SB 4 WELL STIMULATION TREATMENT REGULATIONS

PUBLIC COMMENT SUMMARY AND RESPONSE

Public Comment Period:
June 13, 2014 through July 28, 2014

Public Comment Hearings:
Santa Maria – July 15, 2014
Long Beach – July 17, 2014
Sacramento – July 21, 2014
Salinas – July 23, 2014
Bakersfield – July 23, 2014

Numeric codes at the beginning of each comment summary can be used to locate the summarized comment in the marked-up version of the written comment submission or transcript of public hearing.

	Ban
1375	4607-8, 4609-1, 4665-1, 9314-2, 4735-1, 4738-2, 5531-1, 5542-2, 5544-1, 5546-3, 4695-12, 9286-1, 9292-1, 9306-1, 4602-4, 4716-3, 5550-1, 9311-1, 5531-3, 4650-2, 6370-1 through 7696-1, 8422-9, 8411-7, 8356-11, 8290-1, 8095-1, 8132-2, 8163-2, 8169-1, 8235-1, 8341-1, 8242-1, 8259-1, 8111-1, 8171-1, 8096-1, 8359-1, 8128-1, 8184-1, 8101-1, 8103-1, 8104-1, 8108-1, 8113-1, 8389-1, 8136-1, 8151-4, 8180-2, 8185-1, 8186-1, 8190-1, 8206-1, 8212-1, 8212-4, 8217-1, 8226-1, 8241-1, 8257-1, 8288-1, 8352-3, 8366-12, 8062-1, 8369-1, 8390-3, 8365-1, 8274-1, 8079-1, 8152-1, 8270-1, 8078-1, 8097-1, 8092-1, 8083-1, 8372-4, 8304-1, 8385-1, 8093-1, 8348-7, 08380-1, 8375-1, 8392-17, 8386-1, 8388-7, 8318-1, 8329-1, 8391-1, 8218-1, 8222-1, 8069-1, 8415-1, 8205-1, 8239-1, 8287-1, 8417-3, 8374-1, 8150-1, 8368-1, 8372-1, 8422-2, 8284-1, 8193-1, 8149-1, 8200-1, 8286-3, 8191, 8412-1, 8240-4, 8201-1, 8208, 8082-1, 8413-1, 8183-1, 8253-1, 8347-1, 8399-1, 8293-2, 8205-5, 8187-1, 8074-1, 8074-15, 8168-1, 8066-1, 8373-6, 8368-5, 8369-5, 8365-5, 8373-4, 8368-3, 8373-1, 8402-1, 8224-1, 8165-1, 8331-1, 8157-1, 8321-1, 8122-1, 8139-1, 8237-1, 8137-1, 8360-1, 8134-1, 8134-2, 8164-1, 8145-1, 8166-4, 8353-1, 8228-4, 8242-3, 8281-1, 8138-1, 8125-2, 8308-1, 8308-2, 8147-1, 8147-4, 8251-1, 8131-5, 8149-1, 8171-1, 8081-1, 8081-3, 8128-1, 8187-2, 8202-1, 8102-1, 8110-1, 8377-2, 8307-1, 8155-1, 8214-1, 8162-1, 8181-1, 8217-4, 8238-1, 8255-1, 8275-3, 8276-1, 8276-2, 8352-1, 8234-1, 8192-3, 8248-1, 8146-1, 8299-1, 8309-1, 8342-1, 8124-1, 8250-1, 8143-1, 8152-2, 8072-3, 8236-1, 8197-1, 8382-3, 8120-1, 8417-3, 8258-3, 8229-1, 8394-3, 8383-4, 8409-4, 8416-1, 8315-8, 8420-1, 8398-1, 8398-4, 8371-1, 8142-1, 8142-2, 8115-1, 8320-1, 8394-1, 8074-16, 8259-2, 8271-1, 8131-4, 8379-3, 8215-7, 8255-2, 8078-3, 8198-1, 8198-2, 8419-2, 8192-1, 8167-2, 8167-3, 8074-3, 8360-1, 8360-4, 8148-1, 8266-1, 8229-2, 8197-4, 8373-3, 7713-9, 7733-1, 7727-2, 7742-3, 7731-6, 7788-1, 7726-2, 7736-6, 07717-2, 7758-5, 7736-4, 7736-3, 7742-2, 7736-3, 7736-1, 7731-5, 7715-2, 7714-3, 7756-4, 7763-6, 7766-6, 7757-6, 7753-1, 7755-3, 7775-1, 7919-1, 8027-11, 7978-1, 8044-3, 8010-1, 8014, 7835-6, 8000-1, 7772-4, 8006-1, 7792-1, 7899-3, 7899-3, 7867-1, 7857-1, 8 9-2, 7882-3, 7798-1, 7785-1, 7926-1, 7801-1, 7809-1, 7831-2, 7827-1, 7828-1, 7862-1, 7804-1, 7805-1, 7930-1, 7895-1, 7894-3, 7916-6, 7966-1, 7925-1, 7983-1, 7921-1, 7946-1, 7997-1, 7998-1, 8042-1, 7849-2, 7850-1, 7874-1, 7906-3, 7937-1, 7943-1, 7970-2, 7976-1, 7980-1, 7989-3, 7993-1, 8012-1, 8031-1, 8033-1, 7890-1, 7929-1, 7951-1, 8001-1, 8019-

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	killing wildlife, damaging peoples' health, and increased seismic risks. There is no way to make fracking safe, evidence from other states in the US prove this fact. The only way to keep water, land, and the public safe now and for generations to come, is to ban Hydraulic fracturing. A ban needs to be put in place and there needs to be a focus on alternative energy, before it's too late.
1376	4602-3, 8408-2, 8284-2, 8329-3, 8384-6, 8336-3, 8324-1, 8173-1, 8344-1, 8176-1, 8133-2, 8303-1, 8303-3, 8346-6, 8346-7, 8078-2, 8078-5, 8092-4 Fracking should not be done until the State can prove it can be done safely. All indications are that it cannot be done safely, which is why over 400 communities across the U.S. have banned it or are seeking to do so.
1377	4724-2, 9285-1 There's no such thing as safe fracking. This is an experiment that's going on in our backyards. Millions and millions of gallons of chemicals are brought into California. They stay in California.
1378	8340-I Is it correct, that DOGGR cannot ban fracking and that it can only be banned by the Legislature?
1379	8123-1 The people of California ask that a halt be put to fracking because it is not safe. Companies that frack are not viewed as responsible and they don't believe they are doing damage, just as tobacco companies didn't believe that their products caused cancer and other problems.
1380	5548-4, 5549-1, 9304-1 The recent pole, 68 percent of Californians supported our fracking moratorium. And to protect residents, numerous California communities are moving forward with local measures to prohibit fracking and other extreme extraction methods. It seems to us it's time for the Governor and his administration to hear the concerns of citizens and stop fracking in California. Never has there been a more appropriate application or a precautionary approach to protecting our community's natural resources.
1381	9293-1, 8263-3, 8238-1 STOP all further fossil-fuel mining. No reckless hunt for oil in California. Think about future generations and Mother Earth.
1382	9307-1, 006678-1, 007575-2, 006971-4, 07661-3 The Governor's support and endorsement of fracking in California is shameful. Available research shows that there are more than 600 chemicals used in the fracking process, and more than 150 of them are linked to cancer and cell mutations. Also, nearly 40% of them affect human hormonal activity, 50% of them adversely affect the kidneys and central nervous system as well as the cardiovascular and immune systems, and nearly 3/4 of them cause gastrointestinal and respiratory ailments. Methane gas contamination is massively elevated at sites where fracking has taken place, and nearly 70% of the fracking fluids remain in the ground after the drilling and "recovery".
1383	006926-1 Ban Fracking in Monterey County because the process uses too much water, poisons the earth, and causes earthquakes, and instead, focus on solar power.
1384	8263-1 Residents of California will never allow fracking to happen and will do all they can to stop every plant that is in the effort to begin the well-stimulation industry they describe as mindless.

1385	8094-1, 8196-5 Fracking cannot be allowed because it spells disaster for human health. It means life or death.
1386	6810-1, 8395-1 Ban fracking, acidization, and cyclic steaming. The SB4 draft regulations aren't bad but DOGGR is unable to monitor and enforce the regulations that are already in place. If fracking, acidization, and steam (which isn't regulated under SB4) aren't banned, we will just be hearing in a year or 10 how DOGGR is understaffed, under-funded and under-trained and that's why all our groundwater has been poisoned.
1387	8179-1, 8179-6, 8179-8, 8273-3, 8239-2, 8235-4, 8235-5, 8227-1, 8204-1, 8273-4, 8260-7 Fracking is the single most insane idea Californians have ever heard and it is a prime example of lying corporate greed pulling the proverbial wool over the public's eyes. People will die first from the poison water that leaks into public aquifers and then from radiation as the atmosphere is destroyed. Californians need to stop all fracking until the industry proves it can be done without their toxic cocktail and shoddy methods, poisoning the water and polluting the air.
1388	8182-4 Fracking means breaking and destruction. Californians ask that the definition of the word not be misunderstood.
1389	8344-4 Citizens wonder if they have to get Erin Brockovich in action again and will support any efforts to stop the well-stimulation process from going into effect in California.
1390	8174-4 Corporation monsters have made puppets out of Californians and they want this to stop.
1391	8408-1 There is strong opposition of fracking in any form. People want it called what it is and find the regulations letter deceptive because it does not mention the "f" word.
1392	8058-1 There is strong opposition to anything but the most stringent oversight, transparency and regulations.
1393	8406-1, 8406-2 The proposed "new method" is not any better than the one that had been used, causing major damage and extreme contamination of ground and surface water. California is lacking the above already. The new development in oil extraction technology ("fracking") seems to fly directly in the face of the more general and expected concerns about burning fossil fuels.
1394	8242-2 There are numerous downsides to fracking that far outweigh the possible short-term benefits.
1395	8388-1 Some citizens have signed petition after petition against allowing fracking in California based upon history of this practice in other states.
1396	8243-3, 8243-4 The people of California say enough of this chemicalizing of their society for money. They believe the only people who get the money take it and move to Switzerland where no chemicals are allowed ever on anything. Citizens say that they are left with garbage and residue for hundreds of years. They opt out of fracking and suggest to find another way.

1397	8160-1 Anyone who supports fracking supports death, which means abetting murder, which means that person is a criminal who deserves imprisonment.
1398	8332-2 Doing the thing right is one thing; doing the right thing is another.
	<u>Moratorium</u>
1399	4624-2, 4632-1, 4638-1, 4714-1, 5538-1, 4678-2, 9282-1, 9283-1, 9294-1, 9298-1, 9301-1, 4615-9, 4617-4, 4619-1, 4620-1, 4630-4, 4631-1, 4636-1, 4642-1, 4712-4, 5533-1, 5525-1,4649-2, 4651-1, 4650-3, 4681-1, 4663-2, 9312-1, 9315-1, 9316-1, 9321-1, 4607-2, 4612-3, 4613-1, 4640-2, 5540-1, 4652-6, 4632-2, 5541-4, 6804-3, 7683-3, 6597-1, 6616-2, 7603-2, 6806-2, 6971-3, 6971-5, 7520-2, 8418-5, 8292-1, 8267-3, 83271-1, 8267-2, 8159-7, 8262-2, 7728-1, 7732-1, 7761-1, 7712-6, 7709-8, 7732-1, 7734-3, 7760-2, 7750-1, 7725-2, 7749-1, 7761-7, 7745-10, 7737-2, 7724-1, 7740-1, 7713-9, 7722-2, 7741-2, 7739-3, 7754-1, 7752-2, 7719-2, 7733-3, 7727-1, 7767-1, 7762-1, 7768-1, 7742-1, 7720-1, 7751-1, 7748-1, 7731-1, 7711-3, 7769-1, 7747-1, 7735-2, 7746-1, 7710-2, 7738-1, 7744-3, 7764-1, 7749-1, 7758-4, 7747-2, 7747-3, 7730-2, 7726-1, 7723-2, 7753-2, 7708-1, 7720-3, 7735-1, 7717-1, 7718-1, 7765-2, 7759-2, 7743-3, 7713-6, 7713-2, 7768-3, 7709-7, 7770-3, 7731-5, 7762-9, 7739-1, 7739-2, 7761-2, 7761-3, 7708-4, 7762-2, 7712-4, 7752-1, 7736-2, 7708-5, 7754-4, 7740-2, 7762-8, 7745-2, 7730-1, 7713-4, 7713-1, 7713-9, 7745-5, 7762-3, 7745-3, 7758-2, 7753-11, 7753-9, 7761-4, 7762-7, 7761-4, 7720-2, 7711-1, 7730-1, 7753-6, 7746-3, 7730-1, 7725-1, 7768-2, 7760-4, 7770-2 DOGGR has the ability and the responsibility to impose a statewide moratorium on the permitting of fracking jobs. The only way DOGGR can only meet the legal mandate by imposing a moratorium on well stimulation. Industry is poised to rapidly expand its use of highly controversial well stimulation techniques to extract oil and gas throughout the state, yet there is not a comprehensive science and knowledge base to assess expected impacts to our state's health, water, air, climate, natural resources, environmental quality, seismically sensitive lands and communities, and the related social and environmental justice issues. The absence of science and reporting occurs in a context of a currently inadequate regulatory environment, including documentation and reporting, and thereby enforceable safeguards. Under SB 4 and the emergency regulatory power granted for the interim period by that statute, and the existing power under Pub. Res. Code § 3106, the Division clearly has the authority to implement the precautionary principle, and put an immediate halt to well stimulation projects. It is unconscionable to allow the oil industry to use water, which is a public good, and pollute it with chemicals thereby making it unusable for public use. A moratorium should be place on fracking. We strongly urge a moratorium on all well stimulation and the immediate implementation and completion of an independent scientific review. California must place a moratorium on fracking for none, one or more of the following reasons: fracking has environmentally unsafe procedures, causes damage, earthquakes, all well casing must be fully cemented, aquifer contamination, it's a risk to ground water, soil contamination, ecosystems, concerns regarding the transportation and disposal of waste products, lack of penalties for failure to comply with any damages, concerns of the long term impacts and effects being unknown, overhype of the amount of oil and jobs that will be created, becoming oil dependent, land movement, a reduction in rainfall and snowpack, permits should have chemicals listed with the quantity, lack of study and reviews by state environmental experts and a board, voters support a moratorium on fracking, permits should include the street address for the well and before a permit is granted for a well, written notification should be given to those residing, or owning a business within one-quarter mile of the proposed well, safety of California's people, inability to meet the greenhouse gas reductions (AB32), to assure a sustainable future, to protect public health, prevent environmental destruction, lack of thorough studies on impacts and effects, water supply impact, others states/countries data and experiences reported, lack of precautions and mitigation, concerns

	about reporting, enforcement and supervision of wells; until it can be proven safe, fracking only being done for profit, jeopardizing water and food security, until July 1, 2015 when the new regulations begin, drilling should be postponed until the regulations are agreed upon and go into effect, lack of studies and maps on the effects and impacts on aquifers, groundwater, depletions and pollution, life, health, toxic vapors, property, and natural resources, concerns on fracking in the current water shortage, contaminated water and disposal of the water, and DOGGR has the authority to impose a moratorium on fracking's unconventional practice, wastewater production, contamination of water supplies, water leaving the hydrology cycle all together, increase likelihood of earthquakes, fracking uses too much water, climate change, concerns regarding air contaminant emissions and toxic wastewater discharges, need for water conservation, lack of penalties for operators who do not comply, only in it for profit, lack of prohibition of unlined or open-air pits, lack of data collection, lack of setbacks to limit or exclude well stimulation near homes, schools, sources of water, protected areas, or other sensitive receptors, only allowing property owners and not tenants to ask the Industry to cover the costs of water testing and monitoring, concern that a single project approval for multiple wells could lead to fewer environmental reviews, seepage of toxic chemicals into the ground water system, irrevocable water, concern of Industry following through on new public disclosure rules, exploitation of California's natural resources that will continue to pollute the environment, more science needs to be provided, lack of water for agriculture and people, concerns about decision makers being bought out and having alternative agendas influencing fracking, damaging to California's tourism, concern of the upward and outward fracking chemicals permeating the soil and water table.
1401	4621-6 This whole process this is a bunch of smoke and mirrors that really has limited access to the public for these simple vain attempts of saying, you dummy outreach to the public. Governor Brown should implement an immediate moratorium on fracking in the state of California to safeguard our future, our communities, our water, and our air pollution our faults.
1402	4682-1 There should be a two-year moratorium on all fossil fuel "well stimulation" extraction (aka fracking).
1403	8277-2, 8292-1 People believe that regulations should suspend any fracking operations until the state has officially emerged from the current drought, and historic groundwater levels have been restored.
1404	8272-1, 8272-5 California residents trust that conservation officials are recommending that fracking be halted until adequate studies can be done of existing fracking in their state as well as other states. They ask that this technology be held off on until there is a better understanding of the Earth. At the rate California is going, people believe this will take a half century.
	<u>Regulations are Inadequate</u>
1405	4605-1, 4607-1, 4630-1, 4607-5, 4615-1, 4621-4, 4649-1, 4650-1, 4656-1, 4709-1, 4603-1, 4613-2, 9321-3, 9323-1, 9320-1, 8387-1, 8387-2, 8378-1, 8379-1, 8379-4, 8397-2, 8329-2, 8450-1, 8438-1, 7753-7, 7745-6, 7753-13, 7753-8, 7753-3, 7763-1, 7766-1, 7757-1, 7769-2, 7749-2, 7750-3, 7748-2, 7749-3, 7712-1, 07712-5, 7709-1, 7711-2, 7722-1, 7710-1, 7763-3, 7766-3, 7757-3, 7763-5, 7766-5, 7757-5, 7741-1, 7708-5, 7760-1, 7763-2, 7766-2, 7757-2, 7765-1, 7759-1, 7763-5, 7766-5, 7715-1, 7745-1, 7745-3, 7755-2, 7716-3, 716-4, 7714-3, 7750-2, 7755-3, 7716-2, 7756-2, 7756-3, 7755-1, 7887-2, 7836-1, 7771-4, 8054-4, 8054-9, 8054-10, 7836-2, 8054-5, 8054-6, 8014-2, 8054-7, 7808-3 The Division's proposed regulations to govern hydraulic fracturing for the recovery of oil and natural gas in California fail to adequately protect against damage to life, health, property, water, and natural resources, and therefore the rules are not in accord with standards prescribed by the

	law of California. The regulations do not address pressure restrictions for waste water injection wells and preventing the injection into deep aquifers servicing agricultural regions. The proposed rules do not reflect many known best practices as outlined in reports such as "Attaining Sustainable Development of Oil and Gas In North America, Appendix: US Policy Briefs" (Krupnick, et al.), released by Resources for the Future Report in June 2014. The rules must therefore be rewritten or amended to provide such protections. The equation is pitifully undersized in comparison with the work involved. Regulations must include one or more of the following: a spill contingency plan for each well, a regulation of air pollution in the area of the well head and near residents, acid concentration, a mechanism for measuring water availability in California or managing its sourcing, a provision for people located near a well to be notified of an impending well stimulation operation, ensure the safety for Californians in the case of earthquakes, drought or climate change, a lack of a provision that would impose an unnecessary burden on production of energy, a provision that prohibits well stimulation near sensitive areas, a consistent definition of what "stimulation" means, Californian's protection of unsafe fracking practices, their health, environment, water, air, climate, natural resources including full review of the potential public health and environmental impacts prior to any well stimulation projects; limits on air contaminant emissions and toxic wastewater discharges. The regulations also do not include regulations on waste injection wells, any penalties for operators who fail to comply, a provision for enforcement, and must have full compliance with CEQA on a well-by-well basis. The scope of regulations must cover all forms of well stimulation, regardless of penetration distance or acid concentration. There is a lack of the State to regulate the materials that are injected into fracking wells despite it being the public's right to know. In the event that a moratorium is not imposed, DOGGR must make the regulations as stringent as possible.
1406	5546-2, 5548-2, 4663-1, 8061-1, 8061-2, 8061-3 How is it possible to regulate something sufficiently before you have studied it and know what the risks are? How can you possible study impacts to water, air, seismicity and climate, when you're only studying this much (tiny fraction) of the problem and not the cumulative impact of all these extraction methods? Look at all these processes in combination and the cumulative risks from an increase in their use and then you would privilege human health, preservation of water supplies and our obligation to reduce emissions to protect the future livability of our planet over oil company profits. The regulations need to control, monitor, and mitigate potentially hazardous gas migrations, the surface where it might pose a fire hazard and health concern to the public in the vicinity of the surface projection of a particular well. Additional provisions should be included to ensure there is a full understanding of potential for seepage of methane and hydrogen sulfide gas that may result from the activity, and that the operator incorporate appropriate mitigation and surveillance measures in their work to establish the toxic chemical seepage is below hazardous levels during the course of well stimulation activity. That would be real regulation.
1407	5546-1, 4607-3, 4607-4, 4689-2, 8182-3, 8336-1 The draft rules put forth by Governor Brown and the Division allow regulators to simply rubber stamp multiple fracks and prevent oil companies ·to conceal dangerous chemical use. The regulations are ripe with weak protections and industry loopholes.
1408	5540-3, 4678-1, 6627-6, 9280-1, 4715-2, 8396-2, 8318-5, 8351-1 These regulations are the paltriest set of regulations regarding a highly-complex activity that I could even think about. The Department should to go beyond the minimum baseline set forth in SB4. Under 3106, the Department has the authority to go beyond what the Legislature specifically outlines. The regulations should be the most protective as possible.
1409	4602-1 It is interesting when industry and its supporters coming up and praising a regulatory law, it may be an indication that your regulation is insufficient.

1410	4603-2 Even if these regulations are more stringent than other states, we don't know if fracking is safe, and all the evidence points the other way in state after state. So, this just doesn't make sense.
1411	4697-4 It appears the regulations CONTINUE to need defining regarding flow back of toxins and resultant water quality, measures to prevent earthquakes, full disclosure of toxins for Public Safety. Therefore I am currently opposed to Well Stimulation. Currently there is not enough information to produce adequate regulation to protect our environment and the public. I am opposed to proceeding with the current regulations to enforce the unenforceable and regulate the corporate powers.
1412	4605-3, 8179-5 I don't believe it's possible to regulate these processes [fracking steam injection, etc.]. Fracking has been done for a long time, but they are new and different because of the chemicals that are being used. The industry wants to tell you that we've been doing this for decades safely, and I do understand the decade's part. I don't believe the safely part.
1413	9283-2 DOGGR has not explained whether or how the proposed regulations will "prevent, as far as possible, damage to life, health, property, and natural resources." DOGGR cannot allow well stimulation to proceed unless and until DOGGR has shown that the governing regulations will prevent the environmental damage that well stimulation has been shown to have caused elsewhere. The California Environmental Quality Act ("CEQA") review process provides the appropriate vehicle for evaluating these issues.
1414	5540-2, 4727-2 I would disagree with some of the comments about these regulations being the most stringent in the country. We know that California does not have any regulations on methane emissions, for example, in well stimulation. Other states such as Colorado are ahead of us in this regard.
1415	008082-2 Citizens of California are concerned about the lack of monitoring in the proposed regulations.
1416	008297-14 Regulations need to be adjusted to recognize the possibility of damaging a drinking water aquifer from well stimulation practices.
1417	008347-5 Regulations have much strengthening to undergo before they come close to protecting all life forms in California. As of now, no regulation is sufficient enough.
1418	8393-6 There is hope for strong regulations requiring quick and thorough repairs, environmental cleanup and care for people who suffer from well stimulation treatment.
	<u>Support Regulations as is</u>
1419	4596-1, 4597-1, 4606-1, 4701-1, 4610-1, 4622-4722-11, 4623-1, 4626-1, 4634-1, 4635-1, 4639-1, 4702-1, 4646-1, 4647-2, 4706-2, 4708-1, 4718-2, 4719-1, 4733-1, 5536-1, 5539-1, 5545-1, 5551-1, 5515-1, 5517-1, 5519-2, 5520-1, 4649-2, 5522-2, 5524-1, 5527-2, 5528-1, 5530-1, 5535-1, 4668-1, 6369-1, 4671-1, 9296-2, 9324-1. 4629-2, 4734-1, 8071-1, 8085-3, 8318-2, 7755-1, 7726-3, 7716-5, 7756-5

	When implemented these regulations will be the strictest regulations on hydraulic fracturing in the U.S. The regulations are necessary to implement SB 4 have been drafted in a very thoughtful manner and that they provide the oversight, transparency, and environmental and safety protections necessary for responsible energy development and the jobs, revenues, and energy security. DOGGR, so far, has done a commendable job in balancing the interests and promoting safety and also on drilling activities to take place. DOGGR must not insert provisions that would result in a de facto moratorium or ban, which is contrary to the intent of SB 4.
1420	5541-1 Strictest regulations doesn't necessarily mean that it's strict or effective. And apparently from the last commenter, they may not even be the strictest anymore.
1421	4596-4, 4598-1, 4601-1, 4705-1, 4730-1, 4720-2 We encourage you to avoid anything that would undermine the original intent of SB 4 or over-regulate.
1422	4601-2, 5537-3, 5521-2, 4664-1 CIPA supports the current rulemaking because we believe in the higher level of transparency. After seven months of mandatory reporting, there are still no reported instances of any adverse issues.
	Support of Division Creating Regulations
1423	5547-1, 4666-1, 4667-1, 4629-1, 4711-1, 4731-1, 4680-1, 8364-1, 8345-2, 8063-1, 8337-1, 8442-1, 8441, 8432-2, 8445-1, 8448-1, 8430-1, 8426-1, 8449-1, 8450-2, 8433-1, 8432-1, 8440-1, 8444-1, 8427-2, 8429-2, 8428-1, 8434-1, 8437-2 Implementing SB 4 in a timely manner will allow California to continue to produce the energy it needs to support California's economy and the more than 38 million people that call it home. Fracking is safe and gives California a must needed revenue Doing so will also create jobs and bring individuals out of the grips of poverty. As a result of SB4, the slow pace of interim regulation implementation is prohibiting the issuance of new drilling permits that use Well Stimulation Treatment (WST). Many local contractors and producers have already started laying off employees, cancelling contracts, and shifting their investment dollars out of the State of California. Our local Energy Industry has seen downturns like this before. When employees are laid off they travel to other regions where the work exists. Texas and North Dakota based businesses are actively recruiting our work force. Once workers leave California, we lose not only the economic value associated with each job loss but their knowledge and skills because they rarely come back. Furthermore, the ripple effect is already being felt with less people buying cars, groceries and critical services which sustain our local economy. Our tax base which supports our schools and public services is also in danger. California and the US needs oil and natural gas production to sustain our economy, and Kern County needs it to provide job opportunities for our residents. With 67% of California energy use currently coming from imports, we must do our part and provide for our own needs in an environmentally and safe manner. I am asking for your help to find a way to get WST drilling permits approved sooner which will support job creation and energy independence for California.
1424	9302-1 The regulations should explicitly state that DOGGR will revise and readopt the regulations every three years, if not more frequently. New technologies– for use in the oil and gas supply chain, as well as monitoring and enforcement – should be incorporated into the regulation as they improve and become more cost effective.

