

Comment	Comment	Resolution
May-1	Provide Strike Team and Advisory Panel and update on the analysis of setbacks, recommendation for 2,500-foot setback.	Forthcoming reports will include recommendations on potential public and environmental health and safety concerns of high priority wells. The Oil Code Update process will provide information and analysis on setbacks.
May-2	Need for a trained facilitator and use of environmental justice and equity principles at Strike Team public meetings to improve community participation.	The Strike Team will review the reference materials and consider an alternate approach to facilitating future meetings.
May-3	Recommendation for environmental justice and the use of CalEnviroscreen to be part of abandoned well analysis.	Future analysis will include environmental justice and CalEnviroscreen data.
May-4	Recommendation for air monitoring at abandoned wells.	As the comment states, air monitoring is not part of the project scope, however, the Strike Team may consider monitoring in future efforts based on the results of the current analysis.
May-5	Recommendation to include abandoned wells located in the City of Los Angeles.	Abandoned wells located in the City of Los Angeles are not under the jurisdiction of the County Los Angeles, therefore, are not part of the scope of this project.
May-6	Abandoned well analysis results.	Future reports will contain additional information on abandoned wells.
May-7	Recommendation that the Wilmington oil spill in 2014 be considered in the pipeline analysis section of the Strike Team report.	The referenced oil spill occurred in the City of Wilmington which is outside the project scope area. However, the Strike Team will review the incident as part of the pipeline analysis section of the report.
May-8	Recommend the report include data on pipeline spills and accidents.	Future reports will contain pipeline incident data where available.
May-9	Recommendation to use CalEnviroscreen in the pipeline analysis section of the report.	CalEnviroscreen will be considered in the pipeline analysis.
May-10	Clarify definitions used for pipeline contents and expand the pipeline regulation discussion.	The Strike Team will review and enhance the information and analysis in the pipeline analysis.
May-11	Use CAS numbers in the report for chemicals.	CAS numbers will be considered for use in future reports were applicable.

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May-12	Recommendation to identify chemical use at well sites and consider transportation of such chemicals.	Identification and transportation of chemicals used at well sites will be considered in future reports.
May-13	Recommendation to include SCAQMD Rule 1148.2 public comments and recommendations in future reports.	An analysis of the implementation of SCAQMD Rule 1148.2 is not part of the scope of the project.
May-14	Oil and gas storage analysis results.	Future reports will contain additional information on oil and gas storage facilities.
TOC-1	Recommendation on the Strike Team process for greater involvement by the Advisory Panel on the preparation of the reports.	The existing process is consistent with the Advisory Panel mandate as documented in the Board Motion. Any member of the public may provide comments on Draft reports.
TOC-2	Reports should include new issues regarding the oil and gas industry and items noted during review of the reports.	Future reports will consider new data and input on previous report iterations.
TOC-3	Prioritization matrix for wells use and description in the reports.	The prioritization matrix is being developed as more data is obtained and analyzed. Future reports will have additional information on the matrix and the future potential uses of same.
TOC-4	Prioritization matrix should be made public in the reports.	Section 3.3 of the report contains information on the prioritization matrix. Future reports will have updates on the development and results of the matrix.
TOC-5	Request for additional information be included in the well priority matrix.	Future versions of the priority matrix will contain additional data, including environmental justice issues, as it becomes available.
TOC-6	Request for the use of various well records from DOGGR be used in the idle well analysis for future reports.	Staff is actively corresponding and working with DOGGR to obtain any and all data available on idle wells.
TOC-7	Request to coordinate with DOGGR on current well plugging and abandonment projects and consider air monitoring of such projects.	Staff is actively corresponding and working with DOGGR to obtain any and all data available on wells and the plugging and abandonment of wells. Air quality monitoring of DOGGR projects is outside the scope of the Strike Team project.

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TOC-8	Comment notes the importance of well plugging dates in determining what type of standards the well was plugged and abandoned with.	Comment acknowledged, Staff is actively corresponding and working with DOGGR to obtain any and all data available on wells.
TOC-9	Comment notes the methane issue in the LA basin, SB 1458, and the Roberti Study (provided as an attachment to the comment) as important to consider in the reports.	Staff is familiar with SB 1458 and the Roberti study and will incorporate as applicable to future reports.
TOC-10	Recommendation that a prioritization matrix be developed for pipelines and be included in future reports.	Staff is working with various agencies to collect additional data on pipelines. Future reports will include such data and may contain a matrix type approach to the analysis of the data.
TOC-11	The natural gas pipeline data in the report is incomplete.	As additional data is obtained, future reports will be more comprehensive.
TOC-12	Report should include data on So Cal Gas pipelines.	The natural gas pipelines operated by the So Cal Gas Company will be added to future reports as feasible.
TOC-13	Request to include the So Cal Gas facility located in Playa Vista in the report.	Playa Vista is in the City of Los Angeles and therefore outside the scope of the project.
TOC-14	Request the report include analysis of the chemicals found in oil and produced water as opposed to chemicals transported and used on oil field sites.	An analysis of the chemicals in oil or produced water is outside the scope of the project. In addition, the chemical constituents of oil or produced water vary greatly from different oil fields. The findings of the previous phase of the Strike Team found chemicals brought on-site for various well completion projects are not typically included in hazardous materials plans. A second finding found a gap in the regulations on the transportation of such chemicals. Thus, chemicals transported and used on oil field sites are the focus of this phase of the project.
TOC-15	The comment references two reports on the chemicals found in oil and gas leaks.	Comment acknowledged.
TOC-16	Recommendation that staff seek the most up to date and accurate information possible.	Data contained in the reports are the most recent and accurate available.
TOC-17	Reference to the chemicals used in the hydraulic fracturing process.	

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		Chemicals transported and used on oil field sites, including those for hydraulic fracturing, are the focus of this phase of the project.
TOC-18	Produced water spills should be included in the report along with the chemical constituents in produced water.	Produced water spills are not a primary focus, however, staff will consider these events as applicable to the report analysis.

Advisory Panel Comments		
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May-1	I am concerned about follow-up on Mr. Rezvani's comment regarding pipelines owned by larger companies, which have been sold to smaller companies that may not have the same resources. I strongly support follow-up, as pipeline ruptures onto public streets have occurred in the past.	The County holds franchise agreements with the various pipeline owners that occupy the public right of way, and will address the issue of change of ownership as a separate effort from the Strike Team
May-2	Please provide specific locations (such as addresses) of abandoned and orphaned wells, at least for the highest priority wells.	Specific locations not available for many wells and most wells are not connected to a street address. We have added APN number for those wells located within a parcel and the APN for those wells located in non-parcel areas (such as streets, etc.). Also, the general location of the wells is provided as part of the aerial maps included in the report with the approximate location of the wells per CalGEM data. Additional location information will be obtained during the well inspection process.
May-3	Providing all report maps in interactive online format would make them much more useful. As they are now, many points can be only seen as overlapping clusters, rather than individual points, and don't provide the report reader with enough specific information on locations. Ability to zoom in with high resolution would make these maps meaningful to local folks.	The Reports are available online at the County's Strike Team website. Well maps are available on CalGEM WellFinder website and we will be providing the APN and API numbers in this upcoming report.

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May-4	There is a great need to consider earthquake impacts on health and safety relating to all of the oil and gas infrastructure discussed in the report. I would appreciate highlighting this recommendation to the Board of Supervisors, since major earthquakes could happen any time. Earthquake issues would be consistent with the efforts to identify health and safety hazards relating to these operations. While it is a major subject, a start needs to be made.	Earthquakes are an important consideration, and the subject is being addressed as part of the Oil Code revisions, outside of the scope of the Strike Team Project. Note that the Strike Team Oil and Gas Facility Compliance Project reviewed oil and gas facility emergency response plans, spill plans, emergency drills, secondary containment and other issues related to emergencies from oil and gas facilities. Proximity to an earthquake fault could be added as a criteria for abandoned wells, although the impacts of an earthquake could be felt Countywide and are not necessarily associated with an earthquake fault.

