



SENATE BILL 4: A PAST AND FUTURE LOOK AT REGULATING HYDRAULIC FRACTURING IN CALIFORNIA

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Preface

This report was primarily researched and written by Michael Murza (King Hall '13), J.D., Environmental Law Fellow with the California Environmental Law and Policy Center (CELPC) at the UC Davis School of Law. The report was completed under the guidance of and with review by Richard M. Frank, Executive Director of CELPC and Professor of Environmental Practice at the UC Davis School of Law. Special thanks to Sam Sellers, King Hall's graphic designer, for his work on the design and layout of this document.

This analysis builds on scholarship previously developed by former CELPC Environmental Law Fellow Miles Hogan, who in 2012 authored a CELPC report, *Lessons From the West: Fracking and Water Resources*. The 2012 Report may be accessed at <https://law.ucdavis.edu/centers/environmental/files/FrackingLessonsFromWest.pdf>

This report is not intended to be and should not be considered an advocacy document. It does not argue in favor of or against California's SB 4 and ongoing efforts by state regulators to implement that 2013 legislation. Rather, this report is intended to serve as an independent and objective analysis of SB 4, the circumstances leading to its passage, efforts to implement the legislation, and unresolved legal questions associated with this important law. It is hoped that this analysis will help inform the ongoing public debate over SB 4 and the underlying technology of hydraulic fracturing ("fracking") and related technologies. It is further hoped that this report will be of assistance to California policymakers, commentators and interested members of the public.

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Executive Summary

Fracking, the injection of pressurized fluid deep underground to enhance oil and gas recovery by breaking apart the subsurface layer of rock, has occurred in California and throughout the United States for decades. However, new advancements in horizontal drilling technologies and more effective chemical compositions have made the practice more effective – and more controversial.

As the practice has become more economically viable in California, an increasingly visible and political debate has emerged over the past few years. As a result of that debate, on September 20, 2013, California Governor Jerry Brown signed into law the state's first legislation directly addressing fracking and related technologies: Senate Bill 4.

Fracking, more precisely, is the process of extracting oil or natural gas trapped in deep shale formations by injecting highly pressurized fluid – containing significant amounts of water, sand, and chemicals – into the ground to break apart the shale allowing the trapped oil and gas to flow to the surface.

Due to California's unique geology, another type of well stimulation technique is used even more frequently than fracking in this state: acid well stimulation or “acidizing.” Acidizing is a process by which a well operator injects chemicals, generally hydrochloric- or hydrofluoric-acid, into the ground to dissolve shale to make it more permeable so that oil and gas can be extracted.

The oil and gas industry insists these techniques are safe and emphasizes that advancements in well stimulation in recent years has propelled the United States to become the world's leading producer of both oil and natural gas. This, in turn, provides a significant boost to the American economy as well as strengthens national security interests by reducing U.S. dependence on foreign energy sources.

Environmentalists and other members of the public, however, are concerned that the chemicals injected into the ground through fracking and acidizing may ultimately contaminate groundwater, harming the environment and affecting human health. Additionally, California's current, severe drought raises concerns regarding amount of water needed for fracking and acidizing technologies. Fracking has also been linked to earthquakes, an issue of particular concern to California. Finally, environmentalists contend that by allowing fracking to continue, even if regulated, California is backing away from its stated commitment to address climate change by reducing greenhouse gas emissions resulting from the continued use of fossil fuels.

Nationally, unless it involves diesel fuels, the U.S. Environmental Protection Agency cannot regulate hydraulic fracturing because of provisions in the Energy Security Act of 2005, enacted during the Bush Administration. Some states, however, have been regulating fracking within their borders for years. Texas, Pennsylvania, North Dakota, and Colorado are among the states with the most active hydraulic fracturing industries.

California is estimated to hold 15.4 billion barrels worth of oil in the Monterey Formation, which represents nearly two-thirds of the known recoverable oil in the entire United States. Much of this oil can only be extracted through the use of oil enhancement techniques such as fracking or acidizing.

In the 2013-2014 California legislative session, there were eleven proposed bills regarding hydraulic fracturing, eight of which called for a moratorium or complete ban on the practice. Of the eleven, only Senate Bill 4 (SB 4) survived.

Broadly, SB 4 requires:

- (1) California's Division of Oil, Gas and Geothermal Resources (DOGGR) to consult with multiple state government agencies and local air districts and develop **regulations**, including disclosure requirements, and to delineate applicable state regulatory authority;
- (2) The Secretary of California's Natural Resources Agency to complete an **independent scientific study** evaluating the hazards and risks associated with well stimulation treatments;
- (3) DOGGR to implement a new **permitting** system for oil and natural gas well operators; and
- (4) Oil and gas well operators to **disclose** to DOGGR and the public the identity and quantity of every chemical used in hydraulic fracturing and acid well stimulation fluids.

On November 15, 2013, DOGGR released a "Notice of Preparation (of Environmental Impact Report required by Public Resources Code section 3161, subd. (b)(3) and (4))." Per SB 4, this report must be completed by July 1, 2015.

On January 1, 2014, DOGGR's interim regulations pursuant to SB 4 went into effect and will remain in effect until DOGGR completes the permanent regulations. The Division has released proposed permanent regulations that will go into effect on or before January 1, 2015, as mandated by SB 4.

However, several important unresolved questions remain following the passage of SB 4 and the subsequent implementing regulations. Some of these questions are addressed in this report; others, beyond the scope of this report, are identified and will require detailed analyses. These unresolved questions are ripe for additional agency rulemakings and potential follow-up legislation, such as State Senator Fran Pavley's SB 1281 addressing water use during fracking operations.

SB 4 is a critical piece of environmental and public right-to-know legislation. Importantly, SB 4 includes:

- A new robust permitting system;
- The strongest disclosure laws in the U.S., including a reversal of trade secret presumptions;
- An independent scientific study to determine the true effects of well stimulation techniques;
- Broad landowner notification requirements; and
- A new groundwater monitoring plan that could significantly inform other CA water issues.

Ultimately, SB 4 represents significant steps toward greater scientific knowledge regarding well stimulation, increased government and industry transparency and accountability, as well as responsible regulation of a potentially harmful – but technically effective and economically profitable – practice.

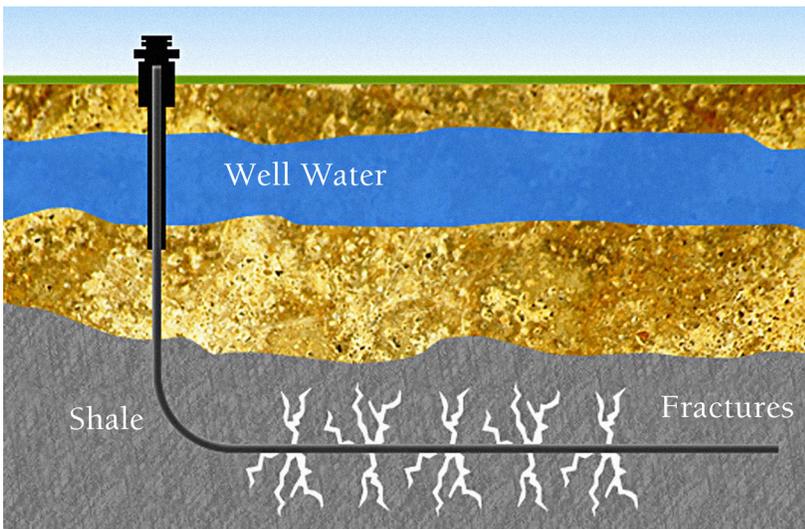
SENATE BILL 4: A PAST AND FUTURE LOOK AT REGULATING HYDRAULIC FRACTURING IN CALIFORNIA

I. Introduction

Introduced December 3, 2012 and signed into law by California Governor Jerry Brown on September 20, 2013, Senate Bill 4 (Pavley) is the first California statute regulating hydraulic fracturing, otherwise known as “fracking.” Recent technological advances in tight oil (hereinafter referred to as “oil”) and natural gas (hereinafter referred to as “gas”) drilling techniques have made fracking for oil and gas more common and lucrative: from 2007 to 2011, facilitated by the fracking boom, production of oil in the United States increased more than five times and gas production increased more than four times their previous levels.¹

What is fracking?

Modern hydraulic fracturing is a two- to three-day process of injecting highly pressurized fluids into the subsurface rock to enhance oil and gas extraction from underground geologic formations. Well operators bore a well vertically, 6,000-12,000 feet below the Earth’s surface, and then turn the drilling mechanism horizontally and drill away from the vertical well column.² Pressurized hydraulic fracturing fluids – a combination of water, sand, and chemical components – are then injected underground through the newly-drilled well. The resulting pressure causes cracks to form along the horizontal portion of the well in the surrounding rock formation, often consisting of tight shale formations. Small particles of sand, known as “proppants,” become lodged in the cracks and create avenues for trapped oil to flow to the main well for extraction.

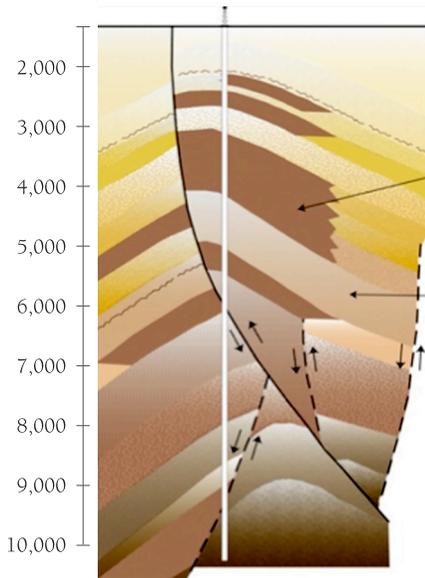


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In most of the United States, such as in states with a resurgent energy boom such as North Dakota and Pennsylvania, this process is used primarily to extract natural gas from beneath the surface. In California’s Monterey Formation and North Dakota’s Bakken Formation, however, hydraulic fracturing is mostly used to extract oil.

Hydraulic fracturing in California differs significantly from that

being conducted in other regions in the United States. That is due principally to the unique geology of California’s Monterey Formation. In other parts of the country, the subsurface geological layers are generally flat. Because of California’s frequent tectonic activity, the underground layers of shale within the Monterey Formation are not flat; instead, they are folded and wavy. Therefore, it is difficult for California well drillers to drill horizontally very far from the vertical well column and remain in the same subsurface geological layer. As a result, well operators are much more likely to use a process known as “acidizing” or “acid well stimulation.”³



Visualization of California's subsurface geology.
SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION

Acidizing is a process by which well operators inject strong acid mixtures into the rock formation to dissolve the rock surrounding the well, opening channels through which oil may flow and be extracted. These acids are typically hydrochloric acid (HCl) and hydrofluoric acid (HF), though other acids are often used or combined with HCl or HF to increase oil viscosity.⁴

In fracking wells across the United States, after being used to increase the permeability of the reservoir, the fracking fluid is then itself extracted, bringing what is known as “backflush” or “flowback” to the surface. Flowback typically contains water, proppants, the fracking fluid chemical mixture, and other subsurface materials such as salts, metals, and “naturally occurring radioactive materials.”⁵

Because the requirements of California’s SB 4 largely apply equally to hydraulic fracturing, acid well stimulation, and other recognized well stimulation techniques, this paper uses the term “fracking” to refer to all covered well stimulations

techniques unless a specific technique must be distinguished.

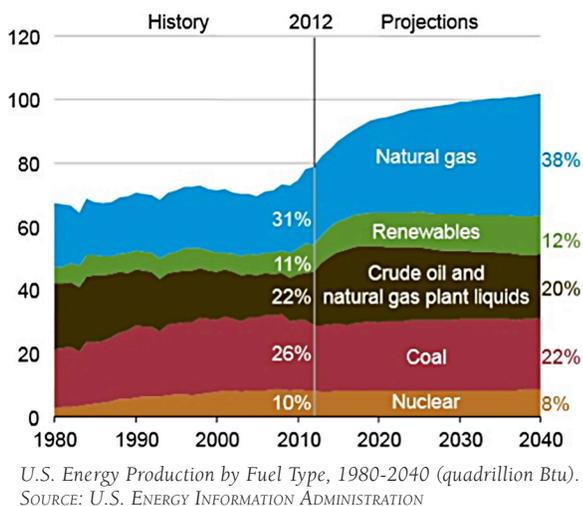
Why is Fracking Controversial?

First-generation fracking techniques in California relied exclusively on water and steam; it is the relatively recent addition of chemicals to fracking fluids that has helped to make the practice more controversial. The controversy grew exponentially in part due to fracking’s portrayal in the Oscar-nominated 2010 documentary *Gasland* and other media accounts. With its increased utilization, visibility, heightened technology and the current partisan state of national politics, the controversy over fracking has continued to increase. Generally, the debate concerns whether the economic benefits associated with fracking outweigh the potential adverse environmental and health-related consequences of the activity.

On the one hand, due to technological advancements in enhanced oil and gas recovery, some analyses indicate that in 2012 the United States became the world’s leading producer of natural gas, overtaking Russia; similarly, in 2013, the U.S. surpassed Saudi Arabia as the biggest producer of oil in the world.⁶ This rapid increase in the United States’ oil and gas production is predicted to continue for many years.⁷ This has profound implications for a revitalization of the United States economy,⁸ national security through energy independence,⁹ and lower domestic energy prices.

On the other hand, environmentalists and some scientists contend that fracking is harmful to the environment and human health, as well as unwisely continuing American dependence on fossil fuels, thus exacerbating aggregate U.S. greenhouse gas emissions. Although fracking fluids consist mostly of water, the oil and gas industry has acknowledged that between 2005 and 2009 the industry has used at least 29 chemicals in fracking fluids that are “(1) known or possible human carcinogens, (2) regulated under the Safe Water Drinking Act for their risks to human health, or (3) listed as hazardous air pollutants under the Clean Air Act.”¹⁰ A major concern is that these chemicals could leach into groundwater basins and other water supplies. The Associated Press compiled data on complaints

filed in 2013 concerning polluted water near American fracking sites. The A.P. investigation revealed hundreds of complaints and confirmed polluted water sources in Pennsylvania, Ohio, West Virginia, and Texas.¹¹



Fracking is also relatively water intensive, using between two to five million gallons of water per well stimulation treatment in some parts of the U.S.¹² However, self-reported data from the Western States Petroleum Association and the California Department of Conservation show that hydraulically fractured wells in California require far less water: about 126,000 gallons per well.¹³ Still, the high volume of water needed for fracking puts additional strain on existing, statewide demands for this important and scarce resource. Following a very dry winter, 2014 finds California experiencing its third consecutive year of drought conditions, affecting the amount of water available for household, agricultural, and industrial uses.

The drought has implications reaching far beyond California; the Golden State’s farming industry produces approximately half of the United States’ fruits, vegetables, and nuts and requires a sufficient amount of water to remain productive.¹⁴ On January 17, 2014, California Governor Jerry Brown officially declared a drought emergency in the state, the worst in California’s 163-year history.¹⁵ As more fracking wells are drilled in California, demand for a shrinking statewide water supply will become even more dire, other things being equal.

Furthermore, storage and disposal of fracking fluids that return to the surface are a major concern to environmentalists because of the potentially toxic nature of the fluid. Storage and disposal of flowback are delicate and costly tasks for oil and gas well operators. Environmentalists have expressed concern that improper disposal practices can result in additional groundwater contamination.

Aside from concerns over the disposal of fracking fluids and flowback, there are also health concerns with the particles used in fracking to “prop” the subsurface cracks open. Companies often use silica sand as proppants; the U.S. Government Accountability Office reports that if silica sand is improperly handled, it can become airborne and enter a person’s lungs, causing an incurable lung disease called silicosis.¹⁶ There are currently hearings underway in Congress to strengthen regulations relating to silicosis, something the U.S. Occupational Safety and Health Administration claims could save 700 lives per year and over \$5 billion in unnecessary medical costs.¹⁷

There are other indirect concerns with fracking, such as transporting the resulting, produced oil. In 2013, more crude oil spilled from trains in the United States during transportation – 1.15 million gallons – than in the last 40 years combined.¹⁸ On January 2, 2014, the U.S. Department of Transportation issued a safety alert regarding hydraulically fractured oil being transported from North Dakota’s Bakken Formation.¹⁹ The federal safety alert states that “recent derailments and resulting fires indicate that the type of crude oil being transported from the Bakken region may be more flammable than traditional heavy crude oil.”²⁰ This alert was issued in response to recent derailments of oil-filled rail cars in North Dakota, Alabama, and Quebec, the latter of which killed 47 people.²¹ On May 7,

2014, the U.S. Department of Transportation issued a second Emergency Order “requiring all railroads operating trains containing large amounts of Bakken crude oil to notify State Emergency Response Commissions...about the operation of these trains through their states.”²²

More recently, in February 2014, a train carrying Canadian crude oil derailed in Pennsylvania, spilling 3,000 to 4,000 gallons of oil.²³ In April 2014, a freight train transporting crude oil derailed in Lynchburg, Virginia, spilling or burning an estimated 50,000 gallons of crude oil in the nearby James River.²⁴ Government investigators are particularly concerned because many rail shipments have been misclassified as less dangerous than they actually are.²⁵ In response to these derailments, the U.S. Department of Transportation and major railroad representatives have begun to review and update rail transportation regulations related to safety issues and reporting.²⁶

Additionally, there is evidence that fracking operations may induce seismic activity.²⁷ Studies from the University of Texas at Austin and Southern Methodist University have linked fracking fluid disposal wells with induced earthquakes.²⁸ The study, however, highlights the fact that induced seismicity is rarely great enough to be felt or cause any damage to the surface.²⁹ A 2013 National Research Council study further observes that “only a very small fraction of injection and extraction activities...have induced seismicity at levels noticeable to the public.”³⁰ Though these earthquakes do not seem to be damaging in other parts of the country, the concern is particularly heightened in California due to the state’s frequent seismic activity.