1425	5535-2, 5516-2 Royalty owners of this state are concerned that DOGGR not put a framework together that is so onerous that it hurts them. The state should be concerned about their rights and the citizens of the world and their need to have a clean environment. DOGGR is accomplishing that with the current regulations and should be applauded for it.
1426	4597-2, 5539-2 WSPA appreciates certain clarifications the State has provided in the revised regulations.
1427	4604-1 The regulations that we have in place now, the regulations under SB 4 are something that should be use as an example for the rest of the world. The state should be doing more oil right, not stopping oil production or further restricting oil production.· DOGGR is doing an excellent job of overseeing the oil production in this state and should be applauded for it.
1428	4703-1, 4706-3, 4721-1, 4723-1, 4728-1, 8338-1, 8338-2, 8361-1, 8361-2, 8063-3, 8070-3, 4597-4 Please work in cooperation with industry to develop workable, appropriate regulation that protects public health, safety, and the environment.
1429	4704-1, 4729-1, 5537-1, 5527-1, 8297-6 Regulations should be based on facts and sound science. Regulatory development should be driven by science and a long history of the safe hydraulic fracturing and well stimulation in California rather than political agendas and anti-developers or special groups. ·
1430	4699-1, 8383-1 I am pleased with your results. The text shows a real concern for public safety based on full transparency of what can be extremely dangerous procedures. My main concern here is that funding for your Department for purposes of witnessing many of the stated procedures never be put in jeopardy. The safety of the public is entirely dependent on your department and its employees continuing to have full regulatory authority.
1431	4700-1 Thank you for including our earlier comment asking that local permitting jurisdictions, such as the County, be notified of a proposed well stimulation project. This is now included in Section 1786(7). The County's zoning ordinances include a discretionary permit path for hydraulic fracturing and this early forma l notification requirement will help us determine the appropriate permit path and level of environmental review. The proposed specificity in the public notification process is an excellent revision as is the tracking of seismic activity both during and after a well stimulation process. An important clarification has been added which is distinguishing between the use of acid for well stimulation and routine maintenance. In particular, Section 1761 (B) very clearly states that routine well cleanout work is exempted from the regulations, and importantly describes exempted maintenance activities in detail. Section 1761 (B)(2) clearly distinguishes a well stimulation project from an underground injection project to allow for enhanced oil recovery, waste disposal or storage. The requirement that DOGGR maintain electronically searchable well reports is an important addition. The detailed information required for a well stimulation application is most beneficial, including requirements for engineering reviews where appropriate to ensure an accurate analysis. This level of detailed information would be beneficial to the County in process in g any future hydraulic fracturing project applications, including CEQA review. The requirement placed on operators to disclose water use, source and final disposition is an excellent addition to the proposed regulations and one of particular interest to our community.

1432	8334-1 Embrace fracking to the fullest extent possible.
1433	8387-3 California residents approve of any drilling oil and gas companies care to do so long as citizens are told where and when it will be occurring. Even pollution of water, air and land is permissible so long as companies note where it was pumped and what contaminants were existent.
	Regulations Go Beyond Authority in SB 4
1434	4597-3, 4623-2, 4708-2, 5539-3, 5515-2, 9288-1 In general, it is important to note that several sections of the proposed regulations require a significant volume of information from operators that go beyond the statutory requirements of SB 4 and exceed the authority granted to the State in the authorizing legislation. While we appreciate the Division's efforts to explain the need for the information, we do not believe the Division has demonstrated how this information would improve the design, operation, or safety of well stimulation treatments, which are effectively and stringently regulated by current California oil and gas statutes and regulations. The Division has also not provided any clarity on how such information would be analyzed and by what criteria compliance would be met. We recommend the Division closely examine all areas of the proposed regulation to determine how new reporting requirements can be streamlined to balance the need for public information with the statutory intent of SB 4.
1435	5514-5 SB 4's regulations are some of the most intrusive in response to a problem that, so far as anybody can tell, does not exist.
1436	4670-1 The Monterey County Cattlemen's Association is opposed to any and all regulations that may infringe on private property rights of its members especially those concerning mineral rights which the Board of Directors believe to be a private property right. A landowner should not be restricted as to what it can do with his or her property. Mineral rights are a financial tool that can be used to support the above ground operations. A ban or moratorium on such activities below ground could lead to a financial setback to the private property landowner.
1437	9317-4 The regulations are completely unnecessary, and address a problem that does not exist. • No credible quantifiable significant systemic problem exists that these regulations will remedy in the slightest. They are simply even more friction (non-useful work) for California's petroleum industry. Although the Department of Conservation had to develop some sort of regulation in response to SB 4, it in no way had to be as onerous or industry hostile as the proposed regulations are.
1438	8297-8 Attorneys abuse SB4 if the regulations allow them to, to block lawful exercises like others similarly have done to abuse CEQA today. People believe that California does not need another vehicle for millions of frivolous lawsuits to be filed whose sole purpose is to enrich attorneys, clog the courts and cost citizens.
1439	8297-12 SB4 should limit the regulation to the flowback fluids, but it doesn't.
1440	8419-1 Citizens and community members object to the proposed regulations as they run counter to Environmental Protection, the very title of the Subchapter 2 under which the proposals fall.

	Response to comments 1375-1440: The Division's primary statutory mandate, Public Resources Code section 3106, is that the Division permit operators "to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons," but regulate operations so as to prevent, as far as possible, damage to life, health, property, and natural resources, including underground oil and gas deposits and water suitable for irrigation or domestic purposes. Specifically, Public Resources Code section 3106, subdivision (b), contemplates that the Division will regulate, but allow, "the application of pressure heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells." In recent years the Legislature has considered several legislative proposals that explicitly banned or placed a moratorium on well stimulation activities in the state. Each of these legislative proposals have failed passage in the Legislature. Senate Bill 4 does not contain any explicit ban or moratorium on well stimulation treatments. Rather it contains explicit direction to the Division to regulate well stimulation treatments. Consistent with this statutory mandate of Public Resources Code 3106 and Senate Bill 4, the Division has established regulations that address environmental risks and respond to public concerns, but do not prohibit methods and practices that are proven to increase hydrocarbon recovery. These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations. SB 4 is not the entire universe of the Division's authority to regulate oil and gas exploration and production. In addition to provisions of SB 4, these regulations implement the statutory mandates of Public Resources Code section 3106, among others. Limiting these regulations to the regulation of flowback fluids would be inconsistent with the mandate of Public Resources Code section 3160, subdivision (b), to establish regulations that ensure well integrity and geologic and hydrologic isolation of the hydrocarbon formation during and following well stimulation treatment.
	<u>Acidization</u>
1442	5540-9 It's a good thing to require reporting of acid jobs that are below the threshold limit; however, you might want to flush out some of the things that need to be recorded in those cases, such as types of acids. I don't believe the current draft has that much detail about what specific information needs to be submitted with that.

1443	5532-2, 5541-6, 8312-8, 8329-4 We know the kinds of chemicals that are being put into wells. We know that they're acids. We know that they're solvents. We know that here are chemicals in combination that will reduce and liquefy rock. I mean it's something that is a serious concern to people's health and safety. It's being released into the waters of the state. It's being released into the air. It's something that you as regulators should be very concerned about.
1444	4712-3, 8370-1 When it comes to fracking fluid and matrix acidization, we're talking about some seriously toxic substances. Matrix acidization, one ingredient -- I don't know how often this is used in California and maybe you can answer this or someone can answer this for me, hydrofluoric acid is a chemical component used in matrix acidization. Hydrofluoric acid is also a primary ingredient in saran nerve gas. This is a weapons-grade material that is used in matrix acidization. Where is this hydrofluoric acid going after it comes back out. How's it being managed?
1445	4607-6 Acidization, which is a common practice in the San Joaquin Valley. The use of hydrofluoric and hydrochloric acid is used to dissolve rock. There's a loophole where merely the idea of maintaining wells with a small amount of this could conceal actual oil exploration and extraction and stimulation.
	Response to comments 1442-1445: Accepted in part. Public Resources Code section 3157 distinguishes well stimulation treatment from routine well cleanout, well maintenance, removal of formation damage from drilling, bottom hole pressure surveys, and other routine operations that do not affect the integrity of the well or the formation. A treatment that is not a well stimulation treatment is not subject to the permitting and public disclosure requirements of Public Resources Code section 3160 and these regulations. Section 1777.4 is added to specify data that must be submitted for acid treatments that do not meet the definition of a well stimulation treatment.
	Air Quality
1446	4692-6, 9280-16, 4627-3, 4600-4, 9282-6, 9305-6, 9312-2, 8321-8, 8327-12 The Regulations fail to address protections against air quality contaminants that result from the construction and production phase of wells that have been unconventionally stimulated. Additionally, there is no mention made about the air pollution at the well heads. These types of air contaminants have been shown to have adverse health effects on workers and populations living near such wells, especially children and pregnant women. Regulations that seek to prevent discharges of air contaminants, as well as mitigation strategies to protect human health and the environment in case of an accident, must be developed and enforced.
1447	4636-3 South Coast Air Quality Management District was the first agency in our state to require the disclosure of chemicals being used on fracking, acidizing and gravel packing in the past, three of them which include LA and Orange County.• And what they found after 12 months of reporting was that 45 million pounds of air toxic chemicals were being used and half of these operations were happening within 1,500 feet of homes, schools and medical facilities.
1448	9311-5, 8332-5 Well stimulation treatments also result in potentially dangerous air pollution. Recent studies show that residents living close to active wells experience a higher rate of adverse health impacts, including cancer, birth defects, and an array of illnesses. A survey of well stimulation data from

	the South Coast Air Quality Management District showed that in just one year, well operators in the Los Angeles air basin used 44 different chemicals categorized as “air toxics” due to their potential to cause adverse human health effects through inhalation or contact through the air. These chemicals were used over 5,000 times, totaling over 44 million pounds, in the course of a year, often in dense urban areas. Over half of the well stimulation events occurred within 1,500 feet of a residence, hospital, or school. The air toxics released from well stimulation operations will only further degrade this air, making it more unsuitable to breathe. In addition, well stimulation worsens air pollution from other stages of oil and gas production by extending the life of existing wells and allowing new wells to be created where none had existed before.
1449	8363-1, 8363-2 There is displeasure in the fact that there’s nothing in the regulations regarding the blast material frack engineers use in the process. The well that is being stimulated needs to be monitored and overseen because air needs to be monitored at all times. There should be a permit for every fracked well, not a permit for a lease.
1450	9315-10 The lack of protection for air quality and greenhouse gas emissions in these regulations show that critical gaps still exist in the regulation of well stimulation, and prove even further the need for a moratorium until these protections are in place. DOGGR has the authority under Public Resources Code 3106 to implement regulations that will protect Californians’ health, including: monitoring air quality; limiting emissions that threaten health and the environment; and requiring infrastructure that will prevent the leakage of harmful gases, such as methane. If DOGGR does not develop its own air pollution control requirements, then it should not approve any permit application that the Air Resource Board has not also reviewed and approved as adequate for protection of air quality and climate.
1451	8085-2, 8215-2, 8343-3 People remember the old days of smog in Los Angeles; they feel that California has done a good job of controlling the poor air quality even with the huge increase in population size. The State of California has done much to clean the air. Some Californians are already restricted in their outdoor activities by air quality and particulates nearly four months out of the year due to autoimmune system impairments.
	Response to comments 1446-1451: On August 25th, the California Air Resources Board held a public workshop and informed stakeholders and the public that it will proceed with the development of an oil and natural gas methane control measure that would include well stimulation. ARB will also continue a well stimulation emissions study and analyze chemical constituent data. Depending on results of this study and analysis it could propose additional controls for well stimulation activities. ARB staff anticipates bringing the methane measure to its board in the spring of 2015.
	Agriculture
1452	4713-1 Agriculture and ranching can coexist; they have on my farm since 1948.
1453	4607-9 Agriculture and fracking are not compatible uses on land.
1454	8312-8 California is a leader in crop production in the United States.

1455	8243-2 The honey bee drama was enough to show California that no amount of return for using chemicals on crops could pay the people back for a land that cannot produce anything because there are no honey bees to fertilize the fruit trees and other necessary plants properly.
	Response to comments 1452- 1455: Thank you for your comments. The Division's primary statutory mandate, Public Resources Code section 3106, is that the Division permit operators "to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons," but regulate operations so as to prevent, as far as possible, damage to life, health, property, and natural resources, including underground oil and gas deposits and water suitable for irrigation or domestic purposes. Specifically, Public Resources Code section 3106, subdivision (b), contemplates that the Division will regulate, but allow, "the application of pressure heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells." In recent years the Legislature has considered several legislative proposals that explicitly banned or placed a moratorium on well stimulation activities in the state. Each of these legislative proposals have failed passage in the Legislature. Senate Bill 4 does not contain any explicit ban or moratorium on well stimulation treatments. Rather it contains explicit direction to the Division to regulate well stimulation treatments. Consistent with this statutory mandate of Public Resources Code 3106 and Senate Bill 4, the Division has established regulations that address environmental risks and respond to public concerns, but do not prohibit methods and practices that are proven to increase hydrocarbon recovery. These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.
	<u>Bonds</u>
1456	4710-1 Financial liability should damage occur hasn't been addressed in any meaningful way with regard to acid hydraulic injection. Bonds placed on the part of those who are engaging in the fracking activity and the pumping following that fracturing activity to cover costs of damage that may possibly occur.

1457	4710-2 DOGGR should consider adding financial responsibility to those people engaging in hydraulic and acid fracturing to cover any damages that might occur if something doesn't work as anticipated.
1458	9320-10 Existing fee and bond requirements should be reexamined in light of SB 4's duties and well stimulation practices that will facilitate wider development of unconventional resources. It is apparent that administration of SB 4 will require a significant increase in Division's personnel and resources which should be financed by permit application fees that are commensurate with providing efficient and thorough service. In addition, well performance bonds should be increased to a level adequate to provide resources for plugging, and abandonment of wells, and the restoration and reclaiming of drill sites, costs which are very likely to rise substantially with horizontally drilled and hydraulically fractured shale wells.
	Response to comments 1456-1458: Rejected. Bond requirements and financial liability are addressed in other statutes and regulations and are outside the scope of this rulemaking.
	CEQA
1459	9321-8 The regulations have potentially significant environmental impacts and require CEQA review. These regulations are not categorically exempt from CEQA, and they should be subject to full consideration and public disclosure of their impacts as required by law.
1460	9320-8, 9321-7, 9315-2, 007451-2 In laying out the regulatory framework for well stimulation treatments, the Department should also define in these regulations how it intends to conduct environmental reviews. For example, the Department should describe how it intends to "tier down" from SB 4's statewide EIR to individual well approvals under CEQA, and how it intends to assess cumulative effects across a landscape, a clear requirement of CEQA. The Conservancy also strongly recommends the Department identify the "lead agency" for purposes of conducting the environmental review of oil and gas drilling and well stimulation treatments; in particular, under what conditions that role will be assumed by a local or county land use authority. The Department should also state in the rules or associated guidance how it intends to deal with county or local jurisdictions that conduct and certify their own EIRs for drilling and well stimulation treatments given the reservation of local CEQA authority in Public Resources Code, Section 3161(b)(4)(C). We believe that the Department should establish a minimum set of requirements governing well stimulation activities that would apply statewide, while allowing for additional requirements derived from the EIRs of local jurisdictions.
1461	9320-9 The Department also should acknowledge responsibility and authority to analyze and adopt mitigation requirements for the adverse effects of well stimulation treatments. Currently, CEQA reviews for well drilling, especially in established oil fields, appear to have been largely perfunctory, without appropriate consideration of mitigation options. Unconventional oil and gas development outside of existing oil fields, in particular, may cause significant ecological and other adverse effects that will require a far greater focus and reliance on mitigation: avoidance of sensitive areas and resources, minimization and compensation for adverse effects. We urge the Department to provide for this issue in the proposed regulations by adopting at least a basic set of rules to define how it intends to approach mitigation in permitting future unconventional wells

	including providing for specific authority to deny or condition permits based on ecological effects.
1462	9282-2 The regulations should specify that full compliance with CEQA be met through the completion of field-by-field and well-by-well environmental reviews, and affirm the statement in PRC § 3161(4)(C) that nothing in these provisions "prohibits a local lead agency from conducting its own EIR".
1463	9320-3 There appears to be no — or very limited – consideration of ecological effects despite the full mitigation mandate of the California Environmental Quality Act (CEQA) and the requirement that the independent science review consider habitat and species effects. At some point in the regulatory consideration of well permitting, especially in areas outside of existing disturbed areas, the Department will have to evaluate areas that should be avoided, impacts that will have to be minimized, and identify appropriate mitigation for adverse impacts. We urge the Department to provide for this consideration at the programmatic level rather than addressing ecological effects on an inefficient and time consuming well-by-well basis. Furthermore, we recommend that the Department require environmental analysis that considers cumulative impacts over a whole landscape, not just single-well impacts which fail to show the full scope of negative ecological impacts that could result.
1464	8414-2 The CEQA guidelines should be updated and coordinated with the proposed SB4 regulations.
	Response to comments 1459-1461: As of the date that these regulations go into effect, Public Resources Code section 3160, subdivision (d), will require discretionary review and permitting of all well stimulation treatments in the state. This site-specific discretionary review of well stimulation treatments will require compliance with the California Environmental Quality Act. In addition, Public Resources Code section 3161, subdivision (a)(3), requires the Division to complete an environmental impact report providing detailed information regarding potential environmental impacts of well stimulation in the state by July 1, 2015.
	<u>Casing</u>
1465	4611-6 Any well, especially those to be fracked, the pressures are the most extreme that they will ever encounter for the longest duration, therefore have all casings be fully cemented a hundred percent if necessary to the top for the production casing, the surface casing and any intermediate casings.
1466	8327-5 Californians demand that all well casings must be fully cemented.
1467	4636-4, 4605-5, 9311-3, 8402-2, 8095-4 We know that immediately upon the first fracture that these well casings break or crack at a 6 percent rate. Over a15-year time period, 50 percent of these well casings fail and that just goes to show that there is absolutely no say according to this fracturing if that's all that's protecting our ground water supplies from methane migration and chemicals. We have a lot to be concerned about.
1468	8095-2

	Cement encasement is not reliable.
	Response to comments 1465-1468: Public Resources Code section 3160, subdivision (b), mandates regulations that will ensure well integrity and geologic and hydrologic isolation of the treated hydrocarbon formation during and after well stimulation treatment. In order to ensure well integrity, the purpose of Section 1784.2 is to verify that a well subject to well stimulation treatment is constructed in accordance with well construction requirements, and that the quality of cement is sufficient to ensure geologic and hydrologic isolation. The default cement evaluation method is a cement evaluation log, but Section 1784.2 is intended to be a performance-based requirement. Another cement evaluation method may be used if it is capable of demonstrating the adequacy of the cement. The cement evaluation may be waived under an alternate cement evaluation plan if the Division is satisfied that past experience with drilling and production in the area has proven that the method of well construction and cementing employed will ensure that there will be no voids in the annular space of the well. An alternate cement evaluation plan will not be approved by the Division unless the operator can conclusively prove that the plan will ensure zonal isolation. It is not necessary to require that a well be fully cemented if it is demonstrated that the quality of cement is sufficient to ensure the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation treatment. The well construction requirements for wells that are not subject to well stimulation treatment are outside the scope of this rulemaking.
	<u>Climate Change</u>
1469	9280-17, 5531-4, 4616-2 The effects of climate change are already beginning to be felt by all Californians. Regulations meant to mitigate the effect of climate change, such as AB32, will be eviscerated if continued fossil fuel extraction continues. The Regulations must include measures to collect and analyze data to better understand the effects that increased fracking and burning of the extracted fuels will have on our planet's climate.
1470	8321-4 According to the latest studies, 80% of the known carbon reserves need to stay in the Earth. Most of the leading scientific minds agree that climate chaos is real and the use of carbon based fuels needs to be drastically curtailed.
1471	5516-1 We represent the estimated 510,000 citizens who own California's oil and gas reserves, about eight and a half million nationwide. I don't think it's fair to require the citizens of this state to try to bear 100 percent of the burden for, what I said, is perceived as a global problem.
1472	5551-3 Increased oil development will result in meeting of many of our very rigorous environmental goals, such as our climate change goals. We're going to need wealth as an economy in order to adopt the new technology and develop all the things that we need to do in order to reach those goals, and having a healthy emergency production sector will help us in that endeavor.
1473	4616-1, 8165-6, 8417-6 There is an increased release of airborne toxins and greenhouse gases by factors of 2 to 10. If we continue to emit greenhouse gasses by 2100, 2 out of 3 people will die from catastrophic climate change. There are real and predictable limits to the carrying capacity of our home.

1474	4690-3 Wastewater ponds and condensate tanks release volatile compounds (VOC2) 24 hours a day, 7 days a week. As the VOC2 are evaporated and come into contact with diesel exhaust from trucks and generators at the well site, ground level ozone is produced. There's a carbon pollution issue, by which methane and C02 from the gas production and combustion process contribute to global warming.
1475	4694-1, 8193-4, 8193-4, 8214-2, 8422-5, 8253-4, 8074-8, 8319-5, 7575-8, 8112-1, 8271-6, 8171-6, 8215-5, 8269-5, 8107-2, 8385-4, 8348-2, 7713-4, 7734-1, 7760-5, 7762-6, 7708-2, 7709-5, 7745-8, 7713-5 Extracting oil by well stimulation treatment, transporting it and selling that oil so that it can be burned as fuel only contributes to the global problem of climate change. Our state can instead make money by developing, manufacturing and marketing clean energy technology. Continuing to extract oil and gas when we are already suffering from drought and other effects of man-made climate change is irresponsible and short sighted. This process creates a positive feedback loop that will worsen with global warming. Just because something can be extracted from the Earth doesn't mean it should be or needs to be. There is a concern about the other following effects on climate change: fracking waste, long term and short term practice of fracking, well sites releasing/leaking hazardous gases like methane and benzene (a carcinogen) into the atmosphere which increases CO2 emissions which is a catalyst for climate change, lack of California phasing out fossil fuel dependency, methane being a far more potent greenhouse gas than carbon dioxide, exceeding its intensity over a twenty-year period by more than 70-100 times.
1476	8319-6, 8374-3, 8369-3, 8365-3, 8383-2, 8396-3 California natives and residents oppose further use of fossil fuels. Fossil fuels are an obsolete energy technology; continuing to pursue them will accelerate the destruction of California's water supply as a result of global warming.
1477	8310-2 If climate predictions are correct, the current state of California is just a taste of what's to come.
1478	8303-13 Fracking has a larger carbon footprint than coal. Californians are already facing an overwhelming burden to reduce climate change so that everyone can inhabit the Earth for another fifty years.
1479	8227-4 People equate ice cubes melting in drinks to the icebergs calving into the Ocean but in a bigger way. When all the ice is melted, people worry mankind will be in trouble because the Earth's cooling system and atmosphere would be destroyed. The Sun will still be shining and emitting heat.
1480	8180-1 Fracking is a process appropriate for a pre-climate change world.
1481	8342-2 The fossil fuels laid down in the sediment during the Carboniferous period need to stay there unless the people want to repeat the Permian extinction by burning them, releasing too much CO2 back into the atmosphere.
	Response to Comments 1469-1481: On August 25th, the California Air Resources Board held a public workshop and informed stakeholders and the public that it will proceed with the development of an oil and natural gas

	methane control measure that would include well stimulation. ARB will also continue a well stimulation emissions study and analyze chemical constituent data. Depending on results of this study and analysis it could propose additional controls for well stimulation activities. ARB staff anticipates bringing the methane measure to its board in the spring of 2015.
	<u>Climate Change (Methane)</u>
1482	5543-1, 9311-9, 8153-4, 8151-3, 8212-3, 8311-2 Methane is a potent greenhouse gas, 120 times stronger trapping heat than carbon dioxide. Natural gas and oil production processes, including fracking and acid – hydraulic acid fracking may result in substantial methane emission. This is wasteful, whether through unintentionally leaks or intentional venting processes, and this waste can have significant climate impacts and undermined the benefits of using natural gas.
1483	5543-2 We are interested in the level of interaction and engagement you have with the Air Resource Board with respect to the scientific study in the rule-making process required by SB4. The draft rules before us do not seem to address the significance of methane emissions from stimulation activities. We want to know what you are doing to ensure that the scientific study in the rule-making process addresses methane emissions comply with SB 4.
1484	006678-2, 006815-5, 07661-3 Methane gas contamination is massively elevated at sites where fracking has taken place, nearly nearly 70% of the fracking fluids remain in the ground after the drilling and "recovery", and high levels of silica have been found at fracking locations.
1485	7030-2, 8133-4 The draft regulations don't require operators to capture methane, a potent greenhouse gas. They don't protect people living near fracked wells from air pollutants that cause cancer and respiratory illness.
1486	8179-4, 8418-2, 8346-3 One in five steel casings leaks methane gas, which is even more harmful to the environment than carbon dioxide. Not enough study has been done to verify whether fracking is able to produce oil and gas without considerable damage to the water table and the release of considerable methane gases to the surrounding air supply. New studies suggest that fracked wells introduce far greater methane gas into the air and groundwater than the permit holders' show. People are highly concerned.
1487	8303-9 Fracking causes methane gas explosions which can be lethal and unpredictable. Methane can be found in groundwater wells if there are superficial natural gas deposits present, but those wells, in range of fractures made by hydraulic fracturing, will all be effected.
	Response to Comments 1482-1487: On August 25th, the California Air Resources Board held a public workshop and informed stakeholders and the public that it will proceed with the development of an oil and natural gas methane control measure that would include well stimulation. ARB will also continue a well stimulation emissions study and analyze chemical constituent data. Depending on results of this study and analysis it could propose additional controls for well stimulation activities. ARB staff anticipates bringing the methane measure to its board in the spring of 2015.

