CENTER for BIOLOGICAL DIVERSITY Because life is good.

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via electronic mail and U.S. mail to:

Department of Conservation
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Re: Freeport-McMoRan Oil & Gas, LLC, Arroyo Grande Oil Field Aquifer Exemption--Dollie Sands, Pismo Formation

To Whom it May Concern,

The Center for Biological Diversity ("the Center") submits comments in opposition to the recommendation of the Department of Conservation, Division of Oil, Gas and Geothermal Resources ("DOGGR") to exempt the Arroyo Grande Oil Field ("AGOF") aquifer in order to allow Freeport-McMoRan ("FM") to inject oil wastewater into the aquifer via Class II wells. In this time of historic drought, DOGGR, the water boards, and the U.S. Environmental Protection Agency (EPA) must tread extremely carefully in risking California's dwindling water resources. The aquifer exemption application fails to provide critical information that would allow DOGGR or EPA to even begin to make that determination, and fails to address vital questions regarding the health, safety, and welfare of the surrounding environment and residents. What is more, the little discussion that exists in the application entirely ignores FM's simultaneous project to add hundreds of new wells and increase oil production up to nine to ten times current production levels. Without further information regarding the potential impacts of this massive expansion project on the hydrogeology and chemistry of the existing oil field and aquifer, and on risks to

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the area's groundwater resources, especially in a time of historic drought, the Center strongly recommends that DOGGR and EPA reject the Arroyo Grande aquifer exemption request.

I. Introduction

As DOGGR's issuance of up to 5,625 potentially unlawful Class II injection well permits shows,[1] DOGGR and the oil field operators have a history of ignoring laws and risking our water resources.[2] It is this history that has led to this aquifer exemption application. In 2011, the U.S. EPA commissioned a report on California's Underground Injection Control Program ("UIC Program") ("Horsley Witten Report"). That report found, *inter alia*, that state regulations did not protect aquifers as required by the SDWA and the State's primacy agreement.[3] The EPA requested that DOGGR provide an action plan quickly, requiring DOGGR to address the regulatory and other deficiencies by September 1, 2011.[4] To date, most of the issues identified in the Horsley Witten Report, including necessary amendments to regulations, remain unaddressed. On November 16, 2012, DOGGR acknowledged that it had been aware since 2009 that the UIC Program had failed to comply with state and federal law and regulations.[5] DOGGR stated then that a rulemaking would be commenced in 2013 to "update the UIC program, well construction, and plugging and abandonment regulations."[6] As of early February 2015, California had "identified approximately 2,500 wastewater disposal and enhanced oil recovery wells injecting into potentially non-exempt zones, 2,100 of which [were] still active. Of these, there are approximately 140 active wastewater disposal wells injecting into aquifers with Total Dissolved Solids (TDS) less than 3,000 mg/l, a key indicator under the federal Safe Drinking Water Act

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[1] Letter from Steve Bohlen, State Oil and Gas Supervisor, DOGGR, and Jonathan Bishop, Chief Deputy Director, State Water Resources Control Board, to Michael Montgomery, U.S. EPA (July 31, 2015) ("July 31, 2015 letter"), p. 1.

[2] Letter from Steve Bohlen, State Oil and Gas Supervisor, DOGGR, and Jonathan Bishop, Chief Deputy Director, State Water Resources Control Board to Jane Diamond, Director, Water Division, Region IX, U.S. EPA (February 6, 2015) ("February 6, 2015 letter"); Memorandum, CalEPA Review of UIC Program, from Matthew Rodriguez, Secretary of CalEPA to Cliff Rechtschaffen, Senior Advisor, Office of the Governor, and John Laird, Secretary, California Natural Resources Agency (March 2, 2015) ("March 2, 2015 CalEPA Memorandum"), *available at*: http://www.calepa.ca.gov/Publications/Reports/2015/UICFindings.pdf.

[3] Letter from David Albright, Manager, Ground Water Office, US EPA Region IX, to Elena Miller, State Oil and Gas Supervisor, DOGGR (July 18, 2011) ("July 18, 2011 letter").

[4] *Id.*

[5] Letter from Tim Kustic, State Oil and Gas Supervisor, DOGGR to David Albright, Manager, Ground Water Office US EPA Region IX, Response to the US EPA June 2011 Review of California's UIC Program (Nov. 16, 2012) ("November 16, 2012 letter").

[6] November 16, 2012 Letter, attachment: Response to the US EPA June 2011 Review of California's UIC Program, p. 1.

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(SDWA) of higher quality water."[7] By July 2015, the number of illegal wells identified had expanded to more than 5,600.[8]

At the outset, the law requires that water be presumed protected under the SDWA unless exempted; therefore, all injection should cease immediately.[9] Given that California is currently in the fourth year of a historic drought, and communities are more dependent than ever on underground water resources, it is vital that DOGGR act to ensure our aquifers are protected from the toxic waste generated by oil and gas production processes. Overall, 85 percent of California's public water systems depend on groundwater for at least part of their drinking water, and smaller urban and rural areas depend entirely on groundwater.[10] California's reliance on groundwater increases during times of drought and will continue to increase with the growing demand from municipal, agricultural, and industrial sources, especially as surface water availability changes as a result of climate change and drought.[11] The most recent data available as of October 2014 shows that groundwater levels have decreased in many basins throughout the state since spring 2013, and more notably since spring 2010; basins with notable decreases in groundwater levels are in the Sacramento River, San Joaquin River, Tulare Lake, San Francisco Bay, **Central Coast**, and South Coast hydrologic regions.[12] Indeed, there is precedent on the Central Coast for a scenario in which drought causes a major increase in reliance on groundwater supplies: during the last major drought in the late 1980s, the City of San Luis Obispo began pumping groundwater for the first time in history, and by 1990 it received 40% of its water from groundwater.[13]

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[7] March 2, 2015 CalEPA Memorandum, p. 1.
[8] July 31, 2015 letter, p. 1
[9] 40 C.F.R. § 144.7(a); 42 U.S.C. § 300h(d)(2).
[10] State Water Resources Control Board, Report to the Legislature: Draft Communities that Rely on Contaminated Ground Water (Feb. 2012) ("SWRCB, 2012"), p. 6.
[11] SWRCB, 2012, p. 6; Memorandum from Howitt et al., UC Davis Center for Watershed Sciences, to California Department of Food and Agriculture (May 31, 2015) ("Howitt, 2015"), *available at:* https://watershed.ucdavis.edu/files/biblio/2015Drought_PrelimAnalysis.pdf.
[12] Cal. Department of Water Resources, "Public Update for Drought Response: Groundwater Basins with Potential Water Shortages, Gaps in Groundwater Monitoring, Monitoring of Land Subsidence, and Agricultural Land Fallowing (November 2014) ("DWR, 2014"), pp. 5, 11 (emphasis added), *available at:* http://water.ca.gov/waterconditions/docs/DWR_PublicUpdateforDroughtResponse_GroundwaterBasins.pdf.
[13] Halverson, Nathan, "What will happen to a sinking California? Just ask San Luis Obispo," *Grist* (June 24, 2015) (Halverson), *available at:* http://grist.org/climate-energy/what-will-happen-to-a-sinking-california-just-ask-san-luis-obispo/.

