill Contingency Plan is to be created at some future time. Given the dangers of a spill, including dangers to outside communities and the ocean as a whole, the public (including all potential response agencies) must be given the opportunity to review this plan and assess its adequacy in connection with the EIR process.

Greenhouse Gases

<u>Inadequate Mitigation of Greenhouse Gases</u>

OTTJ-3

The EIR's approach to GHG mitigation is wrong as a matter of law. The EIR concludes that the Project's GHG impacts will be "less than significant with mitigation" (EIR at 4.2-54) and

therefore requires only offsets for the Project's GHG emissions above the SCAQMD threshold of significance of 10,000 MTCO2e/year. (*Ibid.*) The implied rule is that no further mitigation is required once the environmental impact is mitigated below the adopted threshold of significance. This rule is wrong. Once an effect is determined to be significant, CEQA requires the EIR to describe all feasible measures to mitigate the impact. (Pub. Res. Code § 21100(b)(3); CEQA Guidelines § 15126.4(a).) The purpose of mitigation is to minimize the effect, not just to reduce it below the threshold of significance. (*Ibid.*)

Mitigation Measure AQ-6 requires credits (offsets) to be purchased for emissions above 10,000 MTCO2e/year, but the EIR contains no demonstration that it would not be feasible to mitigate all of the Project's GHG emissions through the purchase of credits.

OTTJ-3 continued

Mitigation Measure AQ-6 also requires the submission of a GHG Reporting and Reduction Plan "detailing the measures to be implemented to achieve the required reductions." (EIR at p. 4.2-54.) But AQ-6 doesn't say exactly what reductions are required. It appears that it means "reductions to the 10,000 MTCO2e/year level" but doesn't state this. The "Residual Impacts" section at pp. 4.2-55-56 lists a number of measures that would reduce GHG's and could be "assisted by the Applicant," including, for example, planting trees. But MM AQ-6 doesn't itself mention this type of mitigation.

It is entirely feasible for the Applicant to completely mitigate, i.e. to a level of zero, not just to the level of 10,000 MTCO2e/year, all of its GHG effects. All feasible mitigation is required for significant environmental effects, such as this Project's GHG effects. (Pub. Res. Code § 21081; CEQA Guidelines § 15091.) Mitigation Measure AQ-6 should therefore be changed in the Final EIR to require mitigation to carbon neutrality, i.e. it should require the Applicant to purchase offsets or take some other GHG-reducing action to compensate for 100% of the Project's GHG emissions.

Failure to Include GHGs from Combustion of Oil Produced

The area under the chart on EIR page 2-75 indicates that about 40 million barrels of oil will be produced at the project during Phase 4. Using the EPA's figure of 0.43 MTCO2/barrel of crude oil, the oil produced in Phase 4 will result in 17 million tons of CO2. This accords with the EIR's statement that the crude oil produced from the Project would generate about 535,000 MTCO2e per year (EIR at p. 4.2-57.) But the EIR analysis at page 4.2-58 concludes the Project will generate only 43,841 MTCO2e. The difference is explained by the EIR's failure to include "End Use" among the Project's environmental effects. (EIR at pp. 4.2-56-57.)

OTTJ-4

The GHG emissions from burning the crude oil produced at the Project must be included in the environmental analysis because CEQA Guidelines § 15126.2(a) requires both direct and indirect significant effects of the project on the environment to be discussed and analyzed. "Indirect effects" are effects "caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable." (CEQA Guidelines 15358(a)(2).) The effects of burning the crude oil produced at the Project are foreseeable adverse physical environmental effects caused by the Project and therefore, based on the cited CEQA Guidelines sections, should be included in the EIR's significance analysis. Based on the thresholds of significance for GHG emissions adopted in the EIR, these impacts are significant.

The EIR's dismissal of "End Use" (i.e. GHG emissions caused by the combustion of the produced oil) on pages 4.2-56-57 explains that the EIR's GHG analysis does not include end use because, if this oil is not produced, it will be supplied for use by someone else. But if supply were significantly constrained, prices would increase, and consumption would decline. The fact is that, if the oil to be produced at the Project were not extracted, it would not be burned, and 17 million tons of CO2e would not be added to the atmosphere. Under the definitions in the CEQA Guidelines, this type of effect is a foreseeable consequence of the oil production and, thus, an "indirect effect" of the Project. OTTJ-4 continued

Failure to Distinguish Proposed from Agreed Mitigation Measures

CEQA Guidelines § 15126.4(a)(1)(A) requires the EIR to distinguish between mitigation measures proposed by the Applicant and measures proposed by the lead, responsible, or trustee agencies that the lead agency determines could reasonably be expected to reduce environmental impacts. No such distinction is noted for any of the mitigation measures in the EIR. OTTJ-5

Cumulative Impacts

The EIR's cumulative impact analysis in Section 3 fails to comply with CEQA requirements by (1) improperly limiting the geographical scope of the analysis, and (2) improperly focusing on energy projects. The second of these two errors is signaled by the EIR's title for this section: "Cumulative Projects."

The proper geographic scope for a cumulative-impacts analysis is the "area which will be affected by a proposed project," which is how CEQA defines the "environment." (Pub. Res. Code § 21060.5; *see also Muzzy Ranch Co. v. Solano County Airport Land Use Com'n* (2007) 41 Cal.4th 372, 387-88.) The appropriate geographic scope depends on the type of impact. (CEQA Guidelines § 15130(b)(2).) As the EIR notes, for GHG emissions, the appropriate scope is global. For air-quality impacts, the proper scope is the air basin. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 721.) For water-quality impacts, a watershed analysis might be called for. . (CEQA Guidelines § 15130(b)(2).) For each type of impact, the EIR should set forth the geographic scope chosen for the cumulative-impact analysis of that impact, and justify the choice based on evidence in the record. (*Ebbetts Pass Forest Watch v. Department of Forestry & Fire Protection* (2004) 123 Cal.App.4th 1331, 1352.) OTTJ-6

In this case, the EIR Section 3 limits the scope of cumulative-impacts analysis for the entire EIR to the cities of Hermosa Beach, Redondo Beach, and Torrance. For certain types of effects, this geographical scope may be appropriate, but for others, e.g. air quality and GHGs, it is not. Section 3 of the EIR also limits the cumulative-impacts analysis to energy projects. This violates CEQA. An EIR's analysis of cumulative impacts should consider all sources of related impacts, not just similar sources or projects. (CEQA Guidelines § 15130(1)(1); *City of Long Beach v. Los Angeles Unified Sch. Dist.* (2009) 176 Cal.App.4th 889, 907.)

CEQA allows two types of cumulative-impacts analysis: the list-of-projects approach and the summary-of-projections method. (CEQA Guidelines § 15130(b)(1).) The analysis in EIR Section 3 appears to use a list-of-projects approach, but the projects listed are woefully inadequate for some impacts. OTTJ-7

For example, for air quality, all types of industrial development projects should be included. The air-quality-specific cumulative-impacts analysis on page 4.2-68 of the EIR states that the other energy projects used in the cumulative analysis are too far apart to have a cumulative effect, there would be no cumulative air-quality impacts. To do a proper cumulative-impacts analysis, the EIR must consider other types of projects, as well as the existing air quality in the area. This same problem afflicts virtually all the other cumulative-impacts analyses.

OTTJ-7 continued

Very truly yours,

OTTEN & JOYCE, LLP

Victor J. Otten, Esq.

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Palos Verdes - South Bay Group / Angeles Chapter

April 14, 2014

Mr. Ken Robertson
Community Development Dept.
1315 Valley Drive
Hermosa Beach, CA 90254
Via email: oilproject@hermosabch.org

Re: Comments on E&B Oil Drilling and Production Project Draft Environmental Impact Report (DEIR)

Dear Mr. Robertson:

The Sierra Club is a non-profit '501(c)(4)' organization dedicated to the protection and restoration of the natural and human environment. The Sierra Club has over two million members and supporters and, within the Club, the Angeles Chapter and the Palos Verdes-South Bay Regional Group of the Sierra Club, which include the City of Hermosa Beach, have approximately 35,000 and 3,500 members, respectively.

The Palos Verdes-South Bay Regional Group of the Sierra Club is commenting herein regarding the DEIR for the E&B oil and gas drilling and production project proposed to be operated on a 1.3 acre lot in your densely populated beach city. The DEIR aptly indicates that the project will have many significant, unavoidable impacts, even with mitigation, and that impacts in several areas are rendered particularly significant and unavoidable by virtue of the small size of the proposed drill site and its proximity to residences and public spaces, the beach, and the marine environment:

- " Proposed Oil Project activities during all phases may generate significant noise, odor and visual impacts that would be incompatible with . . . adjacent land uses. Mitigation measures are proposed to reduce these impacts . . . but impacts would remain significant and unavoidable." p. ES-9.
- "[D]ue to the close proximity of neighbors, odor impacts . . . would be a significant impact" p. ES-8. "[Despite mitigation efforts] impacts would remain significant and unavoidable." p. ES-8. SIER-1
- "[A] rupture or leak from oil Pipelines has the potential to result in a substantial adverse effect on native species and habitats, sensitive species, and biologically important habitats associated with the Pacific Ocean." p. 4. 3-20.
- "Impacts on resident biota could be short- to long-term, depending on the amount of oil spilled, environmental conditions at the time, containment and cleanup measures taken, and length of time for habitat recovery." p. 4.3-21.
- "[Despite mitigation efforts], impacts to sensitive biological resources . . . would remain significant and unavoidable." p. ES-9.
- "[Regarding hydrology,] mitigation measures would reduce the frequency or severity of a spill reaching the ocean, but impacts would remain significant and unavoidable." p. ES-9.

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That is what the DEIR gets right. We found other areas in the DEIR, however, that require correction and/or further disclosure. Our comments appear below in bold italic font following quotations, which appear in regular font, lifted from the indicated pages and sections of the DEIR.

Page ES-1 Executive Summary.
Given that the voters are the decision makers for this proposed project, it is essential that the Executive Summary in the Final EIR present potential impacts of the proposed project clearly, concisely, and completely. This is necessary because the body of the report is far too extensive and detailed for use by most readers. In many cases, text in the existing Executive Summary mentions degradations and potentially serious hazards for Hermosa Beach. A number of significant aspects of the proposed project are not included in the Executive Summary, however.

For example, we found nothing in the Executive Summary regarding the potential for the 87-foot drill rig, and all the attendant visual, noise, and transportation impacts, to be installed and reinstalled on the drill site up to 5 times per year during the 30-year operations phase, as is described at Section 2.4.5, page 2-59 and Section 4.1.5.6, page 4.1-91. This impact is in addition to the workover rig that may be onsite 90 days per year. SIER-2
"Applicant estimates that up to 30 re-drills could occur over the life of the Proposed Oil Project, with up to five re-drills occurring during any given year. In the event that a re-drill would occur, noise attenuation design features, including the use of a 32-foot sound attenuation wall and acoustical covers, would be implemented on the Project Site." (Section 2.4.5, page 2-59)
"Each re-drill would include the re-installation of the 32-foot sound wall. . . . The 32-foot sound attenuation wall setup is estimated at 3 weeks, the drill rig setup time is 2 weeks, drilling time is typically 30 days (~4 weeks) per well, drill take-down is 2 weeks, and wall take down is 2 weeks. This timeframe totals to approximately 7 months per re-drill if done in groups of 5, or 3 months per re-drill if done individually." (Section 4.1.5.6, page 4.1-91) ***We think the voters would want to read about these very long term impacts in the Executive Summary.***

Moreover, while usage of the term "significant" may at times have a technical basis, it is not always clear when that is the case and when the term's usage reflects more common meaning. Readers should be aware, for example, that factors which are considered technically insignificant for the entire LA basin may represent highly annoying conditions for the local environment. Highly undesirable changes to the local residents can be unremarkable in other industrial areas, thus they are judged "not significant" in the DEIR. This proposed project replaces low intensity industrial activity in a quiet and relatively undisturbed area, with industrial activity at high levels in a very confined area, for three years, and with somewhat lower intensity for over 30 years. Some of the impacts may be considered insignificant in an industrial area, but they are highly significant in the proposed project location. SIER-3

Page ES-2. Executive Summary--Project Background: ". . . in 1998, the City Council voted to stop the oil project based on safety concerns."
We would expect to see some discussion regarding whether anything has changed since the City Council's 1998 decision that would alleviate safety concerns. Has the drilling and production site been enlarged? Is the public any farther from the operations and the attendant risks? SIER-4

Page ES-2 Executive Summary--Description of Proposed Oil Project: "Project Site" ***is described as*** "a 1.3 acre site located in the City of Hermosa Beach . . . located at 555 6th Street, bounded on the east by Valley Drive and on the south by 6th Street, approximately seven blocks east of the beach and the Pacific Ocean." SIER-5

The lease properly defines that location as the drill site. Oil and gas pipelines constructed and used by the proposed project would extend from the drill site to area refineries, yet these areas are not included as part of the Project Site. Moreover, the tidelands and uplands through which wells will be drilled are not included in the Project Site.

Failure to properly define the project site impacts other disclosures. For example, if the project site were to include wells and pipelines, then there may need to be a water assessment.

SIER-5 continued

Moreover, the areas impacted by the proposed project that are not included in the definition of "Project Site" are not well-delineated in the DEIR. The Oil & Gas Lease, the terms of which ostensibly are the basis for the "deal" between the City of Hermosa Beach and the applicant, holds in recitals that the Uplands Lease, "which provided for the use of the existing City Maintenance Yard . . . excepting existing structures, both above and below ground, which would remain available for City use including ingress and egress) as the drill site." ***(Recital C) The Oil & Gas Lease further recites that*** "Lessee has obtained other oil and gas leases from private land owners and that the City and Lessee intend to also use the Drill Site to drill wells into other adjacent lands not owned by the City." ***(Recital E) It's important that the DEIR discuss discrepancies between the Oil & Gas Lease and the proposed project as otherwise described in the DEIR as this will be important for readers/voters to consider in making their decisions. For example, Section 1d of the Oil & Gas Lease seems to contemplate that there may come a time when the leased lands cease to produce oil and gas, but the "adjacent lands" continue to produce oil and gas and Lessee has the right to continue operations from the drill site. The DEIR should discuss adjacent lands, providing maps of these lands and the uplands that are considered "leased lands". Explain what are the ramifications of this for Hermosa Beach, as it seems that under these circumstances the City may have the burden and risks of the applicant's operations without the benefits.***

SIER-6

Page ES-6 and 2-4. 2.2. Project Objectives: . . . Provide an oil and gas development project on the Project Site . . . in order to provide a project that would be safe and would meet the applicable environmental requirements; Conduct construction and drilling activities on the Project Site . . . to minimize the potential impacts on the adjacent community and the environment;
These "objectives" are not able to be met by the proposed project at the proposed location. As indicated in Section 5.1.6 of the DEIR, 'CEQA states that the EIR need examine in detail only the alternatives that the lead agency determines could ". . .feasibly attain most of the basic objectives of the Project".' We would expect some discussion of the fact that several of the basic objectives proclaimed for the proposed project itself are unable to be met by the terms of the proposed project.

SIER-7

Page ES-7. Table ES.2 Proposed Project – "Significant Unavoidable Impacts Summary".
This summary table will be extremely important to voters approving or disapproving the proposed project and as it stands is highly misleading in several respects. Re-drilling can take place throughout the operation phase and it is misleading to include re-drilling under construction and drilling. Please correct that and the following errors:

Aesthetics (yes/no*) *During Workovers significant unavoidable impacts would occur for aesthetics.
Change to (yes/yes). Place the emphasis on informing the reader that there would be significant unavoidable impacts to aesthetics during the operations phase. The "yes" can then have an asterisk indicating the maximum number of days that the workover rig and

SIER-8

the re-drill rig might be in place, which itself is quite significant. Indeed, the column referencing aesthetic impacts refers to re-drilling, which will go on through the duration of operations and it is misleading to include that activity with the earlier phases and not with the long-term operations phase.

Energy (no/no)
Change to (yes/yes). Coastal Act policy "Section 30253 - states that new development shall: minimize risks to life and property; assure structural stability; be consistent with AQMD requirements; minimize energy consumption". Contrary to this policy, the proposed project involves consumption of massive quantities of energy. New energy consumption will include fabrication and transport of large amounts of steel pipe; large amounts of fuel are required for transportation of equipment and materials to the proposed project; energy intensive production of large amounts of cement is involved in the proposed project; much energy will be consumed by drilling operations; and subsequently, large amounts of energy will be needed to pump and transport oil and gas produced by the proposed project. The produced oil and gas will be combusted, adding to atmospheric heat burden, and the associated green house gas emissions will surpass this contribution. Therefore there are significant energy impacts, both during and after construction.

SIER-8 continued

Fire Protection and Emergency Response (no/no)
Change to (yes/yes). The public needs to understand and thoroughly evaluate the proposed project overall, equipment, and infrastructure for safety and potential impacts to human health both when working properly and in the event of system failure. As the proposed project is currently structured there would be a potentially significant impact if, for example, the drill rig or workover rig or the boom to install these rigs were to topple over, simply because of the small size of the drill site and the proximity thereof to the public. Likewise, because of the small size of the drill site and the project plan to include a flare, the risk of fire is substantially increased and the impact to the public should be described in the DEIR as significant and unavoidable.

Geology (yes/no)
Change to (yes/yes). Seismicity issues and the conflict between increased injection to reduce subsidence versus increased injection that increases seismicity renders this proposed project's impacts in this regard significant and unavoidable.

Noise drilling (yes/no)
Change to (yes/yes). The DEIR text indicates that drilling will go on for the duration of the project, due to re-drilling activity that will occur during the operations phase. It is misleading to characterize "re-drilling activity" in the drilling phase as opposed to in the operations phase in this table.

Page ES-8. Aesthetics.
Again, there is no mention of the drill rig being on site for re-drilling during a potentially large part of the operations phase.

SIER-9

Page ES-8. Air Quality.
The use of odor masking materials, chemicals that add other odors, is not likely to be effective in eliminating odors. Moreover, the underlying chemical compounds causing odors will still be present. This must be disclosed.

SIER-10

Page ES-9. Biology. The fully enclosed drain systems proposed by the Applicant would retain any spills at the Project Site on-site, therefore, potential spills at the Project site would not produce a significant impact.
This conclusion is not supported by the body of the DEIR and must be corrected. The DEIR contemplates spills in dirt that must be cleaned up. Also, for some period, the surface of the Project Site will be composed of crushed aggregate, rather than an impervious surface, and it appears that the final drainage system will not be completed until Phase 3. (p. 4.7-16) Moreover, Applicant cannot guarantee that the drain system proposed will retain spills onsite and the DEIR provides several possible scenarios, including human error and catastrophic events. Regarding the latter, the DEIR states, "This system could fail with a catastrophic scenario, such as a major earthquake causing failure of the retaining walls." (p.4.8-80) SIER-11

Page ES-10 11. Safety and Risk of Upset. Impacts when drilling is not occurring would be less than significant with mitigation.
This summary section does not provide adequate disclosure. In particular, this section should disclose how long drilling could occur throughout the life of the proposed project (which itself is significant), as this will be important to readers when judging the overall significance of the risk of upset. SIER-12

Page ES-14. Table ES.2 Proposed Project Versus Alternatives - Significant Unavoidable Impacts Only.
This table numbering is confusing given that there is another Table ES.2 Proposed Project Significant Unavoidable Impacts Summary on page ES-7. Amend this table to reflect the changes to the categories with significant unavoidable impacts identified above and to include re-drilling under Operations. SIER-13

Page ES-15. Table ES 3 Proposed Project Versus Project Component Alternatives - Significant Unavoidable Impacts Only.
Amend this table to reflect the changes to the categories with significant unavoidable impacts identified above and to include re-drilling under Operations. SIER-14

Pages ES-17- ES-40: Table ES 2 Summary of Environmental Impacts for the Proposed Project.
This table numbering is confusing given that there is another Table ES.2 Proposed Project Significant Unavoidable Impacts Summary on page ES-7 and yet another Table ES.2 Proposed Project Versus Alternatives on page ES-14. SIER-15

AE.1 states that the proposed project "during the drilling phases or with a workover rig present has the potential to cause a substantial degradation . . . " While we support this statement, we believe it would be more revealing to the reader if it were to indicate 1) that the workover rig may be present up to 90 days per year for the duration of the project, because that is a significant part--25%--of the operations period of the project, and 2) that the drill rig may be present for 150 days per year, in addition to the initial drilling phases, for re-drilling, for a total of 240 days, or 66% of any given year of operations. SIER-16

Throughout this table each and every reference to a mitigation must be mandatory. Therefore change all references to actions that "must" or "should" be taken to indicate that such actions "shall" be taken. See, e.g., Section 4.2 Air Quality and GHG's AQ1 ***referencing trucks hauling dirt "are to be tarped"--change to "shall be tarped"; "limit onsite truck idling to less than 5 minutes"--change to "there shall be no onsite truck idling for more than 5 minutes". Furthermore, in this latter instance, specify a time frame for such limitation to minimize the fumes, noise, and odor impacts to the public. For all mitigation measures spell out specific consequences, penalties, and fines for failure to*** SIER-17

adhere to the mitigation mandates. Thus, for example, regarding the mitigation measure identified in NV-10c "No noise-producing activity allowed in the temporary City Yard before 8 A.M. or after 7 P.M.," ***identify the consequence or penalty for violation.***

Page ES-21. Table ES.2 Summary of Environmental Impacts for the Proposed Project, AQ 3a: The Applicant shall limit flaring to a total of 5 hours per day at the full flaring capacity (or equivalent) during all emergency or routine flaring events in order to ensure that NOx emissions are reduced below the thresholds.
Flaring 5 hours per day, and all the environmental and health impacts attendant to that, as well as the wastefulness of burning this non-renewable resource, is excessive and significant. SIER-18

Page ES-23. AQ 7A: All workover rigs shall utilize electric drive/sources and shall not utilize diesel generators or engines.
Amend the body of the DEIR to reflect this mitigation measure, as there are references in the DEIR to the use of diesel powered workover rigs. SIER-19

Page ES-24. Bio-2. The Applicant shall submit for City approval and shall implement an Emergency Response Plan that would address protection of biological resources and possible re-vegetation of any areas disturbed during an oil spill or cleanup activities.
Add a timeframe for the above mitigation measure that ensures voters will have time to analyze such plan prior to the vote, ideally prior to release of the Final EIR. SIER-20

Page ES-31. SR-1: The Applicant shall ensure that no spark producing equipment is located within the crude oil spill containment areas, or that spark producing equipment is sufficiently isolated from the crude oil containment area, in order to reduce the potential for crude oil fires.
Reference to "spill containment areas" as well as providing an alternative that permits placing the spark producing equipment in a location sufficiently isolated to reduce potential for fires is vague and inadequate. Specific requirements for placement in terms of distance from spark producing equipment must be provided. SIER-21

Page ES-32. HWQ.2a: Spills in dirt areas shall be immediately contained.
Add after "dirt": "and gravel" SIER-22

Page ES-33. HWQ-2h: . . .the devices shall be inspected by the Applicant to ensure that the "trap" is operational before any storm events.
Add an appropriately tight timeframe for such inspection. SIER-23

Page ES-36. NV-8b No noise-producing activity allowed in the City Yard before 8AM or after 7PM on weekdays and anytime on Saturdays and Sundays except during emergencies.
Clarify that the above reference is to emergencies that impact the public or have the potential to do so, not because the applicant has an emergency. SIER-24

Page ES-37. TR-1a For Phases 1-3, the Applicant shall fund. . . an afternoon crossing guard to be stationed at the Project Site area. . . . Alternately, the Applicant shall ensure that trucks do not travel to and from the Project Site unless school is in session.
Modify this mitigation measure to provide for the best alternative in the School District's discretion rather than leaving it up to the Applicant to decide what is the best and safest mitigation under the circumstances. SIER-25

Page 2-1. 2.0 Project Description: Applicant is proposing the E&B Oil Drilling & Development Project (Proposed Oil Project) on a 1.3-acre site located in the City of Hermosa Beach (City). SIER-26

The site for the Proposed Oil Project (Project Site), as shown in Figure 2.1, would be located at 555 6th Street.
The description of the Project Site is actually just the drill site and misrepresents the scope of the project area and the potential impacts thereto, as explained above.

SIER-26 continued

Page 2-4. 2.2. Proposed Project Objectives: . . . Provide an oil and gas development project on the Project Site . . . in order to provide a project that would be safe and would meet the applicable environmental requirements; Conduct construction and drilling activities on the Project Site . . . to minimize the potential impacts on the adjacent community and the environment;
These "objectives" are not able to be met by the proposed project at the proposed location. As indicated in Section 5.1.6 of the DEIR, 'CEQA states that the EIR need examine in detail only the alternatives that the lead agency determines could ". . .feasibly attain most of the basic objectives of the Project".' We would expect some discussion of the fact that, setting aside possible alternatives, several of the basic objectives proclaimed for the project itself are unable to be met by the terms of the proposed project.

SIER-27

Page 2-6. Figure 2.2 Historical Wells Drilled in the Los Angeles Basin.
Overlay this map with the map at 4.7-2. Figure 4.7-1 Regional Fault Map ***to reveal to the voting public the proximity and alignment of well drilling activities and faults in the LA basin and cite and describe any studies evaluating the interplay between these wells and the fault lines.***

SIER-28

Page 2-10. 2.4 Proposed Oil Project Phases: Prior to the initiation of each phase of the Proposed Oil Project, it would be required that plans be submitted by the Applicant to the City and other permitting authorities for review and approval.
Refer to and describe the Section 4.6 of the Settlement Agreement that requires the City to grant permits, franchise and other rights and discuss the conflict between the City's duty to comply with such settlement terms and the City's public safety obligations to its residents.

SIER-29

Page 2-11. Table 2.2 Proposed Oil Project Design Parameters: Water Use During Construction and Well Re-Drills.
Include in this table where water quantities are referenced whether such water will be potable or reclaimed. Where the table references well re-drills, specify any water, electrical and/or fuel use for well workovers and re-drills.

SIER-30

Page 2-18. 2.4.1.2 Phase 1 Site Preparation Detailed Schedule: The Project-related truck trips would be limited to 18 round trips per day.
Spell out that 18 round trips per day means 36 trucks over 6 hours, which means one every 10 minutes and clarify whether this description refers only to truck trips during Phase 1 or to other phases as well. In particular, since re-drilling may occur throughout the life of the proposed project, and the infrastructure for such re-drilling will need to be repeatedly re-installed, torn down, then re-installed, will the same noise and traffic impacts occur throughout the life of the proposed project as are represented to occur during the construction and drilling phases of the proposed project?

SIER-31

Page 2-20. 2.4.2.1 Phase 2 Site Geology and Drilling Objectives: The Proposed Oil Project would utilize directional drilling techniques to access the crude oil and gas reserves in the tidelands (offshore) and uplands (offshore) in the portions of the Torrance Oil Field within the City's jurisdiction.
Confirm that the reference to "uplands (offshore)" is an error and correct it in the FEIR.

SIER-32

Page 2-23. Photos of automated drilling rig and ground flare.
These graphics are misleading given the size of the drill site. Provide graphics that overlay these example on other equipment, wells, tanks, etc, and thereby indicate where the ground flare and drilling rig would be relative thereto.

SIER-33

Page 2-26. Figure 2.8 Applicant Proposed Oil Project Lease Areas Cross Section.
Provide cross-section graphic of wells drilled in upland area as well as this graphic of wells in the tidelands and describe differences in risks associated therewith.

SIER-34

Page 2-29. Project Description continued: The initial mobilization and rigging up operation is expected to last about seven to ten working days.
Explain whether or not re-drill operation set up also takes this long each time there is a re-drill in the operations phase.

SIER-35

Page 2-29. Project Description continued: In order to drill downwards through soil and rock, the drill bit requires rotation and downward force, which is provided by the weight of thick-walled pipe on top of the drill bit.
Describe any surface vibration associated with this step and how far from the drilling activity would such vibration migrate.

SIER-36

Page 2-29. Project Description continued: Cement is then pumped down the inside of the casing, around the bottom of the hole, and up the annulus between the casing and the well bore. When the cement hardens, it ensures that the entire casing and well bore are encased in cement, protecting the fresh water aquifers and surrounding subsurface areas from the production fluids inside of the casing.
Require 100% cementation of the annular space.

SIER-37

Page 2-31. Project Description continued: Table 2.5 shows a list of chemicals that would be used during drilling operations. The amounts listed are the estimated quantities consumed per well drilled. . . . Drilling each well would require approximately 130,000 gallons (or 0.4 acre-feet) of water.
Do these chemical and water quantities apply to re-drilled wells also? If so, make this clear in the table, the project description, and the summary.

SIER-38

Page 2-33. Project Description continued: . . . limits within the delivery schedule. . .
Specify the limits.

SIER-39

Page 2-34. Project Description continued--Gas Treatment System: A vapor recovery system attached to the temporary Baker tanks would be utilized to capture vapors and to direct them to a vapor recovery compressor and to the gas system and flare.
What is the frequency and duration of flaring? What are the visual, auditory, olfactory, and other impacts of flaring? What are the impacts on recreation nearby, e.g. kite flying? What are the impacts on wildlife in the vicinity, e.g. sea and shore birds, raptors, migratory birds, etc.? What design features are incorporated into the proposed project to safely minimize flaring?

SIER-40

Page 2-37. Table 2.6 Phase 2 Testing Chemicals: Typical chemicals utilized in the temporary production facility are shown in Table 2.6.
Identify other chemicals, either typical or not, that may be used. Then explain where such chemicals end up after the process.

SIER-41

Page 2-37. Project Description continued--Noise abatement: The exhaust and intake of the diesel engine (if used on the workover rig) would be muffled to reduce noise to an acceptable limit.
Define what would be "an acceptable limit" and explain why the discrepancy exists between this description of the proposed project and the mitigation measure that indicates the workover rig will not use diesel.

SIER-42

Page 2-38. Project Description continued--Noise abatement: Each well pump would produce a sound power level no greater than 83 dBA. This may be achieved by fitting sound attenuating enclosures that provide an insertion loss of at least 15 dB; The produced oil pumps, produced water pumps, water booster pumps and variable frequency drive electrical (VFD) cabinets would produce a sound power level no greater than 77 dBA; The water injection pumps would produce a sound power level no greater than 83 dBA; The vapor recovery compressors would produce a sound power level no greater than 83 dBA; and The cooler for the compressors would produce a sound power level no greater than 85 dBA.
Identify common sounds that typically are comparable to the noise levels of the sounds described above; for example, a telephone dial tone is typically about 80 dB. Identify which of these noise-producing pumps and compressors would be running 24/7 during 24/7 drilling, which, contrary to what is represented in parts of the DEIR, may occur throughout the life of the proposed project.

SIER-43

Page 2-38. Decision Not to Proceed – Abandonment
Confirm that any wells would be properly abandoned, capped to comply with DOGGR regulations at a minimum. Require 100% cementation of all abandoned wells.

SIER-44

Page 2-39. Table 2.8 Phase 2 Vehicle Trip Summary footnotes: Trucks are 3+ axle or greater or trucks with trailers.
Limit truck size to 3 axle. Indicate what materials and equipment require use of 3 axle trucks or greater and/or trailers and which materials and equipment are transported by such large trucks and trailers for cost savings, i.e., it is feasible to use smaller trucks for their transport.

SIER-45

Page 2-41. 2.4.3.1 Phase 3 Onsite Construction--Implementation of Remedial Action Plan.
Require that the remediation required by the RAP be completed before Phase 2 to minimize environmental and health hazards.

SIER-46

Page 2-45. Table 2.9 Phase 3 and 4 Processing Equipment Listing: Flare/Gas Combuster 10 foot diameter by 22 feet high.
Modify the project to minimize flaring for the environmental, health, and safety benefits.

SIER-47

Page 2-47. Gas Pipeline Route: The pipeline would be a loop system that allows for the gas to be returned to the Project Site for further treatment in the event that the produced gas does not meet SCG standards.
This potential return trip of gas through the pipeline seems like an unnecessary increase in safety risks, due to tripling the length of transport of gas, and the proposed project should be modified to have the gas tested to SCG standards at the drill site.

SIER-48

The gas line is designed for a maximum operating pressure of 465 pounds per square inch gauge (psig), but would typically operate at approximately 225 psig of pressure.
Presumably operating at the lower pressure is safer and therefore such operation should be mandatory. If it is not made mandatory explain why not.

SIER-49

If for some reason the first portion of the new pipeline could not be located within the existing SCG easement within the SCE Utility Corridor between N. Francisca Avenue and Pacific Coast Highway, it would [follow a different route].
Explain why one route might not be possible and why the route can't be nailed down before voters make their decision.

SIER-50

Page 2-48. Oil Pipeline Route: The selection of the pipeline route would occur after Project approval. . . . The oil line would be designed for a maximum operating pressure of approximately 500 psig, but would typically operate at approximately 100 to 200 psig of pressure.
Explain why one route might not be possible and why the route can't be nailed down before voters make their decision. Presumably operating at the lower pressure is safer and therefore such operation should be mandatory. If it is not made mandatory explain why not.

SIER-51

Page 2-56. 2.4.4 Phase 4 Development and Operations: The purpose of Phase 4 would be to maximize oil and gas recovery from the reservoirs by drilling additional wells and operating the permanent facility. . . The drill rig and its associated equipment would require the same setup as described under Section 2.4.2, Phase 2 Drilling and Testing.
Page 2-57. Table 2.10 Phase 3 Project Schedule Table.
The Phase 3 Project Schedule Table is located within the discussion of Phase 4 of the project, contributing to confusion rather than facilitating the readers' understanding of the project.

SIER-52

Page 2-58. Table 2.11 Phase 3 Vehicle Trip Summary footnotes: Trucks are 3+ axle or greater or trucks with trailers.
Limit truck size to 3 axle or explain why this is not feasible. Also, the Phase 3 Vehicle Trip Summary Table is located within the discussion of Phase 4 of the project contributing to confusion rather than facilitating the readers' understanding of the proposed project. Moreover, the text of 2.4.3.5 Phase 3 Personnel and Equipment Requirements ***indicates that*** "The vehicles, equipment, and employees estimated for Phase 3 are provided in Table 2.11." ***There is no information regarding employees estimated for Phase 3 in Table 2.11.***

SIER-53

Page 2-59. 2.4.5 Phase 4 Drill Remaining Wells: The drilling of the remaining oil wells and water injection wells, up to a total of 30 oil wells and four water injection wells, would involve the same activities as described for Phase 2.
The description fails to include adequate information for the reader to understand this phase of the proposed project, including the size of the drill rig. In addition, there is no information regarding consequences for phases of the proposed project taking longer than represented by the Applicant, particularly phases that impact the public and the environment most adversely, whether in terms of aesthetics, noise, odors, nuisance, or otherwise.

SIER-54

Page 2-59. 2.4.5 Phase 4 Drill Remaining Wells: Drilling each well would require approximately 130,000 gallons (or 0.4 acre-feet) of water. The water would be reclaimed water provided by the West Basin Municipal Water District conveyed via extension of an existing waterline serving the Greenbelt east of Valley Drive.
Require that the water is treated to a level that permits use underground, not just treated for use in landscaping.

SIER-55

Page 2-59. 2.4.5 Phase 4 Drill Remaining Wells: Although most of the mud would be reused on subsequent wells, some mud would be removed from the Project Site and disposed at

SIER-56

Anterra's Oxnard Licensed Class 2 Disposal Facility or a similar facility. All other waste generated by the test drilling would be transported by truck to Clean Harbors Buttonwillow Landfill or a similar facility closer to the Project Site.
Provide information regarding the amount of waste anticipated to be produced by the project. Present the information in a table that indicates quantities of each type of waste, where such waste will be deposited, and how impacted such waste disposal sites are at present, what the anticipated regional needs will be for such sites in the future, particularly in terms of waste generated by activity that is a necessary part of functioning in an urban environment rather than an activity that is not, such as the proposed project. SIER-56 continued

Page 2-59. 2.4.5 Phase 4 Drill Remaining Wells--Re-Drilling of Wells: Re-drilling of a well occurs if production from a well declines substantially or if problems exist with the well, affecting the well's efficiency or viability. The same activities would be required for re-drills as for initial drilling, except that conductor piping would not have to be installed again, as the same conductor piping would be used for the re-drill. Although the Applicant indicates no anticipation for the re-drilling of wells, the activity may be required under extraordinary circumstances. Depending on the circumstances, a workover rig might be able to be used to complete a re-drill. However, for the purpose of providing a worst-case analysis, the Applicant estimates that up to 30 re-drills could occur over the life of the Proposed Oil Project, with up to five re-drills occurring during any given year. In the event that
a re-drill would occur, noise attenuation design features, including the use of a 32-foot sound attenuation wall and acoustical covers, would be implemented on the Project Site.
Provide textual description as well as a table showing how the re-drilling worst case scenario would alter the proposed project impacts in terms of noise, odor, aesthetics, energy, environment, etc. In particular, confirm whether each of these re-drills would take the same time as the original drilling, that is, 30 days, which means potentially 150 days in a given year if the applicant is permitted 5 re-drills in a given year. And confirm that this means the 32 foot wall could be re-installed up to 30 times, or once a year (or more in a given year), over the life of the proposed project. SIER-57

Page 2-61. 2.4.5.1 Phase 4 Processing and Operations: During the ongoing operation of the Proposed Oil Project, active wells would require periodic routine service. These activities could include the replacement of down-hole pumps, piping, and cleaning. These maintenance activities would typically be accomplished by utilizing a service rig, or "workover" rig, approximately 110 feet high. The workover rig would be operated on the Project Site a maximum of 90 days per year. The workover rig would be operated between the hours of 8:00 a.m. and 6:00 p.m. on weekdays only (excluding holidays).
The DEIR does not provide the information regarding the workover rig that we requested in the Sierra Club letter, August 12, 2013, commenting on the Notice of Proposal for the E&B oil project. We asked for clarification regarding whether the workover rig would be stored on site or transported; and whether the 90 days of operation per year would be expected to be consecutive or intermittent, meaning more truck travel. In particular we said "The NOP indicates that certain "maintenance activities would typically be accomplished by utilizing a service rig or "workover" rig" and that such rig may operate up to 90 days per year." In the project description, describe the dimensions of the workover rig and what maintenance activities would require its use; whether it would be stored on site or transported; and whether the days of operation would be expected to be consecutive or intermittent. We reiterate our request for the benefit of the public looking for a complete picture of the proposed project and its impacts. SIER-58

Page 2-61. 2.4.5.1 Phase 4 Processing and Operations--Gas Treatment System: SulfaScrub is a non-regenerative batch process that requires replacement of the SulfaScrub materials SIER-59

periodically. . . . Propane would be utilized as a refrigerant in the low temperature separation system.
Describe the waste generation and disposal aspects of the SulfaScrub process, as well as environmental impacts. Describe the risks associated with propane use, in particular in the vicinity of potential spark and/or flare activity.

SIER-59 continued

Page 2-65. 2.4.5.1 Phase 4 Processing and Operations--Vapor Recovery System: Gas from all tanks and vessels not part of the gas processing system (the oil and water processing tanks and vessels), as well as pressure relief valves, would be gathered through pipes into a closed-system and directed to a vapor recovery compressor unit. The vapor recovery compressor would compress the gas and then add it to the gas in the gas processing system (from the three-phase separator, etc), where it would be processed and sent via pipeline to the metering station and the SCG system.
Explain what vapors are processed as described above and what vapors are flared. Require that the maximum feasible quantity of vapor be processed as described above in order to meet the project objective of maximizing gas production and to minimize environmental impacts and waste.

SIER-60

Page 2-65. 2.4.5.1 Phase 4 Processing and Operations--Waste: Waste would be generated as part of the facility operations and the production process. Regular waste would include typical municipal trash such as paper, trash bags, food, and cups. Process waste would include generic oil field waste such as sandy oil (from the tank bottoms), spent H2S scavenger, spent filters, oily cloths (i.e., rags), gloves and Tyvek® suits. Intermittently the facility could generate hazardous waste. These wastes could include empty drums, rinse water, painting supplies, spilled chemicals, spent media, and hydraulic fluids. The Applicant indicates that the Project Site would have an Environmental Protection Agency (EPA) and Department of Toxic Substances Control (DTSC) Identification Number.
Provide information regarding the amount of waste anticipated to be produced by the proposed project. Present the information in a table that indicates quantities of each type of waste, where such waste will be deposited, and how impacted such waste disposal sites are at present, what the anticipated regional needs will be for such sites in the future, particularly in terms of waste generated by activity that is a necessary part of functioning in an urban environment rather than an activity that is not, such as the proposed project.

SIER-61

Page 2-65. 2.4.5.1 Phase 4 Processing and Operations--Phase 4 Safety and Security Systems: The security system for the ongoing operation of the Proposed Oil Project in Phase 4 would be installed and initiated during Phase 3. Security on the Project Site would be provided by onsite personnel and a site security program that would include a Closed Circuit Television System, a gate access system, and an intrusion and motion detection system. The security system would control all access to and from the Project Site.
Provide greater security that will mitigate impacts of potential terrorist activity, impacts which can be presumed to be extremely elevated given the proximity of the proposed project to a densely populated residential community and at-risk marine and shoreline habitat and wildlife. Provide an explanation and justification for implementing this security system during Phase 3 rather than during Phase 1, or preferably, implement the system during Phase 1.

SIER-62

During the final design of the Proposed Project and submission of plans to the appropriate agencies for permits, the following plans and programs would be developed by the Applicant as part of the facility drilling and operations phases (Phase 2 and Phase 4 activities):
The DEIR here lists odor, air, fire protection, safety and other plans and programs that will be developed at some later date, presumably after the FEIR. These areas are some of

SIER-63

the most important areas of concern regarding impacts and it is therefore incumbent upon the applicant to develop such plans and programs and describe them in the FEIR in order that the public have full and transparent information regarding the proposed project. SIER-63 continued

Section 13f of the Oil & Gas Lease contemplates well spacing requirements, yet we found no discussion of such requirements in the DEIR description of the proposed project. Further, this section of the lease limits the number of wells that can be drilled in the tidelands to 21 of the 30 wells overall. We saw no discussion of this. Section 13g(2) requires applicant to drill "protection wells". We saw no discussion of this in the DEIR. SIER-64

Page 3-1. 3.0 Cumulative Projects: For this Proposed Project, the cumulative impact study area includes the immediate vicinity surrounding the Oil Project Site and the proposed crude and gas pipelines in the City of Hermosa Beach, Redondo Beach and Torrance as well as the area around the Proposed City Maintenance Yard Project. Greenhouse gas (GHG) emissions would have cumulative impacts well beyond the region, and this analysis will consider Project-related GHG emissions relative to those on both a regional and statewide scale. Under risk of upset conditions and for impacts involving biological resources, geology, air quality, noise, traffic, and recreation, the cumulative impact study area would also encompass the communities of the City of Hermosa Beach, the City of Redondo Beach and Torrance (see Figure 2-1). SIER-65
Indeed risk of upset conditions have impacts beyond the cities indicated. Residents of the Palos Verdes Peninsula, inland communities, and beach cities north of Hermosa enjoy the recreational opportunities afforded by a clean beach in Hermosa and the Pacific waters. Moreover, the DEIR fails to adequately assess the potential impacts of blow outs and spills to these other areas, including the waters north of Hermosa and south along the Palos Verdes Peninsula, which is the site of a Marine Protected Area.

Include the PV Shelf and add a discussion regarding subsidence and potential impacts of subsidence on capped DDT and PCBs at this Superfund site.

Page 4-3. 4.0.3 Formulation of Mitigation Measures and Mitigation Monitoring Program: The City of Hermosa Beach will be responsible for monitoring of the mitigation measures adopted pursuant to this EIR.
Identify who will be responsible for monitoring the design features, which reduce an impact, that are not considered mitigation measures but are conditions of approval. Further, identify what the consequences (penalties, fines, project cessation) will be for applicant's failure to comply with conditions of approval, whether mitigation measures or design features. SIER-66

Page 4.2-1. 4.2 Air Quality and Greenhouse Gases.
Potential chemical emissions are described briefly. Anticipated duration, frequency and concentration range are either not specified, or information is too generic and poorly defined to be useful. Impacts are judged relative to overall regional levels of significance, which may not be of primary interest to voters. Local impacts of some pollutants at some times will greatly exceed current local ambient levels. Readers are unlikely to be able to assess local health impacts from the information supplied. SIER-67

Page 4.2-19. 4.2. Air Quality and Greenhouse Gas Emissions--Impacts of Greenhouse Gas Emissions.
The discussion fails to compare and contrast GHG emission impacts under the no project alternative versus the impacts of GHGs as a function of the project extracting oil and gas. In other words, if it isn't extracted, it cannot add to GHG emissions. Correct this omission. SIER-68

Page 4.2-22. 4.2.2.1 Air Quality and Greenhouse Gases--Criteria Pollutants Regulatory Setting --Local Authority: The SCAQMD has rules and regulations that would apply to an oil and gas facility. These include the following:
• _Rule 402. Nuisance - A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons;
• _Rule 462. Organic liquid loading emission limits;
• _Rule 463. Organic liquid storage emission control requirements;
• _Rule 1110.2. Emissions From Gaseous- And Liquid-Fueled Engines limits;
• _Rule 1118. Control of emissions from refinery flares;
• _Rule 1134. Emissions of oxides of nitrogen from stationary gas turbines limits;
• _Rule 1148.1. Oil and gas production wells - addresses emissions of volatile organic compounds (VOCs) from the wellheads, the well cellars and the handling of produced gas at oil and gas production facilities;
• _Rule 1148.2. Notification And Reporting Requirements For Oil And Gas Wells And Chemical Suppliers;
• _Rule 1166. Volatile organic compound emissions from decontamination of soil procedures and requirements;
• _Rule 1173. Control of volatile organic compound leaks and releases from components at petroleum facilities and chemical plants;
• _Rule 1176. VOC emissions from wastewater systems limits and required controls; and
• _Rule 1178. Further reductions of VOC emissions from storage tanks at petroleum facilities.
Address other SCAQMD regulations which may apply, including:
Rule 464 – Wastewater Separators
Rule 466 – Pumps and Compressors
Rule 466.1 – Valves and Flanges
Rule 467 – Pressure Relief Devices

SIER-69

Page 4.2-27. 4.2. Air Quality and Greenhouse Gas Emissions--California Air Resources Board: Scoping Plan: Executive Order S-03-05 sets a goal that California emit 80 percent less GHGs in 2050 than it emitted in 1990. . . . "Reducing our greenhouse gas emissions by 80 percent will require California to develop new technologies that dramatically reduce dependence on fossil fuels, and shift into a landscape of new ideas, clean energy, and green technology. The measures and approaches in this plan are designed to accelerate this necessary transition, promote the rapid development of a cleaner, low carbon economy, create vibrant livable communities, and improve the ways we travel and move goods throughout the state."
The Executive Order sets a goal within approximately the same time frame as the proposed project. Discuss the extent to which the proposed project, to the financial benefit of the applicant, will vitiate the State's progress toward its goals, resulting in a waste of public fiscal resources. Correct this omission.

SIER-70

Page 4.2-30. 4.2. Air Quality and Greenhouse Gas Emissions--City of Hermosa Beach. The City of Hermosa Beach is involved in efforts to reduce its greenhouse gases.
The DEIR provides a lengthy list of the City's efforts to reduce its greenhouse gases, but fails to discuss the extent to which the proposed project, to the financial benefit of the applicant, will vitiate the City's progress toward its goals, resulting in a waste of public resources. Correct this omission.

SIER-71

Page 4.2-50. 4.2. Air Quality and Greenhouse Gas Emissions--Odor emissions: Due to the close proximity of the site to neighbors, businesses and the public (within 100 feet of businesses, 160 feet of residences, 55 feet of the Greenbelt and 20 feet of the public sidewalks), numerous other scenarios could cause odors offsite. These could include various

SIER-72

maintenance activities, small spills and "leaker" components. A single component defined as a "leaker" by Rule 1173 (>10,000 ppm) from a compressor or pump seal, for example, could produce odor impacts 100 feet downwind and would produce odor impacts offsite. The results of the modeling indicate that fugitive emissions from normal operations could produce concentrations greater than the odor threshold from the Project equipment, which would reach nearby residences and businesses and public areas offsite. Concentrations of odiferous materials could be as high as 6 times the odor threshold, primarily driven by H2S levels. Odor impacts from normal operations would therefore be considered potentially significant. . . . The fugitive component leak detection program under Rule 1173 shall utilize a Leak Detection and Reporting (LDAR) level of monthly detections with an action level of 100ppm and the installation of bellows valves where applicable (valves 2 inches or smaller) to ensure that leaking components are minimized at the facility.
Odor impacts due to concentrations of odiferous materials being as high as six times the odor threshold deserves greater attention, particularly in the Executive Summary.

SIER-72 continued

Page 4.2-53. 4.2.4.4 Residual Impacts: When high gas levels or pressures are detected, the muds would be re-directed to pass through this vessel to release entrained gasses. These gasses would be combusted in a flare while the liquid muds would flow to muds processing. The dedicated flare pilot or igniter would automatically and immediately ignite the flare gasses. The flare would essentially eliminate all of the hydrocarbons in the gas, and the combustion of gasses would create substantial heat, providing the combusted products with sufficient buoyancy to rise quickly into the air without producing odors.
While flaring may reduce odors for humans, it is wasteful of a non-renewable resource and has other environmental impacts, including potential impacts to birds. Flares have attracted birds in migration during foggy conditions that cause birds to fly lower and the DEIR should include further analysis and discussion of the flaring activity--the wasted resource, the pollutants, the heat, and the other potential impacts, including on migratory birds, raptors and others in the vicinity.

SIER-73

Page 4.2-53. 4.2.4.4 Residual Impacts:
... The flare would essentially eliminate all of the hydrocarbons in the gas, and the combustion of gasses would create substantial heat, providing the combusted products with sufficient buoyancy to rise quickly into the air without producing odors.
Substitute: Most of the hydrocarbons in the gas would be burned in the flare, depending on the combustion efficiency of the flare, producing CO2, and some NOx. Sulfur compounds would be mostly combusted to SOx and CO2. The exhaust gas from the flare may be hot enough to have sufficient buoyancy to rise quickly into the air. It might rise quickly enough to avoid being in the breathing zone of people downwind.

SIER-74

Page 4.2-33. 4.2.4.1 Design Features: An odor suppressant spray system or vapor capture hood and carbon filter system on the mud shaker tables and carbon capture canisters on all tanks will be installed during Phase 2;
If the "odor suppressant" is merely spraying an odor masking agent, a chemical that adds another odor, then it will not be likely to be effective. The underlying chemical compounds causing odors will still be present.

SIER-75

Page 4.2-43. 4.2.4.4 Operational Criteria Pollutant Emissions: Emission factors for fugitive components are based on the SCAQMD Guidelines for Fugitive Emissions Calculations (SCAQMD 2003) default emission factors for oil and gas production facilities (Form P1 or P1U). Because these emission factors do not include the use of an inspection and maintenance program, as prescribed and required by SCAQMD Rule 1173, a reduction level of 80 percent was applied to these emissions to account for the quarterly Leak Detection and Reporting (LDAR) protocol as required by Rule 1173 (SBCAPCD 1998).