	Cumulative Impacts
1488	4602-8 If you are to really regulate oil production here in California, you would look at all of these processes in combination and the cumulative risks from an increase in their use, and then you would privilege human health, preservation of our precious water supplies, and our obligation to reduce emissions to protect the future livability of our planet above oil company profits. That would be real regulation.
1489	4605-4 There are parts of Kern County that have subsided as much as ten feet. That means that the land itself has fallen down ten feet because all of the extraction, and with the combination of the breaking up of the land formations underneath to get out the oil that doesn't flow.
	Response to Comments 1488-1489: These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations. The potential cumulative impacts of well stimulation treatments on the environment will be considered in the Environmental Impact Report required by SB 4. Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015.
	DOGGR / DOC
1490	4621-5 It's insane that we are relying on DOGGR which is an agency that's specially funded by permitting oil and gas wells to stop permitting oil and gas wells.
1491	8193-7 Residents of California think fracking makes no sense. Blood will be on regulators', oil and gas companies' hands when a disaster occurs.
1492	8207-4, 8183-2, 8266-3, 8380-2 Conservation must be California's guiding principal, not greed. The people want regulators to

	reject categorically dirty, planet killing, fossil-fueled power plants and automobiles
1493	8332-1 Citizens want to know how they can be assured of the efficacy of regulations and the coordination and good judgment of agencies who will be notified.
1494	8056-4 The public thinks regulators are all probably educated enough to see the obvious outcome of the reckless proposal; citizens feel it is nothing shy of a terrorist act.
1495	8207-1 The people of California have attended many DOGGR hearings and state that they are now watching. They believe the Department needs to get up to speed on many issues.
1496	8312-2 Some believe that DOGGR's practices have no concern for the environment and with the state in a drought, the water system is more vulnerable than ever to the destructive process of fracking.
1497	8366-3 There is hope that the issue of hydraulic fracturing is of paramount importance to regulators, just as it is to the people of California.
1498	8337-2 Hydraulic fracturing is not new, it has been accomplished before with a successful track record. DOGGR is obviously knowledgeable in what they are doing and the people believe they should be encouraged to move forward with local energy production.
1499	8258-1 There is curiosity whether the Department also considered and rejected the prohibition of hydraulic fracturing in the state of California.
1500	8381-1 Citizens applaud the Department of Conservation, thanking it for protecting the people and environment of California.
1501	8322-2 Californians urge regulators to be visionary. They want fracking addressed with responsibility to the people who live in the state, not the industry that is using California only for profit. They ask if there is a conscience out there.
1502	8089-7 May those who have the responsibility to protect Californians stand strongly, validating trust in them.
1503	8264-4, 8264-5, 8131-3 Concerned citizens wonder how much long-term damage is being allowed; they believe that they'll all have to live with and possibly be sickened by the results of regulators' decision on fracking. They believe the focus should be on protecting the environment and planning for the future. There are times that the government must step up and protect the public and wellbeing of their resources for future generations and for the future of life on Earth.
	Response to Comments 1490-1503: These regulations have been developed to supplement the Division's existing oil and gas

	regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.
	Economy
1504	8147-2 Citizens believe that there is a worldwide oil glut.
1505	8118-3 Oil is a dying industry. California has reached peak oil production even with fracking.
1506	9303-2, 9317-2 I fail to see any benefit to an operator, particularly a small “Mom and Pop” business. California's oil industry is now more dominated by Major and Multinational oil companies than at any time in the past, almost entirely because most small companies and service providers can no longer survive, much less thrive, in the current regulatory and tax environment.
1507	8340-9 Residents of California are finding out that property adjacent to them has been leased out for fracking; those who own homes near what have been “abandoned” oil fields are having their homes reduced in value, potentially made unmarketable and uninhabitable. There is no recourse once permits have been granted. People are not being informed about permits until the process has concluded. What is particularly unacceptable to residents is that there is no section of the proposed regulations that would provide input from neighbors before the application is approved.
1508	8343-2 Communities that have adopted fracking as a means of income have been said to regret it based on the unexplained earthquakes they’ve experienced, gas and methane infused water tables, overwhelming odors, unexplained health problems, et cetera. Parents with children who have autoimmune system impairments and whom are advocates for healthy environments vehemently oppose frack activities statewide.
1509	4635-2, 8063-2, 7716-1, 7714-1, 7756-1 Given that 96 percent of our state's transportation uses and depends on petroleum, California must take a reasonable approach, transitioning to alternative fuel sources by bringing demands with domestic production. With over 200,000 middle class jobs, and $17 billion in income depends on the industry, not to mention $10.6 billion in tax revenue for southern California alone, we cannot afford to cripple our energy sector arbitrary to politically driven restrictions. We should be promoting safe instate production for •secure, affordable and independent supply of energy, rather than forcing our jobs and our dollars overseas, out of state, and increasing our reliance on expensive, unregulated energy sources.
1510	4707-1, 8244-1 As long as oil is necessary, it is better that it comes from local and domestic sources, not

	controlled by foreign governments in areas of conflict and compromised environmental safety and health standards.
1511	8384-4, 8384-7, 8179-7, 4652-3, 8418-6, 8331-8, 8157-4, 8164-5, 8150-3, 8303-10, 8303-11, 8240-1, 8125-1, 8125-3, 8271-8, 8116-1, 8215-8, 8121-2, 8159-3, 8175-1, 8215-5, 8231-5, 238-5, 8265-2, 8355-1, 8355-2, 8097-4, 8417-8, 8395-4, 8315-6, 8420-2, 8420-4, 8398-3, 8329-13, 8268-1, 8411-5, 8253-6, 8178-2, 8178-2, 8427-1, 8429-1, 8450-3, 8428-2, 8437-1, 8431-1, 8436-1, 8445-2, 8435-1, 8439-1, 8446-1, 8447-1, 8432-3, 8435-2, 8443-1 It is clear to residents of California that products of fracking are not intended to benefit consumers. Products are shipped overseas to satisfy demand for oil products in other countries. Proponents would like to have the public believe that they bring many jobs to the areas where fracking is permitted, however, even the few jobs they bring are dirty jobs that cost far more in remediation of the damage they cause than the people ever benefit. Once pipelines are built and wells are in place, these jobs go away, only leaving behind the extreme damage to the environment. Citizens ask that Governor Brown not give in to the pressure of the oil industry and their lobbyists and sell California out for profiteering. They ask that the Governor stand up for the people, the clean water everyone enjoys, the beauty of the state and the supremacy of the produce grown in California. Do not mortgage the future of California to the oil industry and ruin what is arguably the most beautiful of the states in the name of oil production and profits.
1512	4682-6, 8393-8 Fossil fuel "well stimulation" extraction (aka fracking) is allowed to continue on, then it (and any other type of fossil fuel extraction as well) should be very heavily taxed (via taxes. permitting fees, etc.)
1513	5522-1, 5519-3, 9296-1, 4649-1, 5527-3, 5551-2, 8071-2 Kern County has a resource-based economy. Two-thirds of our economy comes from natural resources, whether it be petroleum, agriculture, mining, alternative energy, wind, solar, geothermal, biomass. And how important is this? The oil companies – as someone mentioned earlier, nine of our 10 top taxpayers are oil companies. The other one is a mining company. The oil industry pays -- the oil industry has a net assessed value of $29 billion. They pay $319 million a year in local property taxes to support our local government. ·Additionally, they contribute $13.7 billion to our $36 million economy. It is unacceptable to look at out of state for imported foreign oil to meet the energy needs we have right here at home.
1514	5514-4, 5527-4, 9317-1, 8354-1, 8076-1, 8076-3 It is indisputable that state government is hostile to business and particularly hostile to the oil and gas industry. California is the third largest on-shore oil-producing province in the entire United States. We have two percent of the active rigs in the entire United States. It's by no means because we don't have enough oil to drill. It's just so damn hard to do business in this state. So while regulation is taking its time, it is hurting the local work force, hurting the local tax base, and hurting jobs here in Kern County and the State of California. Since SB 4 was implemented in 1-2014, California has already dropped from 3 frack fleets to 2.
1515	9317-3 DOGGR implementation of more stringent MASP requirements for UICs in 2011 severely degraded the operations of a number of UICs under my supervision, because we simply couldn't risk exposing 50 year old casing strings to the MASP the tubing strings handled. We had to drop our MASP for these projects to levels we could safely test our casing strings to, and drill or convert new UIC injectors to handle the produced water that now had to be injected at much lower pressures. The only thing this new regulation accomplished was to drive up UIC costs, at no discernable or quantifiable benefit to the consumer or environment.

1516	5519-1, 5545-3, 8070-2 For every job created by an oil company or other business directly associated with petroleum, another 2.5 indirect jobs are created in the economy. For every direct refinery job in California, another nine jobs are created. This economic driver keeps our economy strong, our businesses prospering, and our citizens working. Today oil generates or supports 468,000 jobs in the great state of California. We have $113 billion economic value to the state, and 21.5 billion in state and local tax revenue in 2012.
1517	4720-1, 8358-2 If the oil companies keep on getting regulated it might be worth it to them to drill in Monterey County and they may leave the area. If they leave the area, 60 to 80 oil workers that will be directly affected. That will affecting Federal taxes, state taxes, and local taxes. That would decimate our little volunteer fire department because they would probably have to move, to live in another area to work to earn a living.
1518	4717-1, 8232-1, 8349-2 SB4 and the regulations represent a positive step towards energy independence in California. Energy independence leads to more stable and affordable fuel prices, and it is critically important for transporting commodities for agriculture, vineyard, and other industries vital to the Central Coast economy.
1519	4645-1, 8213-1 Lots of people talk about how fracking will create jobs. Well, what about the jobs that are being lost in the agriculture industry because ground water contamination is ruining crops? This concept that fracking will bring more jobs to the state of California is a myth.
1520	4596-3, 8297-5 California will continue to produce hydrocarbons safely in the state. There is a tremendous cache of technology, technologists, scientists, engineers, and experience ready to apply to any new challenges. Energy companies are the largest taxpayers in the state. Their revenue provides important public services, not the least of which are police, fire, perhaps most importantly, schools.·
1521	4639-2, 8335-3 According to a recent report by the LA County Economic Development Corporation, more than a 103,000 jobs in LA county come from the petroleum industry which is more jobs than anywhere else in this state.· This statistic demonstrates how critical the industry is in creating quality local jobs and how those wages support our local economy.·
1522	4643-1, 8396-4 It's about jobs. The thing is an engineer working in oil and gas can work as an engineer doing other things rather than killing the environment.
1523	9303-1 The proposed regulations will generate a number of fairly non-productive jobs internally and externally to the oil operators to report and organize the myriad data. I can also see how oilfield and environmental service companies and contractors can profit immensely from these proposed regulations (radial cement evaluation tool, frack/acid model analysis, casing pressure testing, neighbor notification, protocol water sampling, water management plans, laboratories, seismic monitoring and regulation interpretation and compliance).
1524	4661-2 We do not drive large gas consuming vehicles and do not need to enrich a few people so they can send more gas to China either.

1525	5526-4, 4596-2 Limiting well stimulation in California would be detrimental to California's local production of oil and natural gas, and this limitation and this regulation will not reduce the state's consumption of oil and gas. What's going to happen is the state will have to make up the difference that we can't produce in California. It's going to have to make the difference with imports coming through supertankers. We are going to have a lot more supertankers and more railway cars because there's no pipelines.
1526	8350-1, 8350-2 Allow Fracking in California and take a step toward economic recovery. The State has been destroyed by regulations.
1527	8218-4 Jobs can come from Solar Collection Points being built. Workers want a planet to raise their babies on.
1528	8334-3, 8334-2 It is time for California to step up and retake its place as the eighth largest economy in the world. Citizens believe that the state is woefully underperforming on the world stage at this time and that it is abundant with natural resources. However, people believe that California is cursed with huge, unsustainable debt and enormous unfunded financial liabilities. Shameful labor participation rates, bankrupt municipalities, unpaid for healthcare, crumbling infrastructure and the energy blackmail of California's allies by Russia make it plain to see that California needs the money, employment, revenue and strategic leverage than an unleashed energy sector can provide. These above things unaddressed will ruin California's economy and culture over time. The solution is under the citizens' feet and the time is now to act.
1529	8059-5 Property owners and taxpayers are not pleased to know they will be taxed for compliance through parcel taxes and fees. This is seen as unfair when a source point like well stimulation is identified.
1530	8293-3 Using a gas tax, citizens suggest starting a war on oil and gas by creating jobs that will find alternatives in solar and better energy storage cells that can be charged by solar or solar absorbing nanomaterials for paint on cars. California can still lead the country in something besides poor public education and high real estate prices.
1531	8187-4, 8187-3, 8118-5 Fracking uses a lot of water and fracking has the potential to poison water. People want to know what idiot thought this was a good idea. Californians surmise that idiots who value profits over the citizens' wellbeing are those who think fracking is a good idea.
1532	8331-2 There is a lot of hype about keeping money flowing where it is flowing now rather than advancing and making necessary changes
1533	8331-9 The people don't think that subterranean waste disposal is a cornerstone of the economy. It is relied upon by pharmaceutical and chemical companies, not the public. Greedy gas and oil commerce and agriculture giants who refuse to use moderation and common sense by using biodegradable products but instead use pesticides and fertilizers are reasons why the economy is fracked.

1534	8149-2 Landowners want money and allow fracking to occur on their land, without any idea what they are exchanging for. Californians that are pro-fracking want to get any money they can for their land and are willing to take a chance on something that looks good without having done the research to decide if the idea is indeed good, or stupid. Some have a hard time thinking that people this uninformed are making decisions that affect those who feel they know better.
1535	8423-3, 8359-6, 8110-4, 8190-3, 8362-2 The main obstacle for replacing fossil fuel with renewable energy is political in nature. Opinions are that the government is owned by big oil and that they provide most primary energy used in the United States. Major stockholders and high executives of such companies are the ruling class and just as much entitled to respect, power, and share of income. There are feelings that this is similar to old European nobility. It is important to the people of California for regulators to let big oil companies know that their state does not have a “For Sale to the Highest Bidder” sign on it.
1536	8087-7 If the government allows fracking to continue, there is belief that it will lose tax revenue as the population dwindles. Emergencies will escalate and agriculture will fail.
1537	8358-1 Fracking is almost a God-given benefit to the poor and middle class of this country and State. Californians pay crude prices for their oil which is approximately 75 cents a gallon more than the rest of the country. Fracking is necessary to bring supply to the state and more pipelines so that refineries may process cheaper American Crude. This gives young and poor people a tremendous break on their cost of living.
1538	8400 -3 Municipalities sell out to the oil and natural gas drilling companies and ruined water supplies are the result.
1539	8423-6 Recommendations have been made to strike a deal with the twelve big oil firms to put all small, independent fossil fuel firms out of business in exchange for five years to phase in tax on emissions before starting to buy coal as mineral rights. A suggestion has been made to phase in a tax on energy and demand electric utilities wait their turn for leases of renewable energy equipment so that replacement of fossil fuel with this energy will be orderly. Citizens note that since all twelve big oil firms are publicly traded, they must file P&L so that the government can tell when their profits and revenues decline from taxes and renewable energy—then start buying fossil fuel reserves to bring their sales up to business as usual. Fossil fuel firms will then suspend exploration.
1540	8362-1 If the US is using much less gasoline than it has in the past, then why is all this fracking occurring?
1541	8401-1 Oil field workers state that wells that were permitted in ten working days now take a two year lead time. They add that proposed regulations on fracking and well stimulation may finally drive the nail in the coffin of their careers.
1542	8371-2 People sometimes say they forget about the power of the huge oil companies in the State of California.

1543	8064-1 The true potential of the Monterey Shale Formation has been vastly overstated according to the Post Carbon Institute; recently the US Energy Information Agency confirmed these findings, cutting their estimate by 96%. They also reduced the projected recoverable amount to 600 million barrels.
1544	8297-4 People ask the government to reject the temptation to rectify political agenda created problems via regulatory mandates that have no supportive basis or theory. Those mandates will result in tremendous cost to California across all segments of the economy.
1545	8210-7 Courage to say no to big oil is what people believe California needs because profit is not worth the future.
	Response to comments 1504-1545: The imposition of assessments to support the Division's administrative costs and requirements for bonding to cover compliance costs are addressed in statute and are outside the scope of this rulemaking. Compensation for damage to private property is outside of the Division's regulatory purview. The Division does not anticipate that these regulations will increase or decrease the extent to which well stimulation treatment is employed in oil and gas production in the state. These regulations do not create an incentive to conduct will to conduct well stimulation treatment, nor are they intended to curtail its use. Rather, these regulations are intended to ensure that, when well stimulation treatment is done, it is done within a regulatory scheme that ensures proper engineering review, monitoring, and public disclosure before, during, and after treatment. The Division's consideration of the economic impacts of this rulemaking is discussed in the Economic Impact Assessment and the STD 399 included in the rulemaking record. The Division's primary statutory mandate, Public Resources Code section 3106, is that the Division permit operators "to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons," but regulate operations so as to prevent, as far as possible, damage to life, health, property, and natural resources, including underground oil and gas deposits and water suitable for irrigation or domestic purposes. Specifically, Public Resources Code section 3106, subdivision (b), contemplates that the Division will regulate, but allow, "the application of pressure heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells." In recent years the Legislature has considered several legislative proposals that explicitly banned or placed a moratorium on well stimulation activities in the state. Each of these legislative proposals have failed passage in the Legislature. Senate Bill 4 does not contain any explicit ban or moratorium on well stimulation treatments. Rather it contains explicit direction to the Division to regulate well stimulation treatments. Consistent with this statutory mandate of Public Resources Code 3106 and Senate Bill 4, the Division has established regulations that address environmental risks and respond to public concerns, but do not prohibit methods and practices that are proven to increase hydrocarbon recovery. These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments

	hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.
	Enforcement, Financial Liability, Penalties
1546	7485-2, 8326-1, 7737-1, 7763-4, 7766-4, 7757-4 The toughest most stringent regulations must be in place and must include an absolute 100% responsibility of the fracking company and agents for cleanup and remediation of any and ALL damage caused to the water, the land, the air and the land values in areas damaged by fracking with NO EXCEPTIONS or LOOPHOLES. There MUST be money for ENFORCEMENT of the regulations otherwise it is just impotent verbiage.
1547	8317-9 The operator is responsible for permits, reports, etc. If the “operator” is a corporation that is based offshore, what are the odds of collecting compensation? Does the “operator” mean the employee or contractor actually doing the drilling, or the corporation employing the drilling company? People think that if it is the former that the employees ought to be aware of the above when they complete fracking forms.
1548	7441-3, 8057-5 Drillers must be held accountable for disposing used chemicals in a safe and approved manner. Permits to conduct fracking should be predicated on large bonds posted by those corporations to cover subsequent health costs for communities who find the company's chemicals in their drinking water up to two or three decades later. Those funds should be held in interest bearing accounts by the state treasury for at least thirty years.
1549	6678-5, 8219-2, 8392-12, 8392-14, 8392-15 Who will pay for damage to the environment cause by hydraulic fracturing? Californians would like to know what happens if the well owner or operator’s company goes out of business. People would like to know about monitoring wildlife impact throughout the operating life and once the well is sealed. They would like to know if that expense becomes that of State of California’s, thereby the tax payer’s responsibility.
1550	8067-2 It has been strongly recommended that private insurance companies be responsible for determining risk, not government regulators.
1551	8303-2 The people believe that government officials and industrial leaders who obtain profit from fracking at the expense of the citizens should face appropriate legal and financial consequences as a whole and individually.
1552	8317-11 California residents want to know who will compensate the farmers, cities, landowners whose wells become too shallow after hydraulic fracturing has used an indefinite, unlimited amount of water. People want to know what their properties will be worth once the fracking boom is over

	and the gas supply is exhausted.
1553	8393-7, 8328-3 People want quick and thorough compensation to those who suffer from damage to individuals and their property to be included in SB4.
1554	9315-33, 9323-2, 9292-3, 9299-16 The complete lack of discussion of enforcement is a glaring omission. This draft does not limit any pollution to air or water and does not specify how the Division or other agencies such as the California Air Resources Board and the Department of Toxic Substances and Control should respond to non-compliance of any section of these regulations. Such a regulatory scheme lacks the teeth needed to be effective and invites repeat violators. This omission signals to the public and the environmental community that DOGGR in fact does not view itself as a regulatory agency whose job is to ensure that the industrial activities it regulates are conducted safely, but rather, as an enabler of the oil and gas industry. With no enforcement provisions, the Division sends a clear message to the industry it regulates that they need not be concerned about complying with these regulations.
1555	9311-12, 9312-6, 7030-6 The attempted implementation of the interim well stimulation regulations this year has revealed that neither DOGGR nor the oil and gas industry can be relied upon to adhere to regulations. In April, the DOGGR had not posted a single well stimulation disclosure report prior to being contacted by the Center earlier this year. Even after receiving pressure from the media and the public, DOGGR posted reports for less than half of the known hydraulic fracturing events that had occurred. For reports that had been posted, several categories of critical and mandatory information were missing from the reports, such as the chemical composition of the waste water and the location of waste disposal. Despite knowing about these violations, the problems still persist. After six months, many reports are still missing from DOGGR's reporting site, and reports that have been posted are still missing chemical analyses and other critical data. Also, it appears that DOGGR has been unwilling to levy penalties against well operators who have missed reporting deadlines. The widespread violations of the interim regulations suggest that DOGGR is ill-equipped to regulate well stimulation and implement a permitting system. DOGGR would be relying almost entirely on self-reported information from the industry, and it is unclear whether DOGGR has the resources or willingness to verify the information submitted to the agency.
1556	8277-1 Californians are pleased to learn that DOGGR recently suspended various fracking operations that could impair groundwater quality.
1557	9309-12, 4715-4, 8317-8 There's nothing in here which addresses what happens when these regulations are not followed once the permit is issued, and what punishment is put upon the driller if they fail to follow these regulations. Public Resources Code Section 3236.5 states that any person who violated this section of the code is subject to fines. This section should be referenced within the proposed regulations.
1558	4636-5 If there is a ground water contamination, whose going to pay for the cleanup? It's not going to be the oil and gas industry. They have shown us they will refuse to do that across the country and it will be the taxpayers and ratepayers and finally when it comes to reporting and disclosure, even with these emergency regulations.
1559	5532-1 A recent article in the Sacramento Bee discussed how the DOC and the other regulatory

	agencies handle well reports where they don't even have the enforcement mechanism to make the people that fill out the well reports indicate what chemicals have been put in the wells. That's a very serious problem with what's being proposed to be done.
1560	9289-3, 9319-8 We see that there are various notification requirements expected of operators but we do not see any wording that puts the burden of clean-up and any other mitigation on the shoulders of the operator except in the case of above ground spills. We continue, in the strongest way possible, to urge DOGGR to spell out clearly the financial and functional responsibilities of operators to any and all other parties for the adverse effects of well failures AND for adverse effects that result from the normal functioning of well stimulation activities and related underground injection projects.
1561	9280-2 The proposed regulations fall short of providing enforceable safeguards for the risks of well stimulation, and the potential increase in drilling and associated activities. Given the widespread and large scale nature of development that is envisioned by the oil and gas industry in California, and the potentially harmful well stimulation methods that are to be used, DOGGR, acting as the lead agency preparing the Regulations, must ensure the protection of all Californians.
1562	5541-5 The first commenter said DOGGR does not have enough money to actually follow through on enforcing regulations. I mean if you put a provision in saying that the industry has to pay to make sure we have enough staff to implement regulation, then we had enough regulation and more jobs would be created by the oil industry.
1563	4681-4, 5532-5 Regulations should and can be promulgated giving Californians a private right of action to enforce the final regulations when the public agencies in charge of enforcement fail to act. Section 3106, gives DOGGR an extraordinary amount of discretion in formulating regulations to further oil and gas production, including hydraulic fracturing or fracking.
1564	4612-1 How does the Department enforce these regulations? I suppose there's no enforcement in them because they're unenforceable.
1565	9298-2 While considerable effort has gone into addressing the cleanup of spilled hazardous fluids stored at the well site, for example, there does not appear to be language in the bill that specifically requires the oil company to actually clean up an aquifer (or similar underground source of protected water) if it is contaminated as a result of a well breach.
1566	4664-5, 4600-5 Make sure there is clarity for oil and gas companies so that the rules guarantee that all lead applicants and subcontractors will be fully informed and formally sign on to all regulation and stipulations.
1567	007543-2 In lieu of a ban on fracking, a very expensive extraction tax, along with extensive, thorough laws requiring full financial responsibility for any negative effects on the environment and the welfare of the citizens is necessary.
1568	8131-2 Frack activity may be characterized as criminal, comparable to dumping toxic waste on

	productive farmland. It is even worse since the poisons can be spread through the water supplies over large distances.
1569	8297-7 The goal of SB4 and other environmental measures is to ensure that Californians harvest natural resources while minimizing hurt to things and people. Citizens are joining organizations who are donating to groups of attorneys who sue without merit and intimidate via threats as a means to block action that is permitted and legal.
1570	8392-6 Who is tracking the operators to make sure they are complying with strict deadlines like 1784.1(b) or 1788(6)?
1571	8329-8, 8329-9 There is a history of non-responsibility in the drilling industry. Oil companies in the Gulf of Mexico had safety and mitigation regulations in place. As the Gulf incident later showed, the regulations were inadequate even with mitigation factored in. Oil is ready and willing to accept meager regulations such as the abovementioned.
1572	8297-31 Severe financial penalties, plus cost recovery should be imposed on those who file unsubstantiated and frivolous lawsuits. There are tremendous penalties for the accused to accrue who must defend against claims that may be false. This could cause them to lose production and revenue in the interim.
1573	8356-3 Californians say they've heard that recently and despite the illegality of the action, companies have been caught using diesel fuel in the fracking fluid.
1574	8067-3, 8067-4 Companies that plan to extract hydrocarbons via fracking should be required to carry insurance against all safety risks, including events such as earthquakes that are real risks in California. There is some evidence that fracking can lead to earthquakes. People feel that they'll be reassured that the costs of accidents will not be borne by taxpayers if companies were to obtain full coverage.
1575	8306-4 Oil companies have never fully cleaned up the messes they've made in any spill or drill accident. People think it's a guarantee this will not change. Their payments seldom are sufficient in comparison to the damage they do to peoples' properties and the usability of land.
1576	8295-4 Some agree continued and enlarged fracking is good for business as it promotes growth. However, "growth for its own sake is the ideology of a cancer cell." People say no to both.
1577	8380-4 The best way to clean up a hazardous, toxic mess is to not make it in the first place.
1578	8331-7 There have been many thousands of violations and Californians believe in the future there will probably be misconduct by impatient well injectors who ignore proper techniques and force injections too fast, breaking any natural protections and containment of the toxic chemicals deep below, as well as too shallow drilling for Case 1 and 2 type wells.