The environmental community has itself been divided on the issue of hydraulic fracturing. Some environmental organizations see potential harms, such as groundwater contamination, as sufficient to impose a complete ban on utilization of fracking technology. Other environmental groups believe a moratorium on the practice until sufficient scientific studies can be completed is the right course of action. Still others contend that by permitting continued drilling and hydraulic fracturing, even if properly regulated, California is backing away from its stated commitment to transition to a “clean energy economy” based on renewable energy sources rather than fossil fuels. In other parts of the U.S., some environmentalists support fracking for natural gas as a less carbon-intensive “bridge” between dirtier fossil fuels, such as coal, and renewable energy options, which in some cases are not yet ready for large scale deployment.³¹

Although fracking has occurred for decades, recent technological advancements in horizontal drilling techniques have made extraction of shale oil trapped deep underground more financially viable, increasing the number of fracked wells in California, the United States, and globally.

II. Domestic and Global Fracking Regulation

Fracking Regulation at the Federal Level

Fracking, particularly the disclosure of chemicals used in the practice, is not currently regulated at the federal level. In fact, Congress has specifically declared that fracking and well stimulation treatment fluids that do not use diesel fuel are exempt from the federal Clean Air Act and the Safe Drinking Water Act.³² Congress added provisions, colloquially known as the “Halliburton loophole,”³³ to the Energy Policy Act of 2005³⁴ to amend these statutes. This revision also created a rebuttable presumption that many processes associated with fracking are subject to “categorical exclusion” from the

environmental assessment requirements of the National Environmental Policy Act.³⁵

Notwithstanding the Halliburton Loophole, the U.S. EPA has begun regulating fracking fluids containing diesel, but until 2014 had not done so.³⁶ However, in February 2014, the U.S. EPA issued a guidance document requiring well operators to apply for a permit from the U.S. EPA if they use five specifically defined types of diesel fuel in hydraulic fracturing.³⁷

In 2013, multiple bills were introduced in Congress related to fracking. Some supported states' rights in regulating fracking, such as the "Fracturing Regulations are Effective in State Hands (FRESH) Act,"³⁸ while others, like the "Fracturing Regulations and Awareness of Chemicals (FRAC) Act,"³⁹ sought to eliminate the above-described federal fracking exemptions and support greater disclosure requirements.⁴⁰

In May 2013, the Obama Administration proposed the nation's first federal regulations to address hydraulic fracturing.⁴¹ The Department of Interior hopes to have these regulations finalized by 2014;⁴² however as of June 2014 the final release of those rules is still pending.⁴³ In response to this regulatory initiative, on November 20, 2013, the U.S. House of Representatives passed legislation that seeks to prevent the U.S. Department of the Interior from regulating hydraulic fracturing in states that have their own legislation regulating the practice.⁴⁴ It is unlikely this House bill would pass the U.S. Senate. Even if it did, President Obama has indicated he would veto it, so the House bill is more symbolic than substantive.⁴⁵

Fracking Regulation at the State Level

In certain regions of the United States, outside of California, fracking has been a major industry practice and a significant source of controversy for many years. There are, or are pending, disclosure laws in at least twenty-five states across the US that have fracking potential.⁴⁶ Most of the shale oil- and gas-rich areas sit atop the Barnett shale,⁴⁷ the Bakken shale,⁴⁸ and the Marcellus shale formations.⁴⁹

Over time, states have attempted to balance the economic promise of fracking with growing concern that the practice may be harmful to the environment and public health. These concerns gained widespread exposure in the media as well as the controversial 2010 documentary *Gasland*⁵⁰ and its 2013 sequel, *Gasland II*.⁵¹ However, even before this type of exposure, some states were addressing the issue with legislation.

In July 2008, the New York Legislature imposed a statewide moratorium on hydraulic fracturing.⁵² When the moratorium expired, New York Governor Andrew Cuomo ordered an environmental health review to be completed before making a decision on whether to allow fracking, effectively extending the moratorium in New York.⁵³ In January 2014, New York's State Energy Planning Board released a long-term energy plan that encourages renewable energy and a switch from oil to natural gas for heating purposes;⁵⁴ this plan, however, reiterates that the state is continuing to examine the environmental health issues related to fracking. As a result, oil and gas companies and well operators are still barred from engaging in fracking in the state of New York.⁵⁵

Similarly, Maryland's Department of the Environment is not issuing exploration or drilling permits for fracking projects unless the State's comprehensive study ultimately demonstrates "that the natural gas can be extracted from shale formations in Maryland without adverse impact to human health, natural resources, or the environment."⁵⁶

constitutionally-protected aspects of the public environment and of a certain quality of life.”⁶² While Pennsylvania’s Governor has asked the State Supreme Court to reconsider its decision, the existing ruling ensures local communities can develop regulations that ban or restrict hydraulic fracturing within their borders.⁶³ It is also very likely that this Pennsylvania Supreme Court decision will have wide-reaching impacts on oil and gas development beyond that state’s borders.⁶⁴

Illinois regulators recently released proposed fracking regulations in accordance with that state’s first fracking legislation, the Illinois Hydraulic Fracturing Regulatory Act, signed into law in early 2013.⁶⁵ The Illinois law, encompassing 123 pages (compared to SB 4’s 13 pages), explains in detail how Illinois legislators believe hydraulic fracturing should be regulated.⁶⁶ The law mandates wastewater management rules, stringent air quality standards, strong chemical disclosure provisions, permit application notice and comment requirements, the opportunity for citizens to bring private enforcement lawsuits, and other important health and environmental protections.⁶⁷ However, as of early 2014, the regulations had not been adopted and no fracking wells have been permitted by state regulators.

In North Dakota, in response to a December 30, 2013 train derailment and fire that prompted the U.S. Department of Transportation’s safety alert discussed above, state Republicans and Democrats both called for a closer look into the boom in oil drilling and transportation practices, and how safely these operations can be undertaken.⁶⁸ North Dakota state officials reportedly wish to support the economic growth provided by the current oil boom while simultaneously protecting public health and safety. State legislators have met with the head of the federal Pipeline and Hazardous Materials Safety Administration to “put pressure...to step up and move forward with safety provisions, which have not been handled with the necessary urgency.”⁶⁹

Fracking Regulation at the Local Level

Recently, local communities have begun to act in the absence of federal and state fracking regulation. More than 100 municipalities across the U.S. have enacted moratoria or bans on hydraulic fracturing in their communities.⁷⁰ Some examples follow.

On November 5, 2013, citizens of three cities in Colorado voted overwhelmingly against fracking. Fort Collins and Boulder voters enacted a five-year moratorium and Lafayette banned the practice completely. However, opponents of the measures, including the oil and gas industry, claim that there is very little interest in drilling in these not very shale-rich areas. Therefore, after spending nearly \$1 million to try to defeat them, opponents have now labeled these local Colorado measures as largely symbolic.⁷¹ Citizens of Broomfield, Colorado also voted on a measure that sought to establish a moratorium on fracking. Unlike the other Colorado towns, though, Broomfield’s oil resources are projected to be more significant. The Broomfield measure won by a mere 20 votes with over 20,700 votes cast, imposing a five year moratorium on fracking; this result, a sharp division among residents directly affected by the fracking industry, is very different from the result in areas where no fracking is actually occurring.⁷²

On September 10, 2013, 10 days before SB 4 was signed into law, local officials in Santa Cruz County, California enacted a temporary ban on fracking.⁷³ However, because there is little or no recoverable oil in Santa Cruz County, this ban is viewed by most observers as largely symbolic, like some of the Colorado moratoria described above.

On March 18, 2014, the City Council of Carson, California, located in Los Angeles County, voted to impose a 45-day moratorium on all new drilling, which can be extended for up to 2 years.⁷⁴ Councilman Al Robles proposed the moratorium because “there are too many questions, too many unknowns...to gamble with the health and well-being of the residents.”⁷⁵ On April 29, 2014, the City Council voted against extending the moratorium, which expired on May 2, 2014.⁷⁶

In Kern County, California, local fracking regulations have been in place for years. Under the local ordinances, drilling companies may drill in Kern County with a state permit obtained from the California Division of Oil, Gas & Geothermal Resources (DOGGR).⁷⁷ However, the oil and gas industry and some local regulators viewed this process as cumbersome. Therefore, prior to SB 4, the industry requested that the permitting process be streamlined.⁷⁸ Subsequently, Kern County officials took steps to amend the local ordinance to allow for a program-level environmental impact report (EIR) for all valley oil & gas drilling activities under the California Environmental Quality Act (CEQA), rather than well-specific EIRs.⁷⁹ Kern County regulators believe this satisfies CEQA and SB 4; however, the final ordinance will likely depend on the outcome of litigation brought against DOGGR by the Center for Biological Diversity (CBD) and other environmental groups in October 2012, discussed below.

Fracking Internationally

Other nations have begun to consider whether and how to regulate hydraulic fracturing within their borders.

Germany has adopted a regulatory moratorium on fracking based on an agreement between Chancellor Angela Merkel’s Christian Democratic and the opposition Social Democratic parties.⁸⁰ That agreement places a moratorium on fracking until and unless studies show there are no adverse environmental issues or health problems associated with the practice.⁸¹

The French Parliament banned fracking altogether in 2011.⁸² An American oil and gas company operating in France brought a lawsuit after the government ban nullified the company’s oil and gas exploration permits. In October 2013, France’s Constitutional Council, the country’s highest court, upheld the ban throughout the country.⁸³

In January 2012, Bulgaria’s Parliament banned the hydraulic fracturing within its borders.⁸⁴ However, in June 2012, the Bulgarian Parliament eased the ban, making it easier for companies to explore for viable shale gas wells.⁸⁵ Bulgaria’s latest legislation is reportedly designed to help that nation overcome its historical energy dependence on Russia.

The State of Victoria, Australia banned fracking in August 2012; that ban is expected to remain in effect until July 2015.⁸⁶ Other subnational governments in Australia, such as the State of Western Australia, are confronting debates between shale gas companies that want to drill and environmentalists who argue that fracking endangers the environment and public health. A particular focus of debate over fracking in Australia is on the large volumes of water needed for the technology, considering that Australia is the world’s driest inhabited continent and has experienced severe droughts in recent years.⁸⁷

In the United Kingdom, a single fracking well was drilled in 2011.⁸⁸ The drilling of this particular well caused seismic activity, which in turn prompted a national 18-month ban on the practice.⁸⁹ More recently, however, British Prime Minister David Cameron announced his support for fracking, as existing sources of shale gas from the North Sea decline.⁹⁰ In early 2014, Prime Minister Cameron stated that the U.K. is “going all out for shale.”⁹¹ While not many British oil companies are committed to fracking

in the U.K., a French company has shown great interest and has committed \$48 million for new shale gas exploration in Britain.⁹² According to the British Geological Survey, central England may hold up to 1,300 trillion cubic feet of natural gas.⁹³ Currently in Britain and throughout Europe, natural gas is three times more expensive than in the United States, and electricity is twice the price.⁹⁴ The British energy industry and some government officials believe that fracking for U.K. shale gas could reduce these prices throughout the country and thereby help the national and local economies.

Poland hopes to develop its shale gas resources in order to reduce its energy reliance on Russia, from which Poland currently imports up to 70 percent of its gas.⁹⁵ The U.S. Department of Energy estimates that Poland holds enough shale gas to meet that nation's energy requirements for the next 300 years. However, the U.S. Geological Survey claims there is "essentially nothing" there.⁹⁶ Due in part to this uncertainty, Poland's Geological Institute believes the only way to find out how much shale gas underlies the country is to drill more wells.⁹⁷ Accordingly, the Polish government has issued more than 100 well exploration permits, and 48 wells were drilled by the start of 2014.⁹⁸

III. Background and Enactment of SB 4

SB 4 Background

Fracking has been occurring in California for decades. In the 2010-2011 Legislative session, the California Division of Oil, Gas & Geothermal Resources (DOGGR) submitted a budget augmentation proposal seeking \$3.2 million to support 17 new staff positions to strengthen and oversee regulations regarding "underground injection control."⁹⁹ This budget proposal was approved in 2010. By the middle of 2011, DOGGR had created some of these positions but was reportedly not developing the expected regulations.



Fran Pavley, California State Senator. SOURCE: <http://sd27.senate.ca.gov/biography>

In January 2011, California State Senator Fran Pavley sent a letter to DOGGR inquiring whether fracking was occurring in California and, if so, in what regions and to what extent.¹⁰⁰ Essentially, in February 2011, DOGGR responded that it did not know where or how much fracking was occurring because, despite statutory authority to do so, DOGGR did not keep records on the practice. Furthermore, contrary to DOGGR's position in the 2010-2011 Legislative session, DOGGR stated that based on California's geology, California's regulators shouldn't be concerned about adverse environmental impacts from hydraulic fracturing.¹⁰¹

In June 2011, the California Legislature enacted a budget appropriations bill that included a "budget trailer" regarding the funding previously appropriated to DOGGR to develop more robust underground injection control regulations. Budget Item 3408-001-3046 specifically directed DOGGR to use the money "for the collection and public dissemination of information related to hydraulic fracturing activities occurring in the state."¹⁰² This also included the Legislature's first attempt to direct DOGGR to create a website that publicly disclosed information on fracking activities in California. The trailer language specified that the funds "may" be used for this purpose, rather than "shall" be used. Nonetheless, as 2011 concluded, DOGGR still had not initiated this effort.



State of California Capitol Building
SOURCE: WIKIMEDIA COMMONS, USER "AMADSCIENTIST"

On November 3, 2011, Governor Brown removed the supervisor of DOGGR from her position, which she had held since September 2009. The Governor also removed the director of DOGGR's parent agency, the Department of Conservation. Within a year, the governor's newly-appointed supervisor and director began developing fracking regulations; the Brown Administration's "discussion draft" regulations for hydraulic fracturing were released on December 18, 2012.¹⁰³

However, by this time, legislative staff and environmental organizations had already begun to research fracking in California and had started drafting a bill focused on public disclosure. In early 2012, the Environmental Working Group, an environmental nonprofit focused on toxic chemicals, public lands, and corporate accountability, released a paper detailing the history and regulatory oversight of fracking in California.¹⁰⁴

Even earlier, in February 2011, Assemblymember Wieckowski introduced Assembly Bill 591¹⁰⁵ (2011-2012) that would have required well owners or operators to disclose to DOGGR the chemicals used in fracking and would have directed DOGGR to make this information available to the public online. The final version of AB 591 reportedly included "Halliburton amendments," which were amendments proposed by the Halliburton Company that contained provisions barring the disclosure of chemicals claimed by industry to be "trade secrets."¹⁰⁶

Some observers saw DOGGR's "discussion draft" regulations in December 2012 as a regulatory version of AB 591 that included some of the "Halliburton trade secret language." In response, Senator Pavley's office began drafting a new bill that would require greater public disclosure of fracking fluid components without the trade secret language included in AB 591 and DOGGR's draft regulations.

The legislative and executive branches of California state government, however, were not the only branches focused on the fracking issue in 2012.

In October 2012, the Center for Biological Diversity (CBD), Earthworks, Environmental Working Group, and Sierra Club (the "plaintiffs") brought a lawsuit against DOGGR. That lawsuit claimed that DOGGR's previous practice of approving permits for oil and gas wells, including those engaging in fracking, without completing an environmental review violated the requirements of the California Environmental Quality Act (CEQA).¹⁰⁷

Plaintiffs allege that DOGGR issued "boilerplate negative declarations finding no significant impacts from these activities" based on CEQA's exemptions for "minor alterations to land" and/or "existing facilities" and that, in doing so, DOGGR violated CEQA.¹⁰⁸ Plaintiffs sought a declaration from the court that "this pattern and practice is a violation of CEQA's mandate that each state agency prepare an EIR" when carrying out a project, such as approving a permit. Plaintiffs also sought an injunction

“prohibiting the approval of new oil and gas wells,” including those engaging in fracking, until an appropriate EIR has been completed.¹⁰⁹

CBD also brought a separate, federal lawsuit against the U.S. Bureau of Land Management (BLM) at the end of 2011.¹¹⁰ In that litigation, CBD argued that BLM violated the National Environmental Policy Act (NEPA). In evaluating and auctioning four oil and gas leases on over 2,700 acres of federal mineral estate in California’s Monterey and Fresno Counties, BLM determined that fracking was “not relevant to the analysis of [adverse environmental] impacts” and that “the proposed action would not result in any significant environmental impact requiring further analysis under NEPA.”¹¹¹ Therefore, BLM issued a Finding of No Significant Impact (FONSI) and proceeded with the auction without a full environmental review.

In March 2013, the U.S. District Court for the Northern District of California held that

*the BLM violated NEPA in its environment assessment of the leases by unreasonably relying on an earlier single-well development scenario. That scenario did not adequately consider the development impact of hydraulic fracturing techniques popularly known as “fracking” when used in combination with technologies such as horizontal drilling. Not only was the environment assessment erroneous as a matter of law, the BLM’s finding of no significant impact based on the assessment and resulting decision not to prepare an environmental impact statement also was erroneous as a matter of law.*¹¹²

That federal litigation is relevant to CBD’s state court lawsuit against DOGGR because DOGGR similarly failed to conduct a comparable preliminary environmental assessment under CEQA; instead, DOGGR routinely issued negative declarations based on asserted CEQA exemptions. The BLM case helps to establish the minimum environmental disclosure requirements for scientific studies before engaging in government activities, such as well permitting, that allow fracking to occur.

Prior to the federal district court decision in CBD’s lawsuit against the BLM, three industry groups – the Western States Petroleum Association, the Independent Oil Production Agency, and the California Independent Petroleum Association – intervened in the state court litigation against DOGGR in February 2013. The litigation remained ongoing as the Legislature was developing SB 4.