SIER-76

Arbitrarily reducing the emission factor by 80 percent is not justifiable. SIER-76 continued

Page 4.2-44. Table 4.2-9 Operational Criteria Emissions
Without the 80 percent reduction in the emission factor for fugitive emissions, VOC emissions should be modeled to be substantially higher, unless demonstrated to be less.
VOC Emissions Local Significant Impact YES SIER-77

Page 4.2-46. Table 4.2-10 Operational Criteria Emissions: Mitigated
Without the 80 percent reduction in the emission factor for fugitive emissions, VOC emissions should be modeled to be substantially higher, unless demonstrated to be less.
VOC Emissions Regional Significant Impact YES
VOC Emissions Local Significant Impact YES SIER-78

Page 4.2-49. Offsite Odors.
The odor modeling is based on H_2S. However, there are numerous organosulfur compounds which are much more odorous than H_2S, and some of these compounds may well be present in the crude oil. Organoselenium compounds are less volatile, but much more odorous than organosulfur compounds, and may well also be present in the crude oil. Odors may be more significantly unpleasant than disclosed in the DEIR. SIER-79

Page 4.2-52. AQ-5f: The fugitive component leak detection program under Rule 1173 shall utilize a Leak Detection and Reporting (LDAR) level of monthly detections with an action level of 100ppm and the installation of bellows valves where applicable (valves 2 inches or smaller) to ensure that leaking components are minimized at the facility.
An IR Camera or other fast leak-detection instrument must be kept onsite, in addition to the required EPA Method 21 leak-detection instrument. SIER-80

4.2-55,56. 4.2.4.5. Air Quality and Greenhouse Gas Emissions--Residual Impacts, End Use: None of these GHG emission levels would be above the 25,000 MTCO2e per year level that would require the facility be a part of the California Cap-and-Trade program. . . . End use of the crude oil produced as a part of this Project has not been included in the GHG emissions. Crude oil is supplied to the region from a number of different sources. . . . if this crude oil is not produced, it will be supplied by another source, as crude oil prices are set largely on the global market.. . . CARB and SCAQMD specifications for the calculation of GHG emissions from a project do not include the end use estimates. Current policies, such as Cap-and-Trade and automobile efficiency standards and the Low Carbon Fuel Standard, address GHG emissions from transportation fuels. The end use of fossil fuels will be encompassed by the Cap-and-Trade program in 2015. However, for informational purposes, the Project would generate, over its life, an average amount of crude oil that would generate 535,000 MTCO2e per year, from the combustion of natural gas, and crude oil products. SIER-81
We take issue with the contention that the level of GHG emissions from the proposed project do not render the project impacts significant and do not render the applicant responsible for them. As stated in the DEIR and quoted above, the crude oil from the proposed project would generate 535,000 MTCO2e per year. If the emissions from individual emitters combusting the oil and gas products from the proposed project do not reach these thresholds either, the result is that there are no mitigations for these impacts, vitiating the progress resulting from the cap and trade program and other efforts. This project should be responsible for the emissions generated by virtue of the project extracting the fossil fuels that result in GHG emissions at highly significant levels. Address this significant impact. As stated in the DEIR under the heading "Carbon Neutral", "In order to achieve a carbon-neutral approach to the Proposed Oil Project, as is defined in the City of Hermosa Beach strategic plan for at least municipal operations, the

mitigation measure AQ-6 would need to require that the Applicant shall provide credits for all GHG emissions generated above the threshold of zero MTCO2e per year." ***Make it so.*** SIER-81 continued

Moreover, considering where the City of Hermosa Beach and the State of California are headed from a renewable energy policy and implementation perspective, we think there ought to be a table that clearly, concisely, and completely outlines the great many initiatives and efforts implemented to develop, promote, and advance renewable energy, demonstrating the many ways in which the proposed project vitiates those efforts. SIER-82

4.3--1. 4.3 Biological Resources: This following description of the affected marine and onshore environment is based on a reconnaissance-level field survey conducted October 23, 2013 . . . reconnaissance survey of the proposed Pipeline route and the Project Site by walking its entire perimeter. Limited onsite natural resources were identified in the survey.
This section and the reconnaissance survey described are wholly inadequate and must be redone. In several instances there are references to reports more than 20 years old, indicating a lack of accurate, timely information and perhaps lack of awareness of the significant changes, and particular investments in, restoring endangered species and improving the marine habitat, since that time. The reference to "onsite" in this instance is vague and leaves the reader with an inadequate frame of reference for the conclusions drawn. The reconnaissance was conducted one day at one time of year, whereas it should have been conducted at several points in time to account for migratory and nesting species. The reconnaissance apparently did not cover areas, notably the beach, that would be most vulnerable to environmental impacts in the event of a significant spill. To conclude that "limited onsite natural resources were identified" renders this report unbelievable. At risk are natural resources within .3 miles from the drill site and these resources are substantial. Consideration should also be given to the potential impacts to birds flying over the drill site, particularly during flaring. SIER-83

4.3--2. 4.3 Biological Resources--Sandy Beach: The Proposed Project Site is approximately 1,700 feet to the east of the Hermosa Beach coastline. Several stormwater lines that drain off Valley Drive run perpendicular to the proposed Pipeline route and outflow onto the sandy beach habitat (see Section 4.8, Safety, Risk of Upset and Hazards). Sandy beach habitat is typically found between the intertidal zone and areas where vegetation becomes established, typically forming foredunes or pioneer dunes. Several invertebrate species (predominantly crustaceans and worms) . . . attract shorebirds that are most abundant during the fall and winter and include willet (*Tringa semipalmata*), sanderling (*Calidris alba*), western (*Calidris maudi*) and least (*Calidris minutilla*) sandpipers and various species of gull (*Larus* spp.).
This section is inadequate, fails to include significant species, in particular the Western Snowy Plover, and must be expanded in the FEIR. SIER-84

4.3--9. Table 4.3-1 Endangered, Threatened, and Special Status Species in Project Area:
Baseline studies of all species that could be impacted by the project must be done. Saying that particular species are "in low numbers" when some species, including blue whales and brown pelicans, have been present in increasing numbers in the past few years is misleading and unhelpful. SIER-85

4.3-14. 4.3.2.1 Federal Regulations Migratory Bird Treaty Act (16 United States Code 703–711) The Migratory Bird Treaty Act (MBTA) of 1918, as amended in 1972, makes it unlawful, unless permitted by regulations, to “pursue; hunt; take; capture; kill; . . . any migratory bird for the protection of migratory birds or any part, nest, or egg of any such bird” (16 USC 703).
Assess the potential impact of the proposed project on migratory species, in particular with respect to flaring and other operations and equipment use, in the special circumstances of conducting such operations in a marine environment. SIER-86

4.3-16. 4.3.2.2 State Resource Regulations--California Coastal Act: Section 30240 states: Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.
Given the small size of the drill site and the location just .3 miles from the beach, it cannot be said that the proposed project is "sited and designed to prevent impacts which would significantly degrade [habitat] areas" and, therefore, the DEIR should state that the proposed project fails to comply with the California Coastal Act.

SIER-87

4.3-18. 4.3.4 Project Impacts and Mitigation Measures: no sensitive . . . habitat in the general Project area, nor immediately downstream of the Project Site and therefore, the construction and operation phase of the Project is not expected to have adverse effects . . . the construction and operation phase of the Project is not expected to have a substantial effect on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, . . . The Project would not conflict with the provisions of any Conservation Planning program, Natural Community Conservation Planning program, or other approved local, regional, or state Habitat Conservation Planning program.
These conclusions are not based on thorough studies and reconnaissance, as described above, and therefore must be re-evaluated upon completion of proper studies. Moreover the DEIR fails to give adequate consideration to nearby MPAs and the potential impacts of the project thereon.

SIER-88

Page 4.3-19, 4.3.4 Project Impacts and Mitigation Measures, Impact BIO.1
"Most of the wildlife species utilizing the urban setting and Greenbelt vegetation are currently exposed to high numbers of people walking through the area, traffic, traffic noise, pets, vegetation trimming, and regular maintenance … It is expected that any Project related impacts to any plant or wildlife species in the area would be similar to existing conditions. No nests were visible in trees planned to be removed and/or trimmed near the facility yard during the non-nesting season site reconnaissance survey."
This generalized statement risks missing particular areas of potential impacts to wildlife. In particular, noise impacts, which the DEIR indicates will be significant and unavoidable for people, should be specifically assessed with respect to nearby wildlife--in particular nesting birds (which were not surveyed during nesting season).

SIER-89

4.3-20. 4.3.4 Project Impacts and Mitigation Measures --Residual Impact: A spill at the drilling facility would need to travel through approximately 0.75 miles of storm drains to reach the ocean.
Clarify that the beach is just .3 miles from the drill site.

SIER-90

4.3-22. 4.3.4 Project Impacts and Mitigation Measures--Fish: Adult fish, due to their mobility, may be able to avoid or minimize exposure to spilled oil. However, there is no conclusive evidence that fish will avoid spilled oil (NRC 1985). . . . Because fish species can be economically important and because long-term loss can result from an oil spill, impacts to fish are considered to be significant.
Without support for the first statement (that fish may be able to avoid exposure to spilled oil), as indicated in the second sentence (no conclusive evidence they can avoid it), the first sentence should be removed. Moreover, fish species are not only economically important, they are vital to the marine ecosystem and this must be addressed.

SIER-91

4.3-23. 4.3.4 Project Impacts and Mitigation Measures--Marine Mammals.
This section fails to address the potential impacts on marine mammals if a spill impacting, for example, krill populations should occur during whale migration. This must be corrected.

SIER-92

4.3-24. 4.3.4 Project Impacts and Mitigation Measures--BIO-2: The Applicant shall submit for City approval and shall implement an Emergency Response Plan that would address protection of biological resources and possible revegetation of any areas disturbed during an oil spill or cleanup activities.
The Emergency Response Plan (ERP) is the principal mitigation measure for threats to bio resources and therefore must be included in the FEIR.

SIER-93

4.3-25. 4.3.4 Project Impacts and Mitigation Measures: In contrast, large spills, such as those that could be produced from a Pipeline rupture, could spread to the beach and potentially to the numerous sensitive habitats and species present in the Pacific Ocean, resulting in an impact considered to be **significant and unavoidable (Class I)**.
This point must be made more clearly and made earlier on when describing the probabilities; In addition, reiterate here that clean up itself will have a significant impact.

SIER-94

Section 4.3.5 appears to be missing.

SIER-95

4.6-14. 4.6 Fire Protection and Emergency Response-- Significance Criteria: The Proposed Project would be considered to have a significant impact in the fire protection and emergency response area if . . . The Project equipment layout and access structure do not meet the API, NFPA, IFC, and IRI or CAL FIRE recommendations for equipment spacing and clearances;
4.6-20. 4.6.4.2 Proposed Oil Project and Pipeline Impacts--Equipment Spacing: The Proposed Project is particularly challenged to provide sufficient spacing between equipment and between equipment and areas offsite due to the small size of the site. For example, the current design of the facility has the compressors, the low temperature separation equipment, the VRU and the flare all located within the containment area for the crude oil tanks. If a crude oil spill were to occur, crude oil would impact this equipment and substantially increase the ignition probabilities, leading to an almost certain crude oil fire in the event of a spill. NFPA 30 does not specifically prohibit the placement of combustion or other equipment within diked areas, but it does prohibit the placement of "combustible materials, drums or barrels" (NFPA 30.22.11.2.8) within a diked area, thereby implying combustion equipment within the diked area would not be considered "good engineering practice". . . . Based on preliminary design drawings, the site appears to have some issues with equipment spacing requirements, including:

- Well drilling equipment spacing from buildings (100 feet, as per LACFC) - well drilling equipment would be located 33 feet from adjacent buildings;
- Fired heater separation distances from property line (200 feet) and from storage tanks (15 feet) as per CCPS- the flare would be located 10-12 feet from the property line and 8 feet from the storage tanks;

Some equipment spacing could still create impacts, such as the location of the flare relative to process units or atmospheric storage tanks and distances from public areas. Inadequate equipment spacing would be a significant impact. During the drilling phases of the Project, a 32 foot sound

. . .

Mitigation Measures
FP-2a The Applicant shall ensure that design and construction comply with applicable codes and standards for equipment spacing, particularly those related to flare location and distances to public areas and distances from well drilling equipment to buildings.
It is imperative that, prior to release of the FEIR, applicant be required to show what they would do in particular to render this aspect a non-significant impact with mitigation,

SIER-96

addressing whether any of the changes would have additional aesthetic or other impacts. Note that there is no mitigation that says no project if they can't meet the standards for spacing, etc., and there will be tremendous pressure on the City to grant the applicant variances, etc. in order to avoid litigation under the lease terms that require the City to grant permits, thereby exposing the public and the environment to high risk.

SIER-96 continued

4.7-1. 4.7 Geological Impacts and Resources.
In the Sierra Club letter commenting on the NOP, we asked the following: "Conduct a thorough analysis of any known natural oil seepage off the coast of Hermosa, Manhattan and Redondo to establish a baseline. Thoroughly evaluate how the risks and effects of extraction actions by E&B, such as underground pressure changes resulting from drilling and water injection methods, may exacerbate the current seepage. Identify the level of seepage at which E&B will be required to cease operations." We found nothing in the DEIR regarding baseline data for any known, natural oil seepage, nor thresholds of seepage at which applicant would be required to cease operations. We reiterate our request.

SIER-97

4.7-2. Figure 4.7-1 Regional Fault Map.
Overlay this map and the map at 2-6. Figure 2.2 Historical Wells Drilled in the Los Angeles Basin.
to show readers the increasing density of well drilling within close proximity to fault lines in the LA basin and cite and describe any studies evaluating the possibility that such increased activity may increase associated hazards.

SIER-98

4.7-5. 4.7.1.3 Geologic Hazards: [Earthquake] intensity is usually greater in areas underlain by unconsolidated material, such as the Proposed Project area, than in areas underlain by more competent rock. . . . Moderate to severe ground shaking will be experienced in the Proposed Project area if a large magnitude earthquake occurs on one of the nearby active faults. . . . A Project Site-specific seismic analysis completed for the Proposed Oil Project indicated that the maximum moment magnitude would be a magnitude 7.7 earthquake, generated from the Palos Verdes Fault (NMG Geotechnical 2012).
Maps should be provided indicating locations where drilling and injection wells will be located and indicating the reach of active faults. Moreover, we found no reference in the DEIR to the impacts of projected sea level rise or tsunami activity on hazard assessments. Please correct this.

SIER-99

Page 4.7-6. 4.7.1.3 Geologic Hazards: Historically, while the spillage of oil has sometimes been considerable, these spills have not been serious when contained within dikes and kept free of ignition sources.
Stating that spills haven't been serious when kept free of ignition sources, without indicating similarities or differences between the space available to maintain requisite distances due to the size and compactness of a project begs the question regarding the feasibility of keeping flammables free of ignition sources at this particular project site. Please address this.

SIER-100

Page 4.7-19, 20. 4.7.3.4 Impacts--Mitigation Measures GEO.1:The drilling operator shall cease operations and inspect all onsite oil field-related pipelines, storage tanks, and other infrastructure following any seismic event that exceeds a ground acceleration at the Project Site of 13 percent of gravity (0.13 g)..
Is .13g, or 13% of gravity industry standard for ceasing operations at a drilling and/or production site as close to human populations and marine life as this proposed project and why is this measurement and mitigation limited to the drill site?

SIER-101

Page 4.7-21. 4.7.3.4 Impacts-- GEO.2: A study by Geosyntec (2012) indicated that the closest fault, Offshore Fault 103, is located at a sufficient distance from the proposed wastewater injection wells such that injected water-induced seismicity along this fault is not expected. ***The apparent reliance on a statement that seismicity "is not expected" is troubling. Hazardous events often happen when they are not expected. Applicant should be anticipating and planning for this potentiality.*** SIER-102

Page 4.7-24. 4.7.3.4 Impacts-- GEO.4: The Proposed Oil Project will remove an unknown volume of oil, gas, and associated water. In the absence of injection of produced water back into the subsurface, the potential for settlement of overlying infrastructure increases. Similarly, most of the subsidence could occur offshore, as oil would be extracted beneath offshore waters and most of the initial water reinjection is planned for portions of reservoir zones located beneath onshore areas. SIER-103
Applicant has indicated the amount of oil, gas, and water to be extracted on a daily basis and therefore can calculate the maximum to be extracted over the life of the proposed project. This information should be included in the FEIR. Further, information regarding the volumes anticipated to be extracted beneath offshore waters that are not planned to be replaced must be provided.

Page 4.7-26. 4.7.3.4 Impacts--Mitigation Measures GEO-4b: In the event that the Global Position System monitoring indicates that subsidence is occurring in and/or around the Proposed Project area, wastewater or water reinjection operations shall be increased to alleviate such subsidence. . . .The Applicant will also coordinate with the City of Hermosa Beach, Public Works Department, to verify that subsidence has been mitigated sufficiently. SIER-104
Specify the extent of the area monitored "in and/or around" the project area. Further, indicate how subsidence that has already occurred is going to be mitigated.

Page 4.7-16. 4.7.3.2 Geological Resources-Soils--Proposed Project Design Features: There are two 550-gallon underground storage tanks that were abandoned in place by filling with concrete in the southerly portion of the Project Site. In April 1989, the County of Los Angeles issued a closure letter with no further action. The exact location of these tanks are not known and they may be encountered during grading at the Project Site and may require removal if they are in the way of grading or improvements. SIER-105
The above-identified potentiality requires that the impacts of this scenario--noise, vibration, odors, nuisance, truck trips, etc.--be fully evaluated and discussed in the FEIR.

Page 4.7-18. 4.7.3.4 Impacts--Impact GEO.1 pertains to the following significance criteria: The Proposed Project would be considered significant if it:

- Exposes people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, and seismic-related ground failure, including liquefaction or landslides; or
- Is located within any of the following areas: (1) a State of California designated Alquist-Priolo Special Fault Study Zone, (2) a designated Fault Hazard Area, (3) a mapped area of tsunami hazard.

SIER-106
Address how the confined area and close proximity of equipment, wells, etc., are likely to result in impacts at this site whereas the impact probability would be reduced at another site without the space constraints of this drill site.

Page 4.7-19. 4.7.3.4 Impacts: All surface facilities and equipment would have suitable foundations and anchoring design, surface restraints, and moment-limiting supports to withstand seismically induced ground shaking. SIER-107

Identify whether or not the workover rig is a "surface facility" and, given that it is mobile, whether it is associated with increased risk in an earthquake. SIER-107 continued

Page 4.7-26. 4.7.3.4 Impacts GEO-4b: In the event that the Global Position System monitoring indicates that subsidence is occurring . . . .
Address the balance that must be struck between injecting wastewater to mitigate subsidence and the potential adverse impacts of high pressure injection. SIER-108

Page 4.8-78. Safety, Risk of Upset and Hazards: . . . drilling activities could produce offsite risks if they encounter pressurized areas of the reservoirs. Although it is not known at this time what areas, or if any areas, of the drilling will encounter pressure that could produce a blowout, historical data from drilling in Redondo Beach indicates that there is the potential for some of the wells to produce pressure and the potential for a blowout. . . . the equipment arrangements that place spark-producing equipment within the containment, which could possibly be mitigated, but as the site is very small, these impacts may not be able to be completely mitigated.
Page 4.8-79. Safety, Risk of Upset and Hazards: There is uncertainty associated with being able to eliminate spark producing equipment within the crude oil containment. Spacing requirements limit the location of the flare, but if the flare is elevated and surrounding by shrouds/protection, it would minimize the ability of the flare to ignite a spill of crude oil. There would be other spark-producing equipment, such as pumps and compressors, that keeping out of the bermed area would also minimize the chances of igniting a crude oil spill. Incorporating this design safety issue will help reduce the ignition probability given a crude oil spill. SIER-109
The issues associated with the small size of the drill site and the close proximity of the site to a densely populated residential area require greater attention. This proposed project is distinguishable from many other projects because of these factors, in addition to the proximity to marine resources. Spark producing equipment within the containment area cannot be mitigated because of the small drill site. Nor can the site location within a densely populated residential area, and .3 miles from marine resources, be mitigated. These factors operate together to magnify the risk of harm to the public, and marine resources, exponentially.

Page 4.10-1 et seq. 4.10. Land Use/Recreation/Policy Consistency Analysis Recreation.
Impact on recreation is not discussed except for views from a few sites of recreational activity. Major construction and operation plus heavy truck traffic and pollutant emission is likely to have great impact on Greenbelt recreational activity. Section 4.10 does not discuss recent Hermosa initiatives such as Green Zone. SIER-110

Page 4.13-28. 4.13.4.2 Regulatory Setting--Regional/Local
While this section outlines "South Bay Bicycle Master Plan" elements, it does not point out that the proposed project is likely to be inconsistent with the stated objectives. Health Ways Blue Zones are discussed, yet project incompatibility is not mentioned. An uninterrupted bikeway with low traffic impact and roadway interferences along Valley is recommended. The proposed project will involve heavy truck traffic and street disruption, therefore it does not comply and there is no discussion in the DEIR. Bicycle impacts are not included in Table 4.13.9-13. SIER-111

Page 4.14-13,14. 4.14.4.3 Impacts--Impact WR.4: The primary water demand by the Proposed Oil Project would occur during Phases 2 and 4 in association with drilling, which would result in a projected water use of 4.8 acre-feet per year (AFY) over the 30- to 35-year life of the Proposed Oil Project. Drilling of each well would require approximately . . .0.4 acre-feet. SIER-112
Doing the math, these numbers seem to indicate that applicant anticipates drilling 360 to 420 wells over the 30-35 year life of the proposed project. Confirm or clarify.

Page 5-24. 5.1.6 Project Objectives: CEQA states that the EIR need examine in detail only the alternatives that the lead agency determines could "...feasibly attain most of the basic objectives of the Project". The Project objectives are detailed in the beginning of section 2.0, Project Description. The ability of each of the alternatives that have been retained for further analysis to achieve these Project objectives is discussed below.
Page 5.1.6.1 No Project Alternative and Project Objectives: The No Project Alternative would not achieve any of the Applicant's objectives of the Project as no oil and gas would be developed and no infrastructure would be installed.
The no project alternative warrants further discussion in view of the stated project objectives. This alternative would achieve the applicant's stated objectives of safety, meeting environmental requirements, and minimizing potential impacts on the adjacent community and the environment.

SIER-113

Page 6-15, 16. 6.1.3. Reduced Wells Alternative: Under the Reduced Wells alternative, fewer wells would be drilled and less crude oil and gas would be produced. Drilling would take place for about 1 year only. . . . Impacts on biological resources would be the same as under the Proposed Project.
From a probability perspective, the statement that this alternative would generate the same impacts on biological resources as the proposed project appears to fly in the face of reason. Drilling fewer wells, for a shorter period of time, would be expected to have proportionately less impact on biological resources, and proportionately less risk of accidents. This is an error that must be corrected. This is the second most environmentally sound alternative of the alternatives offered. The best alternative being "no project."

SIER-114

Page 6-64. Table 6.2 Proposed Project - Significant Unavoidable Impacts Summary
We take issue with Table 6.2 as discussed in preceding comments regarding impacts. Include a map of probable spill impact zones, with estimated probability contours, ranging from low probability (for large events) to high probability (for small events).

SIER-115

7-1. 7.1 Unavoidable Significant Adverse Effects: . . . the non-renewable resources demand by the Proposed Project is not considered to be significant since the oil field would produce more non-renewable oil and gas than it would consume. . . . The Proposed Project would directly increase the volume of oil and gas extracted and produced locally, but would not increase the overall consumption of oil or gas. The production from the Proposed Project would be used to satisfy existing demand.
We take issue with these statements and ask that they be corrected. The impact of the proposed project on non-renewable resources is a significant adverse effect. Indeed, the project is designed to deplete the reserves of all oil and gas beneath the Hermosa Beach tidelands and uplands. Once it's gone, it's gone. Moreover, the production from the project would likely contribute to an increase in demand. The proposed project, along with other projects across the country that are using new technologies to access previously inaccessible reserves, can be expected to contribute to a temporary decline in oil and gas prices as a result of a temporary spike in supplies. Consequently, we can expect an increase in demand for these fossil fuels, including for uses that renewable energy sources are available and should be further developed given the focus of local, state, and federal policies.

SIER-116

8-3. 8.5 Mitigation Monitoring Table.
In addition to the areas listed, the table should identify how each mitigation measure will be enforced; within what time frame will violations be required to be corrected; what will the penalties be for violations; when will punitive penalties be assessed for repeated violations; and at what threshold will violations be considered egregious enough to

SIER-117

warrant cessation of operations. The voters will want to know. Moreover, the body of the DEIR, including tables and graphics therein, must include full disclosure regarding the impacts of these mitigation measures, including on wildlife and the environment. SIER-117 continued

8-11. Mitigation Measure AQ-3a: The Applicant shall limit flaring to a total of 5 hours per day at the full flaring capacity (or equivalent) during all emergency or routine flaring events in order to ensure that NOx emissions are reduced below the thresholds. Lower NOx emission combustors or other equivalent measures can also be used to satisfy the requirement. SIER-118
Minimize flaring, to the extent consistent with safety, and utilize gases for fuel value.

8-13. Mitigation Measure AQ-6: The Applicant shall provide credits for all GHG emissions generated above the threshold of 10,000 MTCO2e per year. SIER-119
As discussed above, applicant should provide credits for all GHG emissions generated by virtue of the oil and gas extraction.

8-22. Mitigation Measure FP-2a: The Applicant shall ensure that design and construction comply with applicable codes and standards for equipment spacing, particularly those related to flare location and distances to public areas and distances from well drilling equipment to buildings. If this cannot be achieved, additional requirements shall include . . . the construction of thermal radiation barriers or insulation on the crude oil tanks, installation of thermal barriers/walls around the flare stack, increasing the height of the flare stack during drilling, relocation of the flare stack, providing thermal radiation modeling to estimate the impacts of equipment on the crude tanks and process piping and public areas. Fire rated barriers shall be established, as per LACFD requirements, to ensure that all buildings within 100 feet of well drilling would be protected from thermal radiation. SIER-120
The same consideration should be given to wildlife potentially impacted by thermal radiation.

8-24. Mitigation Measure GEO-1a: The drilling operator shall cease operations and inspect all onsite oil field-related pipelines, storage tanks, and other infrastructure following any seismic event that exceeds a ground acceleration at the Project Site of 13 percent of gravity (0.13 g). SIER-121
Indicate whether the indicated levels are standard for a project such as this at a site such as this and provide supporting references. Add appropriate mitigation for off-site pipeline inspection following seismic events as well.

8-25, 26. Mitigation Measure GEO-2C: In the event that monitoring indicates that Proposed Oil Project-induced seismicity is occurring, water flood operations shall be adjusted to alleviate such seismicity. GEO-4b: In the event that the Global Position System monitoring indicates that subsidence is occurring in and/or around the Proposed Project area, wastewater or water reinjection operations shall be increased to alleviate such subsidence. SIER-122
What mitigation will be implemented in the case of both seismicity and subsidence? What safeguards will be in place to insure that water re-injection to alleviate subsidence does not exacerbate seismicity? GEO-2C provides no compliance verification method; GEO-4b states that the compliance verification method will be "Increase wastewater reinjection and/or water replenishment operations." That is not a compliance verification method. Please correct these errors.

8-29. Mitigation Measure SR-1b: The Applicant shall ensure that no spark producing equipment is located within the crude oil spill containment areas, or that spark producing equipment is sufficiently isolated from the crude oil containment area, in order to reduce the potential for crude oil fires. SIER-123
This is to be implemented prior to Phase 3 construction. This is a potentially ongoing/intermittent problem from the start of the proposed project, requiring design

restrictions for the initial drilling and experimentation phases. Use of any mobile spark producing equipment must be addressed, which would require limits on such equipment use and periodic monitoring throughout the term of the proposed project. SIER-123 continued

8-29. Mitigation Measure SR-1d: The Applicant . . . shall install a backflow prevention device at the main gas pipeline tie-in location, to prevent the release of gas from the main transmission pipeline in the event of a rupture in the gas pipeline. The second, return pipeline shall remain isolated from the main gas pipeline during normal operations.
Why have a return pipeline and the attendant risks? Does this save Applicant the money to properly treat the gases travelling through the pipeline in the first instance? That should not be a consideration in this setting. There should be no plan to send the gas back to the drill site and expose the public and the environment to additional risk. The second pipeline should be eliminated. SIER-124

8-29. Mitigation Measure SR-2: This may necessitate implementing the RAP during Phase 1 if substantial amounts of contamination are encountered.
Identify what levels will be considered "substantial" for various contaminants/toxins and, therefore, at what levels workers on site, including public employees, will be exposed to such toxins if Applicant doesn't clean up the site during Phase 1. SIER-125

8-31. Mitigation Measures HWQ-2c, 2d.
Regarding verifying employee training, proper equipment, and methods of oil spill containment and cleanup, the timing for monitoring these mitigation measure should be intermittently throughout the term of the proposed project, not just before phase 2 and before phase 4, and there should be rights of field inspections. SIER-126

8-31. Mitigation Measure HWQ-2h.
The timing for monitoring this mitigation measure should be intermittently throughout the term of the proposed project, not just before phase 4. SIER-127

8-31-38. Mitigation Measures NV-1a-10c.
The timing for monitoring these mitigation measures should be intermittently throughout the term of the proposed project, in addition to at the installation phase. SIER-128

8-39. Mitigation Measures TR-1a-2a.
The timing for monitoring these mitigation measures should be intermittently throughout the term of the project, in addition to at the design phase.
Regarding TR-1a, why is there no provision for morning crossing guard, nor apparent limits on truck traffic?
Regarding TR-1b, clarify that lights blink when a truck is approaching either to enter the site or exit it as opposed to blinking during all hours of operation.
As we requested in our letter commenting on the NOP, "The EIR should also specify:
- ***which agencies will monitor environmental compliance and at what level of attention***
- ***who has authority to require compliance***
- ***how quickly government authorities must be notified about environmental problems***
- ***who is responsible for environmental remediation***
- ***consequences for non-compliance***
- ***requirements for bonding for environmental damage "*** SIER-129

Page 8-16. Table 8.3. SIER-130

Under BIO-2, the DEIR proposes to have the developer submit a plan in the undefined future for emergency response in the event of a spill. Lack of a specific plan in this DEIR is unacceptable, given the critical importance of the issue. The requirement is to have a plan for cleanup up to 1000 feet from the proposed project. This is entirely inadequate. The plan needs to address cleanup of a large marine oil spill.

SIER-130 continued

Appendix O--Aesthetics-Visual Simulation.
The architectural renderings in Appendix O "Aesthetics-visual simulation" are inadequate to represent the impact on residents living and passing through the confined project area in Hermosa Beach. The visual does not adequately portray disruption to pedestrians and drivers on confined 6th Street and Valley Drive. In particular, there may be up to 18 large trucks roundtrip visits daily--one every 10 minutes. They will occupy much of the small streets and experience difficulty moving in and out of the construction site. This will disrupt traffic and be a nuisance to pedestrians and local residents. This needs to be visualized in the Executive Summary and also in Appendix O. An eastward simulated view down 6th Street, from close to the site, is needed. It should depict trucks entering and waiting outside the site on 6th Street plus normal traffic and parked vehicles in the area. The trucks should be representative of those that will deliver miles of heavy pipe, large amounts of concrete and heavy equipment and will remove produced petroleum and drilling waste. It should be a part of the Executive Summary as well.

SIER-131

Given the project proposal and the alternatives offered, the Sierra Club can only support the "No Project" alternative.

SIER-132

Very truly,

Eva Cicoria
Conservation Chair
Palos Verdes-South Bay Regional Group
Sierra Club

Al Sattler
Chair
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SUBJECT: E&B Oil Drilling and Production Project
SCH# 2013071038
RE: Draft Environmental Impact Report and Comments

C. Thomas Williams,Ph.D., Geology/Zoology, UC, Berk., 1976; Retired; Professor/Instructor - Geol.:UC-Berkeley, UC-Davis, and Cal.St.Un.San Francisco; Project Manager, Geologist, and Environmental Engineer/Planner; URS Corp.-San Mateo, Parsons Corp.-Pasadena/Worldwide, ERM-HongKong, and Dubai Govt- UAE; 300 EIRs/EISs, & EAs;
Sierra Club, Angeles Chptr., Frack.,Oil & Gas Committee.

WILT-1

We express many major concerns related to this DEIR and recommend changes to the current Draft EIR within this letter and we request comprehensive revisions and updatings. The introduction and executive summaries and tables are so voluminous as to distract and distort the reviewers' appreciation when viewing the Text sections since the Summary assures that everything is less than significant. Such distorted views pre-disposes the reviewers to accepting inadequate and incomplete settings and assessments and related mitigation.

Based on the requested changes and supplementation of the main text sections, all summaries are rendered inadequate and incomplete in that they do not reflect changes required in the base text sections in the remaining DEIR on specific sections and impacts detailed in the sections below.

WILT-2

The DEIR and this section are woefully inadequate and incomplete for meaningful Public review and commenting. These sections and statements must be reviewed/revised and justified with appropriate documentation and sources/references. The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments on the revised Final Environmental Impact Report prior to considerations of certification.
Where comments are made, the text must be revised, augmented, and/or rewritten to adequately and completely respond to the comments; where questions are stated, responses must answer the questions and answers integrated with the text; and where comments includes some directions as to what is deficient, the responses must incorporate the comments in the revisions of the section. The purpose of the public review is not provide specific amendments to the document and thereby do the job of the preparer but only to identify sections, settings, assessments, and mitigation which require revisions by the preparer to form an adequate and complete FEIR. This DEIR must be considered as inadequate and incomplete until revisions are made, circulated, and reviewed by the public and competent third party specialists.

WILT-3

2-1/1 (E&B)...proposing the E&B Oil Drilling & Development Project (Proposed Oil Project) on a 1.3-acre **site** located in the City of Hermosa Beach (City).
The Oil Project is not limited to the 1.3 ac site but includes the subsurface property lease, all production wells, and the Underground Injection Control Project for the injection and reinjection of produced and make-up waters to the producing formation.
The entire document requires a simple and consistent definition and delineation of the Project, Project Site(s), Project Area, Project Facilities (including all underground pipelines and wells).

WILT-3 continued

Inconsistent word usage and terminologies (general and technical) renders the document as unusable for a clear discussion and review by the public. The Draft Environmental Impact Report is inadequate and incomplete and appears to be bias and not-objective in its presentation of the project, its setting, the potential impacts, and meaningful mitigation. Lack of consistent definitions and a general and technical glossary of terms and other comments provided herein renders this DEIR as unusable for its required purposes to fully and transparently inform the Public and requires its substantial revision and upgrading in the Final EIR and extended review period or meaningful comments.

WILT-4

The Site is not only the Drill Site, but the "Site" must also include pipeline routes, well pathways, and the Lease and leases held/sought by the Applicant. Later reference to Project Area should include all leases held and potentially all of those currently not held but with reasonable probability of being included in the Lease/Settlement Agreement (L/SA) terms for the Applicant/Lessee/Operator.

WILT-5

No information as required for the DOGGR application is provided for the UIC Projects for injection for disposal and injection for producing and water flooding.

No mention and descriptions are given for the "make-up waters" required to compensate for the lack of return of 8000 bpd (barrel per day) to the production zones.

WILT-6

2-1/2 ...(Project Site)...Oil and gas pipelines constructed and used by the Project would extend from the Project Site to area refineries...leased the Project Site from the City...composed of two parts: 1) the relocation of the City Maintenance Yard (called the Proposed City Maintenance Yard Project); and 2) the development of an oil and gas facility on the current City Maintenance Yard site (called the Proposed Oil Project)...determined that the production of oil and gas on the Project Site would be economically viable (Phase 2 of the Proposed Project)...once Phase 3 of the Proposed Project begins.

Project description includes pipeline and other parcels outside of the "Project Site", current yard, but does not include the subsurface lease and well+casing paths and then later closely incorporates references to some aspects of the other portions of the Project Site.

The Project Description section is inadequate and incomplete and many of the deficiencies quite blatant and purposeful, and such inadequacies may relate to the objectivity and purposes of the preparers and the Applicant.

Inclusions of references to economics, employment, jobs, and revenues are inappropriate and lack objectivity without inclusion of full description, setting, assessment, and mitigation of socioeconomics and/or economic impact assessment within the DEIR.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-7

2-1/2 ...Project Application submitted to the City of Hermosa Beach...in conjunction with the Project Application...

DEIR does not incorporate or summarize the Project Application and does not provide appropriate comparisons to the DEIR's Project Description which differs markedly from the Lease and Settlement Agreement which are incorporated into the Applicant's submission.

The Applicant's submissions as part of the Application also includes economic and health considerations which appear to include different basic assumptions with regard to the DEIR's Project Description and the production and effects therefrom.

All Project Descriptions must be coordinated and made comparable for all documents, starting with the Lease.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-8

LEASE AND SETTLEMENT AGREEMENT - LEASE

TOC - Appendix M – Oil and Gas Lease No. 2 between the City and E&B

TEXT - 2-2/5 The timeframe from commencement of the Proposed Project until the permanent oil and gas facility would be operational is estimated to be approximately 3.25 years. The **existing lease (Oil and Gas Lease No. 2)** allowing drilling into the tidelands provides for a 35-year period.

Other initial mentions:

ES-5 "existing Lease (Oil and Gas Lease No. 2)"

1-8 Oil and Gas Lease No. 2 between the City and E&B (assigned from Macpherson Oil Co.), dated January 14, 1992 and approved by the State Lands Commission on April 28, 1993.

1-12, 1-15, and Others

2-72/3

Appendix F – Settlement Agreement and Other Entitlements

2-4/3 Item 1 As part of the Project Application, the Applicant provided its **stated objectives** for the Proposed Oil Project, which consist of the following:
1. Develop the Proposed Oil Project consistent with the 1993 Conditional Use Permit ***[which is based on the 1992 Lease]*** and the **March 2, 2012 Settlement Agreement**, with the utilization of directional drilling techniques from the Project Site...
TOC 1.8.2 Lawsuits and Settlement Agreement
Many other Text mentions of Settlement Agreement.

COMMENTS BELOW RELATE TO DEIR TEXT INVOLVING SPECIFIC SECTIONS OF LEASE/SETTLEMENT AGREEMENT

Appendix M Lease

C. The City desires to enter into a lease for the extraction and removal of oil and gas deposits below and seaward one (1) nautical mile of the mean high tide line of the Pacific Ocean within the boundaries of the City which have been granted to the City by the State of California (the "tidelands").

C. Deposits below and seaward - tidelands, City-granted
This section of Lease limits the City participation, although the City provides the site for access, to many other resources and the City would be required to allow passage of wells through and beyond the City's jurisdiction and production from, and perhaps injection of fluids into these areas without compensation.

E. City acknowledges that Lessee has obtained other oil and gas leases from private land owners and that the City and Lessee intend to also use the Drill Site to drill wells into other adjacent lands not owned by the City.

WILT-9

E. Other oil and gas leases from private land owners
This section positively states Applicant's/Lessee's intent ...to drill wells into other adjacent lands not owned by the City and would not allow compensation to the City.

d. Whenever the leased lands and the adjacent lands drilled from the Drill Site cease to produce oil or gas subsequent to the Primary term and prior to the end of the Term of this Lease, this Lease will continue in force if within six (6) months after production ceases, or such longer period as the City may authorize, the Lessee commences and prosecutes with reasonable diligence, drilling, deepening, repairing, redrilling, injecting and disposing of water or other operations for restoring production of oil or gas from the leased lands and/or the adjacent lands drilled from the Drill Site.

d. adjacent lands
This again allows Lessee to do all activities - drilling, deepening, repairing, redrilling, injection, and disposing, and others, all without limits and without compensation to the City.
This section does not require abandonment, which would fall to the owner of the Site and holder of the title for the subsurface properties, the City.
This section allows ...other operations for restoring production...from leased lands and/or the adjacent lands drilled from the Drill Site...without limitations, including any unconventional stimulation/re-stimulation methods.

e. The Lessee shall have the sole and exclusive right to use the Drill Site to drill into the leased and adjacent lands, and to prospect for, drill for, produce and take only oil, gas and

e. This section prohibits competition for use of the site. In other Lease sections the City can allow geophysical surveys to be conducted by others than the lessee

WILT-10

other hydrocarbon substances and associated water recovered incidental to such prospecting, drilling and production from the leased lands together with the right to inject and dispose of water and to conduct secondary recovery operations from said Drill Site. Unless otherwise provided in this Lease, this right includes the right to conduct geological and geophysical surveys on the leased lands for the purpose of determining subsurface conditions. However, the City may permit others to conduct geological or geophysical surveys on the leased lands as provided in sections 6212.2 and 6826 of the Public Resources Code and the applicable regulations of the City.

e. This section eliminates any City constraints for any disposal of any liquids by the Lessee from sources other than the City's lease area (e.g., other well fields).

Lands for exploration and production usually = <u>properties</u> surface and/or subsurface - except for the production pad they have no surface property rights with the Lease.

This section also may allow other companies to conduct exploration & production operations, although such activities are excluded from the Project Site which contradicts the earlier portion of the lease as "surveys" are considered as part of exploration phase and some would define drilling to include all activities from surveys through first barrel of production for sale...

WILT-11

p.6/3.f

f. In the event that in the reasonable judgment of Lessee, it shall be necessary to use diluent in its producing operations or to clean, treat or dehydrate the oil produced from any wells drilled into the above described lands, Lessee may clean, treat or dehydrate the same, and Lessor hereby agrees to pay its pro rata share of its royalty share for the actual reasonable charge for the cost of any diluent used in connection with production and for dehydration, cleaning and treating and a reasonable charge for transportation to the treating plant, but said charge to Lessor for such cleaning, treating and dehydration shall not exceed five cents ($0.05) per barrel for the net oil cleaned, treated or dehydrated, which proration shall be deducted monthly from the royalty due Lessor.

p.6/3.f City cannot prohibit use of diluents including transport to, storage on, and disposal of at the Project Site.

p.6/3.f City would agree to pay its pro rata share...for the actual reasonable charge for the cost of any diluent, cleaning, and treating...actual reasonable charge for transportation to the treating plant...not exceed five cents...per barrel.

This section allows the Lessee to treat produced fluids without City's oversight, and requires the City also to pay for the treatment charge per barrel which has no means of updating the charges. Diluent can include any hydrocarbons, usually distillates (say API Gravity 30+, e.g., light crude oil from adjacent leases, kerosene, diesel, etc.).

WILT-12

p.9/8.b

The Lessee shall measure and account for all oil, gas and other hydrocarbon substances produced from, used on or transported from the leased lands and adjacent lands from the Drill Site in accordance with the terms of this Lease. The City shall have the right at all times [illegible]

p.9/8.b from the leased lands and adjacent lands from the Drill Site

This section confirms the Lessee's production from "adjacent lands" through the Project Site..

p.9/8.c

c. Notwithstanding any provision to the contrary in this Lease, Lessee may commingle oil of like quality produced from the leased lands (i.e., uplands and tidelands) subject to this Lease and with oil of like quality produced from any other lands leased and controlled by Lessee.

p.9/8.c ...leased lands (i.e., uplands and tidelands)...and...from any other lands leased and controlled by Lessee.

WILT-12 continued

This section confirms the Lessee's production from "adjacent lands" which can be used to blend heavier crudes for improved transport and pricing.

p.10/9.a

9. PRODUCTION FOR LEASE OPERATIONS

WILT-13

a. The Lessee may use oil produced from the Lessee's wells drilled into the leased lands or adjacent lands for lease operations only. Oil so used shall be reported to the City monthly. Such oil shall not be included in computing for royalty purposes the total production of oil removed or sold from the leased lands or adjacent lands during the month and the current market price of such production.

p.10/9.a ...may use oil produced from the Lessee's wells...for lease operations only.
p.10/9.a ...into the leased lands or adjacent lands for lease operations only.
p.10/9.a ...from the leased lands and adjacent lands
This section confirms the Lessee's production from "adjacent lands" and absence of any compensation for passage through City leases and production/treatment at the Project Site for the City. This also removes the diluent light crudes from volume of saleable crude while requiring potential costs to City up to $0.05 per barrel.

p.12/12.a

12. EXPLORATION AND DEVELOPMENT OBLIGATIONS

a. It is contemplated that the exploration and development of the leased lands and the adjacent lands from the Drill Site will take place in four separate stages or phases. The

p.12/12.a ...of the leased lands or adjacent lands for lease operations only.
This section confirms the Lessee's production from "adjacent lands".

WILT-14

Alternatively, if all necessary permits and other approvals and authorizations have been timely obtained, Lessee shall proceed with the "Exploration Phase" which shall involve the drilling of at least one, and as many as three exploratory wells within the leased

p.12/12.a...within the leased lands. [NOT or adjacent lands for lease operations]
This section limits the Lessee's initial exploration production to only the City's lands and excludes leased or potentially to lease subsurface properties beneath "adjacent lands" from any restrictions and scheduling.

shall drill and operate additional wells from the Drill Site to the leased lands as required by this Lease, and may drill additional wells from the Drill Site to adjacent lands as allowed by this Lease. Lessee shall conduct all drilling

p.12/12.a...to the leased lands as required by this Lease,...may drill additional wells...to adjacent lands as allowed by this Lease
This section confirms Lessee's production from "adjacent lands" as covered by Lease.
This section also indicates that the Project's well count can be increased by Lessee without restrictions. Such conditions render the Project Description meaningless as the Project Description and DEIR presume the controlling conditions of the Lease and the Project. As this condition and others within the Lease may void the limits of the proposed Project, the DEIR is totally inadequate and incomplete with respect to the Project, Leases, and Project impacts.

p.15/e.2

WILT-15

a well capable of producing oil and/or gas. Thereafter, Lessee shall continuously conduct drilling operations from the Drill Site using one string of tools for wells bottomed on the leased lands or on adjoining lands under lease to Lessee, allowing no more than one hundred twenty (120) days to elapse between the cessation of drilling operations for one well and the commencement of drilling operations for the next, until the leased lands have been fully drilled or Lessee elects not to conduct further drilling.

WILT-15 continued

p.15/e.2 ...for wells bottomed on the leased lands or on adjoining lands under lease to Lessee...until the leased lands...fully drilled...

This section confirms the Lessee's production from "adjacent" or "adjoining" lands. This section also provides that drilling wells to other than City lease areas counts for the drilling schedule for the Project/"Drill Site".

WILT-16

p.17/12.g.0

g. The City and Lessee recognize that Lessee is a so-called "common lessee" in that Lessee has lands under lease which are adjacent or are in close proximity to the leased lands, and this Lease grants Lessee the right and Lessee intends to exercise the right to drill wells from the Drill Site to such adjacent lands under lease to Lessee for oil and gas production. The City and Lessee have agreed that Lessee shall have the following obligations to drill protection wells to protect the leased lands from drainage, whether caused by Lessee's own producing operations on other lands or by producing operations conducted by others.

p.17/12.g. ..."common lessee"...has lands under lease...adjacent to or are in close proximity to the leased lands...grants Lessee the right and...exercise the right to drill wells from the Drill Site to such adjacent lands under lease...

p.17/12.g. ...to drill protection wells to protect...from drainage...caused by Lessee...or...others

This section confirms the Lessee's production from "adjacent lands", "adjoining lands", and "those in close proximity".

WILT-17

p.19/12.i.5

(5) The term "adjacent lands" means land or lands within the limits of the City of Hermosa Beach which are not owned by the City.

p.19/12.i.5 ...adjacent lands"...within the limits of the City...not owned by the City.

This section confirms the Lessee's production from "adjacent lands" but limits "adjacent" to those within the City's boundaries rather than wider area depending on definition/delineation of leases that may pass beyond the City's boundaries. This section appears to conflict with other section and requires better definition and contrast with "adjoining" or "close proximity" in other sections

WILT-18

p.25/16.

16. UNITIZATION

Subject to the requirements of Public Resources Code §6879, City and Lessee may mutually determine to combine, pool or unitize the leased lands with other lands not subject to this Lease and lying within the jurisdiction of the City to insure that the

p.25/16. ...mutually determine to combine, pool, or unitize...with other lands not subject to this Lease...within the jurisdiction of the City...

This section confirms the Lessee's production from "adjacent lands" and appears to contradict statements on p.19/12.i.5.

WILT-19

p.25/16

ameliorated. The City and Lessee may enter into agreements to unite with others owning or operating lands not belonging to the City, including lands belonging to the State of California and the United States, in operating under a cooperative or unit plan of development or operation for the pool or field or any part thereof.

p.25/16. ...unite with others owning or operating lands not belonging to the City...in operating under a cooperative or unit plan...for the pool or field or any part thereof.

This section confirms the Lessee's production from "adjacent lands" and the operator has the right to "unitize" the leases and act as the DOGGR's official designation of an "Area" of the Torrance Field.

WILT-20

Appendix N Settlement Agreement
IV.a Options of the Parties
Sec. 14 Macpherson Obligations At Closing a. Execute and deliver to E&B or to an Affiliate or Affiliates designated by E&B including for the purposes of a 1031 exchange as provided in Article X hereof all of Macpherson right title and interest in the **Lease all townlot leases the School Lease and any other leases and all other rights** it may have in or with respect to the Project including but not limited to the Conditional Use Permit and all other permits for the Project collectively the Assets all without any warranty of title and subject to the releases set forth in paragraph VI hereof
This section transfers all leases as defined in the Lease that may be adjacent, adjoining, or in close proximity to the City's lease areas.

WILT-21

ASSIGNMENT AND BILL OF SALE With Reservation of Overriding Royalty
Mineral Rights
p.33--3/4 Grantor as lessee also made and entered into **various subsurface oil and gas leases of varying dates with private party lessors with respect to lands within the incorporated area of the City all such leases existing and hereafter acquired are hereinafter collectively referred to as the Townlot Leases the existing Townlot Leases**...provided however that the assignment hereinafter of the existing Townlot Leases includes **each and all existing oil and gas lease** now held by Grantor from **private party lessors with respect to lands within the incorporated area of the City whether or not described or correctly described in Exhibit A...**
This section also transfers all leases as defined in the Lease that may be adjacent, adjoining, or in close proximity to the City's lease areas.

WILT-22

p.33--3/8 ...lease the School Lease any and all Townlot Leases the CUP and EIR the State Lands Approval the Coastal Approval and any and all other rights...produced in the course of the Project from the Project Area under the Project Leases as hereinafter...p34...defined or allocated to **any of the Project Leases or any part of the Project Area pursuant to a pooling arrangement line well agreement or unitization or communitization agreement** which may be entered into by Grantee
This section recognizes the right to unitize (=pooling) all leases and those lease not currently held but functionally and/or geologically connected to those of the City.

WILT-23

p.33--3/8
As used herein the Project Leases means and includes the City Lease the School Lease around any of the Townlot Leases as currently framed or hereafter from time to time modified in any respect as well as **any continuation extension renewal restatement ratification or replacement of any of them as may be made taken or acquired by Grantee any successor or assign of Grantee** or any entity in which Grantee or its successor or assign has an **ownership interest or is under common ownership or control** with or otherwise from the Project Area, i.e., whether or not a specific subsurface point of production at which such substances enter a well bore is located within or outside the area that is subject to any one or more of such leases and whether or not a specific subsurface point of production at which such substances enter a well bore is located within an area subject to any further Townlot Leases provided only that such subsurface point of production is located within the **Project Area or allocated to any of the Project Leases or any part of the Project Area** pursuant to a **pooling arrangement line well agreement or unitization or communitization agreement** which may be entered into by Grantee all upon and subject to the terms provisions and conditions hereinafter set forth
This section further recognizes the Applicant's authorized unitization (=pooling) of all leases and those lease not currently held but functionally and/or geologically connected to those of the City. As the Lease and Settlement Agreement define the basis for Project, the DEIR is deficient as it does not include all provisions of the Lease and thereby the Project. If the Project includes all elements of the Lease, then the Lease defines not only current proposed facilities and activities but also the Project's future expansion unless such expansion is specifically removed from the Project Description and the Lease, e.g., Project Area restricted to 700 acres rather than the maximum feasible Lease Area of 7000 acres.
This section also indicates that the "Project Area" includes all existing and potential subsurface properties and leases that could be pooled or unitized. General physical constraints may allow unitization/pooling to cover a unit/pool of 7200 acres with two-mile radius from the Project Site (10,000x 10,000 x 3.14 = 314Msqft).

WILT-24

34--4/a 1.1 The City Lease, the School Lease, each of the existing Townlot Leases, and **any and all other oil gas or mineral leases and interests in rights...including but not limited to working interests, carried**

WILT-24 continued

working interests, net revenue interests rights of assignment and reassignment reversionary interests 35/5 back-in interests, production payments, and royalty interests of any kind or description, each and all of which are hereinafter collectively referred to as the **Property**.

This section further recognizes the expansive unit (=pool) including all Project leases and those unitized/pooled leases not currently held but functionally and/or geologically connected to those of the City.

WILT-25

COMMENT

The original Lease and Settlement Agreement (SA) clearly differ from the DEIR Project Description and thereby render the Project Description and the DEIR incomplete, inadequate and inaccurate asthre preparers portray a much more limited Project Drill Site and Project Area than the Lease an SA than do the Lease and SA. As these issues directly and specifically relate to the maximum Lease allowable project, the comment herein are specifically relevant to the CEQA required Objective Full Disclosure Documents. Apparent intentional inaccuracies or exclusions reflect upon the objectivity of the preparers which all local agencies depend upon or its abuse.

Given conditions of the Lease and Settlement Agreement, more "additional wells" (say total of 60 wells) can be placed within the Project Site and may draw oil and gas from a total Project Area of 7000 acres, including tidelands and uplands and easterly to Marine Ave. (north), Inglewood Ave. (east), and Torrance Ave. (south).

As the Lease and Settlement Agreement are specifically included in the DEIR, such inclusion renders the Project Description as incomplete without any consideration of the maximum allowable development. As such the DEIR represents only the initial segment development project, perhaps only 700 acre and 30 wells, of a much larger project of 5000-7000 acres and 100 wells. As a segmentation approach rather than cumulative or inducements, the Applicant may operate in such as manner as to compel neighboring owners to move out.

The City is requested to incorporate the maximum extent of project as defined within the Lease and Settlement Agreement into the FEIR and provide at least 60 days for confirming reviews of incorporations and comments.

WILT-26

2-2/3 2.1 Project Overview ...proposes the development of an onshore drilling and production facility site...would utilize directional drilling of 34 wells (30 oil, 4 four water injection) to access the oil and gas reserves in the tidelands...lease granted by the State of California to the City) and in an onshore area known as the uplands.

In the Settlement Agreement all subsurface areas and their reserves in/under the tidelands and uplands are included in the Project Area. As the Project Site depends on production of the reserves, all leases must be included in the Project Site and dependent Project Area.