	Response to comments 1546-1578: Thank you for your comments. The Division has several statutory enforcement authorities that are effective for obtaining compliance. Among these enforcement authorities is Public Resources Code section 3236.5, which provides for civil penalties of up to $25,000 per violation per day. Under SB 4, Public Resources Code section 3236.5 was amended to specify a minimum civil penalty of $10,000 for each violation of relating to well stimulation treatment.
	Environmental Damage
1579	9320-2 The Department has a critical opportunity to put in place a highly protective, yet reasonable, set of rules for well stimulation practices for both conventional and unconventional resources before development significantly increases, including enhanced protection of the state's ecology, its waters and terrestrial and marine resources. The Department can benefit from, and build upon, laws and regulations of other states, taking the best ecological standards from each in order to reach the Department's goal of developing "among the most protective" rules in the nation.
1580	9320-4 We have a particular concern about surface impacts, in addition to water and air impacts. It is of paramount importance for the Department to spell out in its regulations how and where surface disturbance activities would be limited and how natural resources would be protected. Surface disturbance from unconventional oil and gas development that is not carefully planned and limited — construction of roads, pads, flares, processing facilities and pipelines, truck traffic, diesel pumps, and other related development activity — can be highly disruptive to the surface environment and species that depend on that habitat.
1581	9311-2, 8321-10, 8134-5, 8218-2 Californians are concerned about the fracking chemicals and their ability to disrupt hormones needed for healthy and reproducing beings. Well stimulation involves the use of hundreds of chemicals, the majority of which are known to have adverse human health effects. These chemicals pose an unacceptable risk to public health and safety. For example, a study of gas production in Colorado yielded 632 chemicals used in 944 different products. Of these chemicals, 75 percent have been shown to cause harm to the skin, eyes, and other sensory organs; 37 percent could affect the endocrine system; and 25 percent could cause cancer and mutations.
1582	9309-7 The State of California and County of Monterey have a responsibility to protect their resources and citizens from uses and activities that may impact their livelihood, and provide emergency procedures in the case of an environmental hazard. We ask that DOGGR consider adding an article to Subchapter 2 that references the procedures for long term reclamation and monitoring in the case of a breach and need for environmental remediation. If this is already written into Chapter 4 or other California Code, it should be referenced in Subchapter 2.
1583	9306-4, 8123-2, 8130-1, 8279-1, 8098-5, 8177-2, 8258-2, 8375-2, 8408-3, 8220-4, 8422-6, 8244-3, 8303-6, 8126-1, 8133-1, 7731-3, 7764-2 Fracking's yet undiscovered effects on water contamination, tectonic plate activity, wildlife, climate change, and humans are not worth discovering by trial and error. It will not be possible to undo the damage being done by fracking. It is a terrible idea.
1584	8189-1 People want to know who will be remembered for standing up against manipulators. They want to

	know when Californians will realize how much damage has been caused by fracking as well as who will be remembered for having the wisdom to consider the long-term effects and repercussions of such dangers.
1585	9280-12, 9282-11, 8057-1, 8057-2, 8356-9, 8415-3, 8415-2, 8183-3, 8385-2, 8385-2, 8150-4, 8150-5, 8156-1, 8391-2, 8415-4, 8356-6, 8412-2, 8412-3, 8264-1, 8075-7, 8359-8, 8128-2, 8085-1, 8129-1, 8296-2, 8221-1, 8301-3, 8233-1, 8238-2, 8390-1, 8372-3, 8327-11, 8318-1, 8072-1, 8283-1, 8411-4, 8346-4, 8392-7, 8386-2 Pollution from truck traffic, chemical contamination around storage tanks, habitat fragmentation and damage from drilling to environmentally sensitive areas are results of fracking. California's natural resources include more than minerals beneath the surface. The state possesses vast amounts of sensitive ecosystems, world renowned biodiversity, and some of the most productive agricultural and biological areas in the country. To protect our resources, DOGGR must prohibit well stimulation in, under, and around sensitive areas, including, but not limited to: the Pacific Ocean, coastal bays and estuaries, sensitive ecosystems, wetlands, critical watersheds, and groundwater recharge areas. California is known for being a leader when it comes to environmental issues and people count on the state to do the right thing by ending fracking
1586	9292-4, 9280-12, 8117-2, 8097-2, 8409-1, 8315-5, 8315-6, 8348-7 Californians cannot afford to risk the destruction and contamination of the water or that of the citizens' health, especially the children's, by continuing to introduce substances that are long-term poisons. The regulations fail to protect public health because they do not include any setbacks for well stimulation, maintenance, and waste storage & disposal. Recent health studies found severely negative health impacts in people living 1.6 miles from a fracking site. Setbacks of at least 1,500 feet must be established, prohibiting well stimulation near residential areas, sensitive receptors such as hospitals, schools, and day care centers, as well as known fault zones, in order to protect human health for the state's most vulnerable populations.
1587	4620-2 There must be regulations tailored to California's to address the full range of environmental and human health risks associated with well stimulation, including putting sensitive areas off limits to development, putting appropriate setbacks in place and limiting fresh water use and requiring water recycling which is sorely needed as a result of the drought and during this time of extreme water scarcity.
1588	4633-1 We should analyze what we are risking; we are risking damage to the environment, we're risking our water supply during the drought has been covered many times, water; we're risking earthquakes, we're risking poisons. What are we risking if we don't do this, money for an industry that is filthy rich, that is the only thing that we're risking?
1589	4695-6, 8095-5 1783.2 What happens when AFTER well stimulation is discovered that water, soil and air is NOW toxic? The kids are sick. None of these companies care or have real solutions. Neither does the state. Smoke and mirrors.
1590	8418-1 The basic concept of well stimulation is to introduce an unnatural element into the strata to disrupt the current geological formation. While this has been used for centuries, the stimulation of wells in order to extract oil and gases is relatively new and wrought with unintended consequences. The people are concerned with change in the underground water table that coexists with the geological formation that is being stimulated with acid or other toxic chemicals.

1591	8393-5 An indicator regarding the safety of well stimulation treatment is the willingness of insurance companies to cover damages that may occur as a result of well stimulation. People need to know whether or not insurance companies will provide them coverage.
1592	8303-15 It amazes citizens that people lived without polluting forms of energy since their evolution, however, today people are not apt to survive on the planet without destroying the habitat and that of all the other living fauna.
1593	8303-16 The planet belongs to all of its citizens, not a government or industry. The enabling and act of fracking has proven itself an egregious crime against all of humanity.
1594	8232-2 People are skeptical about fracking being good for the environment.
1595	8351-4, 8316-2, 8058-5 Residents of California ask that all components of fracking and well injection fluids be proven to be non-hazardous to animal or plant life by testing methods established by the State of California. If the compounds so specifically listed, are known to be, or found to be, detrimental to human health or animal health and/or carcinogenic, and/or teratogenic, then those listed compounds should not be used for well stimulation and should not be put into the well where they could leak into the water table, and contaminate the water that people and domestic animals drink.
1596	8194-18213-2 Fracking is a ticking time bomb and has been proven as the most damaging form of energy to the atmosphere and environment as well as to the soil and water. The only benefactors would be the gas and oil folks who refuse to see the damage they intend to do.
1597	8243-1 Californians believe they are learning too late that the chemicals in the land, water and air influence and destroy much more than money earned can give them.
1598	8311-3, 8301-7 Fracking is dangerous to transport. Truck accidents and train wrecks happen with greater frequency and destruction, doing long-distance hauling from the remote fracking sites.
1599	8382-2, 8058-4, 8159-6, 8196-2, 8196-7 The people of California want to know where the legislators are who are supposed to be watching out for the interests of Californians and not powerful oil and gas corporations? There is the belief that individual political representatives who back this poorly conceived process will suffer the consequences when the general population recognizes that they have sold their souls to satisfy their own greed.
1600	8392-5 Indefinitely into the future, people want to know who is responsible if natural causes, i.e. earthquakes or mudslides, damage plugs, cement fill, containers, etc. resulting in seepage or any degradation of water quality once the wells are no longer in use.
1601	8317-14 Californians believe that new wells for business ought to be limited. The State cannot afford to allow each individual person or entity to sip from the same source of water until its run dry. There is strong belief in managing resources, not allowing the gas and oil industry to trash California.

1602	8150-2, 7751-3, 7723-3 With the diminishing natural resources the people have in California and in the entire nation, citizens believe they must do everything to protect and conserve their natural resources.
1603	8238-4 Citizens ask that solutions to cleaning up the fracking mess be considered; they wonder if there's enough consciousness for people to realize it's time to stop fracking and "play somewhere else."
1604	8383-3 Californians have the rights to clean air, clean water, and a climate that can keep them fed and alive. The best and most careful well stimulation still fails on the third item in the list and most stimulation violates all three rights.
1605	8076-2 The people ask that regulators strive for balance with environmental protection and energy production.
1606	8145-12, 8303-12 Residents of California believe that it is all about thriving as a species, not merely surviving. Thriving equates to health. Thriving happens when healthy living systems are supported and they ask how everyone would like their children and grandchildren to remember their loved ones.
	Response to comments 1579-1606: These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations. In addition, Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015. Once the EIR and the independent scientific study are complete, the Division will evaluate whether there is a need to amend these regulations in light of the findings of those studies.
	<u>Environmental Justice</u>
1607	9311-25 DOGGR must conduct a cumulative impacts analysis that identifies existing sources of pollution and addresses the specific needs of predominantly low income communities and communities of color already facing high level burdens from those sources. This form of study and analysis must

	be included as part of an independent review of the full range of real and potential impacts of fracking, and other related forms of well stimulation and treatment activities, prior to issuing any new permits. DOGGR must prohibit any drilling, acidization, or other form of well stimulation or treatment from taking place in communities that have either been identified as environmental justice communities by the criteria set forth in the Office of Environmental Health and Hazards' Environmental Health Screening Tool, or other forms of socioeconomic, race and cumulative health impacts assessment methods.
1608	9292-5, 8327-9 Written notification of well stimulation treatment must be in plain and accessible language in order to successfully notify landowners and tenants of future activities. As CEQA provides, documents must be "organized and written in such a manner that they will be meaningful and useful to decision makers and to the public." Pub. Res. Code § 21003(b). DOGGR's regulations must require notice in Spanish, English and other languages. For example, according to the U.S. Census 41.6% of Kern County, California's most fracked county, residents speak a language other than English at home.3 All Californians are entitled to written notice they can understand.
1609	9292-2 The regulations fail to protect the public health of the most overburdened communities by pollution in the state because they do not limit the amounts pollution an operator may release. The overwhelming majority of well stimulation notices are in communities identified by California EPA's CalEnviroScreen as the top 20% of most polluted in the state. It is time to stop adding on to the already life-threatening burdens experienced by these communities and start prioritizing protection of their public health.
1610	4725-1 No one has requested translation of the hearing. So acknowledging that there are real barriers that keep predominantly Spanish-speaking people from participating in these processes, it's really important that what information is provided is accessible.
1611	4725-3 On the notice of the regulations and hearings written in Spanish there is a link where people can get further information, however those websites are in English. So if someone who speaks Spanish and doesn't speak English want to learn more, they don't have another place to go other than the notice to go to.
1612	8407-1, 8407-2, 8407-5 The people want fracking to be called what it is. Calling fracking well stimulation treatment is hiding your fracking plans from citizens' right to know what is going on.
	Response to comments 1607-1612: In an effort to outreach to non-English-speaking communities and provide them with the opportunity to provide comments on the proposed regulations, the Division provided Spanish-English translation services at the first public comment hearing held in Bakersfield on January 8, 2015. The Division expanded the number of venues with Spanish-English translation services to all five public comment hearings held after the release of the first revised text of proposed regulations (Santa Maria on July 15, 2014; Long Beach on July 17, 2014; Sacramento on July 21, 2014; Salinas on July 23, 2014; and Bakersfield on July 23, 2014). In addition, the proposed regulations require operators to hire an independent entity or person to provide notification to every tenant and owner of neighboring property within a specified distance from the wellhead and horizontal projection of a well that will have a well stimulation treatment performed on it. This neighbor notification must be provided utilizing a bilingual (English/Spanish)

	template form developed by the Division. Lastly, with respect to environmental justice communities, the Environmental Impact Report required by SB 4 will analyze the potential impacts of well stimulation activities on these communities. Statute requires that the EIR be completed by July 1, 2015.
	EPA
1613	8331-5 People of California think that the EPA has performed dismally and dishonorably. Many citizens will sicken and die in the future in spite of public warnings and admonishments. Californians refuse to be subjected to idiotic mistakes when there is verifiable proof of the dangerous well stimulation practices.
1614	8331-10 Hydraulic fracturing purports to be clean coal, but thousands of wells are leaking, salinity and odors from harmful chemicals are bubbling up from the Earth. The EPA has not counted violations in twenty years according to concerned Californians. The rules have been broken a reported 1,100 times without debate. The last time the EPA issued an update was in September of 2011 and only a handful of states and regulatory agencies contributed anything to the database.
1615	8331-11 California citizens don't think anyone other than Mario Salazar from the EPA that will vouch for the insanity of fracking violations in the states.
1616	8095-6 People state that the EPA cannot be relied upon to protect Californians from fracking. They believe that it is up to each state to govern itself in this regard.
	Response to Comments 1613-1616: It is the Division that has been tasked with developing and finalizing regulations for well stimulation treatments in the state.
	Exporting Oil or Natural Gas
1617	8219-, 54689-3, 8377-4, 8219-3, 8306-5 Californians believe there is a glut of natural gas in the United States. They feel that if future gas recoveries were sold on the U.S. market that the price would drop precipitously. Gas billionaires ask for more areas to frack and they are not in the business to lower prices so they want to export oil and gas. They are currently petitioning President Obama for permits to build liquefied natural gas plants so that they can ship California's precious natural gas to China.
1618	8219-4 People want to know why there's a need to frack more gas when there is a glut and the price will drop if more gas hits the market.
	Response to comment 1617-1618: The state does not have the legal authority to prohibit the exportation of oil or liquefied natural gas out of the state or out of the country. Such legal authority resides with the federal government.

	Fees
1619	9309-3 Please provide clarification on any application fees. There is nothing written in Subchapter 2 for fees. County of Monterey requires several inspections of every structure we issue permits for; which entails thousands of inspection per year over a large area. The state can do the same. Sufficient staff can be funded to inspect each well stimulation treatment permit site through fees that provide full cost recovery.
	Response to comment 9309: The Division is a special funded agency using the Oil, Gas, and Geothermal Administrative Fund (OGGA), with revenue generated by annual assessments from the regulated industry. These funds are used exclusively for the support and maintenance of the Division of Oil, Gas, and Geothermal Resources.
	Flowback Water
1620	4600-2, 4664-3 To protect groundwater sources, flow back water needs to be specifically tested for any of the additives or likely reaction product to these additives. The data required to be collected does not fully characterize the flow back completion or composition. Specifically for the major additives, they should be treated by volume, and the methods of testing for radioactivity in the flow back water needs to be described.
1621	8317-6 The storage, disposal, disposition of all waste is entirely up to the operator, though it is governed by laws too. People don't know where these wastes are being stored, and are upset to think that their water well is above an injection site for waste water.
1622	8297-13 Waste water is injected at low pressure, far below frack pressure, back into the zone from which it was produced. People in California may or may not know that the fracked water is processed and cleaner than the water still in the formation. Objectors find loopholes to achieve a larger agenda and has nothing to do with protecting drinking water aquifers.
1623	8297-20 Waste water injection is not the same as fracking and flowback.
1624	8405-4 Citizens desire for the fluids and water that resurfaces after stimulation practices must be treated so that the resulting liquids are suitable for irritation as a minimum—preferably to be potable.
1625	8318-4 Regulations already exist governing how fluids are disposed of in disposal wells. However, people want to know what will happen to the disposal wells over time, especially given the great quantity of fluids that will have to be disposed of from the fracking wells. They need to know what guarantee exists so that there will be absolutely no leaking from these enormous disposal wells.
1626	8329-7 During self-regulation, oil companies claim that they use recycled water for well stimulation. The people want to know what the real origin of the water is before it is recycled; they assume it is from the ground and drilling as well as the Ventura River.
	Response to Comments 1620-1626: In Section 1783.1 of the proposed regulations, the application for a well stimulation permit shall include a water management plan that will provide an estimate of the amount of water to be used

	in the treatment, an estimate of water to be recycled following the well stimulation treatment, a description of how and where the water from the well stimulation treatment will be recycled, including a description of any treatment or reclamation activities to be conducted prior to recycling or reuse; and the anticipated source of water to be used in the treatment. The application will also include the anticipated disposal method that will be used for the recovered water in the flowback fluid from the treatment that is not produced water. And in Section 1788 of the proposed regulations, an operator will be required to disclose after a well stimulation treatment the source, volume, and specific composition and disposition of all water associated with the well stimulation treatment.
	Geothermal Hydraulic Fracturing
1627	8423-7 Suggestions have been made to drill wells and frack hot rock reservoirs for enhanced geothermal systems. Since at a greater depth and the object is to extract heat, there is less of a chance of contaminating drinking water. Once all top layers of rock reservoirs are done, fossil fuel firms can deal direct with utility for redrilling. Nice tunnels should be drilled for desalinated seawater to adapt to drought and HDVC lines for national smart electric grid.
1628	8349 Californians believe they all need energy in one form or another; although some people are personally big proponents of clean, safe and abundant Geothermal energy, until the day comes when it can be developed on a large enough scale, they have to take advantage of what they have now. The residents feel they have to be level-headed and smart about fracking and not succumb to irrational or purely emotional responses.
	Response to Comment 1627-1628: Senate Bill 4 specifically applies to well stimulation treatment on oil and gas wells. It does not apply to geothermal projects.
	Governor Brown
1629	6678-8, 8219-1, 8219-6, 8384-5, 8098-1, 8106-1, 8106-2, 8125-4, 8103-2, 8108-2, 8252-1, 8194-2, 8127-2, 8218-6, 8089-3, 8301-8, 8311-4, 8411-8, 8153-1 Governor Brown ran on a renewable platform; supporting fracking is a massive contradiction of that. Citizens of California want to know if Governor Brown is aware of the current drought, that fracking uses millions of gallons of water and after fracking uses the water, it is of no further use because it's been poisoned. To lose California's groundwater supply to fracking is unconscionable and a dereliction of the Governor's responsibilities to the people. Californians have to wonder why Governor Brown would consider betraying the environment and the voters by allowing the gas industry billionaires to rape the environment and pillage the state's natural resources just to further enrich the already obscenely wealthy. The only conclusion the people can come to is that the Governor stands to profit somehow.
1630	6519-2, 8220-1, 8220-1, 8220-5, 8249-1, 8099-2, 8073-1 Governor Brown, please do not add FRACKING to the error you made on WECS. The people of California ask that Governor Brown do all he can to curb the devastating growth of fracking in their state. Californians ask that he reign in this dangerous industry in the interest of the health and safety of all citizens. They ask that he do all he can to curb the devastating growth of fracking in California.

1631	8253-7, 8187-5, 8227-2, 8171-8, 8221-2, 8312-5, 8073-3, 8305-4, 8090-1 California voters state that at this time they are disgusted to have voted for Governor Brown, shook his hand and registered Democrat. They claim they won't vote for him if he continues to endanger the beautiful state of California and cater to big oil. Concerned citizens ask that the Governor Google fracking and read the facts. Californians think that surely Governor Brown does not want to make this his legacy.
1632	8253-5, 8111-3, 8204-2, 8296-4, 8301-9 The people believe that if Governor Brown's support for solar energy been continued from his first term, California would lead the world in supplying clean, safe, low-cost solar electricity which is where the state needs to head now. By doing so, people will be put to work safely without polluting the environment and without creating more health problems. Someone has to stand up to the big oil companies. There is belief that someone has to be first, and ask that Governor Brown let it be California. The Governor has demonstrated incredible leadership for the good of California. The people believe the stakes are greater.
1633	8312-1, 8301-1 The public does not understand why they have to implore the Governor to say no to the oil industry. Fracking for expensive, poor quality oil is unacceptable on many levels. People of California urge for Governor Brown to reject DOGGR's latest attempts at fracking wells and water systems.
1634	8144-1, 8231-1, 8228-1, 8117-1, 8326-7 The Governor and many Democrats have sold out Californians. People feel that they had a chance to stand up to big gas and oil companies to say no to fracking; ignoring public comments which were requested, they still sold out to big oil and gas. Californians see the Governor and Democrats as being two-faced liars that considered nothing which was sent in to them. There were 100,000 comments made by the public and people are displeased by the Governor's action. Citizens feel that big gas and oil can buy any Californian in the government, from the Governor down. They add that no one can drink oil, and everyone will find that out soon.
1635	8077-1, 8077-2, 8077-3, 8077-4, 8296-1, 8175-5, 8217-2, 8217-3, 8231-6, 8312-11, 8127-3, There is belief that Governor Brown has a majority in his corner in California at the moment. His enthusiastic acceptance of fracking is far and away the most egregious error of Governor Brown's career in terms of the irreparable damage that will inevitable be done to the lovely Golden State. Californians ask that he vigorously promote alternative energy sources. The Governor has been instructed to look to Europe; Germany has high percentage levels of total electrical generation that prevail in 2014 and is derived from wind and solar. Burning garbage, tidal action, etc. can create power from sources never previously considered. People urge the Governor to be one of the most powerful voices to defend water in California. No one dares to come out and say that gas and industry profits are more important than water, so the citizens instead get doubletalk that simply ignores the cost of fracking. The people of California ask that Governor Brown's decision on fracking be reconsidered.
1636	8078-4 A champion for California would fight fracking tooth and nail, not endorse it.
1637	8229-3 The people of California thank the Governor for making a decision in favor of the people rather than the greed of corporations.
	Response to Comments 1629-1637: It is the Division that has been tasked with developing and finalizing regulations for well

	stimulation treatments in the state.
	Health
1638	5531-2, 4665-2 One study this year by the University of Missouri researchers connects hormone disrupting chemicals associated with fracking to breast and another cancers as well as infertility and other health problems. That study was published in March 2014 in endocrinology.
1639	4682-4 Unknown (to the public) pollutants could prove quite dangerous to the environment and public human health. And even if they are not directly dangerous to human health our individual and collective health is extremely dependent on a clean and healthy environment. We simply don't need any more fossil fuels consumed and dumped (deliberately or accidently) into our global environment. Fossil fuels and their byproducts are extremely harmful to human health and the environment, of which we all depend on for our survival - global warming is real and a serious threat to our way of life and even to life itself.
1640	9280-15, 9282-12, 9315-19 In order to protect workers' health and safety, operators must be required to present and manage an active Injury Illness Prevention Program during all well stimulation activities. The program must be available in all necessary languages so non-English speaking workers may have access to its benefits. In addition to protecting the public and the environment, the Regulations must also protect workers on rigs, well pads, and other infrastructure. Studies have shown that a large percentage of work related accidents disproportionately affect minorities and non-English speakers.
1641	8359-5, 8389-2, 8366-9, 8301-2, 8315-7, 8250-2 Fracking puts at risk the health of every single person who calls California their home and jeopardizes the future of children. The people know the chemicals used are dangerous and history/experience has shown that chemicals will eventually end up where they are not supposed to be. Eye irritation and breathing problems are two fracking-related health issues that Los Angeles residents have reported experiencing.
1642	8366-1 Teachers have described the health problems of students in schools located near fracking operations.
1643	8096-2 A Texan citizen states that she lived in Texas and was made ill by fracking. She adds that it is not safe.
1644	8188-1 Stop fucking around with the public's health and lives.
1645	8195-2 The US is the top producer of fossil fuels and their byproducts largely due to the heavy use of hydraulic fracturing. The public urges the Governor to reconsider the future consequences of such actions as he has the final word.