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May-5	Please include information in the next report about the dramatic explosion at Nustar petroleum storage last week in Northern California, and any similarities between this facility and other Oil and Gas storage facilities in unincorporated LA County. While the Nustar explosion and burning of two tanks involved ethanol, many nearby tanks were threatened, including crude oil storage. This facility was connected by pipeline to other facilities including the nearby Phillips 66 refinery. The explosion caused shutdown of the nearby freeway for 7 hours, spilling traffic onto local roads, which may have delayed mutual support of other oil industry fire resources. (The fire Marshall reported during a press conference that mutual aid firefighting resources of the petroleum industry had arrived, but this was two hours after the fire started.) Nustar employees were reported to have fled for their lives, failing to turn on fire suppression, but locking the gate, impeding fire department access. The resulting brush fire on the hillside required a helicopter, tractor to cut fire lines, and dozens of fire fighters. There was speculation on whether a small earthquake the night before could have led to this dangerous malfunction.	Historical incidents can inform the development of response plans and other planning tools. Storage tanks are being addressed in later versions of the Strike Team Report and information will be provided on potential impacts of these facilities, along with potential recommendation to reduce impacts.
May-6	Please include at least preliminary information in the next report about emergency response resources for fires and explosions relating to oil and gas infrastructure. Although this is a major topic in itself, this fits with the reports' identified next steps to identify recommendations on health and safety evaluation relating to oil and gas infrastructure.	The Strike Team Oil and Gas Facility Compliance Project reviewed oil and gas facility emergency response plans, spill plans, emergency drills, secondary containment and other issues related to emergencies from specific oil and gas facilities. However, these are specific to the individual sites and their potential emergencies and their response. The Report does not examine the resources of agencies, which is outside the scope of the project.
May-7	Please also provide in the next update the chemicals and amounts reported for each company in Table 5.1 -- Facilities with the Largest Quantity of Chemicals, since the work of pulling this information together is already done. It would be helpful and appreciated for the reader to have the specific information.	Additional chemical information will be included in Report #3.

Advisory Panel Comments		
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O'Connor-1	The Strike Team report proposes a prioritization matrix for idle, abandoned and hazardous wells based on a series of factors, including age of wells/field, proximity to people, and whether the well is in a disadvantaged community as identified within the Cal EnviroScreen 3.0 tool. While the clarity and transparency of the factors going into this prioritization seems appropriate, there may be other relevant indicators of the propensity of a well to leak and cause impacts to human health and the environment. For this reason, the Strike team should affirmatively seek out an external review of the chosen factors / prioritization matrix it has developed. Researchers at Stanford University led by Rob Jackson - rob.jackson@stanford.edu – would be especially capable of performing this review.	External review of Strike Team reports is achieved by making all the reports public and available for review and comment. The current scope does not contemplate seeking out additional experts for review and comment. However, members of the public and Advisory Panel members are encouraged to reach out to experts that are willing to provide review and comment on the Strike Team efforts. All comments will be taken under consideration to achieve the best possible outcome for the Reports and additional expertise is welcome.
O'Connor-2	My prior comments made after the first report in this series stated that additional criteria should be considered for the prioritization matrix, such as 1) water level recordings during regular tests by operators and 2) observations in county or other well records of negative integrity indications. While several of my other recommendations for inclusion were taken, an explanation of why these were not would be appreciated.	Water levels at idle wells were obtained from DOGGR and reviewed. However, water levels varied substantially between idle wells in the same field and generalizations were therefore not able to be made. Negative integrity indications will be developed as detailed DOGGR/CalGEM records are reviewed, starting in this next report.

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O'Connor-3	In my prior comments I recommended the Strike team seek out water level records from DOGGR (now CalGEM) and add to the matrix a score for whether well records indicate any communication between well liquids and the surrounding geologic formation. The report includes a reference to this work on page 13, saying that “DOGGR provided DRP with an excel spreadsheet with water level data from idle wells within the Los Angeles County.” However, my review of the report did not find anything related to what that data showed or any incorporation into the prioritization matrix. The strike team should provide an explanation of what that data showed and a discussion of its usefulness for evaluating well integrity.	Water levels at idle wells were obtained from DOGGR and reviewed. However, water levels varied substantially between idle wells in the same field and generalizations were therefore not able to be made in order to provide insight into abandoned wells located in the same field. Idle wells are not being examined as part of this project.
O'Connor-4	Recently the California state legislature passed AB 1328 related to idle and abandoned well testing. This bill, thereafter signed by the Governor will result in significant testing for human health and local air contaminants coming from these wells across California. The Strike Team should reach out to state officials at CalGEM in charge of implementing this bill to ensure they are aware of the prioritization matrix that has been developed, and to capitalize on the investment in air monitoring that will be conducted by the state – making sure it is being deployed to advance the study of wells envisioned in this project.	The Strike Team will take this new legislation into consideration and work with CalGEM to understand how this effort is going to be implemented. It usually takes some time for the agency to implement the legislative action and it may occur beyond the timeline of the Strike team efforts.
O'Connor-5	With respect to the next steps in this process, it is clear that the Strike Team plans to visit some or all high priority wells and evaluate their condition. Some of these wells are likely to be located under structures or on private land. Further, some of these wells are likely going to be leaking hydrocarbons or other compounds. To ensure the strike team performs a meaningful assessment of each of these wells, a clear protocol for site evaluation is needed. The Strike team should therefore share the draft site evaluation protocol with the panel before it becomes final and put to use, including the methodology that will be employed for finding the well, notifying the well owner in advance, sampling air emissions at the well, and dealing with wells that are inaccessible.	A well inspection protocol will be included in Report #3.

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O'Connor-6	Based on the report and comments at the October 21, 2019 meeting of the Advisory Panel, it appears that the Strike Team plans to create a prioritization matrix for pipelines as it is doing for idle wells. This is an important task and the proposed criteria being used appear to be appropriate for this action. In addition to those proposed for evaluation though (and included in my prior letter from April 2019), the Strike team should include the additional factor of whether the pipeline operator has paid for and is maintaining a valid certificate of conveyance for operation in the public right-of-way. Operators who are not maintaining their permits according to the law are less likely to be keeping abreast of pipeline quality, and thus may be an indicator of pipeline integrity.	The Strike Team is getting access to the various pipeline inspection reports from the State Fire Marshall's office and will be able to evaluate the compliance status of the various pipeline operators. Certificates of conveyance from the PUC would be applicable to common carrier lines and it may not address all other proprietary lines within the County.
O'Connor-7	As stated in the report, the actual miles of pipe listed for natural gas does not include So Cal Gas data. To the extent the report includes a number for miles of pipe in natural gas service, it should strive for accuracy by seeking out and including So Cal Gas pipeline data.	Utilities such as the Gas Company are regulated by the CPUC and have not been included as part of the scope of this effort. The Strike Team will check with County Counsel on the appropriateness of including the Gas Company pipelines as part of the review.
O'Connor-8	Although this comment was made in my prior letter of April 2019 to the Strike Team, it is of renewed relevance because the Strike Team is only now getting to the evaluation of storage systems. The Strike Team should conduct a thorough assessment of the Playa Vista gas storage facility owned and operated by So Cal Gas. At that facility, nearby residents have complained for years of strong odors and releases of gas. As a result, the Strike team should seek out the information for nearby residents and open the door to enhanced participation in this area of the report. To the extent that the county decides the facility is not within the charge area of the study, the Strike Team should provide a clear explanation why not, and then evaluate the lateral extent of subsurface stored gas to determine whether any belowground gas storage extends into the county as opposed the facility fenceline.	The Strike Team will discuss the appropriateness of evaluating Playa Vista as part of this effort.