Although the Project Overview includes references to the State/City lease and the 34 wells, these are not consistently included throughout the DEIR and do not accord with the Lease.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-27

2-2/3 Both of these areas are located within the Torrance Oil Field within the jurisdiction of the City. In addition...installation of offsite underground pipelines for the transportation of the processed crude oil and gas from the Project Site to purchasers...Yard is proposed to be relocated to a temporary facility to be established on the rear (westerly) portion of the City Hall site...maintenance operations could be moved when the existing City Maintenance Yard is demolished as part of Proposed Oil Project activities.

The DEIR references the Torrance Field but fails to describe such and its relationships to the proposed Project, including the wells, standard field requirements (i.e., Unit or Field/Areas Rules), their operations, and the required Underground Injection Control Project (UC project) for the field area.

The Project Description and setting are deficient within regard to the Torrance Field and related Redondo Area/Pools and to the entire UIC project for the area and lease. Deficient sections must be rewritten to reflect the tideland pool in the offshore area of the Torrance Field.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-28

2-2/5 The **existing lease (Oil and Gas Lease No. 2)** allowing drilling into the tidelands provides for a 35-year period...Table 2.1 summarizes events in the Proposed Project timeline. Specifics of each of the Proposed Project components are described in the following sections.

WILT-28 continued

The DEIR references the Torrance Field but fails to describe such and its relationships to the proposed Project, including the wells, standard field requirements (i.e., Unit or Field Rules), their operations, and the required Underground Injection Control Project for the field area.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-29

2-3/**Table 2.1 Proposed Project Schedule Summary Phase**
Oil Project Phase 2 Drill Test
Oil Project Phase 4* Drill Operate Continuously for 30+ years
The DEIR references Phase 4 may extend for 30 years but fails to describe the long-term activities and probable developments of technologies and activities as the production changes such and its relationships to the proposed Project, including the wells, standard field requirements (i.e., Unit or Field Rules), their operations, and the required Underground Injection Control Project for the field area.
One of the Project objectives requires "maximizing production" which when applied to the entire tideland field area could be accomplished by more wells which is allowed by the Lease.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-30

2-2/1 ...**Project objectives**, historical operations on the Proposed Project Sites...
...four phases of the Proposed Oil Project,
scheduling,
vehicle trip and employee requirements, and
necessary permitting associated with the Proposed Project...
The DEIR mentions Project Objectives but does not clearly and quantitatively describe the Project Objectives, and thereby these objectives cannot be readily used for review of the Project and Alternatives.
As the DEIR Objectives exclude any specific oil/gas production requirements, the Objectives cannot restrict the Alternatives as they are in Section 5, Alternatives. As required here, only the separation of four distinctive phases would be required. Absence of specificity herein and then application of specific requirements for production and reaching various productive zones appear arbitrary and appears to indicate a lack of objectivity.
These objectives must be specifically compared to/comparable to those used in the discussion and comparable assessment of Alternatives.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-31

2-4/2 ...provided its stated **objectives** for the Proposed Oil Project...:
1. Develop the **Proposed Oil Project consistent with the 1993 Conditional Use Permit and the March 2, 2012 Settlement Agreement**,...the Project Site, which is the current City Maintenance Yard;
2. **Maximize oil and gas production from the Torrance Oil Field within the City's jurisdiction**, thereby **maximizing the economic benefits** to the City;
3. Provide...project on the Project Site...utilizes the **latest** technology and operational advancements...safety and production efficiency...to provide a project that would be safe and would meet the **applicable environmental requirements**;
4. Conduct construction and drilling activities on the Project Site incorporating **technological advancements**, operational practices, and design features related to air quality, odors, noise, hazards, and water quality to **minimize** the potential impacts on the adjacent community and the environment;
5. Provide...other design features to **minimize** the visual effects of the Proposed Oil Project on the adjacent community; and
6. Implement operational practices and incorporate design features to provide safe vehicular ingress and egress during temporary construction activities and the ongoing operation of the Proposed Oil Project.
The DEIR provides no quantified objectives, rather objectives are vague and specious. The many meaningless terms: consistent, maximize, latest, applicable, advancements, minimize, etc., renders the objectives useless for establishing compliant alternatives and comparisons with the Project.
If the objectives do not have quantitative scale, the Project cannot be readily compared to the Alternatives, e.g., typical for even economics objectives is Net-Present-Value versus annual values vs values to the Operator vs values to the Lessor, the City or economic differences between Cash-Flow vs Return-On-Investment must have quantitative values not just more or less than.

WILT-31 continued

All operators look at financial/economic incentives to get approval for a project and get on with the project, in order to achieve positive cash flows. If operator pays an individual or a non-profit, and it gets the project started three months ahead of without payments - it is simple accounting.
Objectives do include maximize economic benefits to the City without reference to who in the City will benefit and who will be at risks. Socioeconomic setting and assessment are not provided and therefore either the "objective" is in error or an economic evaluation must be provided to demonstrate the Project's achievement of the objectives.
Objectives must be thoroughly revised, quantified, coordinated, and made consistent between Lease, Settlement Agreement, DEIR/FEIR, and Economic studies.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-32

2-5/1 Pursuant to the March 2, 2012 Settlement Agreement between the City of Hermosa Beach, E&B, and Macpherson Oil Co., the **City's primary objective** is to comply with the California Environmental Quality Act and place on the ballot a measure allowing the City of Hermosa Beach electorate to decide whether or not to approve the Applicant's Proposed Oil Project and a **Development Agreement** to vest the Project so that, if approved, the Project cannot later be invalidated by a vote of the people.
Inclusion of this objective appears to be met by the Project and all proposed Alternatives and thereby ceases to be a Project Objective.
As this objective is not specifically relevant to the CEQA process, absence of background and incorporation into assessment and mitigation renders its inclusion as inadequate and incomplete.
This statement suggests that the CEQA compliance and overriding of any objections leading to certification of the FEIR is secondary importance to allow voting to proceed rather than having an objective, adequate, and complete FEIR to certify so that the community may proceed with the voting.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-33

2-5/4 The Proposed Oil Project would drill into the western edge of the Torrance Oil Field...Most of the production from the Torrance Oil Field has been generated from wells drilled in the City of Torrance...some drilling in the Cities of Redondo Beach and Hermosa Beach...approximately 1,500 wells drilled in the Torrance Oil Field...
As the Lease Agreement allows the Project Drill Site to be used for drilling throughout the westerly portion of the Torrance Field, discussion regarding the western edge or any un-delineated portion of the Torrance Field is totally inadequate and incomplete. As drilling technologies make feasible drilling out horizontally to at least 10,000feet (measured depths of say 14,000feet) with True Vertical Depths of 3000-8000feet. Oil and gas resources must be comprehensively assessed, including the Puente, overlying Repetto, and underlying Schist Conglomerate formations.
All subsurface properties and current leases must be provided and those currently in lease to the Applicant or its predecessor identified must be provided.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-34

2-5/5 ...soils impacted with total petroleum hydrocarbons (TPH) were found at depths of 25 to 44 feet bgs within the central portion of the landfill...**detailed discussion** of the soil conditions on the Project Site...
Detailed discussions on soil conditions could mean both anything and nothing at the same time, the latter appears to be the case, simply "discussion" may be truer to the text than presented. No details are provide for the description of all elements of the landfill and of existing hydrocarbon contaminants and how they are to be distinguished from those that may over the course of time arise from the Project's facilities and operations on the Project Site.
All proposed wells must be sited in relationships to the landfill and the hydrocarbon contaminated portions therein or the Applicant could simply acknowledge their presence and take full responsibilities for any hydrocarbons on the site, no matter their origin.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-35

2-6/1 In 1930, an oil well (Stinnett Oil Well No. 1) was drilled in the **western portion of the Project Site**. The oil well was abandoned in 2005, consistent with the then-current standards of the DOGGR.

WILT-35 continued

As an element of the production site with 30+ other wells, the description of the existing abandoned is important to know in order to assessment potential, especially as no conductor casings are included in the Project Description.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-36

2-10/ 2.4 Project Description, Proposed Oil Project Phases Prior to the initiation of each phase...**would be** required that plans be submitted by the Applicant to the City and other permitting authorities for review and approval...**would include**...oil and gas well permits,...and construction plans, amongst others."
We request that any safety plans be updated at each phase of the proposed project, using information gathered from each phase of the proposed project. Additionally, we recommend the mitigation plans and monitoring plans be reviewed and updated using best available science for oil spill response and cleanup plans before the new phase of the proposed project is initiated.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-37

2-10/2 The Applicant proposes a facility designed for a maximum capacity of 8,000 barrels per day (bpd) of crude oil and 2.5 million standard cubic feet per day (scfd) of produced gas at completion of the drilling stage of the Proposed Oil Project in Phase 4.
The Application, Project Description, and Appendix A provide no information, references, or development as to the sources of the estimated oil, gas, and produced water for this Project and the Bottom of Hole locations, and Hole Pathways, and their capacities. Estimated 260bpd-well appear reasonable to high compared to many other wells in the Torrance and Wilmington Fields, but no assessment is provided for Public review and as a basis for economic analyses, elsewhere.
In other sections, 3000bpd has been used for production, and both 3000/8000bpd have been used without clear distinctions as to their basis and whether they represent different averaging periods (e.g., initial or long term production) and their association with the production value and royalties to be paid and financial resources available to respond to impacts arising from the Project.
All oil and gas information must be made available through appendices or even live links within the FEIR. All information and analyses must be provided for deriving the 8000bpd production with the established production, disposal, and flooding wells.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-38

2-11/**Table 2.2 Proposed Oil Project Design Parameters**

Parameter	**Value**
Crude oil production	Phase 2: Up to 800 bpd Phase 4: Up to 8,000 bpd
Crude oil properties	**18 API**
Natural gas production	Phase 2: Up to 250,000 scfd Phase 4: Up to 2.5 million scfd
Produced water injection	Phase 2:...Phase 4: Up to **16,000 bpd**
Maximum number of wells	Phase 2: 4 wells (3 production, 1 water injection) Phase 4: 34 total (...4 water injection/**disposal**)
NGL production	Up to **1 bpd mixed with crude oil**
Water use, during construction	...
Water use, during drilling	130,000 gallons per well reclaimed water (Approx. 4,500 gallons per day)
Water use, during operations and maintenance...	...
Well workovers, annually	...
Well re-drills (full sized drilling rig, peak annually	Up to 5 per year, up to 30 redrills...life of...Project

No factual basis or existing sources for the estimated production and total recoverable production has been provided and thereby the entire table is considered ass inadequate and incomplete.
No references/source/basis is provided for stating-
API 18 rather than less than 20 or more than 10.
Gas cut of up to 2.5MMscfd
Water cut of 8000boe-pd/16,000bpd-water, = 33%oil and 67%water, appears to be very low water content.
No DOGGR references or information sources are provided anywhere although such DOGGR information is available on their web-sites for Torrance and Redondo and onshore and offshore

WILT-38 continued

Reclaimed water use is a good best management practice and must be made a condition of any permit.
30-day drilling program may not include completion as the statement does not refer to completion of well; completion may in fact may require larger volumes not included in drilling water use.
Annual Re-Drills appear to be limited to only 5/year x 30 yr. but with 150 rather than 30. ERROR??
This entire tables must be provided with an appendix regarding how it was derived and any factual basis.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-39

2-17/4 **Construction of Well Cellar** A cement well cellar approximately 8 feet wide by 40 feet long by 12 feet deep would be constructed for three test wells and one water injection well to allow for the drilling of the wells in Phase 2. The well cellar would provide containment of any potential oil spillage during Phase 2...
No calculations nor analyses are provides to demonstrate adequacy of containment (30,000gal) of rainfall and an expected blowout/spill from a well or associated fluids.
Average length per well would require total cellar length of 340+ft which does not appear to accommodate by the site.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-40

2-20/2 **2.4.2 Phase 2 Drilling and Testing** The purpose of Phase 2...conduct the drilling and testing of wells...to determine the potential productivity and economic viability...up to three test wells and one water **disposal/injection** well (a total of four wells)...drilled...so that the bottom-hole locations may be located **several thousand feet** from the surface location of each wellhead on the Project Site...
In other text/table the injection well is classed for injection rather than disposal. As DOGGR permits for such are very different a very clear distinction must be applied and consistently used throughout the text and appendices.
As an injection well, DOGGR requires clear designation as a UIC Project well for waterflooding (or enhanced oil recovery) or for disposal. All information for the UIC Project application must be included (as an Appendix) in the DEIR as the DOGGR processing requires the local community to have certified CEQA documentation. Therefore DOGGR depends on the adequacy and completeness of this DEIR for their future considerations of simple production or UIC related wells.
No distinction is made herein regarding the Application's and Lease Agreements to the maximum lease are (Project Area) to be included. Use of bottom-hole locations...located thousands of feet from the surface location could include a far larger radius and area than the tidelands area. Clear delineations of all prospective areas/leases involved currently and within 7000ft (Pad to far NW corner of tidelands lease boundary) from the Project Pad must be included in the DEIR.
All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-41

2-20/3 2.4.2.1 Phase 2 Site Geology and Drilling Objectives The Proposed Oil Project would...access...reserves in the tidelands (offshore) **and uplands (offshore) in the portions of the Torrance Oil Field within the City's jurisdiction**. The Project Application states that "no hydraulic fracturing (or "fracking") of wells will occur because the geologic zones for the Proposed Project are permeable and capable of yielding oil and gas without hydraulic fracture stimulation."
Here the text limits reserves to be access while the Lease contains no such limitations constrain the Applicant in area or field; Applicant can in fact delineate a new field or area or unit.
No information is provided regarding the sources and measurements of permeabilities and zones, and thus the statement regarding the fracturing is unsupported and must be provided as an unlimited condition and revision to the Lease.
All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.
The entire DEIR Project Description must be thoroughly revised and with clear agreement that whatever the limits are within the FEIR they shall have jurisdiction and power over all other conditions.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-42

2-21/1 The approximate extent of the City's jurisdiction within the Torrance Oil Field is provided in Figure 2.7. Figure 2.8 provides a typical well cross section illustrating how wells can reach the oil reserves, within the

WILT-42 continued

tidelands, from the Project Site...primary target zones are the Upper Main, Lower Main, and Del Amo Zones with some production potential within the Schist Conglomerate. **These are all part of the Puente Formation**.

The City' jurisdiction is not equivalent to that of the Applicant/Operator and thereby erroneously limits the anticipated limits of the Applicant drilling, based on the Lease.

Use of the Puente may be locally appropriate but is generally closely correlated with the more commonly understood title of Monterey formation; similarly others refer to the Modelo formation as an equivalent of the Monterey and/or Puente in Southern and Central California.

Similarly the Schist Conglomerate is usually grouped as part of the Topanga formation, not the Puente.

All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-43

2-21/2 ...Upper Main Zone is the uppermost part of the Puente Formation...**expected to be the shallowest oil productive zone** in the City...Upper Main Zone is the most prolific...beneath the Hermosa Beach tidelands and uplands is expected to be 300 feet thick and composed of inter-bedded thin sands and shales...shales are currently fractured and provide both fractured porosity and permeability...critical to the performance of the reservoir...due to the fine-grained and thin-bedded nature of the sands.

No information, sources, or references are provided for support of this statement. The DEIR does not delineate the Uppermost Hydrocarbon Zone in the Torrance Field or Hermosa or Offshore Areas of the field. The geological discussions are inadequate and incomplete with regard to oil productive zones in the Torrance Field, Redondo Area, or the Hermosa Area.

"Expected" is not referenced to any source document and thereby implies it is sourced from a DEIR preparer and is not objective nor a full disclosure.

Above the Puente formation (=Monterey and/or Modelo) has been found to be the source of petroleum above the Puente in the Repetto formation in the remainder of the Torrance and in the Wilmington, Dominguez, Inglewood, and many other shallower fields and areas.

All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-44

2-21/2 ...Lower Main Zone lies below the Upper Main Zone...Project Application states that similar to the Upper Main Zone, the shales of the...2-22/1 Lower Main Zone are **currently fractured and important for oil production**. However, the Lower Main Zone has **fewer interbedded fine-grained sands** and is over 500 feet thick.

No information, sources, or references are provided for support of this statement. The DEIR does not delineate the Uppermost Hydrocarbon Zone in the Torrance Field or Hermosa or Offshore Areas of the field. The geological discussions are inadequate and incomplete and do not provide primary references or even the pertinent sections in the Application.

No information, sources, or references are provided for support of evaluation of degree of fracturing, interbedding, fineness of grain sizes, or comparisons between the zones in the western Torrance Field areas is provided in the Application or the source documents for the Application.

All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-45

2-22/2 The Del Amo Zone lies beneath the Lower Main Zone...**least amount of thin-bedded sandstone**...Project Application states that similar to the other two zones, the shales of the Del Amo Zone are currently fractured and important for oil production.

No information, sources, or references are provided for support of this statement. The DEIR does not delineate the Uppermost Hydrocarbon Zone in the Torrance Field or Hermosa or Offshore Areas of the field. The geological discussions are inadequate and incomplete and do not provide primary references or even the pertinent sections in the Application with regard to the fracturing of any formation or member or zone.

No information, sources, or references are provided for support of evaluation of degree of fracturing, interbedding, fineness of grain sizes, or comparisons between the zones in the western Torrance Field areas is provided in the Application or the source documents for the Application.

WILT-45 continued

All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-46

2-22/3 The Del Amo Zone...**could** be from 200 feet up to 700 feet thick. The Schist Conglomerate underlies the Del Amo Zone...resting on metamorphic basement rock (Catalina Schist)...**could** be as much as 400 feet thick and...of reworked fragments...from...underlying Catalina Schist...**Application** states...it is **unknown if the Schist Conglomerate** is productive **beneath** the City...**still a viable exploration target**.

No information, sources, or references are provided for support of this statement. The DEIR does not delineate the Uppermost Hydrocarbon Zone in the Torrance Field or Hermosa or Offshore Areas of the field. The geological discussions are inadequate and incomplete and do not provide primary references or even the pertinent sections in the Application.
No information, sources, or references are provided for support of evaluation of dimensions of geological units or zones, presence of the Schist Conglomerate, of productivity of the Conglomerate within the western Torrance Field areas, and of targeting requirements for exploration that can be achieved during the exploratory phase in the western Torrance Field areas in the Application or the source documents for the Application.
All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-47

2-22/4 The production test wells **would target** areas to the south-west, the north-west and the north areas of the **lease**...at a true vertical depth of approximately 3,000 feet and a measured depth of approximately 9,000 feet...***[=<6000ft offshore, north, and south]***

As this "lease" and target areas appear to specifically exclude other "adjacent", "adjoining" and "close proximity" areas to the northeast, southeast, and east, the project Description appears to be incomplete with regard to the maximum area which could be altered during the Phase 2 with little or no public review.
All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.
All areas and pools within 9000ft measured depths and 3000ft true vertical depths must be discussed and assessed for this Phase.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

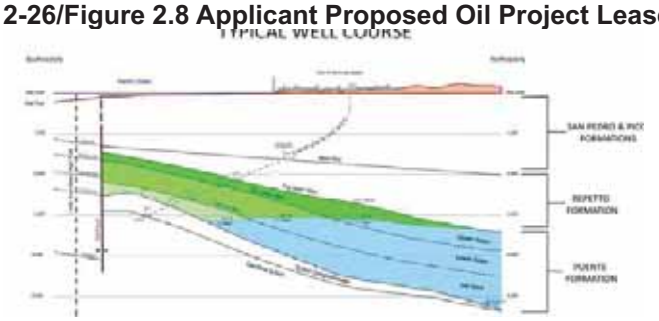
WILT-48

2-22/5 The Applicant **indicates** that the wellhead pressures **anticipated** during and immediately after drilling would be 0.0 pounds per square inch (psi)...wells are not **anticipated** to be free-flowing.

No definition is provided for "indicates" rather than "states" along with page and paragraph locations and for "anticipated" rather than "planned" and no
As an up-dip pool, re-pressurization would be commonly expected or anticipated occurrence. The Applicant does not provide any evidence/documentation to establish a 0.0psig and absence of any pressured flow.
All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-49

2-26/Figure 2.8 Applicant Proposed Oil Project Lease Areas Cross Section



WILT-49 continued

As a combined, simplified geological, well, and oil/water depiction, this image fails to state as to sources/references, and appears to indicate that the Fault 103 is a complete and absolute barrier to oil and water, and that the Puente has no gas drive front nor penetration of Fault 103.

Similarly the section indicates an interpreted massive thickening of the DelAmo member to the west of the Fault 103, all without references/sources.

Depiction of Fault 103 also indicates that the fault is expected to have been active to present/Holocene and therefore can be considered as an Active Fault, based on the depiction herein.

The very simplified well course does not indicate the Base of Fresh Water and the Uppermost Hydrocarbon Zones and well casing strings as usually provided for such generalized Unit depiction.

No source/reference is given for the three different depths of salt water/oil contacts.

No source/reference is given for the position of the "Fault 103" nor is any reference or occurrences of numerous faults in the Puente/Repetto given by DOGGR, 1992

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-50

2-30/3 **Usually**, the only interruptions to drilling operations would be to remove the drill pipe (also known as tripping pipe) from the well to replace a dull drill bit, and then lowering the pipe back to the bottom of the well.

Many other "interruptions" occur in the activities covered by a Permit to Drill, e.g., casing placement, cementing, pressure-testing/cement logging, perforating, stimulations, and tubing installation. The statement appears to distract reviewers from the "completion" (or "development") phases and potential issues of controversy, unconventional stimulation.

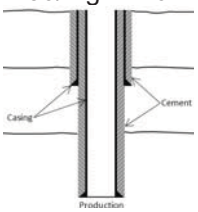
Many urban locations require nighttime Quiet Mode operations rather than unimpeded 24-hour a day drilling and completion operations, unless the rigs are fully enclosed as used in Los Angeles, Long Beach, and Beverly Hills.

As in many other statements (e.g., drilling without a conductor casing), the DEIR preparers do not cite other sources for this statement and thereby attribute the statement to the preparers or their editors, and thereby the preparers demonstrate that they are unfamiliar or inexperienced with oil field and well operations.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-51

2-30/Fig. 2-10 Typical Well Bore and Casing Source: Project Application



Open conductor zone, dual casings (Surface and Production), and cemented from Bottom of Hole to surface are not common practices especially during initial exploration of a neww field area and pools and must be assumed to be specifically designed for the proposed Project, as no references or sources are given.

Cementing from bottom to top of hole is not common but part of Best Management Practice, but dual casing only without conductor and intermediate casings are not common nor best practices and require justifications or compliance to Unit/Field Rules. Therefore the reviewer can only assume these are specific to the proposed Project and review accordingly.

The well design is totally inadequate and incomplete as the casing design does not include a conductor casing through the acknowledged dune sands of the Production Pad in an urban setting and must be presumed to be a gross error in the simplification presented.

Although not specific, the surface casing must be presumed to reach the bottom of Pico/top of Repetto formations and must be considered the Base of Freshwater.

As DOGGR has provided no field/unit rules for the Torrance Field, the Applicant, who may become the Unit or Field-Area operator through the Lease-Agreement's provision for unitization, must provide a draft Unit/Area/Field Rules before proceeding especially as such would be required for the UIC compliance for water flooding and injection for disposal.

Similarly, absence of an intermediate casing above and through the numerous permeable and oil-bearing elsewhere members of the Repetto formation (without indication of references or sources) must be presumed to be errors (without references to information that shows no oil in the Repetto formation above the Puente in this offshore area).

WILT-51 continued

100% percent cementing is not common practice but is often used as Best Management Practices for sensitive conditions and either must be a decision of the Applicant as a condition for all wells from this pad or is an error in the illustration.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-52

2-31/2 When the well reaches **total depth (TD)**, drilling operations are halted and the drill pipe is removed from the well leaving mud in the hole to contain any potential production fluids located at the reservoir depth. A logging tool is then lowered into the hole to record petrophysical data of the formations...drilled. If the well looks like it would produce oil, production casing is installed in a similar fashion to the installation of the surface casing.
Again as before, as indicated in available well design, drilling would be first halted at the end of the surface casing bore and then the surface casing placed, cemented, and tested; then the bore would be extended and turned from the vertical as part of directional drilling.
Actually halted at total measured depth usually and not at total vertical depth.
Again issues of only two casings designs only rather than including an intermediate casing through the Repetto formation, well design is incomplete as it does not include an intermediate casing through known hydrocarbon zones. No references or sources are provided to justify exclusion of the intermediate casing.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-53

2-31/2 Production casing for the Proposed Oil Project is planned...be cemented similarly to how the surface casing is cemented,...cement has been allowed to fully harden, **another electric logging tool, called a cement bond log**, is lowered to the bottom of the well to evaluate the completeness and effectiveness of the cement on the outside of the production casing.
Cementing of the production casing, as in the surface casing, to the surface is not common but is stated in the text herein and in figures elsewhere but is a common best management practice and is accepted as a condition in this review. Without such, many other comments would be required. Similarly use of cement bond integrity logging is a best management practice, especially for the sensitive location/pathway for these wells. Such logging must be required after any significant changes in casings, e.g., perforations, re-perforations, high pressure/unconventional completion methods, etc., to assure the continuing integrity of casing:cement:bore cohesions.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-54

2-31/3 The well is then **"completed"**,...series of activities that allow for the production fluids to flow into the well bore inside the casing and to the surface.
Common terminology extends completion or development from the placement and cementing of casings and running of the logs rather than Pressure Tests of the casing. All activities and operations after the successful pressure tests or logging up to connecting and commencement of production flow for sales are still considered as part of completion within the DOGGR Permit to Drill or Permit to Rework/Redrill.
This is a totally inadequate and incomplete statement given the current complete overhaul of DOGGR regulations regarding "Completion", "Development", and "Stimulation".
Completion commonly includes the following: Perforation, Stimulation = surging/swabbing, packing, acidization, and fracturing, cleaning/development, and piping/connecting for Production.
This section must thoroughly clarify what the anticipated activities are between testing of the production casings and placing the well into production. As written, the DEIR would allow any activities to be conducted without the stated limits of "no fracking", depending on how the Applicant defines fracturing.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-55

2-31/3 Appendix A provides additional details on this process.
This appendix does not provide the factual and quantified responses for the comments above and will be commented on below after comments on the Text of the DEIR.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-56

2-31/4 Table 2.5 shows a list of chemicals that would be used during drilling operations. The amounts listed are the estimated quantities consumed per well drilled. **These materials are packaged by the manufacturer for shipping** and would be delivered to the job site...

As DOGGR drilling and redrilling (and Reworking) permits include all activities through completion/development to flow for sale, limitations to those chemical used only in drilling muds and fluids used up to pressure tests/cement logging appears to be purposeful and renders this section to be totally inadequate. All chemicals must be listed and any other which may be used through the DOGGR permit processing must be listed or require the Applicant and City to issue Supplemental EIRs as needed.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-57

2-32/1 The Proposed Oil Project would comply with the **1993 CUP conditions** of approval, proposed operational practices, and proposed design features. ***[1993, City Council Resolution 93-5632; Oil and Gas Lease No. 2, City and Macpherson, 1992 allowing oil and gas extraction within the tidelands]***

E&B undertook various studies and submitted an application to the City for its own redesigned oil production project that maintains consistency and thereby the Project Description of the DEIR must be assumed to be the Best and Last definition of the Project and all conditions, the scope, and limits of the Project. This statement creates a conflict between the Lease/Conditions/Settlement/CEQA.

As the conditions and the original lease differ from statements made in the DEIR, the statement is in conflict with either CEQA (i.e., the DEIR as a full disclosure document) or the contract legal issues.

The DEIR must be revised and the FEIR must be accepted and if certified be acknowledged as and become the controlling document for all activities, facilities, and operations of the Project.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-58

2-33/3 The Applicant **indicates** that low levels of **potential "native" hydrogen sulfide (H2S)**...0.0 to 6.0 parts per million (ppm), **may be encountered** in the gas produced from the underlying oil reservoir.

No information, sources, or references are provided for support of this statement. The DEIR does not provide any evidence or references to justify any level of "native" H2S even though production records exist for Redondo and other pools and areas of the Torrance Field both within the Puente and Repetto zones.

All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-59

2-33/4 Because the produced fluids **may** contain **some** H2S, fixed H2S detection systems would be installed around the drilling site and continuous monitoring would be present during all drilling, workover, and well servicing operations. Sensors would be located in areas that are frequently used by personnel, selected drilling area locations, areas where **H2S** may accumulate, and any other areas determined by hazard analysis to pose a potential risk.

2-33/4 Personnel would also carry personal **H2S** monitors attached to their clothing for immediate H2S detection during drilling.

No information, sources, or references are provided for support of this statement. The DEIR does not provide any evidence or references to justify any level of "native" H2S even though production records exist for Redondo and other pools and areas of the Torrance Field both within the Puente and Repetto zones.

All unfounded statements in the DEIR must be revised and supporting documents be included and all speculative statements by the preparers removed or justified by appropriately qualified specialists.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-60

2-X: 88pages

The 88 pages of "Project Description" fails to describe the real project as supported by the basic document, "The Lease", starting with the available production, disposal, and waterflooding areas/ zones of the western on-/offshore portions of the Torrance Field.

As the last in a long line of documents, and the implied swearing that the Application and this DEIR are true and accurate, it is not clear and apparent as to what documents take priority in the definition of the Project and any subsequent developments not include herein. Therefore the Project Description

WILT-60 continued

of the Final EIR must be accorded the superior priority before certification and all other document be superseded.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-61

4.5-1/1 **4.5 Energy and Mineral Resources** **...**addresses the Project's potential impacts related to **energy**...resources...identifies **energy consumption levels and trends in California**, along with current energy conservation policies established by the State and by the City of Hermosa Beach...energy that would be produced by the Project's oil and gas production activities is also estimated and compared to the major forms of energy (electricity, natural gas) and their sources (including alternative energy sources) generated and consumed in California.

4.5-3/1 **4.5.1.4 Minerals** **Several minerals are mined**...no meaningful quantities of known mineral resources...at the Project Site or the Proposed...Yard Site (USGS 2014)...sites are not listed as a Mineral Resource Zone (MRZ), which includes only **non-fuel** mineral resources...closest mining...mine...

4.5-8/4 **The California Department of Conservation** **...**primary agency with regard to **mineral resource** protection...responsible for conserving earth resources...

4.5-8/5 The State Mining and Geology Board develops policy direction regarding the development and conservation of **mineral resources** and reclamation of mined lands.

4.5-11/2 Crude oil is a raw **material** used to manufacture petroleum-based products...77 to 90 percent of the future oil field production could be used to produce fuels such as gasoline or diesel.

Oil, gases, and even water can be and most often are considered as minerals in the oil and gas sector: Schlumberger, 2014. Mineral Interest 1. n. [Oil and Gas Business] Ownership of the right to exploit, mine or produce all minerals lying beneath the surface of a property...include all hydrocarbons. Mineral interests include:

1. the right to use as much of the surface as is reasonably necessary to access the minerals,
2. the right to execute any conveyances of mineral rights,
3. the right to receive bonus consideration,
4. the right to receive delay rentals and
5. the right to receive royalty.

Any or all...rights of mineral ownership may be conveyed [leased for compensation] by the mineral owner.

Inclusion/separation of energy resources distorts and diverts attention from the mineral resources requirements, codes/conditions, and state-county-city jurisdictions and renders the entire section as inadequate and/or incomplete. As a new approach, preparers appear to be intentionally confusing the public review.

Energy discussions are most appropriately discussed in GreenHouseGases or Infrastructure, Utilities, or Services and must be removed from this section.

Traditionally, all oil and gas production is considered as mineral resources and not as "energy" which requires processing of the mineral resources before being suitable for energy-related uses.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-62

4.5-4/1 The Proposed Project would allow for the production of an average of about 3,000 barrels per day (bpd) over the life of the Project (based on the Applicant's estimated production totals)...

This statement of production, presumably of oil rather than total production fluids would equate to <100bpd-well for the life of the project (35 years) which is contradicted elsewhere.

Presumably this is text in the Project Description stated total production would be 8+16,000bpd not 3000bpd as stated here without a single graph of initial production and fall off assumed in the Project Plan.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-63

4.7-1/1 **4.7 Geological Resources/Soils** **...**impacts related to geologic hazards and resources...evaluating potential impacts at **each of the Proposed Project sites**,...potential for impacts that **might be** in the Proposed Project **vicinity or subregion**,...induced seismicity and subsidence (onshore or offshore) due to oil and gas extraction...several sources, including geotechnical studies prepared by the City's consultants for this EIR...as well as geologic reports and maps pertaining to the **Proposed Project area**.

WILT-63 continued

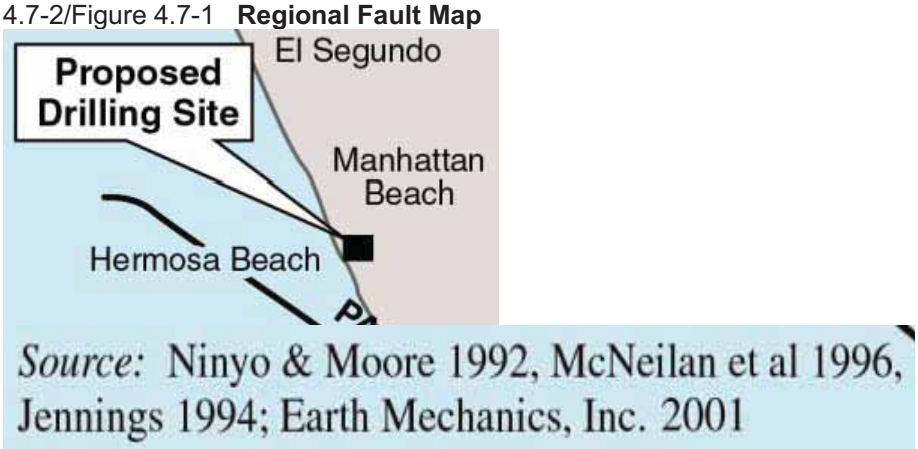
Although the Project Description refers to only the singular Project Site, in this section Project Sites are referred to without definition and demarcation and a "might be" for a larger Project vicinity, subregion, or area is introduced.

The DEIR is inadequate and incomplete as to definition and delineation of all Project designations and must be revised and clarified and consistently applied, e.g., Project Site(s), Project Corridors (pipeline), and Project Area (e.g., 7000acres of prospective leases, pools, and subsurface properties).

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-64

4.7-2/Figure 4.7-1 **Regional Fault Map**



The figure appears to be derived from rather than be a portion of an unreferenced figure and therefore totally unacceptable for a full disclosure document.

References are generally not available to the Public and not included in Appendices, therefore such depictions are inadequate and perhaps incomplete.

Without restrictions to active or potentially active designations, the Figure is totally inadequate and does not provide any information for potential earthquakes above 6 magnitudes within 25 mile radius.

No relationship between the fault delineated hereon (assumed to be Palos Verdes) and the Fault 103 is described and no comparisons have been made here or elsewhere.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-65

4.7-3/4 Beneath the surficial dune sands is the Pleistocene age San Pedro Formation...late Pliocene age Pico Formation...early Pliocene age Repetto Formation, consisting of siltstones with layers of sandstones and conglomerates...Miocene age Puente Formation, which is the **primary oil reservoir** in the Hermosa Beach area.

As in earlier text for same issues, no evidence, documents, or references are provided to support stratigraphic description and exclusion of oil and gas reservoirs in the Repetto under the Project Site or Area.

Similar no definition is provided for "primary" reservoir as compared with that used in Redondo Beach and most of Torrance. Furthermore as used, the text implies that secondary reservoirs, areas, or pools occur within and adjacent to the Hermosa Beach area, which is also not defined or demarcated.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-66

4-7/5 Within the Puente Formation,...Project targets the Upper Main, Lower Main, and Del Amo reservoir units. The Upper Main is **expected** to be the shallowest oil productive section for the Proposed Oil Project and it is known to be the **most prolific oil-producing zone for this area of the Los Angeles Basin**.

As in earlier text for the same issues, no evidence, documents, or references are provided to support the stratigraphic description and exclusion of oil and gas reservoirs in the Repetto under the Project Site or Area.

No evidence, documents, or references are provided to support the designation as the most productive zone within the Los Angeles Basin.

WILT-66 continued

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-67

4.7-4/6 The **Proposed Project sites** are not located within a fault-rupture hazard zone, as defined by the Alquist-Priolo...

No delineation or demarcation has been provided for Project Site, Sites, Area, or other designations for areal association to the Project.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-68

4.7-4/6 Based on mapping by the State...no known **major active** faults at the Proposed Project **sites** and **no evidence of active faulting** was observed during NMG's geologic/geotechnical Project Site investigation. The closest active faults are the Newport-Inglewood Fault, located 5.8 miles east of the Project Site, and the **Palos Verdes Fault**, located 1.9 miles west of the Project Site...**An inactive offshore fault, named Offshore Fault 103**,...approximately 1.4 miles west of the Project Site...

4.7-5/3 The seismic events...earthquakes of 1812, 1827, 1852, 1855, 1857, 1893, ***[1933,]*** **1936**, 1952, 1956, 1965, 1971, 1974, 1977, 1987, 1991, and 1994...**1812 and 1857 events**...along the **Mojave Segment of the San Andreas Fault** and caused significant damage to developed areas of southern and central California...estimated...magnitudes of approximately M7.1 and 7.8...1952 Tehachapi earthquake...M7.7...**1933 Long Beach earthquake**...caused serious damage...and killed 115 people...M6.4 (USGS 2012; Southern California Earthquake Data Center 2014).

No defintion of major vs minor active fault is provided.

Earlier section depiction and some later reference to Fault 103 indicates that the fault plane has been active during the post-Repetto and San Pedro depositional ages, and may extend to the offshore surface as small escarpment.

This fault is not shown in its relationships with the Palos Verdes fault and no measureable earthquake records have been reviewed and presented to address the activities of +1 -+3 RM treemors.

The discussion totally avoid the fact that DOGGR indicates many know faults without any assessments of the potential or measured activities and that others have recognized that the State Geologist has not delineated or extended any new potentially active or active faults for over 10 years due to outcries in the media over their impacts on land use development and property values.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-69

4.7-5/5 *Probabilistic Ground Acceleration Analysis* ...probability of exceeding a certain ground motion...10 percent...in 50 years map depicts an **annual probability** of 1 in 475 of being exceeded **each year**...show ground motions that...Survey do not **believe**...exceeded in the next 50 years. **IN FACT, there is a 90 percent chance that these ground motions would not be exceeded**...allows engineers to design structures for larger ground motions than what is expected during a 50 year interval...10 percent probability of exceedance of ground acceleration of **0.4 to 0.5 g** (**percent of gravity**) (California Geological Survey 2013)...4.7-6/1 A peak horizontal ground acceleration of 0.433g and peak vertical ground acceleration of 0.560g was calculated for the **Project Site**...predicted ground accelerations and **underlying earth material conditions**, moderate to severe ground shaking due to a seismic event can be expected in the **Proposed Project area.**

Discussion of annual probabilities along with years is inadequate and distorts the issue that at any time, the risk of the event is 1/475 - 0.2% and that once in 475 years does not mean that the other 474 years you are safe.

Editorial remark ("IN FACT...") does not included in referenced document, attempting to lessen the importance of the analysis and potential impact for surface and more importantly subsurface facilities of the proposed Project.

Use of "believe" in inadequate and inappropriate herein.

Emphasis provided to the chance for not happening appears inconsistent with standard risk designations and attempts to emphasize the security rather than the risk of occurrence and distorts the entire concept of risk analysis rather than security analyses.

Attempts to defined gravity are inadequate as 0.4 is designated as percent of gravity rather than ratio and as provide would be 0.4% of gravity, again demonstrating that the preparers are not qualified for preparation of geo-seismological sections.

No Project area has been defined, delineated, or demarcated for the Project Change from Project Site to Project Area and only one unspecified site, not including the well paths.

Calculations for the Project Site(s) avoid the more serious risks for the very long Project corridors for pipelines and mile+-long well pathways which are exposed to the vertical and horizontal acceleration

WILT-69 continued

and more importantly the differential movements as the seismic wave pass through the corridors and pathways.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-70

4.7-6/2 Earthquakes and Petroleum Facilities **Worldwide**, earthquake performance at various types of petroleum facilities has been **excellent from the standpoint of direct damage**, but several significant instances of damage have occurred as a **result of fire** following an earthquake.
Worldwide analyses have no bearing in CEQA considerations as they don't pertain to Southern California and the western areas of the Los Angeles Basin and structural analyses of the proposed Project site production facilities. Similarly virtually no analyses are undertaken regarding the absence of conductor and intermediate casings in the proposed Well Designs.
Similarly many well facilities are governed by vertical/slant wells rather than long near-horizontal pathways which respond very differently to seismic wave passages.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-71

4.7-6/2 Similarly, oil lines were undamaged during the 1979 **Imperial Valley** earthquake (magnitude 6.4) and pipeline damage was minimal during the 1983 **Coalinga** earthquake (magnitude 6.4) (California Division of Mines and Geology 1988).
Totally different geology and seismic/tectonic situations exist at the Project Site compared to the two example locations, and both P-/S-waves move differently for seismic tremors in the Imperial Valley, the Coalinga oilfield, and the western LA Basin.
Far more well casing paths would be subjected to 7+RM earthquakes from sources at say 6mi depth and 3-6mi distances. Directional drilled and cemented well casings would may located well above the depth of the seismic epicenters, but would be oriented aligned to the wave and be subjected to greater stresses than those or near vertical or slant well casings (moving up and down together).
The City is requested to make extensive revisions for the FEIR and allow 60 days for Public Review and Comments.

WILT-72

4.7-6/3 The low earthen embankments used as retention dikes around oil storage tanks are subject to failure from earthquake shaking...these **spills have not been serious when contained within dikes and kept free of ignition sources**...
No application of generalities to specifics of the proposed project and the designs, close proximity to ignition sources, and T- and L-connectors, pipes/casings connectors to surface piping and pipes to tanks are most affected.
Casings overlaps, changes in diameters, and bores/cements/casing connections especially in the less than vertical strings are prone to damages from the vertical and horizontal wave movements.
Seimic analyses and relationships to spills must be focused on the Project facilities, and the lack of specificity for assessment and mitigation renders the DEIR inadequate and incomplete.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-73

4.7-6/5 *Liquefaction* Liquefaction...ground failure...as a result of loss of shear strength or shearing resistance in loose and sometimes medium dense, cohesionless soils, due to seismically induced ground shaking...typically occurs in sediments where **static, relatively widespread groundwater** is less than 50 feet (15 m) below ground surface.
4.7-7/2 Based on the dense native sand dune deposits and the depth to groundwater at the Proposed Project sites, the liquefaction potential is considered to be low...
No mention is made of the need for conductor casings throughout the DEIR, which appears to indicate lack of preparers and editors" awareness of good drilling practices for both oil and water in beach sand conditions. Most if not all oil field/unit rules require a conductor casing in order to prevent cave-ins around the surface casings and to allow injected cement to flow back to the surface around the surface casings.
A complete well/casing/cement design is required along with evidence-based justifications for the absences of conductor and intermediate casings.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-74

4.7-4/4 *Differential Settlement* ...process whereby soils settle non-uniformly, potentially resulting in stress and damage to pipelines or other overlying structures...strong ground shaking often greatly exacerbates soil conditions already potentially prone to differential settlement...Elongated structures, such as pipelines ***[not-vertical well casings]***, are especially prone to damage as a result of differential settlement. Pipe ***[casing]*** connections...are especially vulnerable to the differing earthquake response between buried pipe and rigid structures (California Division of Mines and Geology 1988).

Soils and softer sedimentary formations are subject to compaction and subsidence resulting in differential movements and increases stress on long facilities at right angles to the movements, here indicated only as pipelines. Vertical wells are subjected to very different stresses due to differential settlements. Low-angle and near-horizontal pathways proposed for more than 25 wells must be considered in the assessment of impacts of subsidence/uplifts and differential movements resulting from the production from offshore areas and injection for production and disposal beneath the onshore areas of the project. Similar activities in the Inglewood Field have clearly documented the uplift of areas in the injection sites and depressions in the production areas. Similar differential movements were considered as promoting or causing the differential movement beneath the Baldwin Dam leading to its leakage and eventual collapse.

Natural and induced differential movements must be assessed with regarding to the risks to the many Project production wells and the anticipated subsidence of production and uplift of injection areas.

Similarly the text does not indicate nor reflect the impacts of the absence of replacement fluids injections to compensate for the loss of 8000bpd of oil.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-75

4.7-4/5 *Oil Field Induced Seismicity* A seismic study has been conducted for the Proposed Oil Project area...to identify past seismic activity...coincided with and...result of **past nearby oil field operations**...study concluded...past seismic activity did not coincide with past oil field operations (such as drilling, **fracturing**, oil **extraction**, or water injection)...no patterns of seismic activity relative to those past oil field operations.

As the seismic study failed to recognize the presence of DOGGR recognized faults beneath the Project Site and Area and involved no center/depth/magnitude relationships with production rates and field pressures. The Study cannot be considered as science and is only "correlations" not causative.

Similarly the Study does not consider the potential for differential movement as production removes pressure/fluid and as injection over pressurizes areas with a mile separation.

No information nor analyses are provided for the transfer of pressures and fluids between the injection and production zones and areas.

All fault lines must be considered and epicenters located as to Lat./Long./Depth and most probable fault.

Such reservoir/pool/zonal studies are required for the FEIR.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-76

4.7-12/1 [4.7.2 Significance Criteria] ...guidelines indicate that a substantial adverse impact would occur if a project would expose people or structures to major geologic hazards...significant adverse impacts are determined based on **whether construction of the project would generate unstable geologic conditions lasting beyond the short-term construction phase**...The Proposed Project **impacts** would be considered significant if it:

- Exposes...**structures** to potentially substantial adverse effects,...**known earthquake fault**, strong seismic **ground shaking**, and seismic-related ground failure...;
- Is located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site...**subsidence, liquefaction, or collapse**;

The DEIR has not assessed the DOGGR delineated fault line/planes beneath the Project Site(s) and Area and specifically provide seismic response studies for the Site facilities, shallow pipelines and deeper well casings/pathways, which are need before further review can be undertaken..

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-77

4.7-12/2 **4.7.3.1 Introduction** The Proposed Project...in a **geologically complex** and **seismically active region**....including...pipelines, as well...Yard Project facilities...to such seismically induced ground motion...In addition, **wastewater** injection would potentially induce seismicity in the vicinity of the Proposed Project during Phases 2 and 4. The Proposed Oil Project will remove an **unknown volume of oil, gas, and associated water**. In the **absence of injection of produced water back** into the subsurface, the potential for settlement of overlying infrastructure increases during Phase 2 and 4 operations.

WILT-77 continued

Similarly, offshore subsidence could occur, as oil would be extracted beneath offshore waters.

Use of both produced and waste waters is confusing as the produced water is not considered waste and is considered as service water for direct use in maintaining field pressure and promoting the flow of oil and gas to the producing wells. Wastewater should only be considered when injecting into a Class 2 UIC well for disposal.

Why is the production volume "unknown" when daily productions are also estimated at 3000-8000bpd oil and 16,000bpd produced water. Oil-1,100,000bbl/yr x 35 years = 38,325,000bbl (1610Mgal, 215Mcuft; 5000acft) must be replacement with fluids so as to prevent subsidence due to oil and gas production, in addition to the return of produced water.

Subsidence must be estimated and suitable quantities of replacement fluids must be added to the injection projects to assure balanced field pressures and volumes.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-78

4.7-17/2 *Design Features and Operational Practices* A comprehensive Subsidence ***[Ground Movement]*** Monitoring Program...monitor subsidence in the area during oil extraction and water injection...land surface monitoring using Global Positioning Survey (GPS) and InSAR technology...to facilitate the **early identification** of potential subsidence caused by oil extraction...to **measure** whether subsidence occurs; **measure potential vertical ground movement** (either up or down); collect information that could definitively distinguish between measurable subsidence caused by oil extraction operations and subsidence attributable to other human activity or natural processes; and implement defined action level requirements...minimizing or eliminating the potential for damaging subsidence ***[and uplift]***. The Program would ensure that subsidence would not occur to the **degree that it could endanger the facility**, surrounding properties/structures, **shoreline areas, and offshore areas**.

The entire subsidence monitoring Program for the tidelands areas is based on above sealevel monitoring points which would not be on or over presumed production area and less than 1500ft offshore.

InSAR system may be useful for the beach and a few surface exposed features but has no applicability to submerged surfaces.

While the Applicant and DEIR preparers appears to have not directed any efforts to subsurface/seafloor level monitoring, seafloor subsidence monitoring systems have been implemented elsewhere and could be established for the proposed Project. The currently proposed surface monitoring system does not provided any early warning or long term monitoring and documentation capabilities.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-79

4.7-17/3 A comprehensive Induced Seismicity Monitoring Program would be implemented as a part of the Proposed Oil Project in order to **monitor seismic activity** in **the area** during oil **extraction** and water injection...could monitor seismic activity using the Southern California Seismic Network (SCSN)...to measure...potentially induced seismicity that **might** result from drilling activities and water injection, collect information that would allow for a determination of the causes of **any measurable** seismicity, and implement defined action level requirements...minimizing the potential for continued induced seismicity.

No discussion is provided for monitoring disposal injection, and a preliminary plan must be provided for the UIC Projects for disposal and waterflooding production similar to that required by DOGGR as part of the UIC Projects..

As demonstrated in the Inglewood Field, microseismic monitoring can clearly identify and measure tremors down to -3 Richter Mag. and up to +2 RM, while others for more general systems can pick up 1.0-+5 RM.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-80

4.7-17/2 If activity is detected and the **overseeing agencies** consider it necessary, the Proposed Oil Project operations would be modified or ceased.

Such overseeing agencies are not defined and as such the statement is totally inadequate. Subsidence must not depend on some undefined agencies as no mitigation is stated or required herein. Detectable subsidence at any location must be addressed and considered significant and mitigation can be implemented. As stated elsewhere, no provisions is made to replace fluids removed but not reinjected to the producing formations and no modeling or other analysis is provided to assure the injection locations are appropriate for maintaining pressures and avoiding subsidence >3000ft away from the injection sites.

WILT-80 continued

All production and injection activities must provide flows-production and injection and resulting field pressures for more than 8 locations (1/80 acres) within the producing areas and must be made available to the public. The Applicant must also provide an independent structural geologist to review information and develop a model for ground movements within 1000ft of the production and injection points (bottoms of holes).

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-81

4.7-18/1 ...Project facilities, associated oil/gas pipelines, and Proposed City Maintenance Yard Project facilities...susceptible to damage as a result of an earthquake on these ***[Newport and Palos Verde]*** or other **regional faults** ***[and underlying]***. Although the Proposed Project **area** is not susceptible to liquefaction hazards, the potential exists for seismically induced differential settlement and soil collapse.

Proposed Project area must be assumed to include all reasonable expected lease areas of about 7000 acres which includes shoreline/beach areas with the 6000-7000 ft reach of well paths.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-82

4.7-19/3 However...existing building codes are often inadequate to **completely** protect engineered structures from hazards associated with large ground accelerations...potential seismic impacts and associated damage to ***[surface]*** structures from a major earthquake on the nearby Newport Inglewood and Palos Verdes faults, or any other **regional** ***[underlying]*** **fault**, would be considered *significant*.

Building codes are never adequate to completely protect specialized industrial facilities, especially as the the city building codes do not have specific jurisdiction over the subsurface facilities regulated by State and Federal laws, regulations, and requirements, and since no one could verify such assurance and compliance.

No analyses or assessments are provide for the area or regional fault designated Fault 103 and those shown by DOGGR beneath the site and area.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-83

4.7-21/1 A **very small fraction** of oil field extraction and associated **wastewater injection** activities in the United States have **induced seismicity at levels that are noticeable to the public**...past oil field operations in the Los Angeles Basin inducing seismic events...**very shallow** earthquakes at the Wilmington Oil Field occurred between 1947 and 1961, as well as **possible** fault creep at the Inglewood Oil Field in the early 1960s...associated with **extreme amounts of land subsidence** that occurred in these fields that resulted from lack of **proper** water re-injection operations...

Oil fields and wells usually produce oil and gas rather than extracting as in tar sand mining, and all references to "extract", "extracting" or "extraction" must be replaced with equivalent of production.

Wastewater must be injected through disposal wells, and produced water must be injected through waterflooding/injection wells. Preparers appear not to be familiar with oil and gas activities and terminologies.

What does "very small" mean? Provide a description of all related activities that have induced seismic events, depths, magnitudes, and locations.