Meanwhile, in January 2013, the Center for Biological Diversity filed a new separate lawsuit against DOGGR.¹¹³ In its 2013 complaint, CBD sought to invalidate DOGGR’s practice of not tracking or monitoring fracking, alleging this omission violates California’s Underground Injection Control (UIC) Program.¹¹⁴ The plaintiffs further sought injunctive relief “prohibiting DOGGR from continuing to allow the fracking of oil and gas wells in violation of the UIC Program.”¹¹⁵

Enactment of SB 4

Once the Legislature learned of the perceived regulatory gap in 2011, fracking-related bill proposals flourished. In the 2012-2013 Legislative session, proposed legislation ranged from mandating drilling regulations stronger than those proposed by DOGGR¹¹⁶ to a full moratorium on fracking in California unless and until new legislation was enacted;¹¹⁷ however, of the introduced bills, only SB 4 survived and became law, effective on January 1, 2014.¹¹⁸

SB 4, sponsored by California State Senator Fran Pavley (D – Agoura Hills), was enacted in response to increased fracking activity in California, perceived weak regulatory oversight of this and related drilling practices, insufficient government and industry transparency, and an information gap regarding the

potential risks and hazards posed by fracking and other oil and gas extraction technologies in California, both on- and off-shore.¹¹⁹

Broadly, SB 4 requires:

- (1) California's Division of Oil, Gas and Geothermal Resources (DOGGR) to consult with multiple state government agencies and local air districts and develop regulations, including disclosure requirements, and to delineate applicable state regulatory authority;*
- (2) the Secretary of California's Natural Resources Agency to complete an independent scientific study evaluating the hazards and risks associated with fracking and acid well stimulation treatments;*
- (3) DOGGR to implement a new permitting system for oil and natural gas well operators; and*
- (4) Oil and gas well operators to disclose to DOGGR the identity and quantity of every chemical used in hydraulic fracturing and acidizing fluids.*

Although the initial language of SB 4 only discussed hydraulic fracturing, the bill's author and supporters thought it critical to expand the bill beyond that narrow focus. The final version of the bill therefore covers specifically, but is not limited to, hydraulic fracturing and acid well stimulation treatments. As discussed above, acidizing, rather than hydraulic fracturing, is likely the most effective well stimulation technique for the predominant Monterey Formation in California. Accordingly, SB 4 sets an important framework for addressing the most likely types of unregulated well stimulation treatments in California, rather than focusing on hydraulic fracturing alone.

During the development of SB 4, some of the most debated provisions were those related to trade secret disclosure requirements. While the media has mostly reported that the oil and gas industry strongly opposed extensive chemical disclosure requirements and environmentalists were strongly in favor of disclosure, that oversimplifies the actual legislative debate. Many oil and gas drilling companies buy their fracking fluids from third parties. Two of the largest suppliers are Halliburton Company and Schlumberger Ltd.¹²⁰ The disclosure provisions require the disclosure of these suppliers' chemical constituents, and thus have little negative effect on drilling companies and well operators themselves. Accordingly, it was the third party fluid suppliers, rather than oil and gas drillers and well operators, that constituted the principal opposition to the disclosure provisions of SB 4.

On September 6, 2013, Halliburton wrote an opposition letter to Senator Pavley regarding the trade secret disclosure requirements. Specifically, Halliburton argued that the bill's proposed section 3160(j)(2)(A) and (B) "repeal the protection of the California Uniform Trade Secret Act for hydraulic fracturing fluids," and in doing so would "deter companies that have developed innovative oil and natural gas recovery technologies from bringing those advancements into California."¹²¹

Nevertheless, the Legislature retained these strong chemical disclosure requirements in the final version of the bill.

Around this time, Governor Brown reportedly met with the oil and gas industry and negotiated late amendments to the bill designed to eliminate the industry's opposition. After this last round of amendments, the oil and gas industry withdrew its lobbying efforts against SB 4 in the legislature, and shortly thereafter the bill passed both houses.

Every environmental organization previously in support,¹²² the Los Angeles Times,¹²³ and many other original advocates of the bill withdrew their support after these late amendments. One of the main

late amendments that reportedly caused the environmental community to withdraw their support was new Public Resources Code section 3161(b).¹²⁴ Environmental organizations expressed concern that this provision requires DOGGR to approve new wells without complying with the requirements of CEQA, essentially sidestepping what they consider to be one of California's most crucial environmental protection laws.

The authors of the bill, however, contend that it was imperative to address DOGGR's and the industry's obligations during the interim period. There were ultimately three options: not addressing these CEQA obligations and keeping the status quo; imposing full CEQA obligations, effectively enacting a moratorium on the practice until DOGGR completed the state-wide EIR; and allowing fracking to occur contingent on explicit statutory informational requirements and environmental protections. Legislators developed SB 4 to address the first option; the second option was not politically viable and would have caused SB 4 to fail passage. Therefore, the authors of the bill sought to impose strict requirements on industry in the interim to ensure the industry engaged in the economic exploitation of California's natural resources with strict and important environmental protections.

Still, however, California environmental organizations decided to withdraw their support for SB 4.

Regardless, Governor Brown signed SB 4 into law on September 20, 2013.

When approving SB 4, however, Governor Brown indicated in his signing message that the bill needed "clarifying amendments." He also directed the Department of Conservation to:

*"develop an efficient permitting program for well stimulation activities that groups permits together based on factors such as known geologic conditions and environmental impacts, while providing for more particularized review in other situations when necessary."*¹²⁵

This directive is similar to proposed permitting ordinances in Kern County. Governor Brown's statement seeks to "develop an efficient permitting program" that would avoid duplicative EIRs based on different wells in close proximity that have similar geological and surface issues. The Department of Conservation has declared that this issue will be addressed in future rulemakings.

Even without environmental groups' support, passage of SB 4 is particularly important for national well stimulation treatment practices because of California's historical influence on other states', and even national and international, environmental policies.¹²⁶ Many states have implemented fracking regulations, some based on SB 4 and implementing California regulations. Most importantly, California's SB 4 and its implementing regulations have the most stringent disclosure provisions in the entire U.S. Given California's status as the world's eighth largest economy, this feature of the legislation will likely have a strong effect on the development of industry practices and regulations outside the state.

IV. SB 4: Analysis of the Legislation

This section will analyze SB 4's major components and briefly discuss the key provisions. Broader recommendations and remaining questions will be addressed subsequently.

The full text of SB 4, as enacted, is included as Appendix A.¹²⁷

Section 1: Legislative Findings

SB 4 begins by describing the Legislative findings motivating SB 4. Specifically, the Legislature identifies five reasons why SB 4 is deemed to be necessary legislation:

- (1) The practice of hydraulic fracturing and other well stimulation treatments (WST) to enhance oil and gas recovery is increasing in California;*
- (2) There is insufficient scientific data on the practice to know the true associated risks and hazards;*
- (3) Government and Industry transparency and accountability are of paramount concern to the Legislature and the public;*
- (4) The public disclosure requirements in SB 4 are meant to enable the public to discern any potential chemical exposure due to hydraulic fracturing and other WSTs; and*
- (5) The Legislature encourages the use and reuse of treated and untreated water, as well as produced water, to minimize the amount of water used in the fracking process.*

Section 2: Definitions, Scientific Study, Regulations, Chemical Disclosure, and Permitting Program

Important Definitions Related to Well Stimulation Treatments

These definitional sections define key concepts such as “hydraulic fracturing,” “well stimulation treatment fluid,” “proppants,” “surface property owner,” “flowback fluid,” “well stimulation treatment,” and “acid well stimulation treatment.”¹²⁸ Of these definitions, “well stimulation treatment fluid,” “additive,” “base fluid,” and “well stimulation treatment” are among the most important in defining the scope of SB 4.

“Well stimulation treatment fluid” is defined, in part, as “a base fluid mixed with physical and chemical additives, which may include acid, for the purpose of well stimulation treatment.”¹²⁹

“Base fluid” means “the continuous phase fluid used in the makeup of a well stimulation treatment fluid, including, but not limited to, an acid stimulation treatment fluid or hydraulic fracturing fluid.”¹³⁰

An “additive” is a “substance or combination of substances added to a base fluid for the purposes of preparing well stimulation treatment fluid which includes, but is not limited to, an acid stimulation treatment fluid or hydraulic fracturing fluid.”¹³¹

Because “well stimulation treatment” (WST) is already a term used in other regulatory programs, the Legislature defined it specifically for SB 4 to mean “any treatment of a well designed to enhance oil and gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments.”¹³² “Well stimulation treatment,” for purposes of SB 4, does not include underground injection control (UIC) projects because a regulatory scheme already exists for UICs.

These definitions are particularly important because, as discussed above, it was deemed essential by legislators for the language of the bill to encompass not just hydraulic fracturing but other well stimulation techniques, particularly acidizing. Furthermore, one of the major provisions of SB 4

mandates the public disclosure of “well stimulation treatment fluid composition and disposition.”¹³³ With the above definitions, a WST fluid could be as simple as water and one “additive” meant to “enhance oil and gas production or recovery by increasing the permeability of the formation.” Acid stimulation treatment fluid or hydraulic fracturing fluids could be considered either a “base fluid” or an “additive.” Therefore, these definitions are designed to require the disclosure of the contents of nearly any fluid used in this type of oil and gas recovery, subject to a few trade secret protections that are discussed below.

Independent Scientific Study

New Public Resources Code section 3160(a) requires the Secretary of California’s Natural Resources Agency to complete an “independent scientific study on well stimulation treatments, including, but not limited to, hydraulic fracturing and acid well stimulation treatments.”¹³⁴ This study must be scientifically rigorous and peer reviewed, must identify existing and potential oil and gas reserves that are or may become drilling sites, and must analyze all known and potential hazards and risks of every aspect of WST. These risks and hazards explicitly include potential greenhouse gas emissions, water contamination, noise pollution, seismicity, and impacts on wildlife, native plants, and habitat.¹³⁵ The Secretary must complete the independent scientific study on or before January 1, 2015.

Public Resources Code section 3160(e) directs the Secretary to submit progress reports regarding the mandated scientific study, beginning on or before April 1, 2014, and continuing every four months thereafter, to the Joint Legislative Budget Committee and the chairs of the Assembly Natural Resources, Senate Environmental Quality, and Senate Natural Resources and Water Committees.

This provision would appear to be essential to the stated purpose and overall success of SB 4. Because there have to date been no statewide, comprehensive environmental assessments of fracking in California, there is no basis on which to promulgate science-based regulations adequately protecting the environment and public health. By requiring the Secretary for Natural Resources to conduct an independent, scientifically rigorous study, SB 4 sets the foundation for comprehensive informed regulations.

Development of Well Stimulation Treatment Regulations by DOGGR

New Public Resources Code section 3160(b) requires DOGGR, on or before January 1, 2015, to promulgate and adopt regulations governing fracking operations in California. DOGGR is directed to formulate these regulations in consultation with multiple state and local agencies, including the California Department of Toxic Substances Control, California Air Resources Board, State Water Resources Control Board, local air districts, and the nine regional Water Quality Control Boards. The DOGGR regulations must be specific to WSTs, including but not limited to hydraulic fracturing and acid well stimulation treatments. The regulations must include provisions establishing threshold values for acid volumes, minimum disclosure requirements imposed on well operators, and other explicit provisions consistent with SB 4. These regulations are to be evaluated and revised according to the best available scientific information, including the above-described independent scientific study prepared by the Secretary for Natural Resources pursuant to section 3160(a), which has the same statutory deadline.

The disclosure requirements set forth in section 3160(b)(2) include, among other things, full disclosure of the composition and disposition of well stimulation fluids, the volume of base fluids, additives, and waste fluids, and the source and volume of all water used in the WST process. These minimum

disclosure requirements are particularly important as applied to the trade secret provisions set forth in section 3160(j), discussed in more detail below.

DOGGR released proposed permanent regulations on November 15, 2013, and revised, proposed regulations on June 13, 2014.¹³⁶

On December 19, 2013, DOGGR released “interim well stimulation regulations,”¹³⁷ which became effective on January 1, 2014 and will remain in effect until the permanent regulations are completed and adopted before January 1, 2015.

Delineation of Agencies’ Statutory Authority and Regulatory Responsibilities

While developing WST regulations, SB 4 instructs DOGGR to “identify and delineate the existing statutory authority and regulatory responsibility relating to well stimulation treatments and well stimulation-related activities;” while not explicitly stated, this includes identifying authority over both on- and off-shore drilling. By January 1, 2015, DOGGR must enter into formal agreements with the identified state and local agencies and boards describing the applicable statutory authority and regulatory responsibilities regarding hydraulic fracturing. This is important for oil and drilling in general, but particularly important for offshore fracking and is further addressed later in this paper.

Public Disclosure of WST Fluid Composition

Public Resources Code section 3160(g) requires a well operator to disclose the specific WST fluid composition and disposition required by section 3160(b) within 60 days of “cessation of a well stimulation treatment on a well.” This information must be posted on a public website created by DOGGR, which must develop this website by January 1, 2016.

Until this website is launched by DOGGR, SB 4 directs reporting of this information to an “alternative Internet Web site;” this alternative site is identified as fracfocus.org both in the final Senate Floor Analysis and in DOGGR’s currently-proposed regulations.¹³⁸

Under new Public Resources Code section 3160(g), companies are required to report information for fracking and acidization to FracFocus, and DOGGR must obtain this information and post it publicly on its own website in an “organized electronic format.”

DOGGR has developed a page on its website where it will compile “specified information regarding the composition and disposition of well stimulations fluids, including, but not limited to, hydraulic fracturing fluids, acid well stimulation fluids, and flowback fluids” as it is received from operators.¹³⁹

This provision is one of the most important provisions contained in SB 4. Perhaps the most prominent complaint about fracking cited by opponents is that the public does not know what chemicals fracking operators are pumping into the ground. By requiring public disclosure of each chemical present throughout every step of the process, SB 4 seeks to address these concerns. However, chemical disclosure is not absolute under the legislation, and is subject to some limited trade secret protections.

Trade Secret Disclosure

A major concern expressed by fracking fluid suppliers is that by disclosing the chemical composition of their WST fluids, they will lose a competitive edge in the industry. Therefore, suppliers have often voluntarily disclosed some of their WST fluid composition on fracfocus.org, while at the same time withholding particular ingredients as protected trade secrets. As discussed in Public Resources Code section 3160(j), trade secrets are governed by section 1060 of California's Evidence Code, the Uniform Trade Secrets Act, and the California Public Records Act.

New section 3160(j) applies only to fracking fluid "suppliers."¹⁴⁰ Section 3160(j)(8) states that "the supplier is not required to disclose trade secret information to the operator." If a supplier reveals the chemical information to an operator, it is very unlikely the supplier would be able to claim the information as a trade secret.¹⁴¹ However, "if a supplier believes that information regarding a chemical constituent of a well stimulation fluid is a trade secret, the supplier shall nevertheless disclose the information to [DOGGR]..."¹⁴²

New Public Resources Code section 3160(j)(2) specifically states that none of the following "shall be protected as a trade secret:"

- (1) *the identities of the chemical constituents of additives;*
- (2) *the concentration of additives in the well stimulation treatment fluid;*
- (3) *air or other pollution monitoring data;*
- (4) *health and safety data associated with WST fluids; and*
- (5) *the chemical composition of flowback fluid.*

Suppliers, such as Halliburton, must disclose all chemical constituents to DOGGR even if a trade secret is claimed. If the trade secret claim is invalid or invalidated, DOGGR must release the information to the public pursuant to the normal disclosure requirements of section 3160(g). A company claiming trade secret status may prevent this disclosure only if, within 60 days, the operator files a lawsuit claiming trade secret status and the reviewing court agrees, determines the relevant information qualifies as a trade secret under California law, and issues a court order preventing DOGGR from making the disclosure.

This provision dramatically shifts the traditional process of seeking and challenging trade secret protection in California. SB 4 presumes that the identities of chemicals present in fracking additives are not protected as trade secrets and directs companies to provide a complete list to DOGGR. DOGGR must then release this information to the public within 60 days, unless the company is able to substantiate a trade secret claim under five criteria listed in section 3160(j)(5).

If DOGGR is satisfied that a chemical is protected under the trade secret criteria contained in section 3160(j)(5), it need not disclose the information to the public. However, any member of the public may then request that DOGGR disclose the claimed trade secret information. Section 3160(j)(9) indicates that when a request for information is submitted, DOGGR must notify the company in writing and the company must substantiate the trade secret claim in a court proceeding.

Finally, even if information is protected as a trade secret under sections 3160(j)(5) and (9), section 3160(j)(10) identifies individuals to whom DOGGR must always provide the information,

notwithstanding trade secret status. This list includes specific government officers and employees, health professionals in emergencies, and public health professionals who provide a statement of need. These health professionals may share the information with other health professionals as needed without signing a confidentiality agreement.

Well Stimulation Treatment Permitting Process

SB 4 mandates a permitting process for DOGGR's approval of well stimulation treatment (WST) projects. Public Resources Code section 3160(d)(1) identifies the minimum criteria that must be included by a well operator in a permit application. A WST permit issued by DOGGR, if approved, is effective for one year from the date of approval. Some of the most important criteria a prospective permittee must satisfy are the time and location of the proposed WST, a complete list of chemicals to be used in the WST fluid, water management and groundwater monitoring plans, and the source and disposal method of water related to the treatment.

Approval of the permit is by DOGGR alone, without any public input, hearing or disclosure regarding the contents of the permit application.

DOGGR must provide a copy of any approved permit to the "appropriate regional water quality control board" and local "planning entity" with jurisdiction over the site where the WST will take place, within five days of approving the permit.¹⁴³ Pursuant to section 3160(j)(10)(a), the contents of the permit (including any protected trade secret information) must be released to the affected local governments. This is intended to ensure that those regulated bodies can monitor the chemicals being injected into their communities and may exercise their traditional policy powers to protect public health if they have concerns over drilling operations under the DOGGR-approved permit.

Furthermore, DOGGR must post the approved WST permit on "the publicly accessible portion of its Internet Web site" within five business days of issuing the permit. This requirement, however, does not extend to the contents of the permit application.

Surface Landowner Notification of Approved WST Permit

Public Resources Code section 3160(d)(6-8) describes the public notification requirements of SB 4. It is "the policy of the state," and a particular concern of SB 4's author and groups supporting the bill, that well operators timely provide an approved permit and any related information concerning available water sampling to tenants on and owners of land that may be affected by the WST. SB 4 identifies relevant landowners as surface property owners – or their authorized agent – within a 1,500 foot radius of the wellhead or within 500 feet of the horizontal projection of the WST. A well cannot begin operating until at least 30 days after all necessary parties have been notified. Therefore, it is in the well operators' interest to notify the appropriate tenants and landowners in a timely manner.