	Response to Comments 1638-1645: In an effort to minimize public health risks, the proposed regulations require pressure testing and cement evaluation requirements, as well as require operators to perform a well stimulation treatment area analysis to demonstrate that there is no potential conduit for fluid to migrate out of the hydrocarbon zone where the well stimulation treatment will occur. There are also requirements for the storage and handling of well stimulation treatment fluids and wastes. In addition, Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015. Lastly, SB 4 amended the Public Resources Code to add Section 3160 (a), which requires the Secretary of the Natural Resources Agency to 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 independent scientific study is to 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. This study will be completed on or before July 1, 2015.
	<u>Injection Wells</u>
1646	6737-2, 6676-2, 6524-2, 6378-2, 6548-2, 6448-2, 6472-2, 6441-2, 6432-2, 6415-2, 6412-2, 6473-2, 6535-2, 6878-2, 6468-2, 7604-2, 6493-2, 6798-2, 6804-2, 6941-2, 7621-2, 6960-2, 6976-2, 6984-2, 7029-2, 6993-2, 7398-2, 7683-2, 7462-2, 7465-2, 007490-2, 7491-2, 7501-2, 7514-2, 7517-2, 6580-2, 6965-2, 7520-5, 7459-2, 8228-2 DOGGR was just forced to shut down eleven oil and gas waste injection sites over fears that they are contaminating drinking water in the Central Valley with fracking chemicals.
	Response to comments 1646: These proposed regulations do not regulate the injection wells or impact the Underground Injection Control program administered by the Division.
	<u>Local Initiatives & Ordinances</u>
1647	4706-1 We are very troubled by the current proposed initiative that we have in San Benito County that would ban the use of hydraulic fracturing, and what's being defined as "high intensity oil extraction methods," including cyclic steam injection, acidization, and hydraulic fracturing; although, low-intensity oil extraction is not defined within the initiative. We would like the Department's support in helping to educate the community about oil and gas extraction and the importance in our community.
1648	4718-1, 4733-2, 4669-1, 8349-7 The Department should educate the public about fracking because there are assumptions and perceptions about what goes on in Monterey County that do not exist under your guidance, monitoring, and regulating. There is no fracking in San Ardo, and there hasn't been fracking in San Ardo. And it would be very helpful, and I think would make a lot of people sleep easier in the evening, if they knew that the Department of Conservation could help play a role in making sure

	that people understand that. This is in order to allay as much as possible any fears the Californians may have, and will attempt to avoid unnecessary expenditures from the legal battles that erupt as a result. Money would be better spent making the technology even safer or as safe as possible. •Members of our business community, community members, and leaders need to receive more information from the Department. We encourage you to conduct one or more public workshops on hydraulic drilling, hydraulic fracturing, and existing and future state regulations.
1649	4603-5, 4605-6 I support Measure P, a local initiative to ban extensive oil extraction in our county. And I support all efforts, local efforts around the nation and in California to stop these problematic intensive extraction efforts.
1650	4603-6 SB 4 allows too much leniency and it will inspire continued local efforts to stop this kind of production.
1651	4607-7 In a recent poll, 68 percent of Californians supported a fracking moratorium, and in response to Governor Brown's State officials' refusal to protect residents, California communities are moving forward with local measures and other aids amid other extreme extraction methods.
1652	9321-8 The proposed regulations should make clear their intent not to preempt local fracking laws.
1653	8363-5 Some citizens report hearing fracking engineers using explosives in Santa Barbara County.
1654	8407-4 Citizens are outraged that officials put communities at risk in order for oil companies to suck up more oil under their dense residential neighborhoods.
1655	8323-1 Protect Salinas Valley (PSV) is a Monterey County organization that has analyzed the risks and possible mitigations if industrial level fracking is allowed in the salad bowl of the world for several years. They seek state and county ordinances to reduce risk of devastating economic damage to the Agriculture and vintner industries should a leak or spill of toxic injection fluids occur within the most seismically active oil field in America.
1656	8333-1 Residents of Ventura County are very concerned about fracking taking place in their local mountains.
1657	8336-5 The people believe their vote is their one and only power. Even that is now being bought and sold by elected officials to big oil, pharmaceutical companies, the Koch kingdom and right wing corporations. Long Beach is particularly upset about being fracked and “Koched.”
1658	8408-4 It is felt that fracking robs people of their right to live on private property, which becomes contaminated from this unsafe practice.
	Response to comments 1647-1658: The proposed regulations require all well stimulation treatment operations be conducted in compliance with all applicable requirements of the Regional Water Board, the Department of

	Toxic Substances Control, the Air Resources Board, the Air Quality Management District or Air Pollution Control District, the Certified Unified Program Agency, and any other local agencies with jurisdiction over the location of the well stimulation activities. These regulations do not purport to limit local land use authority.
	Location of Hearing
1659	4618-7, 4621-1 You can see in this meeting room, it's not packed. We'd offered Culver City, the last time you were down there, we had over 500 people show up. When you say you want public comment, you put it in a place where it's hard to park, hard to find and parking that cost $10. Next time if you ever want to do this and want to have any respect in the community, come to the community.
1660	8367-1 The public wants to know if the SB4 hearings will be available to watch online, and if so, where can they be viewed?
	Response to comments 1659-1660: The Division held two rounds of public comment hearings. One in January 2014, and another in July 2014. Each round included five public comments hearings in five distinct locations in the state. Those locations were Bakersfield, Santa Maria, Long Beach, Salinas and Sacramento. The selection of those locations were based on proximity to communities near oil and gas operations.
	Notice of Proposed Regulations & Public Hearings
1661	4674-1, 4675-1, 4677-1 I don't know: (1) why I received the notice of proposed regulations; (2) what should I do with the notice I received; (3) why I received multiple copies of the notice.
1662	5542-1 I'm only here because one of my neighbors informed me that this existed. I got no information that these procedures were taking place. And I kind of find the secrecy disturbing. It's a way of doing public service, and I come from a long line of public servants.
1663	4738-1, 8410-1, 8300-5, 8396-1, 8400 -1 Californians received letters regarding SB4 Well Stimulation Treatment Regulations, for which they were thankful. However, the notice should have included the word "fracking" on the notice. People would have appreciated a short, explanatory sentence at the beginning of the letter since they did not know what well stimulation is, and had to Google it for clarification. Why has the word "fracking" been replaced by the word "well-stimulation" and see this name-swap as the oil extraction industry's' attempt to avoid bad publicity. Think of the ink and taxpayer money that was saved by eliminating the euphemism "well stimulation treatment" by substituting it with "fracking."
1664	4725-6 I knew about today's meeting because I received a notice about it in the mail. There was little-to-no information in the media or in the local newspapers that would have, let people know about today's meeting and there right to comment on the regulations. As you can see, there's not a lot of people here, and the people who are here, it's not a diverse bunch.
1665	8411-1 Average citizens that received the mailed SB4 notice regarding well-stimulation treatment regulations did not attend law school so sections 1751, 1761, 1780, 1781, 1782…mean nothing.

	They assume they received the notice because of their anti-fracking stance.
1666	8300 -4 Residents are thankful for the opportunity to comment and for being notified about regulations by email.
1667	8424-1 California's citizens have read the Department of Conservation's informational email and found that the attempt to communicate information about fracking was a failed attempt. They suggest the Department take time to improve PR and communication skills unless it wishes to not be understood by the public.
1668	8377-3 Citizens thought the subject of fracking was under consideration by state governing bodies and wonder if that is why notifications were sent out.
1669	8336-2 The rules for speaking out at open forums are convoluted, discriminatory and ludicrous. Californians believe the rules are imposed to eliminate the possibility of the participation of hundreds of individuals who are unable to wade through the extensive and confusing verbiage of the 29 page, "safer" regulations.
1670	8377-1 There are complaints about people trying to read the "techogarbage" that was sent out by the Department in relation to the legislation about fracking which would impact private wells.
1671	8343-1 Citizens wish they had received the SB4 open comment notice with more than a 24 hour window so that they could address fracking issues clearly on behalf of family and community members.
1672	8344-5 Some individuals were unable to attend the SB4 regulations hearing but were unable due to work commitments.
1673	8349-1 Californians are in receipt of Senator Fran Pavley's email regarding the hearings on the proposed hydraulic fracturing regulations in California.
1674	8315-1 Citizens comment with great concern about their disappointment in not being able to attend and speak at the Bakersfield forum due to a lack of prior notification.
1675	8089-1 There is great disappointment in the Long Beach public hearing: parking fees, time of day, weekday, low attendance number and general feelings of public avoidance disturbed citizens. There is belief that had the hearing been well publicized, held at night or on a weekend at a more centrally-located auditorium, there would have been many more attendees. The public feels like a game of hide-the-ball is being played.
	Response to comments 1661-1675: The Department made the proposed regulations and revisions thereto available for public comment from November 15, 2013 until January 14, 2014; from June 13, 2014 until July 28, 2014; and from October 9, 2014 until October 24, 2014. During those public comment periods

	the Department conducted a total of ten public comment hearings around the state. Notices of rulemaking activities and opportunities to comment were sent to everyone who requested it, to everyone who submitted written comments or made comments at public hearings, and to anyone else the Department thought might be interested. The timing and content of all notices conformed to the requirements of the Administrative Procedures Act.
	Offshore Fracking & Activities
1676	8317-10 Californians ought to know whether they are onshore or offshore and what liability they will have for contaminating the state's water and soil.
1677	8364-6 Concerned citizens mention offshore drilling rigs; well stimulants will not impact groundwater treatment in California, they say, but if re-injected, people want to know if it could have an impact on marine life or ocean water quality.
1678	8207-5 People of California notice that SB4 does not take into consideration offshore drilling.
1679	8145-6 The enormous plastic islands floating and growing in the oceans would not be there if it weren't for big oil. California cannot afford for this to continue.
1680	8345-2 Californians want to be independent of offshore oil.
	Response to comments 1676-1680: These proposed regulation would be applied to well stimulation treatments within state waters (within three nautical miles from the coastline) but cannot be applied to well stimulations treatments in federal waters. These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations. The impacts to marine wildlife and environment will be considered in the Environmental Impact report and independent scientific study required by SB 4. Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015. SB 4 also amended the Public Resources Code to add Section 3160 (a), which requires the Secretary of the Natural Resources Agency to 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 independent scientific study is to 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. This study will be completed on or before July 1, 2015.
	Public Comment Period
1681	9280-5 Given the extended period of 6 months afforded to DOGGR by the California State Legislature to complete the regulations, additional public comments must be allowed prior to July, 2015. This will allow the public maximum time to revise and comment on any permanent regulations before they are put into full effect.
	Response to comments 1681: The Administrative Procedures Act requires that this rulemaking be completed within a year of it commencing. The Department made the proposed regulations and revisions thereto available for public comment from November 15, 2013 until January 14, 2014; from June 13, 2014 until July 28, 2014; and from October 9, 2014 until October 24, 2014. During those public comment periods the Department conducted a total of ten public comment hearings around the state. Notices of rulemaking activities and opportunities to comment were sent to everyone who requested it, to everyone who submitted written comments or made comments at public hearings, and to anyone else the Department thought might be interested. The timing and content of all notices conformed to the requirements of the Administrative Procedures Act.
	Renewable Energy
1682	5545-2, 8196-6 The state cannot currently meet all of its petroleum needs. As we work toward finding alternative sources, we should bridge demand with the method production, since 96 percent of state transportation needs are meant by petroleum. Instead of sending our jobs overseas, out of state to buy imported oil, we should promote safe in-state production for a secure, affordable and independent supply of energy.
1683	4603-3, 4645-2, 4727-1, 5542-3 Oil production here is only a small portion of our local economy, and it is not the area of economy that we should be worried about expanding. Clean energy is the area we should be expanding.
1684	4641-1, 5533-2, 4653-2, 4689-4, 4652-5, 9306-3, 9314-1, 7449-2, 6684-2, 8406-3, 8374-4, 8368-4, 8369-4, 8365-4, 8422-4, 8263-2, 8200 -3, 8253-8, 8384-8, 8121-1, 8215-6, 8346-8, 8347-5, 8420-3, 8074-4, 8207-3, 8373-5, 8402-5, 8153-9, 8319-5, 8134-6, 8174-3, 8230-2, 8091-1, 8345-1, 8342-3, 8390-2, 8062-2, 8312-4, 8117-3, 8078-8, 8295-3, 8269-4, 8269-6, 8348-5, 8409-5, 8386-3, 8282-3, 8159-5, 8210-4, 8266-2, 8231-4, 8249-2, 8251-3, 8257-3, 8260-4, 8128-3, 8366-7, 8385-5, 8129-2, 8098-6, 8184-2, 8109-5, 8113-2, 8264-3, 8259-3, 8136-2, 8112-2, 8271-5, 8171-5, 8075-6, 8170-1, 8145-5, 8383-5, 8422-7, 8422-8, 8179-9, 8418-7, 8074-5, 8118-4, 8091-2, 8404-2, 8260-5, 8074-13, 8074-14, 8321-9, 8145-7, 8113-4, 8162-2, 8449-2, 7761-6, 7754-2, 7709-6, 7733-2, 7720-4, 7738-2, 7744-4, 7736-5 Citizens of California state that they have been ahead of the curve so far and desire to find better alternatives for the benefit of future generations. We should be investing in renewable and clean energy. Solar and other types of renewable energy sources are costs effective and don't poison anyone. Think of everyone's grandchildren and start investing in solar and hydro power. People

	of California should be made to conserve, force auto industry changes and convert to clean energy. California needs a big push towards a renewable energy future now on the level of NASA space travel in the 50's and 60's.We can overcome our oil/gas addiction with healthy alternatives. Fossil fuels will not last forever. When they are gone, look what fracking will leave in its wake—a world overwrought with pollution caused by the caustic emissions the fossil fuels produce. Exxon, Chevron and the likes could be dominating the wind, solar, hydrogen alternatives, etc., but they consciously choose not to.
1685	8161-2, 8161-3 People would like to know why California doesn't develop a clean energy solution. They suggest extracting Hydrogen from water as it is clean, has no carbon footprint, and with the glaciers melting, water will be evermore abundant. Citizens suggest the government set up a challenge to businesses to develop Hydrogen as a clean, inexhaustible source of energy.
1686	8422-1 There are so many renewable energy sources available that California residents are confused as to why they are forced to be reliant on non-renewable, dirty energy such as oil and gas.
1687	8183-4, 8145-4, 8303-15, 8073-2, 8344-3, 8417-4, 8416-3, 8359-7 Residents of California believe that if the same amount of money that is being spent on fracking and oil exploration was spent on renewable energy, that the state would be energy self-sufficient. Californians want to redirect oil subsidies to alternate energy and solve the resource dilemma. The time has come to take on the oil lobbyists and stand up for alternative energy.
1688	8402-4, 8153-7, 8145-11, 8078-6 California has some of the highest numbers of sunny days and unused, sun-soaked real estate in the country. Residents have solar panels that pay for all of their electricity and electric cars. Cloudy Germany is making better use of solar roofs than the United States' sunniest states. There is a lot of ingenuity in California just not necessarily coming out of the oil industry. The people ask that the government support innovation with the same vigor with which oil was supported. Tesla might be a role model for the future.
1689	8165-7 The Mother Jones Handbook of Homemade Power should be read for many sustainable methods of producing electricity without burning fossil fuels. Wind and Solar are only two of many ways to produce energy. People have not pursued looking into tidal changes which could easily be used to push large turbines to produce energy. It is encouraging to Californians to see voltaic panels getting a boost; if all carports were covered with them, it would make a huge dent in the consumption of energy by apartment complexes across the state. The ideas in the Mother Jones book should all be tried on a large scale.
1690	8193-3, 8321-2 People do not understand why California allows fracking when the state has made such great progress with alternative energy sources.
1691	8331-4 There is no scientific basis for disapproving wind and solar energy. Steam and electric cars have already been invented but larger car companies forced them out. Californians want to know if that was an ecologically or environmentally sound thing to allow to happen. And if not, they want to know if it was sound policy-making for America.
1692	9293-2 The amount of solar energy, wind energy, ocean, streams and geothermal energy is easily sufficient to power mankind. In fact, generating energy from renewables has many advantages

	over carbon combustion. Combustion of carbon also leads to emissions of dangerous air pollutants, which impair our health and lead to shorter lifespans. Removing the developed world from its dependence on a handful of oil producers such as Russia, Iran, and Venezuela would greatly enhance our security.
1693	9293-3 As we shift away from fossil fuels and use renewable energy oil companies can develop geothermal plants and sequester carbon dioxide. The coal companies can mine for iron, zinc, aluminum, and other elements.
1694	4656-3, 8282-1, 8210-5, 8210-6 Petrochemicals are toxic resources that need to be phased out in favor of a mix of renewables, which are being proven workable in Germany, Denmark and other affluent countries. Germany currently generates 75% of their entire electrical needs via wind and solar. California has more wind and sunshine than Germany
1695	8278-3 One problem with solar panels is heat. Californians believe it may be possible to use solar panel heat to purify grey water more and make it safer to use. They also suggest the use of composting toilets.
1696	8238-6, 8238-7 Find ways to make money in good and long-term healthy ways which are constructive, protective and co-creative. Grow a garden in peace rather than destroy one. Be inspired today.
1697	8133-5 It is important for officials to learn more about and endorse MSR's (Molten Salt Reactors). They are different than light-water nuclear reactors in that they cannot blow up since they don't use superheated water, don't produce free hydrogen and they run on atmospheric pressure. They cannot melt down because they use a liquid salt solution instead of solid fuel rods. This concept was proven in the 1960's by Oak Ridge National Labs with the MSRE (Molten Salt Reactor Experiment). They can run on nuclear fuel and on thorium. The world has 400 times as much thorium in the Earth's crust as the uranium-235 that is now used in nuclear reactors. They can be designed to run on nuclear waste. Clean, safe, electric power that is cheaper than coal is a big deal. It is the direction people feel the world needs to steer towards.
1698	8260-6 There are suggestions for big oil to invest into research of sustainable fuel and power if they want to stay rich.
1699	8108-3 If California wants to support Tesla, then it should get the Giga-factory and be a world leader. It is time to move beyond fracking.
1700	8242-1 People believe the country would be better off if communities could provide all of their own energy needs through clean programs such as solar energy. The search to fulfill these energy needs should exclude the pursuit of fracking.
1701	8227-3 Taxpayers pay almost 100 x more for fossil fuel subsidies than for solar. All of the coal, oil and gas known to humans has the same amount of energy as the sun shines in twenty days.

1702	8423-4, 8423-5, 8423-7 A lot of money will be required to keep coal (as mineral rights) underground and for renewable energy to take off. Some believe that a prohibitive tariff is needed both for emissions for incentive to reduce as much as possible, as soon as possible and for energy to reduce demand to what renewable energy will fit in available space. Algal bio-fuels could replace petroleum starting sometime in the 2020's with a prohibitive tariff in effect. When Algae Systems algal bio-fuels get cost competitive with petroleum products, fossil fuel firms should start operating Algae Systems modules leased from government and selling algal bio-fuels. Once they get fully cost competitive with petroleum, the government could barter Algae System Modules for tar sands reserves as mineral rights to get them off market.
1703	8414-4 The proposed regulations should require that drilling projects subject to SB4 pay environmental mitigation fees to fund sources of energy that are actually constructive in reaching the state's environmental goals (as opposed to fossil fuels). These fees should fund subsidies for wind, solar, geothermal, small hydroelectric, wave, and tidal energy projects.
1704	8253-4, 8422-3 The energy cost of the fracking process, with its thousands of truck trips per well, surely balances out much of the energy produced.
1705	8084-1, 8378-2 Some Californians believe that it is better to use less energy and educate how sustainable methods would work than to have to produce more energy in questionable or possibly dangerous ways. Californians wonder if it is so hard for people to drive less, hang their clothing out to dry, etc.
1706	8078-7 Citizens suggest regulators check out "Put Solar on It."
1707	8332-4 People wish the Department of Conservation would expend more energy on creating regulations forcing citizens and corporations to conserve existing resources. Individuals wonder why they would use mass quantities of water for fracking as opposed to forcing big Ag to recycle water, cutting back on water waste. Citizens are motivated to curtail excess water use and can be further encouraged.
1708	8293-4 People in California are progressive; although they know things do not happen overnight, they realize that ten more years of the same methods and types of energy procurement will put California out of business.
1709	8170-2 In the future there may be discoveries of safer ways to get fossil reserves that won't jeopardize Californians' water supplies. By then, the reserves will be even more precious.
1710	8416-5 In 2033, California will celebrate one of its greatest achievements, the Hetch Hetchy Valley water reservoir system for San Francisco's drinking water. The public are concerned that the oil industry's admittance into California's energy culture would reflect a strong, desperate departure from the sustainable energy systems that have contributed to California's wellbeing. It is felt that it'd set the stage for future Californians to clean up after enduring the greed-inspired act of detrimental pollution.

1711	8423-1, 8423-2 There is hope that fracking will become altogether obsolete in the next ten to twenty years. People believe that replacing fossil fuel with renewable energy in 10-30 years is technically feasible. They note that compared to burning every bit of fossil fuel left, it had better be economically feasible.
1712	8121-3 It has been well over 125 years and California has still not progressed beyond the internal combustion engine. It is one's belief that if Californians are that stupid, perhaps they deserve extinction and fracking is just speeding up the process.
	Response to comments 1682-1712 These proposed regulations in no manner directly impact the availability of alternative or renewable fuels.
	<u>SB 4 Study & EIR</u>
1713	9320-6, 9321-2 The Conservancy strongly recommends that the Department clearly delineate a formal process to integrate the findings from the EIR and science review into the proposed regulations, and that this occur prior to the proposed regulations being finalized. We are especially concerned that the effects of unconventional oil and gas development on un-fragmented habitats and the plant and animal species that depend on them will not receive due consideration if the proposed regulations, EIR and science review are not closely coordinated and integrated.
1714	9311-10 The Proposed Regulations, as currently drafted, would violate multiple state laws. First, the Proposed Regulations would result in DOGGR impermissibly permitting an activity before adequately studying the environmental risks. Without having the benefit of the study, DOGGR would be regulating an activity without a full understanding of the risks. Any regulations that are prematurely adopted would thus be arbitrary and capricious. Nothing in SB 4 requires DOGGR to allow fracking to occur prior to the completion of the environmental review, nor does the law excuse DOGGR or any other agency from complying with all provisions of existing law. Rather than adopt the Proposed Regulations before the CEQA-mandated EIR is complete, DOGGR must adopt a prohibition at least until the EIR is complete and after DOGGR and the public have had a full opportunity to review the results of the EIR. Allowing hydraulic fracturing and other well stimulation to occur prior to adoption of a complete and adequate EIR would conflict with CEQA's basic protections.
1715	4648-1 DOC should use a science based approach when making decisions on fracking.
1716	9300-4 Within a hydrocarbon basin, and within the known boundaries of a reservoir, there may be different companies filing 'project applications' at different times - months or years apart. What are the boundaries of the scope of SB 4 regarding Cumulative Impacts Assessment? What are the boundaries of the scope of the EIR in each of the 6 Districts? What are the boundaries of the scope of EIR Cumulative Impacts Assessment in each of the Division's 6 Districts which most appropriately would span the development of a hydrocarbon basin in it's entirety? (Including all data required under SB 4, though not limited to SB 4 requirements, as Regional Air Quality Boards must be involved and water agencies).