Provide definitions and quantify (or delete) of very small, noticeable, very shallow, possible, extreme, and proper, and related subjects in Setting and Assessments of impacts related to these areas

Amongst seismologist, "noticeable" (=also feelable) has been generally identified as +2 Richter Magnitude and above, whereas measureable is +1 RM or above. , possible, extreme, and proper

Provide data and/or reference for statement of "possible fault creep"

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-84

4.7-21/2 As indicated...Proposed Project Design Features,...conducted a **seismic study** for the Proposed **Project area** in order to identify **past seismic activity** that may have coincided with and been a result of past nearby oil field operations. The results...concluded that past seismic activity **did not coincide** with past oil field operations (such as drilling, **fracturing**, oil extraction, or water injection) and there were no patterns of seismic activity relative to those past oil field operations. Most of the recent seismicity (1981 to 2010) in the **northwest portion of the Los Angeles Basin, which includes the Project Site**, occurs at depths below **5 miles**, as a **result of normal tectonic stresses**. Except for **one shallow, low magnitude earthquake** located **west of the Wilmington Oil Field**, no shallow earthquakes **(less than 4 kilometers below ground surface)** were recorded

WILT-84 continued

in the active Wilmington or Torrance oil fields, including the Redondo Beach area located immediately adjacent to Hermosa Beach.

The Project Site/Area (including the Redondo Area) is not located in the northwestern portion of the LA Basin but lies in the southwest corner of the Basin, no fields are further south none further west.

The Study did not have access to a) production and injection records of the Redondo Area of the Torrance Field and to b) microsiesmicity and low magnitude records for -3 - +2 RM tremors so as to calibrate an sensors or analyses as to what was and was not correlated. No evidence is provided either way and the presumption is that if no records exxist no event happened.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-85

4.7-21/3 As previously discussed, the Project Site is located 5.8 miles west of the active Newport-Inglewood Fault, 1.9 miles east of the active Palos Verdes Fault, and **1.4 miles east of inactive Offshore Fault 103**...closest fault, Offshore Fault 103, is located at a **sufficient** distance from the proposed **wastewater injection wells** such that injected water-induced seismicity along this fault is **not expected**. The data...should not experience an increase in seismicity as a result of oil production and wastewater injection during Proposed Oil Project operations...

No information is provided regarding the effects of the differential pressure/injection-withdrawal regimes that would be created by the production from those zones/pools nearest the fault and injection of produced water at supposedly the maximum distances from the fault. If the injected water does not return to the pools and vicinity from which it is taken this would lead to greater subsidence therein and uplift in the vicinity of the injected produced water.

Here the preparers say water will not return to the vicinity of the fault while in other sections the water must return to the vicinity of the fault in order to support the ground and formations from subsidence.

No consideration is provided regarding the effect on the fault plane and related fault blocks due to the removal of 8000 bpd of oil without replacement by additional compensatory fluids along with the returned produced water for flooding and pressure maintenance.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-86

4.7-21/4 ...adherence to California regulations and oversight by DOGGR would minimize the potential for an earthquake induced by water injection...an accurate, operating pressure gauge or pressure recording device **would be available** at all times, and all injection wells **would be equipped for installation and operation of such a device**. To determine the maximum allowable surface injection pressure, a step-rate test would be conducted prior to sustained liquid injection...involves incrementally increasing the injection pressure on a given well until **fracture pressures are reached**. Maximum allowable surface injection pressure would be less than the fracture pressure, thereby minimizing the potential for earthquakes and **surface ground cracking**.

As indicated during the last few years of DOGGR reviews by the public and by EPA for the UIC projects, regulations and regulators are not equipped nor funded to properly protect the health, safety, natural resources, and environmental quality related to oil and gas in the State.

As indicated herein, the preparer assumes no need of pressure monitoring in the production zones - mile offshore - and only focuses on the injection locations which are underlain by known faults. A device is required to be available but not installed nor operating nor relaying pressure in summarized or real time modes. No indications of fracture pressure are provided and are not related to target zone levels and surface pump pressure.

This section is totally inadequate and incomplete and cannot be deem to provide any mitigative value based on locations, depths, activities, quantified values, and information availability. DOGGR Suervisor is reported as to stating "Fracking is regulated but not reported", and then "Since fracking is not regulated we can't ban it."

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-87

4.7-22/2 Conventional...fracking), where...water...injected into large areas of the **reservoir formation** at relatively high rates, would not be utilized...potential impacts related to fracking induced seismicity would not occur.

Fracking is seldom if ever used in "reservoir" formations as permeability is already high and formations are usually soft and thereby will squeeze and close up thus defeating the very purpose of fracking.

The statement is not supported by actual studies of fracking operations which are commonly monitored by microseismicity contractors to assure proper placement of the fracs. Therefore, induced

WILT-87 continued

microseismicity are the very basis of fracking/fracturing/breaking the rock formation and the statement is wrong. Induced seismicity may be kept low (-3 - +2 RM) in order to avoid blowouts and expense.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-88

4.7-22/2 ...Project-induced seismicity is **not anticipated to occur**, impacts would be *potentially significant* in the **absence of monitoring** to verify that seismicity is not occurring...applicant proposes a Subsidence and Induced Seismicity Monitoring Program to detect seismicity as a result of **wastewater** injection activities to ensure that seismicity is not occurring...would further reduce potential impacts related to subsidence.

Define anticipated and monitoring and mitigation to assure compliance with the statement..

Monitoring of drilling and completion is not conducted to assure "seismicity is not occurring" but rather to assure that the induced seismicity remains in the targeted zones.

Monitoring of "wastewater" injection for disposal can be conducted to assure that fracturing of the faulted areas within the injection zones beneath the Project Site does not occur.

All of these have little bearing or mitigative value for avoid subsidence in the production areas of the tidelands. Injection may not influence or compensate for withdrawal of formation water and oil and gas as the injection zones are a mile east of production and oil/gas withdrawal are not compensated by equivalent replacement fluids or gases within the production zones.

The entire subsidence, ground movement, and seismicity requires total revision.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-89

4.7-24/1 Subsidence due to oil, gas, and groundwater withdrawal **generally** occurs over a **large** area. As a result, **differential settlement damage** due to subsidence is **typically** only evident in **long linear** features, such as pipelines, roadways, or aqueducts.

Define generally, large area, typically, and long-linear.

DEIR does not include the 30 one-mile long near-horizontal directionally drilled well casings as long and linear features.

The statement and text section are inadequately specific to the Project to render the test as totally inadequate for review and assessment of the Project.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-90

As indicated in Section 4.7.4.2, Geosyntec (2012) **conducted a subsidence study for the Proposed Oil Project** that was **peer reviewed by the EIR preparers**.

EIR preparers have no disclosed competence, experience, or education to peer review geological, geophysical and seismological studies and analyses.

Various comments above have identified statements and text which appears to demonstrate that the preparers cannot be considered as "Peers" for review and confirmation of the adequacy and completeness of specialized technical documents and analyses.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-91

4.7-24/1 The report concluded that subsidence has not occurred to date in the Torrance Oil Field and subsidence is not expected to occur as a result of the Proposed Oil Project related oil extraction, for the following reasons:

• Water injection would be conducted to minimize subsidence as oil is extracted during the operational life of the Proposed Oil Project.

As no references within the Study Report are made to the same level of information basis for the Wilmington, Torrance Main, and Torrance Offshore-Redondo/Hermosa pools/areas and no comparisons are made with the Proposed Project Area geology, the conclusions of the Study Report and derivation herein cannot be considered as adequate nor complete.

NO definition or quantification of "minimize" is provided (e.g., subsidence of less than 0.6 inches/year) therefore the text statement become meaningless and renders this section inadequate and incomplete.

The only specifically focused application to the Project avoids the facts that the injection is over a mile away from the production area and the volume of fluid reinjection is only 66+% of the total volume removed from the distant production area.

WILT-91 continued

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-92

4.7-24/1 The Proposed Oil Project will remove an **unknown volume of oil, gas, and associated water**. In the absence of injection of produced water back into the subsurface, the potential for settlement of overlying infrastructure increases.
...**most of the subsidence could occur offshore**, as oil would be extracted beneath offshore waters and most of the initial water reinjection is planned for portions of reservoir zones located beneath onshore areas.

The Project Description and other sections have indicated a range of oil production volume of 3000-8000bpd and the Project Lease is good for 35 years; therefore, the volume of oil removed without replacement can be estimated as say 70,000,000 bbls (38.3-102Mbbl = 3K-8Kbpd x 365d x 35yr).

Offshore subsidence would be the primary focus of the Project, if production and injection are limited as described in the Section 2, Project Description, rather than the Lease (e.g., 700 or 7000 acres). As indicated in the offshore field area generalized geology, production would be drawn from offshore/tidelands and produced water would be injected beneath the upland area, over one mile away. Therefore balancing of pressures and flow permeabilities requires a thorough description and modeling of Puente and Repetto zones for production and injection, permeabilities, and containment of pressures and flows in order to assure ground movement control and risks of uplifts and subsidences. As no specific information is provided for even a general subsidence model, the entire discussion of subsidence and uplift is totally inadequate and very incomplete, and the derived assessment statements, assurances, and mitigation values are unsupported by evidence or evidence-based conceptual and preliminary models and analyses.

Onshore/Upland areas may be subject uplift due to injection of produced water, but if the Lease defined areas are explored and produced then subsidence and uplift can greatly expanded and may affecct an area of say 7000 acres.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-93

4.7-24/1 Produced water reinjection is a standard practice in the oil and gas industry, **not only for the disposal of wastewater, but also to prevent ground subsidence.**

Disposal of wastewater is different from injection of produced water, and DEIR preparers appear not to be familiar with the DOGGR's UIC Project-Program in the LA Basin and the Torrance Field and offshore areas.

The DEIR does not provide adequate or complete assessment of both the UIC-Injection for Disposal and Injection for Production setting, assessments, and mitigation, and therefore any use of the Certified-FEIR without major revisions and at least a preliminary Project-UIC application(s) would render any further DOGGR-CEQA UIC Project consideration as equally inadequate and not covered by these CEQA documents.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-94

4.7-24/1 Although reinjection of produced water in proposed injection wells would substantially reduce the potential for ground subsidence, such reinjection does not ensure avoidance of subsidence.

Reinjection of produced water often replaces about 95% of the fluids produced, and therefore everyday the fluid volume (and all gas equivalents, is reduced everyday unless made up from additional injection into the reservoir unit.

However, the Project Description indicates that oil/water ratio maybe as high as 33%, 8/16 (x1000bpd) and therefore the proposed Project would have a deficit of millions of barrels of replacement injection fluids which would be expected to reduce pore pressure and promote subsiddence of the overlying formations and ground surface.

As the production comes from about 2000-5000ft offshore but injection is done underneath the Project Site and depends on slow upward, westward movement of the injected water to replace the produced fluids and gases

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-95

4.7-24/1 Therefore, impacts would be *potentially significant* in the **absence of subsidence monitoring** to verify that subsidence is not occurring...applicant proposes a Subsidence Monitoring Program to detect subsidence as a result of drilling activities to ensure that subsidence would not be allowed to the degree that it **could endanger the facility, off-site structures, and the shoreline**.

WILT-95 continued

No subsidence would be expected from drilling operations as stated here. Subsidence usually occurs during production rather than drilling. Similarly, uplift would be expected during the production phase arising from injection of produced water when pressures are not controlled.

All DOGGR's UIC projects require pressure testing/monitoring of the injection areas and planning of the injection model, however actual monitoring results and submittal continue to be less than adequate compliance as EPA has found during the last five years.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-96

4.7-24/1 DOGGR requires development of **field wide re-pressuring plan** to abate potential subsidence due to fluid production and sand withdrawal.

4.7-24/1 ...section 3319 (c) requires that "field wide re-pressuring plans be based upon a **competent engineering study** that includes re-pressuring operations designed to most effectively arrest or ameliorate subsidence." Consequently, oil field operations will be conducted under the oversight of DOGGR and will be designed to **reduce potential subsidence as much as possible**...Applicant proposed Subsidence Monitoring Program...mitigation measures would **further reduce potential** impacts related to subsidence.

The Field Wide Plan requires a delineation of the "Field", and the Applicant has the Lease authority to expand the Project "Field" as limited in the DEIR to the "Upland" and "Tideland" areas (e.g., 700ac) and in the Lease to all subsurface properties adjacent, adjoining, and in close proximity to those of the City's jurisdiction (e.g., 7000ac).

No re-pressuring plan has been proposed based on the minimum up to the maximum. However, this DEIR/FEIR (if certified) would become the Applicant's statement of compliance with CEQA for such a Re-pressuring Plan submitted to DOGGR for permits. As no plan is provided, the CEQA compliance for DOGGR's processing of a UIC Program approval must require further considerations for any re-pressuring Plan as part of a Supplemental/Subsequent EIR document and process. OR it must be included as part of the revisions for the FEIR of the current CEQA process.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-97

SPILL PLAN

4.8-31/2 **Spill Risk Analysis Approach** The approach for the spill analysis involved estimating the frequency of release events from the facilities and the release volumes. Spill volumes from a pipeline system rupture are based on the pipeline diameter and the **terrain** profile...limit the amount of oil that could drain out of the pipeline...pumping rate also affects the size of a release...until the pumps are shut down...assumed that pumping could continue for 60 minutes for a worst case spill.

Spill volumes includes pumping flows (e.g., 6-bbl/min) and gravity drainage and both depend on the motor control valves and motor shutdowns; assumed shutdown of 60-minutes is totally unacceptable and must be reduced to less than 3-minutes via motor-controlled valves and pressure-activated-shutdowns/ins.

The analytical approach is so generalized as to render it totally inadequate and incomplete. A draft Spill Contingency Plan is required before assessment of spill impacts. As no plans and no experience or examples from other Applicant's oil and gas production facilities are provided, the entire secction is rendered inadequate and incomplete.

Vague generalized statements lack specific focus on the proposed Project production Site, Pipeline Corridors, and Field well paths.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-98

4.8-31/3 Spills contained by the berms and drainage system valves would only be directed outside of the **field** after a subsequent failure in the drainage discharge procedure or equipment.

No spills must be directed outside of the field. No definition of "subsequent failure" of procedure or equipment is provided for the Project Site and pipelines.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-99

4.8-33/5 **4.8.1.5 Existing Site Spill Potential** Spill potential from the **existing operations** is minimal as no large quantities of materials are stored onsite which could spill and affect areas offsite. A spill outside of the facility would drain into the storm drains.

4.8-33/6 All storm drains in the area **eventually** flow to the ocean.

WILT-100

4.8-33/7 Storm drains...flows through storm drain piping and connects to the main storm drain system...and flows southerly to connect to the storm drain system...that discharges **onto the beach area**.

Such statement have not been defined and storm drains and inlets have not been located on any maps to show expected high risk areas for spillage and where the spilled oil could be intercepted as would be required and included in an adequate and complete spill contingency plan, not provided for this specific Project.

A complete surface and storm-drains drainage map must be provided between all Project facilities, to any inlets for storm or sanitary, and to any beach/tideland areas.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-101

4.8-40/2 *Overview...*Spill Prevention Control and Countermeasure plans (SPCC) covered in these regulatory programs apply to oil storage and transportation facilities and terminals, tank farms, bulk plants, oil refineries, and production facilities,...as follows:

The Project Site(s) and pipelines can be considered as storage, transportation, processing, and production facilities. Furthermore DOGGR requires a parallel document of the "Spill Contingency Plan" which must be provided for every field and production unit, e.g., the Project, and must be site specific and presented along with the Project notices and applications for UIC disposal and flooding project.

As the DOGGR considerations and processing for discretionary permits depends on this DEIR and eventual certification of the FEIR, drafts of all documents required for submission to DOGGR must be contained in the DEIR and its appendices in order to allow DOGGR use the certified document in their CEQA considerations for permits.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-102

4.14-7/4.14.4.2 Proposed Project Design Features

Oil Reservoir Wastewater

4.14-7/2 During Phase 2, water would be separated from the oil and gas stream by a three-phase separator. The water would then be pumped into a treatment system to remove excess oil, including a gas flotation unit and a filter unit...to clean the water of oil and solids...the extracted water would be tested...and treated by a biocide...**Replacement water**...similarly be tested and treated...reduced to hydrogen sulfide (H2S)...could be used for this specific treatment if it is determined to be needed.

Phase 2 drilling, testing, and production requires that the injection well be drilled/completed first elsewise the testing and production for the 2nd-4th well will be constrained by lack of "disposal" facilities for treatment residual fluids and sludges, if the Phase 1-3 are restricted in injection.

Although no alternative or option is mentioned the common practice is to use disposal wells operated by others which only requires a ten-day notice to and approval by DOGGR.

Define "Replacement" water as the produced water once treated would replacement via pressure/flows part of the Phase 2 well produced fluids and gas. Assuming proposed oil production of 8000 bpd oil and 16,000bpd of produced formation water per each of three wells and only one injection well, the single injection well capacity must be sufficient for injection of 48,000 bpd of treated produced water and 24,000 bpd of treated "replacement" water (e.g., treated wastewater from any one of several sewage treatment plants to the north or east), for a total of 72,000 bpd (3000bph, 126,000 gal/hr, 2100gpm). With an onsite injection well, "Replacement Water" alone would still require about two truck deliveries/hr (20,000gal/truck, 1,000,000 gal/day), with export/return/outbound truck trips taking produced water in excess of the well capacity. Once purple pipelines are installed, trucking may be eliminated for "replacement" waters.

No information is provided as to replacement water systems nor the disposition of Phase 2 produced water or the injection well capacity during the tests/production of the Phase 2 production wells.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-103

4.14-7/3 ...water would enter a water surge tank and then be sent to the **water injection pumps** for injection into the **oil-producing reservoir**, through an injection well...to monitor this oil/gas/water separation process.

As currently described the injection system need to inject into the water flood zone beneath the oil zone and force the water/oil level upward towards the producing well perforated/screened zones. Such water-flooding programs require pressure balancing and controls, which have not been described in this DEIR but are required for DOGGR consideration of any UIC-Injection project. As such at least a

WILT-103 continued

draft of all documents required for the UIC project(s) of this pool/area/field must be provided as part o the City's CEQA consideration and which will in turn be used by DOGGR for their considerations.

As such injection/production systems are managed by computer models, the Applicant has been deficient in not providing inputs/outputs of their field production/injection models for both the Phase 2 and Phase 4 production and injection requirements, and specifically the status of replacement or makeup water to balance field pressures in the "reseervoir".

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-104

4.14-7/5 **The injection wells would be designed to meet all of the rules and regulations of the California DOGGR**....injection wells would have steel casing that **would be cemented in place**...to a point just above the perforations, located at the zone of water injection...Several tests are typically run to ensure that the well is operating properly and that the injected fluids are confined to the intended injection zone (DOGGR 2013).

No designs for the injection wells has been provided, and the designs of the production wells appear to be deficient for some aspects and protective for other issues.

As indicated in text here, the injection well casings would appear to be designed with only two casings (surface and injector casing; without a conductor or intermediate casings) with full cementing from injection zones to ground surface) as are the production wells and therefore injection and production wells can be easily reassign duties throughout the Project life.

Without specific and comparable designs for both injection and production wells, and the general supporting documents for the reservoir development, review and comments for well-related activities are severely constrained and the DEIR must be considered as inadequate and incomplete until revisions are made, circulated, and reviewed by the public and competent third party specialists.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-105

4.14-9/3 ...unclear whether the existing City sewer along 6th Street...has the capacity to support the increased sewage volume associated with the Proposed Oil Project...ultimately result in releases of untreated sewage to surface waters and/or the ocean. Therefore...considered *potentially significant*.

The Project description and herein text does not clearly locate where all sewer access points would be in the Project Site(s) and mitigation to isolate such from any Project operations other than office and changing rooms. All industrial facilities and ares must be completely isolated from any sanitary sewerage services or facilities. All industrial liquids must be designed and shown to be completely isolated from the risk or potential for any industrial discharges to the sanitary systems or inlets.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-106

4.14-10/1 ...in the event of a spill...designed to retain, process, and inject storm water within the perimeter fence or wall for **a 100-year storm event** and process walls/berms would be designed to contain at least 110 percent of the largest vessel. Therefore, similar to any precipitation, any spills on the site would be contained, both within process system walls/berms around equipment and site walls/berms around the site. As a result, impacts to water quality within adjacent drainages and Santa Monica Bay would be less than significant with mitigation.

Some confusion is created by separating the storm rainfall at 100-year containment vs process retention of 110% of the largest vessel. Rainfall must be excluded from accumulating on the site and can an has been excluded from other urban oil production facilities, e.g., Packard Site at Pico/Genesee, LA City. Similarly oil spills from processing units and vessels rather than simple storage tanks must include provisions for simple storage and for processing shutdown, Example of 30 pumping wells at 24,000bpd of fluids requires containment within the production pad, Project Site or an additional volume of 16.7bbl x 30 wells = 500bbl/21,000gal for a one-minute shutdown interval. No provisions have been described for a fully-automated shutdown/in system for the Project or Site. Therefore we could assume an extended period for shutting down well pumps and shutting in the processing units and therefore an expected volume of containment for the spill walls and berms would exceed 5-minute shutdown and 100,000gals of production within the enclosed processing area. Such has not been provided for and is a serious impact of the Project by discharging well fluids to the public areas.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-107

Mitigation Measures

As the Project Description and individual sectional settings and assessment are not supported by available evidence and many statement are incomplete and inadequate, any review of current mitigation and their reduction of significant cannot be founded on unsupported reviews and assessments. Therefore all mitigation measures must be subject to individual revisions and alterations commensurate with the revisions of the Description, Settings, and Assessments.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-108

4.14-11/ Up to four injection wells have been proposed at the Project Site for **disposal of produced water**,...exist under high pressures and temperatures and usually contain oil and metals; therefore, the water must be treated prior to being discharged...also contain high concentrations of salts, metals, hydrocarbon and organic compounds, sulfur, treatment and workover chemicals, dissolved gases (particularly carbon dioxide), bacteria and other living organisms, dispersed solid particles, scales, and other pollutants...components vary greatly among different oil fields. This salt water can be very damaging if it is discharged into surface water. Instead, all states require that this brine be injected into formations similar to those from which it was extracted.

As the Project Description has not provided documented chemical compositions of oils, gases and produced waters, any considerations are generalities and totally unsupported.

Allusions to discharge to surface water is totally inadequate and would require NPDES permits, etc. to even be considered.

Reference to "ALL States" is incorrect as produced water can be injected via any authorized disposal injection well as long as the characterization of the waters complies with the range allowed for disposal. Such water can and are being used in injection wells for waterflood production, if they are appropriately characterized and submitted for approval by DOGGR

This section requires total revision and rewritten by competent, experienced oil field specialists.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-109

4.14-11/ The California Division of Oil and Gas and Geothermal Resources (DOGGR) regulates oil field waste disposal in injection wells and **is expected to use this EIR in its permitting review** of the Proposed Oil Project.

DOGGR requires extensive supporting documents and factual submittals for Notices of Intent to Drill and applications for UIC Projects for both disposal and for production. Documentation provided for this DEIR is totally inadequate for supporting such submission and CEQA consideration by DOGGR prior to their discretionary decisions to approve permits of UIC projects. If the FEIR is not thoroughly, completely, and adequately revised and supported, certification of this EIR will lead to further review of DOGGR considerations and appeals for either Supplemental or Subsequent EIRs either by DOGGR or the City.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-110

4.14-11/ Three major fresh water aquifers comprise the West Coast Basin: the 200-Foot Sand (Gage Aquifer), the Silverado Aquifer, and the Lower San Pedro/Pico Aquifer. Groundwater depth in these predominantly confined aquifers reaches more than 1,500 feet in the West Coast Basin, although water production wells generally are not this deep.

The DEIR does not provide any support documents or depictions to demonstrate the relationship of the aquifers, the Repetto formation, or upper horizon of the Puente formation. Similarly no discussion or documents are provided to related the movements of freshwater between these aquifers and the underlying rising oil and gas producing formation. No evidence or supporting documents are provided with regard to the prospective gas, oil, and degraded formation water barriers between the Repetto and Puente formations and the overlying aquifers. As DOGGR has shown many faults lie beneath the Project Area and Site(s) and the DEIR shows that at least the Fault 103 has penetrated through the aquifer levels and that oil/gas seeps occur offshore, supposedly only related to the Palos Verde Fault, offshore of the Fault 103, no evidence or references can be provided to assure the separation of the overlying aquifers from the uppermost hydrocaarbon bearing zone in the Torrance and related Fields, areas, and pools.

NO monitoring of the deeper aquifers has been accomplished and no such monitoring is proposed in the DEIR and therefore significant impacts can be expected during production and especially in the injection uplifted areas.

WILT-110 continued

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-111

4.14-12/ The injection wells would pass through these fresh water deposits, creating potential water quality impacts as a result of **well leakage** and/or **inadvertent migration of wastewater** from the point of injection upward through the formation, as a result of **frac-outs**, which are **uncontrolled releases of produced water from the formation**. Frac-outs are not to be confused with fracking (i.e., hydraulic fracturing), which is an **oil production method whereby a sandy slurry is purposely injected into the oil producing formation, at very high pressures,** in an effort to artificially fracture the formation and increase oil flow to the wellbore.

Wastewater is disposed of via injection wells as part of DOGGR's UIC Project process while the activities in this text describe the use of produced water for injection as an aid to flooding and production of oil and gas from the field and does not include purposeful disposal or loss of the produced water in the production zones.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-112

4.14-12/ The current mechanism that is creating a stratigraphic and/or structural trap for oil accumulation within the **Miocene Puente Formation (the target oil producing formation)** would similarly prevent upward migration of injected **wastewater (i.e., potential frac-outs)** into the overlying aquifers. There are no **domestic water supply** wells located in the **vicinity**...Site, thus further **minimizing the potential** for impairment of beneficial groundwater as a result of **produced water injection**.

The Puente formation is equivalent to the Monterey and Modelo marine shale dominate and avoidance of theMonterey terminology does not accord with the DOGGR prevalent usage of the Monterey formation in the LA, Orange, and Ventura Counties' basins geology. Purposeful use of "Puente" appears to be for diverting attention from the Monterey formation and associated current interests.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-113

4.14-12/ ...Class II injection wells have **proved to be an environmentally safe method** of **disposal** of produced water...**peer review** conducted by a national organization, the Ground...4.14-13... Water Protection Council, determined that the DOGGR has a program that effectively protects underground sources of drinking water (DOGGR 2013).

The peer review and groundwater and oil/gas industrial sectors have concluded that since there is not evidence of any problem there must not be any problem. Therefore the DOGGR program protects, even though the EPA found that the UIC projects/program is totally under-resources and many projects lack documentation as to their compliance with even past requirements.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-114

ALTERNATIVES

5-2/3 In addition, CEQA states that alternatives should "…*attain most of the basic objectives of the project* ..." (Section 15126.6(a)). If an alternative was found to not attain the basic objectives, then it was also eliminated.

Based on the un-quantified and distorted objectives and incomplete and inadequate Project Description, no fact-based reasoned alternatives can be provided or support.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-115

5-4/8 The ability to extract oil and gas from a reservoir by directional drilling is a function of the depth of the oil- and gas-containing layers (targets) and the size and ability of the drilling rig. In general, the shallower the reservoir, the closer the drilling rig must be to the reservoir. The larger the drilling rig, the farther the drilling rig can be from the reservoir. The ratio of the...5-5/1... horizontal distance to the vertical distance is called the "throw ratio" or horizontal to vertical (H/V) ratio. For the Proposed Project test wells, throw ratios range up to 2.8 based on Applicant data. Most likely a throw ratio of 4.0 could be achieved, with a maximum horizontal distance depending on the depth of the portion of the reservoir targeted.

/2 **Figure 5-1 shows the areas which were evaluated for alternative locations and the estimated crude oil recovery percentages based on a throw ratio of 4:1 from each of the test well locations and their associated depths to the target.**

5-6/**Figure 5-1 Percent of Crude Recovery and Alternative Locations**

WILT-115 continued

Notes: Recoverable reserves based on a Horizontal/Vertical "Throw" ratio of 4.0. TW#1 represents the bottomhole target location for test well #1, etc.

Modern drilling and reservoir technologies in urban areas discarded "Throw" even before the original Lease was signed. Use of Throw for comparing alternatives when it was not described as part of the Project Description is counterproductive and not documented for the limits of the Project. Currently rigs can be far more with less tonnage than 10 or 20 years ago.

The real comparison must be based on current practices and technologies/equipment and their costs which have not been adequately developed for the Project and extended to Alternatives.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-116

/2 All of the **targeted areas** could be reached from areas located within Hermosa Beach or within the north-western portion of Redondo Beach.

/2 **For locations farther away, less of the crude oil could be recovered as fewer portions of the crude oil containing reservoirs could be reached.**

The statement is wrong, incorrect, and incomplete and all areas could be reached as they are proposed in Carson and other cities in the LA Basin from far more distant and less sensitive sites in Torrance and Manhattan Beach.

What is the maximum length of laterals in the LA Basin? Reports of 10,000ft are not unknown from the Huntington Beach, Long Beach offshore, and Wilmington/Port of LA offshore areas and fields.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-117

/3 In general, **alternative locations would need to be within 0.5-1.0 miles of the Proposed Project site** to drill and extract **100% of the resources from the north, east and south ends of the delineated reservoir** while not exceeding a **horizontal to vertical ratio (throw ratio) of 4.0**. Locations farther away would recover less of the reserves.

/3 Based on availability of vacant sites and appropriateness of potential oil development, offsite locations were considered at the following areas.

1. Near the corner of Rosecrans and Sepulveda/Hwy 1 within the City of El Segundo;
2. A site south of the Exxon/Mobil Oil Refinery in the City of Torrance;
3. On or near the AES property within the City of Redondo Beach;
4. Other Hermosa Beach locations

Only based on costs which can be further minimized compared to the delays inherent with this Project Site(s).

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-118

5-25/2 **5.1.6.2 AES Site Alternative and Project Objectives** The AES Site Alternative would achieve most of the Applicant's **objectives** in regards to

a. maximizing oil and gas production,
b. utilizing the latest technologies and technological advances,
c. minimizing visual effects and providing safe vehicular ingress and egress.
d. Because the **1993 CUP and the Settlement Agreement** are both associated with the specific Project Site within the City of Hermosa Beach Maintenance Yard, **this objective** may not be specifically met. However, the ***D***EIR includes this alternative as it would meet all of the other objectives and would substantially reduce significant environmental impacts.

Inclusion of the Lease/Settlement Agreement conditions is inappropriate in the consideration of Alternatives without supporting documentation and quantification of costs, operating conditions, and use of technologies of 1992-3.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-119

6-1/3 In accordance with State CEQA Guidelines Section 15126.6(d) as presented above, this Environmental Impact Report (EIR) provides sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project and the other alternatives. It should be noted that assumptions made regarding the alternatives' descriptions could differ from actual proposals and the analyses are not presented to a project-level of detail.

WILT-119 continued

As indicated in other comments there is insufficient information even for the Project, much less the formation of alternatives and their comparisons with the Project, therefore CEQA has not been satisfied for a full disclosure, objective, complete, and adequate document for public review.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-120

9.1-1/Table 9.0 List of Preparers and Agencies/Individuals Consulted During EIR Preparation
Name & Education Years Experience Contributions
Educational backgrounds do not indicate any oil and gas-exploration and production experience, training, and education. Totally inadequate and incomplete for "Peer-Review" of geotechnical and oil&gas reports, calculations, and references.
No work experience in the fields of geology and oil&gas/Exploration & Production is indicated.
Mechanical engineer assessing air quality may be acceptable but others aren't.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-121

Appendix I Geotechnical Exploration and Design Report, Hermosa Beach City Maintenance Yard...
A-9/5 2.2 Based on **our review**...are **no faults mapped directly at the site**...closest **active** faults are the **Palos Verdes Fault located 3 km (1.9 miles) west of the site** and the Newport Inglewood Fault located 9.4 km (5.8 miles) east of the site...**regionally active faults** is anticipated to produce seismic ground shaking at the site...not located in a seismic hazard zone for potential liquefaction.
The "Our" preparers do not have demonstrated competency, education, or experience to conduct a structural geology review and appeared to fail to consult available DOGGR documents for the western end of the Torrance/Redondo Field/Area which clearly indicate faults beneath the Project Site and extending beneath the uplands and tidelands of the Project.
As no map of faults and distances is provided for the Project Site and Area, the distances cannot be confirmed and the stated distance to the Palos Verde Fault appears less than the distance to Knob Hill Ave./Sepulveda or Torrance Ave. or the 3-miles to Pacific Coast Highway and Palos Verde Blvd.. Assuming offshore projections of the Palos Verde Fault to a location SW of the Project Site, the 2-mile distance offshore may be reasonable, but the Department of Conservation has not delineated any designated active fault zone in this offshore location.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-122

p.29/TABLE 10 SEISMIC DESIGN PARAMETERS FOR HORIZONTAL ACCELERATION

Selected Seismic Design Parameters (or Horizontal Acceleration	*Seismic Design Values*
Nearest seismic source	Palos Verdes Fault
Distance to nearest seismic source	**3.13 miles** (5.0 kln)

The preparers do not demonstrate competency, education, or experience to conduct a structural geology review and appeared to fail to compared the distances for the Palos Verde Fault given as 1.9 or 3.13 miles presumably from the Project Site (50% difference). Similarly, no information has been provided as to where the designated Palos Verde active fault zone is and where measurable (>1 RM) earthquakes have occurred.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-123

10/5 **2.4 Faulting and Seismicity Regional Faults**: The **site** is not located within a fault-rupture hazard zone...by the Alquist-Priolo Special Studies Zones Act..no **known major active faults** mapped at the **site**, and no evidence of **active faulting**...observed during this exploration. A detailed review of available geologic maps, historic aerial photographs and historic topographic maps indicate...no geomorphic expressions, offset drainage channels, or visible lineaments associated with **active faulting** at the **site**.
The site is not defined nor does the "site" appear to include the various pipeline routes and well pathways. The section does not provide any delineation of the nearest active fault, major active fault, any measureable seismic history, and generally appears ill-informed of the recognized faulting known to exist beneath the Site, routes, and pathways.
The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-124

11/2 **Seismicity:** Properties...seismic hazards...depending upon the proximity, degree of activity, and capability of nearby faults...primary (i.e., directly related to the energy release of an earthquake, such as surface rupture and ground shaking) or secondary (i.e., related to the effect of earthquake energy on the physical world which can cause phenomena, such as liquefaction and ground lurching)...**potential for primary ground rupture is considered low.** The primary seismic hazard for **this site** is ground shaking due to a future earthquake on **one of the major regionally active faults**.

As the Exploration Report for the Site has not considered any DOGGR delineated faulting beneath the Site, routes, and pathways and the fact that the site was an urban land fill, the absence of any past lineation would bear no evidentiary value. No definition is provided for primary versus secondary "ground rupture" Absences of any subsurface exploration for and correlations of natural layering of the Holocene deposits further reduces support for any interpretation of "low potential" for "primary" ground rupture.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-125

11/4 The maximum moment magnitude (Mw) for the Controlling Fault is 7.7...generated from the Palos Verdes Fault (assuming the connected alternative). The site-specific seismic evaluation...included in Appendix D.

13/5 **Deterministic Analysis:** A deterministic seismic hazard analysis...maximum earthquake resulting in the highest peak horizontal accelerations at the site would be a magnitude 7.7Mw event on the Palos Verdes Fault.

The DEIR designates the Palos Verde as the Controlling Fault for alternatives but not for the proposed Project Site, pipeline corridors and all potential well casing pathways. Referenced appendix does not include assessments and analyses for both pipelines and well casings not does the DEIR take into considerations the major structural/seismic response issues of pipeline elbows and valves/valve boxes and of conductor/surface casings and transitions from vertical to near-horizontal casing pathways.

Both the DEIR text and related appendices do not consider the many faults, including Fault 103 and whether they represent feathering of the Palos Verdes Fault as a the fault swarm/zone commonly found with other major faults in the LA region.

Both the DEIR text and related appendices do not review the "history" of the desginated "active faults" or "potentially active faults" in California and the absence of designations by the State Geologist for over a decade.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-126

Appendix G p.pdf256 Geosyntec

pES-2/3 There are examples of past oil field operations in the Los Angeles Basin inducing seismic events...very shallow earthquakes at the Wilmington Oil Field...1947 and 1961...possible fault creep at the Inglewood Oil Field in the early 1960s...associated with the extreme amounts of land subsidence that occurred in these fields that resulted from the lack of proper water re-injection operations. **Very little to no subsidence is expected to occur during the proposed oil development in Hermosa Beach, and therefore, these types of "subsidence caused earthquakes or fault creep" will not be produced by the proposed operations.**

No evidence or supporting analyses are provided to support the statement of "expectations" regarding subsidence. Production of more than 8000 bpd of oil (plus additional volume for compressed gasess) and absence of Project acquisition of replacement water would clearly indicate a high potential for subsidence in the production area while injection of the remaining 67% (16000/24000bpd) of produced fluids perhaps 3000ft away from the production zone may cause lift in the injection zone and differential subsidence in the production zones.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-127

Appendix G 4/3 Title 14,.."Approval must be obtained from this Division **before** any subsurface injection or disposal project can begin...for such a project must provide the appropriate Division district deputy with **any data** that, in the judgment of the Supervisor, are pertinent and necessary for the **proper evaluation** of the proposed project."

Requirements for Class II injection wells...include notification of operational changes, reporting frequency, chemical analysis of injection fluids and pressure monitoring, among others..."Data shall be maintained to **show performance**...and to **establish that no damage**...is occurring **by reason of the project**. Injection shall be stopped if there is **evidence** of such damage, or loss of hydrocarbons, or upon written notice from the Division."

Given the poor past performance of DOGGR for adequate and complete UIC Project submissions/reviews, monitoring, evaluations, and documenting compliance of oil field operators

WILT-127 continued

for both disposal and recovery injections (as documented by EPA reviews), the use of DOGGR without major resourcing and independent City oversight seems inadequate and incomplete to assure mitigation of subsidence.

As the Applicant has conducted flooding and disposal projects under the authority of DOGGR, the Applicant must provide a review of their experience for such, e.g., City of Carson/Wilmington Field, a review of the Redondo water flood project, and a preliminary flooding plan for the proposed project.

As the Applicant must have Notices/Applications submitted to DOGGR prior to implementation of Phase 2 and as the Notice/Application must reference THIS CEQA process, this DEIR and any FEIR must include at least the preliminary plan for injection wells for disposal and for flooding/production.

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

WILT-128

Appendix G 4/3 Most pertinent to **induced seismicity** is item (i) of this section which outlines the process for determining the **maximum allowable injection pressure**...maintained below the **reservoir fracture pressure**.

As no information is made available for the existing Site or Area field pressures nor the expected range of rock fracture pressures to be expected, the statement has no evidentiary or supporting values for the DEIR. Many UIC project files contain no such information and none are provided for the adjacent past operations of UIC projects in the Redondo Area or Torrance Field..

The City is requested to make extensive revisions for the FEIR and allow 60 day for Public Review and Comments.

VIA EMAIL AND FEDEX

April 14, 2014

Ken Robertson
City of Hermosa Beach
Community Development Department
1315 Valley Drive
Hermosa Beach, CA 90254

RE: Comments on the E&B Oil Drilling & Production Project Draft Environmental Impact Report [State Clearinghouse #2013071038]

Dear Mr. Robertson:

On behalf of Stop Hermosa Beach Oil (SHBO), we appreciate and welcome the opportunity to comment on the E&B Oil Drilling & Production Project (Proposed Project, or Project) Draft Environmental Impact Report (DEIR). SHBO is a political action committee (PAC) consisting of concerned Hermosa Beach (City) residents, small business owners, professionals, and former council members committed to fostering an open and honest dialogue about the Proposed Project. Consistent with this commitment, SHBO has sought to provide well-researched information regarding the Project and its impact on the City.

SHBO opposes the E&B Oil Drilling Project: we believe that the City's ban on oil drilling, which voters adopted in 1932, 1958, and 1995, remains the best assurance to secure the welfare of our community and avoid the grave risks inherent in oil drilling operations. SHBO-1

As the DEIR and Health Impact Assessment help to make clear, the Proposed Project poses an unacceptable risk to our community. Consisting of multiple development and construction phases aimed at accessing oil and gas reserves in the tidelands and the uplands within the Torrance Oil Field, the fully-developed Project would consist of 30 production wells, four water injection wells, liquid and gas SHBO-2

separating equipment, a gas processing unit, and oil and gas pipelines. Ultimately, the Project would produce up to 8,000 barrels of oil and 2.5 million cubic feet of natural gas per day.

SHBO-2 continued

Hermosa Beach prepared the DEIR to fulfill the legal requirements of the California Environmental Quality Act (CEQA). CEQA's main purpose is to "inform the public and its responsible officials of the environmental consequences of their decisions before they are made."[1] Thus, the EIR "protects not only the environment but also informed self-government."[2] We acknowledge and appreciate that the DEIR and Health Impacts Analysis identify significant impacts to the environment including: noise, air quality, land use, risk of upset, human health, and others. As explained in more detail below, and in the comment letters submitted by Heal the Bay, NRDC, and L.A. Waterkeeper[3], we believe that certain sections of the DEIR understate the risks and expected impacts to the environment. This comment letter focuses on the following areas that SHBO believes should be strengthened in the final EIR:

- Project description;
- Analysis of seismic activity related to drilling;
- Analysis of subsidence-induced impacts;
- Analysis of mitigation measures for seismic impacts;
- Analysis of mitigation measures for subsidence impacts;
- Analysis of noise and vibration impacts resulting from the Project; and
- Analysis of catastrophic failure/spill.

SHBO-3

As one of the only organizations whose membership live and work in Hermosa Beach, SHBO and its members are uniquely positioned to offer the following recommendations to fill gaps in the DEIR, and strengthen analyses, so that the Final EIR can serve its primary purpose primary purpose to serve as "an

[1] Citizens of Goleta Valley v. Bd. of Supervisors of Santa Barbara Cnty., 52 Cal. 3d 553, 568 (1990).
[2] Laurel Heights Improvement Ass'n v. Regents of University of California, 47 Cal. 3d 376, 392 (1988).
[3] SHBO adopts and incorporates as its own, the comments on the DEIR that are concurrently being submitted by Heal the Bay, NRDC, LA Waterkeeper, and Surfrider.

environmental 'alarm bell' to alert the public and its responsible officials to environmental changes."[4]

SHBO-3 continued

I. ANALYSIS OF SEISMIC RISK [DEIR SECTION 4.7]

A. Analysis of Seismicity Associated with Oil and Gas Drilling

Page 4.7-7; Section 4.7.1.3; Oil Field Induced Seismicity

NMG Geosyntec identified past seismic activity with possible connections to operations in nearby oil fields.[5] The DEIR concludes that past seismic activity did not coincide with past oil field operations.[6]

The DEIR should more fully address the fact that oil and gas drilling is correlated to a risk of seismic activity. An agency must use its best efforts to uncover and disclose what it reasonably can when addressing controversial issues that resist reliable forecasting.[7] When it is difficult to forecast future actions, an EIR may rest its analysis on reasonable assumptions.[8] An EIR may, for example, include projections about future actions as long as information supporting the EIR's predictions is provided and the uncertainties inherent in its forecasts are described.[9] When uncertain future events could lead to a range of possible outcomes, the EIR may base its analysis on a reasonable worst-case scenario.[10]

SHBO-4

Although the DEIR states that Project-induced seismicity is not anticipated to occur, the precise correlation between oil and gas drilling and seismic activity remains the subject of study and debate.[11] According to Dr. Michael Blanpied, Associate Coordinator of the USGS Earthquake Hazards Program:

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[4] Laurel Heights Improvement Assn., 47 Cal. 3d 376 at 392 (internal quotation omitted).
[5] DEIR Appendix I at ES-2.
[6] DEIR at 4.7-7.
[7] Planning & Conservation League v. Castaic Lake Water Agency, 180 Cal. App. 4th 210, 252 (2009).
[8] State Water Resources Control Bd. Cases, 136 Cal. App. 4th 674, 797 (2006).
[9] Watsonville Pilots Ass'n v. City of Watsonville, 183 Cal. App. 4th 1059, 1093 (2010).
[10] Planning & Conservation League, 180 Cal. App. 4th at 244.
[11] Seismic Science: Is number of earthquakes on the rise?, The Washington Post, http://www.washingtonpost.com/wp-dyn/content/discussion/2010/03/08/DI2010030802570.html (last visited March 29, 2014).

> ***[o]il drilling as well as other fluid-related activities in boreholes (e.g., geothermal production) can change the stress on faults in the area, and induce earthquakes, due to the extraction of fluids or the injection of fluids. Most times those are small earthquakes directly around the production site, but occasionally they can be big enough to be felt, and earthquakes up to the magnitude five range have been created through fluid injection into boreholes. It is a subject of research whether it's possible for larger quakes to be induced.[12]***

SHBO-4 continued

The final EIR should base its assessment of oil field induced seismicity on reasonable assumptions.[13] SHBO is concerned that it is not reasonable to assume limited impacts of oil field induced seismicity given: (1) the history of local oil operations inducing seismic events[14], (2) the Project's use of drilling and extraction methods including directional drilling and high-rate gravel packing[15], and (3) the Project's proposed location on top of a municipal landfill subject to large potential seismic settlements.[16] At a minimum, the final EIR should better support and explain the prediction that oil and gas operations will not induce seismicity in the Project area. Considering the environmental risks of seismic activity in the highly populated Project area, the final EIR should base its analysis of induced seismicity on a reasonable worst-case scenario.

B. Analysis of Seismic Risk and Well Bore Information

Page 4.7-1; Section 4.7.1.1; Regional Geology

The 30 proposed individual, directionally-drilled well bores will be targeting oil-producing geologic units in the Upper Main, the Lower Main, and the Del Amo units of the Miocene age Puente Formation.[17]

SHBO-5

Description, the Proposed Project will "access crude oil and gas reserves in the tidelands and uplands in the portions of the Torrance Oil Field within the City's jurisdiction."[18] However, the DEIR Geological Resources/Soils section expands on the Project Description and states:

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[12] Id.
[13] See DEIR at 4.7-21.
[14] DEIR Appendix I at ES-2; DEIR at 4.7-21.
[15] DEIR at 2-2; DEIR Appendix I at 46.
[16] DEIR Appendix I at 2.
[17] DEIR at 4.7-1, 4.7-3.
[18] DEIR at 2-20.

> ***[u]nderlying [the] three units targeted by the Proposed Oil Project is the Late Miocene age Schist Conglomerate. This geologic unit may have some oil potential north and northeast of Hermosa Beach, and possibly in Wilmington to the southeast, and may be a viable exploration target for the Proposed Oil Project.[19]***

As currently drafted, the scope, direction, and location of the 30 proposed well bores is not clear. When looked at as a whole, an EIR should provide a reasonable, good faith disclosure and analysis of environmental impacts.[20] The final EIR should provide sufficient information to allow decision-makers and the public to understand the environmental consequences of the entire Project.[21] In order to understand seismic risk, the final EIR should provide the public with additional information related to the proposed scope, direction, and location of the individual well bores, including analysis of whether well bores would be completed across seismic faults. In the event that an earthquake occurred along a fault crossed by an oil or gas well, the integrity of the well bore would potentially be compromised at the point where the borehole traverses the fault.

SHBO-5 continued

In addition, the final EIR should provide the scope, direction, and location of individual well bores to allow the decision-makers to understand whether well bores would be completed across different geological lithologies. The DEIR describes the different types of interbedded sands and fractured shales expected to be encountered in the three targeted reservoir units.[22] Different earth materials may be subject to stronger differential movements during seismic activity.[23] The integrity of the well bore would potentially be compromised at the point where the borehole traverses a differing geological lithology.

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[19] DEIR at 4.7-4.
[20] California Oak Found. v. Regents of Univ. of Cal., 188 Cal. App. 4th 227, 269 (2010).
[21] In re Bay-Delta Programmatic Envtl Impact Report Coordinated Proceedings, 43 Cal. 4th 1143, 1175 (2008); Napa Citizens for Honest Gov't v. Napa Cnty. Bd. of Supervisors, 91 Cal. App. 4th 342, 356 (2001).
[22] DEIR at 4.7-4.
[23] U.S. Geological Survey, Soil Type and Shaking Hazard in the San Francisco Bay Area, http://earthquake.usgs.gov/regional/nca/soiltype/ (last visited March 29, 2014).

II. ANALYSIS OF SUBSIDENCE RISK [DEIR SECTION 4.7]

A. Analysis of Subsidence-Related Impacts

Pages 4.7-23 to 26; Section 4.7; Geological Resources/Soils

The DEIR identifies subsidence from oil and gas withdrawal as a "potentially significant" impact.[24]

SHBO agrees that subsidence related to the Project is a potentially significant impact, indeed the DEIR underestimates the risk. For example, subsidence is only generally discussed as causing "differential settlement damage" and "settlement of overlying infrastructure," and that "damage to structures and underground utilities occurs only where a substantial amount of subsidence occurs."[25] The only factual discussion of the damages caused by subsidence is the statement that "[p]ast subsidence due to oil extraction from the late 1940s to the late 1960s has been documented in the adjacent Wilmington Oil Field to the south."[26]

SHBO-6

In contrast, the EIR prepared by the City of Whittier for an oil drilling project adequately informed decision-makers in this regard by: (1) extensively explaining the dramatic subsidence damage that took place in the Wilmington Oil Field; and (2) discussing the possibility that subsidence may have contributed to the failure of the 20-acre Baldwin Hills Reservoir, which killed five people and destroyed over 277 homes.[27] The difference between this DEIR and the EIR for the City of Whittier in terms of the extent to which subsidence is discussed is conspicuous and of concern given that both documents were prepared by MRS.[28]

B. Making the Reasoning Behind Residual Impact of Potential Subsidence More Transparent

Pages 4.7-23 to 4.7-26; Section 4.7.3.4; Subsidence Residual Impacts

The DEIR concludes that the residual impact of potential ground subsidence is less than significant with mitigation (Class II).[29]

SHBO-7

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[24] DEIR at 4.7-23.
[25] DEIR at 4.7-9, 4.7-24.
[26] DEIR at 4.7-9.
[27] See Whittier Main Oil Field Development Project Final Environmental Impact Report, 4.4-12 to 13, http://www.cityofwhittier.org/civicax/filebank/blobdload.aspx?blobid=4167 (last visited March 29, 2014).
[28] Compare id. at Cover Page with DEIR at Cover Page.
[29] DEIR at 4.7-26.

The final EIR should better explain why subsidence-related impacts are less than significant with mitigation. An EIR must "effectively disclose to the public the analytic route the . . . agency traveled from evidence to action."[30] The final EIR should contain facts and analysis rather than the Agency's bare conclusions or opinions."[31] Here, the DEIR simply concludes, "residual impacts would be considered less than significant with mitigation."[32] The final EIR should explain the relationship between the mitigation measures and the reduction in impact classification. Similarly, the final EIR should better explain the monitoring plan's effectiveness. The DEIR states that subsidence-related impacts would be "potentially significant in the absence of subsidence monitoring to verify that subsidence is not occurring," implying that a monitoring plan is what reduces the potentially significant impact.[33] The final EIR should explain why the ability to verify non-occurrence of subsidence results in reduction of impact classification.

SHBO-7 continued

Furthermore, there appear to be inconsistencies within the DEIR related to certain mitigation measures. The DEIR notes, for example, that although water reinjection would "substantially reduce the potential for ground subsidence, such reinjection does not ensure avoidance of subsidence."[34] Given this statement it is difficult to understand how Mitigation Measures GEO-4a and GEO-4b could reduce the impact of subsidence to less than significant.

III. ANALYSIS OF MITIGATION MEASURES [DEIR SECTION 8.0]

A. Need for Seismicity Monitoring Program Plan or Performance Criteria

Page 4.7-22; Section 4.7.3.4; Impact No. GEO.2; Mitigation Measure GEO-2b

The DEIR should better describe the actions that will be taken to reduce or avoid the impact of induced seismicity by including a seismicity monitoring program plan (Plan) and seismicity monitoring program performance criteria.[35] The DEIR identifies seismicity potentially induced by wastewater injection in the vicinity of the Proposed Project as a Class II residual impact during Phases 2 and 4.[36] To mitigate the impact, Mitigation Measure GEO 2-b

SHBO-8

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[30] Citizens of Goleta Valley, 52 Cal. 3d at 568 (citing Topanga Ass'n for a Scenic Cmty. v. Cnty. of Los Angeles, 11 Cal. 3d 506, 515 (1974)).
[31] See Concerned Citizens of Costa Mesa, Inc. v. 32nd Dist. Agric. Ass'n., 42 Cal. 3d 929, 935 (1986).
[32] DEIR at 4.7-26.
[33] DEIR at 4.7-24.
[34] Id.
[35] DEIR at 4.7-22.
[36] DEIR at 4.7-21.

states that a "seismicity monitoring program shall be completed in coordination with the Caltech Seismological Laboratory."[37]

SHBO is concerned that Mitigation Measure GEO-2b does not include a Plan.[38] Without a Plan, how can the citizens of Hermosa Beach consider, review, or comment on the seismicity monitoring program's adequacy?

SHBO-8 continued

If the final EIR does not include a Plan, the EIR should at least list specific performance criteria and alternatives to be considered, analyzed, and possibly incorporated in a Plan.[39] Mitigation Measure GEO-2b should list performance criteria or analyze alternatives.

B. Need to Define Subsidence Monitoring Program

Pages 4.7-23 to 26; Section 4.7.3.4; Impact No. GEO.4, Mitigation Measure GEO-4a and GEO-4b

Mitigation measures GEO-4a and GEO-4b relate to the potential for ground subsidence resulting from oil and gas withdrawal.