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O'Connor-9	As it relates to hazardous chemicals, the report seems to miss a discussion of the chemicals and constituents that are naturally entrained in the oil itself (and brought to the surface through produced water) or contained in leaks from oil and gas sites. As a result, it appears that the Strike Team is reading its direction from the board on this issue "Review chemicals at oil and gas facilities not identified in Hazardous Materials Business Plans" in an overly narrow manner – because there are many chemicals that can be found from the oil and gas itself.	Chemical composition of oil emulsion is captured by the knowledge that crude oil contains a range of potentially hazardous materials. The scope of the analysis is to identify additional chemicals that are used at oil and gas sites, particularly on an intermittent or periodic basis, and are not captured by the business plans. Crude oil is captured by the business plans program.
O'Connor-10	As to the chemicals entrained in oil and gas leaks, there has been a lot of research – one such research report was written by EDF and summarizes a lot of the science on the hazardous compounds found in leaks. - https://www.edf.org/sites/default/files/californiamonitoring_filling-the-void.pdf You can also see a CARB report on chemicals included in oil and gas leaks by Sage Environmental – CARB, (2015), "Air Resources Board RFP No. 13-414: Enhanced Inspection & Maintenance for GHG & VOCs at Upstream Facilities— Final (Revised)," Prepared by Sage ATC Environmental Consulting LLC, https://www.arb.ca.gov/cc/oil-gas/sage_i&m_ghg_voc_dec2016.pdf	Input noted for background information on Strike Team research.
O'Connor-11	Given that the hazardous chemicals associated with hydraulic fracturing processes can additionally be used in on-site storage facilities and transportation of oil and gas, information related to their usage in such processes.	Hydraulic fracturing chemicals are reported through the SCAQMD 1148.2 process. Chemical composition of oil emulsion is captured by the knowledge that crude oil contains a range of potentially hazardous materials. The scope of the analysis is to identify additional chemicals that are used at oil and gas sites, particularly on an intermittent or periodic basis, and are not captured by the business plans.

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O'Connor-12	As to produced water, much has been written about this. In considering spills of produced water, the Strike Team should investigate further the presence of hazardous chemicals such as benzene and compare the level of chemicals present to established exposure limits.	Chemical composition of oil emulsion (and therefore produced water) varies greatly from reservoir to reservoir and are captured by the business plan program. Spills are considered to be accidental releases and not part of the day to day operations of an oil facility. Produced water spills could contain VOCs, but at substantially lower levels than oil spills.
Rezvani-1	As is evident in the report, there are significant numbers of abandoned and orphan oil and gas wells in LA County. Some of which, from time to time, present safety and possibly health hazards to members of the community. As it has been appropriately reported, rework and closure of these old wells is the responsibility of DOGGR. The county should advocate additional state funding for identifying and prioritizing and closing of the old orphan wells according to the latest well closure standard.	Recent legislation allows for the County to request that CalGEM prioritize wells for plugging and abandonment under the Orphan Well program. Depending on the results of the studies to be conducted on the priority wells, the County may choose to approach CalGEM with requests for wells to be plugged and abandoned.

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Rezvani-2	<p>The report does a great job of identifying federal and state laws and regulations, as wells as the regulatory agencies having jurisdiction over oil and gas pipelines. The report also identifies the number of lines and the operators. Unfortunately, the report lacks the maintenance data the status, and the leak history on these lines.</p> <p>In the past few years a great number of oil pipelines in California, and in LA County that were historically owned and operated by reputable large oil companies have been acquired by investment firms with limited resources. It is significantly important for the county to understand the status of these pipelines, their maintenance records and leak history. Additionally, aside from Hazardous Liquid Pipelines there may be a number of pipelines that carry hazardous materials that may not be included in the definition of Hazardous Liquid Lines. Those could be lines transporting hazardous liquids and/or gases such as Anhydrous Ammonia, Hydrogen, Sulfuric acid and other hazardous liquids and gases. I recommend the county consider obtaining an inventory of these lines and their status. It is vital for the County to understand the safety hazards of such lines, their locations and potential safety and health consequences in case of a leak.</p>	The Strike Team is evaluating data from CSFM PS-101 Forms to determine if maintenance data is available for County review.
Rezvani-3	Finally, the report identifies significant amount of chemical being used and stored in LA County. It would be helpful to have a section on the report from the Health Department on impact of such chemical, if any, on public health, considering the quantities reported in the report.	The portion of the report on chemicals will include the potential toxicity of those chemicals as available from OEHHA and the SCAQMD.

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May-1	<p>Once again, a great deal of important documentation on specific hazards has been carried out through this latest report, despite the very hard year of 2020 (for wells – hazards related to pressure, H2S presence, community characteristics, age, production and accident history, abandonment, idling, etc., as well as hazards from pipelines, oil and gas storage, and chemical use). Over time, this site-specific information has added substantially to the body of evidence regarding hazards from oil and gas operations in unincorporated parts of the County, much of which was previously very hard-to-access information buried in hard copy files, or entirely missing. In addition, the severe challenges of 2020 hampered Strike Team efforts, including in person inspection (among other more extreme burdens of the year). It is important to acknowledge barriers as well as important progress as we look forward to better times.</p>	<p>Comment noted. With the concerns and restrictions associated with Covid ramping down, the Strike Team is scheduling field inspections for late Spring/early Summer.</p>
May-2	<p>However, the overall Strike Team process which began in 2016, has been too slow-moving in reaching the point of action, to reduce and eliminate Oil and Gas hazards that continue to threaten local, regional, and planetary health and safety. Low-income and communities of color are disproportionately impacted by Oil and Gas operations and associated well-to-wheel impacts of fossil fuels, including toxic emissions, smog-forming chemicals, odors, greenhouse gases, hazardous chemical transport, and climate impacts. These dangers cannot be treated separately, as if they exist in a vacuum. Last year brought home the immediate and severe dangers of climate change, during the out-of-control wildfires and other fossil-fueled disasters. Latinx, Black, Indigenous, other people of color are hardest hit. The body of evidence documenting these racial inequities and widespread health and environmental hazards is extensive; I will not try to repeat them in this short memo.</p>	<p>Pursuant to the motion by the Los Angeles County Board of Supervisors (Board), the Strike Team was directed to assess the conditions, regulatory compliance and potential public health and safety risk associated with existing oil and gas facilities in unincorporated Los Angeles County. Specifically, Phase II the Strike Team was tasked with researching and investigating the following oil and gas elements; abandoned and orphan wells, storage facilities, pipelines, and hazardous chemicals associated with oil and facilities. The final Strike Team report will include recommendations on potential public and environmental health and safety concerns regarding these facilities to assist the Board on future rulemaking or other actions to address those concerns.</p>
May-3	<p>At the same time, the pandemic highlighted options to accelerate clean energy, and some fossil fuel operations have even closed. This begs the question – will the Strike Team move beyond evaluation only of separate components of hazards in oil and gas operations? The times have moved beyond that—even the oil industry is discussing phaseout. I urge that the Strike Team broaden the discussion to include the much-needed fossil fuel phaseout and Just Transition.</p>	<p>The future phaseout of the use of fossil fuels is beyond the scope of the Strike Team Project, however, the information contained in the Strike Team reports may provide the Board with applicable data as the County moves in that direction.</p>