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Even DOGGR now recognizes the need "to rethink the standard approach to produced water disposal in light of the increasing demand for groundwater."[14] DOGGR thus "recommends" that operators consider other options for produced water, such as treating and reusing the waste water for other uses, rather than go through "what could be a difficult, time consuming and, in some cases, unsuccessful process of proposing to increase or change the areal extent of currently exempted aquifers, or to exempt portions of new aquifers."[15] While the Center does not condone reusing oil wastewater for uses such as agriculture, DOGGR's recognition that measures other than allowing wastewater to be injected into California's precious resources must be found is correct. However, DOGGR, as the regulatory agency in charge of these injections, must approach these exemptions from the perspective that the protection of California's groundwater resources is of paramount importance, and must do far more than send unenforceable "recommendations". This is the only approach consistent with the federal Safe Drinking Water Act ("SDWA") and the State Oil and Gas Supervisor's duty to "supervise the drilling, operation, maintenance, and abandonment of wells and the operation, maintenance, and removal or abandonment of tanks and facilities attendant to oil and gas production … within an oil and gas field, so as to prevent, as far as possible, damage to life, health, property and natural resources; damage to underground oil and gas deposits from infiltrating water and other causes; loss of oil, gas or reservoir energy, and damage to underground and surface waters suitable for irrigation or domestic purposes by the infiltration of, or the addition of, detrimental substances."[16] As the current drought has shown us, the State of California does not have the luxury of being able to sacrifice its valuable water resources for the convenience of the oil and gas industry.

Perhaps the most egregious aspect of the AGOF exemption request in particular, however, is the fact that FM is simultaneously seeking to double its permitted oil production barrels per day (bpd) from 5,000 to 9,000 to10,000, which is up to a ten-fold increase in current production.[17] The State and federal regulators--charged with protecting California's precious

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[14] DOGGR, "Notice to Operators: A Strategy for Produced Water" (Sept. 9, 2015, *available at:* ftp://ftp.consrv.ca.gov/pub/oil/Notice_to_Operators/NTO_9-2015_A%20Strategy%20for%20Produced%20Water.pdf.

[15] *Id.*

[16] Cal. Pub. Res. Code § 3106(a).

[17] San Luis Obispo County Department of Planning and Building, Initial Study, Phase V Oilfield Expansion Conditional Use Permit (November 2012) ("Phase V Initial Study"), p. 2, *available at:* http://www.slocounty.ca.gov/Assets/PL/environmental/plains/Environmental/initialstudy.pdf; Price Canyon Oilfield

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groundwater--should not even consider this exemption request unless and until the effects of this project on the aquifer and surrounding groundwater sources have been analyzed. If this willful disregard of a simultaneous proposed major oilfield expansion by the same applicant were not enough of a reason to deny this request, however, the State and US EPA must deny it because the burden is on the applicant to demonstrate it meets the state and federal criteria for an aquifer exemption, and this application does not meet that burden. It does not demonstrate that the aquifer is not and cannot be used as a source of drinking water, or that it is zonally isolated and will not affect other sources of water for domestic, agricultural, and other beneficial uses. It fails to analyze the risks to the integrity of the aquifer and the wells posed by earthquakes, subsidence, and other pressure changes, made all the more concerning given the proposal to increase the bpd oil production nearly ten times. For all of these reasons, this exemption must be denied.

II. Legal Requirements

A. Presumption is in Favor of Protecting Drinking Water, and Against Exemption

Congress passed the Safe Drinking Water Act ("SDWA") to protect public health by regulating and protecting the nation's public drinking water supply. The federal underground injection control program, part C of the SDWA, was established to safeguard underground drinking water sources endangered by underground injections.[18] The SDWA and its attendant regulations ("Federal Regulations") protect not only existing public water systems;[19] crucially, they also safeguard any drinking water source that supplies, or can reasonably be expected in the future to supply, any public water system.[20] In other words, the SDWA and the Federal Regulations preserve future sources of drinking water by prohibiting their contamination *before* they are drawn upon.

The primary purpose of the regulations promulgated pursuant to the Safe Drinking Water Act is to protect drinking water and potential sources of drinking water. It does not seek to balance the protection of drinking water and potential drinking water sources with industrial use

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Project (Freeport McMoran Oil & Gas) - DRC2012-00035, *documents available at:* http://www.slocounty.ca.gov/planning/environmental/environmentalnotices/pxp.htm.

[18] *Legal Envtl. Assistance Found., Inc. v. United States EPA*, 118 F.3d 1467, 1475-76 (11th Cir. 1997) (quoting House Report, H.R. Rep. No. 93-1185 at 29, reprinted in 1974 U.S.C.C.A.N. 6454, 6481).

[19] A public water system is a system for the provision of public water for human consumption through pipes or other constructed conveyances, which has at least 15 service connections or regularly serves at least 25 people. *See* 40 U.S.C. § 300f(4).

[20] 42 U.S.C. § 300h(d)(2).

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of those sources. Rather, the statutory language, purpose and intent safeguard water sources from Class II well injection activities. As the court found in *United States v. King*,

> The injection provisions of the SDWA are "preventive." 1974 U.S.C.C.A.N. at 6463. Congress concluded that the most effective way to ensure clean drinking water was to prevent pollution of underground aquifers in the first place, rather than to clean up polluted aquifers after the fact. Under the SDWA, the danger posed by proposed injections to an underground aquifer is determined during the permitting process. As noted above, the SDWA puts the burden on a permit applicant to show that a proposed injection will not endanger an USDW. If an applicant fails to show that a proposed injection is safe, the SDWA requires that the permit be denied. That is, in the absence of a showing by the applicant that a proposed injection is safe, the SDWA presumes that the injection will endanger an USDW.[21]

Thus, here, the burden is on FM to prove that the aquifer will not endanger a USDW, and this application fails to do that.