The DEIR states that the Applicant proposed a Subsidence Monitoring Plan (Applicant's Plan) and that GEO-4a and GEO-4b are mitigation measures that "would further reduce potential impacts related to subsidence" in addition to the Applicant's Plan.[40] GEO-4a discusses the "Subsidence Monitoring and Avoidance Program" (Subsidence Plan) and GEO-4b discusses alleviating measures that are triggered if the monitoring program indicates that subsidence is occurring.[41] The final EIR should make clear whether there are any differences between the Applicant's Plan and the Subsidence Plan, and whether or not the final EIR Plan incorporates the Applicant's Plan.

SHBO-9

In addition, the DEIR only articulates general standards that the Subsidence Plan must meet. For example, the DEIR Plan requires that GPS benchmarks must be sufficiently spaced to draw conclusions about subsidence within the City and that there must be sufficient monitoring frequency to establish trends in subsidence.[42] The only specific requirements are the identification of the locations of three continuous monitoring GPS stations and the requirement that "[s]ubsidence monitoring reports shall be completed

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[37] DEIR at 4.7-22.
[38] DEIR at 4.7-22.
[39] See Defend the Bay v. City of Irvine, 119 Cal. App. 4th 1261, 1275-76 (2004); Sacramento Old City Assn. v. City Council, 229 Cal. App. 3d 1011, 1028-29 (1991); Cal. Code Regs. tit., 14 § 15126.4(a)(1)(B).
[40] DEIR at 4.7-26; DEIR Appendix I at 11-13.
[41] DEIR at 4.7-27.
[42] DEIR at 4.7-25.

annually."[43] In contrast, the Applicant's Plan contains specific standards, such as the number and location of GPS benchmark stations.[44] Similarly, the Applicant's Plan discusses specific thresholds for triggering alleviating action.[45] In contrast, the DEIR Plan does not identify specific thresholds at which wastewater reinjection will be increased to alleviate subsidence.

The final EIR should be modified to either: (1) reflect specific standards for both GEO-4a and GEO-4b; or (2) specify whether the Applicant's Plan will be incorporated into and made an enforceable part of the Subsidence Plan.

SHBO-9 continued

C. Mitigation for the Mobilization of Soil Contamination

Page 4.8-80; Section 4.8.4.8; Site Contamination

The DEIR indicates that during Phase 1 grading, contaminated soil could be mobilized.[46] Mitigation Measure SR-2 calls for soil sampling for lead during Phase 1.[47]

The DEIR only mitigates for lead.[48] According to NMG Geotechnical, among other historical uses, the Proposed Project site served as a City-operated municipal dump in the 1930s and 1940s.[49] Accordingly, lead is not the only contaminant present at the Proposed Project site.[50]

According to the Remedial Action Plan (RAP) contained in Appendix A of the DEIR, in addition to lead, total petroleum hydrocarbons (TPH) were encountered in four separate studies at the Project site.[51] TPH was found in concentrations exceeding the California Regional Water Quality Control Board – Los Angeles Region (CRWQCB-LAR) screening levels within the diesel range. [52] Lead and TPH are not the only potential contaminants present at the Project Site.[53] According to NMG Geotechnical, "the primary geotechnical constraints at the subject site include the presence of . . . undocumented fill material . . . ."[54]

SHBO-10

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[43] DEIR at 4.7-27, 28.
[44] DEIR Appendix I at 11-12.
[45] Id. at 13.
[46] DEIR at 4.8-80.
[47] Id.
[48] Id.
[49] DEIR Appendix I at 10; DEIR at 4.7-3.
[50] DEIR Appendix A at A-49.
[51] DEIR Appendix A at A-53.
[52] DEIR Appendix A at A-55.
[53] DEIR Appendix I at 4.
[54] Id.

The presence of TPH and other undocumented, potentially contaminated landfill material is identified by the DEIR but not addressed in Mitigation Measure SR-2.[55] The final EIR should either: (1) mitigate for soil contamination other than lead, or (2) describe why mobilization of soil contaminants other than lead was determined not to be significant.

SHBO-10 continued

IV. ANALYSIS OF NOISE AND VIBRATION [DEIR SECTION 4.11]

A. Analysis of Biological Impacts of Vibration

Page 4.3-18; Section 4.3.4; Project Impacts and Mitigation Measures
Page 4.11-94; Section 4.11.4.3; Vibration Impact Analysis

The DEIR explains that all phases of the Project will produce vibration levels at or above the human perception threshold of 0.01 inches per second over the frequency range 1 – 100 Hz.[56]

The DEIR correctly establishes an environmental baseline with no vibration at or near the Project site perceptible to humans.[57] The DEIR then states that all phases of the Project have the potential to create vibration at and beyond the property line in excess of human perception thresholds.[58] SHBO is concerned, that the DEIR does not fully analyze biological impacts related to vibration. For example, the DEIR states that Project impacts to any plant or wildlife species in the Project area would be similar to existing conditions,[59] without addressing the fact that the introduction of vibration throughout the entirety of the Proposed Project at levels at or above human perception represents a change in existing conditions.

SHBO-11

The final EIR should: (1) include vibration as a potentially substantial adverse change to the physical condition of the land and analyze it in terms of its potential for interference with wildlife species, migratory wildlife corridors, and wildlife nursery sites; or (2) better disclose the analytic route leading to the determination that the introduction of vibration perceptible to humans will not

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[55] DEIR at 4.8-79, 4.8-80.
[56] DEIR at 4.11-94, 4.11-95, 4.11-32.
[57] DEIR at 4.11-1, 4.11-7, 4.11-16, 4.11-17.
[58] DEIR at 4.11-94, 4.11-95, 4.11-32.
[59] DEIR at 4.3-18, 4.3-19 (stating that disturbances to any wildlife species attempting to move through the area would either be temporary in nature or similar to existing conditions and therefore, the construction and operation phase of the Project is not expected to have a substantial effect on the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or interference with the use of native wildlife nursery sites).

create potentially significant wildlife impacts.[60]

SHBO-11 continued

B. Analysis of Significant and Unavoidable Noise Impacts Created by Specific Construction Methods.

Page 4.7-16; Section 4.7.3.2; Proposed Project Design Features

According to the 2012 Geotechnical Exploration and Design Report (NMG Geotechnical) contained in Appendix I of the DEIR, some of the tanks, equipment, and walls in the northern end of the Project site will not tolerate the relatively large potential seismic settlements of up to 3.5 inches that may result from left-in-place landfill material.[61] According to NMG Geotechnical, "deep foundations to support these structures or some type of ground improvement to address these settlements will be necessary."[62] Three of the most feasible options provided in NMG Geotechnical include: (1) drilled-in-place, grouted pipe piles; (2) cast-in-drilled hole (CIDH) piles; and (3) injection grouting of the landfill material.[63]

SHBO-12

SHBO agrees that noise levels during Project construction (Phase 1 and Phase 3) are significant and unavoidable.[64] SHBO is particularly concerned that unique construction methods required as a result of inherent geotechnical defects associated with the Proposed Project's location on top of a municipal landfill may involve levels of noise and vibration not required for construction on more stable soil.[65] SHBO requests that the Final EIR contain specific data related to the unique construction methodology that could create significant and unavoidable noise impacts.[66] More information about noise impacts created by specific construction methods would allow decision-makers to better evaluate the Project's environmental consequences.[67]

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[60] Cal. Pub. Res. Code § 21100(b)(1); Cal. Code Regs. tit., 14, § 15126(a); Cal. Code Regs. tit., 14, app. G. See also Citizens of Goleta Valley, 52 Cal. 3d at 568 (citing Topanga Ass'n for a Scenic Cmty. v. Cnty. of Los Angeles, 11 Cal. 3d 506, 515 (1974) (stating that an EIR should effectively disclose to the public the analytic route the . . . agency traveled from evidence to action).
[61] DEIR Appendix I at 2.
[62] Id.
[63] Id.
[64] DEIR at 4.11-35; 4.11-63.
[65] See generally DEIR Appendix I at 2 (describing the additional drilling, casing, contamination, and waste associated with the 3 proposed construction options).
[66] DEIR at 4.7-6 (stating that based on predicted ground accelerations and underlying earth material conditions, moderate to severe ground shaking due to a seismic event can be expected in the Proposed Project area).
[67] Cal. Code Regs. tit., 14, § 15151; Cadiz Land Co. v. Rail Cycle, 83 Cal. App. 4th 74, 86-87 (2000).

V. PROJECT DESCRIPTION [DEIR SECTION 2.0]

The Project Description in the Final EIR should be bolstered to better: (1) discuss foreseeable future activities; and (2) explain how the Proposed Project's objective is consistent with the 1993 Conditional Use Permit (CUP).[68] SHBO-13

A. Discussion of Foreseeable Use of Enhanced Recovery Techniques

Page 2-20; Section 2.4.2.1; Phase 2 Site Geology and Drilling Objectives

The DEIR does not discuss any enhanced/tertiary recovery techniques that may be undertaken as part of the Proposed Project.[69]

The Project Description should discuss enhanced recovery techniques. CEQA regulations require that the final EIR analyze all phases of the Project.[70] SHBO-14

The DEIR's only mention of enhanced recovery techniques is a statement that no hydraulic fracturing will occur.[71] If an enhanced recovery technique is adopted, it is likely that the environmental effects of the Project will change. For example, depending upon the technique, there could be the risk of introducing hazardous chemicals to the environment, potentially hazardous microorganisms, or gas injection may cause seismic instability and contribute to subsidence.[72] The Final EIR should include a discussion of the enhanced recovery techniques that may be employed and associated environmental impacts.

B. Relationship to Conditional Use Permit: Phase 2 Schedule

Page 2-38; Section 2.4.2.3; Phase 2 Drilling and Testing Schedule

The DEIR states that during Phase 2, "[t]he drill rig would operate continuously for 24 hours per day, seven days per week, until the appropriate depth and bottom-hole location for each well has been reached."[73] The DEIR estimates that drilling of the test wells would take 120 days, after which, the drill rig would be removed from the Project site.[74] SHBO-15

However, the CUP states that "[t]he maximum number of days the

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[68] See DEIR at 2-4.
[69] See DEIR at 2-20.
[70] See Cal. Code Regs. tit., 14, § 15126.
[71] DEIR at 2-20.
[72] See E.C. Donaldson et al., Enhanced Oil Recovery, II: Processes and Operations 496-97 (1989).
[73] DEIR at 2-38.
[74] Id.

workover rigs <u>or any other rig that is to be used on-site</u> shall be 90 days per year, and shall be operated weekdays 8:00 A.M. to 6:00 P.M. excluding holidays."[75] The proposed 24-hour operation of a drill rig is inconsistent with the CUP. The CUP also provides for a 90 day maximum for usage of any rig on site.[76] The expected schedule of 120 days of drill rig usage during Phase 2 is also inconsistent with the CUP.

SHBO-15 continued

Additionally, the CUP requires that "The testing phase for all production shall be a maximum of one year from the date drilling is initiated."[77] The DEIR estimates that, during Phase 2, drilling will occur for "3-4 months" and testing for "7-9 months more."[78] Thus, the expected duration of Phase 2, as described in the DEIR, may not conform to the CUP. Moreover, this estimate relies upon a schedule that includes 24-hour drilling, seven days a week, over a period of 120 days, which itself may not conform with the CUP. The Project's relationship to the CUP should be better explained. The relationship between the Project and the CUP may require a revision of the Project Description in the final EIR.

<u>C. Relationship to Conditional Use Permit: Phase 4 Schedule</u>

Page 2-59; Section 2.4.5; Drill Remaining Wells

The DEIR states that during the drilling portion of Phase 4, "[t]he drill rig would operate continuously for 24 hours per day, seven days per week, until the appropriate depth and bottom hole location for each well has been reached."[79] The DEIR estimates that drilling of the remaining 27 oil wells and three water injection wells will take approximately 30 months.[80]

SHBO-16

The CUP states that "[t]he maximum number of days the workover rigs <u>or any other rig that is to be used on-site</u> shall be 90 days per year, and shall be operated weekdays 8:00 A.M. to 6:00 P.M. excluding holidays."[81] The proposed 24-hour operation of a drill rig is inconsistent with the CUP. The CUP also prescribes a 90-day maximum for the operation of any rig on site.[82] The expected schedule of 30 months of drill rig usage during Phase 4 may be inconsistent with the CUP.

Additionally, the CUP states that the drilling component of Phase 4 will be

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[75] DEIR Appendix L at 2 (emphasis added).
[76] <u>Id.</u>
[77] <u>Id.</u>
[78] DEIR at 2-20.
[79] DEIR at 2-59.
[80] <u>Id.</u>
[81] DEIR Appendix L at 2 (emphasis added).
[82] <u>Id.</u>

34 months.[83] The timeframe given in DEIR conforms to this 34-month schedule, however, that timeframe assumed 24-hour drilling, seven days a week. This schedule may be inconsistent with the CUP and necessary changes to the schedule may result in nonconformance. The Project's relationship to the CUP should be better explained. The relationship between the Project and the CUP may require a revision of the drilling portion of the Phase 4 Project Description in the final EIR.

SHBO-16 continued

D. Relationship to Conditional Use Permit: Project Schedule

The DEIR describes Phase 2 as lasting 10-13 months.[84] The DEIR describes Phase 3 as lasting between 14[85] and 16 months[86]. The DEIR describes the duration of the drilling portion of Phase 4 as "about 30 months."[87] Aggregated, the DEIR provides a schedule for the start of drilling in Phase 2 to completion of drilling in Phase 4 taking 54-59 months.

The CUP states "[a]ll wells must be drilled and completed within 55 months from the start of drilling of the first exploratory well."[88] To the extent that the estimate provided in the DEIR allows for a timeframe of 56-59 months from the start to completion of drilling, the schedule may not conform to the CUP. The schedule should be revised to reflect the CUP's requirement that drilling be completed within 55 months.

SHBO-17

Additionally, the schedule provided in the DEIR assumed 24-hour drilling, seven days a week during Phases 2 and 4. The proposed 24-hour drilling, seven days a week, may violate the terms of the CUP. The CUP states "[t]he maximum number of days the workover rigs <u>or any other rig that is to be used on-site</u> shall be 90 days per year, and shall be operated weekdays 8:00 A.M. to 6:00 P.M. excluding holidays."[89] The Project Description should be revised to take into account the limited drilling schedule to conform with the CUP. If the Project is to consist of 30 production and four injection wells, Phases 2-4 may need to be accelerated. This process should be described and the impacts of such an accelerated schedule discussed. Furthermore, the Project's relationship to the CUP should be better explained in the final EIR.

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[83] Id. at 3.
[84] DEIR at 2-20.
[85] DEIR at 2-55.
[86] DEIR at 2-40.
[87] DEIR at 2-59.
[88] DEIR Appendix L at 3.
[89] DEIR Appendix L at 2 (emphasis added).

E. Relationship to Conditional Use Permit: Phase 3 Pipeline Construction

Page 2-52; Section 2.4.3.2; Phase 3 Offsite Pipeline Construction

The Project Description states that Phase 3 pipeline construction activities "would occur on weekdays between the hours of 9:00 AM and 4:00 PM," so as to avoid peak commute hours between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM.[90]

The CUP requires that "[p]ipeline construction and operation of earth moving equipment shall be limited to daylight hours between 8:00 AM and 3:00 PM . . . [a]dditionally, construction-related trucks should not be operated during peak traffic hours of 7 to 9 AM and 3 to 7 PM."[91] According to the CUP, construction activities should not take place after 3:00 PM and construction-related trucks should not be on the affected roadways from 3:00 AM to 7:00 PM.

In contrast, the Project Description states that Phase 3 pipeline construction activities "would occur on weekdays between the hours of 9:00 a.m. and 4:00 p.m.," so as to avoid peak commute hours between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM.[92] The Project Description does not specifically describe restrictions on construction-related truck traffic. According to the Project Description, construction activities should not take place after 4:00 PM and there are no specific restrictions on construction-related truck traffic. SHBO-18

The construction schedule permitted by the CUP is more restrictive than that proposed in the Project Description. Therefore, a project that complies with the CUP will take longer than the Proposed Project. Prolonged construction may cause additional impacts. For example, there may be additional noise-related impacts. The DEIR already deems noise impacts to be "significant and unavoidable."[93] However, as noted in the HIA, "Phase 3 pipeline construction activities, lasting approximately 4 months, may disrupt students attending schools in the proximity of the proposed pipeline route (including Jefferson Elementary in Redondo Beach)."[94] If construction is prolonged, students may be disrupted to an even greater extent. Thus, if construction is prolonged, the final EIR should include additional mitigation measures to reduce noise related impacts. Furthermore, the Project's relationship to the CUP should be better explained in the final EIR.

F. Relationship to Conditional Use Permit: Phase 1 Schedule

SHBO-19

Page 2-18; Section 2.4.1.2; Phase 1 Site Preparation Detailed Schedule

[90] DEIR at 2-52.
[91] DEIR Appendix L at 14.
[92] DEIR at 2-52.
[93] DEIR at 4.11-68.
[94] DHIA at 54; DEIR Table 2.10 at 2-57.

The DEIR states that Phase 1 construction activities on the Project site, including the operation of earthmoving equipment, "would be conducted between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday (except holidays) and 9:00 a.m. and 5:00 p.m. on Saturdays," as required by the Conditional Use Permit.[95]

The proposed schedule may be inconsistent with the CUP because it provides for construction activities on Saturday.[96] The CUP requires that "[a]ll requirements, standards, conditions stated within the Oil Production Code, Chapter 21-A, of the City's Municipal Code shall be met."[97] The Oil Production Code, Section 21A-2.8 Special Conditions – Drill Site Preparation, states "[a]ll site work and all delivery of equipment and materials attendant to the preparation of the drill site shall be performed only on Monday through Friday, excluding legal holidays, between the hours of eight a.m. and seven p.m."[98] A construction schedule consistent with the CUP will require more extensive mitigation measures in order to mitigate significant impacts due to fugitive dust and VOCs. SHBO-19 continued

The Project Design Parameters states that during construction between 2,000 gallons of water per day and 20,000 gallons per month will be used for different aspects of Phase 1 of the Project.[99] If the permitted construction schedule does not allow for construction activities on Saturdays, it is likely that the duration of construction will need to be extended to account for lost construction time. If the construction schedule is extended, more water may be required to control fugitive dust and VOCs.

The Project's relationship to the CUP should be better explained. The relationship between the Project and the CUP may require a revision of water consumption information in the Project Description in the final EIR. For example, if the West Basin Municipal Water District is unable to supply the additional water, the provider of the additional water should be identified.

VI. SAFETY, RISK OF UPSET, AND HAZARDS [DEIR SECTION 4.8]

A. Potential for Catastrophic Failure

Page 4.8-80; Section 4.8.4.8; Proposed Project Impacts SHBO-20

The DEIR addresses spill risks at the Proposed Project site and associated pipelines, and indicates that prevention measures could "fail with a catastrophic

[95] DEIR at 2-18.
[96] Id.
[97] DEIR Appendix L at 3.
[98] Hermosa Beach, Cal., Municipal Code § 21A-2.8 (1985).
[99] DEIR Table 2.2 at 2-11.

scenario, such a major earthquake causing failure of the retaining walls."[100] Further, a "blowout during drilling at the facility, if the wells are pressurized, could send crude oil up into the air, which could cause impacts outside of the site as well as spill crude oil into the site area."[101] Other identified risks include subsurface releases from the borehole, pipeline failure, and gas equipment rupture.[102]

The DEIR should further analyze the potential for catastrophic environmental impacts as a result of the Proposed Project. An EIR requires descriptions of all "irreversible damage that can result from environmental accidents associated with the project."[103]

The DEIR correctly identifies the potential that the Proposed Project could create environmental accidents with the potential to impact resources.[104] We agree that significant environmental impacts of the Proposed Project remain significant and unavoidable even after the incorporation of feasible mitigation measures.[105] However, the final EIR should better describe the damage that could be caused by an accidental release of oil, gas, and other contaminants. Further, the final EIR should more fully evaluate the costs of responding to releases of oil and discharges of hazardous material, to include financial impacts to the community resulting from the release and subsequent response actions. For example, any negative environmental impact on the tidelands will irreparably harm public perception of the recreational quality of "the best little beach city."[106] Such injury to public perception and corresponding economic impact should be addressed in the final EIR.

SHBO-20 continued

In addition, the final EIR should further develop Mitigation Measure FP-1b, the community alert and notification system.[107] The community alert and notification system should provide parents, students, and staff at the nearby Hermosa Valley School with real-time information about Project site emergencies and corrective actions.

A more complete final EIR analysis of the potential for catastrophic environmental impacts would allow decision-makers to better understand, closely monitor, and possibly mitigate impacts before they become catastrophic. "An EIR is an environmental 'alarm bell' whose purpose it is to alert the public

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[100] DEIR at 4.8-81
[101] Id.
[102] DEIR at 4.8-81, 4.8-61, 4.8-62.
[103] Cal. Code Regs. tit., 14, § 15126(c).
[104] DEIR at 7-1.
[105] Id., DEIR at 4.8-78, 4.8-79.
[106] City of Hermosa Beach, Hermosa Beach Strategic Plan 2013, available at http://www.hermosabch.org/Modules/ShowDocument.aspx?documentID=2673 (last visited Apr. 8, 2014).
[107] DEIR at 4.6-18.

and its responsible officials to environmental changes <u>before they have reached ecological points of no return</u>."[108] To allow the Proposed Project's impacts to be discovered before reaching an ecological point of no return, the final EIR should better analyze the full potential of catastrophic environmental impacts. A catastrophic spill could ruin, for generations, the "beach life style" that is one of the guiding principles of Hermosa Beach's vision for the future.[109]

SHBO-20 continued

VII. CONCLUSION

The analysis of the Project's environments effects is highly technical, involves a particularly controversial matter, and serves a unique function. The final EIR will educate City residents about the Project's expected environmental and health impacts in advance of the upcoming election—an election in which the City's *residents* will act as the decision-makers. Thus, the adequacy of the EIR is important not only in consideration of CEQA's legal requirements, but for the lasting welfare of our community.

SHBO's mission is to keep Hermosa Beach clean, green, safe, and beautiful by maintaining the City's ban on oil drilling originally adopted by the voters in 1932. It is our belief that the City's ban on oil drilling, which voters studied and wisely adopted in 1932, 1958, and once again in 1995, and which the California Court of Appeals unanimously upheld in 2001, remains our best assurance to secure the welfare of our community and to avoid the grave risks inherent in any oil drilling operation. These risks are reiterated throughout the DEIR, and we believe such risks are far too great to the residents, wildlife, and the Santa Monica Bay to consider this Project in Hermosa Beach. Hermosa Beach prides itself on being "the best little beach city."[110] Our city is a thriving beach town filled with families, professionals, retirees, athletes, and tourists that enjoy spending time outdoors and all the greatness our town offers. Drilling 34 oil wells in the middle of our town is a complete contradiction to what our community stands for. The speculative benefits are no match for the health and safety risks of this Project. We are confident that the risks outlined in the forthcoming Final EIR and Health Impact Assessment will help educate voters with the information necessary to retain the ban on oil drilling.

SHBO-21

Thank you for the opportunity to provide these comments. Please contact us with any questions.

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[108] <u>Laurel Heights Improvement Assn.</u>, 47 Cal. 3d 376 at 392 (internal quotation omitted) (emphasis added).
[109] City of Hermosa Beach, Hermosa Beach Strategic Plan 2013, <u>available</u> <u>at</u> <u>http://www.hermosabch.org/Modules/ShowDocument.aspx?documentID=2673</u> (last visited Apr. 8, 2014).
[110] <u>Id.</u>

DATE: April 14, 2014

Signed,

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SURFRIDER FOUNDATION

Via Email: oilproject@hermosabch.org

April 14, 2014

Ken Robertson
City of Hermosa Beach, Community Development Director
1315 Valley Drive
Hermosa Beach, California, 90254

Re: Comments on Draft Environmental Impact Report for the E&B Oil Development Project

Dear Mr. Robertson,

On behalf of the Surfrider Foundation Headquarters and the South Bay Surfrider Chapter, we submit the following comment letter regarding the Draft Environmental Impact Report ("DEIR"), for E&B's Oil Development Project ("Project"). The Surfrider Foundation (Surfrider) is a non-profit grassroots organization dedicated to the protection and enjoyment of our world's oceans, waves and beaches. Surfrider has over 20,000 members/supporters in California, and maintains 90 chapters worldwide fueled by a powerful network of activists.

Forward:

In August 2013, Surfrider submitted a comment letter regarding the NOP and also attended NOP scoping hearings. The following DEIR comments are similar in nature to previous letters. Below we highlight a few areas that need more analysis and consideration. In general, Surfrider's main concerns relate to: accumulative biological impacts, hydrology and water, and subsidence. SURF-1

Accumulative Biological Impacts:

As mentioned in our last comment letter, Surfirder is concerned about oil spills and the State's preparedness. State legislators recently warned that California is woefully unprepared for large spills.[1] Another area of concern is the use of chemical dispersants. In our NOP letter we recommended that the DEIR examine alternatives to dispersants. The information in this regard is sparse, and it is imperative that EIR explicitly say if and what dispersants will be used. Finally, the FEIR must include elaborate oil spill contingency plans that are vetted with other costal resources agencies prior to any permits approvals. SURF-2

[1] http://pressdemocrat.com/article/20130802/articles/130809891?title=Coast's-oil-spill-defenses-called-inadequate#page=2

Santa Monica Bay (SMB) suffered from poor environmental health for decades, however after major restorative efforts, SMB is now considered a healthy ecosystem. In fact, the State of California recently established Marine Protected Areas (MPAs) in SMB. Surfrider is concerned that potential oil leaks and spills would render MPAs weak and defenseless. Surfrider strongly suggests the EIR explore possible impacts to MPAs and have a specific oil spill contingency plans for MPAs. SURF-2 continued

Considering the sensitive nature of SMB, it is imperative that the FEIR analyze accumulative impacts for the entire Bay. Surfrider is concerned that the NOP omits potential, accumulative impacts to SMB— and given the risky nature of oil drilling, the Applicant must analyze **all** potential impacts; including but limited to: impacts associated from pipeline and well construction onshore and offshore, and a detailed analysis of how an oil spill would not only impact the immediate area of Hermosa Beach, but also the entire Bay. SURF-3

The Hydrology And Water Quality Study report contains a paragraph that encapsulates most of Surfrider's biological concerns. Throughout this letter we will highlight those specific concerns, however we believe it's worth reiterating the warnings that come directly from E&B documentation.

> "The project would include site demolition, grading, construction of site improvements, etc... These activities would result in surface disturbances across the project site that could ***potentially affect surface runoff water quality, groundwater quality, and the hydrological character of the project site.*** Drilling, production, and the reinjection of processed produced water into the oil-producing reservoir below the oil water contact ***could have the potential to affect groundwater quality***. The introduction of oil and water to the surface from the wells, together with separation, processing, piping, and truck loading operations have the potential to ***result in leaks or spills resulting from a blowout during the drilling, a rupture of a production tank or piping, or an offsite oil truck accident or oil pipeline rupture***".[2]

SURF-4

<u>Hydrological and Water Quality Concerns:</u>

As articulated in our first letter, Surfrider is concerned about water quality impacts and how this project could impede on the hydrological characteristics of the proposed site. First we are gravely concerned about contamination of groundwater. As cited in the Hydrological report, "… reinjection of processed water into oil reservoir could affect groundwater quality… [M]ost of the groundwater in the WCB remains at an elevation below sea level due to historic over pumping, so the importance of maintaining the seawater barrier wells to keep out the intruding seawater is critical." [3] SURF-5

In order to protect groundwater, the EIR must explicitly: provide diagrams and detailed

[2] Hydrologic Report: http://www.hermosabch.org/modules/showdocument.aspx?documentid=2145
[3] Hydrological http://www.hermosabch.org/modules/showdocument.aspx?documentid=2145

plans of how directional drilling will avoid groundwater locations; establish a baseline of groundwater conditions including seasonal and long term water level and water quality trends; and must also identify mitigation for water quality contamination.

While Project Application declares impacts to groundwater will be avoided, there is plenty of skepticism about directional drilling and how this type of well technology can adversely impact groundwater.

SURF-5 continued

Reinjection Of Produced Water

Surfrider's concerns about the reinjection of produced water into the oil reservoir still remain. First we are concerned about how waste from produced water will be collected, stored and disposed of.

Secondly we are concerned about how the chemistry of the reservoir could change if reclaimed water is injected. While it is encouraging the Applicant aims to use reclaimed (rather than potable water) it is unclear how reclaimed water might interact with natural conditions of the reservoir. Along those same lines, Surfrider is concerned about hydrogen sulfide levels of the reservoir (as originally identified by the Coastal Commission in the 90s when the project was first created). Therefore the EIR must articulate how reinjection of produced water (created from reclaimed water) would **not** have negative effects on the reservoir. The EIR must prescribe treatment measures for produced water to eliminate potential contamination of the "native" condition of the oil reservoir.

SURF-6

The question of water ratios during reinjection is also concerning to Surfrider. For example, Surfrider is concerned that variations in the subsurface pressures brought about by fluid extraction and fluid injections may exacerbate the seepage conditions in Santa Monica Bay, creating the potential to foul Los Angeles County beaches. A thorough analysis of the impact on seepage should be included in the EIR. On the flip side, we are concerned that if not enough water is re-injected, it could cause subsidence (we will later discuss those concerns).

SURF-7

According to the Applicant's Water Quality Study, during Phase 1, 2,000 gallons per day of water would be required. During Phase 2 drilling, 130,000 gallons per well of water would be used. During Phase 3, approximately 2,000 gallons per day of water would be required in addition to up to 10,000 gallons per day during pipeline installation. [4]

While the Applicant asserts the water used for the project would not impact West Basin Municipal Water District supply, we are skeptical.[5] The EIR must explicitly evaluate current water uses for West Basin Municipal Water District and project how a **continued** use could impact supply. For example, if the project continues through Phase 4, that could mean several decades of drilling, and it's impossible to predict what California's water situation will be like then. It's imperative the DEIR provide and current supply and projected supply.

SURF-8

[4] http://www.hermosabch.org/modules/showdocument.aspx?documentid=2145
[5] NOP http://www.hermosabch.org/modules/showdocument.aspx?documentid=3013

West Basin in their "Will Serve" letter has offered to make available up to 375 acre-feet of recycled water (Application Attachment L, page 5), but doesn't indicate whether this is on an annual basis, for the lifetime of the Project. The potential to utilize the West Basin supplied recycled water for the purpose of well stimulation is also a concern. SURF-8 continued

In the Attachment C of the Project Application, "*E&B Oil Development Project Information On Drilling Activities",* it is clear well stimulation is being considered and the language is so nuanced, that some of the practices seem marginally akin to hydraulic fracturing. The report says:

> "During well completion, it is sometimes necessary to stimulate the producing zone to improve the permeability of the oil rock and increase the flow of oil into the well casing. *This may be accomplished by the use of a perforation-washing tool that individually breaks down and cleans out each perforation, or occasionally by the use of acid to dissolve some of the particles blocking the flow path* of the oil in the formation. Such a treatment usually improves the flow of oil into the casing.[6] "

SURF-9

Based on the report submitted by E&B, it is unclear if well stimulation will be used and if the practice of acidizing will be used. The EIR must make it abundantly clear if hydraulic fracturing will be utilized, especially considering the State currently lacks a regulatory framework to permit hydraulic fracturing. In addition, the EIR must thoroughly describe treatment and disposal processes of fluids.

Our final concern about water quality pertains to "drill muds. In May 2013, at the Surfrider Community Forum, we asked the E&B representative what chemicals would be included in the drill muds and we were reassured that they are "EPA approved chemicals". The Project Application explains that nontoxic chemical will be used for drill muds. The DEIR must provide a detailed list of chemicals used in drill muds and provide research on past situations where other oil companies have used "non-toxic" chemicals for muds in offshore drilling operations. Further, the DEIR must analyze how the "non-toxic" chemicals could potentially impact oil reservoir after re-injection. [7] SURF-10

<u>Seismic and Geological Concerns:</u>

GEO.4: "Subsidence due to oil, gas, and groundwater withdrawal generally occurs over a large area. As a result, differential settlement damage due to subsidence is typically only evident in long linear features, such as pipelines, roadways, or aqueducts. As indicated in Section 4.7.4.2, Geosyntec (2012) conducted a subsidence study for the Proposed Oil Project that was peer reviewed by the EIR preparers. The report concluded that subsidence has not occurred to date in the Torrance Oil Field and subsidence is not expected to occur SURF-11

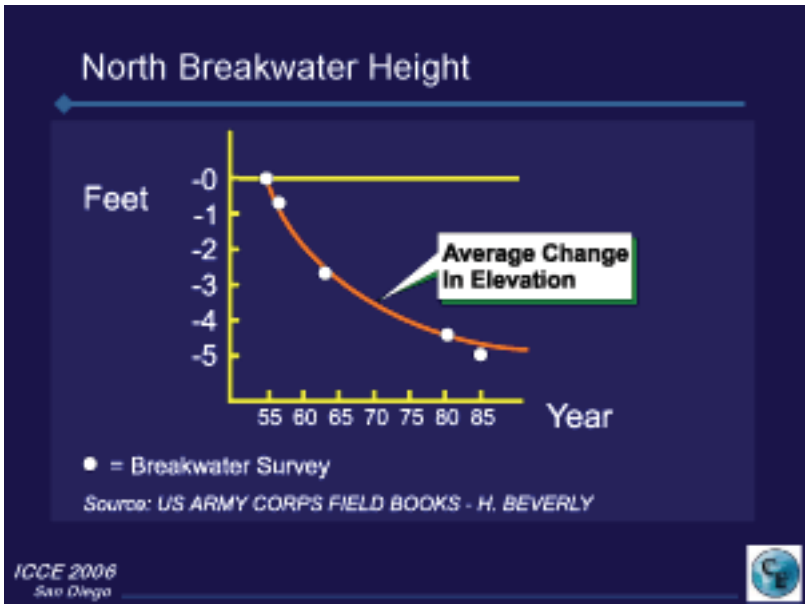
[6] *E&B Oil Development Project Information On Drilling Activities"*
http://www.hermosabch.org/modules/showdocument.aspx?documentid=2103
[7] Attachments to Project Application http://www.hermosabch.org/modules/showdocument.aspx?documentid=2103

as a result of the Proposed Oil Project related oil extraction, for the following reasons:

- Sand-grain packing is mature in the Torrance Oil Field reservoir formations, unlike the adjacent Wilmington Oil Field reservoir formations, where historical subsidence has occurred.
- Lithology of the target reservoir formations includes lenses/layers of compacted and cemented shale units, which inhibits subsidence, unlike the greater unconsolidated thicknesses of sandstone of the adjacent Wilmington Oil Field.
- Water injection would be conducted to minimize subsidence as oil is extracted during the operational life of the Proposed Oil Project."

Subsidence has in fact occurred in the Torrance Oil Field according to the presentation by Coastal Environments for the 30th International Conference on Coastal Engineering[8]. Page 5 (shown following) of their presentation shows subsidence of the Redondo Beach King Harbor Breakwater of approximately 5 feet as the result of oil recovery from the Torrance Oil Field:

SURF-11 continued



"The Proposed Oil Project will remove an unknown volume of oil, gas, and associated water. In the absence of injection of produced water back into the subsurface, the potential for settlement of overlying infrastructure increases. Similarly, most of the subsidence could

[8] Elwany, H., R. Dill, J. Johnson, and N. Marshall. 2006. Subsidence of King Harbor Breakwater at Redondo Beach. Proceedings of 30th International Conference on Coastal Engineering, ASCE. 8 pp. King Harbor, http://coastalenvironments.com/pdf/11_kingharborbreakwater_icce06.pdf

occur offshore, as oil would be extracted beneath offshore waters and most of the initial water reinjection is planned for portions of reservoir zones located beneath onshore areas."

Without certainty of well bottom locations for extraction, and with water reinjection planned for zones apparently located primarily beneath onshore areas, Surfrider remains deeply concerned that planned water reinjection may not reach areas of primary extraction offshore and therefore will not ameliorate potential subsidence in the offshore reservoir zones.

SURF-11 continued

"Produced water reinjection is a standard practice in the oil and gas industry, not only for the disposal of wastewater, but also to prevent ground subsidence. Although reinjection of produced water in proposed injection wells would substantially reduce the potential for ground subsidence, such reinjection does not ensure avoidance of subsidence. Therefore, impacts would be potentially significant in the absence of subsidence monitoring to verify that subsidence is not occurring. As indicated in Section 4.7.4.2, Proposed Project Design Features, the applicant proposes a Subsidence Monitoring Program to detect subsidence as a result of drilling activities to ensure that subsidence would not be allowed to the degree that it could endanger the facility, off-site structures, and the shoreline. In addition, DOGGR will review the Proposed Project operations including plans for fluid withdrawal, water re-injection and reservoir pressure maintenance. DOGGR maintains jurisdiction to arrest or ameliorate subsidence under Division 3, Chapter 1, Article 5.5 of the California Public Resources Code (beginning with Section 3315). The DOGGR requires development of field wide re-pressuring plan to abate potential subsidence due to fluid production and sand withdrawal. Furthermore, section 3319 (c) requires that "field wide re-pressuring plans be based upon a competent engineering study that includes re-pressuring operations designed to most effectively arrest or ameliorate subsidence."

SURF-12

Surfrider does not see evidence of appropriate "field wide re-pressuring plans," nor adequate plans to effectively monitor potential offshore subsidence, and strongly recommends development and implementation of separate and specific offshore monitoring plans, in part as previously proposed by the California Coastal Commission (as addressed in detail later in these comments).

Mitigation Measures

GEO-4a: "Prior to approval of the first drilling permit, the Applicant shall have submitted and the City of Hermosa Beach, the California Coastal Commission, and the California Division of Oil, Gas and Geothermal Resources shall have approved a Subsidence

SURF-13

Monitoring and Avoidance Program. The Subsidence Monitoring Program shall include:

- Ground elevation survey methodologies with high vertical resolution;
- A network of survey or subsidence monitoring locations, including continuous GPS stations and GPS benchmarks, positioned within and outside the City that are sufficiently spaced to draw conclusions about subsidence within the City;
- Use of InSAR imagery technology to evaluate regional subsidence patterns both within and beyond the proposed oil field;
- Sufficient monitoring frequency to establish trends in subsidence in order to distinguish background ground movement from any subsidence caused by proposed oil field operations;
- Reservoir monitoring, including documentation of produced fluid volume (oil, gas and water) and reservoir pressures at similar frequency to ground elevation measurements;
- Reporting requirements; and
- Action levels."

SURF-13 continued

"Subsidence monitoring reports shall be completed annually. Surveying for both vertical and horizontal ground movement shall be completed along the perimeter and throughout the interior of the oil field, utilizing Global Positioning System technology in combination with a network of ground stations. The continuous monitoring GPS stations shall include:

- Hermosa Beach Pier. The pier will serve as the furthest offshore point in the monitoring program, and the closest to where the center of the subsidence bowl would be expected to occur.
- Longfellow Outfall. This Outfall is larger and more structurally stable than some of the other outfalls along the City's coast.
- King Harbor Jetty. This location was selected to achieve a distribution of continuous monitoring points along the coast of Hermosa Beach. This will help provide a limited regional picture of the subsidence between survey events.

The results shall be forwarded to the Division of Oil, Gas and Geothermal Resources, the California Coastal Commission, and the City of Hermosa Beach for review."

Surfrider believes that the offshore monitoring plan outlined above is inadequate and will not accurately reflect potential offshore subsidence, and recommends a program at least as comprehensive as that proposed previously by the California Coastal Commission, which reads in part (and as detailed later in these comments):

"Monitoring offshore will use Global Positioning combined with tautly anchored monitoring points. Since subsidence can occur for various reasons, the monitoring program must provide sufficient information on the area to allow the effects of this project to be isolated from other activities. This will be accomplished by establishing control points outside the zone of influence."

SURF-13 continued

GEO-4b: "In the event that the Global Position System monitoring indicates that subsidence is occurring in and/or around the Proposed Project area, wastewater or water reinjection operations shall be increased to alleviate such subsidence. The Applicant shall coordinate with the California Division of Oil, Gas and Geothermal Resources in determining appropriate increased levels of wastewater reinjection operations. The Applicant will also coordinate with the City of Hermosa Beach, Public Works Department, to verify that subsidence has been mitigated sufficiently.

Residual Impacts

With implementation of measures GEO-4a and GEO-4b, residual impacts would be considered less than significant with mitigation (Class II)."

SURF-14

California Coastal Commission mitigations listed as Special Conditions M-34 and M-35, recommended in the Staff Report for the February 4, 1998 hearing for Permit E-96-28, should be mandated for the current project, and updated to reflect advances in the science since 1998 - see Staff Report excerpts following for the balance of these comments:

California Coastal Commission Staff Report - Permit E-96-28 - February 4, 1998[9]

Page 7: Table 1. Issue Summary: Potential Project-Related Impacts

Hazards

Issue: Withdrawal of reservoir fluids and associated changes in reservoir pressures may lead to subsidence. Subsidence of the nearshore area could lead to changes in beach profiles and result in loss of sandy beach. Subsidence can also cause increase seismic

[9] http://www.coastal.ca.gov/energy/e-96-28.html, http://www.coastal.ca.gov/pdf/e9628.pdf
(The exhibits to the report are not available online for download, but are available for inspection at the offices of the Commission during business hours.)

activity.

Mitigation Measures:

- **Special Condition M-35** requires implementation of a Subsidence Monitoring and Control Program. The program in part provides for Commission intervention if subsidence is detected.

Page 30: MITIGATION MEASURES

Subsidence

- **M-34:** This permit incorporates all subsidence-related conditions imposed pursuant to the City of Hermosa Beach Conditional Use Permit 95-5632.
- **M-35:** The subsidence monitoring and control program described in *Subsidence Monitoring and Control Plan* prepared for the City of Hermosa Beach dated August 1, 1994, by Leonard W. Brock and the *Offshore Subsidence Monitoring Program* Hermosa Beach, California, dated January 14, 1998, prepared by Coastal Environments, shall be implemented by the applicant throughout the life of the project.

SURF-14 continued

Page 64: 4.4.2.4 Subsidence

Subsidence is the dropping or lowering of the earth's surface, and has long been recognized as a potential concern with oil and gas extraction projects.

Subsidence can be extremely hazardous to shoreline areas. One of the more documented cases of subsidence occurred in the Wilmington oil field which showed over 29 feet of subsidence over a 53 year period. The associated impacts included inundated harbor facilities, oil wells and other property (Terminal Island needed to be diked to prevent flooding and parts of Long Beach were filled); ruptured oil well casings, pipelines, sewers and storm drains; separated or buckled railroad tracks; a jammed drawbridge; and cracked walls and foundations of local buildings[10]. It should be noted that the Wilmington field had

[10] From information provided in a letter Report prepared by R. K Baker, Division of Oil and Gas, to Ms. Lorena Margoles, July 30, 1982, entitled "Comments on the Various Subsidence Reports and Associated Criticisms for the Riviera Drilling Districts and Alternate Drill Site EIR."

a total voidage[11] of 1045.9 MMbbls prior to re-pressuring, but once re-pressuring of the field began, no further subsidence-related surface damage was noted and approximately 1.5' of elevation gain (or rebound) occurred. Many structures along the shore are designed to remain safe and effective for identified water elevations. For example, embedded in the design for many seawalls, breakwaters, etc. is a design water elevation and wave height. When water elevations are increased, the structure will provide less protection and may be damaged. These dangers are two-fold. First, subsidence of the offshore sea bottom effectively causes an elevation in water elevation for all existing structures and for the general beach area. A structure which was built to have a top elevation 10 feet above mean sea level will only be 9 feet above mean sea level if the land upon which the structure is built subsides by 1 foot. Second, water depth in front of the structure will increase by 1 foot, and this increase in depth will allow larger waves to break on the structure. Since the energy carried by a wave increases proportionally with the square of the wave height, a small increase in water depth can cause a much larger increase in the available wave energy.

SURF-14 continued

The beach itself will also be affected by subsidence. Direct subsidence of the beach will inundate part of the beach and cause a loss of dry beach. Subsidence of the nearshore area will allow larger waves to come closer to the dry beach, increasing the wave energy expended on the beach and increasing sand movement. A gradual increase in beach erosion (or decrease in accretion) is a likely effect of this localized change in wave energy.

Subsidence occurs for a number of reasons, including oil and gas extraction. California is a tectonically active area and subsidence is frequently linked to earthquake events (seismically induced subsidence). These changes in elevation are sudden, with areas rising or dropping in a few seconds. Regional surface elevations also change gradually over time, due to long-term compaction of soils, adjustments to past seismic events, etc. Human caused subsidence comes mainly from fluid extraction — groundwater as well as oil and gas. Subsurface mining can also cause subsidence, but this is not a concern in the Hermosa Beach area.

The City of Hermosa Beach's Required Subsidence Program

The Conditional Use Permit issued by the City of Hermosa Beach has six conditions which address subsidence. In summary, they require:

[11] Voidage is the total amount of fluid withdrawn from a reservoir minus the total fluid injected back into the reservoir.

- The applicant shall hire an independent engineer to prepare a plan showing the potential zone of influence for all soil settlement, measured to 0.01 feet at any control point.
- The survey area to extend a minimum of 1,000 feet from the zone of influence and that an elevation baseline control survey be done before the drilling begins.
- The applicant shall prepare a plan outlining the method to monitor subsidence as well as any corrective measures for settlements in excess of 0.10 feet. The plan must be approved by an independent engineer and the Director of Public Works.
- The applicant shall undertake annual elevation surveys of the project area and monitor and evaluate any potential settlement.
- If the survey data indicates subsidence then the applicant must take such action as provided in the subsidence control plan as approved by the Director of Public Works, which shall include a program for more frequent monitoring, and monitoring subsidence along the pipeline route.

A *Subsidence Monitoring and Control Plan*, dated August 1, 1994, was prepared for the City of Hermosa Beach by Leonard W. Brock, petroleum engineer. This plan establishes a series of benchmarks that cover the area above the oil reservoirs that are tied into adjacent stable areas and stable benchmarks. The plan, as shown in Exhibit 18, proposes to use 13 existing benchmarks and 20 new benchmarks. There will be 10 benchmarks along the shoreline and three benchmarks located on the City of Hermosa Beach Pier. The only offshore benchmarks are the three which are located on the pier. All other benchmarks are on land. The plan recommends that this network be established as a base prior to oil production and then surveyed annually thereafter. The benchmarks will be surveyed by a qualified land surveyor using Class II specifications with an accuracy of 0.02 to 0.05 feet. The plan recommends that selected wells will have the casing measured to detect compaction in the producing intervals. The only control efforts identified in this plan require that "any evidence of subsidence attributable to the oil operations will be immediately followed by water injection." **Special Condition M-34** incorporates into this permit all subsidence-related conditions imposed by the City of Hermosa Beach in CUP 95-5632.

SURF-14 continued

Subsidence Program Modifications

Due to concerns raised by the Commission staff about offshore and nearshore subsidence, the applicant supplemented the 1994 *Subsidence Monitoring and Control Plan* with the *Offshore Subsidence Monitoring Program Hermosa Beach*, California, dated January 14, 1998, prepared by Coastal Environments and attached as Exhibit 26. The applicant's Subsidence

Monitoring and Control Program, which incorporates modifications suggested by the Commission's technical staff, is summarized below:

Re-injection: The applicant proposes to re-inject all produced water. Re-injection is the "state of the art" technique to halt or prevent subsidence. Re-injection at Wilmington was effective at halting subsidence, and through a detailed re-pressuring program, the Wilmington area experienced approximately 1.5' of rebound. Re-injection of all produced water reduces the total voidage and tends to reduce the potential for subsidence to occur.

Monitoring: The applicant proposes to monitor for subsidence within the "zone of influence" of the entire project — both onshore and offshore. The survey techniques will be different for the onshore monitoring and the offshore monitoring. Monitoring onshore will be undertaken using standard survey techniques, with established benchmarks and reference points. Monitoring offshore will use Global Positioning combined with tautly anchored monitoring points. Since subsidence can occur for various reasons, the monitoring program must provide sufficient information on the area to allow the effects of this project to be isolated from other activities. This will be accomplished by establishing control points outside the zone of influence. Elements of the Subsidence Monitoring Plan include:

SURF-14 continued

- Establishment of onshore benchmarks for annual surveys and determination of existing ground surface elevations before drilling begins. These ground surface elevations shall be used as a base of reference.
- Placement of offshore bench marks, monitoring of benchmarks, and baseline and background data collection[12] (semi-annual measurement taken at all identified survey locations, starting before or no later than the start of Phase II construction.)
- Preparation of a report summarizing all onshore and offshore baseline and background data collection, including a review of regional and local geologic conditions affecting ground movement in the Hermosa area; review of historic regional and local subsidence and settlement problems and related processes; review of historic changes effecting coastal sediments and projects; development of an agency and individual contact program; and quantification of background or baseline elevation changes without the full oil and gas extraction program and

[12] Baseline conditions are the surface elevations measured at the time of, or close to the time of initial production. Background conditions are the surface elevation changes measured prior to the commencement of production. These measurements shall be used as indicators of natural subsidence which is not influenced by the production phase of the project. The measured pre-production phase elevation changes shall be used to extrapolate future natural subsidence, without the project.

extrapolation of pre-production conditions, in five year increments, to establish the "without project" elevation changes against which the measured changes will be evaluated. This report shall be completed and made available to the executive director and the CSLC at least two months and no more that six months prior to planned commencement of Phase II Production.

- If requested by the executive director, the applicant will fund a peer review of this report.
- The applicant may, at any time update and add to the information available in the Phase II Development Phase Baseline and Background Conditions Report. If the applicant decides to reexamine the background study, the applicant shall notify the executive director that additional research is being undertaken. Such efforts shall be undertaken in a timely manner and shall not be used as a reason to delay any of the subsidence mitigation steps.
- Measuring of shoreline and offshore elevations shall continue annually through the life of the project, with annual summary reports provided to the executive director and CSLC within one month following the end of each annual cycle. If the measurements identify any onshore sites with elevation changes greater than 4" from the agreed upon baseline, or any offshore sites with subsidence greater than 1' from the agreed upon baseline, all reviewing agencies should be notified of these changes by phone at the same time that the reports are being transmitted. While these changes may be within the bounds of the anticipated natural conditions, these changes may be sufficient to require modifications to the extent or frequency of the monitoring effort.
- Selected wells will be measured to detect compaction on the producing zones. This information shall be included in the annual reports provided to the executive director.

SURF-14 continued

Mitigation: Macpherson will undertake the following steps if subsidence is detected during monitoring:

- If the <u>offshore</u> monitoring identifies a bowl-like subsidence feature, with progressive subsidence (greater than the extrapolated background level) of 6 or more inches at any two sites, or of 4 or more inches at any one site which is located in less than 30 feet of water, the applicant shall:
  (1) immediately notify the executive director;
  (2) increase the monitoring schedule to every 3 months for onshore and offshore surveys;
  (3) evaluate the injection program and propose to the executive director changes or

modifications to better address existing conditions within two months after the elevation drop being observed; and
(4) implement approved changes to the re-injection program within 30 days after approval has been received.

- If the changes to the re-injection program do not halt or reverse subsidence, and the offshore monitoring program identifies a bowl-like subsidence feature, with progressive subsidence (greater than the extrapolated background levels) of 8 inches at any two sites, or of 8 or more inches at any one site which is located in less than 30 feet of water, the applicant shall:
  (1) immediately notify the executive director;
  (2) evaluate a re-pressuring program which would re-inject a quantity of fluid somewhat comparable to the total amount of fluid being withdrawn;
  (3) propose to the executive director changes or modifications to the re-injection program to better address existing conditions within two months after the elevation drop being observed; and
  (4) implement approved changes to the re-injection program within 30 days after approve has been received.

SURF-14 continued

- If the changes to the re-injection program do not halt or reverse subsidence, and the offshore monitoring program identifies a bowl-like subsidence feature, with progressive subsidence (greater than the extrapolated background level) of 12 inches at any one site which is located in less than 30 feet of water, the applicant shall:
  (1) immediately notify the executive director; and
  (2) halt or reduce production from all wells within the zone of subsidence, or initiate any and all other changes to production to halt the drop on elevation and or the lateral spreading of this drop.

- If, after modifications to re-injection and production are attempted, the measured elevation drops continue to subside, or if the number of sites with an elevation drop increases, the entire project shall halt until both the measured subsidence stabilizes and a new extraction and re-injection plan can be prepared to insure no additional subsidence will occur.

- If <u>onshore</u> monitoring identifies a bowl-like subsidence feature, with progressive subsidence (greater that the extrapolated background level) of 0.1 foot at six or more of the onshore benchmarks, shown in Exhibit 18, the applicant shall:

(1) immediately notify the executive director and any other contacts identified by the City's Conditional Use Permit;
(2) increase the monitoring schedule to every 3 months for onshore and offshore surveys;
(3) evaluate the injection program and propose to the executive director changes or modifications to better address existing conditions within two months after the elevation drop being observed; and
(4) implement approved changes to the re-injection program within 30 days after approve has been received.