1717	9280-3, 9280-6, 9289-1, 9291-4, 4602-2, 4607-4, 4726-1, 4682-2, 4689-1, 8417-1 DOGGR should implement the precautionary principle when it comes to well stimulation. This includes undertaking a halt on all well stimulation projects until the statewide EIR mandated by SB4 is completed. An independent and thorough scientific review of the impacts of well stimulation will help develop comprehensive and protective regulations that more fully safeguard California's people, environment, and economy. Allowing such a dramatic practice to continue on without rigorous scientific analysis by the state and impartial and other interested parties is extremely short-sighted and morally criminal at best.
1718	4662-1 Why would I want a detailed report on how you're poisoning the city we live in? No to fracking.
1719	4606-2, 4642-2, 8159-2 SB 4 should be given an opportunity to be scientifically studied by the technical experts so that we can arrive at the best scientifically based decision to ensure that we make the right choice for the environment and economics of the State.
1720	5548-3 The propose regulations we feel contain many ill-defined productions and procedures leading to seemingly large loopholes and gaps. Without comprehensive analysis of fracking's potential impact, the current proposed regulations just give the sense that we're just guessing in this process.
1721	9309-2 We understand that DOGGR is required by SB4 to establish regulations for the permitting of Well Stimulation Treatments by January of 2015. We find it troubling that the related environmental impact review is not required to be certified until July 2015. This severely hinders our review of the proposed regulations regarding impacts to County of Monterey. It is our hope that DOGGR would revise regulations as needed after the environmental review is completed to reflect issues identified in that effort.
1722	9324-8 SB 4 also requires an independent scientific study of hydraulic fracturing and other well stimulation treatments, which must consider induced seismicity among other issues (Pub. Res. Code Section 3160(a)(4)). In addition, SB 4 calls for preparation of an environmental impact report evaluating "any potential environmental impacts of well stimulation in the state", which necessarily includes seismic and other geologic impacts, pursuant to the California Environmental Quality Act (Pub. Res. Code Section 3161(b)(3)). The study and EIR are now in progress. If the independent scientific study or the EIR somehow and improbably uncovers evidence that runs counter to all of the scientific conclusions already yielded on this topic, the regulations can be revised to address the issue at that time. At this time, however, there is no scientific justification for the requirement to halt hydraulic fracturing within the specified radius following a single seismic event until DOGGR completes an ill-defined evaluation process.
1723	8068-1, 8068-2 A) It is the understanding of Californians that on a subject with so much real environmental impact that an Environmental Impact Report (EIR) is absolutely required before allowing fracking to take place. Citizens demand a shutdown of all fracking in the State of California until such time as these questions and all other related questions flowing from them are answered in a proper EIR: B) Where are the groundwater sacrifice zones mapped? C) What amount of water will be extracted from the water table in each sacrifice zone? D) At what rates will water be extracted? E) At what subsidence rate will the land collapse from groundwater extraction?

	F) What earthquake issues will flow from these extractions? Who is to bare the brunt of the earthquake losses? G) What amount of groundwater will be contaminated by fracking injections in each site, area and overall? H) What well protection structure will last into the long-term future, forever, to exclude the groundwater strata from the injection and extraction chemicals? I) What amount of surface water will be taken from other uses including environmental uses? J) Who currently has the rights to this water? K) How much of this water is currently committed to other users and uses? L) How much of this water is overcommitted? M) How much of this water is committed to environmental uses? N) Where will these contaminations take place? O) Who will clean them up? P) How will they be cleaned up? Q) When will they be cleaned up? R) What regulating bodies will monitor process and the clean up? S) What chemicals, and in what amounts will contaminate the water? T) What will become of the contaminated water? U) What lands will receive the contaminated water? V) What air pollution will be caused by surface pooling contaminated water for both hold and clean up? W) What gases will flow through cracks to the surface and add directly to air pollution? What gases will add to air pollution in already contaminated air basins and define this further degradation in the air basins in which this is taking place? What are these seeping chemicals and how will they add to climate change? X) What gases, and how much will be extracted that will add to climate change when burned? Y) Who is to monitor or will there be a monitor for this entire process? Who is to pay for this? Z) What waters will be sacrificed to dump polluted fracking water? (Already a permit is sought to dump at sea). AA) What State agency has the staff and expertise to monitor these activities? BB) Since this process yields natural gas, much of it for electricity, why aren't the major utilities using wind power and solar power instead? CC) If the major utilities had to bare all the fracking costs, including all the long-term environmental costs, how does this compare with wind and solar? How much will this overall cost both short and long-term will become a public cost?
1724	8370-4, 8393-2, 8393-3, 8312-6, 8312-7, 8312-10 Californians think that the EPA or the CA department acting in its place should conduct an investigation of SB4 to determine if it adequately protects them. An Environmental Impact Study is done for many construction projects and it should be one of the appropriate measures required to be completed before activating SB4. In addition, people call for the opinion of the National Resources Defense Council prior to SB4 approval because many indications of oil companies being solely interested in their profit margin over environmental protection have been seen. People ask that SB4 be reconsidered. People urge for SB4 to be shut down and to do whatever necessary.
1725	8074-2 The title of SB4 reflects the hold the gas and oil industry has on the state of California and its legislature.

1726	8361-3, 8361-4 California's wonderful crime-ridden legislature is bound and determined to turn the state into the next Detroit. The people are sure that regulators won't listen to any opposition to the new laws.
1727	8326-4, 8326-6 This bill seems to lack a clear purpose. It should be stated as such so that the intent is enforceable in a court of law. It should be to regulate the industry in a way that allows California's natural resources to be developed without risking water. People understand the need to develop resources, however, the lack of transparency and substantive regulations in California will likely lead to increasing tension. It is felt that the bill is poorly written
1728	8326-5 The bill calls for the "current industry standard" to be used, killing the possibility of developing advanced technologies. Incentives for the industry to develop safer and better methods as well as equipment are the desire of concerned citizens.
1729	8326-8 If the state were to work directly with select groups (Sierra Club, Earth Justice, Engineers without Borders, etc.) representing varied interests, the people believe an acceptable bill could be developed.
1730	8064-2 The public encourages consideration of the facts and implications in *Drilling California* as part of the process of implementing SB4.
	Response to Comments 1730-1730: Senate Bill 4 and subsequent related legislation set specific deadlines for each major deliverable the bills require. It is the Division's, the Natural Resources Agency's and other state and local agencies intent to meet those deadlines. Permanent regulations are to be finalized by January 1, 2015. They will not be in effect until July 1, 2015. Informal agreements between the Division and other state and local agencies describing delineation of authority with respect to well stimulation activities, consultation, information sharing, and coordinated enforcement, among other issues, must be finalized by January 1, 2015. Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015. Section 3160 (a) of the Public Resources Code requires the Secretary of the Natural Resources Agency to 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 independent scientific study is to 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 first volume of the study will be completed by January 1, 2015. Subsequent volumes will be completed on or before July 1, 2015. The fact that the deadlines for completion for the EIR and scientific study are after the finalization of the permanent regulations may require the regulations be revisited for amending in the near

	future.
	Seismic Activity/ Earthquakes
1731	9301-27 As part of its permit application, the operator should be required to conduct an evaluation of the potential for well stimulation treatments to trigger seismic activity that may be a danger to persons or property. Such an evaluation should include not only the potential impacts from a single hydraulic fracturing event, but also should assess the impacts of cumulative activity. It is our understanding that multiple small earthquakes can ultimately trigger larger one. The operators need to evaluate the risk of minor and major seismic events so that DOGGR can determine whether approval should be granted. The evaluation should be conducted by an independent geologist qualified in the field. The operator should be required to provide the geologist with all relevant information available to it including all data collected during any seismic survey, testing or analysis of the oil field regardless of any claim of trade secret.
1732	9301-28, 8060-1, 8060-2 Although the proposed regulations do not cover "underground injection projects" or "subsurface injection or disposal projects," the City believes it is extremely important and relevant to also evaluate and regulate the seismic impacts of such operations.
1733	8153-5, 8336-7, 8353-2, 8823-2, 8231-3, 8301-5, 8321-3, 8132-1 , 8244-2, 8164-4, 8176-3, 4682-5, 4683-2, 4690-4, 9307-3, 8273-2, 8240-3, 8111-2, 8075-4, 8140-2, 8151-2, 8098-3, 8172-2, 8260-3, 8288-3, 8271-3, 8417-7, 8087-5, 8087-6, 8352-2, 8366-10, 8348-3, 8089-5, 8254-17708-3, 7761-4, 7709-4, 7762-5, 7712-3, 7745-4, 7734-2, 7731-4, 7724-2, 7740-3, 7754-5, 7758-3, 7763-8, 7766-8, 7757-8, 7723-1 Commenter's have the following concerns about fracking when it comes to earthquakes: if the "big one" will be triggered in the event that the highly faulted terrain sustains any more fissures, the unknown about seismic threats that fracking has been shown to cause, fracking in an earthquake prone state and during a drought period, waste injection wells are more prone to generate earthquakes than fracked wells, fracking being able to stimulate earthquakes, lack of studies on the effects, forceful blasts that break shale weakens the structure and integrity of the ground in the area, effects of wastewater, increased risk of earthquakes, seismic monitoring should be required to establish baseline ground movement and post stimulation seismic activity in the area surrounding all wells.
1734	8145-9, 8215-4 People want to know who will pay for the damages when California has earthquakes that result from fracking.
1735	8340-7 It is not much help to homeowners for well operators to report earthquakes when their structures or community have been seriously damaged.
1736	5514-2, 4647-1, 5537-2, 8235-3 California has earthquakes, always has, always will. Fracking won't impact this. Berkley seismological laboratory from 1990 to 2011, there were 558,434 earthquakes in the state of California having a magnitude greater than 1.0. That is 25,383 per year, 2115 per month, 498 per week, and 70 per day with a magnitude of 1.0. We have had the earthquakes in the state of California for as long as anyone can remember.
1737	5540-10, 8060-6 The industry probably has the technology to do monitoring. They probably are already monitoring

	for much smaller levels of seismic activity below a 2.0. So if they are collecting that information, it should be recorded. The proposed cut-off of magnitude 2.0 for reporting requires some analysis according to Californians as most fracking earthquake sequences involve much smaller earthquakes. These smaller earthquakes are not hazardous in themselves, but they are most diagnostic of the process and are important for determining whether or not regional-scale faults are being activated. The people believe developing a network to detect and report the lower magnitude earthquakes may be wise.
1738	4645-5, 5542-5, 8097-1, 8411-6, 8269-1, 8253-3, 8104-2, 8384-3, 8275-2, 8205-4, 8290-2, 8340-5, 8360-2, 8182-1, 8075-2 Concern for potential increase of earthquakes if fracking allowed. People have heard that most wells are on fault lines. People want to know why anyone would agree to destabilize the land purposefully.
1739	4613-3 The regulation does not appear to me to require microseismic monitoring to establish baseline ground movement or monitored seismic activity and especially post-well stimulations seismicity in the surrounding area.
1740	4664-4, 4600-3 There must be an effective method to notify the public if there is seismic activity associated with well stimulation. It must be fast, complete and fully disclosed. You should address air quality contaminates that result from the construction and production phase of fracked wells.
1741	4613-4, 9311-7 It should be of interest that of California's 1,553 active and new waste water injection wells, 54 percent are within ten miles of a recently active fault; 25 percent are within five miles and six percent are within one mile.· Do you get the picture?
1742	4681-2, 006678-7 Hydraulic fracturing or fracking is associated with increased seismic activities which is one of my biggest concerns. I applaud the proposed final regulations for adding seismic monitoring to the regulatory mix but seriously doubt mere monitoring alone is sufficient to combat the clear and present danger caused by increased seismic activity and the threat it poses to California clean water and air. Water is clearly a limited resource at this time – activities that decrease water should be studied thoroughly. Any other course of action is the height of irresponsibility.
1743	8272-4 People wonder whether fracking in Kern County and the drought might be combining forces to spur a plethora of earthquakes recently near Kettlemen City.
1744	4693-2, 8193-2, 8201-3, 8353-3, 8223-2, 8305-1, 8272-3, 8075-3, 8087-5, 8260-2, 8407-1, 8346-1, 8407-2, 8375-3 Greely Colorado is now experiencing an earthquake per day, for the first time ever. In the late 60s earthquakes ruled because the Arsenal north of Denver was pumping nuclear waste into the ground in and around Derby Colorado. An increase in earthquakes has occurred in areas where fracking is permitted: Oklahoma, Texas and Virginia, for example. The people don't need that in California.
1745	8317-6, 8260-1, 8092-3 Californians would not like to think that an earthquake could at any moment cause harm to the cement casings or whatever is going to keep or put the water below their aquifers. In California, earthquake activity is ridiculous and to prove that fracking caused an earthquake and damaged wells, property, etc. is a joke to citizens. They feel that Oklahoma already demonstrated that fracking causes earthquakes and find it shocking that anyone has to prove the correlation

	between fracking and earthquakes in California. People feel that any damage owing to an earthquake ought to be compensated so long as hydraulic fracturing is occurring in California.
1746	4697-2 Earthquake insurance is a must to prevent the certain effect of well stimulation. Well Stimulation has a record of altering the faults. How can one regulate earthquakes from extraction techniques?
1747	4617-3, 8418-3 There are an estimated 7,000 miles of active faults in California, 2000 miles still need to be mapped in places such as LA county's west side, Orange County, Pasadena, Lake Tahoe, San Diego and San Francisco bay areas. The issuing permits at least of all single-project authorizations before the fault mapping is complete is tending to place the cart before the horse. It would be irresponsible, illogical and unconscionable. DOGGR has to impose a moratorium and should give the green body of evidence of fracking.
1748	4621-3, 4716-2, 4737-4, 5532-3, 5534-2, 006815-6, 07661-4 A report from the Neries (phonetic) Foundation, and we know that thanks to Oklahoma, Ohio, West Virginia, Texas that these methods are causing earthquakes. I mean not headlines but coming up daily.
1749	4624-1 In the last eight months, our residents have experienced earth movement, earth subsidence, cracking of walls and ceilings in their home, cracking of driveways, re -- porches coming away from the house. We are not certain what exactly is happening in our area but we think it is related to oil production.
1750	8359-2 There is evidence that fracking can cause earthquakes; the people ask that regulators think of Oklahoma and Los Angeles. Residents of those two areas have had small tremors before the fracking was halted.
1751	8340-8 The people of California are concerned about the potential of fracking earthquakes damaging well casings, causing severe contamination from toxic chemicals where none was anticipated.
1752	5541-3 And earthquakes which have long been in California, yes, before probably anyone in this room was born, not so much in Oklahoma, as I understand it, due to the lack of fault lines and well on the one hand apparently the disposal of the water they initially thought was causing the earthquakes. I have also seen news reports that it might actually be the fracturing itself causing the earthquake. If there are power plants directly on a fault line, that seems like a concern.
1753	7575-6 California is riddled with fault lines and fracking has been linked to earthquakes (triggered by both the well injection process and the storage of waste water).
1754	8364-5 California residents think that the proposed regulations will look into the impact of the use of well stimulants on land and the overall impacts on drinking water and geology. However, citizens' concern is focused on the drilling and use of stimulants in areas within an Alquist-Priolo Fault Zone. There is belief that it should be analyzed as part of the review. Unless there is undisputed proof, any drilling should be at least 500 feet from an active fault. Those within the zone, people believe, should provide a fault analysis to prove they meet the requirement. Structures and wells

	should have a greater impact on the land and people since the wells could damage the drills and release excess untreated water into the ground and possibly contaminate groundwater supplies.
1755	8152-3 Destroying the underground plates by injecting chemicals to extract fossil fuels so that they can be sold for profit is criminal; it contaminates aquifers, disrupts the Earth's crust and potentially causes earthquakes.
1756	8297-19, 8297-21, 8297-22, 8297-23, 8297-24, 8297-25 Studies have shown that there is no correlation at all between any seismic event greater than magnitude 2.0 and fracture stimulation according to citizens who approve of hydraulic stimulation. Focus of induced seismicity should be on injection wells. California should be distinguished from other parts of the country as geological targets for water disposal are highly permeable sandstones in which it is difficult to alter pore pressure even with large volumes of fluids being injected. Regulations mandate that oilfield operators and State earthquake monitoring agencies suddenly become expert and accurate earthquake predictors which people find noble but unsuccessful. Being able to say there will be an earthquake on a specific date and time is a long way off, scientifically. Regulations seemingly intend to plunge oil and gas operators into a role of regulatory mandated earthquake predictors.
1757	8297-27, 8297-28, 8297-29 Citizens know that California is a highly tectonically active area, with hundreds of earthquakes detected daily along many active fault lines. Determining if an earthquake is natural or induced can only be done by a highly experienced seismologist after months of analyzing data and correlating it to potentially catalyzing events. On any day, a team of lawyers with no seismological skills or training but an agenda can find an oil company to sue. People believe they can have access to earthquake and fracking data bases to create a legally actionable correlation even though it cannot be scientifically supported.
1758	8297-26 Microseismic energy from hydraulic fracturing is not relevant to the topic of induced seismicity that has the capacity to hurt things and people.
1759	8157-3, 8303-8, 8256-1, 8329-10, 8329-11 There are too many faults in California. People think that fracking in California is like building the Diablo Power Plant on top of the San Andreas Fault. Citizens ask if life isn't already short enough. Cautions such as high magnitude earthquakes triggered in the San Andreas Fault are impossible to mitigate after the fact. With a litany of broken promises, the Oil industry is willing and ready to accept any level of regulation promising mitigation knowing there is no after-the-fact enforcement. Big money is made and then they drag out a clean-up of the mess if they are caught. Their mitigation process is to mitigate the loss of profit, according to the public.
1760	8145-10 There is fracking in the UK. The people there cannot figure out why earthquakes are now occurring there.
1761	8145-9 People want to know if earthquakes will be considered an "Act of God" after fracking has occurred, drilling and rendering the ground more unstable than it already is. They worry that oil and gas companies are ignoring the fact that there are faults all over the state. Californians want to know if these drillers will get a pass because no one will be able to effectively prove that fracking caused the seismic activity.

1762	8333-2 Earthquake faults are located all over California and many are in Ventura County (Fillmore earthquake). People are afraid of the risk of a major earthquake, magnitude 9.0 or higher. Fracking is believed to only contribute to the problem and there is strong belief present that it must never be approved anywhere in California.
1763	8341-2, 8379-3, 8251-2, 8118-2, 7758-3 There is a direct correlation of an increase in earthquakes related to fracking (e.g. Oklahoma) and the negative impact it would have on groundwater. Citizens note California's geography; there is concern about Oklahoma and what has happened in California with steam wells at the Geysers. California does not need more earthquakes in California
1764	8299-2 Changes in the ground's structure may or may not affect earthquakes—gambling with this is not worth the risks.
1765	8060-5 The Monterey Shale is not well-covered by seismometers as historically the Central Valley has not been very seismically active. People of California want to know if a systematic detection assessment has been done and if there are any recommendations about ensuring adequate seismic network capabilities.
1766	8060-7 Assessing the possible link between fracking and earthquakes has been hampered by the available time resolution of publically released data. Current practice is to release monthly injection, production rates and pressures. Earthquakes occur daily as the regulations recognize by setting a ten day window for reporting. Daily injection, production rates and pressure data from the treatment and disposal wells would be a great help to the technical assessment of activity. Citizens believe a higher time resolution would be better.
1767	8060-8, 8060-9 Deep wastewater disposal wells are the most common aspect of fracking associated with induced seismicity, yet people state that they do not fall under the authority of the regulations. This issue is believed to be one of the most important problems for Californian fracking and the issue should remain on the table. Induced seismicity is a subject that pushes the boundaries of Californians' knowledge of earthquake mechanics. The people of California applaud efforts to grapple with this complex issue and hope comments are helpful in moving the process forward.
1768	8407-3 Residents of the Santa Monica Blvd. and Westwood Blvd. intersection are concerned about fracking; that area is in the middle of several active faults. Plans to use fracking to access oil pockets in that area is viewed as completely and totally irresponsible.
1769	8349-6 People believe that no use of fracking should be permitted to occur within a safe distance from known seismic faults. Thorough geological studies shall be done for any proposed fracking sites to determine in advance if any substantial or potentially unstable faults are in the vicinity.
1770	8330-1 Some believe there should be special care regarding seismic activity and the use of toxic chemicals.
1771	8318-3 People assume that all earthquake activity is predictable and only take place along existing fault

	lines. However, the Shoreline Fault was discovered six years ago one kilometer offshore from the Diablo Canyon Power Plant. Citizens express concern about what will happen should an earthquake occur along a previous fault line in an area of hydraulic fracturing. In addition, they need to know what guarantees exist that the cement barriers and metal casings will hold.
1772	8332-3 Individuals are extremely concerned about land and air stability, land and air quality for the future of the state given the seismic activity in California along with hearing extraction will severely underperform projections. The people want to know what the ultimate results will be of these "proppants" in an earthquake.
	Response to comments 1731-1772: Thank you for your comments. These regulations include Section 1785.1, which requires monitoring of the California Integrated Seismic Network during and after hydraulic fracturing. If an earthquake of magnitude 2.7 or greater occurs within a specified area around the well, then further hydraulic fracturing in the area are suspended until the Division, in consultation with the California Geological Survey, determines that there is no indication of a heightened risk of seismic activity from hydraulic fracturing.
	Steam Injection
1773	5530-2 SB 4 was passed to exclude the steam drive, cyclic, and disposal wells, Class II, if you will, but as I read through all your material, it's like you guys are sort of massaging it to go back to include everything, and I am totally opposed to that.
1774	4602-5, 4603-4 Oil companies seeking to unlock the tight oil resources in California cite three processes for doing so:· fracking, acidizing and steam injection, including in combination such as improving cyclic steam injection with chemical additives and use fracturing. How can these regulations protect water supplies when they don't apply to steam injection?
1775	4602-6 Steam injection has caused almost a hundred leaks and surface expressions here in Santa Barbara County. It has caused unstoppable spills in Canada where regulators there are investigating this. It has high well casing failure rates.
1776	4605-2 SB 4 originally contained regulations that would have addressed cyclic steaming, which is the primary -- well, the primary enhanced extraction technique that we use here in Santa Barbara County, even though most of the wells are still traditional types of extraction. And that part of the regulations were extracted because the industry was successful in expressing their First Amendment rights to influence the legislation, so cyclic steaming is not being addressed by DOGGR.· That is not your concern, I understand.· You are a regulatory agency that has been tasked with regulating according to the bill that passed.
1777	4602-7 Steam injection is also the most emissions and greenhouse gas intensive form of oil production, and it also happens to be on a huge and massive increase here in Santa Barbara County.
1778	8069-3, 8171-7 It is with concern for California's children's futures and that of all Californians that no

	authorization be given for the use of water for well stimulation processes without there being full public disclosure of the risks and benefits which ostensibly stands to be gained by the state.
	Response to comments 1773-1778: Public Resources Code section 3157 specifically excludes underground injection projects such as steam flooding, water flooding, and cyclic steaming from the definition of well stimulation treatment. Therefore, even if these underground injection project operations fall within the parameters of the definition of a well stimulation treatment, they are not well stimulation treatment operations for purposes of these regulations. Underground injection projects are regulated under Sections 1724.6 through 1724.10 and Sections 1748 through 1748.3. If a well stimulation treatment, such as a hydraulic fracturing treatment or an acid matrix stimulation treatment, is performed on a well that is part of an underground injection project, then that treatment would still be subject to these regulations.
	Water Quality
1779	4695-2, 5533-3, 4652-2, 4694-2, 4661-3, 007575-7, 8374-2, 8176-2, 8174-2, 8166-3, 8373-2, 8173-2, 8145-8, 8110-3, 8215-1, 8164-3, 8196-4, 8261-2, 8366-11, 8271-4, 8288-2, 8346-2, 8366-6, 8366-4, 8369-2, 8365-2, 8119-2, 8119-1, 8372-2, 8197-3, 8417-5, 8348-4, 8421-1, 8300 -3, 8235-5, 7708-2, 7709-3, 7770-1, 7754-3, 7719-1 California's water is a finite resource and fracking may cause infinite damage. Millions of gallons of good water are needed to "stimulate" just one well. Good water gets contaminated. It becomes toxic "waste water" with NO safe disposal options. "Unrecovered", poison wastewater festers. It leeches through fractured rock, infests aquifers, oozes up into the surface air and soil. It is even explosive. It makes people animals and plants sick. We can't afford to poison our aquifers.
1780	8349-4 Monitoring wells should be installed at regular intervals and at various depths surrounding the fracking well sites. They should be independently managed by a state-approved entity or entities other than oil companies themselves. Costs should be paid for by assessments collected from the oil companies involved, not the taxpayer. There should be independent auditing of the monitoring entities themselves on a randomized basis by a rotating group of auditors so that undesirable relationships or unsavory collaborations cannot develop over time.
1781	4644-2 We're all concerned about energy. Food is our primary energy, our primary number that should be protected up to the umpteenth and anything that spoils that energy equation should be taken into consideration and poison our water isn't going to do that.
1782	8323-2 PSV has concluded that the latest regulations recommended by DOGGR have some positive improvements but still have dangerous shortfalls. The shortfalls include not addressing pressure restrictions for waste water injection wells or preventing injection into deep aquifers servicing agricultural regions.
1783	4709-4 We requests that DOGGR adjust the proposed stimulation regulations to prevent storing toxic fracking fluids in deep aquifers in the Salinas Valley and to establish pressure and construction regulations that prevent leakage by any waste water injection wells used by fracking explorers and production companies.
1784	5540-4, 9311-8 This draft does have some good provisions about reporting and disclosure on well stimulation,

	waste water; however, exemptions at the federal level for hazardous waste could leave some opportunities for contamination of our ground waters. As we have seen with recent clutters of injection wells, it is clear that the state does not have a good handle on where these processes should happen, and that goes back to our definition of protected waters, knowledge of aquifers are exempt and water qualities around the state. So I would say that that broad issue of the waste stream of the oil and gas industry is a big hole that needs to be addressed before we can say that this process can move forward.
1785	9282-7 Because of potential increased volumes of wastewater due to unconventional drilling methods, the Division should examine the current methods of produced water and flowback disposal, and strengthen all related regulatory programs to ensure protection of surface and groundwater resources and reduce the risk of induced seismicity.
1786	4715-5, 4654-1, 8163-1, 8145-2, 8147-3, 8067-1, 8157-2 When an “unforeseeable accident” occurs, the people of California want to know who is going to fix it. They believe there is no way to fix such an accident as no previous accidents have been remedied. People believe that although not all accidents are due to fracking, they still involve the energy and chemical companies. Once a mistake is made, and if it impacts the water table, how are you going to fix that? It's not a fixable problem. It really isn't.
1787	4652-4 We will eventually be left with abandoned, contaminated well sites to deal with, after extraction companies have taken their fill. Fracking is a, lose-lose scenario for us all.
1788	8059-2, 8059-3, 8059-4 People are familiar with the Los Angeles Basin’s MS4 permit, a source point permit. Low-impact Development ordinances and Green Streets ordinances are assumed to have offsetting effects for the SM4 permit. Well stimulation is omitted in the MS4 permit language. People notice that the potential Total Daily Maximum Load issue was not covered in the MS4 permitting.
1789	4690-2 It is not uncommon for methane gas and toxic chemicals to leach out from the system and contaminate nearby groundwater. Methane concentrations are 17 times higher in drinking water near fracking sites then in normal wells. There have been over *1,000* documented cases of water contamination next to areas of gas drilling wells. People have experienced sensory, respiratory and neurological damage due to ingested contaminated water. SB4 states monitoring of groundwater that is or has the potential to be a source of drinking water. Why just drinking water? I question the safety of the water, infused with chemicals, being used on crops. These crops are our food supply. Each frack increases the chances of chemical leakage into the soil and local water sources.
1790	4672-1, 8356-1, 8075-5, 8089-7 The chemicals injected into our groundwater and the millions of gallons per day of water used are totally irresponsible in the use of a public resource so precious to California and everywhere in the world. If I wanted to light my drinking water on fire or drink toxic chemicals, I could move to Texas or Pennsylvania. Stop fracking now.
1791	5526-1, 5514-1, 9335-2, We have been fracking wells for more than 65 years. More than two million hydraulic fracturing treatments have been pumped in the U.S., two million, with no documentation of any case of any treatment polluting an aquifer. There has not been a single documented case in California of any well stimulation treatment polluting an aquifer or a stream or a river or a lake or any fresh water. This may be a case where absence of evidence truly is evidence of absence. You won't find is a single case of any significant groundwater contamination.