For one, this application does not provide the specific constituents that will be injected into the aquifer, but oil waste water generally contains toxic contaminants that can endanger this aquifer as well as surrounding USDWs. Produced water from oil extraction contains not only naturally occurring chemicals and hydrocarbons, but also many of the same chemicals from the well stimulation along with contaminants mobilized from underground, in part via flowback fluid. In its recently-published report into hydraulic fracturing in California ("CCST Report"), the California Council of Science and Technology identified over 300 unique chemicals being used in hydraulic fracturing fluids in California.[22] Nearly one third of those chemicals did not have a Chemical Abstracts Service Registry Number (CASRN). Chemical additives reported without a CASRN cannot be fully evaluated for hazard, risk, and environmental impacts due to lack of specific identification.[23] The absence of any such evaluation means that it cannot be concluded that such chemicals will not cause harm. In the absence of a positive conclusion that a chemical will not cause harm, it must be concluded that they "may" cause harm. Accordingly, USDWs must be protected from contamination by chemicals without a CASRN. Of the chemicals used in hydraulic fracturing processes in California, "approximately one-half of chemicals used do not have publicly available results from standard aquatic toxicity tests. More

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[21] *United States v. King*, 660 F.3d 1071, 1079 (9th Cir. 2011).
[22] California Council of Science and Technology, Potential Environmental Impacts of Hydraulic Fracturing and Acid Stimulations (Jul. 2015) ("CCST Report"), Vol. II, Ch. 2, p. 50.
[23] *Id.*

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than one-half are missing biodegradability, water-octanol partitioning analysis, or other characteristic measurements that are needed for understanding hazards and risks associated with chemicals."[24] Again, in the absence of information demonstrating that these chemicals will not cause harm to human health, it must be concluded that these substances *may* cause harm, and therefore they must not enter a USDW.

A survey of chemical analyses reported by well stimulation companies posted to the DOGGR reporting website shows that benzene is detected in flowback fluid at high levels—on average, 700 times the federal drinking water limit.[25] In chemical analysis reports submitted to DOGGR, tests found flowback fluid contained, among other chemicals and elements, naphthalene, hexavalent chromium, selenium, strontium, and barium.

In addition to containing chemicals used in well stimulation, wastewater can contain many harmful chemicals in the produced water (naturally occurring water drawn up along with oil), including heavy metals such as lead, mercury, and arsenic; polycyclic aromatic hydrocarbons; and even naturally occurring radioactive material.[26] Benzene, an extremely toxic carcinogen, is a common constituent of oil and gas wastewater in California.[27] DOGGR's own study found benzene in produced water samples at concentrations at 3,600 times EPA's limit for drinking water.[28] All of these substances may adversely affect the health of a human.

As a result of the potential for injectate to harm USDWs, the environment, and human health, as well as the importance of water to sustain life, all potential sources of drinking water are by default protected; as stated above, all injection into any non-exempt portion of the aquifer is in violation of state and federal law and must cease immediately. In order to allow an aquifer to be polluted, active administrative processes must be undertaken to overcome the presumption

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[24] *Id.*

[25] Cart, J., *High Levels of Benzene Found in Fracking Wastewater*, Los Angeles Times, Feb. 11, 2015, *available at:* http://www.latimes.com/local/california/la-me-fracking-20150211-story.html#page=1; DOGGR, Well Stimulation Database, *available at:* http://maps.conservation.ca.gov/doggr/iwst_index.html; 40 C.F.R. § 141.61(a) (maximum contaminant level for benzene is 0.005 mg/L, or 5 ppb).

[26] While data gaps exist for chemical compositions of California produced water, studies of other oil fields have detected harmful chemicals. *See*, *e.g.*, Benko, K., "Produced Water in the Western United States: Geographical Distribution, Occurrence, and Composition," 25 *Environmental Engineering Science* 2 (2008); Pampanin, Daniela & Magne Sydnes, M., "Chapter 5: Polycyclic Aromatic Hydrocarbons a Constituent of Petroleum: Presence and Influence in the Aquatic Environment," *Hydrocarbon* (Vladimir Kutcherov and Anton Kolesnivikov eds. 2013) at 87.

[27] Gamache, Mark T., DOGGR, "Benzene in Water Produced from Kern County Oil Fields Containing Fresh Water" (1993), *available at:* ftp://ftp.consrv.ca.gov/pub/oil/publications/Open-file2.pdf.

[28] *Id.* at p. 11, Table 1 (finding produced water samples with up to 18.0 parts per million, up to 3,600 times greater than the EPA limit for drinking water (0.005 parts per million).

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of protection. Section 144.7 of the Federal Regulations to the SDWA provides that the Director "shall" protect as underground sources of drinking water all aquifers, and parts of aquifers, that meet the definition of a USDW.[29] The obligation to protect USDWs arises whenever an aquifer meets the criteria of a USDW, regardless of whether the Director has not acknowledged the source as such.[30] An USDW can only be exempt from the default protections if the Director actively undertakes the required administrative process.[31]

B. Federal and State Requirements for Aquifer Exemptions

Procedurally, an exemption requires a two-step process: (1) an operator will propose to the state agency (DOGGR) that an aquifer be exempt, and (2) if DOGGR approves, it will propose the exemption to the EPA.[32] Both federal and state law lay out the conditions that must be met in order for DOGGR, the water boards, and EPA to consider whether to exempt an aquifer from the protections of the SDWA. DOGGR's decision to submit an aquifer exemption to EPA for approval is a discretionary action. Under the Federal Regulations, an aquifer or a portion of an aquifer cannot be exempted unless:

> (a) It does not currently serve as a source of drinking water; and
> (b) It cannot now and will not in the future serve as a source of drinking water because:
> (1) It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.
> (2) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;
> (3) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or
> (4) It is located over a Class III well mining area subject to subsidence or catastrophic collapse; **or**
> (c) The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system. . . .[33]

[29] 40 C.F.R. § 144.7(a).
[30] *Id.*
[31] 40 C.F.R. § 144.7(b).
[32] *Id.*; 40 CFR § 145.32.
[33] 40 CFR § 146.4 (emphasis added).