- If the changes to the re-injection program do not halt or reverse subsidence, and the onshore monitoring program identifies a bowl-like subsidence feature, with progressive subsidence (greater than the extrapolated background levels) of 0.15 feet at six or more onshore benchmarks, the applicant shall:
(1) immediately notify the executive director;
(2) evaluate a re-pressuring program which would re-inject a quantity of fluid somewhat comparable to the total amount of fluid being withdrawn;
(3) propose to the executive director changes or modifications to the re-injection program to better address existing conditions within two months after the elevation drop being observed: and
(4) implement approved changes to the re-injection program within 30 days after approval has been received.

SURF-14 continued

- If the identified actions do not halt or reverse onshore subsidence, and the onshore monitoring identifies a bowl-like feature with progressive subsidence (greater than the extrapolated level) exceeding 0.2 feet at six or more onshore benchmarks, the applicant shall halt or reduce production from all wells within the zone of subsidence, or initiate any and all other changes to production to halt the drop on elevation and or the lateral spreading of this drop. If, after modifications to re-injection and production are attempted, the measured elevation drops continue to subside, or if the number of sites with an elevation drop increases, the entire project shall halt until both the measured subsidence stabilizes and a new extraction and re-injection plan can be prepared to insure no additional subsidence will occur.

Special Condition M-35 requires the applicant, throughout the life of the project, to carry out the subsidence monitoring and control program described in the 1994 *Subsidence, Monitoring and Control Plan*, prepared by Leonard W. Brock, and the 1998 *Offshore Subsidence Monitoring Program Hermosa Beach*, prepared by Coastal Environments.

Conclusion:

We hope our comments will be incorporated into the FEIR especially our recommendations for tracking subsidence and guarding against accumulative impacts to important coastal resources. SURF-15

Very Sincerely,

Stefanie Sekich-Quinn
CA Policy Manager
Surfrider Foundation, HQ

Craig W. Cadwallader
Chapter Chair
Surfrider Foundation - South Bay Chapter

E&B Oil Drilling & Production Project
Final Environmental Impact Report
Public Draft Comments
Organizations

Citizens Advocating Rational Development

Comment #	Response
CARD-1	Current codes and standards, such as Title 24, require energy efficiency in building design and construction (the City requires 15% above Title 24 for new development). The Project already has proposed a range of efficiency techniques, such as the use of electrical motors over diesel engines.
CARD-2	Section 4.14, Water Resources provides a detailed analysis of water supply and the projected water demand for the Project. Reliability of the water supplies from Cal Water and West Basin MWD is provided in their respective Urban Water Management Plans as detailed in the EIR.
CARD-3	The EIR utilizes the guidelines and methodologies prescribed by the SCAQMD, and contains appendices detailing the models and calculations. Effects related to snow pack and the effects on water supply are speculative in nature and not addressed in a CEQA document. GHG emissions are calculated as per CARB methodologies and CEQA requirements.
CARD-4	The alternatives analysis in Sections 5.0 and 6.0 examines alternatives to the Project as required by CEQA.

Center for Biological Diversity

Comment #	Response
CBD-1	CBD's views on the Project are acknowledged. No specific comment is provided on the Draft EIR and no additional response is merited.
CBD-2	The comment suggests that the Draft EIR is inadequate but fails to provide any specific information on how that is the case in this particular comment. Specific comments are addressed individually in other comments as appropriate.
CBD-3	The Project Description encompasses 85 pages of very specific information as to how the Project is proposed to be designed and constructed. The Project Description does not make any mention of enhanced recovery techniques because none are proposed and none are reasonably foreseeable. It would be speculative for the Project Description to include information on recovery techniques that are not proposed by the applicant nor are they contemplated or allowed in any form at this stage of the proposal. The comment also indicates that the Project Description is inadequate because it does not disclose activities at the Torrance Exxon Refinery, which is one of the potential buyers of the crude oil produced by the Project. The expectation is that if the Torrance Exxon Refinery or any other refinery nearby purchases the crude oil produced by the Project, then that crude would displace other crudes currently purchased elsewhere by the refineries. It is also expected that the Refinery that purchases the crude would continue to operate at their permitted levels and no changes to their permits or environmental review would be required and there would be no change in environmental effects at the refinery.
CBD-4	The commenter erroneously assumes that fracking and other enhance recovery techniques will be used by the Project in the future. The reality is that the Applicant has not proposed any enhanced recovery techniques and their use would be completely speculative. In fact, the geology of the formations expected to be exploited as part of this Project are not appropriate for fracking or other enhanced recovery techniques. Potential fracking or other enhanced recovery techniques are speculative and are not evaluated in this environmental review.
CBD-5	The combustion of end-products of oil and gas production would not change from the baseline. CARB reports detail the independence of production on the demand for oil and gas.
CBD-6	This comment states that mitigation requiring buffer zones of 100/500 feet is insufficient to prevent disturbances to nesting birds. These buffer areas have been implemented and supported by numerous Southern California projects and are distances commonly suggested by the CDFW in the protection of nesting birds. Text has been added that requires the biologist to be qualified and City-approved.
CBD-7	This comment states that the Emergency Response Plan defers mitigation for disturbances resulting from oil spills. It is impossible to define the area of disturbance prior to a spill due to the uncertainties with the amount of spills, location of pipe rupture, weather conditions, etc. The requirements described for this Emergency Response Plan comply with established CDFW OSPR requirements in terms of protecting biological resources after a spill into the marine environment. The development of mitigation at a later date is acceptable if sufficient guidance is provided and sufficient performance criteria are established, as is done in the EIR.
CBD-8	The limit on 5 hours per day would require that, if the limit is approached, the wells would have to be shut in and, if drilling, the drilling would be required to be stopped. This is common practice in oil and gas operations, to shut in wells in emergency or loss of power conditions.
CBD-9	The purchase of offsets for greenhouse gas emissions is not speculative. The SCAQMD, CAPOA, amongst others, have established market mechanisms which allow for the trading and purchase of GHG offsets. Websites are established where the

Comment #	Response
	GHG reductions can be purchased. The market has changed substantially in the last few years.
CBD-10	The EIR discusses the limitations of SCADA systems, but SCADA does provide for early detection of many leaks, as exemplified by the recent Glendale pipeline leak, which was detected and shut in by SCADA.
CBD-11	The SCAQMD has an established program for the detection and reduction of leaks from oil and gas, as well as many industrial processes. Using the US wide factors is not accurate for areas that have aggressive programs, such as Rule 1173.
CBD-12	Methylene chloride is not a reported component of the materials proposed to be used at the site. The applicant is not proposing any fracking.
CBD-13	Refineries in Southern California are geared to process and refine heavy oils. If the crude oil does not come from this Project, it will come from another Project somewhere else. This Project would not change the demand for gasoline and jet fuel in Southern California.
CBD-14	The flare is designed to combust all gas that could be generated by the Project and H2S would be combusted to SOx. See Section 4.2, Air Quality.
CBD-15	The Applicant has not proposed enhanced recovery techniques.
CBD-16	Any chemicals used for downhole activities would not be vaporized or released into the air, such as during combustion activities. Acidization may be used only as per acid wash activities and not in the large quantities or high pressures used for acid fracking.
CBD-17	The Applicant has not proposed enhanced recovery techniques.
CBD-18	The hydrology section of the EIR examines the potential for groundwater impacts including the potential for disposal wells to fail.
CBD-19	Much of the oil transported by pipeline in California is heavy crude oil, similar to that which will be produced by this Project. Pipeline failure rates from California are used in the risk analysis.
CBD-20	The DEIR provides data that shows there has been very limited public safety impacts from crude oil spills in the US.
CBD-21	The H2S would be removed before the gas enters the pipeline. H2S levels in the produced gas would not be at levels that would produce substantial corrosion since the requirement by the Gas Company to be able to purchase the gas is that it contains very low levels of H2S.
CBD-22	The Applicant has not proposed enhanced recovery techniques. CEQA requires only that the proposed Project be examined. Fracking would require additional CEQA analysis.
CBD-23	The EIR uses the criteria established by the SCAQMD for the determination of significance.
CBD-24	This comment states that the Cumulative Impacts biology section should described as significant because the Proposed Project identified a significant impact. The discussion of cumulative impacts reflects the severity of the impacts and their likelihood of occurrence. However, the discussion, as described in the CEQA Guidelines, need not provide as great detail as is provided for the effects attributable to the Project alone. The discussion for the cumulative impact was guided by the probability and reasonableness of an oil spill.
CBD-25	The Project examines a wide range of alternatives to the Project that meet many of the Project's basic objectives.
CBD-26	As clearly documented in each one of the previous responses, the commenter has not demonstrated any of the circumstances that would require recirculation of the Draft EIR. The preparers have not identified any new, significant environmental impacts, or any increase in the severity of the impacts described in the Draft EIR.

Earthworks

Comment #	Response
EWRK-1	The Applicant has not proposed enhanced recovery techniques. End use of the crude oil would not change with this Project and end use emissions would be the same as the baseline.
EWRK-2	The EIR examines the impacts of the proposed Project extensively.
EWRK-3	The Applicant has not proposed enhanced recovery techniques.
EWRK-4	The Final EIR will be available to the voters a few months before the election to allow for the information to be available to contribute to the voter's decision. The EIR does not analyze any unconventional extraction methods because none are proposed and it would be speculative to assume that they will be used as part of this Project.
EWRK-5	The Applicant has not proposed enhanced recovery techniques. In addition, the Project proposes to use reclaimed water, which West Basin MWD has in excess at this time.
EWRK-6	As noted in the Biology and the Hydrology sections of the EIR, regulations require the submittal of oil spill prevention plans as suggested in the comment.
EWRK-7	The EIR utilizes the guidance and significance thresholds developed by the SCAQMD in order to protect human health.
EWRK-8	GHG are discussed in detail in the EIR, including the potential impacts of GHG emissions. The guidance provided by the SCAQMD provides for thresholds that provide a fair share contribution to reducing the GHG impacts.
EWRK-9	Additional text has been added to Section 4.7 Geological Resources and Soils in response to the comment.
EWRK-10	The EIR provides a listing of the proposed chemicals to be used in Section 2, Project Description. The Applicant has not proposed enhanced recovery techniques.
EWRK-11	The EIR contains baseline data on noise, air pollution, light pollution, water contamination, traffic and vibration in their respective issue areas as suggested in the comment. The EIR then compares the impacts of the Project as they are superimposed on that existing baseline.
EWRK-12	A complete HRA, utilizing the HARP model and CARB and SCAQMD Guidance was conducted for the EIR and the results are shown in Section 4.2, Air Quality and GHG as well as Appendix B.
EWRK-13	The EIR includes analysis of the potential impacts of the Project along with alternatives. Unconventional methods of extraction are not proposed and would be speculative to analyze them in this EIR. The City of Hermosa Beach has prepared two additional documents beyond the EIR to address the economic and the health impacts of the Project as suggested in the comment.

Heal the Bay

Comment #	Response
HEAL-1	Heal the Bay's concern about the Project potential for setting a precedent and its opposition to the Project are acknowledged. No specific comment is provided on the Draft EIR and no additional response is merited.
HEAL-2	The EIR acknowledges that an oil spill that reaches the ocean would be considered a significant and unavoidable impact. However, it should also be noted that the probability of an oil spill occurring from the pipeline during a significant rain event is extremely low. In addition, while the impact would be significant if it reached the beach, the spill volumes reaching the ocean are unlikely to be substantial enough, given the volumes projected to be spilled and the distance to the ocean, to be considered catastrophic as stated in the comment.
HEAL-3	Heal the Bay's specific comments on the Draft EIR are addressed individually in the different responses below.
HEAL-4	Heal the Bay's specific comments on the Draft EIR are addressed individually in the different responses below.
HEAL-5	The State Lands Commission does not have permitting authority for this Project. This has been corrected in the Final EIR. The EIR preparer's understanding is that the lease term starts from the initiation of drilling activities. See also response to FLAM-2.
HEAL-6	The Figure 2.2 is intended to show the extent of oil drilling operations, both historic and current, within the Los Angeles basin. Specifics regarding each well is not needed, only the extent to which drilling has taken place within the Los Angeles area.
HEAL-7	DOGGR records indicate that the well was abandoned in 2005, most likely shut down years previously due to reduced production levels. Additional information has been added to the FEIR about the Stinnett well.
HEAL-8	Each Phase of the Project would require the submission of plans and design features to be reviewed and approved by the City as well as other agencies. Adequacy of plans would be determined at that point.
HEAL-9	Information is provided for the Project in the most applicable manner depending on the activity. Workovers could occur for up to 90 days per year, for example, and that could occur on numerous wells or just a single well. Drilling activities in Phases 2 and 4 would require approximately 130,000 gallons of reclaimed water per well (0.4 acre-feet) for each of the 34 wells. Phase 4 of the Project would be designed for a maximum capacity of 8,000 barrels of oil per day and 16,000 barrels of produced water per day. Based on this, a maximum of 8,000 barrels of oil per day could be extracted from the oil reservoir during Phase 4 of the Proposed Project. In the event that the Proposed Project's Subsidence Monitoring Program measures ground movement (subsidence), there could also be a potential need for the injection of makeup water into the oil reservoir equal to the volume of oil extracted per day. Assuming that during Phase 4, oil extraction of 8,000 barrels per day would occur 365 days per year, as a worst case, 375 acre feet of makeup water per year could be needed.
HEAL-10	The Applicant has not proposed enhanced recovery techniques.
HEAL-11	The Applicant proposes that all drilling water would consist of reclaimed water, which would be the majority of the water use associated with the Project. See response to HEAL-9 above.
HEAL-12	The CUP is more directed at noise levels, general practices and not as much on specific codes. The EIR adds mitigation measures in order to reduce significant impacts.
HEAL-13	Projects from surrounding communities were identified in order to define the cumulative projects listing. Most of the area in the vicinity of the Project is highly developed and there are not many projects in the vicinity of the proposed pipeline.
HEAL-14	Risk of upset cumulative impacts only occur in areas where upset impacts overlap or where development is proposed within the upset impact zones. Cumulative projects outside of these areas would not produce cumulative risk impacts. Existing infrastructure does not constitute a cumulative Project.
HEAL-15	The superfund site would not be affected by the proposed Project as it is located a substantial distance to the south.
HEAL-16	This comment states that oil spills have the potential to significantly impact the marine

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	environment. The EIR agrees with this statement and Impact BIO-2 already states: "A rupture or leak from oil Pipelines has the potential to result in a substantial adverse effect on native species and habitats, sensitive species, and biologically important habitats associated with the Pacific Ocean," and has classified this impact as Class I, significant and unavoidable.
HEAL-17	This comment suggests providing additional, recent data on biological resources potentially affected by the Proposed Project. Additional information from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on sensitive areas, MPAs, western snowy plover and least tern habitats have been included in text and in Figure 4.3-1. Additional information on sensitive species has been added to the Final EIR in Section 4.3, Biological Resources. Please note that more data on resources does not enhance the EIR's findings, which already show the impacts of an oil spill to be significant and unavoidable, if one were to occur and reach the ocean. This comment also suggests conducting additional surveys for nesting birds in the spring to determine the presence of additional nesting species. However, the most appropriate means for determining the presence of nesting bird species under the circumstances of limited vegetation removal in an extremely disturbed, urban environment is to assess the quality of habitat, not conduct extensive surveys which will still not provide current nesting activities at the time of the disturbance. The proposed mitigation measure requires the surveys to be conducted at the time of the disturbance which would be the most effective in protecting individual birds and/or nests.
HEAL-18	This comment suggests adding a list of native species observed within the greenbelt. The following text has been added to the baseline section in Section 4.3.1.1: <u>The only native species observed growing in the Greenbelt along the Proposed Project pipeline route were approximately three heavily pruned, California live oak (*Quercus agrifolia*) saplings.</u>
HEAL-19	This comment repeats some of the concerns in HEAL-17 and suggests rearranging the order of wildlife species. However, reordering the discussion of the wildlife species inhabiting the Project area would de-emphasize the fact that the species observed and/or expected in the Project area are all accustomed to an urban/industrial/residential setting which could be misleading to the reader. The comment also suggests conducting additional surveys in a wider area and variety of habitats for birds in the spring to determine the presence of additional species. However, the most appropriate and reasonable means for determining the presence of bird species under the circumstances of limited vegetation removal and noise associated with drilling operations in an already extremely disturbed urban environment is to assess the quality of habitat, not conduct extensive surveys.
HEAL-20	This comment requests that additional information be added to the EIR concerning the western snowy plover. Western snowy plover has been added to the list of potential shorebirds in the Sandy Beach community description in Section 4.3.1.1 and information on this species has been included in Figure 4.3-1 which includes major roosting and nesting habitat for this species.
HEAL-21	This comment questions whether the range of area was large enough for the discussion on the sandy beach habitat. The description in Section 4.3.1.1 for this habitat included the Sandy Beach habitat immediately down-flow of the storm drain outflow, which is the most likely location of effect from an oil spill resulting from a pipeline failure. Additional discussion has been added in Section 4.3.1.4 discussing this habitat type in a larger geographic area.
HEAL-22	This comment states that the EIR did not address the importance of sandy beaches to grunion spawning. Additional information on the importance of sandy beach habitat has been included in Section 4.3.1.2 under Sensitive Sites. Including in this data are those beaches that support this habitat type and grunion spawning events.
HEAL-23	This comment requests that additional information be added to the EIR concerning the nesting seabird rookeries. The EIR correctly defines the primary location of rookeries as being located on off-shore islands. However, data concerning western snowy plover and California least tern nesting habitat has been included in Figure 4.3-1 which includes major roosting and nesting habitat for these species.
HEAL-24	This comment requests that additional information be added to the EIR concerning the presence of kelp beds. The language in text was refined to exclude older data and to define the presence of

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	kelp, which could expand and contract over time, in more general terms.
HEAL-25	"Malago" has been changed to Malaga" as suggested. Additional information has been added to Table 4.3-1, stating western snowy plovers roost on Hermosa Beach. In addition, data concerning western snowy plover nesting and roosting habitat has been included in Figure 4.3-1. The text in Table 4.3-1 concerning blue whale occurrences has been changed to read: "Present in low numbers, but increasing in recent years."
HEAL-26	This comment requests that additional information be added to the EIR concerning the presence of western snowy plovers at Hermosa Beach. Additional information has been added to Table 4.3-1, stating western snowy plovers roost on Hermosa Beach. In addition, data concerning western snowy plover nesting and roosting habitat has been included in Figure 4.3-1.
HEAL-27	This comment suggests providing additional, recent data on California least tern population distributions in the Project area. Additional information from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on least tern habitats has been included in text and in Figure 4.3-1.
HEAL-28	This comment suggests providing additional, recent data on pinniped use of the Bay. The existing information within the EIR on these extremely mobile species is sufficient to reasonably document their presence and potential for impact from a release into the marine environment.
HEAL-29	This comment suggests providing additional, recent data on cetacean's use of the Bay. The existing information within the EIR on these extremely mobile species is sufficient to reasonably document their presence and potential for impact from a release into the marine environment. Additional information on the seasonal occurrences of some of the dolphin species has been added to the EIR.
HEAL-30	This comment suggests including the Marine Life Protection Act and associated MPA regulations in the EIR. Additional information from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on MPAs has been included in text in Section 4.3.1.4 and in Figure 4.3-1.
HEAL-31	This comment recommends including additional discussion on the potential for oil spills impacting wetlands. The comment also recommends oil spill mapping be done showing the potential routes of exposure from likely pipeline routes and operations. The spill risk assessment conducted for the EIR has been conducted and is summarized in the biology section, Impact BIO-2. The risk analysis determined that potential for a spill to come into contact with the marine environment remains relatively low. The likelihood of the spill being large enough to affect wetlands many miles away from pipeline routes and operations is substantially lower. Additional information from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on the presence of sensitive sites including wetlands, lagoons, and mud flats and their distances from the Project site have been included in Section 4.3.1.4 and in Figure 4.3-1.
HEAL-32	Although Impact BIO-2 identifies the potential for any spill into the marine environment as having a significant effect, this was based on the high level of sensitivity of the area and the numerous sensitive species present in the area. However, the potential for such a spill entering the marine environment remains relatively low. The likelihood of the spill being large enough to effect any populations of species migrating through the area for any substantial amount of time is even lower.
HEAL-33	This comment states that the EIR should identify and review consistency with several local restoration and management plans. The primary impacts resulting from this Project will occur within the City of Hermosa Beach. CEQA requires that an EIR discuss any inconsistencies between a proposed Project and applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project . . .adopted for the purpose of avoiding or mitigating an environmental effect. The EIR primary analysis of Plan consistency is located in the Land Use and Planning section. Other restoration and management plans do not have jurisdiction over this Project.
HEAL-34	This comment suggests the EIR underestimates the noise impact to wildlife. The important point the EIR analysis makes is that the Project area is surrounded by busy roads and industrial and urban settings, and so therefore, this particular area does not support a wide diversity or abundant

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	wildlife population. Those species that are present have proven able to adjust to sudden changes to their environment. That is how they are able to survive in the unnatural, heavily impacted, conditions. Therefore, the populations of species inhabiting the disturbed, marginal habitat surrounding the Project area are not expected to be affected by the increased noise resulting from the Proposed Project. In addition, this comment recommends conducting additional surveys during the spring to detect nesting patterns. However, the most appropriate means for determining the presence of nesting bird species under the circumstances of limited vegetation removal in an extremely disturbed urban environment is to assess the quality of habitat, not conduct extensive surveys which will still not provide current nesting activities at the time of the disturbance. The proposed mitigation measure requires the surveys to be conducted at the time of the disturbance which would be the most effective in protecting and/or avoiding individual birds and/or nests.
HEAL-35	This comment suggests that trimming of all vegetation should occur outside the breeding season. This is the intent of the proposed mitigation as written. However, due to uncertainties concerning schedule start dates and the potential for clearing fallen trees or other unexpected events, it allows the applicant to continue work without unnecessary delays that do not necessarily impede breeding activities. The use of qualified biologists to determine adequate buffer zones around active nests is a standard, resource-agency accepted practice.
HEAL-36	Text has been changed as suggested to: "Spills and cleanup activities would potentially result in impacts to biological resources, with the only sensitive resources being associated with coastal and marine habitats." Text has been clarified to: "Small leaks or spills that occur within the confines of the drilling area, which are also most likely to be observed, contained, and remediated quickly, would result in minor or negligible impacts to biological resources."
HEAL-37	This comment recommends including time estimates for how long it would take a spill to reach the ocean during a storm and in dry weather. The spill analysis determined that a spill was not expected to reach marine resources during dry conditions, and unlikely to reach the ocean during wet conditions. The number of variables determining the speed of flow would include the amount of rainfall, the current existing flow within storm-drains, temperature, the amount of spill, and the location of the spill. The salient point is that spills will reach the marine environment only under unlikely conditions.
HEAL-38	This comment recommends that the EIR provides more detail on cleanup procedures and the effects of dispersals and other chemicals used in oil-spill cleanup efforts. The analysis, as written in Impact BIO-2, does include the potential for impacts to wildlife from cleanup efforts. In addition, the Emergency Response Plan, which will be reviewed by both the City and experts in OSPR and other resource agencies, will include additional details on specific cleanup requirements for specific resources.
HEAL-39	Text has been changed as suggested to: "Spills or disturbances resulting from accidents, spills, leaks, and cleanup efforts within the marine, sandy beach, and foredune habitats have the potential to substantially affect a wide variety of wildlife discussed below:"
HEAL-40	This comment recommends including additional discussion on the potential for oil spills impacting benthic organisms. The potential for a spill to come into contact with the marine environment remains relatively low. The EIR has already identified and discussed a range of potential impacts to this resource, and in conjunction with all of the marine environment species, is described as being a Class I significant and unavoidable impact.
HEAL-41	This comment recommends including additional discussion on the potential for oil spills impacting plankton. The potential for a spill to come into contact with the marine environment remains relatively low. The likelihood of the spill being large enough to affect enough plankton to, in turn, substantially affect food chain support in the area is even lower. The EIR has already identified and discussed a range of potential impacts to this resource, and in conjunction with all of the marine environment species, is described as being a Class I significant and unavoidable impact.
HEAL-42	This comment recommends including additional discussion on the potential for oil spills

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	impacting fish. The potential for a spill to come into contact with the marine environment remains relatively low. The following text has been added to the fish text as suggested: "The effect of oil on fish species includes histological (tissue and cell) damage, altered physiological and metabolic patterns, decreased growth and reproduction, and vulnerability to disease."
HEAL-43	The following text has been added to the beginning of the fish text as suggested: "The effect of oil on fish species includes histological (tissue and cell) damage, altered physiological and metabolic patterns, decreased growth and reproduction, and vulnerability to disease." Malibu Lagoon was added to the important habitats for fish nurseries.
HEAL-44	The text at the end of the impact discussion on fish has been changed, as suggested, to read: "Because fish species can be economically important, are critical to the overall health of Santa Monica Bay, and are important in the entire food-web of the area, impacts to fish are considered to be significant."
HEAL-45	This comment states that the EIR did not describe grunion in the fish section. The following text has been added to the Sandy beach description in Section 4.3.1.4: "Sandy Beach is a habitat included in the Area Contingency Plan as a resource of primary concern due to its support of nesting and roosting habitat for western snowy plover (federal threatened species), least tern (Federal and State endangered species), and also due to its importance in providing suitable spawning area for grunion (*Leuresthes tenuis*), which inhabit nearshore waters along the California coast and spawn at night during full and new moons during the spring and summer months. Grunion leave the water and spawn on beaches at high tides swimming as far up the beach as possible. This species is known to spawn as close to the Project Site as the southern shore of Hermosa Beach."
HEAL-46	This comment suggests adding text discussing impacts to fisheries in this section. The impact discussion does mention the economic value of fish in the Santa Monica Bay; however, potential impacts to the fishing industry are not considered biological resources but would be included in Recreational and Land Use Sections.
HEAL-47	This comment states that the EIR should increase the discussion on impacts to shorebirds. Section 4.3.1.4 has been expanded to identify those "Sensitive Sites" that support shorebirds, waterfowl, foraging habitat, and sandy beaches. In addition, Figure 4.3-1 identifies each of these areas in relation to the Project Site.
HEAL-48	This comment states that the EIR should increase discussion of impacts to prey items of marine mammals. Fish, benthic species, and plankton impacts were already addressed in their own specific sections. The text at the end of the impact discussion on fish has been changed as suggested to read: "Because fish species can be economically important, are critical to the overall health of Santa Monica Bay, and are important in the entire food-web of the area, impacts to fish are considered to be significant." This comment also recommends that the EIR discuss impacts to marine mammals from noise and vibration resulting from subsurface drilling. Subsurface drilling under the marine environment is proposed to occur over 2,000 feet below the sea floor. Any noise and/or vibrations resulting from the drilling operations would then have to travel through 2,000 feet of substrate to reach the marine resources, and then some unspecified distance through the water depending on the location of individual animals. The potential for any impact to populations of marine mammals or other sensitive marine species from noise or vibration impacts resulting from subsurface drilling is considered to be very low. See response to comment PRUR-10.
HEAL-49	This comment states that the EIR should have discussion of impacts to invertebrate species. Invertebrate species were discussed under the Benthos Section in Impact BIO-2. In addition, the following text has been added to text: "The subtidal benthos of nearshore areas in the Santa Monica Bay is dominated by small infaunal invertebrates, particularly polychaete worms and crustaceans. An oil spill that results in high concentrations of dissolved hydrocarbons in the water and/or the incorporation of oil into the sediments would likely result in a species composition shift to invasive and opportunistic benthic fauna. It is likely that an oil spill would selectively impact more sensitive benthic species, such as filter feeding amphipods. An oil spill within Santa Monica Bay nearshore and coastal wetlands, which would occur under most of the prevailing conditions evaluated, would have significant impacts to the soft-bottom subtidal benthos."

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HEAL-50	This comment suggests including additional assumptions and calculations behind the risk of spill analysis. The full analysis of the risk of spill into the marine environment is not included in the Biology Section; it can be found in full in Section 4.8, Safety Risk of Upset and Hazards.
HEAL-51	This comment recommends that the Emergency Response Plan be included in the FEIR. The applicant has prepared an Oil Spill Contingency Plan which incorporates many of the proposed mitigation measures described in the DEIR. This Plan is included in the Applicant Provided Comments Appendices and would therefore be included in the FEIR. The primary review of the Final Emergency Response Plan document would occur prior to any construction activities as defined in Table 4.3.7, and as required by the regulatory requirements, would be reviewed and approved by both the City of Hermosa and the leading resource agency on these matters: CDFW OSPR division.
HEAL-52	This comment recommends that the Emergency Response Plan identify and prioritize specific resources for protection and describe agency coordination including the local fire department. Mitigation Measure BIO-2 already clearly states that the Emergency Response Plan shall contain and identify containment and cleanup responsibilities, definitions of the authorities, responsibilities, and duties of all entities involved in oil removal operations. Additional requirement text (underlined) was added to Mitigation Measure BIO-2 requiring that the plan contain: • Definition of the authorities, responsibilities, duties of all entities involved in oil removal operations, <u>and methods of emergency action coordination during and after an oil spill;</u> In addition, text (underlined) was added to Mitigation Measure BIO-2 requiring that the plan contain: • <u>A description of sensitive biological resources in the Santa Monica Bay that should be prioritized for clean-up activities in the case of an oil spill into the marine environment;</u>
HEAL-53	This comment suggests including additional requirements to the Emergency Response Plan so that the Plan include all agreements and statements from all resource agencies involved in an oil response and removal operation. Additional requirement bullet was added, as suggested, to Mitigation Measure BIO-2 requiring that the plan contain: • <u>Agreements and statements from all resource agencies involved in an oil response and removal operation;</u>
HEAL-54	This comment suggests including additional requirements to the Emergency Response plan so that the Plan require some description of facility and pipeline monitoring and inspections. Additional requirement (underlined) was added to Mitigation Measure BIO-2 requiring that the plan contain: Procedures <u>and frequencies</u> for regular monitoring and inspections of pipelines and facilities;
HEAL-55	This comment suggests that the EIR include a discussion of potential chemicals used during clean-up efforts. The applicant has prepared an Oil Spill Contingency Plan which incorporates many of the proposed mitigation measures described in the DEIR. This Plan is included in the Applicant Provided Comments Appendices. In addition, these specifics would be included in the final Oil Spill Contingency Plans that would be approved by both the City of Hermosa Beach and the CDFW OSPR division. In the event of an oil spill, OSPR will direct efforts and provide input on the types of chemicals that can be used for cleanup in accordance with their regulatory purview and expertise.
HEAL-56	CDFG has been changed in text to CDFW as suggested. In addition, the comment states that the Emergency Response Plan be approved prior to the submittal of the FEIR. The applicant has prepared an Oil Spill Contingency Plan which incorporates many of the proposed mitigation measures described in the DEIR. This Plan is included in the Applicant Provided Comments Appendices. In addition, the primary review of the Final Emergency Response Plan document would occur prior to any construction activities as

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	defined in Table 4.3.7, and as required by the regulatory requirements, would be reviewed and approved by both the City of Hermosa and the leading resource agency on these matters: CDFW OSPR division.
HEAL-57	An active fault summary table and information regarding potentially active faults have been added to Section 4.7, Geological Resources and Soils in response to the comment.
HEAL-58	The text has been removed in response to the comment, as Section 4.8, Safety, Risk of Upset, and Hazards provides thorough, up to date information regarding seismicity and petroleum facilities.
HEAL-59	Tank design is regulated by codes and standards, such as API 620. 650, and 653, which help to ensure that tanks can sustain earthquakes. Some tanks do fail, however, and secondary containment is provided for the proposed project. Multiple tank failures producing complete failure of both tanks is extremely unlikely and has not been addressed as the risks would be below the acceptability thresholds.
HEAL-60	As referenced in the text, the liquefaction opinion was based on NMG Geotechnical (2012), which drilled borings, measured depth to groundwater, and measured the density of soil in coming to their conclusion. However, text has been added in the Liquefaction section indicating depth to water. As indicated in the text, lateral spreading typically accompanies liquefaction; therefore, the potential for lateral spreading is low. Additional text has been added to the Environmental Setting with respect to seismically induced settlement. However, Section 4.7.3.2, Proposed Project Design Features, indicates that a design level geotechnical report would be completed prior to completion of Phase 1 and would include a refined assessment of the settlement potential. Similarly, the Phase 3 Design Features address potential settlement issues, most notably in the landfill area.
HEAL-61	Text has been added in response to the comment, in both the Environmental Setting and Impact GEO.2 discussion.
HEAL-62	Impact GEO.4 discusses differences between the Wilmington and Torrance oil fields. Impact GEO.4 indicates that the Proposed Oil Project will remove an unknown volume of oil, gas, and associated water and that water injection would be conducted to minimize subsidence as oil is extracted during the operational life of the Project. Calculations of wastewater volumes to be injected would be completed by a petroleum engineer and are not relevant to the CEQA analysis in determining a level of significance. Also as indicated in Impact GEO.4, wastewater reinjection is a standard practice in the oil and gas industry, not only for the disposal of wastewater, but also to prevent ground subsidence.
HEAL-63	See Section 4.9, Hydrology, Section 4.9.4.2, Proposed Project Design Features, and Section 4.9.4.4, Impacts, regarding petroleum spills and storm water design features.
HEAL-64	See the Project-specific geotechnical investigation (NMG Geotechnical 2012), which has been included as an appendix to the EIR.
HEAL-65	As indicated in Section 4.7.6, Mitigation Monitoring Plan, Mitigation Measures GEO-2b and GEO-2c, changes in wastewater injection pressures would be approved by DOGGR, the seismicity monitoring program would be completed in coordination with Caltech, and potential changes or termination of disposal operations would be overseen by the City of Hermosa Beach. A specific seismic threshold has not been established that would lead to cessation of injection activities. GEO-2c defines performance criteria in the form of triggers for actions and seismicity levels that conform to GEO-2c's performance criterion will be developed as part of the seismic monitoring program.
HEAL-66	The Project Site is located approximately 1,700 feet from the ocean, on old dune sands; therefore, possible sea level rise in combination with a few possible inches of subsidence would have no impact on the Project Site or offshore wells located in excess of 1,000 feet beneath the ocean floor. A Subsidence Monitoring Program is a required mitigation measure for the Project and it will ensure that if subsidence occurs, measures are taken to reduce or eliminate the subsidence.
HEAL-67	There is no industry standard for shutting down operations as a result of seismicity. A ground acceleration of 0.13g is considered moderate in intensity and is generally representative of minimum ground shaking sufficient to cause damage. Similar ground accelerations have been used as mitigation on other oil field related EIRs, including those written for the Inglewood Oil Field and Whittier Oil Field (which used 0.15g).

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	In the event of an earthquake, real time data would be provided by the accelerometer and the facility would be shutdown if the thresholds are exceeded.
HEAL-68	Additional text has been added to the Environmental Setting and impact evaluation regarding wastewater injection induced seismicity. Detailed maps of all proposed wells have not been provided by the Applicant for inclusion in the EIR. Each well location would be based on the outcome (i.e., geology, oil/gas/water content) of the initial test wells and (if drilled) any successive wells drilling during Phase 4. There is no state or federal methodology to determine what sufficient distance is required between injection wells and faults. Impact WR.3 indicates that the Project Site is located along the westerly edge of the West Coast Basin. Three major fresh water aquifers comprise the West Coast Basin: the 200-Foot Sand (Gage Aquifer), the Silverado Aquifer, and the Lower San Pedro/Pico Aquifer. Groundwater depth in these predominantly confined aquifers reaches more than 1,500 feet in the West Coast Basin, although water production wells generally are not this deep. The injection wells would pass through these fresh water deposits, creating potential water quality impacts as a result of well leakage and/or inadvertent migration of wastewater from the point of injection upward through the formation, as a result of frac-outs, which are uncontrolled releases of produced water from the formation. New text has been added from the 2011 EPA report referenced in these comments, as well as from a U.S. General Accounting Office report regarding groundwater contamination related to Class II wells. It is acknowledged that the integrity of some Class II injection wells has been compromised historically, potentially resulting in leaks to the subsurface. As a result, Impact WR.3 has been changed from less than significant to potentially significant and mitigation measures have been imposed accordingly as follows: WR-3a The Applicant shall complete a site-specific Area of Review/Zone of Endangering Influence analysis, per Division of Oil, Gas, and Geothermal Resources requirements, to determine if oil and gas wells are present that might serve as conduits for injected liquids to migrate upward to underground sources of drinking water. In the event that such wells are present, those wells shall be plugged and abandoned such that underground sources of drinking water (i.e., less than 10,000 mg/L total dissolved solids) are protected. Plugging and abandonment of those wells shall include zonal isolation plugs outside all casings and shall be completed per current Division of Oil, Gas, and Geothermal Resources standards. WR-3b The Applicant shall confine injected fluids into the intended zone of injection in order to adequately protect underground sources of drinking water. Injection well cement shall be placed at the base of all underground sources of drinking water, and not just at the base of fresh water, to protect water with total dissolved solids content ranging from 3,000 mg/L to 10,000 mg/L. WR-3c The Applicant shall complete step-rate tests, using bottom-hole and surface pressure gauges, such that maximum allowable surface injection pressures are set at a maximum of 95 percent of the fracture pressure of the formation being injected. WR-3d The Applicant shall ensure that the hydrostatic pressure in overlying West Coast Basin aquifers is not exceeded during injection over the active life of the disposal wells. To ensure that this does not occur, the static reservoir pressure shall be monitored on a periodic basis, per Division of Oil, Gas, and Geothermal Resources requirements, and injection into the receiving zone shall cease if and when the hydrostatic pressure is exceeded. WR-3e The Applicant shall meet with Division of Oil, Gas, and Geothermal Resources staff annually to review the status of the waste water injection wells. Any deficiencies identified by Division of Oil, Gas, and Geothermal Resources staff shall be immediately rectified by the Applicant. However, as indicated in Impact GEO.2, impacts associated with potential Project induced seismicity are considered potentially significant and a Subsidence and Induced Seismicity Monitoring Program would be implemented to determine whether impacts are occurring.

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	Mitigation Measures GEO-2a, -2b, and -2c provide additional measures to supplement the program. In addition, the Subsidence and Induced Seismicity Monitoring Plan has been added as an appendix to the EIR.
HEAL-69	Hydraulic fracturing (i.e., fracking) and produced water disposal/injection are similar in that both are high pressure injections of liquids into the wells. However, fracking consists of injection of a water/sand slurry into fractured shale at pressure above the fracture pressure of the formation to enhance the fractures, while produced water injection consists of high pressure injection of water into the pores of sandstone, which were depleted of oil and water during oil production, and are injected below the formation fracture pressure. As indicated in the text in question, a step rate test would dictate maximum allowable surface injection pressures to avoid fracturing. See response to previous comment HEAL-68 with respect to potential wastewater induced seismicity. In addition, as indicated in the text in question, pressure gauges or pressure recording devices would be used during injection operations.
HEAL-70	As indicated in comment response HEAL-68, well locations and depths would be determined in succession, based on the information obtained from the well drilled prior, including the geologic conditions and oil/gas/water quantities, as these well features are highly variable. Therefore, it is not possible to determine the amount of oil, gas, and associated water that will be extracted in advance.
HEAL-71	See response to comment HEAL-66. Onshore reservoirs are illustrated in Figure 2.8, Applicant Proposed Project Lease Areas Cross Section. In addition, Section 4.8, Geological Resources and Soils contains a mitigation measure requiring subsidence monitoring for offshore and onshore. In addition, the subsidence monitoring program specifically targets the pier as a location for a monitoring site to ensure that if subsidence occurs, it is detected as soon as possible.
HEAL-72	As indicated in Section 4.14, Water Resources, Impact WR.3, wastewater wells would be drilled through three major aquifers of the West Coast Basin. The injection wells would be designed to meet all of the rules and regulations of the California DOGGR. All of the injection wells would have steel casing that would be cemented in place. All of the produced water would be injected through injection tubing that would run down through the steel casing. The tubing would be placed in the well to a point just above the perforations, located at the zone of water injection, and a packer would be 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 typically run to ensure that the well is operating properly and that the injected fluids are confined to the intended injection zone (DOGGR 2013). The U.S. EPA classifies oil and gas injection wells as Class II wells. There are approximately 167,000 oil and gas injection wells in the United States and 25,000 such wells in California, many which extend through potable groundwater. Class II wells must adhere to strict construction and conversion standards. A Class II well that follows EPA Federal standards is built very much the same as Class I well, which can be used to dispose of hazardous waste. However, Federal EPA does not directly regulate Class II wells in California. DOGGR has primacy in regulating the Underground Injection Control Program, which regulates all Class II wells in California. In California, Class II injection wells have proved to be an environmentally safe method of disposal of produced water. A peer review conducted by a national organization, the Ground Water Protection Council, determined that the DOGGR has a program that effectively protects underground sources of drinking water (DOGGR 2013). See Impact WR.3 for additional information pertaining to this issue.
HEAL-73	Ceasing operations would only extend the amount of time before corrective actions can be completed, as the sooner water injection can begin, the sooner the ground surface will rebound. Protective measures have already been identified, that being increased injection of water or wastewater. As indicated in Section 4.14, Water Resources, Impact WR.4, Phase 4 of the Proposed Oil Project would be designed for a maximum capacity of 8,000 barrels of oil per day. Therefore, 8,000 barrels of oil per day could be extracted from the oil reservoir during Phase 4. However, up to

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	16,000 barrels per day of produced water would be available to inject back into the reservoir, such that it is unlikely that a supplemental water source would be required for replacement water to prevent regional ground subsidence from occurring in the vicinity of the Proposed Project. Text has been added in the Environmental Setting indicating that, although complete rebound did not occur, significant land rebound in fact occurred in the Wilmington area of subsidence (Poland and Davis 1969, http://reg.gsapubs.org/content/2/187.abstract). Text has also been added indicating that subsidence monitoring at the Inglewood Oil Field has demonstrated that subsidence has slowed since monitoring began in 2010, but not necessarily in proportion to areas of oil production and injection, respectively. (http://www.inglewoodoilfield.com/res/docs/2013%20Fugro_Annual%20Geotech%20Report.pdf)
HEAL-74	Text has been added in response to the comment indicating that offshore subsidence monitoring would occur. In the event that subsidence is detected, additional water reinjection would occur in the areas where the subsidence occurs.
HEAL-75	The paragraph following the text in question indicates that a SWPPP would be completed in accordance with an NPDES permit. A summary of the Order has been added to Section 4.7.2, Regulatory Setting, in response to the comment. In addition, text has been added to Impact GEO.5 and HWQ.1 (Section 4.9 Hydrology) in response to the comment.
HEAL-76	Deposition was addressed in the Health Risk Assessment utilizing the HARP for impacts to human health and cancer risks through the dermal and hand-to-mouth pathways. No additional analysis was conducted related to environmental deposition and impacts on plants, etc. Emissions of pollutants would be small as the combustion of natural gas does not produce many particulates to produce high deposition rates. Combustion of diesel was minimized through mitigation. Note that health risks from deposition were very small.
HEAL-77	Text has been added in response to the comment.
HEAL-78	Text has been added in response to the comment.
HEAL-79	Text has been added in response to the comment.
HEAL-80	Text has been added in response to the comment.
HEAL-81	Text has been added in response to the comment.
HEAL-82	Text has been added in response to the comment.
HEAL-83	Text has been added in response to the comment.
HEAL-84	Text has been added in response to the comment.
HEAL-85	See response to HEAL-72.
HEAL-86	See response to HEAL-69.
HEAL-87	Text has been added in response to the comment.
HEAL-88	Text has been added in response to the comment.
HEAL-89	See response to HEAL-72.
HEAL-90	As indicated in Impact WR.4, Water Supply, reliability of water supplies from Cal Water and West Basin is provided in their respective Urban Water Management Plans (UWMPs) (Cal Water 2011, West Basin 2011b). The UWMPs demonstrate the water supplier's total projected water supplies available during normal, single dry, and multiple dry water years, during a 20-year projection, as well as the water supplier's existing and planned future uses, including agricultural and manufacturing uses. The projected supplies and demands are presented in 5-year increments for the 20-year projection. California Water Code 10644(a) requires preparation of updated UWMPs every five years and submittal to the California Department of Water Resources, the California State Library, and any city or county within which the supplier provides water supplies. The 2010 West Basin UWMP demonstrates not only how the agency would meet service area retail demands over the next 25 years, but also how the agency plans to provide long-term water reliability through supply diversification, i.e., less reliability on imported water and increased desalinated water, local groundwater, recycled water, and water conservation.
HEAL-91	We were unable to verify the condition of the storm drain; however, we have no reason to doubt the accuracy of the statement and any potential changes in the storm drain diversion would not result in a different finding of significance with respect to the impact. Impacts would remain the same without said diversionary practices.

Comment #	Response
HEAL-92	See response to HEAL-91. The text indicates that only a portion of the runoff would be diverted; therefore, the amount of potential spill diverted is unknown.
HEAL-93	Text has been added to Section 4.14.1.4 and Impact HWQ.2 (Section 4.9, Hydrology) in response to the comment.
HEAL-94	Text has been added in response to the comment.
HEAL-95	See response to HEAL-72.
HEAL-96	Text has been added in response to the comment.
HEAL-97	"Substantial" is terminology from the CEQA environmental thresholds checklist. As indicated in Impact WR.4, Water Supply, domestic water demand would be potable water provided by Cal Water and drilling operational water would be recycled water provided by West Basin. Also, see response to HEAL-90.
HEAL-98	A three phase separator is standard equipment for oil and gas development. There are not any additional environmental concerns or nuisance concerns associated with oil, gas and water separation. The process does not require any additional water to conduct the separation process. The gas will go to the gas processing plant; the oil will be transported to a tank and subsequently put into a pipeline to be transported to a Refinery where the final processing of the crude will occur. Residual water will be reinjected back into the reservoir.
HEAL-99	Wastewater is the resulting water that comes up from the oil reservoir once is separated from the oil. One way to look at it is that the water is actually cleaner when it gets reinjected because the oil has been removed. The water is going back into the same reservoir from where it was extracted. Drilling activities in Phases 2 and 4 would require approximately 130,000 gallons of reclaimed water per well (0.4 acre-feet) for each of the 34 wells. Phase 4 of the Project would be designed for a maximum capacity of 8,000 barrels of oil per day and 16,000 barrels of produced water per day. Based on this, a maximum of 8,000 barrels of oil per day could be extracted from the oil reservoir during Phase 4 of the Proposed Project. In the event that the Proposed Project's Subsidence Monitoring Program measures ground movement (subsidence), there could also be a potential need for the injection of makeup water into the oil reservoir equal to the volume of oil extracted per day. Assuming that during Phase 4, oil extraction of 8,000 barrels per day would occur 365 days per year, as a worst case, 375 acre feet of makeup water per year could be needed.
HEAL-100	As indicated in the sentence following the text in question, the Project Site would be designed to retain, process, and inject storm water within the perimeter fence or wall for a 100-year storm event. However, text has been added referring the reader to Section 4.9, Hydrology, which describes the surface water design in more detail.
HEAL-101	Text has been added clarifying that the water would be recycled. In addition, see response to HEAL-97.
HEAL-102	We agree with the comment. Mitigation Measure WR-1 would mitigate this impact.
HEAL-103	As indicated in Impacts WR.2 and WR.3, surface water and groundwater could be impacted as a result of discharge of wastewater to the surface or subsurface, respectively. Text has been added referring the reader to Table 2.11, Phase 4 Drilling Chemicals.
HEAL-104	Because the water would be injected into Class II wells, water quality standards of the West Coast Basin do not apply. As indicated in Impact WR.3, Class II wells must adhere to strict construction and conversion standards. A Class II well that follows EPA Federal standards is built very much the same as Class I well, which can be used to dispose of hazardous waste. Also see response to HEAL-72.
HEAL-105	Although not common, injection wells have been placed in high density metropolitan areas, including the Inglewood Oil Field. Risks at that field are similar to those anticipated for the Proposed Project, including potential induced seismicity and groundwater contamination, as described in this EIR. See http://www.inglewoodoilfield.com/plans/.
HEAL-106	Wastewater injection would not be used for secondary recovery efforts under the Proposed Project.
HEAL-107	The depths of the proposed disposal wells have not been provided by the applicant. However, see response to HEAL-72.

Comment #	Response
HEAL-108	See response to HEAL-72.
HEAL-109	Additional text has been added to Impact GEO.2 (Section 4.7, Geological Resources) with respect to potential water injection-induced seismicity.
HEAL-110	Additional text has been added to Section 4.14.1.4, Groundwater, with respect to beneficial uses of groundwater. The sentence related to no domestic wells in the vicinity of the site has been removed, as it is true that the entire West Coast Basin, including west of the seawater intrusion barrier, should be protected. As indicated in Section 4.14, Water Resources, Impact WR.3, wastewater wells would be drilled through three major aquifers of the West Coast Basin. The injection wells would be designed to meet all of the rules and regulations of the California DOGGR. All of the injection wells would have steel casing that would be cemented in place. All of the produced water would be injected through injection tubing that would run down through the steel casing. The tubing would be placed in the well to a point just above the perforations, located at the zone of water injection, and a packer would be 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 typically run to ensure that the well is operating properly and that the injected fluids are confined to the intended injection zone (DOGGR 2013). The U.S. EPA classifies oil and gas injection wells as Class II wells. There are approximately 167,000 oil and gas injection wells in the United States and 25,000 such wells in California, many which extend through potable groundwater. Class II wells must adhere to strict construction and conversion standards. A Class II well that follows EPA Federal standards is built very much the same as Class I well, which can be used to dispose of hazardous waste. However, Federal EPA does not directly regulate Class II wells in California. DOGGR has primacy in regulating the Underground Injection Control Program, which regulates all Class II wells in California. In California, Class II injection wells have proved to be an environmentally safe method of disposal of produced water. A peer review conducted by a national organization, the Ground Water Protection Council, determined that the DOGGR has a program that effectively protects underground sources of drinking water (DOGGR 2013). See Impact WR.3 for additional information pertaining to this issue. Finally, the reinjection efforts to reduce subsidence would be targeted to the areas where the subsidence is evidenced.
HEAL-111	Additional text has been added to Section 4.14.1.4, Groundwater, with respect to beneficial uses of groundwater. Also, see response to HEAL-72.
HEAL-112	As indicated in Impact WR.3, the current mechanism that is creating a stratigraphic and/or structural trap for oil accumulation within the Miocene Puente Formation (the target oil producing formation) would similarly prevent upward migration of injected wastewater (i.e., potential frac-outs) into the overlying aquifers. Therefore, sampling is not necessary, nor possible due to the depth of injection.
HEAL-113	See response to HEAL-104 and -112. The oil trap that would confine the injected water would also apply to onshore areas. Regardless of the depth of the injection well, the wastewater would be injected into the oil reservoir, which is separated from overlying aquifers by impermeable cap rock.
HEAL-114	Text has been added indicating that 4.8 AFY is the anticipated maximum water demand per year, during periods of drilling. As indicated in Section 2.3.4.1, Phase 4 Drilling, Phase 4 would be about 2.5 years and re-drilling would occur in some wells beyond 2.5 years, requiring approximately the same amount of water as the initial drilling. Drilling activities in Phases 2 and 4 would require approximately 130,000 gallons of reclaimed water per well (0.4 acre-feet) for each of the 34 wells. Phase 4 of the Project would be designed for a maximum capacity of 8,000 barrels of oil per day and 16,000 barrels of produced water per day. Based on this, a maximum of 8,000 barrels of oil per day could be extracted from the oil

Comment #	Response
	reservoir during Phase 4 of the Proposed Project. In the event that the Proposed Project's Subsidence Monitoring Program measures ground movement (subsidence), there could also be a potential need for the injection of makeup water into the oil reservoir equal to the volume of oil extracted per day. Assuming that during Phase 4, oil extraction of 8,000 barrels per day would occur 365 days per year, as a worst case, 375 acre feet of makeup water per year could be needed.
HEAL-115	Every oil and gas project has different oil to water ratio. In this particular case, the expectation by the Applicant is that the maximum ratio will be 2 to 1, or approximately 2 barrels of water for every barrel of oil produced on average over the life of the Project. Produced water would be reinjected back into the reservoir it came from and it may be supplemented by reclaimed water, as needed to replace the oil removed and prevent potential subsidence.
HEAL-116	Additional text has been added to Impact HWQ.2 (Section 4.9, Hydrology) regarding worst-case spill scenarios.
HEAL-117	The EIR clearly explains that the oil, gas and water will be separated at the processing facility. The maximum volume of liquids that could be processed on an average day would be up to 24,000 barrels of liquids. Once separated, the oil will be transported to the refineries of choice via pipeline and the water reinjected back into the reservoir it originated from. This is a very common standard procedure repeated throughout many wells in Southern California.
HEAL-118	The will serve letter is included in the City's web site as part of the application materials submitted by E&B.
HEAL-119	Landowners were considered to the extent that the site would become infeasible, such as located within incompatible land uses (residential areas). Landowners were not specifically contacted.
HEAL-120	The waste generation related to cuttings would be only during the drilling portion of Phase2, Phase 4 and re-drilling.
HEAL-121	Specific comments by Heal the Bay have been addressed previously in these responses to comments above. Heal the Bay's concern about the potential impacts of the Project as expressed in the comment are acknowledged.