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May-4	Los Angeles County adopted a sustainability plan and goals, including “A fossil-free LA County”, which states: “By eliminating fossil fuels, we are seeking to mitigate global climate change and its impacts throughout the region.” ¹ Similarly, the Strike Team should include this goal and begin evaluating how to carry this out.	Implementation of the LA Countywide Sustainability Plan is beyond the scope of the Strike Team Project, however, the information contained in the Strike Team reports may provide the County with data to assist in carrying out the Sustainability Plan goals.
May-5	Disadvantaged communities of color in the region and statewide, are clamoring for phaseout of drilling in California. It is time for the Strike Team to also begin to evaluate how to phase out Oil and Gas operations, not just incrementally mitigate impacts. This is also consistent with the State of California’s climate goals, and with the County’s sustainability and Environmental Justice goals.	Please see response to Comments May-3 and May-4.
May-6	The County Sustainability Plan’s Goal #1 is to establish: “Resilient and healthy community environments where residents thrive in place. The County will protect low-income communities and communities of color from pollution, reduce health and economic inequities, and support more resilient and inclusive communities.” Fossil fuel operations are inherently at odds with this goal; phaseout plans need to be developed as soon as possible.	Please see response to Comment May-4.
May-7	My past comments, and those of my fellow Advisory Committee Members have not been fully addressed.	Advisory Panel comments, along with a response, have been included in the appendices of each subsequent report.
May-8	One example – In past comments, I documented pipeline spills in Wilmington which caused severe odors and health hazards through quantities of crude oil spilled directly onto residential streets. Pipelines cross between unincorporated and incorporated areas, so those spills are relevant to unincorporated areas. It would be useful to include documentation of the Wilmington pipeline spills and reasons for the rupture in the next report, as well as identifying whether these risks are present in unincorporated areas.	A case study will be added to the report.
May-9	Earthquake risks increase all the hazards identified – these need to be evaluated and updated.	Earthquakes are an important consideration, and the subject is being addressed as part of the Oil Code revisions, outside of the scope of the Strike Team Project. Note that the Strike Team Oil and Gas Facility Compliance Project reviewed oil and gas facility emergency response plans, spill plans, emergency drills, secondary containment and other issues related to emergencies from oil and gas facilities.

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May-10	Thank you to Matt Rezvani, fellow Advisory Committee member, for providing expertise on pipelines and other matters to the team.	Comment noted and the Strike Team staff also acknowledge and appreciate Mr. Rezvani's expertise and assistance with the Strike Team effort.

Advisory Panel First District COMMENTS ON PHASE 2 REPORT #5

1. The County should provide the public with a 30-day comment period after the Sept. 15th hearing to ensure meaningful public engagement and participation. This will give LA County staff the opportunity to evaluate diverse comments, incorporate changes, and bring a stronger final report back to the Board of Supervisors for follow-up consideration. The COVID-19 pandemic disrupted timelines for this extensive investigation and prevented important recommendations from appearing in prior reports. As a result, detailed conclusions and recommendations have only become available during the last month. Also, it is not clear whether the public has access to this most recent draft report—only final reports are currently available on the County webpage. Providing a comment period for the public after the Sept. 15th Hearing will help ensure the best result, as this report covers thousands of oil and gas facilities in widely varying circumstances around the County.

Opportunity for comments on the Strike Team Project reports has been available to the Public at each Advisory Panel Strike Team meeting and each Board of Supervisors meeting where the Strike Team Project was on the agenda. Public input has been considered as applicable. The addition of the Advisory Panel by the Board was to ensure that prominent members of the various districts would have the opportunity to express the community's comments on the Strike Team effort through their Advisory Panel representative. In addition, multiple public meetings have been held throughout this process that allowed the opportunity for public comment, and we did receive comments from the public in multiple occasions. An additional formal public comment and response process is not in the scope of the Strike Team Project. The Strike Team would consider any public input provided during the September 15, 2021 meeting; however, none were received.

2. The LA County Strike Team investigation of hazards from Oil and Gas facilities and activities in unincorporated LA County put a spotlight on previously inaccessible or unavailable data, including information buried in hard copy files. This investigation covered hazards associated with oil drilling and production, odorous and hazardous H₂S gas in wells, history of blowouts or leaks, proximity to neighbors, CalEnviroScreen Score, well pressure, and other factors. It also included data and evaluation of pipeline risks, oil and gas storage, hazardous chemicals used in oil and gas extraction, and more. This was time-consuming work, and it brought the state of data far forward. I commend the staff and consultants for pulling together immense amounts of data that was in extreme disarray. However, there are still key categories that this investigation did not cover (e.g. seismic risks need to be addressed). It also appears that the final report is not truly cumulative, leaving out findings and recommendations from earlier reports regarding ongoing drilling operations.

The impacts of an earthquake anywhere in the County could impact an abandoned well and the potential for that well to leak, therefore, proximity to an earthquake fault was not used as a criterion for prioritizing wells in the report. Although seismic risks could have an effect on the propensity for wells to leak given an earthquake, that risk would most likely not have affected the priority of the wells as identified. The priority system was based on a range of factors, and the proximity of a well to a fault system and the frequency for fault activity were considered lower contributing factors than the age of the wells, the abandonment method and the history of the reservoirs and wells (such as blowout history).

The reports were designed to be cumulative in nature, with each report listing additional tasks to be implemented at the end of each section. The tasks were not necessarily meant to be recommendations, and the recommendations for some sections were combined into other sections. Recommendations from the earlier phases of the Strike Team efforts have been added to the Report for easy reference.

<p>3. A major downside is that the process focused too much on risk mitigation, rather than pollution prevention, especially regarding options for phaseout of these hazardous operations over time. The primary focus of the analysis, as directed by the BOS, was on public health and safety. As stated in the BOS September 4, 2018 meeting, the project is <i>“to assist with assessing the conditions, regulatory compliance and potential public health and safety risks associated with oil and gas facilities and related operations in the unincorporated communities of the County”</i>. Many of the recommendations, such as requirements for better handling of acute and explosive materials, and better inspections of pipelines, are preventative. The information and data presented in the report can be used by decision makers to assist in the goal of the disposition of the oil and gas operations.</p>
<p>4. Because of new developments, the County is now behind the times compared to, for example, state and other requirements that can eliminate hazards (such as Governors' Executive Orders and efforts regarding fossil fuel phaseout, as well as state-wide Just Transition goals for jobs). The final County Report should reference and incorporate these goals and policies. The primary focus of the analysis, as directed by the BOS, was on public health and safety. While these other goals and program are certainly important, an analysis of these additional legislation, goals and policies is beyond the scope of the Project as directed by the BOS. However, the information and data presented in the reports can be used by decision makers to assist in achieving these additional goals.</p>
<p>5. The Strike Team’s investigation revealed the dangers inherent in Oil and Gas extraction operations and highlights the growing need for the County to align with state and local policies regarding eliminating reliance on fossil fuels. Local governments like Culver City and the City of LA are leading the charge to phase out incompatible land uses near sensitive receptors by working to prohibit new oil drilling operations and phasing out existing drill sites city-wide. I urge the County to add recommendations for a plan to transition away from oil and gas towards a clean energy future, with a commitment to creating good high-road jobs for workers, and proper site remediation. The primary focus of the analysis, as directed by the BOS, was on public health and safety. While these other goals and program are certainly important, an analysis of these additional legislation, goals and policies is beyond the scope of the Project as directed by the BOS. However, the information and data presented in the reports can be used by decision makers to assist in achieving these additional goals.</p>
<p>6.A State-wide efforts toward extraction phaseout should be referenced and incorporated by the County. California governors have set fossil fuel phaseout measures through state Executive Orders and additional measures (for example, Governor Jerry Brown’s Executive Order B-55-18 to achieve carbon neutrality no later than 2045 and Governor Gavin Newsom’s recent Executive Order N-79-20). State carbon neutrality requirements have also been evaluated in in state modeling scenarios. The initial State of California Greenhouse Gas Scoping Plan modeling done for the California Air Resources Board (CARB) assumed that in order to meet state goals, energy demand from oil extraction would need to be cut from 90% to 100% by 2045.² This report and modeling states that this is the minimum required by prior California Governor Brown's Executive Order. Many cities and communities such as Culver City and LA City are now approaching a much more expeditious phaseout. The state report found: This study evaluates scenarios that achieve carbon neutrality in California by 2045. These scenarios are designed to align with California’s Executive Order B-55-18 [from Governor Brown], which calls on the state to, “achieve carbon neutrality as soon as possible, and no later than 2045, and to</p>

achieve and maintain net negative emissions thereafter.” Specifically, the scenarios evaluated here achieve at least an 80% reduction in greenhouse gases from 1990 levels by 2045. As stated in the Executive Order, this level of greenhouse gas reduction should be considered the minimum level of reductions needed in the state. More rapid carbon reductions that achieve carbon neutrality prior to 2045 may be considered in future analyses by the California Air Resources Board. [p. 1, emphasis added]

More recently, Governor Newsom instructed CARB to evaluate pathways for the state to achieve carbon neutrality by 2035—in advance of the initial 2045 target.³ In addition, Governor Newsom issued a directive to ban new fracking permits in California by 2024.