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In other words, under the Federal Regulations, DOGGR and EPA cannot exempt an aquifer from the protections of the SDWA to allow Class II injection wells if the aquifer currently serves as a source of drinking water, can or could in the future serve as a source of drinking water, *or* if the water is between 3,000 and 10,000 mg/l TDS and reasonably expected to supply a public water system (If the water is under 3,000 mg/l TDS, if it could reasonably be expected to supply a public water system, the aquifer should not qualify for an exemption, because it is considered high quality water.)[34]

State law further delineates criteria for when an aquifer may be exempted to allow Class II injection wells. Under Section 3131 of the Public Resources Code,

> (a) To ensure the appropriateness of a proposal by the state for an exempted aquifer determination subject to any conditions on the subsequent injection of fluids, and prior to proposing to the United States Environmental Protection Agency that it exempt an aquifer or portion of an aquifer pursuant to Section 144.7 of Title 40 of the Code of Federal Regulations, the division shall consult with the appropriate regional water quality control board and the state board concerning the conformity of the proposal with all of the following:
> (1) Criteria set forth in Section 146.4 of Title 40 of the Code of Federal Regulations.
> (2) The injection of fluids will not affect the quality of water that is, or may reasonably be, used for any beneficial use.
> (3) The injected fluid will remain in the aquifer or portion of the aquifer that would be exempted. . . .[35]

"Beneficial uses" "include, but are not limited to: domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves."[36] Thus, in addition to the federal criteria, DOGGR and the water boards must ensure that the aquifer is zonally isolated--that injection of fluids will entirely remain in the exempted portion of the aquifer and will not affect any water that is, or can reasonable be, used for any of these other beneficial uses.

III. Argument

A. The State and EPA Must Reject the AGOF Aquifer Exemption Request Because FM's Application Ignores a Foreseeable Major Expansion in the Number of

[34] March 2, 2015 CalEPA Memorandum p. 1.
[35] Cal. Pub. Res. Code § 3131.
[36] Cal. Water Code § 13050(f).

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Wells, Well Pads, and Oil Production at the AGOF, Which Will Drastically Increase the Amount of Wastewater

FM is in the process of applying for a conditional use permit to increase oil production at the AGOF from the current approximately 1,000 barrels per day (bpd) of oil to up to 9,000-10,000 bpd--up to a nearly ten-fold increase in oil production ("Phase V expansion project").[37] The project would add 350 new wells and 100 replacement wells on 11 new well pads and 38 modified well pads, and will include both vertical and directional drilling.[38] In its initial study, the County of San Luis Obispo found that this project has the potential for significant impacts and impacts that require mitigation to, among other environmental resources: wildlife species and vegetation that are endangered or threatened by water degradation,[39] geology,[40] groundwater and hydrology.[41]

Even though it is currently in the application and environmental review process for this major expansion project, FM's aquifer exemption application fails to acknowledge it. The only place an expansion is contemplated at all is an introductory note indicating that "[c]urrent oil production averages 1,350 barrels of oil per day (bopd) and is estimated to exceed 6,000 bopd when the field is fully developed."[42] Yet, the impacts of even that much smaller expansion are not analyzed in the application.

There are too many questions that accompany this project that must be answered before the agencies can even begin to consider whether an aquifer exemption is warranted. Crucially among these are:

- Volume - How much extra wastewater will be produced? How much wastewater will move through the Water Reclamation Facility ("WRF") and ultimately be discharged into

[37] Freeport McMoRan Application for Aquifer Exemption, Arroyo Grande Oilfield ("FM Application"), p. 3; Phase V Initial Study, p. 2; San Luis Obispo County Department of Planning and Building, Scoping Meeting Presentation (Feb. 19, 2014), *available at:* http://www.slocounty.ca.gov/Assets/PL/environmental/plains/Environmental/Scoping+Meeting/Presentation+2-19-14.pdf.
[38] Phase V Initial Study, p. 2.
[39] Phase V Initial Study, pp. 13-18. *See also* California Department of Fish and Wildlife, Letter in Review of the Phase V Environmental Impact Report Notice of Preparation (January 8, 2013), *available at:* http://www.slocounty.ca.gov/Assets/PL/environmental/plains/Environmental/Notice+of+Preparation+(NOP)/Responses+Received/CADFW.pdf.
[40] Phase V Initial Study, pp. 21-22.
[41] Phase V Initial Study, pp. 41-48.
[42] FM Application, p. 3.

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Pismo Creek, and can the WRF handle that much water?[43] Will the NPDES permit need to be modified in order to discharge more water into Pismo Creek? How much will be reinjected into the aquifer? What is the volume of injected water the aquifer can handle, and how will this affect the ongoing "dewatering" project?[44] Is there a risk of subsidence from groundwater depletion, including from the dewatering project?

- Groundwater flow, hydrology, and zonal isolation - How will this extraction affect the aquifer pressure and resulting risks for changes in pressure, subsidence, and groundwater flow? What is the potential for the hundreds of new oil wells, including directional drilling wells, to induce fractures and earthquakes that can alter the groundwater flow and provide new pathways for polluted water to enter nearby drinking wells? Will it affect the volume and/or pressure of water that feeds nearby water wells?
- Toxicity - What chemicals will be injected into the aquifer to produce this oil, and what will be the chemical composition of the injection water be?

These are just some of the questions must be answered before the State and US EPA, in order to be diligent, law-abiding regulators, can even consider this exemption request.[45]

Moreover, it is likely that this aquifer exemption is intricately tied to the Phase V project in order to accommodate the large increase in the amount produced water. This exemption request is a discretionary action on the part of DOGGR,[46] and should therefore be subject to environmental review.[47] To the extent this exemption is necessary for Phase V to move forward, it has been improperly piecemealed under the California Environmental Quality Act (CEQA) from the Phase V project, and must be analyzed in the Environmental Impact Report for that

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[43] The WRF was built to handle a throughput of 20,000 bpd to accommodate a Phase IV expansion permitted output of 5,000 bpd of oil. PXP Produced Water Reclamation Facility Subsequent Environmental Impact Report (2008), ch. 3, "Project Description," *available at:* http://www.slocounty.ca.gov/Assets/PL/environmental/plains/Historical+Documents/2008+-+RO+Water+System+EIR/EIR+Documents/06+Chapter+3.0+Project+Description.pdf. This expansion project would double the permitted output.

[44] FM Application, pp. 17, 21 (describing the project to dewater the reservoir to increase oil output).

[45] *See generally,* EPA Aquifer Exemption Memorandum; DOGGR and SWRCB, "Aquifer Exemption Process Guidance Document" (April 10, 2015) ("DOGGR Aquifer Exemption Guidance").