Well operators must organize and contract with an approved third party to be responsible for notifying the appropriate landowners of the approved permit application.¹⁴⁴

Significantly, the requisite landowner notification is required only after the permit has been approved; prior landowner input is not mandated. Landowners may, however, request "water quality sampling and testing from a designated qualified contractor," paid for by the well operator.¹⁴⁵ Landowners may request sampling and testing before operations begin to obtain baseline measurements and then may request follow-up sampling and testing "on the same schedule as the pressure testing of the well casing of the treated well," which is generally done on a monthly basis.¹⁴⁶

Finally, this section requires that the well operator notify DOGGR at least 72 hours before beginning the WST so that DOGGR may “witness the treatment,” though DOGGR representatives are not required to do so.¹⁴⁷

No Displacement of Other Applicable Laws

Public Resources Code section 3160(n) provides that SB 4 “does not relieve the division or any other agency from complying with any other provision of existing laws, regulations, and orders.”

This provision is particularly important in connection with CBD’s October 2012 litigation. Senator Pavley has often pointed to this provision in response to claims that late amendments to SB 4 allow DOGGR and the oil and gas industry to circumvent the requirements of CEQA.

Interim Government and Industry Obligations Under SB 4

New Public Resources Code section 3161 provides that if well operators comply with the provisions of SB 4, DOGGR “shall allow” all types of well stimulation treatments, including hydraulic fracturing and acid well stimulation, until DOGGR finalizes and implements the comprehensive fracking regulations required by SB 4.

This section was added late in the legislative debate over SB 4. Its inclusion was cited as a major reason environmental organizations ultimately withdrew their support for the legislation.

Section 3161 also requires that DOGGR complete an environmental impact report (EIR) pursuant to the CEQA by July 1, 2015, six months after the DOGGR regulations and Secretary of the Natural Resources’ scientific study are completed.

According to section 3161(b)(4)(C), DOGGR’s environmental impact report “shall not conflict with an EIR conducted by a local lead agency that is certified on or before July 1, 2015.” This provision has prompted some local governments, such as Kern County, to attempt to finish their own, local EIRs before DOGGR’s state-wide EIR is finalized.

Penalties for Violations of SB 4

SB 4 amends previously existing Public Resources Code section 3226.5 to establish penalties for violations of SB 4’s substantive provisions.¹⁴⁸ The minimum civil penalty for violating any provision of SB 4 is \$10,000 per violation per day, and the penalty cannot exceed \$25,000 per violation per day. Upon determination of violation, DOGGR may impose a penalty administratively. If the penalty is not paid in a timely manner, DOGGR may go to court to obtain an order to require payment of the fine or to suspend well production. Well operators are not considered to have violated the statute if the violation occurs due to an “Act of God” or an act of vandalism “beyond the reasonable control of the operator.”

These penalties are subject to certain enumerated “adjustment factors,” to be applied by and at the discretion of DOGGR’s supervisor. These adjustment factors include: (1) the extent of harm caused by the violation; (2) the persistence of the violation; (3) the pervasiveness of the violation; and (4) the number of prior violations by the same violator.¹⁴⁹

Penalties collected from these violations are directed to the Department of Conservation’s Oil, Gas, and Geothermal Administrative Fund, which is “limited to the minimum work necessary to eliminate any

immediate risk to life, health, or natural resources.”¹⁵⁰ A maximum of 5 percent of the fund may be used to administer the account and/or develop regulations.¹⁵¹

Funding SB 4

SB 4 includes provisions that establish a system of fees and penalties assessed upon the oil and gas industry engaging in fracking. These fees and penalties ensure that every aspect of the implementation of SB 4, including rulemaking, scientific studies, water quality monitoring and testing, and other costs incurred by public entities are paid for by the oil and gas industry and not the taxpaying public.

State Water Resources Control Board Groundwater Monitoring Plan Obligations

Because groundwater protection is “of paramount concern,” SB 4 directs California’s State Water Resources Control Board to develop regional or well-by-well groundwater monitoring criteria by July 15, 2015. The minimum criteria to be included in this mandated groundwater monitoring plan are codified in new Water Code section 10783(f). The Board is directed to finalize the monitoring plans with input from experts, including DOGGR, and relevant stakeholders such as industry and agriculture.

All of this data must be submitted to the Board in a format compatible with the Board’s existing database, making it available to the public in response to a Public Records Act request. The information must also be submitted for review by “a public, nonprofit doctoral-degree-granting educational institution located in the San Joaquin Valley, administered pursuant to section 9 of Article IX of the California Constitution,” which can only be the University of California, Merced.¹⁵²

V. DOGGR’s Implementing Regulations

Key Provisions of DOGGR’s Interim Regulations on Well Stimulation Treatments

DOGGR proposed interim regulations on December 11, 2013, and submitted final interim regulations, which included amendments responding to public comment, on December 19, 2013.¹⁵³ The final interim regulations went into effect on January 1, 2014.¹⁵⁴

The interim regulations start by defining “well stimulation treatment” as including “hydraulic fracturing, acid fracturing, and acid matrix stimulation.”¹⁵⁵ The interim regulations further state that “well stimulation treatments” do not include, among other things, “routine well cleanout work;...routine activities that do not affect the integrity of the well or the formation;...or a treatment that does not penetrate into the formation more than 36 inches from the wellbore.”¹⁵⁶

Article 4 of the interim regulations sets an “acid concentration threshold” for acid matrix stimulation treatments covered by the regulations.¹⁵⁷ The interim regulations identify a 7% acid concentration threshold, which means if the acid concentration of a fluid used for an acid matrix stimulation treatment is less than 7% the regulations to not apply to that treatment.



California Department of Conservation, Division of Oil, Gas & Geothermal Resources building
SOURCE: WIKIMEDIA COMMONS, USER "GRIFFIN5"

Article 4 then provides definitions for important terms such as “acid matrix stimulation treatment,”¹⁵⁸ “hydraulic fracturing,”¹⁵⁹ and “well stimulation treatment fluid.”¹⁶⁰ Notably, these definitions do not precisely match the definitions codified in SB 4.

Section 1783 of DOGGR’s interim regulations identify the notification requirements of new well stimulation treatments. The regulations require the well operator to submit an “Interim Well Stimulation Treatment Notice form,” which must include information listed in section 1783.1. Importantly, section 1783(b) states: “As directed in Public Resources Code section 3161, the Division must allow, and will allow, well stimulation to proceed if the operator has provided all of the required information and certifications.” This refers to the controversial provision of SB 4 that was reportedly the reason many supporters withdrew their support of the bill. The interim regulations section 1783.1 describes the requirements for the notice and include technical information regarding the well stimulation treatment, notification procedures, and trade secret claim procedures, all pursuant to the directives contained in SB 4.

Section 1783.4 of DOGGR’s interim regulations identifies the necessary criteria for interim “well-specific” or “area-specific” groundwater monitoring plans developed by the well operator including: multiple types of maps, well construction details, and a well failure contingency plan. Operators “shall sample the groundwater monitoring wells before well stimulation commences to establish a groundwater quality baseline and at least once within 60 days after the well stimulation is completed.”¹⁶¹

The interim regulations also address public disclosure of chemicals and water used in the well stimulation treatment processes. Section 1788 lists the information well operators must publicly disclose to the Chemical Disclosure Registry within 60 days after the “cessation of a well stimulation treatment.” This includes: the “complete list of the names, Chemical Abstract Service numbers, and maximum concentration, in percent by mass, of each and every chemical constituent of the well stimulation treatment fluids used;”¹⁶² whether the fluid used during the WST is appropriate for irrigation;¹⁶³ and whether there is reuse of treated or untreated water for other WSTs.¹⁶⁴ The latter two pieces of information are particularly important for the conservation and recycling of water used in well stimulation treatments, a fundamental concern explicitly identified by the Legislature in SB 4.

Key Provisions of DOGGR’s Proposed Permanent Regulations on Well Stimulation Treatments

DOGGR released the text of the proposed permanent regulations¹⁶⁵ implementing SB 4 on November 15, 2013. A 60-day public notice-and-comment period ended in January 2014, at which point DOGGR began additional review of the proposed regulations. This section analyzes the proposed regulations as they existed at the start of May 2014.

The proposed permanent regulations add Article 1, which develops the guidelines for “single project

authorization.” This provision allows DOGGR to approve multiple well stimulation treatment permit applications if well operators group the permits together as specified in Article 1. This provision is likely a response to Governor Brown’s signing message, in which he directed the Department of Conservation to “develop an efficient permitting program...that groups permits together.”¹⁶⁶



Mark Nechodom, Director of California's Department of Conservation. SOURCE: [HTTP://WWW.CONSERVATION.CA.GOV/](http://www.conservation.ca.gov/)

Interestingly, a provision in the interim regulations that is absent from the proposed permanent regulations reads: “well stimulation treatment on a well that is part of an underground injection project is subject to the regulations regarding well stimulation treatment.”¹⁶⁷ This indicates that when the permanent regulations go into effect, a well stimulation treatment that is part of an underground injection project may not be subject to the permanent regulations. Instead, the absence of this clause in the permanent regulations indicates a well stimulation treatment that is part of an underground injection project will be subject to the underground injection regulatory scheme.

Instead of the section in the interim regulations addressing the “Interim Well Stimulation Treatment Notice form,” the proposed permanent regulations develop the requirements for DOGGR’s well stimulation treatment permitting process as mandated by new Public Resources Code section 3160(d). The permit application requires significantly more detail than the interim notice form, and the requirements are listed in the proposed permanent regulations section 1783.1.

The permanent regulations do not include the interim regulations’ section 1783.2(b), which describes the right of property owners to request water sampling. The absence of this regulation is unlikely to be substantive because the right of property owners to request water quality sampling is codified in SB 4 and in other sections of the proposed permanent regulations.

The proposed permanent regulations do not include the interim regulations’ section on criteria for groundwater sampling, testing, and monitoring.¹⁶⁸ Presumably, the provisions for “interim model groundwater monitoring criteria” are not necessary because pursuant to SB 4 the State Water Resources Control Board must complete its own regional groundwater monitoring plan by July 1, 2015.¹⁶⁹ However, the proposed permanent regulations go into effect on January 1, 2015, leaving a six-month period during which the “interim model groundwater monitoring criteria” regulations are not in effect and the SWRCB’s regional groundwater monitoring plan is incomplete. It is unclear what water monitoring criteria would be required during this six-month regulatory gap.

The proposed permanent regulations also add requirements for cement casing evaluation and pressure testing prior to WST,¹⁷⁰ a list of parameters that must be monitored during WST,¹⁷¹ requirements for handling and storage of WST fluids,¹⁷² and post-WST monitoring requirements.¹⁷³

The proposed permanent regulations and the interim regulations have very similar provisions regarding “required public disclosures.”¹⁷⁴ The proposed permanent regulations do, however, change the entity to which well operators must submit groundwater quality data from SWRCB to the applicable Regional Water Quality Control Board; this ensures better communication with regional water quality experts.

Finally, the proposed permanent regulations add section 1789, which requires well operators to submit a “post-well stimulation treatment report” that describes, among other things: the results of the WST; how the actual process differed from the process anticipated in the operator’s permit application; and seismic activity that occurred in the area, if any.

VI. Key Unresolved Issues and Policy Recommendations

The Secretary of Natural Resources' Independent Scientific Study of Fracking



John Laird, California Secretary for Natural Resources. SOURCE: WWW.RESOURCES.CA.GOV/LAIRD.HTML

While the requirements of the “independent scientific study” mandated by SB 4 are very broad, it is uncertain whether that study can be rigorous and peer-reviewed, yet still be completed in just over one year as mandated in the new legislation. If additional scientific data is needed beyond that currently available – which seems likely – Public Resources Code section 3160(a)(7) instructs the Secretary for Natural Resources to “clearly identify where additional information is necessary to inform and improve the analyses.” This is important because it requires the study to be completed by the statutory deadline while allowing the Secretary to revise it later to incorporate and reflect newly-developed, improved scientific findings. Significantly, any revised scientific study, like the original version, will continue to be funded by fees collected from the oil and gas companies engaging in fracking or other well stimulation treatments covered by SB 4.¹⁷⁵

However, some legislators and environmental organizations believe the parameters of the independent study, though open-ended, are ultimately inadequate. On February 20, 2014, California State Senators Holly Mitchell (Los Angeles) and Mark Leno (San Francisco) introduced Senate Bill 1132, a new bill calling for a moratorium on fracking until the Secretary of Natural Resources' independent scientific study is completed.¹⁷⁶ SB 1132 also seeks to address perceived inadequacies in the mandated independent study pursuant to SB 4. In particular, SB 1132 seeks to expand the scope of the independent study to include, among other things:

- How increased oil and gas WSTs will affect California's GHG reductions goals pursuant to AB 32;
- An analysis of the economic costs to agriculture and tourism in California and to specific communities particularly dependent on water;
- Environmental justice concerns;
- The environmental effect of increased traffic and pipeline activity;
- The environmental impact on endangered species;
- An increased focus on worker safety;
- Whether the increase in water usage due to WST activity in California is sustainable; and
- Whether local emergency planning is adequate in spite of the minimal scientific information related to WSTs.

Although some of these concerns may be encompassed within the broad language of SB 4's section 3160(a) and would presumably be included in DOGGR's mandated state-wide Environmental Impact Report, SB 1132 explicitly addresses concerns that may not be addressed without a new, express legislative requirement.

SB 1132 seeks to include an in-depth assessment of worker safety related to hydraulic fracturing. SB 4 itself instructs the California's Natural Resources Agency to include “a hazard assessment and

risk analysis addressing occupational...exposures to well stimulation treatments” in the required independent scientific study.¹⁷⁷ It seems preferable that this study not only address chemical exposure but also identify physical safety issues for workers in oil and gas fields associated with fracking. The annual death rate at oil and gas well sites in the United States is eight times greater than the “all-industry” rate.¹⁷⁸ This increased danger is often attributed to the rapidly expanding workforce flooded with inexperienced workers needed to facilitate the growth of hydraulic fracturing.¹⁷⁹

Policy Recommendation

Although a fracking moratorium bill would be difficult to enact through legislation, many of the specific questions raised regarding the independent scientific study should be incorporated as amendments to SB 4 as a means of strengthening the conclusions of the study and the subsequent regulatory regime.

Furthermore, the SB 4-mandated scientific study should specifically analyze and determine appropriate training requirements to minimize worker deaths and injuries at hydraulic fracturing well sites.

Development of DOGGR’s Implementing Regulations

DOGGR’s proposed permanent regulations raise several issues distinct from those issues presented by SB 4 itself. It will therefore be important for the Legislature, industry, and other interested stakeholders to continue to monitor DOGGR’s rulemaking process to ensure that the final regulations implementing SB 4 fully reflect the letter and spirit of this landmark legislation and incorporate sound science.

New Public Resources Code section 3160(b)(1)(C)(i) directs DOGGR to “establish threshold values for acid volume applied per treated foot...or for total acid volume of the treatment, or both, based on a quantitative assessment of the risks posed” by the amount of acid present in acid matrix stimulation treatment fluids. This provision seeks to identify which acid matrix well stimulation fluids are subject to DOGGR’s regulations. If an acid matrix well stimulation fluid falls below a scientifically justifiable limit identified in the regulations, that fluid is not subject to the regulations.¹⁸⁰

Article 4, section 1780(a) of the proposed permanent regulations establishes only an acid concentration threshold of 7%.¹⁸¹ This means that only well stimulations that have more than a 7% acid concentration are covered by the regulations; accordingly, any acid matrix well stimulation fluid that has a 7% or less acid makeup is not regulated.

DOGGR’s proposed permanent regulations also specify that the regulations “[do] not apply to...a treatment that does not penetrate into the formation more than 36 inches from the wellbore.” This provision essentially exempts from the regulations well stimulation treatments that do not extend more than three feet from the vertical well column. While the text of SB 4 gives DOGGR discretion to include an acid volume threshold or acid concentration threshold (or both), the text does not expressly authorize DOGGR to develop a well penetration threshold.

Policy Recommendation

DOGGR should provide a justification for not including in its proposed regulations an acid volume threshold, which is a more precise measurement than an acid concentration threshold. Interested stakeholders raised this and a few other relevant issues at public hearings throughout the state. In response to these public comments, the permanent regulations could include a risk assessment of

different chemicals, based on their individual potential harms, and could place specified chemicals into categories characterized by volume thresholds and concentration thresholds.

While SB 4 directs DOGGR to establish acid concentration and volume thresholds, discussed above, the legislation does not seek to establish a minimum distance from the vertical well column for covered well stimulation treatments. Perhaps upon completion of the Secretary's Independent Scientific Study required by SB 4, this limiting threshold could reasonably be set. However, for these regulations, the threshold value for treatment penetration appears unjustifiably limiting.

Jurisdictional Issues: Statutory and Regulatory Authority

New Public Resources Code section 3160(c), which directs DOGGR to work with other state agencies to delineate respective statutory and regulatory authority regarding fracking, is important because there is currently a great deal of confusion over which agencies and local governments have regulatory authority and responsibility over specific practices of the oil and gas industry, both on- and off-shore.¹⁸²

In 1988, DOGGR and the State Water Resources Control Board (SWRCB) entered into a Memorandum of Agreement (MOA) meant to simplify the permitting process for oil, gas, and geothermal wells designed to satisfy both agencies' statutory requirements.¹⁸³ This jurisdictional MOA, though still in effect, only applies to Class II injection wells, which include only hydraulic fracturing that uses diesel fuels.¹⁸⁴ Similarly, Public Resources Code section 3160(c) encourages collaboration with a number of identified state agencies to avoid potentially duplicative government review and ensure a streamlined process.