Los Angeles County is considered a leader of forward-thinking environmental analysis. At minimum, LA County should reference and require state requirements regarding phaseout. These requirements are not only necessary to prevent health and safety risks in the County, but also because of the extreme acceleration of negative climate impacts that demands a fossil fuel phaseout to safeguard future generations.

For example, as California was ravaged by wildfires, drought, and extreme heat this year, the Intergovernmental Panel on Climate Change (IPCC) issued their Working Group 1 report. This recent IPCC report referred to the state of the climate crisis as “code red.”⁴ For frontline communities facing unprecedented heat waves and cloaked by wildfire smoke, their health is being impacted right now. And given the unprecedented extremes around the country (115°F in the Pacific Northwest, floods and fires across the U.S.), a county like Los Angeles which is a center of extraction, must directly confront its own contribution to the increasingly catastrophic disaster.

The primary focus of the analysis, as directed by the BOS, was on public health and safety. While these other goals and program are certainly important, an analysis of these additional legislation, goals and policies is beyond the scope of the Project as directed by the BOS. However, the information and data presented in the reports can be used by decision makers on potential oil and gas industry phase out and climate change goals.

6.B. Wilmington Oil Spill report includes certain incorrect information, also relevant to risk screening for crude oil pipelines in unincorporated areas.

I appreciate the inclusion of important new detail on the Wilmington Oil Spill due to a pipeline rupture in a residential area in 2014, as I recommended earlier. However, there are some inaccurate implications that need to be corrected. The report stated:

According to the Los Angeles Police Department, the seeping oil did not pose a threat to the public. Despite odor complaints, authorities received no medical calls, and tests showed no health hazards. (p. 85)

First, while it is interesting that the Police Department was involved, that department is not the one that would be qualified to evaluate health hazards. More importantly, the report is wrong in implying there were no health hazards based on these two sentences.

The report failed to show key information regarding what kind of testing was done and at what time (for example, H₂S or other hazardous sulfur gases present in crude oil are difficult to monitor and must be monitored at the right times and locations to detect the worst impacts, using appropriate methods and quality assurance). It is also unclear whether the testing included a range of VOCs as well as a range of hazardous sulfur compounds, or any specifics on pollutants tested. It is unknown who performed the testing, which is critical to ensure accuracy and objectivity. For example, if testing was performed by Phillips 66, there would be a major conflict of interest that could bias the results.

Because of the absence of this specific kind of data in the report regarding whether there are hazardous sulfur gases carried with crude oil in pipelines, other parts of the report downgraded risk level for crude oil pipelines compared to other materials. It would be very helpful to know if such

data is available, or if this is one more unknown risk. (That is not to underestimate the great deal of work that was carried out to improve the available data on pipelines, which was appreciated.) While it is reasonable to add an additional risk point to pipelines carrying liquids more volatile than crude oil as the risk screening method has done, it is also important to determine whether hazardous sulfur gases are present in crude oil in pipelines. H₂S is a deadly gas, which kills many workers in the country during accidental exposures. This is especially concerning after the County found that a relatively small earthquake may have caused the Wilmington rupture. This is something which could occur on a much wider scale when “the Big One” hits.

It was striking that the reporting on the Wilmington spill ignored first-hand descriptions of severe smells experienced by the County’s own Janice Hahn, U.S. Representative at the time. She stated: “The harsh, crude oil smell is not only horrible, but can also be potentially harmful to the neighborhood residents and environment.”⁵ I personally recall her describing feeling ill during this event when speaking publicly about it.

Such severe smells indicate that significant levels of hydrogen sulfide may have been present. It was wrong for the report to emphasize no health impacts, when there was no evaluation of health impacts reported by community members, such as nausea or headaches, other than lack of medical reports. A lack of medical complaints does not necessarily indicate no health impacts, especially in areas where community members may not have easy health care access.

The report should be corrected to address these gaps.

The Wilmington Oil Spill referenced here occurred in 2014 and a literature search of the incident resulted in reports from several media sources. The Los Angeles Times reported that “...authorities said they received no medical calls and that tests showed no health hazards”. The Strike Team did not locate any governmental agency reports or monitoring data on the incident. The Strike Team notes that “severe smells” do not necessarily indicate levels of hydrogen sulfide that are an acute health concern. Many compounds in addition to Hydrogen Sulfide containing sulfur can be very odorous, and hydrogen sulfide is detectable by the human nose at extremely low concentrations (4 parts per billion), which is below the levels identified as levels generating immediately dangerous to life and health (IDLH) (IDLH for hydrogen sulfide is 100 parts per million). However, strong smells certainly can represent levels that exceed the dangerous levels and generally should be treated as an issue of concern if monitoring has not been conducted.

6.C. Notes on CalEnviroScreen findings

It was surprising to see that unlike most other analyses, this report frequently did not find that communities of color were necessarily the very highest impacted areas. Upon reflection, I noted that this is due to the nature of this report, which evaluates unincorporated areas of the County. This means that areas such as Wilmington, part of the City of LA which has extremely high concentrations of oil wells in close proximity to neighbors and a very high CalEnviroScreen score, is entirely excluded. It is important for the County to note in the CalEnviroScreen scoring sections, that because the report addresses unincorporated areas, it specifically excludes many communities of color that are highly impacted by Oil and Gas operations as found by CalEnviroScreen, which skews this screening score.

CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every census tract in the state and census tracts do not cross County lines. Thus, the CalEnviroScreen data is census tract specific and is not skewed by adjacent census tracts. Areas such as Wilmington with high concentrations of oil and gas activity and high poverty/unemployment/educational attainment populations can have higher CalEnviroScreen scores than some areas of the County, however, the Strike Team Project is specific to the unincorporated County as per the direction from the BOS.

6.D. Instances of difficulty accessing key data

Gaining access to key data has been a big problem during this investigation. For example, the report found:

As detailed above, obtaining information for the State Fire Marshall's office was problematic and required multiple specific PRA requests. Even after information was received, the information appeared incomplete, and the Strike Team was unable to ascertain the status of some of the pipelines reviewed. In some cases, the inspection records were not up to date as required by the regulations, which mandate yearly inspections. The following recommendations are designed to ensure that the County is able to track the inspection records for the pipelines within the unincorporated areas.

The report follows up with recommendations about improving data access, but this is only part of the picture.

This lack of data access is reminiscent of problems when members of the public attempt to gain access to important public data. When even the County cannot easily access such data, this is an indication that the process is broken. This is another indication that widespread oil and gas operations are not well-controlled and represent not only known, but also widespread unknown hazards. In a zone of severe earthquake hazard with high population densities this is very disconcerting, and an additional argument for eliminating hazards, rather than spending years solely gathering data. Data is important, but risk elimination is far better.