[46] EPA Aquifer Exemption Memorandum, p. 3; Cal. Pub. Res. Code § 3131(c) ("Following review of the public comments, and only if the division and state board concur that the exemption proposal merits consideration for exemption, the division shall submit the aquifer exemption proposal to the United States Environmental Protection Agency.").

[47] CEQA applies to "discretionary" projects. Cal. Pub. Res. Code § 21080(a). CEQA Guidelines define discretionary projects as government actions requiring "the exercise of judgment, deliberation or decision," (CEQA Guidelines § 15357), and further provide, in part, that "CEQA applies in situations where a governmental agency can use its judgment in deciding whether and how to carry out or approve a project." CEQA Guidelines § 15002(i).

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project before it can move forward.[48] Even if the decision to exempt the aquifer in order to allow wastewater injection is a separate project, it alone has the potential to create a myriad of significant environmental impacts--to water quality, public health, and wildlife, among others--none of which has been analyzed in FM's application. For these reasons, before DOGGR and the water boards--who have responsibility to analyze the impacts and determine whether to submit the proposed exemption to EPA--can approve this project for submittal they must conduct environmental review under CEQA.[49]

B. EPA Must Reject the AGOF Aquifer Exemption Request Because FM Has Failed to Demonstrate that it Meets the Federal and State Criteria for Exemption

If the fact that the application ignores this proposed major expansion was not alone enough of a reason to reject the request, the exemption must be denied because the application fails to adequately analyze foreseeable risks to groundwater even given current operations. The risks of contamination of beneficial use waters from both oil extraction activities and from re-injecting produced water from oil and gas production are huge because of, among other reasons:

- data gaps in California's understanding of its groundwater quality and hydrogeology[50] that this application does little to supplement or rectify;
- the increasing number and depth of water supply wells in response to climate change and droughts;[51]
- the increasing amount of recent oil and gas extraction activities and injection permitting, including the instant Phase V expansion project;[52]
- data gaps and dangers associated with the chemistry of and exposure to toxic chemicals involved in oil and gas produced water and wastewater injection, [53] mirrored in this

[48] *See* CEQA Guidelines § 15126.2(a) (requiring an EIR to identify all significant effects on the environment); CEQA Guidelines § 15378 requiring analysis of the "whole of an action"; *Orinda Assn v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, 1171 ("CEQA cannot be avoided by chopping up proposed projects into bite-size pieces which, individually considered, might be found to have no significant effect on the environment or to be only ministerial.").

[49] Cal. Pub. Res. Code § 21065 and CEQA Guidelines § 15378 (defining "project" broadly). *See Bozung v. Local Agency Formation Commission* (1975) 13 Cal.3d 263, 283 ("The purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind. CEQA does not, indeed cannot, guarantee that these decisions will always be those which favor environmental considerations. At the very least, however, the People have a right to expect that those who must decide will approach their task neutrally, with no parochial interest at stake.")

[50] CCST Report, Vol. II, Ch. 2, pp. 51, 138, 152, 160, 165-166

[51] *See e.g.,* SWRCB, 2012; Howitt, 2015; DWR, 2014.

[52] Phase V Initial Study.

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application in the lack of data regarding the chemicals injected into the oil wells and in resulting produced and injected water;

- potential changes to the water flow paths that contribute to beneficial use reservoirs, including from changes in pressure, earthquakes, and subsidence which can occur naturally or induced by oil production and injection;[54] and,
- the existence of known and unknown abandoned wells, compromised wells, and other potential pathways of contamination.[55]

The AGOF aquifer exemption application does not and cannot demonstrate that these risks are minimal here, because it has not submitted sufficient data to make that determination. FM therefore fails to demonstrate that the aquifer meets state and federal requirements for an aquifer exemption. In addition, as demonstrated below, even though the burden is on FM to demonstrate that the aquifer meets the criteria and the legal presumption is in favor of protecting groundwater, the analysis in the application is so cursory and vague that it cannot meet this burden. As a result, the exemption request must be rejected.

1. *FM Has Not Demonstrated That the Aquifer is and Will Remain Zonally Isolated (Cal. Pub. Res. Code § 3131(a)(3))*

The California Public Resources Code requires exempted aquifers to be zonally isolated such that the injection of fluids will not affect water that is, or may reasonably be, used for any beneficial use.[56] DOGGR's Aquifer Exemption Guidance confirms that

> State Water Board staff will evaluate the information contained in the Aquifer Exemption Application as to whether or not the proposed injection will likely affect current or potential future beneficial uses of water. If for example, there is an aquifer that is currently being used, or could be used for beneficial purposes in the area where there may be a hydrological connection to the injection zone, and the injection could have an impact on this or other beneficial uses, the State will not pursue and aquifer an exemption. Demonstration of a lack of hydrologic connection is critical to pursue an aquifer exemption.[57]

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[53] CCST Report, Vol. II, Ch. 2, pp. 50, 82, 87, 96-98, 115, 150, 156-158.
[54] CCST Report, Vol. II, Ch. 2, pp. pp. 104-109, 117-121, 124, 125-126, 151, 165.
[55] CCST Report, Vol. II, Ch. 2, pp. 104-109, 122-125, 159; United State Government Accountability Office (US GAO), "EPA Program to Protect Underground Sources from Injection of Fluids Associated With Oil and Gas Production Needs Improvement," Report to Congressional Requesters (GAO-14-555, June 2014) ("GAO Report"), pp. 23-24.
[56] Cal. Pub. Res. Code §§ 3131(a)(2), (3).
[57] DOGGR, Aquifer Exemption Guidance, p. 4.

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The Federal Regulations confirm this requirement, given that the aquifer will be used for Class II wells if exempted: all new Class II wells must be sited "in such a fashion that they inject into a formation which is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review."[58]

In addition, the injection of chemical-laden fluid into an area not zonally isolated from sources of drinking water may be contrary to Proposition 65.[59] Proposition 65 provides that "[n]o person in the course of doing business shall knowingly discharge or release a chemical known to the state to cause cancer or reproductive toxicity into water or onto land where such chemical passes or probably will pass into any source of drinking water, notwithstanding any other provision or authorization of law."[60] Many of the chemicals found in flowback fluid are included by the State on the list of chemicals known to cause cancer or reproductive toxicity. Accordingly, the injection of flowback fluid in circumstances where there is not zonal isolation from drinking water sources may result in a violation of Proposition 65.