Oil rig off the coast of Santa Barbara, California.
SOURCE: FLICKR USER BERARDO62

While SB 4 applies to both on- and off-shore well stimulation treatments, fracking has been occurring on tide and submerged lands off California's coastline for far longer than most of the public and media realize. In August 2013, in response to Freedom of Information Act requests from the Associated Press and environmental organizations, the federal government revealed that federal regulators permitted fracking off the coast of Santa Barbara at least nine times since the

late 1990's.¹⁸⁵ Furthermore, the documents revealed at least 203 fracking operations at six different well sites off Southern California's shores since 1990.¹⁸⁶

Shortly after the A.P. published that story, in October 2013 the Environmental Defense Center released a report highlighting these previously, relatively unknown practices.¹⁸⁷ The federal agency in charge of overseeing these offshore oil drilling projects, the U.S. Department of the Interior's Bureau of Safety and Environmental Enforcement (BSEE), awarded well operators categorical exclusion from the National Environmental Policy Act (NEPA), sidestepping any requirement for an environmental analysis under NEPA. BSEE claimed that fracking was occurring in previously drilled wells that had, at one time, complied with appropriate environmental laws.¹⁸⁸ Even if well operators complied with applicable environmental laws when seeking a permit, while BSEE conducts some inspections, reporting any spills or leaks is generally the responsibility of drilling companies.¹⁸⁹

This is particularly important because, by industry estimates, at least half of the fracking fluid used in offshore wells is left in the surrounding marine environment after the treatment is over; these fluids, like onshore flowback discussed earlier, are also exempt from many federal environmental laws.¹⁹⁰

On January 9, 2014, the United States Environmental Protection Agency issued a rule requiring oil and gas companies for the first time to disclose the chemicals used and disposed of during the offshore fracking procedure located in federal waters off the California coast.¹⁹¹ This "Final NPDES General Permit" rule applies to 23 existing offshore drilling platforms and to "any new exploratory drilling operation."¹⁹² The rules took effect on March 1, 2014.

Currently, about 50% of permitted well stimulation in California occurs on federal lands and is thus under the jurisdiction of the Bureau of Land Management (BLM) and not within the reach of SB 4. DOGGR has a Memorandum of Understanding (MOU) with BLM dated October 2012 regarding oil and gas procedures on land owned by the federal government or "mixed" lands, where the federal government owns the mineral rights to the land or the surface rights, but not both.¹⁹³ DOGGR has jurisdiction over oil and gas drilling on state lands. Among other agreements, the MOU establishes that DOGGR and BLM will "coordinate the development and implementation of future hydraulic fracturing...regulations."¹⁹⁴ Furthermore, DOGGR and BLM will "jointly explore adopting region-wide Best Management Practices specific to California."¹⁹⁵ It is yet to be seen whether and how the BLM will adopt SB 4 implementing regulations to federal lands located in California.

DOGGR must also coordinate procedure and delineate authority with the California State Lands Commission. The State Lands Commission, an entity within the Natural Resources Agency but separate from the Department of Conservation, has jurisdiction over oil and gas drilling permitting and development occurring in California's state-owned tide and submerged lands.¹⁹⁶

As more drilling occurs offshore, the jurisdictional issues get particularly complicated. While BSEE has jurisdiction in federal waters, some wells are in federal waters but drill horizontally into state waters and vice-versa. The California Coastal Commission, yet another regulatory entity within the Natural Resources Agency, has regulatory authority over oil and gas development in state waters as well as authority to ensure that federal drilling activity is consistent with California's Coastal Management Plan (CMP).¹⁹⁷

It is unclear exactly how these jurisdictional issues will ultimately be resolved. Many anticipate that the Legislature will soon draft amendments to SB 4 in an effort to address and resolve the jurisdictional confusion over offshore fracking. That would be a most welcome development.

Policy Recommendations

As SB 4 encourages DOGGR's collaboration with "other public entities, as applicable," it is particularly advisable to include additional language that explicitly identifies those public entities responsible for offshore WST. That is because respective federal, state and local regulatory authority over oil and gas drilling practices are especially amorphous.

When jurisdictional authority is clearly delineated, agencies should look to MOAs like that between DOGGR and SWRCB and MOUs such as that between DOGGR and BLM as models for agency collaboration to ensure that a well operator seeking a permit need go through the fewest jurisdictions while satisfying the statutory requirements of SB 4 and other existing laws.

Disclosure & Trade Secrets

Disclosure

In Public Resources Code section 3160(g), which requires well operators to publicly post online the composition of their WST fluids "following cessation of [WST] on a well," "cessation" is not a clear term. The dictionary definition is "the fact or process of ending or being brought to an end."¹⁹⁸ There is no legislative history explicitly identifying at what specific point "cessation of a well stimulation treatment on a well" occurs for purposes of SB 4's disclosure requirement.¹⁹⁹ However, the term is reportedly meant to refer to Article 4 of the Public Resources Code, where there is a specific definition of cessation: "the cessation of drilling operations occurs on the date of removal of drilling machinery from the well site."²⁰⁰

Both the Interim Regulations²⁰¹ and the Proposed Permanent Regulations²⁰² state that "for purposes of this article, a well stimulation treatment...ends when the [WST] equipment is disconnected from the well." Though a minor semantic detail, there is a difference between "removal of machinery from the well site" and "when the [WST] equipment is disconnected from the well site."

Policy Recommendation

SB 4 and DOGGR's implementing regulations would be improved if this small, but potentially significant, semantic difference regarding the definition of "cessation" were reconciled.

The SB 4 Permitting Program

Landowner Notification

The landowner notification provisions of SB 4 are especially important. Because of the size of horizontal fracking wells both constructed and contemplated in California, some affect hundreds of different properties. The notification requirements mandated under SB 4 will be burdensome and expensive for third-parties to complete, a cost that will be passed on to well owners and operators and ultimately the consumer.

SB 4, as currently written, does not discuss cost-containment measures for third parties conducting notification processes and requested groundwater sampling. Section 3160(d) requires well operators to

contract with third party notifiers and third-party water sampling companies that have been approved by the SWRCB.

Additionally, the landowner notification process is prone to error because of the sheer volume of paperwork and necessary investigation that goes into determining which landowners are affected and must be notified under SB 4. Public Resources Code section 3160(d)(7)(A) states: “A property owner notified pursuant to paragraph (6) may request water quality sampling...” This means that if the well operator or its designated third party representative does not satisfy the requirements of section 3160(d)(6), i.e. does not properly notify a landowner, an otherwise eligible surface landowner would not be able to request this water quality sampling until the landowner has brought a lawsuit against the well operator or the independent contractor to fulfill their section 3160(d)(6) notification obligations. A landowner who learns about WST occurring on or under their property, even if not properly notified by the operator, should be able to request water quality sampling from that well operator without going to court. Additionally, if the notification procedures are not fulfilled, the well operator’s failure to properly notify the landowner would constitute a violation of the law, subject to the penalty provisions of section 3236.5 of the Public Resources Code.

Furthermore, while section 3160(d)(6)(A) indicates every tenant and surface property owner shall be notified, section 3160(d)(7)(A) provides that only surface property owners may request water quality sampling and testing. From the text of the legislation²⁰³ and DOGGR’s regulations,²⁰⁴ a tenant does not have the right to request water quality sampling once notified.

Because adjacent landowners will be able to request water quality testing before drilling and continuously after drilling, there will be a baseline against which subsequent water quality tests can be compared. Landowners and environmentalists have claimed fracking pollutes nearby surface- and groundwater. However, in the past, adjacent landowners have had a difficult time proving that water was polluted as a result of the drilling activities conducted on or near their land. This is because baseline water quality tests were not previously completed; therefore, landowners could not establish the requisite causation. Because of section 3160’s ongoing water quality testing option, if groundwater is truly contaminated due to fracking, it will be easier for affected third parties to establish causation. On the other hand, if fracking does not contaminate groundwater, as the industry claims, then these ongoing tests will confirm that contention and well owners and operators will likely be able to avoid liability. This will minimize litigation costs regarding water contamination in the future.

Policy Recommendations

There should be some parameters for the costs third parties can charge for SB 4’s mandated notification services. The SWRCB has contracted for third-party water sampling in the past, though the sampling procedures haven’t been identical to those mandated by SB 4. Nonetheless, these previous third-party sampling costs could serve as a starting point for developing cost control measures for water quality sampling.

Section 3160(d)(7)(A) would be improved by amending the landowner notification procedures to read: “An eligible property owner pursuant to paragraph (6) may request water quality sampling...” This way, an eligible landowner’s right to request water quality sampling would relate to a statutory definition rather than the actions of a well operator or their designated third-party.

Furthermore, because tenants are likely to live on the affected property, while “surface property owners” may or may not actually live on the property, both the legislation and regulations should be updated to

explicitly allow surface property owners and tenants to request water quality sampling once notified of the proposed well stimulation treatment.

Implications for Local Government Efforts to Regulate or Ban Fracking

SB 4 author Senator Pavley and the legislation's supporters have made clear that SB 4 should not be considered the definitive and final statement governing fracking in California. To the contrary, SB 4 permits a continuing role for California local governments that wish to enact more stringent fracking regulations or bans than the statewide provisions mandated by SB 4. It remains to be seen the extent to which local communities in California will impose additional regulations on oil and gas extraction throughout the state.

Furthermore, California Public Resources Code section 3690, an existing law predating SB 4, explicitly states that state-wide oil and gas regulations “shall not be deemed a preemption by the state of any existing right of cities and counties to enact and enforce laws and regulations regulating the conduct and location of oil production activities...”²⁰⁵

The California Environmental Quality Act (CEQA)

As noted above, one of the key reasons most environmental organizations reportedly withdrew support for the final version of SB 4 was the 11th hour inclusion of new Public Resources Code section 3161, which describes DOGGR's new well-permitting process during the “interim period” (i.e., the time between the passage of SB 4 and the effective date of DOGGR's permanent regulations). These groups fear that section 3161 allows DOGGR and well operators to circumvent the pre-existing environmental requirements of CEQA during the interim period. Their main concern is that, under one reading of the section, a well operator may apply to DOGGR for a permit in the interim period, DOGGR “shall” (read: “must”) approve the permit, and the operator may then begin drilling without complying with CEQA. If a government action is ministerial, i.e. not discretionary, then that government action does not trigger CEQA and CEQA compliance is not required.

The environmental community also expressed concern over new Public Resources Code section 3160(b) (2), which describes the supervisor of DOGGR's discretion to approve multiple permits in a “single combined authorization.”²⁰⁶ The section further states that if the supervisor determines the activities in the permit satisfy the requirements of CEQA, then “no additional review or mitigation shall be required.”²⁰⁷

Center for Biological Diversity's 2012 Lawsuit

After SB 4 was enacted and signed into law, DOGGR and the three industry intervenors in CBD's October 2012 lawsuit²⁰⁸ moved to dismiss the case, claiming SB 4's permitting and CEQA provisions render the complaint moot.²⁰⁹ In particular, the intervenors argued that regardless of any alleged previous “pattern and practice” of DOGGR's approval process for well stimulation permits, SB 4 establishes a new permitting system, so the previous practices are no longer occurring. Therefore, according to the intervenors, the plaintiffs' arguments are no longer appropriate for judicial review.

The industry intervenors further argued that “prior to the completion of the EIR, the Legislature has directed DOGGR to allow hydraulic fracturing to occur, subject to the operator’s certification of compliance with specified requirements, without the need for CEQA review in the interim.”²¹⁰ Therefore, according to the intervenors, the fact that SB 4 directs DOGGR to approve permit applications in a specific, ministerial fashion, the plaintiffs’ claims regarding CEQA are similarly without merit.

According to the CBD plaintiffs, however, the intent of the Legislature in enacting SB 4 is clear: more, not less, regulation of fracking.²¹¹ Temporarily exempting fracking from the requirements of pre-existing laws such as CEQA would, they say, plainly be contrary to this clear legislative intent and express provisions in the bill. As a result, plaintiffs contend that project-specific environmental analyses continue to be required by CEQA until the statewide EIR is complete, and seek a judicial determination of this position.²¹²

On January 13, 2014, an Alameda County superior court judge agreed with the intervenors and found that “S.B. 4 directs how the DOGGR must proceed regarding its environmental review of application for hydraulic fracturing, and that S.B. 4 is a comprehensive legislative solution that moots the claims in this case.”²¹³

The court did not decide the case on the merits of the plaintiffs’ CEQA concerns, so many questions remain regarding the scope of DOGGR’s SB 4-mandated environmental impact report and related CEQA obligations. Many difficult questions remain regarding this matter that are beyond the scope of this paper, but would benefit from further legislative and/or regulators’ attention.

The State Water Resources Control Board’s Groundwater Monitoring Plan



State Water Resources Control Board Members. From left: Dorene D’Adamo; Vice Chair Frances Spivy-Weber; Chair Felicia Marcus; Steven Moore, and Tam Doduc.
Source: [HTTP://WWW.WATERBOARDS.CA.GOV/BOARD_INFO/INDEX.SHTML](http://www.waterboards.ca.gov/board_info/index.shtml)

Water is an extremely valuable resource in California, particularly in arid areas of the state. Yet in a report released by Ceres in February 2014,²¹⁴ 96% of hydraulic fracturing in the Monterey Formation has occurred in “areas of high or extremely high water stress,” which are defined as areas where “80 percent of available surface and groundwater is already allocated for municipal, industrial and agricultural uses.”²¹⁵

Subdivisions (d) and (e) of new Water Code section 10783 direct the State Water Resources Control Board (SWRCB) to seek the advice of “experts on the design of the model groundwater monitoring criteria” as well as “stakeholders representing the diverse interests of the oil- and gas-producing areas of the state.” The SWRCB reportedly intends to create a “groundwater monitoring advisory board” to satisfy this statutory directive.

The interim regulations clarify some internal inconsistencies in SB 4 regarding terms such as “area specific”²¹⁶ and “oil or gas field-specific”²¹⁷ that relate to groundwater monitoring plans. Specifically, the interim regulations identify that “area specific” and “oil or gas field-specific” mean the same thing.²¹⁸

New Water Code sections 10783 (f) and (g) specify the criteria and factors SWRCB must consider in formulating the groundwater monitoring plan mandated by SB 4. The legislation directs SWRCB to focus particularly on drinking water quality. Water quality is the greatest concern regarding groundwater as it relates to fracking. However, the SWRCB has indicated that it is often difficult to accurately detect incredibly small amounts of chemicals in water based on available scientific methods. Therefore, there may be scientific limits on the extent of groundwater quality testing that SWRCB is actively working to advance.

Policy Recommendations

Due to the importance of water in California and to the fracking process, it is imperative that California state agencies adequately oversee not only potential groundwater pollution issues, but also drilling companies’ water sources, quantity used, rate of use, and disposal or reuse methods.

In keeping with the spirit of SB 4, the advisory board satisfying the SWRCB’s statutory directive to obtain input from diverse experts should be as open and transparent as possible.

Finally, because definitions such as “area specific” and “oil and gas field-specific” are not included in the proposed permanent regulations, the Legislature or regulatory agencies could clarify this language to ensure internal consistency and avoid ambiguous interpretations by DOGGR, SWRCB, industry, and the groundwater monitoring advisory board, particularly in relation to “regional”²¹⁹ groundwater monitoring plans.

On February 21, 2014, CA State Senator Fran Pavley, author of SB 4, introduced Senate Bill 1281. SB 1281 seeks to require all oil and gas well operators to “report to the division the volume, source, and use of all freshwater, recycled water, and treated water” and that DOGGR then make this information publicly available.²²⁰

Water Recycling

In SB 4’s legislative findings, the Legislature specifically “encourages the use or reuse of treated or untreated water and produced water for well stimulation treatments.” However, the legislation’s substantive provisions barely address the reuse or recycling of water used in WSTs.

The independent scientific study mandated by Public Resources Code section 3160(a) must include an evaluation of “the potential for the use of recycled water in well stimulation treatments, including appropriate water quality requirements and available treatment technologies.”²²¹

Section 3160(d)(1)(C) sets forth minimum requirements for a water management plan to be included in the well stimulation treatment permit issued by DOGGR. Specifically, section 3160(d)(1)(C)(i) requires the permit applicant to include “an estimate of the amount of water to be used in the treatment” but states that “estimates of water to be recycled following the well stimulation treatment may be included [emphasis added].” DOGGR’s proposed permanent regulations require the permit applicant to include “an estimate of water to be recycled following well stimulation treatment.”²²²

Some other states have considered or enacted legislation to mandate water recycling in connection with fracking activity. Colorado, for instance, requires the recycling of all water used in a well stimulation treatment that returns to the surface.²²³ Two bills introduced in the Texas Legislature in 2013²²⁴ sought to make mandatory the recycling of water used for hydraulic fracturing, though both bills ultimately failed passage.²²⁵

The Texas Legislature has nevertheless developed incentives to encourage water recycling. Texas has amended that state's Tax Code to exempt reused or recycled water for hydraulic fracturing from sales, excise, and use taxes.²²⁶ Furthermore, the Texas Railroad Commission has adopted rules to encourage water reuse and recycling by streamlining the recycling permitting process.²²⁷ A drilling company in Texas has used these incentives to develop a process for providing water for its numerous drilling rigs without using any freshwater whatsoever; instead, the company is using brackish water and recycled water, thus conserving precious fresh water resources in arid Texas.²²⁸

Policy Recommendations

As DOGGR's final regulations are developed, and if SB 4 is revisited and amended, the Legislature should incentivize the reuse and recycling of water used in well stimulation treatments. This is particularly important because of the volume of water necessary for well stimulation treatments, the increasing number of oil and gas wells in California, and the decreasing amount of available water during California's severe drought. These water shortages are likely to persist in the future due to the anticipated effects of climate change.

Because the California Legislature expressly encourages water recycling and reuse in SB 4's legislative findings, the Legislature should consider implementing specific incentives or mandates to increase the use and reuse of recycled water during well stimulation treatments. Incentives would likely be more effective in the short-term, until the independent scientific study required by Public Resources Code section 3160(a) is completed. At that point, mandatory recycling could be imposed if found to be scientifically justified. SB 4 and DOGGR's regulations, as currently written, do not incentivize recycling of water but, rather, require mere disclosure of a well operator's use and reuse of water.