The Strike Team acknowledges the challenges of intergovernmental agency cooperation in a multi-agency project with participants from local, County, and the State agencies and departments. The Strike Team has made recommendations where applicable for improvement on such interactions. However, the Strike Team notes that these challenges do not necessarily indicate that the oil and gas operation in the County are not well controlled or that the hazards are unknown. Oil and gas operations in the County are overseen by a variety of regulatory agencies and requirements depending on their purview.

6.E. Results of monitoring and inspections of Abandoned and Idle wells

The inspection and monitoring of high-priority abandoned and idle wells had to be delayed due to the pandemic but was carried out this year. ("In-field inspections of the priority abandoned, and idle wells were completed over three days from June 15 through June 17, 2021." p. 47) The investigators reported satisfaction by neighbors that the county was checking these facilities, and the County found no instances of "elevated" emissions (p. 52), except for one case with very low VOC levels (p. 53).

It is heartening that the County generally found upon its first inspection that there are no obvious smells or emissions from wells that are not in use. Because it is well-known that wells that are in use have caused repeated and severe odors and emissions, this indicates that the County should first address eliminating the risks from existing operations, but if possible, in parallel with addressing abandoned and idle wells.

However, it is important to consider that one-time monitoring is a snapshot, which cannot determine what happens when conditions change. For example, construction projects, additional drilling and injection wells near abandoned and idle wells, and earthquakes, can all cause changing conditions resulting in new hazards at abandoned and idle wells, that cannot be found during a one-time inspection.

The report acknowledges the fact that the surface air quality monitoring completed by the Strike Team cannot determine whether a well is leaking sub-surface or will leak in the future, see Section 3.6.6, Well Inspections Limitations. Active well operations are overseen by a variety of regulatory agencies and programs including SCAQMD Rule 1176, which checks for odors and emissions from active wells and other oil and gas infrastructure. The report acknowledges that this effort was one snapshot in time and recommends that additional future monitoring be conducted.

6.F. Risk Screening Method

While the risk screening methods developed can help to focus mitigation on facilities and activities which might represent a higher risk (based on past history, proximity to neighbors, environmental justice screening which evaluates cumulative burdens in communities of color, accident history, presence of hazardous gases, high pressures, lack of testing or data, etc.) the report also acknowledges that this is an estimate of risk, and not a crystal ball to perfectly predict where accidents may occur. The concept of addressing the highest risk sources first is logical, but given the large number of sources, it is essential that an expeditious and comprehensive cleanup plan be put in place, so that sources estimated at high risk are addressed quickly, followed by setting a plan to address all sources.

The risk screening scheme was developed to determine which abandoned and idle wells rate high enough to merit further investigation and inspection since detailed review of every well in the County was beyond the scope of the Project. Most of these wells are sub surface and under private property in residential yards and under homes or under streets or other paved surfaces, see Table 3.23. Some of the wells had surface equipment that enabled confirmation of its location and the relative validity of the databases. If the Strike Team had found a well to be leaking at the surface, CalGEM, which was present and a participant at the inspections, would have implemented the appropriate process to further investigate the well and conduct sub-surface monitoring and remediation, if necessary. Finally, the recommendations include future inspection of the wells not looked at under this effort and repeated inspection of the inspected wells at 3-to-5-year intervals.

6.G. Report format is unwieldy

The report format tends to emphasize up front (for instance in the Executive Summary) less important details such as how many meetings were carried out, or who took part), but buries important new recommendations deep inside the report. It is hard to find important report takeaways without re-reading information included from previous reports in this cumulative format. An additional summary of key takeaways and recommendations would be useful, in order to highlight the important work of the team.

The report format is consistent with the previous reports and intended to be cumulative. That said, the Strike Team added - a summary of all the recommendations to the Executive Summary and Section 1.3 of the report for easier reference.

Advisory Panel Second District COMMENTS ON PHASE 2 REPORT #5

1. Prioritization criteria for abandoned wells is missing consideration of the proximity of geologic faults. As noted in Appendix A of the report, a panelist previously suggested that the Strike Team consider earthquake impacts on health and safety related to LA County oil and gas infrastructure. The response was that “[p]roximity to an earthquake fault could be added as a criteria for abandoned wells, although the impacts of an earthquake could be felt Countywide and are not necessarily associated with an earthquake fault.” Faults subsequently were not added as a criterion for prioritizing abandoned wells. Yet, the presence of active injection wells is a criterion, because as rightly stated in the report, “active injector wells give rise to the potential for leakage from a well due to the increased reservoir pressures near the injection wells.” What is overlooked, however, is that injection has been definitively linked with seismicity in many areas. Therefore, the presence of a fault paired with injection can lead to greater risks associated with nearby abandoned faults.

Evidence of induced seismicity has been documented in numerous states, including California. For example, a published 2016 study linked wastewater injection in the Tejon Oil Field in Kern County to a September 2005 earthquake swarm of three $M \geq 4$ events near the White Wolf Fault. Meanwhile, in a 2009 USGS report, it was found that an earthquake cluster of 96 events ranging from magnitude 2 to 4.5 occurred in the San Ardo Oil Field in Monterey County between 1967 and 2008. The report acknowledges that some of these earthquakes were likely caused by fluid withdrawal, along with enhanced recovery procedures such as steam and water injection. An earthquake can occur at any time, with or without nearby injection, but since injection can increase earthquake risk, both injection and seismicity should be considered in the context of leakage risks from abandoned wells.

The impacts of an earthquake anywhere in the County could impact an abandoned well and the potential for that well to leak, therefore, proximity to an earthquake fault was not used as a criterion for prioritizing wells in the report since an earthquake could affect any well. Although seismic risks could have an effect on the propensity for wells to leak given an earthquake, seismic risk would most likely not have affected the priority of the wells as identified. The priority system was based on a range of factors, and the proximity of a well to a fault system and the frequency for fault activity were considered lower contributing factors than the age of the wells, the abandonment method and the history of the reservoirs and wells (such as blowout history).

The fact that uplift/subsidence and seismicity issues have been linked to other areas associated with active wastewater injection or unbalanced production (fluid withdrawal) and injection was acknowledged in the report (see Section 3.2.4 and Figure 3.3). The well prioritization scheme ranked wells based on proximity to an injector well with maximum points for wells located in close proximity to an injector well. Proximity of an abandoned well to an injector would continuously contribute to the propensity for the abandoned well leakage, whereas seismic activity would be a function of the rate of occurrence of seismic activity along with a range of other issues (fault configuration, proximity downhole to fault configurations, if the well bore crosses the fault, etc.) and was therefore not included.

2. In continuing monitoring of abandoned wells, tests should be done for leakage both at the surface and in the subsurface. One recommendation by the Strike Team is for CalGEM or the County to continue to evaluate high priority wells on the time scale of every 3 to 5 years so that, if a leak is detected, those wells can be prioritized for plugging and abandonment to today’s standards. However, these leak tests seem limited to surface leaks rather than those that could occur in the subsurface. According to the report: “The leak test should include sampling with a portable gas

detector and a soap bubble test.” This suggests no sort of testing for subsurface contamination from an abandoned well, yet studies have indicated the potential for such contamination to occur. In a 2019 study of Fruitvale Oil Field in Kern County, methane was found in 11 out of 14 groundwater samples. The isotopic signatures of these samples indicated an oil and gas reservoir source, indicating a connection between oil-bearing formations and the overlying groundwater aquifer. The likely cause of the methane was found to be stray gases migrating from the oil reservoir to the groundwater reservoir along some preferential pathway, such as a leaky wellbore. Groundwater sampling could indicate subsurface migration of gases that would go undetected by surface sampling. Such a detection could lead to remediation of a well before gas migration eventually proceeded to the surface, potentially imperiling public health.

The report acknowledges the fact that the surface air quality monitoring completed by the Strike Team cannot determine whether a well is leaking sub-surface or will leak in the future, see Section 3.6.6. The use of the soap bubble test is discussed for wells that have been identified and excavated as part of a development project. A soap bubble test is also part of the review by CalGEM.