DOGGR and EPA, therefore, must not grant any exemptions where zonal isolation cannot be guaranteed. Complementing this limitation on DOGGR's power to grant authorizations to inject, the federal regulations provide that:

> [n]o owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons. **The applicant for a permit shall have the burden of showing that the requirements of this paragraph are met.**[61]

Accordingly, the burden of demonstrating zonal isolation must be placed on permit applicants.

Here, that burden has not been met. FM claims in its application that the aquifer in which injection will take place is zonally isolated and poses little risk to nearby wells or groundwater. The application itself fails to prove this, however, and in fact, there are indications that pathways to other sources of water already exist. For example, there is a hydrologic connection between the aquifers of Edna Valley and Price Canyon.[62] The application also notes "some

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[58] 40 CFR § 146.22(a).
[59] Cal. Health & Safety Code §§ 25249.5 *et seq*.
[60] Cal. Health & Safety Code § 25249.5.
[61] 40 C.F.R. § 144.12 (emphasis added).
[62] FM Application, p. 19; Appendix G-1-1, Review of DWR Well Completion Reports by Cleath-Harris Geologists, Inc. (June 25, 2015), p. 2.

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interconnectivity between certain layers of the reservoir."[63] This information alone dooms the application.

Previous statements and project studies have also contradicted the assertion that this aquifer is zonally isolated. The initial study for the Phase V expansion project--to add up to 350 new wells and 100 replacement wells in order to double the permitted daily oil production (and increase the permitted product up to ten times more than what is currently produced)--states that "[a]s this formation is relatively close to the surface, potential impacts increase to nearby potable groundwater tables."[64] The Final Environmental Impact Report for the previous Phase IV oil well expansion project on site also noted the potential for injection wells at this site to impact other beneficial and potable groundwater: "[w]astewater generated through the petroleum recovery process would be reinjected into wastewater injection wells. This wastewater reinjection could impact shallow groundwater supplies if the wastewater came in contact with groundwater used for domestic purposes. If this occurred, the water quality of down-gradient public and municipal water production wells could be degraded."[65] Indeed, at the Scoping Meeting on the Phase V oil production expansion project, neighbors argued that they were "'[h]aving problems with groundwater wells in this area.' 'A number of residences have had to redrill water wells.'"[66] Previous comments on the Phase IV expansion EIR and Addendum also indicated that reports have shown a lack of zonal isolation.[67]

Additionally there are further reasons--none of which are analyzed in this application--that the hydrology in this subbasin is more interconnected and complex than FM contends. For instance, changes in pressure during oil extraction--or, in this case, purposeful, gradual

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[63] FM Application, p. 13.
[64] Phase V Initial Study.
[65] San Luis Obispo County Department of Planning Building, and Padre Associates, Inc., Final Plains Exploration and Production Phase IV Development Plan Environmental Impact Report (September 2004) ("Phase IV EIR"), section 5.7.2.3, *available at:* http://www.slocounty.ca.gov/Assets/PL/environmental/plains/Historical+Documents/2004+-+Phase+IV+EIR/phpEIR2004.pdf.
[66] Freeport-McMoRan Conditional Use Permit EIR Scoping Meeting Comments from February 19, 2014 Scoping Meeting ("Phase V Scoping Meeting Comments"), p. 3, *available at:* http://www.slocounty.ca.gov/Assets/PL/environmental/plains/Environmental/Scoping+Meeting/Scoping+Meeting+Summary.pdf.
[67] Letter and fax from John J. Harris, Richards, Watson, and Gershon, to Ellen Carroll, San Luis Obispo County Department of Planning and Building, and County Board of Supervisors re: Further Comments Re Helen Hale Appeal of Planning Commission Approval of Conditional Use Permit D010386D-Plains Exploration & Production Company Project - Arroyo Grande Oil Field (June 27, 2005) ("Harris Fax").

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dewatering of the reservoir--can cause water flow to divert or change direction.[68] In addition, drilling itself, hydraulic and steam fracturing, and other types of production at any stage can create conduits to previously isolated sources of water.[69] Existing, older, unused wells can create pathways as well.[70] Despite the fact that the application indicates that there are approximately 300 non-operating wells at the oil field,[71] the application fails to analyze the potential risk of unused wells creating new hydrologic pathways and connections to other groundwater sources.

Furthermore, the application fails to analyze the risk that earthquakes will create new pathways to other groundwater sources, and damage wells. Known and unknown faults can be conduits for fluid migration.[72] In fact, the Federal Regulations require that all new Class II wells be sited "in such a fashion that they inject into a formation which is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review."[73] The Arroyo Grande fault borders the proposed exempted area and is noted as a boundary to ensure zonal isolation, and there are other faults in the area as well.[74] The application, however, inexplicably contains no seismic analysis of this subbasin, or any analysis of potential changes in groundwater movement as a result of earthquakes that may occur. There is no analysis of potential impacts to this water if that fault shifts. What is more, oil and gas activity itself, including from wastewater injection, can activate faults and trigger earthquakes.[75] As a 2014

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[68] FM Application, pp. 17, 21 (dewatering). *See also,* Verweij, J. M., *Hydrocarbon Migration Systems Analysis*, (Amsterdam: Elsevier Science Publishers B.V., 1993), p. 52 ("Changing groundwater pressure conditions affect directly the system of groundwater flow in the basin. In addition, the directions of groundwater flow may also be influenced indirectly by the tectonically increasing groundwater pressure.")

[69] CCST Report, Vol. II, Ch. 2, pp. 104-109.

[70] CCST Report, Vol. II, Ch. 2, pp. 105, 107, 109, 122-123.

[71] FM Application, p. 3 ("Today there are about 260 wells in operation. To date, about 560 wells have been drilled. . . .").

[72] CCST Report, Vol. II, Ch. 2, pp. 125-126.

[73] 40 C.F.R. § 146.22(a). *See also* CCST Report, Vol. II, Ch. 2, p. 151 ("Site characterization requirements include a confining zone free of known open faults or fractures that separates the injection zone from underground sources of drinking water. . . .").

[74] Phase IV EIR, section 5.7.1.2.