VII. Conclusion

Based on a thorough review of the history, context, and related literature pertaining to SB 4, it is undeniable that the measure represents landmark environmental and public right-to-know legislation. While there is some evidence that human and technological errors during the fracking process may cause environmental harm, there has not been sufficient study to conclude definitively that fracking is the cause of many of these problems. SB 4 develops a detailed regulatory regime requiring preparation of such scientific studies and ensures baseline data are developed against which future measurements can be compared. This data will be a strong step toward determining whether fracking in California is inherently harmful to the environment and public health. Because SB 4 seeks to establish a scientific record on the matter, the fact that SB 4 does not impose a moratorium should not define it as necessarily pro-industry.

SB 4 began as a disclosure bill. It ended up including the strongest disclosure requirements in the nation, avoiding the “Halliburton language” of previously-attempted regulations. Additionally, SB 4 includes a new permitting system; an extended review period from permit approval to physical well drilling; a disclosure website independent of the industry-affiliated fracfocus.org; a reversal of traditional trade secret presumptions; broad landowner notification requirements; and a new groundwater monitoring plan that could have significant collateral value as more public attention is focused on California groundwater issues in the future. These provisions of SB 4 represent significant steps toward increased government and industry transparency and accountability, and promise responsible regulation of a potentially harmful, but technically effective and economically profitable, industry practice.

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- 172 *Id.* at § 1786.
- 173 *Id.* at § 1787.
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- 175 Cal. Pub. Res. Code § 3401(b).
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Glossary of Important Terms

Acid Well Stimulation

“A well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation in order to enhance oil and gas production or recovery...Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.” (DOGGR’s Proposed Permanent Regulations, § 1781(b))

Acidizing

see Acid Well Stimulation

Bureau of Land Management (BLM)

An agency within the United States Department of the Interior, BLM’s stated mission is to “sustain the health, diversity, and productivity of America’s public lands for the use and enjoyment of present and future generations.” BLM manages onshore oil and gas resources, leasing, and development on federal lands.

California Coastal Commission

A quasi-judicial agency within the California Natural Resources Agency that plans and regulates the use of land and water within the state’s coastal zone. Some of these uses include recreation, industrial, and offshore oil and gas development. The Commission is also tasked to ensure that federal activities in federally-owned waters off the California coast are consistent with California’s Coastal Management Plan, as required under federal law.

California Environmental Quality Act (CEQA)

A foundational California environmental law requiring state and local government agencies to review, disclose and, when possible, mitigate or avoid the projected, adverse environmental impacts associated with government decision-making. Any discretionary government action that may have these adverse impacts triggers a preliminary environmental review. After this preliminary assessment – formally known as an “Initial Study” under CEQA – the state or local agency must prepare a more detailed analytical document focusing on the projected, adverse environmental impacts of the proposed project. Generally, if no adverse environmental impacts are identified, the agency will issue a negative

declaration and the project may go forward as is. If the preliminary environmental review identifies minor adverse environmental impacts, the government entity will issue a mitigated negative declaration, which includes recommendations to lessen or eliminate the environmental impacts. If the preliminary assessment identifies significant, adverse environmental impacts, the government entity must complete a full environmental impact report (EIR), which examines the environmental impacts in detail and addresses those issues.

Department of Conservation

A department within California’s Natural Resources Agency, the Department of Conservation is “designed to balance today’s needs with tomorrow’s obligations by fostering the wise use and conservation of energy, land and mineral resources.” The department has five sub-divisions: Land Conservation; Mine Reclamation; Geological Survey; Oil, Gas, & Geothermal (DOGGR); and the State Mining and Geology Board.

Division of Oil, Gas & Geothermal Resources (DOGGR)

One of the five sub-divisions of California’s Department of Conservation, DOGGR “oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells” and “is the clearinghouse for information about the state’s oil, gas and geothermal industry.” Until SB 4, DOGGR had kept few, if any, records or data regarding hydraulic fracturing in California. DOGGR is the principal state regulatory agency responsible for implementing SB 4.

Environmental Impact Report (EIR)

Pursuant to the California Environmental Quality Act, “an EIR shall be prepared if there is substantial evidence that the project may have a significant effect on the environment. The determination of whether a project may have a significant effect on the environment calls for careful judgment, based to the extent possible on scientific and factual data. In cases where it is not clear whether there is substantial evidence that a project may have a significant effect on the environment, an EIR shall be prepared when there is serious public controversy concerning the environmental effect of a project.” (<http://www.dfg.ca.gov/habcon/ceqa/intrnlproced/eir.html>)

Flowback

The well stimulation treatment fluid that, once injected into the ground, returns to the surface with additional salts, metals, and “naturally occurring radioactive materials.”

FracFocus.org

FracFocus is a national database of the oil and gas industry’s self-reported information about the chemicals used in fracking wells. The website is maintained by the Interstate Oil and Gas Compact Commission and the Ground Water Protection Council, “whose members consist of state ground water regulatory agencies.” Because information provided to the website is generally submitted on a voluntary basis, if a company believes certain information is protected as a trade secret it withholds that information is not required to substantiate the trade secret claim.

Fracking

see Hydraulic Fracturing

Hydraulic Fracturing

A well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation, thereby causing or enhancing...the production of oil or gas from a well.” (DOGGR’s Proposed Permanent Regulations, § 1781(h))

Hydraulic Fracturing Fluid

A combination of water, sand, and chemical components that is injected into the ground at high pressure to crack the geologic formation. The composition of hydraulic fracturing fluid is approximately 99% water and sand and 1% chemical components. The chemicals function to dissolve the rock formation, increase the flow of oil and gas, and prevent chemical reactions with the well piping materials.

Interim Period

The period between the time DOGGR’s temporary regulations take effect and when DOGGR’s permanent regulations are finalized, go into effect and supersede its temporary regulations. As it relates to SB 4, the ‘interim’ period is from January 1, 2014 to January 1, 2015. This is particularly important as it relates to DOGGR’s approval of new well projects and how the requirements of existing

California environmental laws, such as CEQA, apply to these projects.

Monterey Formation

A shale formation covering 1,750 square miles beneath California’s surface; the U.S. Energy Information Administration estimates the Monterey Formation holds 15.4 billion barrels of so-called “tight oil,” or over two-thirds of the recoverable oil in the entire United States. Due to California’s unique geology, the Monterey Formation varies in depth between 6,000 to 15,000 feet below the surface. The wavy and folded nature of the Formation makes hydraulic fracturing particularly difficult, prompting some major oil and gas drillers to indicate that acidizing may be a more effective technology than hydraulic fracturing in California.

Moratorium

From the Latin *morari*, “to delay.” Many environmental organizations have called on California government officials and regulatory agencies to delay approving any hydraulic fracturing, acid well stimulation, or other well stimulation treatments until a comprehensive study on the environmental and public health effects of the process has been completed.

Natural Resources Agency

A cabinet-level California government agency overseeing 25 departments, conservancies, and commissions. The Agency’s mission is to “restore, protect and manage the state’s natural, historical and cultural resources for current and future generations.” SB 4 tasks the Secretary of the Natural Resources Agency to oversee an independent scientific study analyzing the impacts of hydraulic fracturing, acidizing, and other well stimulation treatments.

Proppants

Proppants comprise about 9% of hydraulic fracturing fluid, and function to wedge into the newly formed cracks in the underground geologic formation so that oil and gas may flow to the surface. A significant portion of this material consists of silica sand, which if improperly handled may cause cancer.

Shale Gas

Natural gas trapped in subsurface shale formations. Due to advancements in horizontal drilling and chemical

formulas for hydraulic fracturing, there has been a natural gas boom resulting from increased access to shale gas. By 2012, this boom had propelled the United States to become the world's largest producer of natural gas.

State Lands Commission

Within the Natural Resources Agency, the State Lands Commission provides “stewardship of the lands, waterways, and resources entrusted to its care through economic development, protection, preservation, and restoration.” The Commission has near-exclusive jurisdiction over oil and gas drilling permitting and development in California’s offshore tide and submerged lands.

State Water Resources Control Board (SWRCB)

The Board preserves, enhances, and restores “the quality of California’s water resources, and [ensures] their proper allocation and efficient use for the benefit of present and future generations.” There are nine Regional Water Quality Control Boards throughout California, which regulate water quality under the ultimate supervision of the SWRCB. SB 4 requires the SWRCB to develop a “groundwater monitoring plan” for new wells drilled in California pursuant to DOGGR’s SB 4 permitting program.

Tight Oil

Conventional petroleum-based light crude oil that is trapped in tight shale formations, such as the Monterey Formation in California. Also known as “light tight oil.”

Trade Secret

Hydraulic fracturing fluid suppliers often claim that their fluid’s formula gives their company a competitive advantage and, thus, they should not be required to disclose the composition of these fluids under protection of “trade secret” laws. SB 4 significantly alters the traditional presumptions relating to trade secret protections regarding hydraulic fracturing fluids.

Underground Injection Project

“Sustained or continual injection into one or more wells over an extended period in order to add fluid to a zone for the purpose of enhanced oil recovery, disposal, or storage.” Examples of underground injection projects include waterflood injection, steamflood injection, injection disposal, and gas storage projects. (DOGGR’s Proposed Permanent Regulations, § 1761(a)(2))

Well Stimulation Treatment

Any “treatment of a well designed to enhance oil and gas production or recovery by increasing the permeability of the formation.” Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments. Well stimulation is a short term and non-continual process for the purposes of opening and stimulating channels for the flow of hydrocarbons, a major distinction from “underground injection projects.”

APPENDIX: FULL TEXT OF SENATE BILL NO. 4

Senate Bill No. 4

CHAPTER 313

An act to amend Sections 3213, 3215, 3236.5, and 3401 of, and to add Article 3 (commencing with Section 3150) to Chapter 1 of Division 3 of, the Public Resources Code, and to add Section 10783 to the Water Code, relating to oil and gas.

[Approved by Governor September 20, 2013. Filed with Secretary of State September 20, 2013.]

LEGISLATIVE COUNSEL'S DIGEST

SB 4, Pavley. Oil and gas: well stimulation.

(1) Under existing law, the Division of Oil, Gas, and Geothermal Resources in the Department of Conservation, or the division, regulates the drilling, operation, maintenance, and abandonment of oil and gas wells in the state. The State Oil and Gas Supervisor, or supervisor, supervises the drilling, operation, maintenance, and abandonment of wells and the operation, maintenance, and removal or abandonment of tanks and facilities related to oil and gas production within an oil and gas field regarding safety and environmental damage. Existing law requires an operator of a well, before commencing the work of drilling the well, to obtain approval from the supervisor or district deputy. Existing law requires the owner or operator of a well to keep, or cause to be kept, a careful and accurate log, core record, and history of the drilling of the well. Within 60 days after the date of cessation of drilling, rework, or abandonment operations, the owner or operator is required to file with the district deputy certain information, including the history of work performed. Under existing law, a person who violates any prohibition specific to the regulation of oil or gas operations is guilty of a misdemeanor.

This bill would define, among other things, the terms well stimulation treatment, hydraulic fracturing, and hydraulic fracturing fluid. The bill would require the Secretary of the Natural Resources Agency, on or before January 1, 2015, to cause to be conducted, and completed, an independent scientific study on well stimulation treatments, including acid well stimulation and hydraulic fracturing treatments. The bill would require an owner or operator of a well to record and include all data on acid treatments and well stimulation treatments, as specified. The bill would require the division, in consultation with the Department of Toxic Substances Control, the State Air Resources Board, the State Water Resources Control Board, the Department of Resources Recycling and Recovery, and any local air districts and regional water quality control boards in areas where well stimulation treatments may occur, on or before January 1, 2015, to adopt rules and regulations specific to well stimulation, including governing the construction of wells and well casings and full disclosure of the composition and disposition of well stimulation fluids, and would authorize the division to allow well stimulation treatments if specific conditions are met. The bill would require an operator to apply for a permit, as specified, with the supervisor or district deputy, prior to performing a well stimulation treatment of a well and would prohibit the operator from either conducting a new well stimulation treatment or repeating a well stimulation treatment without a valid, approved permit. The bill would prohibit the approval of a permit application that is incomplete. The bill would require the division, within 5 business days of issuing a permit to commence a well stimulation treatment, to provide a copy to specific boards and entities and to post the permit on a publicly accessible portion of its Internet Web site. The bill

would provide that the well stimulation treatment permit expires one year from the date that a permit is issued. The bill would require the division to perform random periodic spot check inspections during well stimulation treatments, as specified. The bill would require the Secretary of the Natural Resources Agency to notify various legislative committees on the progress of the independent scientific study on well stimulation and related activities, as specified, until the study is completed and peer reviewed by independent scientific experts. The bill would require the operator to provide a copy of the approved well stimulation treatment permit to specified tenants and property owners at least 30 days prior to commencing a well stimulation treatment. The bill would require the operator to provide notice to the division at least 72 hours prior to the actual start of a well stimulation treatment in order for the division to witness the treatment. The bill would require the supplier, as defined, of the well stimulation treatment to provide to the operator, within 30 days following the conclusion of the treatment, certain information regarding the well stimulation fluid. The bill would require the operator, within 60 days of the cessation of a well stimulation treatment, to post or cause to have posted on an Internet Web site accessible to the public specified information on the well stimulation fluid, as specified. The bill would require the division to commence a process to develop an Internet Web site for operators to report specific information related to well stimulation treatments and would require the Internet Web site to be operational no later than January 1, 2016. The bill would authorize the division to direct reporting to an alternative Internet Web site, as prescribed, and would require the division to obtain the data reported to the alternative Internet Web site and make it available to the public, as specified. The bill would provide that where the division shares jurisdiction over a well with a federal entity, the division's rules and regulations apply in addition to all applicable federal law and regulations. The bill would require a supplier claiming trade secret protection for the chemical composition of additives used in a well stimulation treatment to disclose the composition to the division, in conjunction with a well stimulation treatment permit application, as specified, but would, with certain exceptions, prohibit those with access to the trade secret from disclosing it. Because this bill would create a new crime, it would impose a state-mandated local program.

(2) Under existing law, a person who violates certain statutes or regulations relating to oil and gas well operations is subject to a civil penalty not to exceed \$25,000 for each violation.

This bill would make persons who violate specified provisions relating to well stimulation treatments subject to a civil penalty of not less than \$10,000 and not to exceed \$25,000 per day per violation.

(3) Existing law imposes an annual charge upon each person operating or owning an interest in an oil or gas well in respect to the production of the well which charge is payable to the Treasurer for deposit into the Oil, Gas, and Geothermal Administrative Fund. Existing law further requires that specific moneys from charges levied, assessed, and collected upon the properties of every person operating or owning an interest in the production of a well to be used exclusively, upon appropriation, for the support and maintenance of the department charged with the supervision of oil and gas operations.

This bill would allow the moneys described above to be used for all costs associated with (A) well stimulation treatments, including scientific studies required to evaluate the treatment, inspections, and any air and water quality sampling, monitoring, and testing performed by public entities, and (B) the costs of the State Water Resources Control Board and the regional water quality control boards in carrying out specific responsibilities relating to well stimulation and groundwater monitoring, as specified.

This bill would require the supervisor, on or before January 1, 2016, and annually thereafter, to transmit to the Legislature and make available publicly

a comprehensive report on well stimulation in the exploration and production of oil and gas resources in the state.

(4) Existing law, the Groundwater Quality Monitoring Act of 2001, requires the State Water Resources Control Board to integrate existing monitoring programs and design new program elements, as necessary, to establish a comprehensive monitoring program capable of assessing each groundwater basin in the state through direct and other statistically reliable sampling approaches.

This bill would require the state board, on or before July 1, 2015, to develop a groundwater monitoring model criteria, as specified, to be implemented either on a well-by-well basis or on a regional scale, on how to conduct appropriate monitoring on individual oil and gas wells subject to a well stimulation treatment in order to protect all waters designated for beneficial uses and prioritize the monitoring of groundwater that is or has the potential to be a source of drinking water.

(5) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) The hydraulic fracturing of oil and gas wells in combination with technological advances in oil and gas well drilling are spurring oil and gas extraction and exploration in California. Other well stimulation treatments, in addition to hydraulic fracturing, are also critical to boosting oil and gas production.

(b) Insufficient information is available to fully assess the science of the practice of hydraulic fracturing and other well stimulation treatment technologies in California, including environmental, occupational, and public health hazards and risks.

(c) Providing transparency and accountability to the public regarding well stimulation treatments, including, but not limited to, hydraulic fracturing, associated emissions to the environment, and the handling, processing, and disposal of well stimulation and related wastes, including from hydraulic fracturing, is of paramount concern.

(d) The public disclosure of chemical information required by this act ensures that potential public exposure to, and dose received from, well stimulation treatment fluid chemicals can be reasonably discerned.

(e) The Legislature encourages the use or reuse of treated or untreated water and produced water for well stimulation treatments and well stimulation treatment-related activities.

SEC. 2. Article 3 (commencing with Section 3150) is added to Chapter 1 of Division 3 of the Public Resources Code, to read:

Article 3. Well Stimulation

3150. "Additive" means a substance or combination of substances added to a base fluid for purposes of preparing well stimulation treatment fluid which includes, but is not limited to, an acid stimulation treatment fluid or a hydraulic fracturing fluid. An additive may, but is not required to, serve additional purposes beyond the transmission of hydraulic pressure to the geologic formation. An additive may be of any phase and includes proppants.

3151. "Base fluid" means the continuous phase fluid used in the makeup of a well stimulation treatment fluid, including, but not limited to, an acid stimulation treatment fluid or a hydraulic fracturing fluid. The continuous phase fluid may include, but is not limited to, water, and may be a liquid or

a hydrocarbon or nonhydrocarbon gas. A well stimulation treatment may use more than one base fluid.

3152. “Hydraulic fracturing” means a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid or fluids into an underground geologic formation in order to fracture or with the intent to fracture the formation, thereby causing or enhancing, for the purposes of this division, the production of oil or gas from a well.

3153. “Well stimulation treatment fluid” means a base fluid mixed with physical and chemical additives, which may include acid, for the purpose of a well stimulation treatment. A well stimulation treatment may include more than one well stimulation treatment fluid. Well stimulation treatment fluids include, but are not limited to, hydraulic fracturing fluids and acid stimulation treatment fluids.