Regarding sub-surface monitoring, the majority of the wells investigated are located on private property in residential yards and under homes or under streets or other paved surfaces, see Table 3.23; therefore, excavation of those wells is not feasible and is out of scope of the Strike Team Project. Larger sub-surface leaks could present at the surface as well, and the in-field work was also attempting to identify if this was occurring. Groundwater sampling would allow for the identification of potential leakage subsurface, with connections to the groundwater. While this may be an issue for drinking water standards, it is not necessarily an issue for public health and safety as directed by the BOS. Groundwater sampling is currently conducted and provided via the State Water Resources Control Board GAMA system and this could be utilized to understand potential ground water contamination.

However, if the Strike Team had found a well to be leaking at the surface, CalGEM would have implemented the appropriate process to further investigate the well and conduct sub-surface monitoring if necessary.

3. The report’s inventory of chemicals used in oil and gas extraction-related activities in Los Angeles does not fully indicate potential harms. The report relies upon the South Coast Air Quality Management District (SCAQMD) Rule 1148.2 database to characterize chemical use related to oil and gas in Los Angeles County. The result is a fairly exhaustive list of chemicals used, but then the list is pared down to those chemicals designated as acutely toxic or explosive, largely based on the California Code of Regulations (Appendix A to Section 5189 – List of Acutely Hazardous Chemicals, Toxics and Reactive) and the EPA ATF listing of Explosive Chemicals. Thus, out of a conservatively estimated dozens of unique chemicals used in LA County, Table 6.10 seems to suggest that only nine are of any concern related to public health. This is potentially misleading.

First, the Rule 1148.2 database labels certain chemicals as air toxics, where an air toxic is a hazardous chemical that can become either a vapor or particles small enough to be transported through the air. According to a 2017 Center for Biological Diversity study, at least 38 different air toxic chemicals were used in Los Angeles County between June 2013 and February 2017. It is curious why the report ignores this categorization by the database on which its conclusions on chemical usage otherwise rely. Also, there are other hazardous chemicals lists other than those used by the report that are nonetheless credible. For instance, ethylbenzene and methanol are both on the EPA Hazardous Air Pollutant list, California Air Resources Board’s (CARB) Toxic Air Contaminant list, and the California Proposition 65 Chemical list, with ethylbenzene a potential carcinogen and methanol linked to reproductive harm. Meanwhile, 2-butoxy ethanol is on CARB’s Toxic Air Contaminant list, and xylene is on both the EPA and CARB lists. Yet, though listed earlier in

the chemical usage section, none of these chemicals ended up in Table 6.10, which presumably lists the chemicals of greatest concern. Only focusing on the “acute materials” obfuscates the potential harms of the other chemicals. A full risk assessment of chemicals used in oil and gas operations is warranted.

Section 6 of the report, Well Drilling and Well Maintenance Chemical Use, provides an overview of the chemicals used in well drilling and certain well completion processes. The SCAQMD Rule 1148.2 data base researched for the Project yielded 264 different chemicals used in those operations for the time period analyzed. Report Tables 6.5 through 6.9 provide the top 25 chemicals used in each of the well drilling activities in the SCAQMD Rule 1148.2 data base.

Report Section 6.3 and Table 6.10 provide additional detail on acute chemicals as those substances that could pose significant adverse health effects for immediate or short-term exposures. Note that most materials in the SCAQMD database do not pose an acute health risk to the public. Acute risk chemical are materials that, if spilled or otherwise released, could cause immediate public health impacts and are therefore considered to be the highest priority. Methanol, for example, is not normally an acute material as it is a liquid at standard conditions and if spilled would generally produce environmental issues along with some health issues in the immediate vicinity of the spill. Methanol becomes an issue, in health risk assessments for example, when it is emitted as part of normal air emissions from a facility and produces more long term or chronic effects. Note that methanol’s Immediately Dangerous To Life or Health (IDLH) value is 6,000 ppm, whereas ammonia’s value is 300 ppm. The emphasis in the report is the transportation of materials through neighborhoods, or the use of materials at wells located in close proximity to residences, where a potential release could cause immediate, acute health and safety impacts. This was considered a higher priority than materials which could cause more chronic, long-term effects, although this effect is still important and relevant. The use of materials during well drilling is normally short term, and relatively unregulated as these materials are not part of the fire department HMBP program and could be used without any knowledge by fire departments which might have to respond to an incident. The identification of materials that could be an immediate concern, and possibly need better coordination with the fire departments, was considered the highest priority, and therefore these materials were selected to be examined as part of the efforts. Note that Section 5 recommendation was amended to include AQMD 1148.2 database for acute and explosive materials that should be reviewed by fire department inspections.

Strike Team staff are familiar with health risk assessment protocols and guidelines including the AB 2588 Air Toxics "Hot Spots" Information and Assessment Act Health Risk Assessment (HRA) process, however, a risk assessment of the chemicals used in oil and gas operations is a substantial level of effort and, while potentially relevant to longer-term public health and safety, was out of the scope of the Strike Team Project.

4. Although outside of the purview of present efforts, going forward the County should consider pathways to full fossil fuel phaseout. Oil and gas production in California has caused an environmental justice and public health crisis. Eighteen percent of the state’s population lives within a mile of at least one oil or gas well. The highest-density oil and gas extraction areas are predominantly located near low-income communities and communities of color. These communities are disproportionately exposed to the health harms associated with oil and gas extraction such as cancer, respiratory illnesses, and pregnancy complications. Two recent studies focused on California specifically found associations between proximity to oil and gas production and preterm birth and low birth weight. A recent Harvard study found that an estimated 34,000 Californians died prematurely in one year because of fossil fuel pollution. Thus, fully addressing public health risks associated with oil and gas means ending our reliance on oil and gas.

The primary focus of the analysis, as directed by the BOS, was on public health and safety. As stated in the BOS September 4, 2018 meeting, the project is *“to assist with assessing the conditions, regulatory compliance and potential public health and safety risks associated with oil and gas facilities and related operations in the unincorporated communities of the County”*. The information and data presented in the reports can be used by decision makers to assist in the goal of phasing out fossil fuels and regulating the oil and gas industry.

5. A step along the path to fossil fuel phaseout in LA County would be further characterizing the oil currently produced in LA County. A complete analysis of public health harms associated with oil and gas is incomplete without a consideration of climate impacts. Through the California Air Resources Board, carbon intensity values for oil produced in California’s major oil fields are available – where carbon intensity is the amount of carbon dioxide produced per barrel of oil, a proxy for how “dirty” a given oil is to produce. Specifically, the carbon intensity values provided by CARB are attributed to the emissions from the production and transport of the crude oil supplied as petroleum feedstock to California refineries. Los Angeles County has four oil fields, Placerita, Montebello, Santa Fe Springs, and Inglewood, with carbon intensities (kg CO₂/barrel) higher than the overall state average: 191, 99, 73, and 58 kg CO₂/barrel, respectively, compared to a state average of 47 kg CO₂/barrel. In fact, in terms of carbon intensity, Placerita ranks number three in the entire state. Once again acknowledging that such considerations are outside of the purview of the present effort, future consideration of the dirtiness of oils produced in the County could inform phaseout. Beyond the climate benefits of considering carbon intensity, more carbon-intensive oils are often so because of the need for dirty energy-intensive extraction techniques such as enhanced oil recovery, which come associated with potential public health and environmental harms. So, considering carbon intensity could also help mitigate public health and environmental harms at the community level.

The primary focus of the analysis, as directed by the BOS, was on public health and safety. As stated in the BOS September 4, 2018 meeting, the project is *“to assist with assessing the conditions, regulatory compliance and potential public health and safety risks associated with oil and gas facilities and related operations in the unincorporated communities of the County”*. The information and data presented in the reports can be used by decision makers to assist in the goal of phasing out fossil fuel and regulating the oil and gas industry.