Natural Resources Defense Council

Comment #	Response
NRDC-1	Comment acknowledged, comments from the organizations Heal the Bay, Surfrider Foundation, Sierra Club, Keep Hermosa *Hermosa*, and LA Waterkeeper are hereby appended to the NRDC comment list by reference.
NRDC-2	Exact well completion techniques for the Proposed Project are not available at this stage of the Project. Applicable subsections of Section 4.0, Environmental Impact Analysis, contain information on the potential impacts of well drilling. For example, Section 4.8, Safety, Risk of Upset, and Hazards, discusses the type and risk of hazardous materials associated with the Proposed Project and Section 4.12, Public Services, addresses the disposal of well mud and cuttings. The Proposed Project does not involve the use of hydraulic fracturing technology. The Applicant has provided information on potential well completion techniques in Attachment C of the Applicant's Project Application.
NRDC-3	Comment noted on the DEIR reference to additional well completion information in Attachment A which does not exist; the text in Section 2.0 has been revised to reflect the correction. See response to comment NRDC-2.
NRDC-4	Table 2-2 in Section 2.4 provides the water use for the Proposed Project. The table includes the water use for the following Project categories; construction, drilling, and operations and maintenance including landscaping. Section 4.14 acknowledges that Project generated produced water could contain high concentrations of salts, metals, hydrocarbon and organic compounds, sulfur, treatment and workover chemicals, dissolved gases (particularly carbon dioxide), bacteria and other living organisms, dispersed solid particles, scales, and other pollutants. Project wastewater would be treated and returned to the reservoir via injection wells, the California Division of Oil and Gas and Geothermal Resources (DOGGR) regulates oil field waste disposal in injection wells and is expected to use this DEIR in its permitting review of the Proposed Oil Project.
NRDC-5	Comment noted, the Proposed Project would be subject to the SCAQMD regulation cited in the comment and would be required to disclose chemicals used in any well completion techniques pursuant to the referenced SCAQMD Rule. The Applicant has indicated that acid wash techniques would be used for well completion. The use of downhole chemicals does not produce chemical emissions such as produced by combustion. Many oil and gas products (such as gasoline) and chemical solvents, etc, contain carcinogenic and hazardous materials. The Applicant would be required to comply with the SCAQMD rules.
NRDC-6	The Applicant has not proposed enhanced recovery techniques. See response to comments NRDC-1 through NRDC-5.
NRDC-7	Comment on the air quality issues and challenges of the South Coast Air Basin acknowledged. Section 4.2, Air Quality and GHGs, provides a comprehensive review of the air quality of the Project area and the attainment status of regulated criteria pollutants including particulate matter and toxic air containments. The Air Quality and GHG section also presents the regulatory setting, potential Project impacts, and mitigation measures to reduce those impacts. Appendix B provides air quality emissions calculations for all Proposed Project emissions including GHGs. The EIR follows the guidance of the SCAQMD in assessing the impacts of emissions. Toxic contaminants are examined utilizing HRA techniques and accepted models. The Applicant proposes to electrify much of the equipment at the site thereby allowing the facility to operate below all of the SCAQMD criteria and toxic thresholds.
NRDC-8	The entire CUP is included in the DEIR as Appendix L and is discussed in detail in Section 2.0, Project Description. The permit requirements of the CUP are discussed in the applicable sections of Section 4.0, for example, the provision limiting deliveries referenced in the comment is discussed in Section 4.13, Transportation and Traffic. The DEIR acknowledges the provisions of the CUP would apply to the Proposed

Comment #	Response
	Project throughout the document. Section 4.2 goes beyond the requirements for air quality listed in the CUP with a comprehensive analysis of the potential air quality and GHG impacts of the Proposed Project and provides seven mitigation measures to reduce the impact of those potential impacts.
NRDC-9	The comment is correct in stating construction equipment meeting the Tier 4 standards has begun to become available in California. However, the availability of Tier 4 compliant equipment is not widespread and the use of Diesel Particulate Filters (DPF) on Tier 3 engines has been demonstrated to achieve similar Particulate Matter (PM) reduction as with Tier 4 engines. Construction equipment meeting Tier 4i became available in 2011. Tier 4 equipment is only starting to become available. Tier 3 equipment with particulate filters is essentially the same as Tier 4i. DPF technology is required by mitigation measure AQ-7a. Implementation of the mitigation measures outlined in AQ-1b and AQ-7a would reduce NO_X and PM to levels from off road diesel construction equipment below the applicable SCAQMD significance thresholds.
NRDC-10	The use of zero emissions or near zero emissions on road trucks for the Proposed Project is not feasible due to the trucking requirements of the Project. Regarding off road construction equipment and the use of Diesel Particulate Filters (DPF) or diesel equipment control strategy (DECS)' mitigation measure AQ-7a requires that diesel equipment used at the site shall meet EPA Tier 3 emission requirements and be equipped with a CARB Level 3 diesel particulate catalyst to reduce Diesel PM emissions. Current regulatory requirements for on road diesel trucks require the use of DPF by the time this Project would begin. CEQA mitigation does not address regulatory requirements.
NRDC-11	The Summary of Mitigation Measures and Mitigation Monitoring Plan tables in Section 8.0 of the DEIR include a column listing the Responsible Party/Agency for each mitigation measure. The Responsible Party/Agency is the agency that is responsible for assuring compliance with the mitigation measure. Table 8-2, Air Quality and GHG's, lists the Responsible Party as the City of Hermosa Beach and the SCQAMD for mitigation measure AQ-5d. Therefore, the Air Monitoring Plan will be required to be developed, approved, and implemented in consultation with the SCQAMD consistent with the request of the comment. The exact spacing of the monitors will depend on the final design of the facility. Review and approval by the City and the SCAQMD has been added to the mitigation measure AQ-5d.
NRDC-12	A discussion of end use GHG emissions is included in Section 4.2.4.5, Potential Operations Greenhouse Gas Emissions. Section 4.2.4.5 demonstrates that the end use GHG emissions from the combustion of the fossil fuel produced by the Proposed Project would occur independent of the Project. If the crude oil is not produced by the Project, it will be supplied by another source, as crude oil prices are set largely on the global market. Therefore, the Proposed Project would not have an impact on the end use GHG emissions resulting from the combustion of the crude oil from the Project. A full life cycle analysis of GHGs is not required for the DEIR to meet the requirements of CEQA, however, for informational purposes Section 4.2.4.5 provides that the Project would generate, over its life, an average amount of crude oil that would generate 535,000 MTCO2e per year, from the combustion of natural gas, and crude oil products. The end use combustion of oil and gas product is the same in the baseline as it would be under the Project as the Project would not affect the demand for gasoline, jet fuel or diesel fuel in Southern California.

Otten and Joyce LLC

Comment #	Response
OTTJ-1	The contention by the Stop HB Oil that the Project has been approved is acknowledged. However, the Project will not be approved until and unless the voters approve the Project by a majority vote in November of 2014. As the Project is proposed for within the City of Hermosa Beach, the City is the appropriate lead agency.
OTTJ-2	CEQA case law states: "for the kinds of impacts for which mitigation is known to be feasible, but where practical considerations prohibit devising such measures early in the planning process, the agency can commit itself to eventually devising [mitigation] measures that will satisfy specific performance criteria articulated at the time of project approval," and that " a condition requiring compliance with regulations is a common and reasonable mitigation measure" (Oakland Heritage Alliance v. City of Oakland (2011) 195 Cal.App.4th 884, 906). The Emergency Response Plan and Oil Spill Contingency Plans would be developed as part of the regulatory requirements and would adhere to these performance standards. The odor plan requires that "The Odor Minimization Plan shall address potential sources of odors from all site equipment, including wells and drilling operations, temporary operations such as truck loading, and measures to reduce or eliminate these odors (e.g., containment, design modifications, carbon canisters). The Plan shall address issues such as facility information, buffer zones, signs with contact information, logs of odor complaints, the protocol for handling odor complaints and odor event investigations and methods instituted to prevent a re-occurrence". The Subsidence Monitoring Plan contains performance criteria to determine if subsidence is occurring and provides for remedies to ensure that if subsidence occurs, it can be abated by reinjection of fluids.
OTTJ-3	The purchase of offsets for greenhouse gas emissions is not speculative. The SCAQMD, CAPOA, amongst others, have established market mechanisms which allow for the trading and purchase of GHG offsets. Websites are established where the GHG reductions can be purchased. The market has changed substantially in the last few years. The SCAQMD has established thresholds to determine impacts of GHG emissions and the EIR follows these established thresholds. CEQA only requires mitigation of significant impacts which are "roughly proportional" to the impacts of the Project. CEQA Guidelines §15126.4(a)(4) and 15091(a). It has been determined that reduction of emissions to the threshold level reduces the impacts of the Project; therefore additional offsets would exceed the requirements of CEQA.
OTTJ-4	The combustion of end-products of oil and gas production would not change from the baseline and therefore do not produce impacts. Note that CEQA only requires mitigation of significant impacts of the Project. Emissions with and without the Project from the end-use of the hydrocarbons would be the same. CARB reports (CEC, 2005, "An Assessment Of California's Petroleum Infrastructure Needs", April 2005, CEC-600-2005-009) detail the independence of production on the demand for oil and gas.
OTTJ-5	The mitigation measures listed in the EIR are those applied by the lead agency, in this case, the City. The EIR distinguishes between those measures proposed by the applicant, called the design features, and those proposed by the lead agency, i.e. the mitigation measures, by breaking them out into separate sections.
OTTJ-6	The geographic scope of the cumulative impacts analysis is a function of the specific environmental impact being addressed. Cumulative air quality impacts generally address areas that could have overlapping localized impacts, as examining all projects in the air basin would be prohibitively cumbersome. The SCAQMD, through its use of thresholds and the clean air plan, addresses the cumulative impacts regionally. The City may satisfy requirements related to cumulative impact analysis by listing projects producing related or cumulative projects or a summary of projections contained in an adopted local, regional or statewide plan, per CEQA Guidelines 15130(b), and then refer to the SCAQMD's threshold and plan.

Comment #	Response
OTTJ-7	The region is highly developed and the number of projects in the region are minimal. Area jurisdictions were contacted for projects that might occur or have occurred in their respective areas. The list was not limited to energy projects, as street re-alignments were also addressed.

Sierra Club

Comment #	Response
SIER-1	Comment acknowledged, the DEIR identifies Class I impacts from the Proposed Project and defines a Class I impact as significant and unavoidable: significant adverse impacts that cannot be effectively mitigated. No measures can be taken to avoid or reduce these adverse effects to insignificant or negligible levels.
SIER-2	The Executive Summary, by definition, presents a summary of the document and provides an overview of the Proposed Project's potential environmental impacts and the recommended mitigation measures to reduce the potential of those impacts. The impacts of the operations phase are included in both the text and the Summary of Impacts and Mitigation Measures for the Proposed Project and Alternatives table, Table ES-2. For example, the comment refers to the visual impacts of the addition of the workover rig which would have the potential to be onsite up to 90 days per year during the operations phase; this impact is acknowledged on Page ES-9 and in Table ES-2 in the description of impact AE-1. The comment also notes concern that potential noise impacts during the operations phase are not acknowledged in the Executive Summary, Page ES-11 notes that noise impacts during drilling of Phase 4 (operations) are significant and Table ES-2 impacts NV-2, NV-5 and NV-6 document the same.
SIER-3	As outlined in CEQA Section 15064.7, a public agency uses thresholds of significance in the determination of the significance of environmental effects of a proposed Project. The preparers of the DEIR used the thresholds of significance as approved by the lead CEQA agency, the City of Hermosa Beach. See Section 4.10, Land Use-Recreation Policy Consistency Analysis, for a discussion on the Proposed Project's compatibility with adjacent land uses and the City of Hermosa Beach Land Use Policies.
SIER-4	See Section 2.0, Project Description, for a comprehensive discussion on the history of the Proposed Project and current Project description. Section 4.8, Safety, Risk of Upset, and Hazards provides information on the safety and risk of the Proposed Project.
SIER-5	Pages ES-2 through ES-6 provides a summary of the information requested in the comments. Detail on the Project description is provided in Section 2.0, Project Description. A discussion of the pipeline route for the Proposed Project is included starting on page 2-50. Figure 2-15 details the pipeline routes. Figures 2.7 and 2.8 provide a graphical description of the lease boundaries outside of the Project site at 555 6th Street including the upland and tideland locations. Water use is discussed in Section 4.14, Water Resources, including an analysis of the need for a Project specific water assessment.
SIER-6	A detailed discussion of the lease and financial issues/agreements between the Applicant and the City of Hermosa Beach is beyond the scope of the DEIR and the CEQA process. However, in order to provide the voters of Hermosa Beach the necessary information to make an informed decision on the Project, the City prepared a Cost Benefit Analysis as a separate document to the DEIR. The Cost Benefit Analysis is intended to estimate potential benefits and cost to the City and includes a discussion on the legal agreements of the Proposed Project.
SIER-7	The comment is not clear as to what objectives are not able to be met by the Proposed Project at the proposed location. If the comment is referring to the DEIR determination of Class I impacts for the Proposed Project at the Project location, the determination of a Class I impact does not, in itself, invalidate a Project objective.
SIER-8	The Table and the Executive Summary provide a synoptic review of the Project, but cannot possibly disclose every detail of the impact. The readers are encouraged to use the Executive Summary as a short version of the document and to use the full document when desiring to look deeper into the details of the analyzed impacts. In addition, the EIR preparers respectfully disagree with the characterization of impacts provided by the Sierra Club. Specific descriptions of all impacts and their levels are

Comment #	Response
	included within each of the issue areas mentioned.
SIER-9	Text describing the role of re-drills has been added throughout the FEIR to clarify that re-drills would occur over the life of the Project.
SIER-10	The DEIR does disclose the potential for odors, from Page E-8 of the Executive Summary; "*Therefore, due to the close proximity of neighbors, odor impacts associated with accidental releases, such as tank pressure relief device releases or minor releases from the oil or gas equipment, could impact surrounding areas and would be a significant impact".* The DEIR determined the potential for odors to be a Class I impact, see impact AQ-5.
SIER-11	The DEIR acknowledges the potential impact from spills for the Proposed Project. Impacts BIO-2, GEO-7, HWQ-2, LUPR-4, and WR-2 all disclose the potential for a spill of produced water or oil.
SIER-12	The Executive Summary acknowledges that drilling would occur during the operations phase of the Proposed Project, see also response to comment SIER-2. The DEIR determined that impacts when not drilling would be less than significant as described on Page ES-10. Table ES-2 on Page ES-31 identifies a Class I impact from drilling for both drilling and operational (Phase 4) phases. Therefore, the Executive Summary discloses the risks of drilling during the operational phase of the Project.
SIER-13	The referenced table has been renamed Table ES-4. The impacts for drilling under the operations phase are disclosed and marked with an asterisk and table footnote.
SIER-14	The impacts for drilling under the operations phase are disclosed and marked with an asterisk and table foot note.
SIER-15	The referenced table has been renamed Table ES-4.
SIER-16	The referenced table, Summary of Environmental Impacts for the Proposed Project, provides a summary of the impacts and acknowledges the impact from the workover rig separate from the drilling phase. Pages 4.1-91 and 4.1-92 of Section 4.1, Aesthetics and Visual Resources, contain the following discussions: *Development and Operations with the Workover Drill Rig, Phase 4 – Re-drills, and Collective Recurring Impacts.* Text indicating that the rigs might be onsite up to 240 days has been added to the FEIR. The re-drills would occur for an average of 30 days per year, meaning that if the Applicant decides to drill 150 days in one year, no re-drills would be allowed for the next 5 years. It would not be annually.
SIER-17	See Section 8.0, Summary of Mitigation Measures and Mitigation Monitoring Plan, for the mitigation measure language structured in permit compliance format along with the agency responsible for assuring compliance with the mitigation measure. Identifying a consequence or penalty for non-compliance will be determined by the responsible agency or agencies and not part of the scope of CEQA. The mitigation measures are mandatory in nature and the penalties are defined by the CUP and development agreement and mitigation monitoring language that gives the City the authority to cease operations if measures are not followed.
SIER-18	As described in mitigation measure AQ-3a: *The Applicant shall limit flaring during Phase 4 to a total of 5 hours per day at the full flaring capacity (or to an equivalent volume of flared gas) during all emergency or routine flaring events in order to ensure that NOx emissions are reduced below the thresholds.* Emission calculations are presented in Appendix B, the flaring operations noted in the subject mitigation measure were included in the emission calculations. The results of the emissions calculations determined that the flaring limitations described in the mitigation measure AQ-3a will reduce NO_X emissions below the SCQAMD threshold. The SCAQMD thresholds were developed to address, among other issues, environmental and health impacts. Information on the development of the SCAQMD thresholds is available at www.aqmd.gov. Significance is based on the SCAQMD thresholds. Flaring would occur due to an upset condition and would not be a routine activity. Note that the Applicant has

Comment #	Response
	proposed the use of high efficiency onsite microturbines for the production of electricity as part of the normal operations.
SIER-19	Diesel powered workover rigs are part of the Proposed Project and are therefore discussed throughout the document.
SIER-20	Compliance and mitigation plans would be required to be completed and approved by the applicable agency prior to final approval/issuance of Project permits. Mitigation measure BIO-2 describes the requirements of the Emergency Response Plan (Plan), the fact that the Plan shall be approved by the California Department of Fish and Game (CDFG) Office of Spill Prevention and Response (OSPR) and that the Plan shall be approved by the City prior to commencing any construction activities. As such, the DEIR sufficient information on the requirements of the mitigation measure/Plan. Timeframes are listed in the Mitigation Monitoring Plan, Section 8 of the EIR.
SIER-21	Mitigation measure SR-1 has been revised to specify the electrical classification requirements for the spill containment area.
SIER-22	Mitigation measure HWQ-2a does not contain the word "dirt"; the commenter is likely referencing mitigation measure HWQ-2c which provides requirements for containment and cleanup of an oil spill. The mitigation measure outlines requirements for non-permeable areas such as pavement and a second set of measures for "dirt" areas. As such, the mitigation measure is clear on the requirements of non-permeable versus permeable areas and the addition of gravel to further describe permeable areas is unnecessary.
SIER-23	As outlined in Table 8-8 in Section 8.0, Summary of Mitigation Measures and Mitigation Monitoring Plan, The City of Hermosa Beach is the responsible agency for assuring compliance with mitigation measure HWQ-2h; as such the Applicant would need to work with the City to develop a procedure for the subject inspections.
SIER-24	The City Maintenance Yard would be managed by the City staff and would not be associated with the Applicant in any way. Any emergency associated with the City Maintenance Yard would be unrelated to the Applicant's Project. The mitigation measure does not specify language as to what defines an emergency to allow the Applicant the discretion to determine what constitutes a necessary repair or action. The responsible agency for the mitigation measure, the City of Hermosa Beach, does not operate an oil and gas facility and therefore does not have the expertise to define what actions may be an "emergency". The Applicant would require the leeway provided in the mitigation measure language to operate the facility safely. Conversely, the City would have the authority to enforce the mitigation measure if the noise producing schedule limitations are not adhered to.
SIER-25	The importance of having a crossing guard should not be redirected by other priorities of the School District. The mitigation measures needs to stay focused on the impacts of the Project, not the areas of most importance to the school district. The last sentence of mitigation measure TR-1a requires the Applicant to consult with the School District on the timing, therefore, the comment request to have the School District determine the mitigation is redundant and unnecessary.
SIER-26	The EIR addresses both the location of the processing and the pipelines and the drilling bores within the Project Description. See response to comment SIER-5.
SIER-27	Whether the Project itself meets all of the objectives is not an issue in determining the alternatives locations or arrangements. See response to comment SIER-7.
SIER-28	The request made in the comment is beyond the scope of the EIR. Wells are often drilled near fault lines throughout California. The implication of the comment is not clearly understood.
SIER-29	The Settlement Agreement does not allow for the City to issue permits if the Applicant does not meet applicable codes and standards and requirements established by the EIR. The referenced text pertains to plans to be developed subsequent to final approval of the Proposed Project; potential conflicts between the Settlement Agreement and the

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	City would be resolved prior to approval of the Project. The referenced language acknowledges that the subject plans would be required to contain a level of detail and specificity that cannot be developed at this stage of the Project process and, therefore, would be required for submittal and approval if the Project is approved.
SIER-30	Text has been modified in Table 2.2 to indicate potable or reclaimed water. Table 2.2 specifies the use of reclaimed water where applicable, for example, reclaimed water is noted for use for drilling and landscaping. A complete discussion of water resources is included in Section 4.14 of the DEIR. Electrical use of the Project phases is included in Table 2.2, a complete discussion of energy use is included in Section 4.5, Energy and Mineral Resources.
SIER-31	The EIR states in multiple places that it would be limited to 18 round trips per day, as is required by the CUP. Re-drills would have the same impacts as drilling. The EIR states that "The same activities would be required for re-drills as for initial drilling" in Section 2.4.5. The referenced section, Section 2.4.1.2, discusses the *Phase 1 Site Preparation Detailed Schedule*, Section 4.13, Transportation and Traffic provides information on trucking for all phases of the Proposed Project. The predicted Community Equivalent Noise Level (CNEL) increases that would result from the Project are provided in Table 4.11-36 of the Noise and Vibration section of the DEIR. The predicted increases for Phase 4 differentiate between "Drilling & Operations" and "Operations". The "Drilling & Operations" predictions apply to the initial drilling period of 27 oil wells and 3 water injection wells and also to re-drilling that would occur periodically throughout the life of the Project. The predicted CNEL increases associated with drilling (or re-drilling) traffic plus operations traffic are no more than 0.1dB, and well below the 3dB significance threshold.
SIER-32	Text has been corrected in the FEIR to indicate that the onshore portions are the uplands.
SIER-33	Figure 2.14 shows the location of the proposed equipment on the Project Site. The photographs of a drill rig and ground flare included on Page 2-23 are examples of what such equipment typically looks like, the photographs are not intended to represent actual Project equipment or the actual Project Site, nor are the photographs annotated as such. Section 4.1 of the DEIR presents a view shed analysis of the proposed Project with 20 Key Observation Points (KOPs) in the City. Section 4.1 also provides an analysis of the impacts of the proposed Project to the character and quality of the existing site and its surroundings including photo simulations of the Project equipment and site.
SIER-34	The cross sectional graphic of directionally drilled wells is representative of both tideland and upland wells drilled. The actual drill paths of the Proposed Project wells have not been determined at this time. Such a determination would be made by the Applicant after test wells have been drilled and the resultant data analyzed. Figure 2.7 provides the approximate drill bore paths of the two primary test wells. Risks associated with the drilling of subsurface wells, related to groundwater, are discussed in Section 4.9, Hydrology.
SIER-35	The DEIR indicates that activities related to re-drilling would be the same as during drilling.
SIER-36	Vibration is discussed in Section 4.11, Noise and Vibration.
SIER-37	DOGGR provides oversight of and requirements associated with the cementing process.
SIER-38	The DEIR indicates that activities related to re-drilling would be the same as during drilling.
SIER-39	The limits within the delivery schedule related to noise are discussed in Section 4.11, Noise and Vibration as well as Appendix L. Truck deliveries to the Project Site would be limited to the hours between 9:00 a.m. and 3:00 p.m. Monday through Friday. The truck delivery scheduled is noted throughout the document, as applicable, and is a

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	permit condition of the 1993 CUP which would apply to the Proposed Project.
SIER-40	As the DEIR states, during Phase 2, "No processing of gas would occur during Phase 2. The gas separated from the oil and water would be directed to a gas combustor (enclosed ground flare), where disposal of it would occur through burning" on page 2-33. The potential impacts from operation of the flare system regarding the visual, auditory, olfactory resource areas are included in Sections 4.1, 4.11, and 4.2, respectively. Proposed Project impacts to recreation and wildlife are presented in Sections 4.10 and 4.3. The vapor recovery, tank and flare system, including design features, would be subject to Southern California Air Quality Management District (SCAQMD) permit requirements.
SIER-41	The Applicant has indicated that these are the chemicals that would be used during the Project. Chemicals are either injected down the well bore, and then often removed via the removal of production fluids, or used at the Project Site for treatment or processing operations.
SIER-42	Specifics related to the mufflers are discussed in more detail in Section 4.11, Noise and Vibration. The language on page 2-37 of the DEIR is taken from the Applicant's description of operational practices and design features proposed to reduce noise as part of the original Project application. In addition, the DEIR also prescribes various mitigation measures that go beyond what the Applicant has proposed. One such mitigation measure (AQ-7a) requires the use of electric drive/sources for the workover rigs and not diesel generators or engines. This mitigation measure removes diesel engine noise from the workover drilling process altogether, so that any evaluation of "acceptable limits" for the diesel engine is moot.
SIER-43	Noise is discussed in more detail in Section 4.11, Noise and Vibration. Table 4.11-1, in Section 4.11 Noise and Vibration, lists common environmental noise levels. Section 4.11.4 presents the potential noise impacts and mitigation measures for the Proposed Project. The analysis in the Noise and Vibration section also identifies the percentage of the time that each noise source (including pumps, compressors etc.) would operate. For example, Table 4.11-29 lists the noise sources anticipated for Phase 4, including the number of pieces of equipment that would be operating and the percentage of the time that each would operate during a 24-hour period; this table indicates that the pumps and compressors would operate 100% of the time, i.e. 24/7 operation.
SIER-44	DOGGR has abandonment requirements for well abandonment and the EIR assumes that these regulatory requirements would be followed and complied with.
SIER-45	Limiting truck axle to 3 would increase the number of trucks required to visit the site. This was considered as a mitigation measure and was rejected, and is discussed in Section 4.13, Transportation and Circulation.
SIER-46	There is no nexus for requiring that the RAP be completed prior to Phase 3 as the EIR did not identify impacts associated with the Phase 2 drilling with the existing site contamination as most of the contamination is deeper than Phase 2 activities. Some lead contamination could cause offsite impacts through the inhalation of fugitive dust, but this was addressed through mitigation in the air quality, Section 4.2.
SIER-47	Flaring is discussed in Section 4.2, Air Quality and is mitigated by limiting flaring to below the SCAQMD thresholds.
SIER-48	As per SCG standards, the gas is tested at the custody transfer. The installation of a second pipeline does not increase risks except when the gas is determined to be off-spec as the pipeline would normally not be used. The Gas Treatment System is discussed on Page 2-61 and 2-62; the gas would be treated to meet SCG company standards. The return loop is a design safety requirement to provide a path back to the Project facility in the unlikely event that the gas does not meet the SCG standard. Mitigation measures address the isolation of the second pipeline in section 4.8, Safety and Risk.

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SIER-49	The pressures are dependent on the pressure in the SCG main that the produced gas would need to enter. The gas pressure must be higher than the gas pressure in the main in order to flow into the gas main. Gas main pressures vary. High pressure gas pipelines are designed for a Maximum Allowable Operating Pressure (MAOP), the MAOP is set significantly lower than the maximum pressure for which the pipe is engineered. Operation of such a pipeline at a pressure below the MAOP is industry standard for gas pipelines and represents another level of safety.
SIER-50	The location of the gas tie-in might have to be slightly modified as per negotiations with SCG, which would not take place before the Project is in its final permitting stages. A detailed feasibility analysis of the Proposed Project is not available at this time. Most existing pipeline right of way (ROW) corridors contain more than one pipeline and a detailed engineering analysis is required to determine the exact pipeline route. As such, the Applicant has proposed several pipeline route options. Regarding the need of a final determination of the pipeline route for the voters to opine on the Project, the pipeline route (independent of which configuration) does not represent a significant portion of the overall environmental impacts of the Proposed Project. Therefore, the voters should have sufficient information to make a decision on the Project without an exact pipeline route.
SIER-51	Negotiations for the exact route have not taken place at this time. The Applicant has indicated that discussions have taken place, but that signed agreement will not be in place until the final permitting stages. Therefore, the Applicant has proposed a number of different options which are examined in the DEIR.
SIER-52	Table 2.10 has been moved to be immediately following the reference to Table 2.10.
SIER-53	Table 2.11 has been moved to be immediately following the reference to Table 2.11. Reference to employees has been removed. Limiting truck axle to 3 would increase the number of trucks required to visit the site. This was considered as a mitigation measure and rejected and is discussed in Section 4.13, Transportation and Circulation.
SIER-54	The details of the drilling of wells are discussed under Phase 2. Phase 4 well drilling would be identical to Phase 2 well drilling, including rig size, timing, etc. The Applicant is limited by the CUP. If phases take longer, then fewer wells would be allowed to be drilled.
SIER-55	The water used would be reclaimed water, which exceeds substantially the quality of the water that would be removed from the reservoir during drilling. In addition, water aquifers in the Project area are not potable water aquifers due to seawater intrusion.
SIER-56	Section 4.12, Public Utilities, discusses the capacities of the referenced landfills and the potential impacts of the solid waste of the Proposed Project on the remaining available capacity of those landfills. The analysis determined that, due to the substantial amount of capacity available in the area landfills, the impact of the solid waste generated by the Proposed Project would be less than significant. Wastes produced as a part of the drilling process would include muds, cuttings and those discussed on page 2-65.
SIER-57	The EIR states that "The same activities would be required for re-drills as for initial drilling" and the impacts would be the same. The soundwall would be installed for re-drills as well, as stated in the DEIR page 2-60.
SIER-58	The workover rig would operate up to 90 days per year, which could be consecutive or intermittent. It would have to be transported to the site each time and also removed. It would not be stored at the site. The dimensions of the rig would be 100 feet tall, as is described in the DEIR. Workover rigs are typically operated by sub-contractors and move from one location to the next as required by client needs. The maintenance of the wells depends on a variety of equipment and down-hole geotechnical factors, therefore it is not possible to determine the schedule at this time. Section 4.13, Transportation and Traffic, discussed the traffic impacts including Phase 4 of the Proposed Project.
SIER-59	Sulfascrub would be removed from the site by either tank truck or bin and replaced

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	with new materials when its effectiveness is reduced. The vendor reports that it can be disposed of down a disposal well in some jurisdictions, but the Applicant has not indicated the exact disposal method. DOGGR decides the materials that can be disposed of down a well. Solid waste disposal for the Proposed Project is discussed in Section 4.12 and safety issues are presented in Section 4.8.
SIER-60	Vapors are produced from various operations at the facility, primarily off the tops of crude oil vessels and tanks or gas processing equipment. The vapors would be the same as those analyzed as fugitive emissions components in the health risk assessment in Section 4.2, Air Quality and GHG. Flare operations are discussed in detail in Section 2.0, Air Quality and GHGs. Emission calculations are presented in Appendix B, the flaring operations were included in the emission calculations. The results of the emissions calculations determined that the flaring limitations will reduce emissions below the SCQAMD threshold. The SCAQMD thresholds were developed to address, among other issues, environmental and health impacts. Information on the development of the SCAQMD thresholds is available at www.aqmd.gov.
SIER-61	Wastes are discussed in Section 4.12, Public Services.
SIER-62	Security would also be provided in Phase 2, as discussed on page 2-36 in the DEIR. This facility would not be unique and would not have a large quantity of hazardous materials and would therefore not be a high terrorist risk. The site security system program for the Proposed Project is as presented in the referenced comment text. The security program is consistent with the security programs implemented at similar facilities located in California and was developed in consultation with the City of Hermosa Beach.
SIER-63	These plans are not needed in order to understand the potential impacts of the Project. This type of facility is not unique, and the plans it would develop are not highly specialized and they would be developed as part of the normal regulatory compliance needed in order to receive operating permits from a number of agencies.
SIER-64	The Applicant would be required to comply with the lease and the requirements to comply with the lease would be monitored separately from the EIR. The exact location of wells drilled would not change the impacts identified in the DEIR.
SIER-65	The effect of a blowout at the drilling site would only affect the area immediately around the Project Site. Subsurface blowouts would not be expected from this type of Project and would occur at a very low frequency, substantially below that requiring review in a CEQA document since it would be speculative. The authors are not aware of any subsurface type blowouts in California and the CSLC engineering geologist indicated that it is highly speculative. See Section 4.8, Safety and Risk.
SIER-66	The Development Agreement will contain specific information as to responsibilities for all aspects of the Project including design features, previous conditions of approval and mitigation measures. In addition, the Development Agreement will contain appropriate consequences for noncompliance including fines and potential shut down of the facilities as needed.
SIER-67	The SCAQMD guidelines were used to assess impacts, which include regional and local impacts. A health risk assessment was also performed utilizing also the CAPCOA HRA Guidelines.
SIER-68	The EIR examines the air quality impacts of the No Project Alternative in Sections 5 and 6. Section 4.2 examines the increases of GHG relative to the baseline conditions.
SIER-69	Text has been modified to include Rules 464, 466 and 466.1. Rule 467 is only applicable to refineries and chemical plants.
SIER-70	The proposed Project along with mitigation, produces a less than significant impact for GHG emissions as per the SCAQMD thresholds.
SIER-71	The proposed Project along with mitigation, produces a less than significant impact for GHG emissions as per the SCAQMD thresholds.
SIER-72	The six allowed complaints as a nuisance odor threshold is based on the unmitigated Project. The mitigated Project produces odor impacts from normal operations of less

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	than 1.0, meaning under normal operations, the Project would not produce odors. The Executive Summary does discuss the significance of odors, which are found to be significant and unavoidable under upset conditions.
SIER-73	The flaring of drilling gasses through the gas buster would only be conducted if there is a kick or other uncontrolled release of gas during drilling and would not last of much duration. Flares are used throughout industry as safety devices to prevent the venting of flammable gasses.
SIER-74	The suggested text does not add additional information or clarity to the EIR and was therefore not included. CO2, NOx and SOx are discussed in multiple locations throughout Section 4.2, Air Quality and GHG.
SIER-75	Odor suppressant sprays are effective to a certain extent at controlling odors at receptors. It does not eliminate the odors, just masks the odor so that it is not as detectable or as offensive to the receptors.
SIER-76	An 80% reduction is applied by the EPA, the SCAQMD and the SBCAPCD for control of fugitive emissions with a LDAR program of quarterly testing with a 10,000 ppm threshold. Note the fugitive threshold used is for uncontrolled; i.e. without Rule 1173.
SIER-77	An 80% reduction is applied by the EPA, the SCAQMD and the SBCAPCD for control of fugitive emissions with a LDAR program of quarterly testing with a 10,000 ppm threshold. Note the fugitive threshold used is for uncontrolled; i.e. without Rule 1173.
SIER-78	An 80% reduction is applied by the EPA, the SCAQMD and the SBCAPCD for control of fugitive emissions with a LDAR program of quarterly testing with a 10,000 ppm threshold. Note the fugitive threshold used is for uncontrolled; i.e. without Rule 1173.
SIER-79	The primary driver of odors in the oil and gas industry is hydrogen sulfide.
SIER-80	Text requiring the use of an IR camera or equivalent device has been added to mitigation measure AQ-5f.
SIER-81	The end use combustion of oil and gas product is the same in the baseline as it would be under the Project as the Project would not affect the demand for gasoline, jet fuel or diesel fuel in Southern California. The EIR utilizes the thresholds to determine GHG significance based on the SCAQMD significance thresholds. The DEIR used the 10,000 MTCO2e per year threshold for GHG emissions as directed by the SCAQMD, the lead agency for the proposed Project. A discussion of end use GHG emissions is included in Section 4.2.4.5, Potential Operations Greenhouse Gas Emissions. Section 4.2.4.5 demonstrates that the end use GHG emissions from the combustion of the fossil fuel produced by the Proposed Project would occur independent of the Project. If the crude oil is not produced by the Project, it will be supplied by another source, as crude oil prices are set largely on the global market. Therefore, the Proposed Project would not have an impact on the end use GHG emissions resulting from the combustion of the crude oil from the Project. A full life cycle analysis of GHGs is not required for the DEIR to meet the requirements of CEQA, however, for informational purposes Section 4.2.4.5 provides that the Project would generate, over its life, an average amount of crude oil that would generate 535,000 MTCO2e per year, from the combustion of natural gas, and crude oil products.
SIER-82	The EIR utilizes the thresholds to determine GHG significance based on the SCAQMD significance thresholds, which were developed by the SCAQMD to capture over 90% of the GHG emissions generated by projects in the South Coast Air Basin.
SIER-83	This comment suggests providing additional, recent data on biological resources potentially affected by the Proposed Project. Additional information derived from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on sensitive areas, MPAs, western snowy plover and least tern habitats has been included in text and in

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	Figure 4.3-1. This comment also suggests conducting additional surveys for nesting birds to determine the presence of additional nesting species. However, the most appropriate means for determining the presence of nesting bird species under the circumstances of limited vegetation removal in an extremely disturbed urban environment is to assess the quality of habitat, not conduct extensive surveys which will still not provide current nesting activities at the time of the disturbance. The proposed mitigation measure requires the surveys to be conducted at the time of the disturbance which would be the most effective in protecting individual birds and/or nests.
SIER-84	This comment states that the description of the Sandy Beach habitat should be expanded and include the western snowy plover use of this habitat. Additional information from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on sensitive resources, including the relevance and location of this habitat, has been included in the discussion of Sensitive Sites in Section 4.3.1.4.text and in Figure 4.3-1. Western snowy plover has been added to the list of potential shorebirds in the Sandy Beach community description in Section 4.3.1.1 and information on this species has been included in Figure 4.3-1 which includes major roosting and nesting habitat for this species.
SIER-85	This comment states that surveys must be conducted for all sensitive species that could be impacted. Although the EIR identified impacts to biological resources, including sensitive marine mammals and birds, as being significant, the probability of a spill into the marine environment is low. The level of surveys and use of existing data on these extremely mobile species is sufficient to document their presence and potential for impact from a release into the marine environment. Additional information on the seasonal occurrences of some of the dolphin species has been added to the EIR.
SIER-86	This comment states the EIR should assess the potential impacts on migratory species. The potential for the proposed Project to interfere with any wildlife species' migratory corridors was discussed in Section 4.3.4. Additional text was added to discuss the likelihood of impacts from flares from the gas combustor. This comment also suggests that flaring and other operations would have potential impacts to migratory bird species. Produced gas generated during the operational and test phase would be sent to a compressor and then to a gas flare for combustion. Figure 2.7 shows a typical rendition of the proposed ground flare. Although flaring has the slight potential for impacting individual birds flying through the area, the height of the ground flare would be low enough to have no impacts on migrating species that fly in large numbers along the Pacific coast line. Although Impact BIO-2 identifies the potential for any spill into the marine environment as having a significant effect, this was based on the high level of sensitivity of the area and the numerous sensitive species present in the area. However, the potential for such a spill entering the marine environment remains relatively low. The likelihood of the spill being large enough to effect any populations of species migrating through the area for any substantial amount of time is even lower.
SIER-87	This comment states that the Proposed Project was not sited and designed to prevent impacts which would significantly degrade habitats, and therefore doesn't comply with the California Coastal Act. The location of the drilling operations was specifically located within an urban/residential area which is described as being disturbed, previously degraded, and offers very little resources to most native wildlife and plant species. The siting of the drilling operations and Maintenance yard facilities therefore complies with the pertinent sections of the California Coastal Act. The fact that the Project is within .3 miles from the beach and could result in impacts to the Marine Environment was discussed at length in the EIR in several of the different resource

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	sections.
SIER-88	This comment suggests that the EIR requires additional information on the location of sensitive habitats and MPAs. Additional information from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on sensitive areas, MPAs, and sensitive species' habitats has been included in text and in Figure 4.3-1.
SIER-89	The comment states that and that the EIR did not adequately describe noise impacts to wildlife species and that bird surveys need to be conducted during the nesting season. The most appropriate means for determining the presence of nesting bird species under the circumstances of limited vegetation removal in an extremely disturbed urban environment is to assess the quality of habitat, not conduct extensive surveys which will still not provide current nesting activities at the time of the disturbance. The proposed mitigation measure requires the surveys to be conducted at the time of the disturbance which would be the most effective in protecting individual birds and/or nests. The following (underlined) text has been added to the impact analysis concerning noise impacts to wildlife species on page 4.3-21: "Due to the industrial and residential setting in which the Project is located, it is unlikely that there would be any increase in impact level to any sensitive wildlife species, including native bird species, resulting from lighting or noise generated from the development or operational phases of the Project. Those species inhabiting the marginal habitat surrounding the Project area would already be accustomed to the baseline level of noise and lighting which is already abundantly generated from houses, major road ways, and industrial activities in the area."
SIER-90	This comment suggests clarifying that the beach is just 0.3 miles from the drill site. Text has been added to the discussion for Impact BIO-2: "Small leaks or spills that occur within the confines of the drilling area (located approximately 0.3 miles from the marine environment) which are also most likely to be observed, contained, and remediated quickly, would result in minor or negligible impacts to biological resources.
SIER-91	The following text has been added to the beginning of the fish text to describe potential impacts to this important biological resource: "The effect of oil on fish species includes histological (tissue and cell) damage, altered physiological and metabolic patterns, decreased growth and reproduction, and vulnerability to disease." The text at the end of the impact discussion on fish has been changed as suggested to read: "Because fish species can be economically important, are critical to the overall health of Santa Monica Bay, and are important in the entire food-web of the area, impacts to fish are considered to be significant."
SIER-92	This comment recommends including additional discussion on the potential for oil spills impacting plankton and then in turn migrating whale species. Potential impacts to plankton were discussed in Impact BIO-2. The potential for a spill to come into contact with the marine environment remains relatively low. The likelihood of the spill being large enough to affect enough plankton to, in turn, substantially affect food chain support including foraging, long-range migrating whale species, in the area is even lower. The EIR has already identified and discussed a range of potential impacts to this resource, and which in conjunction with all of the marine environment species, is described as being a Class I significant and unavoidable impact.
SIER-93	This comment states that the Emergency Response Plan must be included in the FEIR. The FEIR will include the Emergency Response Plan as the primary mitigation for the Class I impacts to the marine environment.
SIER-94	This comment states that the discussion concerning the impact classification resulting from large spills should be discussed earlier in the section describing the probabilities of spills. The EIR preparers discussed the most likely scenarios, (in terms of

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	likelihood of spills) first in the document. The larger impact scenarios required much more discussion but are also much less likely, and therefore were discussed after the more likely scenarios.
SIER-95	Section numbering 4.3.5 has been corrected as suggested.
SIER-96	The Project would be subject to a large number of codes and standards, from electrical to metallurgical to fire protection requirements. Any Project submitted to the City would be subject to a large number of codes and standards also. Lack of compliance with any of these is grounds for the City to deny the Project a permit. The means to reduce these impacts and satisfy the intent of the codes are feasible and widely used in industry.
SIER-97	Text has been added regarding natural oil seeps in Santa Monica Bay and potential impacts associated with the Proposed Project. As discussed in Impact HWQ.3, it is unlikely that oil seeps would increase as a result of the Project; therefore, thresholds would have not been established with respect to cessation of drilling.
SIER-98	Oil wells are often drilled in proximity to faults, as the faults often provide the trap by which oil is accumulated; therefore, overlaying the figures would not provide evidence of potential hazards. However, text has been added with respect to potential induced seismicity and subsidence that could result from wastewater injection and oil/water extraction, respectively.
SIER-99	Additional text has been added to the environmental setting and impact evaluation regarding wastewater injection induced seismicity. Detailed maps of all proposed wells have not been provided by the Applicant for inclusion in the EIR. Each well location would be based on the outcome (i.e., geology, oil/gas/water content) of the initial test wells and (if drilled) any successive wells drilling during Phase 4. There is no state or federal methodology to determine what sufficient distance is required between injection wells and faults. No active faults would be penetrated by the wells, as the closest such fault, the Palos Verdes Fault, is located outside the jurisdictional waters of the City. However, as indicated in Impact GEO.2, impacts associated with potential Project induced seismicity are considered potentially significant and a Subsidence and Induced Seismicity Monitoring Program would be implemented to determine whether impacts are occurring. Mitigation Measures GEO-2a, -2b, and -2c provide additional measures to supplement the program. In addition, the Subsidence and Induced Seismicity Monitoring Plan has been added as an appendix to the EIR.
SIER-100	The text in question has been removed. Please see Section 4.8, Safety, Risk of Upset, and Hazards with respect to risk of upset.
SIER-101	There is no industry standard for shutting down operations as a result of seismicity. A ground acceleration of 0.13g is considered moderate in intensity and is generally representative of minimum ground shaking sufficient to cause damage. Similar ground accelerations have been used as mitigation on other oil field related EIRs, including those written for the Inglewood Oil Field and Whittier Oil Field (which used 0.15g).
SIER-102	See response to SIER-99.
SIER-103	As indicated in comment response HEAL-68, well locations and depths would be determined in succession, based on the information obtained from the well drilled prior, including the geologic conditions and oil/gas/water quantities, as these well features are highly variable. Therefore, it is not possible to determine the amount of oil, gas, and associated water that will be extracted in advance.
SIER-104	An onshore and offshore subsidence monitoring plan has been added as an Appendix to demonstrate the specifics of the monitoring plan. Mitigation GEO-4d outlines the steps that would be taken in the event that subsidence is detected.
SIER-105	Remedial actions associated with removal of USTs are covered under Resource Conservation and Recovery Act (RCRA), which is exempt from the CEQA process.
SIER-106	The risk of upset of the proposed equipment, including seismic related risks, is

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	discussed in Section 4.8, Safety, Risk of Upset, and Hazards.
SIER-107	The workover rig was included in the analysis of earthquake risks to the extent that an earthquake could cause damage to equipment at the site. As the wells would not be pressurized during workovers (as workover would occur many months or years after a well has been drilled), a failure of the workover equipment would not produce a release.
SIER-108	As indicated in Impact GEO.2, a step rate test would dictate maximum allowable surface injection pressures to avoid fracturing. Additional text has been added to the environmental setting and impact evaluation regarding wastewater injection induced seismicity. As indicated in Impact GEO.2, impacts associated with potential Project induced seismicity are considered potentially significant and a Subsidence and Induced Seismicity Monitoring Program would be implemented to determine whether impacts are occurring. Mitigation Measures GEO-2a, -2b, and -2c provide additional measures to supplement the program. In addition, the onshore subsidence and induced seismicity monitoring plan (Geosyntec 2012) and offshore subsidence monitoring plan (Coastal Environments (1998)) have been added as an appendix to the EIR.
SIER-109	The close proximity of the site to its neighbors is the reason why the Safety and Risk of Upset are determined to be significant and unavoidable in the EIR. The issue has been thoroughly addressed throughout the EIR.
SIER-110	Recreational impacts are addressed throughout Section 4.10. Significant and unavoidable impacts were found to occur in the event of an oil spill reaching the beach and affecting recreational users. Other impacts to recreation were found to be significant but mitigable as described throughout Section 4.10.
SIER-111	There are currently no bicycle pathways along Valley Drive. Interference of the construction activities with pedestrians is discussed extensively, and mitigation measures to reduce impacts to pedestrians and increase separation distances between trucks and pedestrians would also reduce the impacts to area cyclists who use Valley Drive.
SIER-112	The Project will not include drilling 360 to 420 wells as implied in the comment. Please note that the Project proposes to drill only 30 oil and gas production wells and 4 disposal wells. Text has been added indicating that 4.8 AFY is the anticipated maximum water demand per year, during periods of drilling. As indicated in Section 2.3.4.1, Phase 4 Drilling, Phase 4 would be about 2.5 years and re-drilling would occur in some wells, requiring approximately the same amount of water as the initial drilling.
SIER-113	The No Project Alternative is selected as the environmentally superior alternative. However, under CEQA, the next best alternative must be identified.
SIER-114	As described in Section 4.3, the primary potential impact to biological resources is from the construction of the pipelines and from an oil spill from the pipelines. The potential for an oil spill would remain significant and unavoidable, a Class I impact, with the Reduced Wells Alternative. Therefore, impacts on biological resources would be the same as under the Proposed Project.
SIER-115	Note that Table 6.2 is presented on Page 6.34 and is a summary of the Significant Unavoidable Impacts. Oil spill impacts are discussed in Sections 4.3 Biological Resources, 4.8 Safety, Risk of Upset, and Hazards and 4.10. Land Use and Recreation discuss the potential for, and the impacts from, an oil spill to biological resources and the community of Hermosa Beach.
SIER-116	While the Proposed Project would produce the oil and gas resources beneath Hermosa Beach, the Project would provide more non-renewable resources than it would consume. Section 4.2.4.5 demonstrates that the use of the fossil fuel produced by the Proposed Project would occur independent of the Project. If the crude oil is not produced by the Project, it will be supplied by another source, as crude oil prices are set largely on the global market. Therefore, the Proposed Project would not have an

Comment #	Response
	impact on the overall area oil and gas consumption. The comment is not clear on how the Project would contribute to an increase in demand nor how the Project would have a significant impact on oil and gas prices as, noted above; crude oil prices are set largely on the global market.
SIER-117	The Summary of Mitigation Measures and Mitigation Monitoring Plan tables in Section 8.0 of the DEIR include a column listing the Responsible Party/Agency for each mitigation measure. The Responsible Party/Agency is the agency that is responsible for assuring compliance with the mitigation measure and would determine any potential penalties for non-compliance of the mitigation measures when developing Project specific permit conditions should the Project move forward to that step in the permitting process. The DEIR, prepared pursuant to CEQA, provides disclosure of the potential impacts of the Proposed Project and the mitigation measures and recommends mitigation to reduce those impacts.
SIER-118	Gasses are utilized for the microturbines to generate electricity to provide fuel to area residences and businesses through the SCG distribution network. Flaring would be an upset condition and would be limited to ensure that the SCAQMD thresholds would not be exceeded. During the operations phase of the Proposed Project, Phase 4, the flare is intended for use only in an emergency or during maintenance periods as necessary. As described in Section 4.2, emission calculations are presented in Appendix B, the flaring operations noted in the subject mitigation measure were included in the emission calculations. The results of the emissions calculations determined that the flaring limitations described in the mitigation measure AQ-3a will reduce NO_X emissions below the SCQAMD threshold.
SIER-119	The EIR utilizes the thresholds to determine GHG significance based on the SCAQMD significance thresholds, which were developed by the SCAQMD to capture over 90% of the GHG emissions generated by projects in the South Coast Air Basin. End-use of hydrocarbons are quantified but, as the project would not affect the demand for hydrocarbons and the use would be the same as the baseline, the impacts are less than significant.
SIER-120	By limiting thermal radiation impacts on nearby residences and the public, thermal radiation impacts to wildlife would also be minimized.
SIER-121	The mitigation measure was developed with coordination with the Caltech Seismological Laboratory and is considered industry standard. Mitigation Measure GEO 1a contains the following language: *The drilling operator shall not reinstitute operations at the Project Site and associated pipelines until it can be determined that all oil field infrastructure is structurally sound,* thus the mitigation measure applies to the offsite pipelines. There is no industry standard for shutting down operations as a result of seismicity. A ground acceleration of 0.13g is considered moderate in intensity and is generally representative of minimum ground shaking sufficient to cause damage. Similar ground accelerations have been used as mitigation on other oil field related EIRs, including those written for the Inglewood Oil Field and Whittier Oil Field (which used 0.15g).
SIER-122	All subsurface activities are regulated by the State of California Division of Oil, Gas & Geothermal Resources (DOGGR). Water flood activities, re-injection operations, and drilling operations would be under DOGGR regulatory oversight which would include data submittal, data review, and confirmation that the reservoir pressure is being monitored and balanced to prevent seismic or subsidence issues. See response to SIER-108. In addition, the compliance verification has been corrected for GEO-2C and GEO-4b.
SIER-123	The concern during Phase 4 is that spark producing equipment would be located within the crude oil containment area so that a spill of crude oil could be more easily ignited. By requiring equipment to be made to specified Class I Division I standards, ignition probabilities would be limited.
SIER-124	A return pipeline does not introduce risks during normal operations because it would

Comment #	Response
	not be used and would be isolated. The Applicant indicates that there would not be room at the site for a metering station. See the alternative discussion, Section 5, for a discussion of this issue. The Gas Treatment System is discussed on Page 2-61 and 2-62; the gas would be treated to meet SCG company standards. The return loop is a design safety requirement to provide a path back to the Project facility in the unlikely event that the gas does not meet the SCG standard. The potential use of the return gas pipeline is a required safety measure and does not represent a cost savings to the Applicant.
SIER-125	The levels of lead that could cause offsite impacts have been identified in the DEIR and lead is the primary contaminant of concern in the shallow soils. Additional testing would be required and any contaminant levels exceeding the established regulatory limits would require offsite removal.
SIER-126	Mitigation Measures HWQ-2c and HWQ-2d are focused on the Project phases where oil drilling and or oil production would occur as these activities are associated with the potential for an oil spill. The comment is not clear as to what "there should be rights of field inspections" is referring to; however, applicable regulatory agencies would have the authority to inspect the Project infrastructure pursuant to those agency permit requirements. The Mitigation Monitoring Plan has been edited in response to the comment.
SIER-127	Section 4.9 identifies Impact HWQ-2 with Phases 2 and 4 of the Proposed Project, the Project phases associated with the potential for an oil spill. Mitigation Measure HWQ-2h applies to Phase 2 and Phase 4. The Mitigation Monitoring Plan has been edited in response to the comment.
SIER-128	Mitigation measures for potential Project impacts from noise are not limited to the installation phase, Section 4.11.7 and Table 8.9 provide the mitigation measures for noise and to which phase of the Project phases the mitigation measure would apply.
SIER-129	Mitigation measures TR-1a, TR-1b and TR-1d apply to Phases 1 through 3, mitigation measure TR-1c applies to all trucks accessing the Project site and thus would apply to all phases of the Project, therefore, these mitigation measures do not apply to only the design phase. Mitigation measure TR-2a addresses impacts from pipeline construction; therefore, it applies to Phase 3 where pipeline construction activities would take place. Regarding the need for a crossing guard in the morning, the CUP requires that truck traffic accessing the Project Site be limited to between 9 a.m. and 3 p.m. Monday through Friday, therefore, truck traffic from the Project would not be occurring during the morning commute to school. Mitigation Measure TR-1b clearly states that the blinking light warning system would be used when trucks are either entering or exiting the roadway and that: *Blinking lights shall only operate when trucks are utilizing the roadway (not 24 hours per day).* The Summary of Mitigation Measures and Mitigation Monitoring Plan tables in Section 8.0 of the DEIR include a column listing the Responsible Party/Agency for each mitigation measure. The Responsible Party/Agency is the agency that is responsible for assuring compliance with the mitigation measure.
SIER-130	This comment states that the emergency response Plan is not a "specific plan" and that the timing of review is not defined. This document will be reviewed and approved by both the City of Hermosa Beach and OSPR (Table 4.3-7). The requirements described for this Emergency Response Plan comply with established CDFW OSPR requirements in terms of protecting biological resources after a spill into the marine environment. The text within Mitigation Measure BIO-2 has been clarified so that the Emergency Response Plan would be prepared <u>in compliance</u> with the OSPR Contingency Plan. In addition, this plan would be reviewed and approved by OSPR. Text now reads: The Applicant shall submit for City approval and shall implement an Emergency Response Plan that would, <u>in compliance with the California State Oil Spill Contingency Plan</u>

Comment #	Response
	(CDFW, OSPR 2014), address protection of biological resources and possible restoration of any areas disturbed during an oil spill or cleanup activities. In addition, this comment states that the requirement for the plan to just address 1,000 feet from the proposed Project is not adequate. Mitigation Measure BIO-2 has been changed to include all containment and cleanup measures and responsibilities (irrespective of distance from pipeline).
SIER-131	Concerns related to truck travel on small streets has been addressed in the EIR under Impact TR.1.
SIER-132	The No Project Alternative is selected as the environmentally superior alternative. However, under CEQA, the next best alternative must be identified.