3154. “Proppants” means materials inserted or injected into the underground geologic formation that are intended to prevent fractures from closing.

3155. “Supplier” means an entity performing a well stimulation treatment or an entity supplying an additive or proppant directly to the operator for use in a well stimulation treatment.

3156. “Surface property owner” means the owner of real property as shown on the latest equalized assessment roll or, if more recent information than the information contained on the assessment roll is available, the owner of record according to the county assessor or tax collector.

3157. (a) For purposes of this article, “well stimulation treatment” means any treatment of a well designed to enhance oil and gas production or recovery by increasing the permeability of the formation. Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments.

(b) Well stimulation treatments do not include steam flooding, water flooding, or cyclic steaming and do not include routine well cleanout work, routine well maintenance, routine removal of formation damage due to drilling, bottom hole pressure surveys, or routine activities that do not affect the integrity of the well or the formation.

3158. “Acid well stimulation treatment” means a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments. Acid matrix stimulation treatments are acid treatments conducted at pressures lower than the applied pressure necessary to fracture the underground geologic formation.

3159. “Flowback fluid” means the fluid recovered from the treated well before the commencement of oil and gas production from that well following a well stimulation treatment. The flowback fluid may include materials of any phase.

3160. (a) On or before January 1, 2015, the Secretary of the Natural Resources Agency shall cause to be conducted, and completed, an independent scientific study on well stimulation treatments, including, but not limited to, hydraulic fracturing and acid well stimulation treatments. The scientific study shall evaluate the hazards and risks and potential hazards and risks that well stimulation treatments pose to natural resources and public, occupational, and environmental health and safety. The scientific study shall do all of the following:

(1) Follow the well-established standard protocols of the scientific profession, including, but not limited to, the use of recognized experts, peer review, and publication.

(2) Identify areas with existing and potential conventional and unconventional oil and gas reserves where well stimulation treatments are likely to spur or enable oil and gas exploration and production.

(3) (A) Evaluate all aspects and effects of well stimulation treatments, including, but not limited to, the well stimulation treatment, additive and water transportation to and from the well site, mixing and handling of the well stimulation treatment fluids and additives onsite, the use and potential for use of nontoxic additives and the use or reuse of treated or produced water in well stimulation treatment fluids, flowback fluids and handling, treatment, and disposal of flowback fluids and other materials, if any, generated by the treatment. Specifically, the potential for the use of recycled water in well stimulation treatments, including appropriate water quality requirements and available treatment technologies, shall be evaluated. Well stimulation treatments include, but are not limited to, hydraulic fracturing and acid well stimulation treatments.

(B) Review and evaluate acid matrix stimulation treatments, including the range of acid volumes applied per treated foot and total acid volumes used in treatments, types of acids, acid concentration, and other chemicals used in the treatments.

(4) Consider, at a minimum, atmospheric emissions, including potential greenhouse gas emissions, the potential degradation of air quality, potential impacts on wildlife, native plants, and habitat, including habitat fragmentation, potential water and surface contamination, potential noise pollution, induced seismicity, and the ultimate disposition, transport, transformation, and toxicology of well stimulation treatments, including acid well stimulation fluids, hydraulic fracturing fluids, and waste hydraulic fracturing fluids and acid well stimulation in the environment.

(5) Identify and evaluate the geologic features present in the vicinity of a well, including the well bore, that should be taken into consideration in the design of a proposed well stimulation treatment.

(6) Include a hazard assessment and risk analysis addressing occupational and environmental exposures to well stimulation treatments, including hydraulic fracturing treatments, hydraulic fracturing treatment-related processes, acid well stimulation treatments, acid well stimulation treatment-related processes, and the corresponding impacts on public health and safety with the participation of the Office of Environmental Health Hazard Assessment.

(7) Clearly identify where additional information is necessary to inform and improve the analyses.

(b) (1) (A) On or before January 1, 2015, the division, in consultation with the Department of Toxic Substances Control, the State Air Resources Board, the State Water Resources Control Board, the Department of Resources Recycling and Recovery, and any local air districts and regional water quality control boards in areas where well stimulation treatments, including acid well stimulation treatments and hydraulic fracturing treatments may occur, shall adopt rules and regulations specific to well stimulation treatments. The rules and regulations shall include, but are not limited to, revisions, as needed, to the rules and regulations governing construction of wells and well casings to ensure integrity of wells, well casings, and the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation treatments, and full disclosure of the composition and disposition of well stimulation fluids, including, but not limited to, hydraulic fracturing fluids, acid well stimulation fluids, and flowback fluids.

(B) The rules and regulations shall additionally include provisions for an independent entity or person to perform the notification requirements pursuant to paragraph (6) of subdivision (d), for the operator to provide for baseline and followup water testing upon request as specified in paragraph (7) of subdivision (d).

(C) (i) In order to identify the acid matrix stimulation treatments that are subject to this section, the rules and regulations shall establish threshold values for acid volume applied per treated foot of any individual stage of the well or for total acid volume of the treatment, or both, based upon a quantitative assessment of the risks posed by acid matrix stimulation

treatments that exceed the specified threshold value or values in order to prevent, as far as possible, damage to life, health, property, and natural resources pursuant to Section 3106.

(ii) On or before January 1, 2020, the division shall review and evaluate the threshold values for acid volume applied per treated foot and total acid volume of the treatment, based upon data collected in the state, for acid matrix stimulation treatments. The division shall revise the values through the regulatory process, if necessary, based upon the best available scientific information, including the results of the independent scientific study pursuant to subparagraph (B) of paragraph (3) of subdivision (a).

(2) Full disclosure of the composition and disposition of well stimulation fluids, including, but not limited to, hydraulic fracturing fluids and acid stimulation treatment fluids, shall, at a minimum, include:

(A) The date of the well stimulation treatment.

(B) A complete list of the names, Chemical Abstract Service (CAS) numbers, and maximum concentration, in percent by mass, of each and every chemical constituent of the well stimulation treatment fluids used. If a CAS number does not exist for a chemical constituent, the well owner or operator may provide another unique identifier, if available.

(C) The trade name, the supplier, concentration, and a brief description of the intended purpose of each additive contained in the well stimulation treatment fluid.

(D) The total volume of base fluid used during the well stimulation treatment, and the identification of whether the base fluid is water suitable for irrigation or domestic purposes, water not suitable for irrigation or domestic purposes, or a fluid other than water.

(E) The source, volume, and specific composition and disposition of all water, including, but not limited to, all water used as base fluid during the well stimulation treatment and recovered from the well following the well stimulation treatment that is not otherwise reported as produced water pursuant to Section 3227. Any repeated reuse of treated or untreated water for well stimulation treatments and well stimulation treatment-related activities shall be identified.

(F) The specific composition and disposition of all well stimulation treatment fluids, including waste fluids, other than water.

(G) Any radiological components or tracers injected into the well as part of, or in order to evaluate, the well stimulation treatment, a description of the recovery method, if any, for those components or tracers, the recovery rate, and specific disposal information for recovered components or tracers.

(H) The radioactivity of the recovered well stimulation fluids.

(I) The location of the portion of the well subject to the well stimulation treatment and the extent of the fracturing or other modification, if any, surrounding the well induced by the treatment.

(c) (1) Through the consultation process described in paragraph (1) of subdivision (b), the division shall collaboratively identify and delineate the existing statutory authority and regulatory responsibility relating to well stimulation treatments and well stimulation treatment-related activities of the Department of Toxic Substances Control, the State Air Resources Board, any local air districts, the State Water Resources Control Board, the Department of Resources Recycling and Recovery, any regional water quality control board, and other public entities, as applicable. This shall specify how the respective authority, responsibility, and notification and reporting requirements associated with well stimulation treatments and well stimulation treatment-related activities are divided among each public entity.

(2) On or before January 1, 2015, the division shall enter into formal agreements with the Department of Toxic Substances Control, the State Air Resources Board, any local air districts where well stimulation treatments may occur, the State Water Resources Control Board, the Department of Resources Recycling and Recovery, and any regional water quality control board where well stimulation treatments may occur, clearly delineating

respective authority, responsibility, and notification and reporting requirements associated with well stimulation treatments and well stimulation treatment-related activities, including air and water quality monitoring, in order to promote regulatory transparency and accountability.

(3) The agreements under paragraph (2) shall specify the appropriate public entity responsible for air and water quality monitoring and the safe and lawful disposal of materials in landfills, include trade secret handling protocols, if necessary, and provide for ready public access to information related to well stimulation treatments and related activities.

(4) Regulations, if necessary, shall be revised appropriately to incorporate the agreements under paragraph (2).

(d) (1) Notwithstanding any other law or regulation, prior to performing a well stimulation treatment on a well, the operator shall apply for a permit to perform a well stimulation treatment with the supervisor or district deputy. The well stimulation treatment permit application shall contain the pertinent data the supervisor requires on printed forms supplied by the division or on other forms acceptable to the supervisor. The information provided in the well stimulation treatment permit application shall include, but is not limited to, the following:

(A) The well identification number and location.

(B) The time period during which the well stimulation treatment is planned to occur.

(C) A water management plan that shall include all of the following:

(i) An estimate of the amount of water to be used in the treatment. Estimates of water to be recycled following the well stimulation treatment may be included.

(ii) The anticipated source of the water to be used in the treatment.

(iii) The disposal method identified for the recovered water in the flowback fluid from the treatment that is not produced water included in the statement pursuant to Section 3227.

(D) A complete list of the names, Chemical Abstract Service (CAS) numbers, and estimated concentrations, in percent by mass, of each and every chemical constituent of the well stimulation fluids anticipated to be used in the treatment. If a CAS number does not exist for a chemical constituent, the well owner or operator may provide another unique identifier, if available.

(E) The planned location of the well stimulation treatment on the well bore, the estimated length, height, and direction of the induced fractures or other planned modification, if any, and the location of existing wells, including plugged and abandoned wells, that may be impacted by these fractures and modifications.

(F) A groundwater monitoring plan. Required groundwater monitoring in the vicinity of the well subject to the well stimulation treatment shall be satisfied by one of the following:

(i) The well is located within the boundaries of an existing oil or gas field-specific or regional monitoring program developed pursuant to Section 10783 of the Water Code.

(ii) The well is located within the boundaries of an existing oil or gas field-specific or regional monitoring program developed and implemented by the well owner or operator meeting the model criteria established pursuant to Section 10783 of the Water Code.

(iii) Through a well-specific monitoring plan implemented by the owner or operator meeting the model criteria established pursuant to Section 10783 of the Water Code, and submitted to the appropriate regional water board for review.

(G) The estimated amount of treatment-generated waste materials that are not reported in subparagraph (C) and an identified disposal method for the waste materials.

(2) (A) At the supervisor's discretion, and if applied for concurrently, the well stimulation treatment permit described in this section may be combined with the well drilling and related operation notice of intent required pursuant to Section 3203 into a single combined authorization. The portion of the combined authorization applicable to well stimulation shall meet all of the requirements of a well stimulation treatment permit pursuant to this section.

(B) Where the supervisor determines that the activities proposed in the well stimulation treatment permit or the combined authorization have met all of the requirements of Division 13 (commencing with Section 21000), and have been fully described, analyzed, evaluated, and mitigated, no additional review or mitigation shall be required.

(C) The time period available for approval of the portion of the combined authorization applicable to well stimulation is subject to the terms of this section, and not Section 3203.

(3) (A) The supervisor or district deputy shall review the well stimulation treatment permit application and may approve the permit if the application is complete. An incomplete application shall not be approved.

(B) A well stimulation treatment or repeat well stimulation treatment shall not be performed on any well without a valid permit that the supervisor or district deputy has approved.

(C) In considering the permit application, the supervisor shall evaluate the quantifiable risk of the well stimulation treatment.

(4) The well stimulation treatment permit shall expire one year from the date that the permit is issued.

(5) Within five business days of issuing a permit to perform a well stimulation treatment, the division shall provide a copy of the permit to the appropriate regional water quality control board or boards and to the local planning entity where the well, including its subsurface portion, is located. The division shall also post the permit on the publicly accessible portion of its Internet Web site within five business days of issuing a permit.

(6) (A) It is the policy of the state that a copy of the approved well stimulation treatment permit and information on the available water sampling and testing be provided to every tenant of the surface property and every surface property owner or authorized agent of that owner whose property line location is one of the following:

(i) Within a 1,500 foot radius of the wellhead.

(ii) Within 500 feet from the horizontal projection of all subsurface portions of the designated well to the surface.

(B) (i) The well owner or operator shall identify the area requiring notification and shall contract with an independent entity or person who is responsible for, and shall perform, the notification required pursuant to subparagraph (A).

(ii) The independent entity or person shall identify the individuals notified, the method of notification, the date of the notification, a list of those notified, and shall provide a list of this information to the division.

(iii) The performance of the independent entity or persons shall be subject to review and audit by the division.

(C) A well stimulation treatment shall not commence before 30 calendar days after the permit copies pursuant to subparagraph (A) are provided.

(7) (A) A property owner notified pursuant to paragraph (6) may request water quality sampling and testing from a designated qualified contractor on any water well suitable for drinking or irrigation purposes and on any surface water suitable for drinking or irrigation purposes as follows:

(i) Baseline measurements prior to the commencement of the well stimulation treatment.

(ii) Followup measurements after the well stimulation treatment on the same schedule as the pressure testing of the well casing of the treated well.

(B) The State Water Resources Control Board shall designate one or

more qualified independent third-party contractor or contractors that adhere to board-specified standards and protocols to perform the water sampling and testing. The well owner or operator shall pay for the sampling and testing. The sampling and testing performed shall be subject to audit and review by the State Water Resources Control Board or applicable regional water quality control board, as appropriate.

(C) The results of the water testing shall be provided to the division, appropriate regional water board, and the property owner or authorized agent. A tenant notified pursuant to paragraph (6) shall receive information on the results of the water testing to the extent authorized by his or her lease and, where the tenant has lawful use of the ground or surface water identified in subparagraph (A), the tenant may independently contract for similar groundwater or surface water testing.

(8) The division shall retain a list of the entities and property owners notified pursuant to paragraphs (5) and (6).

(9) The operator shall provide notice to the division at least 72 hours prior to the actual start of the well stimulation treatment in order for the division to witness the treatment.

(e) The Secretary of the Natural Resources Agency shall notify the Joint Legislative Budget Committee and the chairs of the Assembly Natural Resources, Senate Environmental Quality, and Senate Natural Resources and Water Committees on the progress of the independent scientific study on well stimulation and related activities. The first progress report shall be provided to the Legislature on or before April 1, 2014, and progress reports shall continue every four months thereafter until the independent study is completed, including a peer review of the study by independent scientific experts.

(f) If a well stimulation treatment is performed on a well, a supplier that performs any part of the stimulation or provides additives directly to the operator for a well stimulation treatment shall furnish the operator with information suitable for public disclosure needed for the operator to comply with subdivision (g). This information shall be provided as soon as possible but no later than 30 days following the conclusion of the well stimulation treatment.

(g) (1) Within 60 days following cessation of a well stimulation treatment on a well, the operator shall post or cause to have posted to an Internet Web site designated or maintained by the division and accessible to the public, all of the well stimulation fluid composition and disposition information required to be collected pursuant to rules and regulations adopted under subdivision (b), including well identification number and location. This shall include the collected water quality data, which the operator shall report electronically to the State Water Resources Control Board.

(2) (A) The division shall commence the process to develop an Internet Web site for operators to report the information required under this section. The Internet Web site shall be capable of organizing the reported information in a format, such as a spreadsheet, that allows the public to easily search and aggregate, to the extent practicable, each type of information required to be collected pursuant to subdivision (b) using search functions on that Internet Web site. The Internet Web site shall be functional within two years of the Department of Technology's approval of a Feasibility Study Report or appropriation authority to fund the development of the Internet Web site, whichever occurs latest, but no later than January 1, 2016.

(B) The division may direct reporting to an alternative Internet Web site developed by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission in the interim until such time as approval or appropriation authority pursuant to subparagraph (A) occur. Prior to the implementation of the division's Internet Web site, the division shall obtain the data reported by operators to the alternative Internet Web site and make it available in an organized electronic format to the public no later than 15 days after it is reported to the alternative Web site.

(h) The operator is responsible for compliance with this section.

(i) (1) All geologic features within a distance reflecting an appropriate safety factor of the fracture zone for well stimulation treatments that fracture the formation and that have the potential to either limit or facilitate the migration of fluids outside of the fracture zone shall be identified and added to the well history. Geologic features include seismic faults identified by the California Geologic Survey.

(2) For the purposes of this section, the “fracture zone” is defined as the volume surrounding the well bore where fractures were created or enhanced by the well stimulation treatment. The safety factor shall be at least five and may vary depending upon geologic knowledge.

(3) The division shall review the geologic features important to assessing well stimulation treatments identified in the independent study pursuant to paragraph (5) of subdivision (a). Upon completion of the review, the division shall revise the regulations governing the reporting of geologic features pursuant to this subdivision accordingly.

(j) (1) Public disclosure of well stimulation treatment fluid information claimed to contain trade secrets is governed by Section 1060 of the Evidence Code, or the Uniform Trade Secrets Act (Title 5 (commencing with Section 3426) of Part 1 of Division 4 of the Civil Code), and the California Public Records Act (Chapter 3.5 (commencing with Section 6250) of Division 7 of Title 1 of the Government Code).

(2) Notwithstanding any other law or regulation, none of the following information shall be protected as a trade secret:

(A) The identities of the chemical constituents of additives, including CAS identification numbers.

(B) The concentrations of the additives in the well stimulation treatment fluids.

(C) Any air or other pollution monitoring data.

(D) Health and safety data associated with well stimulation treatment fluids.

(E) The chemical composition of the flowback fluid.

(3) If a trade secret claim is invalid or invalidated, the division shall release the information to the public by revising the information released pursuant to subdivision (g). The supplier shall notify the division of any change in status within 30 days.

(4) (A) If a supplier believes that information regarding a chemical constituent of a well stimulation fluid is a trade secret, the supplier shall nevertheless disclose the information to the division in conjunction with a well stimulation treatment permit application, if not previously disclosed, within 30 days following cessation of well stimulation on a well, and shall notify the division in writing of that belief.