1792	006815-2 Fracking for oil contaminates ground water by using hundreds of chemicals, including heavy metals like lead and arsenic; and methanol, formaldehyde, carbon disulfide, H2S as well as volatile organic compounds, nitrogen oxides, benzene and toluene.
1793	07661-3 Only 30-50% of the fracturing fluid is recovered, the rest of the toxic fluid is left in the ground and is not biodegradable.
1794	006815-3 Approximately a third of the fluid that's pumped into wells during fracking flows back up, bringing back not just the toxic fracking chemicals but other harmful toxins, from deep underground. Wastewater is treated and recycled for irrigation and agriculture or dumped back into lakes and rivers.
1795	6971-2, 8273-1, 8131-1, 8171-4, 8136-3, 8275-1, 8216-1, 8223-1, 8315-4, 8398-2, 8314-1, 8409-2, 8416-2, 8179-3, 8205-3, 8109-1, 8269-2, 8319-4, 8209-1, 8359-3, 8154-2, 8098-2, 8241-2, 8177-1, 8368-2, 8225-1, 8262-1, 8092-2, 8380-3, 8315-3, 8089-4, 8115-2, 8306-3, 8135-1, 8058-3, 7729-1, 7729-2, 7729-5 No matter how fracking water is classified, whether it is "pre" or "post", the issue is that this fracking water is still a concoction of Poisons, by any definition. To pump thousands of gallons of toxic chemicals into the Earth with unknown immediate and future consequences is reckless and irresponsible. People of California believe that the most immediate likely result is poisoning of the groundwater and this has already occurred in several places. With the ongoing drought and water use for agriculture, California cannot afford to poison its drinking water.
1796	9269-1 Water District management has customers who are concerned with how well stimulation will affect water wells. They want to know if the regulations are just for oil and gas or if it includes regulation and protection of water wells.
1797	8074-7 Hydraulic fracturing, steam injection and other related practices put California's underground water at risk, emits methane by-products into the atmosphere and ends with the injection of millions of gallons of toxic waste fluids to leak into the earth while irreversibly polluting water. Water is a finite resource required for California's agriculture and human life.
1798	8405-2 There is the desire for the public body to review the listing of added fracking ingredients to determine the safety of the chemicals for human consumption. This is based on the presumption that contamination of aquifers will occur; aquifers do supply drinking water for human consumption as well as wildlife and grazing/domestic animals.
1799	8195-1 Just as the Gold Rush polluted California's water table and countryside with dangerous amounts of mercury and other toxic substances, fracking presents California with another major threat to the environment and general public welfare.
1800	8165-3 It would be a miracle for gas and oil conglomerates to keep their chemicals out of the groundwater.

1801	8321-6 Californian residents know that there are micro-contaminants, inorganic contaminants, pesticides, herbicides, organic chemical contaminants and radioactive contaminants in their drinking water. They know that the radioactive contaminants may be the result of oil and gas production as well as mining activities; due to the lack of regulations and testing, it cannot be definitively stated how much water contamination is caused by the fracking industry.
1802	8257-2, 8265-3 Many state that everyone knows chemicals will eventually end up in the groundwater. They note that it is not healthy. There is concern that every town or county throughout the nation where fracking has occurred will have numerous ponds of chemical waste left behind.
1803	8349-3 There are many concerns about the safety of fracking technology, particularly with respect to potential groundwater contamination. From what people know of the industry, fracking is implemented at great depths, far below the usual groundwater tables.
1804	8326-2 Simple steps have been suggested for requirement to minimize risk of contamination to drinking water aquifers: Monitor pressure in the annular space during all treatments/injections, verify casing integrity prior to all treatment, perforate mid-span between water and oil zones to ensure no communication into the water zone, never allowing treatments to occur too close to a water zone. If procedures were followed and monitored by a third party, the people believe the risk of water contamination would be nearly eliminated.
1805	8265-4 When fracking ends, trucks leave and no longer transport the leftover waste water. Californians feel concerned when imagining what was done with the waste water when they still trucked it away.
	Response to comments 1779-1805: Thank you for your comments. Consistent with the mandate of Public Resources Code section 3160, subdivision (b), the purpose of these regulations is to ensure well integrity and geologic and hydrologic isolation of the hydrocarbon zone during and after well stimulation treatment. In addition, all wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. These regulations do include requirements to verify the integrity of the well through pressure testing and cement evaluation, limitations on pressure applied during treatment relative to the minimum yield rating of the casing, and pressure monitoring during and after treatment. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783.
	<u>Water Use / Drought</u>
1806	9311-6, 5540-5, 4677-2, 6646-2, 7575-5, 7575-4, 8357-1, 8328-2, 8418-3, 8246-1, 8056-3, 8254-2, 8193-6, 8317-15, 8179-2, 8286-1, 8286-2, 8205-2, 8095-3, 8312-3, 8166-2, 8353-7, 8353-8, 8271-7, 8075-1, 8154-1, 8114-2, 8140-1, 8172-1, 8212-2, 8231-2, 8210-1, 8301-4, 8366-8, 8118-1, 8256-2, 8382-1, 8289-1, 8348-1, 8388-5, 8158-1, 8056-1, 8056-2, 8395-3, 8109-2, 8164-6, 8175-3, 8206-3, 8127-1, 8340-3, 8353-5, 8171-3, 8210-3, 8315-2, 8306-2, 8353-6, 8220-3, 8220-6, 8240-2, 8265-1, 8421-2, 8104-3, 8298-2, 8228-3, 8303-7, 8218-5, 8384-2, 8340-2, 8074-9, 8319-1, 8319-2, 8165-4, 8321-5, 8321-7, 8310-1, 8385-6, 8360-3, 8139-2, 8110-, 28114-1, 8196-

	3, 8261-1, 8159-1, 8203-1, 8206-2, 8225-2, 8312-9, 8366-2, 8366-5, 8291-1, 8311-1, 8285-1, 8107-1, 8395-2, 8329-6, 8305-2, 8069-2, 8165-5, 8197-2, 8320-3, 8269-3, 8074-11, 7729-3, 7729-4, 7712-2, 7709-2, 7745-7, 7758-1, 7731-2, 7730-1, 7767-2, 7770-4, 7751-2, 7746-2, 7744-1, 7754-2 California just imposed its first-ever statewide water restrictions to cope with the state's historic climate change-fueled drought. As global warming proceeds, water will be in increasingly short supply. Other states in the western US where a large portion of the nation's food is grown are in drought too. Hydraulic fracturing also uses a tremendous volume of water, sometimes millions of gallons per well; efforts to reduce the water usage by communities and counties will be meaningless. In a state facing a growing population, water scarcity and projected water shortages in the future, the use of large quantities of water jeopardizes the freshwater and ground water supply for agriculture, tourism, and wildlife that depend on having clean and ample water. Lack of water undermines agriculture and raises the price of produce needed for healthy people. Many farmers are not producing crops and losing orchards to the current drought. The loss of employment for families has been devastating.
1807	9321-4 Well stimulation can use significant quantities of fresh water. The 165 well stimulation treatments publicly disclosed through the Division's website as of July 24, 2014 used on average 63,500 gallons of water per treatment, with a maximum of 225,876 gallons, and a total of approximately 9,655,000 gallons of water. Each of these treatments used fresh water suitable for irrigation or domestic purposes. The Division's well stimulation treatment notices database includes proposed stimulation treatments using up to 1,847,730 gallons of fresh water. According to the Division's disclosure database, all waste water recovered from these stimulation treatments will be disposed of in Class II underground injection wells.
1808	8087-1 Southern California has a long history of water problems, mostly centered on providing potable water for its inhabitants. The people have bought, stolen and killed for it.
1809	8109-3 At the rate California is emptying aquifers, experts claim that the state will run dry in just a few more years.
1810	8363-6 PSV urges that DOGGR establish a better stewardship approach; if oil companies frack, they can't use citizens' potable water nor store their waste in aquifers.
1811	8068-3 A report on the Colorado River Basin water shortage adds to the knowledge Californians now have of the limitations everyone has experienced in the last fifteen years from snow and rain "shortfalls."
1812	8244-4 Californians want to return to the progressive train of thought that the west coast is known for; they ask to be able to show the country that a state in drought will not poison itself by toxifying its resources or shaking it into oblivion.
1813	8218-3, 8317-13, 8146-2 The fracking industry lies. To state that the water used in the process can be returned to the farmers for their crops and that fracking is beneficial is evil and self-reveling. To the people of California, it appears the oil industry did a great job to cover its vulnerabilities whereas the State of California has given them a blank check with regards to the endangered water supply.

1814	8109-4, 8270-1, 8245-1, 8113-3, 8391-3 Most Californians would agree that they would rather have water to drink than the things natural gas is used for. The public states that when they run out of water, they will still have plenty of hydrocarbons to drink.
1815	9321-5 Existing technology makes it possible to use non-potable water as the base fluid for stimulation treatment fluids. Apache Corporation has two drilling programs that use non-potable saline groundwater instead of fresh water for hydraulic fracturing, one in the Horn River Basin in Canada3 and one in the Permian Basin in Texas4. Produced fluid can also be recycled or reused to replace all or a portion of the fresh water used as base fluid. The Pennsylvania Department of Environmental Protection reports that recycling of produced fluid increased from approximately 10% in 2009 to 90% by mid-2012.5. Despite the availability of these better water use practices, the Division's proposed rules do not place limits on fresh water use or require recycling of waste water. We recommend that the Division create requirements to limit or eliminate fresh water use for well stimulation treatments, and require waste water from stimulation operations to be recycled for future treatments.
1816	8211-1 People want to know if regulators know how much water fracking takes. They state that there is not enough water to spare and that the greed must stop now. Peoples' bills are doubled this year and they find it sad and frustrating that gas is being shipped overseas. They believe that greed is king.
1817	5536-2, 5514-3, 8297-10, 8297-11 Hydraulic fracturing uses very little water in California. Less than 1 percent of all water used in the state and there are no records of hydraulic fracturing ever directly contaminating any drinking water, anywhere. People believe the press and objectors have made it sounds as though all the disposed water comes from fracking. Some Californians believe that fracking uses very little water in California and that the State's golf courses use some 7 times more water than fracking..
1818	8363-4 PSV representatives spoke with supervisors urging them that Monterey County's water policy should be that frackers cannot use water from the Salinas Valley River or water basin for fracking nor store toxic frack waste within the water basin.
1819	8100 -1, 8196-1, 8199-1, 8280-1, 8080-1, 8080-2, 8408-5, 8171-2, 8272-2, 8379-2, 8096-3, 8087-2, 8087-4, 8151-1, 8201-2, 8353-4, 8220-2, 8166-1, 8098-4, 8242-4, 8235-3, 8086-1, 8175-4, 8306-1, 8087-8, 8164-2, 8153-2 Water is too valuable to Californians. The State is currently experiencing a multi-year drought due to climate change. Californians are conserving the water they have left. They can't afford to sacrifice water for oil and ask that regulators don't allow any water to be bought and used for oil or gas extraction. Californians need the water for other things. Wasting so much water during fracking is criminal. Money can be manifested, pure water cannot when its origin is contaminated.
1820	5541-2 One percent of water I'm wondering what that means in millions, if not billions of gallons. In terms of California, that doesn't sound like a small number One of the DOGGR guys I remember was telling me something about disposing water being something like 60 billion gallons. So 1%, what does that mean?
1821	8160-2 Demands for water devastation to cease increase among Californians. They feel it is just as much their water as that of the government and citizens claim to do their best to maintain or

	improve its quality regularly for every human and species on Earth. The ultimatum has been given stating that if a person can't "play nicely" on the planet, they need to get off.
1822	5534-3, 4621-2 Ninety-five percent of fracking is happening in drought-induced areas. A 2013 report by the Group Criz, Hydraulic fracking faces growing competition for water supplies in water stress regions estimate 25,450 fracked wells across the United States found at 47 percent lie in areas that face high to extreme high water stress. In these areas, at least 80 percent of the available fresh water is already being used in homes, farms and businesses.
1823	5534-1 In 2011, the EPA report estimated that 70 to 140 billion gallons of water are used to fracture 35,000 wells in the United States each year. Approximately the annual water consumption of 40 to 80 cities each with a population of 50,000, according to Earth Works. Looking at industrial records on the website Frack Focus, the group Sky Truth calculated that between January 2011 and August 2012, a total – a total of 20 months the U.S. used at least 65.9 billion gallons of water to fracture oil and gas in Texas accounting for most of half of all the water usage.
1824	4732-2, 5544-2, 4683-1, 8319-3, 8165-2, 8377-5, 8377-6, 8159-4, 8215-3, 8301-6 So the exemptions and other failings are very disturbing. In a state that has been keenly aware of severe water constraints for more than a century, it is now suffering from a crippling drought, our drinking water resources must be protected and reserved for the precious resources they are and not sacrificed as a garbage dump for the oil and gas industry. So we need a lawyer to try to safeguard California's water table?
1825	4732-1, 4615-8, 5542-4, 9322-1 In spite of the potentially huge water consumption for hydraulic fracturing, the proposed regulations do not require assessment of water availability or of the impact on competing water uses, particularly in times of drought. Nor do the proposed regulations require disclosure of the actual amounts of water use separate from the volumes of other components. We recommend that the regulations require separate reporting of water use during well stimulation operations as a condition of permitting.
1826	4618-6, 4625-1, 4645-3, 4716-1, 5533-4, 4693-1, 4697-1, 4651-2, 4652-1, 4656-2, 4660-1, 4661-1, 4678-3, 4682-3, 8232-5, 8322, 8402-3, 8153-3, 8310-3, 8134-4, 8174-1 The state just reported a $2 billion loss in agriculture this year alone.· At what point do we say no to fracking using millions of gallons of our potable water, drinking water and putting it down hole for the eternity and taking it completely out of the cycle of use?
1827	4645-4 Desalinization plants keep coming on line. Seems to me this is happening because they want to use all that water for fracking.
1828	4709-3 People have water rights to drill a water well as deep as they want to. We are now moving towards California tapping those levels. Injecting down into those levels is now putting the water basin and that water at risk. In fact, DOGGR said that the waste poses a danger to life, health, property, and natural resources.
1829	4673-1 No fracking, no. Non-food crops should not get preferential treatment over people needs. Water for wine-grapes is not food. No GMO, no. People need water. Notice of availability of modified text and documents added to the rulemaking file attached.

1830	4663-3 We particularly shouldn't be doing it here in a drought and earthquake prone location, when the risks are precisely that – water use, water contamination and earthquakes. How can these regulations protect water supplies when they don't apply to steam injection? It has cause almost 100 leaks and surface expressions, caused unstoppable spills, has a high well casing failure rate, produces massive amounts of polluted water that must be reinjected underground, linked to 2500 earthquakes and is the most emissions and greenhouse gas intensive form of oil production and it also happens to be on a huge and massive increase here in Santa Barbara County.
1831	7520-5, 4712-2 California does not have water to spare. The regulations should emphasize gathering current, real time data on all water related issues (amounts required, amounts being used, waste water management, protection of aquifers).
1832	8253-2, 8182-2, 8133-3 People find it outrageous that the government would allow fracking in California. It uses millions of gallons of water per well, poisons water with chemicals so that the only disposal is by injecting it deep into the Earth.
1833	8340-4 Diverting scarce water to fracking will drive up the cost of water and lower availability of water for everyone in California. People are being warned of mandatory rationing in Southern California if they do not reduce their water use by twenty percent. Citizens are concerned and want to know to what standard well stimulators are held; what limits are being put on the well stimulation industry's acquisition of water? People note that there is nothing stated in the regulations about what might trigger a refusal to grant a permit based on projected water requirements.
1834	8356-4, 8232-3, 8232-4 Californian citizens are afraid that fracking removes millions of gallons of precious freshwater from the water cycle. They've heard that each well uses between two and five million gallons of locally-sourced freshwater which will be permanently contaminated by toxic chemicals contained in fracking fluid. They also feel that detailed research should be encouraged before it permissible to place any further stress on water supplies and quality.
1835	8084-2 Some people would rather walk more than jeopardize the state's clean water. They do not want to upset the Earth's crust before it is known what damage they are actually doing.
1836	8303-2 Communities have lost their access to water, lost the value of their land and the ability to live fruitfully upon it, as well as their constitutional rights due to fracking.
1837	8303-4 Fracturing through the water table to the shale always creates loss of floor of the water table resulting in the inability to recharge ground water. This results in irreversible desertification of land, loss of entire habitats for all life.
1838	8192-2, 8067-5 Poisons penetrate groundwater and it can never be reclaimed. A scientist proved groundwater sources are severely depleted by the fourteen-year drought, low snow pack and overpopulation. It will take decades to replace the precious water supply. Protecting underground water supplies is a major issue; no amount of money can repay the people for loss of water supplies. Property values will plummet if water supplies are destroyed. People feel that there needs to be a way to protect taxpayers from the potential cost of helping such losses. One suggestion is insurance.

1839	8230-1 Water is what the people feel everyone should be worshipping, not cars, lights and oils. They state that water is their God.
1840	8295-1 California should leave the oil and gas in the ground to help conserve the state's limited water supply for human and agricultural uses.
1841	8388-2, 8388-3, 8317-4 Concerned citizens want to know what, if any, precautions are being done to safeguard their limited water supply. There is concern about the impact this would have on the environment and human population.
1842	8154-3 It should be considered a crime to let money-grabbing companies buy water rights for the sake of a temporary addition to gas supplies at the expense of the environment.
1843	8405-5 Californians believe that where drought conditions exist, the quantity of water used must be subject to a cost benefit analysis for that local region. This should take into consideration the effect on agriculture as well as the natural environment.
1844	8099-1 The Sierras have not been seen in such serious and detrimental conditions; citizens report that there was no snow to be found, any streams running were minimal, many creeks were dry prior to August. Citizens are shocked. Trees, bushes and flora showed signs of serious distress.
1845	8317-1 Californians have concerns and questions about what may happen to the limited supply of water in the state.
1846	8363-3 It is believed that fracking workers steam flood after fracking in order to push oil to other wells in the same zones. People believe that fracking should be prohibited during times of drought and in areas where water is not plentiful.
1847	8404-1 Some residents did not understand the information about well stimulation treatments from the Department's website. What they hope the information does not mean is that anything will be done to upset the quality of the lesser and lesser amounts of water that California has.
1848	8348-6 It is assumed that elected and appointed stewards of the environment have known for years that California needed to study and take action to provide better water resources that would and could outlast major periods of drought. There are ways to store water in the ground so that it does not evaporate in the sun, allowing rivers to flow down ground, not concrete. This will create more catch basins that slow the flow of rivers and streams which puts more water into the ground or into man-created storage areas. Making water conservation mandatory and imposing fines for those who waste water are suggested solutions. Citizens of California note that California should have found a way for the average household and all businesses who use lots of water to recycle what they use to water open spaces, trees, plants, that do not need the purest water. They wonder how many years it will take for residents to speak up and expect the same of the state's stewards.

1849	8093-2 Especially considering the devastating drought that California is experiencing, passing legislation that furthers a practice proven to make water caustic, would be idiotic according to concerned residents.
1850	8141-1 With natural gas availability at an all-time high and water availability at an all-time low, Californians do not need water guzzling (5 million gallons per frack) mining ventures.
1851	8357-2 The people believe something should be added to the regulations to address the limiting of potable water use during a drought; regulations should explicitly state that all permits involving the use of water that is potable or suitable for crop irrigation are immediately suspended when the Department of Water Resources (DWR) determines that the total amount of water stored in the state's twelve most significant reservoirs is less than forty percent of the total capacity. As of June 30th, the reservoirs were at a total of 40.3% of capacity according to DWR.
1852	8341-2 If fracking is improved, many people in California will only drink bottled water. Citizens ask that everyone imagine the increase in trash and recycling such an event would cause.
1853	8074-12 Existing wells for drinking water have lowered the levels in aquifers and lowered water tables overall. Fracking is short-sighted and foolhardy. It abuses and consumes the most precious resource for short term profits and by private enterprise.
	Response to Comments 1806-1853: In Section 1783.1 of the proposed regulations, the application for a well stimulation permit shall include a water management plan that will provide an estimate of the amount of water to be used in the treatment, an estimate of water to be recycled following the well stimulation treatment, a description of how and where the water from the well stimulation treatment will be recycled, including a description of any treatment or reclamation activities to be conducted prior to recycling or reuse; and the anticipated source of water to be used in the treatment. The application will also include the anticipated disposal method that will be used for the recovered water in the flowback fluid from the treatment that is not produced water. And in Section 1788 of the proposed regulations, an operator will be required to disclose after a well stimulation treatment the source, volume, and specific composition and disposition of all water associated with the well stimulation treatment.
	<u>Other Agencies</u>
1854	9324-14 WSPA, CIPA, and IOPA recognize the concerns that have been raised about ensuring that appropriate notification requirements are in place. As stated previously, we believe DOGGR is the agency that is most appropriately responsible for providing notification to other regulatory agencies and the public through the formal permitting process. We believe by managing notification through a formal interface with DOGGR, the regulations would ensure a managed process for providing information while avoiding unnecessary delays as a result of on-going public announcements during the permitting process.