[75] California Council on Science and Technology Lawrence Berkeley National Laboratory Pacific Institute, *Advanced Well Stimulation in California,* "Executive Summary" (August 28, 2014) ("2014 CCST Report"), pp. 41, 269-275, *available at*: http://ccst.us/publications/2014/2014wstES.pdf. Further study is needed as well. "[A]reas of the southern San Joaquin, Ventura, Santa Clarita and Santa Maria basins, where active water disposal wells are concentrated at present (Figure 5-10), have relatively high rates of seismicity in the 2-5 magnitude range. While undoubtedly most of these earthquakes are naturally-occurring, detailed study of the seismicity in relation to fluid injection will be needed to assess the likelihood that a proportion of the events in these areas are induced." 2014 CCST Report, pp. 275-6. *See also* Hamilton, Douglas H. and Richard L. Meehan, "Ground Rupture in the Baldwin Hills," *Science*, vol. 172, no. 3981 (April 23, 1971), pp. 333-344; Brodsky, Emily and Lisa J. Lajoie, "Anthropogenic Seismicity Rates and Operational Parameters at the Salton Sea Geothermal Field," *Science*, vol. 341 (Aug. 2, 2013); Ellsworth, William, "Injection-Induced Earthquakes," *Science*, vol. 341 (July 12, 2013).

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report noted: if "produced water is disposed of by injection and not handled through an expansion of water treatment and re-use systems, it could increase seismic hazards";[76] yet, the application contains no analysis of the potential for such activity to trigger or increase the risk of earthquakes here. Without a comprehensive analysis of the risk that earthquakes--natural or induced--will aggravate, widen, extend or otherwise modify existing faults or create new ones that then provide conduits for pollutants to travel out of the aquifer into surrounding groundwater, this application cannot move forward.

FM cannot, therefore, show that this aquifer is, and will be, zonally isolated. As current and previous environmental review records have noted, there is potential for injected wastewater to affect nearby potable groundwater and municipal water sources; and, as further described below, there are over 100 water wells within one mile of the oil field. Moreover, the application does not analyze the potential for changes in pressure, earthquakes, and unused wells to open new connections and redirect water flow. There are, therefore, real, foreseeable risks that the wastewater injected into the aquifer will affect other beneficial and drinking water sources, and without any analysis of these risks, the State and EPA cannot approve this exemption based on the application before it.

2. *FM Has Not Demonstrated That the Aquifer is Not Now Nor Could be in the Future Used for Drinking Water, or Supply a Public Water System (40 C.F.R. § 146.4(a), (b), (c)), or That Exemption and Injection will Not Affect Other Sources of Water Used for Drinking Water or Other Beneficial Uses (Cal. Pub. Res. Code § 3131(a)(2))*

This lack of analysis and information is especially alarming given that there are many groundwater supply wells very near the proposed exempted area, though, again, the analysis of the potential impact on these water supplies is not comprehensive enough to overcome the presumption in favor of protecting groundwater. The groundwater in the aquifer contains less than 3,000 mg/l TDS (and in some cases less than 1,000 mg/l),[77] which means that without the produced water chemicals injected into the aquifer, there is reason to believe it could be treated and used to supply a public water system.[78] Indeed, in a consultant's sampling of well W-1,

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[76] 2014 CCST Report, p. 41.
[77] FM Application, Appendix D 1-a.
[78] *See e.g.,* March 2, 2015 CalEPA Memorandum, p. 1, noting less than 3,000 mg/l as a key indicator of higher quality water.

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located in the northern portion of the AGOF just north of the Arroyo Grande fault, the consultant states that with "the appropriate treatment, groundwater could be utilized as a drinking water source."[79] In fact, San Luis Obispo County is among the top ten counties in California in terms of the number of communities in the county that rely on contaminated groundwater (treated prior to consumption) as a primary drinking water source.[80]

FM and its consultants acknowledge there are over 100 water wells within one mile of the oil field, "most" of which are in "separate sub-basins"--*but apparently not all*.[81] Most of these wells, in fact, tap into the Pismo Formation, which comprises the proposed exempted area.[82] In addition, FM's consultant examined generally what wells were within a mile of the oil field, but not necessarily within the boundaries of the proposed exemption, and did not disclose the exact locations of the wells it included.[83] Without exact well locations and depths, which are not provided here, it is not possible to determine whether others are drawing on this aquifer for water supplies, or whether this aquifer could be affecting other sources of water. In fact, one cross section in the application indicates water wells within a few feet of the proposed area.[84] DOGGR's Aquifer Exemption Guidance Document requires applicants to submit "[m]aps showing the locations of any and all water supply, injection, production, or monitoring wells that could have a hydrologic connection with the proposed exempted aquifer. This survey should include all active, inactive, idle, or plugged and abandoned wells within the study area, including any known faults and formation contacts."[85] EPA's Aquifer Exemption Checklist suggests that the application include maps and tables of "each of the inventoried water wells showing: Well Name/#, Owner, (Private/Public), Contact information, Purpose of well (Domestic, irrigation, Livestock, etc.), depth of source water, name of aquifer, well completion data, age of well (if known), and the primary source of well data." In addition, the application should include a map with "arrow(s) to indicate the direction and speed of GW in the aquifer proposed for

[79] FM Application, Appendix G 1-2.
[80] SWRCB, 2012, p. 10.
[81] FM Application, p. 9; FM Application, Appendix G-1-1, DWR Well Review by Cleath-Harris Geologists, Inc. (June 25, 2015), p. 1; FM Application, Appendix I-1-2, Monitoring Wells Map.
[82] FM Application, Appendix G-1-1, DWR Well Review by Cleath-Harris Geologists, Inc. (June 25, 2015), p. 5; *see e.g.,* FM Application, Appendices A.7.a. and A.7.a.1.
[83] FM Application, Appendix G-1-1, DWR Well Review by Cleath-Harris Geologists, Inc. (June 25, 2015), attached maps.
[84] FM Application, Appendix A.7.a.1; FM Application, Appendix I-1-2.
[85] DOGGR, Aquifer Exemption Guidance, pp. 7, 8.

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exemption."[86] Yet aside from a cross section diagram pointed out there are nearby ranch wells and a vague bubble map noting that there are wells within a mile of the oil field that draw from roughly the same area,[87] the application fails to provide any other data on the direction of groundwater flow or specific characteristics of nearby wells.

Nor does the application provide samples from these nearby wells, many of which are used for domestic use and/or irrigation. This is even more concerning given that neighbors have, in fact, described problems with their water wells: "'Having problems with groundwater wells in this area.' 'A number of residences have had to redrill water wells.' 'Some landowners in the area have problems with oil intrusion into their groundwater wells.'"[88] The application must, at a minimum, include a detailed, specific map, with latitudinal and longitudinal coordinates, that shows all drinking water wells within at least a two-mile radius of margins of the proposed exemption area. It addition, it must include a comprehensive well survey, including an analysis of the wells' water chemistries, depth screened intervals, and pumping rates.