(B) A trade secret claim shall not be made after initial disclosure of the information to the division.

(C) To comply with the public disclosure requirements of this section, the supplier shall indicate where trade secret information has been withheld and provide substitute information for public disclosure. The substitute information shall be a list, in any order, of the chemical constituents of the additive, including CAS identification numbers. The division shall review and approve the supplied substitute information.

(D) This subdivision does not permit a supplier to refuse to disclose the information required pursuant to this section to the division.

(5) In order to substantiate the trade secret claim, the supplier shall provide information to the division that shows all of the following:

(A) The extent to which the trade secret information is known by the supplier’s employees, others involved in the supplier’s business and outside the supplier’s business.

(B) The measures taken by the supplier to guard the secrecy of the trade secret information.

(C) The value of the trade secret information to the supplier and its competitors.

(D) The amount of effort or money the supplier expended developing the trade secret information and the ease or difficulty with which the trade secret information could be acquired or duplicated by others.

(6) If the division determines that the information provided in support of a request for trade secret protection pursuant to paragraph (5) is incomplete, the division shall notify the supplier and the supplier shall have 30 days to complete the submission. An incomplete submission does not meet the substantive criteria for trade secret designation.

(7) If the division determines that the information provided in support of a request for trade secret protection does not meet the substantive criteria for trade secret designation, the department shall notify the supplier by certified mail of its determination. The division shall release the information to the public, but not earlier than 60 days after the date of mailing the determination, unless, prior to the expiration of the 60-day period, the supplier obtains an action in an appropriate court for a declaratory judgment that the information is subject to protection or for a preliminary injunction prohibiting disclosure of the information to the public and provides notice to the division of the court order.

(8) The supplier is not required to disclose trade secret information to the operator.

(9) Upon receipt of a request for the release of trade secret information to the public, the following procedure applies:

(A) The division shall notify the supplier of the request in writing by certified mail, return receipt requested.

(B) The division shall release the information to the public, but not earlier than 60 days after the date of mailing the notice of the request for information, unless, prior to the expiration of the 60-day period, the supplier obtains an action in an appropriate court for a declaratory judgment that the information is subject to protection or for a preliminary injunction prohibiting disclosure of the information to the public and provides notice to the division of that action.

(10) The division shall develop a timely procedure to provide trade secret information in the following circumstances:

(A) To an officer or employee of the division, the state, local governments, including, but not limited to, local air districts, or the United States, in connection with the official duties of that officer or employee, to a health professional under any law for the protection of health, or to contractors with the division or other government entities and their employees if, in the opinion of the division, disclosure is necessary and required for the satisfactory performance of a contract, for performance of work, or to protect health and safety.

(B) To a health professional in the event of an emergency or to diagnose or treat a patient.

(C) In order to protect public health, to any health professional, toxicologist, or epidemiologist who is employed in the field of public health and who provides a written statement of need. The written statement of need shall include the public health purposes of the disclosure and shall explain the reason the disclosure of the specific chemical and its concentration is required.

(D) A health professional may share trade secret information with other persons as may be professionally necessary, in order to diagnose or treat a patient, including, but not limited to, the patient and other health professionals, subject to state and federal laws restricting disclosure of medical records including, but not limited to, Chapter 2 (commencing with Section 56.10) of Part 2.6 of Division 1 of the Civil Code.

(E) For purposes of this paragraph, "health professional" means any person licensed or certified pursuant to Division 2 (commencing with Section

500) of the Business and Professions Code, the Osteopathic Initiative Act, the Chiropractic Initiative Act, or the Emergency Medical Services System and the Prehospital Emergency Medical Care Personnel Act (Division 2.5 commencing with Section 1797) of the Health and Safety Code).

(F) A person in possession of, or access to, confidential trade secret information pursuant to the provisions of this subdivision may disclose this information to any person who is authorized to receive it. A written confidentiality agreement shall not be required.

(k) A well granted confidential status pursuant to Section 3234 shall not be required to disclose well stimulation treatment fluid information pursuant to subdivision (g) until the confidential status of the well ceases. Notwithstanding the confidential status of a well, it is public information that a well will be or has been subject to a well stimulation treatment.

(l) The division shall perform random periodic spot check inspections to ensure that the information provided on well stimulation treatments is accurately reported, including that the estimates provided prior to the commencement of the well stimulation treatment are reasonably consistent with the well history.

(m) Where the division shares jurisdiction over a well or the well stimulation treatment on a well with a federal entity, the division's rules and regulations shall apply in addition to all applicable federal laws and regulations.

(n) This article does not relieve the division or any other agency from complying with any other provision of existing laws, regulations, and orders.

(o) Well stimulation treatments used for routine maintenance of wells associated with underground storage facilities where natural gas is injected into and withdrawn from depleted or partially depleted oil or gas reservoirs pursuant to subdivision (a) of Section 3403.5 are not subject to this section.

3161. (a) The division shall finalize and implement the regulations governing this article on or before January 1, 2015.

(b) The division shall allow, until regulations governing this article are finalized and implemented, and upon written notification by an operator, all of the activities defined in Section 3157, provided all of the following conditions are met:

(1) The owner or operator certifies compliance with subdivision (b) of, subparagraphs (A) to (F), inclusive, of paragraph (1) and paragraphs (6) and (7) of subdivision (d) of, and subdivision (g) of, Section 3160.

(2) The owner or operator provides a complete well history, incorporating the information required by Section 3160, to the division on or before March 1, 2015.

(3) The division conducts an environmental impact report (EIR) pursuant to the California Environmental Quality Act (Division 13 (commencing with Section 21000)), in order to provide the public with detailed information regarding any potential environmental impacts of well stimulation in the state.

(4) Any environmental review conducted by the division shall fully comply with all of the following requirements:

(A) The EIR shall be certified by the division as the lead agency, no later than July 1, 2015.

(B) The EIR shall address the issue of activities that may be conducted as defined in Section 3157 and that may occur at oil wells in the state existing prior to, and after, the effective date of this section.

(C) The EIR shall not conflict with an EIR conducted by a local lead agency that is certified on or before July 1, 2015. Nothing in this section prohibits a local lead agency from conducting its own EIR.

(5) The division ensures that all activities pursuant to this section fully conform with this article and other applicable provisions of law on or before December 31, 2015, through a permitting process.

(6) The division has the emergency regulatory authority to implement the purposes of this section.

SEC. 3. Section 3213 of the Public Resources Code is amended to read:

3213. The history shall show the location and amount of sidetracked casings, tools, or other material, the depth and quantity of cement in cement plugs, the shots of dynamite or other explosives, acid treatment data, and the results of production and other tests during drilling operations. All data on well stimulation treatments pursuant to Section 3160 shall be recorded in the history.

SEC. 4. Section 3215 of the Public Resources Code is amended to read:

3215. (a) Within 60 days after the date of cessation of drilling, rework, well stimulation treatment, or abandonment operations, or the date of suspension of operations, the operator shall file with the district deputy, in a form approved by the supervisor, true copies of the log, core record, and history of work performed, and, if made, true and reproducible copies of all electrical, physical, or chemical logs, tests, or surveys. Upon a showing of hardship, the supervisor may extend the time within which to comply with this section for a period not to exceed 60 additional days.

(b) The supervisor shall include information or electronic links to information provided pursuant to subdivision (g) of Section 3160 on existing publicly accessible maps on the division's Internet Web site, and make the information available such that well stimulation treatment and related information are associated with each specific well. If data is reported on an Internet Web site not maintained by the division pursuant to paragraph (2) of subdivision (g) of Section 3160, the division shall provide electronic links to that Internet Web site. The public shall be able to search and sort the hydraulic well stimulation and related information by at least the following criteria:

- (1) Geographic area.
- (2) Additive.
- (3) Chemical constituent.
- (4) Chemical Abstract Service number.
- (5) Time period.
- (6) Operator.

(c) Notwithstanding Section 10231.5 of the Government Code, on or before January 1, 2016, and annually thereafter, the supervisor shall, in compliance with Section 9795 of the Government Code, prepare and transmit to the Legislature a comprehensive report on well stimulation treatments in the exploration and production of oil and gas resources in California. The report shall include aggregated data of all of the information required to be reported pursuant to Section 3160 reported by the district, county, and operator. The report also shall include relevant additional information, as necessary, including, but not limited to, all of the following:

(1) Aggregated data detailing the disposition of any produced water from wells that have undergone well stimulation treatments.

(2) Aggregated data describing the formations where wells have received well stimulation treatments including the range of safety factors used and fracture zone lengths.

(3) The number of emergency responses to a spill or release associated with a well stimulation treatment.

(4) Aggregated data detailing the number of times trade secret information was not provided to the public, by county and by each company, in the preceding year.

(5) Data detailing the loss of well and well casing integrity in the preceding year for wells that have undergone well stimulation treatment. For comparative purposes, data detailing the loss of well and well casing integrity in the preceding year for all wells shall also be provided. The cause of each well and well casing failure, if known, shall also be provided.

(6) The number of spot check inspections conducted pursuant to subdivision (l) of Section 3160, including the number of inspections where

the composition of well stimulation fluids were verified and the results of those inspections.

(7) The number of well stimulation treatments witnessed by the division.

(8) The number of enforcement actions associated with well stimulation treatments, including, but not limited to, notices of deficiency, notices of violation, civil or criminal enforcement actions, and any penalties assessed.

(d) The report shall be made publicly available and an electronic version shall be available on the division's Internet Web site.

SEC. 5. Section 3236.5 of the Public Resources Code is amended to read:

3236.5. (a) A person who violates this chapter or a regulation implementing this chapter is subject to a civil penalty not to exceed twenty-five thousand dollars (\$25,000) for each violation. A person who commits a violation of Article 3 (commencing with Section 3150) is subject to a civil penalty of not less than ten thousand dollars (\$10,000) and not to exceed twenty-five thousand dollars (\$25,000) per day per violation. An act of God and an act of vandalism beyond the reasonable control of the operator shall not be considered a violation. The civil penalty shall be imposed by an order of the supervisor pursuant to Section 3225 upon a determination that a violation has been committed by the person charged. The imposition of a civil penalty under this section shall be in addition to any other penalty provided by law for the violation. When establishing the amount of the civil penalty pursuant to this section, the supervisor shall consider, in addition to other relevant circumstances, all of the following:

- (1) The extent of harm caused by the violation.
- (2) The persistence of the violation.
- (3) The pervasiveness of the violation.
- (4) The number of prior violations by the same violator.

(b) An order of the supervisor imposing a civil penalty shall be reviewable pursuant to Article 6 (commencing with Section 3350). When the order of the supervisor has become final and the penalty has not been paid, the supervisor may apply to the appropriate superior court for an order directing payment of the civil penalty. The supervisor may also seek from the court an order directing that production from the well or use of the production facility that is the subject of the civil penalty order be discontinued until the violation has been remedied to the satisfaction of the supervisor and the civil penalty has been paid.

(c) Any amount collected under this section shall be deposited in the Oil, Gas, and Geothermal Administrative Fund.

SEC. 6. Section 3401 of the Public Resources Code is amended to read:

3401. (a) The proceeds of charges levied, assessed, and collected pursuant to this article upon the properties of every person operating or owning an interest in the production of a well shall be used exclusively for the support and maintenance of the department charged with the supervision of oil and gas operations.

(b) Notwithstanding subdivision (a), the proceeds of charges levied, assessed, and collected pursuant to this article upon the properties of every person operating or owning an interest in the production of a well undergoing a well stimulation treatment, may be used by public entities, subject to appropriation by the Legislature, for all costs associated with both of the following:

- (1) Well stimulation treatments, including rulemaking and scientific studies required to evaluate the treatment, inspections, any air and water quality sampling, monitoring, and testing performed by public entities.
- (2) The costs of the State Water Resources Control Board and the regional water quality control boards in carrying out their responsibilities pursuant to Section 3160 and Section 10783 of the Water Code.

SEC. 7. Section 10783 is added to the Water Code, to read:

10783. (a) The Legislature finds and declares that protecting the state's groundwater for beneficial use, particularly sources and potential sources

of drinking water, is of paramount concern.

(b) The Legislature further finds and declares that strategic, scientifically based groundwater monitoring of the state's oil and gas fields is critical to allaying the public's concerns regarding well stimulation treatments of oil and gas wells.

(c) On or before July 1, 2015, in order to assess the potential effects of well stimulation treatments, as defined in Article 3 (commencing with Section 3150) of Chapter 1 of Division 3 of the Public Resources Code, on the state's groundwater resources in a systematic way, the state board shall develop model groundwater monitoring criteria to be implemented either on a well-by-well basis for a well subject to well stimulation treatment, or on a regional scale. The model criteria shall address a range of spatial sampling scales from methods for conducting appropriate monitoring on individual oil and gas wells subject to a well stimulation treatment, to methods for conducting a regional groundwater monitoring program. The state board shall take into consideration the recommendations received pursuant to subdivision (d) and shall include in the model criteria, at a minimum, the components identified in subdivision (f). The state board shall prioritize monitoring of groundwater that is or has the potential to be a source of drinking water, but shall protect all waters designated for any beneficial use.

(d) The state board, in consultation with the Department of Conservation, Division of Oil, Gas, and Geothermal Resources, shall seek the advice of experts on the design of the model groundwater monitoring criteria. The experts shall assess and make recommendations to the state board on the model criteria. These recommendations shall prioritize implementation of regional groundwater monitoring programs statewide, as warranted, based upon the prevalence of well stimulation treatments of oil and gas wells and groundwater suitable as a source of drinking water.

(e) The state board shall also seek the advice of stakeholders representing the diverse interests of the oil- and gas-producing areas of the state. The stakeholders shall include the oil and gas industry, agriculture, environmental justice, and local government, among others, with regional representation commensurate with the intensity of oil and gas development in that area. The stakeholders shall also make recommendations to the state board regarding the development and implementation of groundwater monitoring criteria, including priority locations for implementation.

(f) The scope and nature of the model groundwater monitoring criteria shall include the determination of all of the following:

(1) An assessment of the areas to conduct groundwater quality monitoring and their appropriate boundaries.

(2) A list of the constituents to measure and assess water quality.

(3) The location, depth, and number of monitoring wells necessary to detect groundwater contamination at spatial scales ranging from an individual oil and gas well to a regional groundwater basin including one or more oil and gas fields.

(4) The frequency and duration of the monitoring.

(5) A threshold criteria indicating a transition from well-by-well monitoring to a regional monitoring program.

(6) Data collection and reporting protocols.

(7) Public access to the collected data under paragraph (6).

(g) Factors to consider in addressing subdivision (f) shall include, but are not limited to, all of the following:

(1) The existing quality and existing and potential use of the groundwater.

(2) Groundwater that is not a source of drinking water consistent with the United States Environmental Protection Agency's definition of an Underground Source of Drinking Water as containing less than 10,000 milligrams per liter total dissolved solids in groundwater (40 C.F.R. 144.3), including exempt aquifers pursuant to Section 146.4 of Title 40 of the Code of Federal Regulations.

(3) Proximity to human population, public water service wells, and private groundwater use, if known.

(4) The presence of existing oil and gas production fields, including the distribution, physical attributes, and operational status of oil and gas wells therein.

(5) Events, including well stimulation treatments and oil and gas well failures, among others, that have the potential to contaminate groundwater, appropriate monitoring to evaluate whether groundwater contamination can be attributable to a particular event, and any monitoring changes necessary if groundwater contamination is observed.

(h) (1) On or before January 1, 2016, the state board or appropriate regional board shall begin implementation of the regional groundwater monitoring programs based upon the developed criteria under subdivision (c).

(2) In the absence of state implementation of a regional groundwater monitoring program, a well owner or operator may develop and implement an area-specific groundwater monitoring program based upon the developed criteria under subdivision (c), subject to approval by the state or regional board, if applicable, and that meets the requirements of this section.

(i) The model criteria for either a well-by-well basis for a well subject to well stimulation treatment, or for a regional groundwater monitoring program, shall be used to satisfy the permitting requirements for well stimulation treatments on oil and gas wells pursuant to Section 3160 of the Public Resources Code. The model criteria used on a well-by-well basis for a well subject to a well stimulation treatment shall be used where no regional groundwater monitoring plan approved by the state or regional board, if applicable, exists and has been implemented by either the state or regional board or the well owner or operator.

(j) The model criteria shall accommodate monitoring where surface access is limited. Monitoring is not required for oil and gas wells where the wells do not penetrate groundwater of beneficial use, as determined by a regional water quality control board, or do not penetrate exempt aquifers pursuant to Section 146.4 of Title 40 of the Code of Federal Regulations.

(k) (1) The model criteria and groundwater monitoring programs shall be reviewed and updated periodically, as needed.

(2) The use of the United States Environmental Protection Agency's definition of an Underground Source of Drinking Water as containing less than 10,000 milligrams per liter total dissolved solids in groundwater (40 C.F.R. 144.3) and whether exempt aquifers pursuant to Section 146.4 of Title 40 of the Code of Federal Regulations shall be subject to groundwater monitoring shall be reviewed by the state board through a public process on or before January 1, 2020.

(l) (1) All groundwater quality data collected pursuant to subparagraph (F) of paragraph (1) of subdivision (d) of Section 3160 of the Public Resources Code shall be submitted to the state board in an electronic format that is compatible with the state board's GeoTracker database, following the guidelines detailed in Chapter 30 (commencing with Section 3890) of Division 3 of Title 23 of the California Code of Regulations.

(2) A copy of the reported data under paragraph (1) shall be transferred by the state board to a public, nonprofit doctoral-degree-granting educational institution located in the San Joaquin Valley, administered pursuant to Section 9 of Article IX of the California Constitution, in order to form the basis of a comprehensive groundwater quality data repository to promote research, foster interinstitutional collaboration, and seek understanding of the numerous factors influencing the state's groundwater.

(m) The adoption of criteria required pursuant to this section is exempt from the rulemaking provisions of the Administrative Procedure Act (Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code). The adoption of criteria pursuant to this section shall instead be accomplished by means of a public process reasonably

calculated to give those persons interested in their adoption an opportunity to be heard.

SEC. 8. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.