Advisory Panel Third District COMMENTS ON PHASE 2 REPORT #5

At the last meeting of the Advisory Panel, it was stated by DRP and the consultant at MRS that the next report (this report # 10) would be the final report prepared pursuant to the Board's motions. It was also stated that this report would include the final findings and recommendations of the Strike Team as a result of this process – in conformance with the Boards 2016 direction. Now that the report is nearing completion though, it is clear that the recommendations and conclusions included in this final report only pertain to the process involved in Phase II of the process, and do not incorporate observations associated with active oil and gas production, or a consideration of the changed conditions that have emerged since the conclusion of the Phase I occurred some 3 years ago.

As part of the Phase I investigation, the Strike team made numerous observations and recommendations in its Part 3 report on September 26, 2017. These included recommendations for modified zoning and permitting, and a series of requirements to mitigate site risk, such as monitoring. The following was the main takeaway from those recommendations:

"The primary regulatory recommendation derived from the implementation of the Strike Team Project is the preparation of a revised County Zoning Code for oil and gas operations to bring the regulatory framework up to date with existing oil and gas operations and new technological advances and extraction methods. This update was recognized as one of the overall goals of the Strike Team by the Board in its motion, and the need to gain thorough knowledge of the existing oil and gas operations in the unincorporated area of the County of Los Angeles is the initial first step towards a revised County Zoning Code for oil and gas operations.

Staff recommends a review and update to the County Zoning Code for oil and gas facilities and further recommends the updated Zoning Code include requirements to address issues noted"

The recommendations associated with the zoning code changes (including setbacks and monitoring) were the project of numerous site inspections at active oil and gas production sites, desktop evaluations of the records associated with those sites, and a review of regulations and requirements those facilities are subject to.

On March 29, 2016, the Board of Supervisors instructed the Department of Regional Planning to amend Title 22, the Planning and Zoning Code for unincorporated Los Angeles County, in order to ensure that oil and gas facilities may no longer operate by right in the unincorporated portions of the County and ensure that the regulations reflect best practices and current mitigation methods and technologies, minimize environmental impacts and protect sensitive uses and populations. The oil code update project is underway and continues with staff currently preparing a revision to the draft ordinance.

It is the Strike Team's understanding that the information in the Oil and Gas Inventory, Phase I and Phase II Strike Team reports have assisted and continue to assist the County in the development of the new oil and gas code. Additional information has been added to the report to also incorporate the findings and recommendations from the Strike Team Phase 1 efforts.

Since the end of Phase I in 2017, there have been multiple Executive actions aimed at phasing out oil and gas production practices and moving the state toward carbon neutrality in the name of climate pollution mitigation. Similarly, there have been reports and findings associated with the 2017 Oil and Gas methane rule passed by the California Air Resources revealing the regularity of leakage of methane and other pollutants from oil and gas infrastructure (including infrastructure in the study region). Additionally, there were findings by inspections conducted by South Coast AQMD as part of this study that components leaking methane were identified within the study area.

Finally, there have been actions taken by entities in the Los Angeles region to initiate a phase out of oil and gas production in alignment with climate and public health objectives.

I raise these issues not for the purpose of undermining the work that has gone into the Phase II report and its focus studying the integrity and emissions of old non-producing oil wells and pipelines, but to ensure the strike team maintains strong focus on the big issue before it – the 1270 active and 24 new oil production wells in the Unincorporated area of Los Angeles County. If, as DRP suggested, Report # 10 is the complete culmination of the work of the Strike Team, the report would be deficient in so far as it misses the much bigger point of what to do with active production in the area.

The Strike Team Inventory Report, Phase I and Phase II reports provide information and data on active oil and gas production in the unincorporated County. The information contained in these reports can be used by current and future decision makers to assist them in future planning efforts and adopting policies on climate change. The efforts can also be used in proposing new regulations on the oil and gas industry. The primary focus of the analysis, as directed by the BOS, was on public health and safety. As stated in the BOS September 4, 2018 meeting, the project is *“to assist with assessing the conditions, regulatory compliance and potential public health and safety risks associated with oil and gas facilities and related operations in the unincorporated communities of the County”*. The information and data presented in the reports can be used by decision makers to assist in the goal of phasing out fossil fuels and regulating the oil and gas industry. Additional information has been added to the report to also incorporate the findings and recommendations from the Strike Team Phase 1 efforts.

As to the issue of what to do with active production, I encourage the strike team to make a final review of the regulatory conditions that have changed (enumerated in part above), and the scientific evidence that has emerged about climate change since the 2017 Phase I report. As identified by the 6th assessment report release by the IPCC this summer, Climate Change is upon us, and the world is already passing major tipping points from which it cannot return. Evidence of extreme heat, fires, drought, extreme rain deluge is present everywhere, with California facing many of these challenges right now.

The Strike Team Phase I reports include a legislative and regulatory review, and the LA County oil and gas ordinance is currently under revision with staff working on the draft ordinance. The Strike Team acknowledges that while certain new climate change data and legislation have been developed, Phase I has been completed and additional review is beyond the scope of the Project. As noted above, the information contained in the Strike Team reports can be used by current and future decision makers to assist them in future planning efforts and adopting policies on climate change. The efforts can also be used in proposing new regulations on the oil and gas industry. The primary focus of the analysis, as directed by the BOS, was on public health and safety as stated by the BOS in the September 4, 2018 meeting. Additional Board direction related to Climate Change could be forthcoming and could be directed at additional studies or incorporation into the ongoing efforts related to code development.

As a result, and in conformance with the Board’s initial motion to “Convene a Strike Team to assess and report on a biannual basis the conditions, regulatory compliance and potential public health and safety risks associated with existing oil and gas facilities in unincorporated Los Angeles County,” only one reasonable conclusion can be made with respect to this process – that the Strike team should recommend the initiation of a process to curtail oil and gas production by all legal means available to it. In addition, and until such a result is achieved, the Strike Team should recommend the use of all available protections to prevent and mitigate exposure from oil and gas operations to the people of the region.

Recommendations as to the disposition of the oil and gas industry is being addressed in parallel efforts related to code development. However, as noted above, the information and data presented in the reports can be used by decision makers to assist in such a goal. The mitigation and recommendations included in the reports document the additional measures identified by the Strike Team to help minimize impacts to the public health and safety from oil and gas operations.

It is important to note that a considerable amount of high-quality work went into the identification and review of plugged and abandoned wells in the study area. Both the development of the prioritization matrix and well inspection protocols appear to be industry leading efforts. Further, it is important to note that the review of oil and gas wells included in the Phase II report did not identify a significant source of air emission from these wells - a result that is in alignment with other scientific studies on the topic. The comprehensive nature of the audit, including both air monitoring and community interviews is important for providing accuracy and completeness to the review. For this, the study team should be commended.

One issue of note is that for old oil wells studied, the site visits had an extremely low success rate for actually identifying the well head – which may have contributed to the low emissions detection. However, the fact that old wells are buried or otherwise unable to be found should not be the fault of the reviewers, and the presence of air monitoring equipment coupled with community interviews should mitigate most concern.

Comment acknowledged and appreciated. The Strike Team notes that had a well been found to be leaking at the surface, CalGEM would have implemented the appropriate process to further investigate the well and conduct sub-surface monitoring if necessary. As discussed in the report (Section 3.6.6), there were limitations to the methodology and one of those limitations was that many of the wells had no surface equipment and therefore the locations could not be verified. Surface equipment was identified for five wells, and these were located in the exact location as the CalGEM database, thereby indicating a certain degree of confidence in the locations of the non-visible wells. More exhaustive assessment, potentially including excavations and/or magnetometer assessments and sub-surface soil vapor measurements, could address some of these issues for the highest priority wells, but these efforts are intrusive and expensive and not within the projects current scope.