As DOGGR acknowledges, because California is experiencing a devastating drought, drilling new and/or deeper wells is becoming much more common.[89] In its own Aquifer Exemption Guidance Document, DOGGR notes that that because "some water supply wells are being drilled increasingly deeper, supporting data must be current and accurate."[90] Groundwater in agricultural areas of the State, including the coastal regions, is particularly vulnerable during a drought because it is used to replace unavailable surface water supplies for agriculture, which reduces available water for both agricultural and potable use purposes. Increased pumping already stresses this "last resort" resource because it decreases groundwater levels below wells ("overdraft"), requires more and deeper wells, reduces groundwater quality (by drawing waters from more sources increasing the likelihood of cross-contamination), increases land subsidence (irreversibly reducing the storage capacity of the aquifer network), and threatens drinking water supplies to the many communities that depend mostly or entirely on groundwater for their potable water supply.[91] Newly deepened wells reduce the water pressure in existing shallow wells, forcing nearby users to also drill deeper wells as the existing wells risk running dry. In

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[86] EPA Aquifer Exemption Memorandum (attachment: Aquifer Exemption Checklist), C-1.
[87] *See* FM Application, Appendix G 1-1.
[88] Phase V Scoping Meeting Comments, p. 3.
[89] DOGGR, Aquifer Exemption Guidance, p. 5.
[90] *Id.*
[91] *See generally*, DWR, 2014.

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addition, Californians have been "forced . . . to use water of lesser quality to meet their needs."[92] This increased pumping and decreased surface water supplies makes any existing aquifers that are available for potential use – in agriculture or as a drinking source – that much more valuable during the current drought. Thus, here, even if fluid injection is at a minimum of 450 feet from the surface, as the application states, there is no guarantee that nearby well owners won't drill at least that deep, or drill new wells, into the same Edna Member, Dollie Sands and/or Pismo Formation, to access water.

In addition, at the same time FM is pursuing a massive expansion of its oil field operations and production, King Ventures, Inc. is pursuing the annexation to Pismo Beach and development of nearly 1,700 acres in the Price Canyon area.[93] This new development will need water. Oil development and residential development are going to increasingly collide over water resources, What is more, this development could have significant impacts on Pismo Creek and surrounding areas.[94] The County, DOGGR, the water boards, and the Department of Fish and Wildlife, the Department of Water Resources, and other environmental and land use agencies need to conduct a much more in-depth analysis of how to protect this area, rather than haphazardly sacrificing California's dwindling water and environmental resources to the oil industry.

Finally, there is evidence that water from the Arroyo Grande aquifer is, in fact, already used for drinking water and for municipal water systems. Groundwater from the Arroyo Grande aquifer is imported into the Pismo Creek Watershed.[95] The produced water that is filtered through the WRF is discharged into Pismo Creek. Pismo Creek helps recharge the Santa Maria water basin: "Natural recharge to the basin comes from seepage losses from the major streams, percolation of rainfall, and subsurface flow . . . Percolation of flow in Pismo Creek provides recharge for the northern portion of the basin."[96] The Santa Maria Water Basin is the "principal

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[92] DOGGR, Aquifer Exemption Guidance, p. 5; Krieger, Lisa M., "California Drought: San Joaquin Valley Sinking as Farmers Race to Tap Aquifer," *Mercury News* (August 19, 2015), *available at:* http://www.mercurynews.com/drought/ci_25447586/california-drought-san-joaquin-valley-sinking-farmers-race.
[93] Central Coast Salmon Enhancement on Behalf of the Pismo Creek/Edna Area Steering Committee, Pismo Creek / Edna Area Watershed Management Plan, Prepared for the California Department of Fish and Game (March 2009) ("Pismo Creek Watershed, 2009"), p. 85.
[94] *Id.*
[95] Coastal San Luis RCD and Upper Salinas - Las Tablas RCD, San Luis Obispo County Watershed Management Planning Project, Phase 1 (January 2014), Pismo Creek Watershed, Section 3.2.4.7, p. 344, *available at*: http://www.us-ltrcd.org/wp-content/uploads/2014/02/IRWM-Report.pdf.
[96] California's Groundwater, Bulletin 118, Central Coast Hydrologic Region California's Groundwater

source of water for thousands of residents and landowners."[97] As a result, the aquifer is currently a source of drinking water and other beneficial uses, and cannot be exempted from the SDWA.

IV. Conclusion

Because this application fails to account for FM's simultaneous major expansion project, and because it fails to include even the most basic information needed to evaluate its consistency with California and federal law, DOGGR and EPA must reject it. Contrast, for instance, this application with EPA's review and approval of an aquifer exemption request in another case. There, in reaching its decision, EPA evaluated a number of factors, including: "(1) whether the 6.7 acre area meets the agency's criteria for exempted aquifers, (2) the various comments received from interested groups and individuals, (3) the impact of the proposed mining project on the environment in general and on surrounding sources of drinking water in particular, (4) the impact of the proposed mining project on human health, (5) restoration of the mining site and removal of contaminants from the exempt aquifer area, and (6) reasonable alternatives to the exemption as well as alternatives to the type of mining proposed by Wyoming Fuel Company."[98] Here, the application did not provide any information on the impact of the proposed exemption on the environment in general, on surrounding sources of drinking water, on human health, or any alternatives to the exemption. Nor did the application discuss restoring the site; rather, it entirely ignored the fact that the applicant is simultaneously proposing to expand it.

Finally, even if, despite these reasons, the State and EPA still believe they should grant the exemption, they should not grant it until California's new Underground Injection Control (UIC) program regulations have been adopted. Without knowing what the requirements and mitigation measures for injection will be, there is no way to analyze how or whether continuing to allow illegal injection into the aquifer could migrate, harm the environment, or degrade nearby water wells. As a result, unless and until FM has submitted a constructive and comprehensive application that actually proves the AGOF aquifer meets the standards for an exemption, and unless and until the State has finalized its UIC program regulations, the application must be rejected and injection into the non-exempt portions of the AGOF must cease immediately.

Santa Maria River Valley Groundwater Basin (last update, 2/27/04), citing Cal. Dept. Water Resources (DWR), Water Resources of the Arroyo Grande - Nipomo Mesa, 2002.

[97] *City of Santa Maria v. Adam* (2012) 211 Cal. App.4th 266, 280.

[98] *Western Nebraska Resources Council v. Environmental Protection Agency*, 793 F.2d 194, 200 (8th Cir. 1986).

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Sincerely,

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