Stop Hermosa Beach Oil

Comment #	Response
SHBO-1	No changes were made to the FEIR based on the comment.
SHBO-2	No changes were made to the FEIR based on the comment.
SHBO-3	Responses related to the issues raised are discussed below.
SHBO-4	Additional text has been added to the environmental setting and impact evaluation regarding wastewater injection induced seismicity. As indicated in Impact GEO.2, impacts associated with potential Project induced seismicity are considered potentially significant and a Subsidence and Induced Seismicity Monitoring Program would be implemented to determine whether impacts are occurring, in both onshore and offshore areas. Mitigation Measures GEO-2a, -2b, and -2c provide additional measures to supplement the program. In addition, the onshore subsidence and induced seismicity monitoring plan (Geosyntec 2012) and offshore subsidence monitoring plan (Coastal Environments (1998) have been added as appendices to the EIR.
SHBO-5	Detailed maps of all proposed wells have not been provided by the Applicant for inclusion in the EIR. Each well location would be based on the outcome (i.e., geology, oil/gas/water content) of the initial test wells and (if drilled) any successive wells drilling during Phase 4. But the wells would be confined to the jurisdictional area of the City, both onshore and offshore, as depicted in Figure 2.7, Proposed Project Lease Areas. Additional text has been added to Impact GEO.1 to indicate that no active faults would be penetrated by the wells, as the closest such fault, the Palos Verdes Fault, is located outside the jurisdictional waters of the City. Figure 2.8, Applicant Proposed Project Lease Areas Cross Section, illustrates the different geologic units that would be penetrated by the wells. There is no evidence to suggest that well bores become compromised at geologic contacts.
SHBO-6	Additional text has been added from the Whittier Oil Field EIR in response to the comment.
SHBO-7	The text has been edited in response to the comment. As indicated in Section 4.7.3.2, Proposed Project Design Features, the applicant proposes a Subsidence Monitoring Program to detect subsidence as a result of drilling activities to ensure that subsidence would not be allowed to the degree that it could endanger the facility, off-site structures, and the shoreline. In addition, DOGGR will review the Proposed Project operations including plans for fluid withdrawal, water re-injection and reservoir pressure maintenance. DOGGR maintains jurisdiction to arrest or ameliorate subsidence under Division 3, Chapter 1, Article 5.5 of the California Public Resources Code (beginning with Section 3315). Furthermore, section 3319 (c) requires that "field wide re-pressuring plans be based upon a competent engineering study that includes re-pressuring operations designed to most effectively arrest or ameliorate subsidence." Consequently, oil field operations will be conducted under the oversight of DOGGR and will be designed to reduce potential subsidence. In addition to the Applicant

Comment #	Response
	proposed Subsidence Monitoring Program, mitigation measures GEO-4a, GEO-4b, GEO-4c, GEO-4d and GEO-4e would further reduce potential impacts related to subsidence.
SHBO-8	An onshore subsidence and induced seismicity monitoring plan (Geosyntec 2012) and offshore subsidence monitoring plan (Coastal Environments (1998) have been added as appendices to the EIR.
SHBO-9	See response to SHBO-8.
SHBO-10	In previous studies, only lead was encountered at the surface of the Project Site, or near surface. TPH levels and dump remains were only encountered at depths that would not be impacted during Phase 1 except for one area near sampling point GP-1. Text was added to the mitigation measure to ensure that TPH is also sampled for during site grading.
SHBO-11	This comment recommends that the EIR discuss impacts to wildlife species, migratory corridors, and wildlife nursery sites. The following text has been added to the discussion of potential impacts to sensitive biological resources in Section 4.3.4: "Subsurface drilling under the marine environment is proposed to occur over 2,000 feet below the sea floor. Any noise and/or vibrations resulting from the drilling operations would then have to travel through 2,000 feet of substrate to reach the marine resources, and then some unspecified distance through the water depending on the location of individual animals. The potential for any impact to populations of marine mammals or other sensitive marine species from noise or vibration impacts resulting from subsurface drilling is considered to be very low."
SHBO-12	The noise and vibration analysis presented in the DEIR for Phases 1 and 3 was based on source data for construction equipment and techniques proposed specifically for this Project. As such, the implications of construction on the Project site (such as overcoming geotechnical challenges) are already included in the determination of noise and vibration impact. It should also be noted that the Noise and Vibration Section of the DEIR clearly identifies "significant and unavoidable" noise impacts associated with the construction phases (Phases 1 and 3). This classification (Class I) is the strongest description of adverse impact available under CEQA and provides the decision makers (the voters in this case) with a very clear basis for evaluating the Project's environmental consequences.
SHBO-13	The EIR describes in detail all activities that are proposed by the Applicant. This is required under CEQA. Future events, such as fracking or enhanced recovery, have not been proposed by the Applicant and are therefore not assessed. If the Applicant chooses in the future to use different processes or methods than those proposed in the EIR, then additional CEQA analysis and permit procedures would have to be completed first. The Applicant provides the Project objectives and they are required to be listed in an EIR by CEQA. CEQA states that the objectives "help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations". The Applicant has indicated that they would comply with the 1993 CUP and the CUP is examined in each of the issue areas throughout the EIR.
SHBO-14	The EIR describes in detail all activities that are proposed by the Applicant. This is required under CEQA. Future events, such as fracking or enhanced recovery, have not been proposed by the Applicant and are therefore not assessed. If the Applicant chooses in the future to use different processes or methods, in the same way that if they choose a different location or a different pipeline route, than those proposed in the EIR, then additional CEQA analysis and permit procedures would have to be completed first.
SHBO-15	The CUP addresses this under Section 1, subsection 4, that a workover rig "or any other rig" shall be 90 days per year. If taken in isolation, this would limit the use of

Comment #	Response
	the full drilling rig to 90 days per year and daytime only. However, this section is only addressing the use of workover rigs, or any other type of rig that is used for workovers, and not a full drilling rig. This becomes clear when other sections of the CUP are examined which clearly state the assumption that drilling would occur for 24 hours per day, including: Section 3.2 "Security personnel shall be employed at all times during the drilling stage (24 hours)" Section 8.9c "During the drilling phase. Noise monitoring shall occur during a six-hour period between the hours from 10:00 P.M. to 7:00 A.M. at least once each month during the drilling phase of the Project." Section 1.12 "All wells must be drilled and completed within 55 months from the start of drilling of the first exploratory well" Therefore, when taken in context, Section 1.4 is referring to workover activities only. The testing phase (including test drilling and testing only) would be limited to 12 months. The drilling phase might be shorter or longer and/or the testing phase might be longer or shorter, so that the total would be 12 months or less.
SHBO-16	See response to comment SHBO-15 above.
SHBO-17	Note that Section 1.12 allows for changes in the schedule as per the following: "If the Drilling Contractor is delayed at any time in the progress of work by any act or neglect of the City of Hermosa Beach or any other governmental body having authority over this Project, or by labor disputes, adverse weather conditions, by law, war, riots, strikes, unavoidable casualties, unusual delays in receiving materials or equipment or by an act of God, or causes beyond the control of the Drilling Contractor, when justified, the time periods may be extended a reasonable time to correspond with the delay incurred by the Drilling Contractor." Some delays are anticipated and included in the Applicants proposed timeframe and the longest durations for the range of each sub-phase are not additive, meaning that a given sub-phase might take the longest period of time listed, but not all sub-phases would. The Applicant has indicated they would comply with the 1993 CUP and the schedule shows that this would be feasible. Please see response to comment SHBO-15 or a discussion of the 24 hour operation and the use of a drilling rig vs. a workover rig.
SHBO-18	Text in the FEIR has been corrected to be consistent with the 1993 CUP in regards to allowable pipeline construction hours. Impacts related to noise are based on the peak day and are not a function of how long the noise impact lasts.
SHBO-19	Section 1.9 of the CUP requires that the Oil Code be met. The Oil Code prohibits construction on Saturdays only during Phase 1 activities. Note that the City's Municipal Code (Chapter 8.24) does allow for construction on Saturdays. As part of the ballot measure, the oil code would be amended to allow for construction on Saturdays, as per the Proposed Project. As Phase 1 activities are not extensive, even if construction on Saturdays was prohibited, this would not affect the Project schedule. The amount of water needed for fugitive dust control would actually be reduced if construction is only allowed Monday-Friday and no vehicle travel or earth disturbance would occur on the weekends. More water is needed if there is active earth disturbance.
SHBO-20	The EIR examines in detail the potential impacts on humans, both of accidental releases resulting in serious injury or fatalities, and the chronic/acute and carcinogenic effects of facility emissions. The economic impacts are outside the scope of the EIR, however, the Recreation section does identify the potential impacts to area recreation if an oil spill were to occur and part of this impact would be the perception of Hermosa Beach amongst potential tourists. Note that spills are classified as "significant and unavoidable".

Comment #	Response
	The City currently has an established community alert notification system, which mitigation measures in the EIR (FP-1a) require the Applicant to join and expand. This would include notifications to both area residences and business and schools. Hermosa Valley School, located to the north of Pier Avenue, would be outside any potential area of impact. Emergency Responders would decide the extent of any evacuation or shelter-in-place zones and who is most appropriate to receive alerts dependant on the extent of potential impacts.
SHBO-21	Thank you for your comments. Numerous edits and clarifications have been added to the FEIR in "revisions tracked" mode.

Surfrider

Comment #	Response
SURF-1	Appendix H of the EIR lists all of the NOP comments and the location within the EIR where the comment is addressed.
SURF-2	This comment states that the EIR should contain elaborate oil spill emergency contingency plans that are vetted by other coastal resource agencies. Mitigation Measure BIO-2 requires the Applicant to prepare an Emergency Response Plan. This plan will be reviewed and approved by both the City of Hermosa Beach and OSPR (Table 4.3-7). The requirements described for this Emergency Response Plan comply with established CDFW OSPR requirements in terms of protecting biological resources after a spill into the marine environment. The text within Mitigation Measure BIO-2 has been clarified so that the Emergency Response Plan would be prepared <u>in compliance</u> with the OSPR Contingency Plan. In addition, this plan would be reviewed and approved by OSPR. Text now reads: The Applicant shall submit for City approval and shall implement an Emergency Response Plan that would, <u>in compliance with the California State Oil Spill Contingency Plan (CDFW, OSPR 2014)</u>, address protection of biological resources and possible revegetation of any areas disturbed during an oil spill or cleanup activities. This comment also suggests providing additional, recent data on biological resources, specifically MPAs, potentially affected by the Proposed Project. Additional information from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on sensitive areas, MPAs, and sensitive species habitats have been included in the text and in Figure 4.3-1. Also note that mitigation measure BIO-2 has been fortified with a requirement that the Emergency Response Plan include a “description of sensitive biological resources in the SMB that should be prioritized for clean-up activities in the case of an oil spill into the marine and coastal environment”. On the subject of chemical dispersants and their possible use in clean-up efforts in the event of a spill, the EIR identifies the potential for clean-up efforts as a source of additional impacts associated with a spill. Specific dispersants that might be deployed in the event of a spill (and potential alternative dispersants) would be identified as a component of the Emergency Response Plan.
SURF-3	This comment suggests providing additional analysis for the entire SMB. Additional information from the 2011 Los Angeles/Long Beach Area Oil Spill Contingency Plan on sensitive areas, MPAs, and sensitive species habitats have been have been added to the discussion of biological resources of SMB in text and in Figure 4.3-1. Although Impact BIO-2 identifies the potential for any spill into the marine environment as having a significant effect, this was based on the high level of sensitivity of the entire SMB and the numerous sensitive species present in the area. However, the potential for such a spill entering the marine environment still remains relatively low. The likelihood of the spill being large enough to affect any one specific biological resource or sensitive site in the SMB is also low and will decrease in probability the farther

Comment #	Response
	away the resource is from potential oil spills and the mobility and abundance of the species.
SURF-4	No response is required. This comment is reiterating a portion of the EIR's text.
SURF-5	As indicated in Section 4.9.1.5, Groundwater, three major fresh water aquifers comprise the West Coast Basin, including the 200-Foot Sand (Gage), the Silverado, and the Lower San Pedro and Pico aquifers. The base of the Pico Formation is illustrated on Figure 2.8, Applicant Proposed Project Lease Areas Cross Section. This figure illustrates that the wells would extend through the Pico Formation to the underlying oil producing Puente Formation. An impermeable cap rock prevents oil from migrating from the oil bearing deposits into overlying potable groundwater within the Pico Formation. The oil production wells would be designed to meet all of the rules and regulations of the California DOGGR. All of the wells would have steel casing that would be cemented in place, thus precluding contamination of groundwater beneath the drilling site from the well bore. This is standard procedure and it is common for onshore oil wells (and injection wells) to extend through potable water supplies.
SURF-6	Waste would be collected, stored, and disposed as described in Section 4.14, Impact WR.2. Reclaimed (recycled) water would be used for drilling and injection. Water injection would consist of produced waste water, which was produced from the oil and gas reservoir into which the waste water is injected, supplemented with reclaimed water if needed. Potential use of reclaimed water would be subject to review by the City to determine if it is consistent with the Project approvals, and by applicable permitting agencies such as the Los Angeles RWQCB and DOGGR. So reinjecting water that came from the same reservoir would not have negative effects on the native condition of the reservoir.
SURF-7	Additional text has been added to the environmental setting and impact evaluation in Section 4.9, Hydrology, with respect to oil seepage.
SURF-8	As indicated in Impact WR.4, Water Supply, reliability of water supplies from Cal Water and West Basin is provided in their respective Urban Water Management Plans (UWMPs) (Cal Water 2011, West Basin 2011b). The UWMPs demonstrate the water supplier's total projected water supplies available during normal, single dry, and multiple dry water years, during a 20-year projection, as well as the water supplier's existing and planned future uses, including agricultural and manufacturing uses. The projected supplies and demands are presented in 5-year increments for the 20-year projection. California Water Code 10644(a) requires preparation of updated UWMPs every five years and submittal to the California Department of Water Resources, the California State Library, and any city or county within which the supplier provides water supplies. The 2010 West Basin UWMP demonstrates not only how the agency would meet service area retail demands over the next 25 years, but also how the agency plans to provide long-term water reliability through supply diversification, i.e., less reliability on imported water and increased desalinated water, local groundwater, recycled water, and water conservation. Drilling activities in Phases 2 and 4 would require approximately 130,000 gallons of reclaimed water per well (0.4 acre-feet) for each of the 34 wells. Phase 4 of the Project would be designed for a maximum capacity of 8,000 barrels of oil per day and 16,000 barrels of produced water per day. Based on this, a maximum of 8,000 barrels of oil per day could be extracted from the oil reservoir during Phase 4 of the Proposed Project. In the event that the Proposed Project's Subsidence Monitoring Program measures ground movement (subsidence), there could also be a potential need for the injection of makeup water into the oil reservoir equal to the volume of oil extracted per day. Assuming that during Phase 4, oil extraction of 8,000 barrels per day would occur 365 days per year, as a worst case, 375 acre feet of makeup water per year could be needed.

Comment #	Response
SURF-9	We respectfully disagree. The well stimulation text referenced is not similar to a description of hydraulic fracturing. The EIR indicates that hydraulic fracturing would not be used in Section 2.3.2.1, Phase 2 Site Geology and Drilling Goals, Section 4.9 Hydrology, Impact HWQ.2, and Section 4.14, Water Resources, Impact WR.3. Treatment and disposal processes of fluids is addressed in Impact WR.2 and WR.3.
SURF-10	The Applicant has not proposed any enhanced recovery techniques. The use of acid would be for acid washing to clear out the area immediately adjacent to the well bore perforations, not for stimulation of the formation. Section 2, Project Description, lists the proposed chemicals and their uses, including those used for mud conditioning. See Tables 2.5 and 2.12.
SURF-11	It's uncertain how much, if any, of the settlement of the Redondo Beach breakwater is due to oil extraction, as opposed to localized settlement. Five feet of settlement of the breakwater with no mention of similar amounts of settlement and attendant structural damage throughout the harbor area and adjoining areas suggests localized settlement due to improper construction (i.e., lack of adequate surcharging of marine sediments prior to construction) rather than regional subsidence. Please note that the Corps of Engineers study concluded that 'subsidence may have caused a lowering of the king harbor breakwater, but it does not state that this subsidence is 'the result of oil recovery from the Torrance Oil Field as stated in the Surfrider letter in this comment. Compaction of shallow lagoonal sediments seems to have been the source of subsidence at that location. If subsidence is encountered, reinjection would be targeted to the areas where the subsidence is occurring. It should be noted that the statement in the applicant's technical appendix that "initial water reinjection is planned for portions of reservoir zones located beneath onshore areas" it is likely referring to the placement of wells during the initial Phase 2 testing period, which is anticipated to include two drilling wells directed offshore, one drilling well directed onshore and one injection well onshore. In Phase 4, the full drilling and production phase, reinjection wells would be directed with the benefit of information obtained during Phase 2.
SURF-12	Additional text has been added to the Subsidence portion of the Environmental Setting and additional measures have been added to Mitigation Measure GEO-4 in response to the comment. The Brock (1994) onshore monitoring plan is similar to the recent Geosyntec (2012) monitoring plan, but dated, so it has not been referenced in the document. However, the Coastal Environments (1998) offshore subsidence monitoring plan has been added as a viable monitoring plan for the Proposed Project, as (with the exception of the onshore portion of the plan) this plan would directly apply to the offshore portion of the Project. Mitigation measures have been added for compliance with both an onshore (Geosyntec 2012) and offshore (Coastal Environments 1998) subsidence monitoring plan, these two reports have been added as appendices, and some specifics from the monitoring plans have been added as mitigation.
SURF-13	See response to SURF-12.
SURF-14	See response to SURF-12.
SURF-15	Comments have been responded to and the Final EIR has been amended as appropriate.

Tom Williams - Sierra Club – Los Angeles Chapter

Comment #	Response
WILT-1	The Executive Summary contains numerous references to where the DEIR determined Class I, significant and unavoidable, impacts for the Proposed Project; Table ES-2 on Page ES-7, Pages ES-8 through ES-10, Table ES-3 (incorrectly titled ES-2 in the DEIR), Table ES-4 (incorrectly titled ES-3 in the DEIR), and Table ES-5 (incorrectly titled ES-2 in the DEIR). Table titles have been corrected in the Final EIR. Table ES-5 lists Class I impacts for 8 different issue areas. Therefore, the Executive Summary does not state the potential impacts from the Proposed Project would be less than significant. The Executive Summary for the FEIR was revised based on applicable public comments.
WILT-2	Request by commenter that the DEIR is inadequate and incomplete for public comment noted, however, the document was prepared pursuant to CEQA and has been released to the public in draft format for comment. CEQA does not require a second 60 day public review period for the FEIR; additional comments on the Proposed Project can be made at the public hearing by the lead agency to consider certification of the Final EIR on the Project. See the City of Hermosa Beach website for Project schedule information.
WILT-3	The DEIR consistently uses the terms Project Site to refer to the current City Maintenance Yard site (1.3 acres). Other portions of the Proposed Project are also addressed throughout the EIR, including the pipeline routes and the well bores and lease areas. However, for most issue areas, the principal components of the Proposed Project which produce impacts are those facilities located at the Project Site.
WILT-4	The Project Site is defined in the DEIR and the location at the current City Maintenance Yard. Other areas, including the pipeline route, are also addressed.
WILT-5	Table 2-2 on Page 2-11 provides a summary of the Proposed Oil Project Design Parameters. The table lists estimated produced water injection rates for both Phase 2 and Phase 4 of the Project. Page 2-62 describes the water treatment system and the fact that the treated water would be re-injected back into the producing formation. Therefore, the DEIR includes information on the re-injection of produced fluids generated by the Project. CEQA does not require the DEIR to include the Project permit application to DOGGR.
WILT-6	The Project Description clearly defines the scope of the Project, including the leased areas and the extent of the well bore locations, as exemplified by Figures 2.7 and 2.8. At this time, the Applicant does not know the exact extent of all well paths, but well paths would be limited to the allowed leased areas.
WILT-7	The DEIR Project Description is based on the Application as submitted to the City. The Applicant has reviewed the Project Description multiple times for accuracy and consistency with the Application materials. The CEQA analysis is limited by the Project Description and any other considerations related to the lease. Areas that extend beyond the limits specified within the Project Description are not applicable to the CEQA analysis.
WILT-8	No response is required. The comment is reiterating a portion of the EIR's text.
WILT-9	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-10	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-11	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.

Comment #	Response
WILT-12	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-13	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-14	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-15	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-16	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-17	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-18	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-19	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-20	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-21	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-22	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-23	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-24	The comment reiterates and comments on a portion of the Oil Gas Lease and/or Settlement Agreement text. No comment on the DEIR is provided, no response is required.
WILT-25	The DEIR Project Description is based on the Application as submitted to the City. The Applicant has reviewed the Project Description multiple times for accuracy and consistency with the Application materials. The CEQA analysis is limited by the Project Description and any other considerations related to the lease that extends beyond the limits specified within the Project Description, are not applicable to the CEQA analysis.
WILT-26	The Project Description clearly defines the scope of the Project, including the leased areas and the extent of the well bore locations, as exemplified by Figures 2.7 and 2.8.
WILT-27	The specifics of the DOGGR requirements relating to operation of well drilling and production in the Torrance Oil Field are not relevant to determining the impacts under the thresholds established by the City and the applicable agencies (such as the SCAQMD). CEQA states that a Project Description shall provide "A general description of the Project's technical, economic, and environmental characteristics, considering the principal engineering proposals". DOGGR field rules are available on the DOGGR website. Note that DOGGR does not list any field rules for the Torrance

Comment #	Response
	Oil Field.
WILT-28	The EIR under CEQA analyzes the impacts of the Proposed Project. If the Applicant chooses to drill more wells than that proposed, it would be inconsistent with the CUP as well as potentially other future permits, based on the current Proposed Project, additional permitting requirements would apply and the City would have to conduct additional CEQA analysis.
WILT-29	Text has been added to the Hydrology section discussing injection well classifications.
WILT-30	The Project objectives are utilized to assess the alternatives and whether the alternatives can achieve "most of the basic Project objectives".
WILT-31	See response to comment WILT-30. The EIR only examines the economic issues to the extent that economics affects the feasibility of mitigation or alternatives. Please see the Cost Benefit Analysis prepared separately from the EIR.
WILT-32	As the City is the leaseholder of the Project Site, it also provided objectives primarily as related to the relocation of the City Maintenance Yard. While some of these objectives may be irrelevant under CEQA, they are still objectives of the City.
WILT-33	The comment is on the Lease Agreement. No comment on the DEIR is provided, no response is required.
WILT-34	The referenced text is incomplete, the full sentence of quoted text is: *For a detailed discussion of the soil conditions on the Project Site, refer to the Geological Resources section.* Additional detail on the existing soil contamination at the Project site is included in Section 4.7, Geological Resources/Soils, and in Appendix I, Geology. Regarding clean-up of the existing contamination, the Applicant has proposed remediation as part of Phase 3, see Page 2-41.
WILT-35	Comment on the importance of the existence of the Stinnett Oil Well No.1 noted.
WILT-36	All plans would be required to be periodically updated and reviewed, particularly if the Project facilities change. Ensuring that proper technology is utilized is part of the review process.
WILT-37	The Applicant is proposing a facility that can handle 8,000 bpd. The EIR analyzes the potential impacts of a facility operating at this level. If the Project does not reach these production levels, impact would be less. Similar to a hotel Project being reviewed by a jurisdiction, if the hotel or business does not reach its sales goals are not a concern of the permitting process associated with building the business. The issues related to production levels and income are addressed in the Cost Benefit Analysis prepared separate from the EIR.
WILT-38	Table 2.2 summarizes the Project as proposed by the Applicant. CEQA is required to assess the proposed Project. The issue areas, such as 4.8, Safety and Risk, address the potential range of crude oil API gravity and the resulting effect on potential impacts.
WILT-39	Text on the estimated containment volume has been added to the FEIR, Section 4.6, Fire Protection and Emergency Response.
WILT-40	The Applicant has not indicated that enhanced recovery techniques, including water flooding, would be used and that the injection wells would be used for disposal. Text has been modified to indicate that the wells would be used for disposal.
WILT-41	The comment is on the Lease Agreement. No comment on the DEIR is provided, no response is required.
WILT-42	Text has been modified in the FEIR to correctly refer to the Schist Conglomerate.
WILT-43	Information in the Project Description is based on the Applicants application submitted to the City. It is the Applicant's Project, as would be the case with any Project brought before the City. The viability and ability of the geology to produce the amounts of crude oil and gas specified by the Applicant is independently verified in the Cost Benefit Analysis, prepared separately from the EIR.
WILT-44	Information in the Project Description is based on the Applicant's application submitted to the City.
WILT-45	Information in the Project Description is based on the Applicant's application submitted to the City.

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WILT-46	Information in the Project Description is based on the Applicant's application submitted to the City.
WILT-47	Information in the Project Description is based on the Applicant's application submitted to the City. Appendix A includes maps showing the extent and targeted areas associated with Phase 2.
WILT-48	Information in the Project Description is based on the Applicant's application submitted to the City. Verification of the information is conducted within the specific issue areas, such as Section 4.8, Safety and Risk, where the ability of the formation to produce pressures are evaluated.
WILT-49	More detailed maps are included in Appendix A of the DEIR.
WILT-50	Completions would not be considered "interruptions". Quiet mode drilling at other oil fields still involves drilling. Quiet mode during the night is proposed by the Applicant.
WILT-51	Information in the Project Description is based on the Applicant's application submitted to the City. DOGGR regulates all aspects of the downhole installations.
WILT-52	Information in the Project Description is based on the Applicant's application submitted to the City.
WILT-53	Information in the Project Description is based on the Applicant's application submitted to the City.
WILT-54	The Applicant has stated that no fracking would be conducted. Details of well completions are beyond the scope of the EIR.
WILT-55	Appendix A provides additional details on the Proposed Project.
WILT-56	Information in the Project Description is based on the Applicant's application submitted to the City.
WILT-57	The Applicant has provided a listing of the CUP conditions and the methods of compliance and this has been added to Appendix A.
WILT-58	Information in the Project Description is based on the Applicant's application submitted to the City. Issue areas discuss the assumptions and verifications in more detail. For example, H2S is discussed in Section 4.8, Safety and Risk.
WILT-59	Information in the Project Description is based on the Applicant's application submitted to the City. Issue areas discuss the assumptions and verifications in more detail. For example, H2S is discussed in Section 4.8, Safety and Risk.
WILT-60	The Applicant has designed the Project to comply with the CUP. Additional information on cross-referencing has been added to the Appendix A.
WILT-61	Section 4.5 is titled Energy and Mineral Resources, as defined by CEQA.
WILT-62	The 3,000 bpd average is of crude oil and is the average of the production over the Project life as shown in Figure 2.19.
WILT-63	The Project Description does not refer to a singular site as the entirety of the Proposed Project. The Project Description clearly defines the scope of the Project, including the leased areas, pipeline routes, and the extent of the well bore locations, as exemplified by Figures 2.7 and 2.8.
WILT-64	The map reference is located in the bottom left corner of Figure 4.7-1, the figure is a regional fault map and is not intended to provide information on the potential for earthquakes.
WILT-65	Information in the Project Description is based on the Applicant's application submitted to the City. It is the Applicant's Project, as would be the case with any Project brought before the City Community Development Department. The viability and ability of the geology to produce the amounts of crude oil and gas specified by the Applicant is independently verified in the Cost Benefit Analysis, prepared separately from the EIR.
WILT-66	Information in the Project Description is based on the Applicant's application submitted to the City. It is the Applicants' Project, as would be the case with any Project brought before the City Community Development Department. The viability and ability of the geology to produce the amounts of crude oil and gas specified by the Applicant is independently verified in the Cost Benefit Analysis, prepared separately

Comment #	Response
	from the EIR.
WILT-67	The referenced text is incomplete, the complete discussion of the quoted text is: *The Proposed Project sites are not located within a fault-rupture hazard zone, as defined by the Alquist-Priolo Special Studies Zones Act (California Division of Mines and Geology 1999; California Geological Survey 2010; Geosyntec 2012; and NMG Geotechnical 2012). Based on mapping by the State (California Geological Survey 2010), there are no known major active faults at the Proposed Project sites and no evidence of active faulting was observed during NMG's geologic/geotechnical Project Site investigation. The closest active faults are the Newport-Inglewood Fault, located 5.8 miles east of the Project Site, and the Palos Verdes Fault, located 1.9 miles west of the Project Site (California Geological Survey 2010; Geosyntec 2012; and NMG Geotechnical 2012) (Figure 4.7-1). An inactive offshore fault, named Offshore Fault 103, is located approximately 1.4 miles west of the Project Site (Geosyntec 2012).* Therefore, the Proposed Project sites are not located within a fault rupture hazard zone as defined by the referenced criteria.
WILT-68	The referenced section presents an overview of the faulting and seismicity of the Project area, it is not intended to provide a discussion of current or past DOGGR studies.
WILT-69	Comment is on the California Geological Survey probabilistic seismic hazard maps. No comment on the DEIR is provided, no response is required.
WILT-70	The analysis of worldwide earthquake damage to existing petroleum facilities is relevant to any study of a potential petroleum facility planned for an area with the potential for seismic activity.
WILT-71	The referenced section provides some of the available information on earthquakes and petroleum facilities, it is not intended, nor is it represented as such, to represent the Project site.
WILT-72	There is no nexus between the referenced text and the comment. The quoted text is incomplete, the complete discussion from Page 4.7-6: *The low earthen embankments used as retention dikes around oil storage tanks are subject to failure from earthquake shaking. Damage to storage tanks is commonly due to the sloshing of liquids that damages or destroys the fixed or floating tank tops. Tank piping often breaks when it does not possess sufficient flexibility. Historically, while the spillage of oil has sometimes been considerable, these spills have not been serious when contained within dikes and kept free of ignition sources (California Division of Mines and Geology 1988).*
WILT-73	There is no nexus between the referenced text and the comment. The use of conductor casings is discussed in the DEIR, see page 2-25.
WILT-74	The comment appears to acknowledge the referenced text with regards to the differential settlement that can occur during ground shaking events. Page 2-62 describes the water treatment system and the fact that the treated water would be re-injected back into the producing formation. Therefore, the DEIR includes information on the re-injection of produced fluids generated by the Project.
WILT-75	DOGGR regulates all aspects of the downhole installations and would be the responsible agency to monitor the production of oil/injection of water reservoir balance issue.
WILT-76	The DEIR uses the significant threshold criteria provided in Appendix G of the State CEQA Guidelines and the City CEQA Guidelines as approved by the lead CEQA agency, the City of Hermosa Beach.
WILT-77	The term wastewater as used in the DEIR is water produced from the drilling and production oil as described in the Project Description. The Project proposes the use of a wastewater disposal well to reinject the produced water. Exact production volumes are not known at this time. A key component of Phase 2 is the analysis of the data from the test wells which would include information to assist in the estimation of the potential production volumes. However, the Applicant has assumed that for each

Comment #	Response
	barrel of oil produced, 2 barrels of water will be produced. In addition to reinjecting the produced water, the Applicant will purchase reclaimed water to reinject into the reservoir as needed and as directed by DOGGR to prevent subsidence or uplift. See response to comment SURF-06.
WILT-78	DOGGR regulates all aspects of the downhole installations and would be the responsible agency to monitor the production of oil/injection of water reservoir balance issue.
WILT-79	DOGGR regulates all aspects of the downhole installations and would be the responsible agency to monitor the water injection process. A preliminary plan submittal to DOGGR is not required at this stage of the Project permitting process.
WILT-80	The DEIR identifies the regulatory agencies with oversight of the Proposed Project in Section 1.0, Introduction, in subsections 1.2.1.1 through 1.2.1.3. See Page 1-6 where DOGGR is noted as the agency responsible of injection wells.
WILT-81	Seismically induced differential settling is discussed in Section 4.7 Geological Resources/Soils. See Page 4.7-7.
WILT-82	Comment acknowledged that existing building codes cannot completely protect a structure from a major seismic event.
WILT-83	Comment on the potential for water injection activities to produce seismic events acknowledged. DOGGR regulates all aspects of the downhole installations and would be the responsible agency to monitor the production of oil/injection of water reservoir balance issue.
WILT-84	See Figure 7, *Los Angeles Basin Oil Fields*, Page 19, of the Subsidence and Induced Seismicity Technical Report in Appendix I for a map of the Los Angeles area oil fields.
WILT-85	The information requested in the comment is not available at this time. DOGGR regulates all aspects of the downhole installations and would be the responsible agency to monitor the production of oil/injection of water reservoir balance issue.
WILT-86	The comment addresses potential funding issues of the State agency DOGGR, requests information that is not available at this time, and hydraulic fracturing which is not part of the Proposed Project. No comment on the DEIR is provided, no response is required.
WILT-87	The comment is on hydraulic fracturing, the Proposed Project does not propose or involve hydraulic fracturing technology; no response is required.
WILT-88	As required by Mitigation Measure GEO-2b, the seismicity monitoring program will be completed in coordination with the Caltech Seismological Laboratory. DOGGR regulates all aspects of the downhole installations and would be the responsible agency to monitor the production of oil/injection of water reservoir balance issue.
WILT-89	The referenced section provides examples of long linear features as pipelines, roadways, or aqueducts. See the Subsidence and Induced Seismicity Technical Report in Appendix I for more information on subsidence issues.
WILT-90	See Section 9.0 for a list of the DEIR preparers and note that a Professional Geologist/California Certified Engineering Geologist was consulted for the preparation of the document. Further, the consulting firm that assisted the City of Hermosa Beach in the preparation of the DEIR has prepared more than 90 Environmental Impact Reports (EIR) and/or Environmental Impact Statements (EIS) and related technical studies during the past 30 years.
WILT-91	See Section 4.0 of the Subsidence and Induced Seismicity Technical Report in Appendix I for a discussion of the regional geological background of the Los Angeles Basin Oil Fields and subsidence data for the Wilmington and Torrance Oil Fields.
WILT-92	Comment on the complexity of reservoir balance of oil and gas extraction activities noted, however, the level of detail requested in the comment is not available at this time. DOGGR regulates all aspects of the downhole installations and would be the responsible agency to monitor the production of oil/injection of water reservoir balance issue.

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WILT-93	Comment that a wastewater disposal well is different from an oil and gas facility water injection well acknowledged. CEQA does not require the DEIR to include the Project permit application to DOGGR.
WILT-94	Comment on the complexity of reservoir balance of oil and gas extraction activities noted, however, the level of detail requested in the comment is not available at this time. DOGGR regulates all aspects of the downhole installations and would be the responsible agency to monitor the production of oil/injection of water reservoir balance issue.
WILT-95	The Proposed Project would be subject to DOGGR regulations. The comment addresses the adequacy of DOGGR regulations on pressure testing/monitoring. No comment on the DEIR is provided, no response is required.
WILT-96	CEQA does not require the DEIR to contain the Project permit application to DOGGR or the associated plans required as part of the subject permit application. An EIR is a "informational document" (see Section 15121(a) of the CEQA Guidelines) intended to inform the City, other public agencies with discretionary authority over aspects of the Project, the general public, the local community and Hermosa Beach voters, and other organizations, entities and interested persons of the Project's scope, significant environmental effects, feasible measures to avoid or minimize the significant effects, and a reasonable range of feasible alternatives to the Project that would avoid or substantially lessen the significant effects. The document does not determine compliance with the rules and regulations of DOGGR.
WILT-97	Although a motor valve could respond in 3 minutes, it would have to be activated. Leaks might not be detected, could occur distant enough from the pressure sensor that they would not be detected, human response to an alarm could be inappropriate, any number of issues could occur which would delay the response time. 60 minutes is considered a reasonable worst case.
WILT-98	Text has been clarified to indicate that spills directed outside of the bermed area would not occur unless a failure occurred.
WILT-99	Storm drains have been mapped in Figure 4.8-3 in the DEIR. Storm drain inlets have been added to the figure in the FEIR.
WILT-100	Storm drains have been mapped in Figure 4.8-3 in the DEIR. Storm drain inlets have been added to the figure in the FEIR.
WILT-101	Drafts of all documents are not required to be in a CEQA document as the permitting agencies will use the DEIR, along with the proposed plans when finalized, to issue permits.
WILT-102	The Proposed Project does not involve the use of disposal wells operated by other entities or disposal wells located off the Project site. Reclaimed water would be brought onsite using an existing West Basin Municipal Water District pipeline and lateral constructed by the Applicant. Trucking of water to the Project site is not a component of the Proposed Project.
WILT-103	Drafts of all documents are not required to be in a CEQA document as the permitting agencies will use the DEIR, along with the proposed plans when finalized, to issue permits.
WILT-104	The engineering technical design information requested in the comment is not available at this time. Drafts of all documents are not required to be in a CEQA document as the permitting agencies will use the DEIR, along with final engineering data and compliance plans, to issue permits.
WILT-105	The engineering technical design information requested in the comment is not available at this time. The referenced section addresses sanitary sewer wastewater, industrial wastewater is discussed in other sections of the DEIR. The Proposed Project does not involve combining sanitary sewer wastewater and industrial wastewater.
WILT-106	The Proposed Project would be subject to the Los Angeles Regional Water Quality Control Board NPDES Municipal Separate Storm Sewer System (MS4) Permit and waste discharge requirements. As such the Project Site would be designed to retain,

Comment #	Response
	process, and inject storm water within the perimeter fence or wall for a 100-year storm event. Therefore, accumulated rain water would be retained and processed in the facility wastewater processing/injection system. The containment system is also designed to contain 110% of the largest vessel, a standard mitigation measure for oil and gas projects. The potential for oil spills has been addressed throughout the DEIR in the applicable chapters of Section 4.0. The DEIR did not determine a significant impact for the potential discharge of well fluids to public areas.
WILT-107	The comment is a general statement on the mitigation measures contained in the DEIR. No specific comment on the DEIR is provided, no response is required.
WILT-108	The EIR provides a listing of the proposed chemicals to be used. The chemical composition of the oil, gas, and produced water is not known at this time. A key component of Phase 2 is the analysis of the data from the test wells which would include the chemical composition of the oil, gas, and produced water. The Proposed Project would be subject to NPDES and DOGGR regulations.
WILT-109	The engineering technical design information requested in the comment is not available at this time. Drafts of all documents are not required to be in a CEQA document as the permitting agencies will use the DEIR, along with final engineering data and compliance plans, to issue permits.
WILT-110	As described in the referenced section, produced water would be pumped back into the reservoirs from which the oil and gas was extracted. The Proposed Project does not involve injection water into ground water bearing formations. The DEIR acknowledges that the water injection wells would pass through the fresh water deposits and identifies the potential impacts of the drilling of those wells.
WILT-111	Comment noted that wastewater injection wells are subject to DOGGR UIC Project regulations.
WILT-112	The correct name of the geologic formation referenced in the comment is Puente as stated in the document, the Puente is a distinct stratigraphic unit within the upper Miocene Series of the Los Angeles Basin.
WILT-113	The comment addresses the adequacy of DOGGR review of underground injection wells. No comment on the DEIR is provided, no response is required.
WILT-114	The DEIR proposes a number of alternatives as required by CEQA, including different Project locations and operating configurations.
WILT-115	Throw, horizontal displacement, or step-out ratio all are used to indicate the extent to which a directionally drilled well can reach horizontally. There are limits for shallow reservoirs and those limits are discussed in the DEIR.
WILT-116	The distance a well can reach is also a function of the reservoir characteristics, including the depth. The Carson Project does not propose drilling into Hermosa Beach.
WILT-117	The ability of a drilling site to reach distant targets is a function of the depth and distance of the targets. Beyond a certain distance, no amount of cost will enable a drilling site to reach a target.
WILT-118	The Settlement Agreement plays into the Applicant's and the City's objectives, but does not play into the technical feasibility of the alternative. Therefore, sites which are technically feasible were retained in the DEIR for further analysis.
WILT-119	The DEIR was prepared pursuant to CEQA Guidelines and meets or exceeds all requirements of those Guidelines.
WILT-120	The consulting firm that assisted the City of Hermosa Beach in the preparation of the DEIR has prepared more than 90 Environmental Impact Reports (EIR) and/or Environmental Impact Statements (EIS) and related technical studies during the past 30 years. Further, as detailed in Section 9.0, the DEIR preparers list includes a Professional Geologist/California Certified Engineering Geologist.
WILT-121	See Page ii of the referenced report for the State of California certification documentation of the Registered Professional Engineers and Certified Engineering Geologist that prepared the report.

Comment #	Response
WILT-122	See response to comment WILT-121.
WILT-123	The Proposed Project well pathways have not been determined at this time, Figure 2.7 provides the approximate paths of the two Project test wells. The Project site is described in Section 2.0, Project Description.
WILT-124	Comment noted, the referenced section provides an overview of the potential seismicity of the Project site based on a ground motion hazard analysis and detailed review of historic aerial photographs and topographic maps.
WILT-125	Page 11 of the referenced Geotechnical Exploration and Design Report identified the Palos Verde as the controlling fault for the Proposed Project. The fact that the State Geologist has or has not designated certain faults as active is not a comment on the DEIR, no response is required.
WILT-126	Throughout the DEIR and supporting documentation the fact that water injection technology would be utilized to return fluids to the oil reservoirs to dispose of Project generated produce water and balance reservoir pressure.
WILT-127	The comment addresses the adequacy of DOGGR review and oversight of underground injection wells. No comment on the DEIR is provided, no response is required.
WILT-128	The Project site and oil field pressures are not known at this time. A key component of Phase 2 is the analysis of the data from the test wells which would include reservoir pressure information.

L.A. Waterkeeper

Comment #	Response
WKPR-1	See responses below, several of which address issues of discharge, water quality, water resources and potential oil spill impacts.
WKPR-2	The DEIR presents the Proposed Project as detailed by the Applicant, provides extensive analysis of a range of issue areas as defined by CEQA and provides for a range of alternatives.
WKPR-3	Text has been added with respect to beneficial water uses. See Section 4.9.1.6. The Project is not designed to discharge water into the Santa Monica Bay and therefore, no analysis is provided on discharging polluted waters into the Santa Monica Bay.
WKPR-4	Text has been added with respect to beneficial water uses. As indicated in Section 4.14, Water Resources, Impact WR.3, wastewater wells would be drilled through three major aquifers of the West Coast Basin. The injection wells would be designed to meet all of the rules and regulations of the California DOGGR. All of the injection wells would have steel casing that would be cemented in place. All of the produced water would be injected through injection tubing that would run down through the steel casing. The tubing would be placed in the well to a point just above the perforations, located at the zone of water injection, and a packer would be 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 typically run to ensure that the well is operating properly and that the injected fluids are confined to the intended injection zone (DOGGR 2013). The U.S. EPA classifies oil and gas injection wells as Class II wells. There are approximately 167,000 oil and gas injection wells in the United States and 25,000 such wells in California, many which extend through potable groundwater. Class II wells must adhere to strict construction and conversion standards. A Class II well that follows EPA Federal standards is built very much the same as Class I well, which can be used to dispose of hazardous waste. However, Federal EPA does not directly regulate Class II wells in California. DOGGR has primacy in regulating the Underground Injection Control Program, which regulates all Class II wells in

Comment #	Response
	California. In California, Class II injection wells have proved to be an environmentally safe method of disposal of produced water. A peer review conducted by a national organization, the Ground Water Protection Council, determined that the DOGGR has a program that effectively protects underground sources of drinking water (DOGGR 2013). See Impact WR.3 for additional information pertaining to this issue.
WKPR-5	The Applicant has not proposed any enhanced recovery techniques. Well completion techniques, such as gravel packing or acid washing, would be used. The use of acid would be for acid washing to clear out the area immediately adjacent to the well bore perforations, not for stimulation of the formation. The Applicant has indicated that no pressurized injection of hydraulic fracturing fluid would be conducted.
WKPR-6	The Applicant has provided a listing of chemicals that would be used during the drilling process and that list is included in the DEIR, Table 2.5 and Table 2.12.
WKPR-7	The Applicant has not proposed any enhanced recovery techniques, including high pressure.
WKPR-8	The DEIR does not state that redrilling is unlikely to occur but indicates that re-drilling would involve the same activities as drilling.
WKPR-9	The DEIR clearly states that containment would be sized for 110% of the largest vessel size plus a 100 year storm event. In addition, text has been added to Section 4.6, Fire Protection and Emergency Response, indicating the capacity of the containment system. See also mitigation measure FP-1g.
WKPR-10	Text has been added to Section 4.9, Hydrology, Impact HWQ.2, in response to the comment.
WKPR-11	We respectfully disagree, as we believe the BMPs listed for the Project Site would predominantly apply to the City Maintenance Yard and the pipeline route. Therefore, stating that similar BMPs would be utilized at the latter two locations would be correct.
WKPR-12	The requested information is design level specifications, which is not required for CEQA compliance. We believe the information provided is sufficient in detail to enable the reader to reach the conclusion stated.
WKPR-13	The Applicant has not proposed any enhanced recovery techniques, including fracking. If the Applicant proposes activities that have not been covered by this CEQA document, then they would need to have those activities undergo additional CEQA review.
WKPR-14	Section 8 of the DEIR defines a mitigation monitoring plan, as per CEQA requirements that would ensure the Proposed Project is constructed and operated as per the CEQA document and associated mitigation measures.
WKPR-15	Emergency response requirements and mitigation measures related to marine impacts are discussed in Section 4.3, Biological Resources, in the DEIR.
WKPR-16	Oil spill response and training for a marine spill would be developed as part of the emergency response requirements associated with the CDFW.
WKPR-17	The requirements related to the preparation of response plans for marine impacts are discussed in Section 4.3, Biological Resources, in the DEIR.
WKPR-18	Text has been modified in Section 4.8 to reflect the use of BOEM.
WKPR-19	Drilling would occur on the current City Maintenance Yard site. Spills from the proposed City Maintenance Yard site would not be substantial enough to enter storm drains as the site would be self contained.
WKPR-20	Impacts related to spills are discussed in Sections 4.3, Biological Resources and 4.9 Hydrology.
WKPR-21	The Applicant would be required to prepare an Emergency Response Plan that addresses potential marine impacts, as per the CDFW. See Section 4.3, Biological Resources.

Comment #	Response
WKPR-22	Section 4.8 address safety and risk, which is defined in the introductory portion of Section 4.8 to be acute and immediate in nature. Health risks, such as air or water quality, are discussed in other sections.
WKPR-23	The QRA conducted for the EIR concludes that risks when not drilling would be less than significant. Risks associated with a blowout during drilling are substantially higher than risks associated with wells that are in production mode only. Also, wells drilled into Redondo Beach lost pressure after only a short period (27 days was the longest).
WKPR-24	USGS data was used to estimate the frequency of an earthquake producing accelerations above a given threshold at the Project Site. These frequencies were added in to the risk analysis.
WKPR-25	The well could spill substantially more than a few barrels, but the amount of oil that would be sprayed into the air and fall offsite would be minimal and, although certainly creating a mess, would not be substantial enough to drain into storm drains and impact the marine environment, for example.
WKPR-26	Emergency response requirements are a part of the CDFW requirements and are discussed in Section 4.3, Biological Resources and 4.6, Hydrology.
WKPR-27	The text "this assumes that everything operates correctly and that operators respond accordingly" is in reference to the ability of the SCADA system to respond to a spill in 15 minutes. However, the EIR assumed that it would take 60 minutes to shut down the pumping under a worst case scenario. This has been updated in the FEIR to accurately show the release volumes as a spreadsheet error miscalculated the volumes due to pumping.
WKPR-28	Emergency response requirements are a part of the CDFW requirements and are discussed in Section 4.3, Biological Resources and 4.6, Hydrology.
WKPR-29	Text has been updated to provide more details on the sand plug that can block the exit of the ocean discharge. See page 4.8-87 of the Final EIR.
WKPR-30	As indicated in Impact WR.4, Water Supply, reliability of water supplies from Cal Water and West Basin is provided in their respective Urban Water Management Plans (UWMPs) (Cal Water 2011, West Basin 2011b). The UWMPs demonstrate the water supplier's total projected water supplies available during normal, single dry, and multiple dry water years, during a 20-year projection, as well as the water supplier's existing and planned future uses, including agricultural and manufacturing uses. The projected supplies and demands are presented in 5-year increments for the 20-year projection. California Water Code 10644(a) requires preparation of updated UWMPs every five years and submittal to the California Department of Water Resources, the California State Library, and any city or county within which the supplier provides water supplies. The 2010 West Basin UWMP demonstrates not only how the agency would meet service area retail demands over the next 25 years, but also how the agency plans to provide long-term water reliability through supply diversification, i.e., less reliability on imported water and increased desalinated water, local groundwater, recycled water, and water conservation.
WKPR-31	See response to comment WKPR-30. In addition, as discussed in Impact WR.4, Phase 4 of the Proposed Oil Project would be designed for a maximum capacity of 8,000 barrels of oil per day. Therefore, 8,000 barrels of oil per day could be extracted from the oil reservoir during Phase 4. However, up to 16,000 barrels per day of produced water would be available to inject back into the reservoir, such that it is unlikely that a supplemental water source would be required for replacement water to prevent regional ground subsidence from occurring in the vicinity of the Proposed Project. Fluid extraction does not always lead to subsidence. In fact, studies of the particular geology of the area suggests that the oil reservoir material in the Hermosa Beach area are significantly finer grained and more consolidated (cemented and compacted) than the Wilmington area, and so compaction of the rock material due to stresses caused by oil extraction will be less. Reservoir materials in Hermosa Beach consist of

Comment #	Response
	interbedded thin sands and fractured shales that are not very thick and thereby, not that susceptible to subsidence.
WKPR-32	It's unclear how the lack of analysis of alternative water consumption violates CEQA. In addition, see response to WKPR-30 with respect to water availability.
WKPR-33	DOGGR currently regulates abandoned wells. Leakage from abandoned wells is rare and, if leakage does occur, DOGGR would contract to have the wells re-abandoned. It is not anticipated that the Proposed Project would cause impacts to the abandoned wells beyond what is currently the case as part of the baseline conditions.
WKPR-34	The DEIR has been updated and revised in numerous locations to produce the FEIR.