1855	4637-1 The enhanced well stimulation method should require a separate permit filed by local jurisdiction. This will allow each frack job to be evaluated according to local conditions
1856	4644-1 There's a drill site on PCH and 9th Street, Huntington Beach on one side, next door neighbor is Best Western, on the back side is a mom and pop hotel, on the other -- across the street you have a residential area and then you have PCH and I'm concerned about what kind of regulation would possibly let something like this happen.
1857	9292-6 DOGGR should require individual approval of permits from all listed assisting agencies without requirement of "written agreement with DOGGR." DOGGR should also require operators submit their compliance history and disproportionate impact data.
1858	9289-2 We note that the First Revised Text offers somewhat more specificity in the description of proposed interactions among agencies (Regional Water Boards, Air Quality Board etc.) in the consideration and monitoring of projects. It remains unclear whether this provides a viable regulatory framework or a hodgepodge of uncoordinated efforts posing as a plan. For example, the Water Code component of this framework, to our understanding, still relies on a monitoring system that will not be in effect until January, 2016, at the earliest. We continue, in the strongest way possible, to urge DOGGR and colleague agencies to have in place a cohesive, coherent regulatory framework which is fully ready to be implemented prior to the issuing of any permits.
1859	9282-3, 9280-14, 9309-11, 9315-4, 9319-5 The regulations should specify delineation and connection of regulatory authority among all state, regional, and local agencies, as mandated under SB 4. Regulations must formalize agencies' jurisdictions and duties and thereby facilitate more complete and coordinated regulatory coverage for all aspects of well stimulation. Responsible agencies must have formal agreements with other agencies before implementation.
1860	9297-13 There are a number of areas that are left unaddressed by the draft DOGGR regulations. This includes issues that have been addressed in other U.S. hydraulic fracturing regions including fugitive methane emissions in the air; and chain of custody requirements for produced water that is found to be classifiable as hazardous waste, such as brines and drill cuttings. It is our understanding that many of these areas will be taken up in companion rulemakings by the Air Resources Board, Department of Toxic Substances Control and other agencies.
1861	4709-2, 8363-3 It is positive and appropriate that DOGGR's latest release clearly states that county jurisdiction retain responsibility for air and water quality issues. PSV has always contended Monterey County Supervisors and county citizens regulate and protect the Salinas Valley water basin from being polluted.·
1862	9309-5 County of Monterey requests that any regulations adopted by the State of California and DOGGR will preserve local land use authority over traditional land use matters including, but not limited to, the following: • Use of water • Source of water • Wastewater disposal methods • Traffic • Aesthetics • Biological impacts.
1863	8317-5 There are requests and reports to the Regional Water Board. People want to know how many

	Regional Water Boards there are in California. They want to know if these are all staffed by qualified experts to determine how much water can be drained from rivers, lakes, aquifers in order to produce gas. Californians surmise that without more control over the water, "too many cooks spoil the broth." Residents want to know how regional entities communicate with one another and if they inform the state. Lastly, they ask if individual citizens know what each regional board is doing with their water.
	Response to Comments 1854-1863 Senate Bill 4 specifies the Division as the sole state agency tasked to permit well stimulation treatments in the state. However, the Division will consult with the appropriate state and local agencies as part of its permitting process.
	<u>Other States & Countries</u>
1864	8425-3 Inspectors are curious about what other jurisdictions are doing, and are collecting information. Questions have been posed to regulators in Colorado, Montana, Texas, British Colombia, etc.
1865	9320-7 Given the controversy and concern surrounding hydraulic fracturing, there is every reason for the Department to strive to make all of the well stimulation treatment notices, neighbor notifications, water monitoring, testing and sampling information promptly and electronically available to the public in an easily searchable form, including well locations. Making well stimulation treatment notices (prior to the effective date of these regulations) and permit applications available to the public (Section 1783), accelerating the establishment of the state's Chemical Disclosure Registry and requiring operators to disclose information, including water analyses, to the Registry promptly once well stimulation operations are completed (Section 1788) will go a long way towards achieving this transparency and accountability. We recommend that the Department also provide for easy public access to all reports required by operators, including, cement evaluations, well breach and repair reports, and the "Post-well Stimulation Treatment Report" (Section 1789).
1866	8370-3 Concerned citizens believe that to pursue drilling and fracking is not a smart course to take and that it needs to be investigated, studied and severely limited. People in Lake County experienced fracking in their communities recently and found substrate shale not stable enough. Though the fracking ended quickly, people still claim to experience daily earthquakes from the reinjection of ground and surface water into the geothermal wells. Future use could damage citizens. They fear for future problems and harms done by injecting substances into the Earth
1867	9280-4, 9282-13, 9285-2, 8384-1, 8175-2 DOGGR should draw from other jurisdictions and states that have implemented more stringent rules than the proposed Regulations. These include: • New York and Maryland have implemented moratoria on hydraulic fracturing while risks to health and the environment are examined;• Vermont has banned the practice outright;• Pennsylvania assumes water contamination is the presumed fault of any stimulations unless an operator has conducted sampling and analysis;• Wyoming regulations require ground and surface water monitoring within one-half mile of wells at various intervals before, during, and after spudding and casing, and monitoring for air pollutants near oil and gas production sites;• Alaska regulations require water monitoring within one-half mile from the well head and the well path before and after treatments, shorter notice/reporting periods, cement-evaluation logging, envelope rather than radius models, and detailed characterization of each treatment stage along the well; and• Many state and local jurisdictions have implemented setbacks from sensitive receptors. In Dallas, for example, no

	drilling is allowed within 1,500 feet of homes, schools, churches, or other protected sites.
1868	9307-2, 6678-4, 6580-3, 6815-4, 8235-2, 8331-6, 8169-2, 8169-3, 8152-4, 8394-2, 8400 -2, 7713-7, 7713-8, 7760-3, 7744-2 The damage from fracking is well documented. The following details are taken directly from a September 20th, 2012 Environment America Research and Policy Center report: • In Dimock, Pennsylvania, Cabot Oil & Gas reported having spent $109,000 on systems to remove methane from well water for 14 local households, while in Colorado; cleanup of an underground gas seep has been ongoing for eight years at a cost of hundreds of thousands of dollars, if not more. • Colorado study counted 77 fracking wastewater spills that impacted groundwater supplies. Ninety percent were contaminated with unsafe levels of benzene. • The provision of temporary replacement water supplies is also expensive. Cabot Oil & Gas reported having spent at least $193,000 on replacement water for homes with contaminated water in Dimock, Pennsylvania. • Fracking can also pollute drinking water sources for major municipal systems, increasing water treatment costs. If fracking were to degrade the New York City watershed with sediment or other pollution, construction of a filtration plant would cost approximately $6 billion. • Fracking and associated activities also produce pollution that contributes to the formation of ozone smog and particulate soot. Air pollution from gas drilling in Arkansas' Fayetteville Shale region imposed estimated public health costs of more than $10 million in 2008. • The clearance of forest land in Pennsylvania for fracking is projected to lead to increased delivery of nutrient pollution to the Chesapeake Bay, which already suffers from a vast nutrient-generated dead zone. The cost of reducing the same amount of pollution as could be generated by fracking would be approximately $1.5 million to $4 million per year. • Gas operations in Wyoming have fragmented key habitat for mule deer and pronghorn, which are important draws for the state's $340 million hunting and wildlife watching industries. The mule deer population in one area undergoing extensive gas extraction dropped by 56 percent between 2001 and 2010. Fracking also produces methane pollution that contributes to global warming. Emissions of methane during well completion from each uncontrolled fracking well impose approximately $130,000 in social costs related to global warming. Firms with an economic interest in drilling and its expansion in the Marcellus and Utica shale formations as well as their allies, supporters and trade associations, have used a variety of tools and techniques to exaggerate the employment impacts of shale drilling.
1869	9311-4, 6678-6, 356-7, 8356-8, 8331-11 At least eight other states have reported surface, ground, and drinking water contamination due to fracking. Spills, leaks, and illicit dumping also put surface waters at risk. A spill of hydraulic fracturing fluid in Kentucky caused a massive fish die-off, including an endangered species, in the contaminated creek. Another 13,000 gallons of hydraulic fracturing treatment fluid spilled in Lycoming County, Pennsylvania, threatening to contaminate drinks water wells and surface waters as a result of the toxic discharge. Over 1,400 environmental violations have been attributed to deep gas wells utilizing fracking practices in Pennsylvania. Tioga, North Dakota was the site of a massive accident that spilled fracking fluid along with over 800,000 gallons of crude oil. These are just a few of the numerous instances of accidents that have occurred in other parts of the country where fracking has been allowed to occur. There have been 7,500 fracking violations reported annually on a nationwide level. Of class 2 wells, the most popular one reported on is one in Texas. Wyoming has shut down 144 wells, Louisiana shut down 82. People feel that America is unrecognizable. First, SB 4 requires the adoption of regulations that "ensure integrity of wells, well casings, and the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation treatments…" The Proposed Regulations, which allow well stimulation to continue, would not "ensure" the integrity of wells—it would actually weaken the integrity of wells. In addition, SB 4 requires DOGGR to adopt an Acid Volume Threshold for acid matrix simulation that would prevent, as far as possible, damage to life, health, property, and natural resources." DOGGR admits that it has been unable to derive a risk-based figure. The lack of a clear Acid

	Volume Threshold based on the risks of acid matrix stimulation is a violation of CEQA and the clear mandates of SB 4. Furthermore, the Public Resources Code mandates that DOGGR regulate oil and gas production to "prevent, as far as possible, damage to life, health, property, and natural resources…." Given the numerous risks inherent in well stimulation operations, DOGGR cannot satisfy this duty without a prohibition on such practices. Studies indicate that allowing well stimulation will undoubtedly damage life, health, property, and natural resources.
1870	8417-2 People ask that it be noted that earlier this year, the Associate Press collected data from Pennsylvania, Ohio, West Virginia and Texas, finding hundreds of drilling-related complaints from the past several years. Some cases included ones in which contamination was confirmed. In West Virginia, about 122 complaints were of well water contamination over the past four years. Pennsylvania's Environmental Department confirmed 106 cases of contamination since 2 5. Ohio fielded 190 complaints from January 2010 through December 2013 and six were confirmed well water contaminations. Texas had more than 2, 0 complaints—62 of which were well water contamination. Oil and gas operations in Colorado's Front Range leaked nearly three times as much methane as predicted and seven times as much benzene. Emissions of other chemicals that contribute to summertime ozone pollution were about twice as high as estimates. Landslides and seismicity has been reported in Oklahoma and Colorado. The failure of the political process to hold the fracking industry accountable and to guarantee the integrity of parties reviewing complaints, the eliminated of the above noted provisions from the regulation above are serious to the public and the requirement of an EIR under NEPA and CEQA is warranted.
1871	9320-5 Other states and the federal BLM have put in place methods to consider the cumulative, landscape scale ecological effects of development. For example, the BLM's Master Leasing Plans require an evaluation of the effects of oil development in prospective areas, exclude development in sensitive areas, and establish minimization and mitigation requirements. The State of Colorado's Geographic Area Plans and Comprehensive Drilling Plans are designed to accomplish much the same objective. We urge the Department, in consultation with those conducting the scientific review and the statewide EIR, to devise and adopt provisions implementing a landscape scale ecological review process before unconventional oil and gas development moves into new areas of California.
1872	8145-3 There are numerous breaches in the Alaska pipeline, the Exxon Valdez, Prince William Sound, BP's avoidable disaster in the Gulf and other spills or accidents that are not able to be made public. No photos are allowed.
1873	8317-12 A Texas-based company recently merged with a Canadian company and moved headquarters offshore. Their management offices are still in Texas. People want to know if the offshore companies with offshore bank accounts want to pay US taxes to compensate the State of California or their residents. They want to know exactly who will be accountable and financially responsible when property is rendered useless in California due to lack of water, earthquake damages, toxic waste, etc.
1874	8393-4 In North Carolina, oil companies are presently trying to outlaw the mentioning or identifying of any components used in fracking fluids. Californians believe that this is not in the best interest of the residents in that state or the environment.
1875	8393-9 People want to know if Exxon ever finished up in Alaska. They mention 3-Mile Island and the BP disaster in the Gulf as well as the oil spill in the Carolinas in their comments as well.

1876	8356-10 Californian citizens find it interesting that oil and gas companies have avoided engaging in frack activity in upstate New York. Citizens joke about not wanting to poison New York City's water supply.
1877	8153-8 People think that California looks as stupid and corrupt as Florida with regards to energy production.
1878	8331-3 The people have heard that there is no need to duck foreign oil dependency. They referenced the Alaskan pipeline.
1879	8146-3 Taxpayers will have to pay higher taxes to clean up the oil and gas companies' messes, like in the Gulf. BP lies on the television, according to citizens, and says that the Gulf is open for business. They promised to clean up their mess but now want to go to court and fight so they don't have to. Californians believe this will not give anyone jobs or help with energy. Oil and gas will sell their product to Russia and China, who are willing to pay more and leave American taxpayers the mess to clean up. Gulf business owners want to sue to get some money back for having to clean up BP's mess because BP never gave them a dime. There are outside oil companies using California courts, using and abusing tax money to benefit themselves. Don't let them do what they did to the Gulf to California.
1880	8335-1 Other countries utilize their own natural resources prior to bankrupting their country with unnecessary and costly importation.
1881	8330-4 Some wonder what other states have required about the "trade secret" restrictions; they cannot see a legitimate trade secret reason for non-disclosure in that the public interest in avoiding land toxification outweighs the trade secret protections.
1882	8416-7, 8416-4, 8416-6 Some feel that Californians are too smart to allow the filthy fracking industry to inflict harm on their soil. Fracking simply doesn't belong in California as some feel they're better than the reckless hicks that govern the environmentally hellish state of Texas—the industry doesn't deserve access to California's land. California's environmental awareness is more superior to the idiots in Texas and water is California's gold. It is felt that the oil industry doesn't belong in California and regulators ask that Texas thugs not be given access to California's soil. Instead, they need to be told to get the frack out of California.
1883	8247-1, 8247-2 Vermont is not fracking and citizens hope that California will follow suit.
1884	8105-1, 8105-2, 8105-3 Residents of Oregon are especially apprehensive about fracking and clean water for all. They ask that officials do what they can to protect the planet, potable water sources and supplies, giving their blessings on land and communities.
1885	8400 -5 Even people who moved out of California still care about the state.

	Response to Comments 1864-1885: In the development of these proposed regulations, the Division reviewed and evaluated regulations related to well stimulation treatment activities in other jurisdictions. The Division believes that these regulations, together with its existing well construction standards, compare favorably with what is found in other jurisdictions. California has always been a leader in requiring protective well construction standards, and these regulations will require an engineering review in advance of well stimulation treatment that is at least as thorough as what is found in other states. The public disclosure requirements under SB 4 are at least as detailed as what is found in other states, and California is the first state to impose significant limitations on asserting trade secret protection to avoid making required public disclosures. The Division's primary statutory mandate, Public Resources Code section 3106, is that the Division permit operators "to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons," but regulate operations so as to prevent, as far as possible, damage to life, health, property, and natural resources, including underground oil and gas deposits and water suitable for irrigation or domestic purposes. Specifically, Public Resources Code section 3106, subdivision (b), contemplates that the Division will regulate, but allow, "the application of pressure heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells." In recent years the Legislature has considered several legislative proposals that explicitly banned or placed a moratorium on well stimulation activities in the state. Each of these legislative proposals have failed passage in the Legislature. Senate Bill 4 does not contain any explicit ban or moratorium on well stimulation treatments. Rather it contains explicit direction to the Division to regulate well stimulation treatments. Consistent with this statutory mandate of Public Resources Code 3106 and Senate Bill 4, the Division has established regulations that address environmental risks and respond to public concerns, but do not prohibit methods and practices that are proven to increase hydrocarbon recovery. These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.
	<u>Other</u>
1886	8423-7 Big oil needs to be kept busy with constructive tasks and not extract fossil fuel; suggestions include: using dredges and compressors on barges towed by tugboats to capture as much methane as possible leaking along the Alaskan coastline. Whatever technical assistance other nations with Arctic coasts can be offered and accepted would be great. In addition, it's been suggested that rather than being frozen in during winter, explore coasts of the lower 48 states including Hawaii and Puerto Rico. The government should buy most of the methane for strategic

	reserve to help stabilize the price of both natural gas and the US dollar. Some can replace natural gas from fracked wells.
1887	8190-2, 8086-2, 8296-3 The people of California want to know what will be left for them to use to sustain their lives. Californians feel they must preserve what is left of their state for the future. What will be told to California's children in 2050 is unknown.
1888	8336-9, 8336-10 Californians state that they will wage war with oil and gas in the fight for human and animal kind's survival--the survival of planet Earth included. They add that all well stimulation proponents will live to regret their votes to back SB4 and the horrendous consequences that will befall everyone. Greed is only secondary to immortality.
1889	8401-2 Californians are considering moving from California to finish their careers and retire elsewhere.
1890	8330-5 Citizens who practice law in California note that they are not representing any stake holders except the public in this matter.
1891	8269-7 The public wants the issue of flooding in California addressed, especially in Marin County and San Rafael.
1892	8382-4 Citizens have sent copies of their emails to senate and assembly representatives.
1893	8294-1 Pass SB1132 .
1894	8359-4 California citizens mention Gasland 1 and 2 as examples, wondering if regulators have seen them.
1895	8358-3 Proponents of fracking wonder if the congresswoman has any objections to their issues and if so, a respectful debate could be started.
1896	8335-4 There are strong feelings that environmentalists have stood in the way of progress and prosperity for far too long with bogus "junk science" and "political correctness" for justification. Some feel it is about time that the American people stood up against this and relied upon common sense and actual facts for the sake of self-preservation and truth.
1897	8280-2 It is a belief that horizontal fracking should ever be allowed and that only existing fracked vertical wells should be permitted to continue to operate.
1898	8278-2 Californians have not had flammable spigots or salty water like other states but they know they cannot endure decade-long droughts like the Native Californians did hundreds of years ago. They state that the coast is crowded and foods are imported, noting that the natives got water from fog with wool and leather absorbers, channels and clay pots. An industrial-level use of this idea sounds feasible to California residents and a variant is currently practiced in South America.
1899	8278-1 There is relief that recharge wells with an impact on groundwater quality were closed.

	Groundwater recharge from treatment plants demands scrupulous oversight.
1900	8153-10 Californians want the government to tell the natural gas industry to frack off.
1901	8264-2 People continue to over develop and overpopulate.
1902	8297-1, 8297-2, 8297-3 People who object to hydraulic stimulation appear to have little to no credible information about the practice, what risks it presents, its history of use, or documentation of collateral damage it has or has not done. Some citizens see oil operators as business people who worked hard to comply with regulations and manage soundly. Fracking is associated with headaches, nosebleeds, animal health problems, etc. Cities like Los Angeles are passing laws to ban fracking even though there is no fracking in their jurisdiction. Seismologists have stated that the recent earthquake in LA couldn't possibly have been caused by fracking even if there was fracking in the area. The biased press supports blatant falsehoods about fracking, its regulation and legislation.
1903	8207-2 The following list is of particular concern to California's residents: monitoring, air and water pollution, seismicity, water supply and drought, agriculture and damage from industrial activity on nearby land, greenhouse gas emissions, and fraudulent comments by the Western States Petroleum Association.
1904	8300 -6 People want to know how gas extraction will be regulated and supported with so much is burned off by oil extraction companies.
1905	8397-1 People agree with the documents submitted by coalitions of environmentally conscious groups in California.
1906	8393-1 Most Californians acknowledge that they are not scientists and thus are not qualified to determine if the Well Stimulation Treatment Regulations are adequate. They know this is why there is an Environmental Protection Agency and why California has a government agency in charge of protecting the environment.
1907	8065-1 It is felt that everyone knows hydraulic fracturing is a greed-driven death spiral into the deepest of all hells. Upset individuals feel Californians stand by like a collection of castrated freaks while millions of gallons of fresh water per well are being destroyed.
1908	8403-1, 8403-2 Residents of California want to know what the status is of AB 1960 implementation. Specifically, citizens would like to know if CCR Title 14. Division 2. Chapter 4. Section 1774.1(f) is enforceable.
1909	8331-13 People want to know when there will be another age of reason; they see patterns of rich people buying up all of the good farmland and renting it out to emigrants and citizens trying to farm on it. This is indicative of the last Great Depression.
1910	8331-12 Californians state that there are over two million abandoned wells or plugged wells in the states. They want to know how many abandoned nuclear plants there are.

1911	8293-1 Well Stimulation Treatment is actually ground water depletion and pollution in the interest of getting oil out of the ground. People want the Department of Conservation to call it what it is.
1912	8089-6 California is not hurting for oil inventories. Only the oil oligarchs have anything to gain. This is not different than mining corporations which blast away mountaintops to extract ore and then depart, leaving their detritus for the state to deal with someday, someway.
1913	8298-2 Pumping chemicals into the water and soil is not a water, regardless of whether harmful effects of this procedure are fully known at this time.
1914	8329-5 Well infrastructure and pipe failure currently occur with drilling; they will continue with new construction.
1915	8329-12 Well stimulation and erosion of rock sub-layers are not predictable and can't be borne with safety and surety. Caution is the rule; when in doubt, don't.
1916	8282-2 Fracking is a potentially disastrous method of transporting oil. It is assumed and confirmed with scientific facts to have a damaging impact on the environment. Californians want to know why the state would give strong consideration to such a negative action.
1917	8153-6 Natural gas is dangerous from extracting to use. Californians state that deadly explosions are not uncommon.
1918	8370-2 People in California have seen many cave-ins around the nation caused by removal of material, which is usually gas or oil substrate. There is belief that it is the outcome of removing tons of material from below the ground and is a simple engineering fact.
1919	8336-8 Koch & Company will choke citizens of Long Beach with thousands of pounds of coal and coke dust, as hundreds of uncovered rail cars make their way through California communities with the intended destination being their port.
1920	8087-3 With climate change comes drought. Southern Californians are asked to not forget that they are living on land that is mostly reclaimed desert. If people would like Southern California to resemble Peru, with its hundred year or more drought, then let the fracking continue.
1921	8336-4, 8134-7 The people of California feel that elected and appointed officials are completely and thoroughly versed and aware of the horrendous consequences of well stimulation practices and that there is no point in citizens wasting their time sending in endless links, scientific studies and proof of fracking's disastrous effects. Elected officials who are playing a role in paving the way for fracking should, and will, be tossed out of office.
1922	006646-3 When spills and accidents occur, how can medical and EMT personnel provide proper treatment?
1923	8376-1 Some individuals object to the proposed revisions to the original text of Sections 1751, 1761, 1780, 1781, 1782, 1783, 1783.1, 1783.2, 1783.3, 1784, 1784.1, 1785, 1786, 1787, 1788, and

	1789, and the addition of Sections 1777.4, 1784.2, and 1785.1 of Title 14 of the California Code of Regulations.
1924	8323-4 The people believe DOGGR knows about the dangerous fracking shortfalls that PSV is highlighting because on July 7th, DOGGR issued cease and desist orders to seven energy companies warning that they may be injecting their waste into aquifers that could be a source of drinking water, stating that their waste disposal poses danger to life, health, property and natural resources. PSV requests that DOGGR adjust its proposed stimulation regulations to prevent storing toxic fracking fluids in deep aquifers in the Salinas Valley and to establish pressure and construction regulations that prevent leakage by any waste water injection wells used by fracking explorers or production companies.
1925	006815-7 There is evidence from areas in Southern Ca homes have been damaged and residents have had to leave their hoes due to damage from fracking.
1926	006678-3 Oil companies should provide evidence to the Ca electorate that fracking is safe.
1927	9320-14 As permit applications increase and well stimulation treatments expand, we strongly recommend that the Division reserve authority to suspend new applications if the capacity (and funding) for oversight and witnessing of operator activities is not sufficiently robust to ensure adequate protections.
1928	9320-13 We propose that the Department review the existing regulations on underground injection projects and subsurface injection or disposal projects in light of unconventional well development.
1929	9319-1 Overall the regulations must be revised and recirculated along with revisions of the Division's website glossaries and definitions as they are conflicting and inconsistent and fail to follow industry norms (except for those with a link to the US OSHA glossary which is partial and incomplete compared to the needs of these draft regulations. Similarly a single set of Abbreviations/Acronyms must be provided on the Division's website and referenced in the regulations. Wherever WST is used, it shall mean Well Stimulation Treatment.
1930	9319-7 Provide subscriptions for Notifications and reports.
1931	9313-2 Waste Management requests confirmation and clarification that the current proposed language of revised proposed Sections 1784, 1784.1 1785, 1787 and other related sections do not preclude the well operator from retaining the services of a third party to meet the requirements of these sections.
1932	9311-11 The regulations also violate the California Administrative Procedure Act27, which states, "Whenever by the express or implied terms of any statute a state agency has authority to adopt regulations to implement, … no regulation adopted is valid or effective unless consistent and not in conflict with the statute and reasonably necessary to effectuate the purpose of the statute."28 In addition to conflicting with CEQA, the regulations also conflict with SB 4 and other sections of the Public Resources Code.

1933	9306-2 Who allowed this document to be called "Well Stimulation" Regulations, a term with which the public is not familiar?
1934	9302-2 Recommend the establishment of a truly independent body of experts to advise DOGGR and the state. Though California appears poised to put in place a strong regulation, the state will surely will not get everything right. We have previously argued for set-backs - minimum distances between (1) well pads and buildings and between (2) well pads and surface waters - and still hope the value of such an approach will be recognized in future iterations.
1935	9285-3 Terms used to cover up for fracking range from "horizontal" to "slant drilling" plus many others. They are all basically all the same.
1936	9283-3 DOGGR must provide the public with a clear statement of the steps involved in drilling and stimulating for public participation, and environmental review.
1937	4679-1 What is SB4 well stimulation? I have a well for water but doubt I have one of them. Will these regulations affect me and how? If this is to do with the geysers, I have no opinion.
1938	4676-1 No fracking. Get off oil. Be a steward of the earth, not a rape and pillager.
1939	4696-1 Issues regarding HOA costs rising, but, not related to oil and gas operations or well stimulation.
1940	4655-2 Has anyone fracked in 2013 and 2014 in LA County?
1941	4657-1 There is a drill site at PCH and G Street Huntington Beach, a Best Western on one side, a mom and pop on one side, residential on the other side. Is this the future?
1942	4658-1 Current drilling works. Leave well enough alone. Do not frack.
1943	4690-5 Landslides near hydraulic fracking well operations were reported.
1944	8344-2, 8411-2, 8137-2, 8167-1 Fracking weakens California's sub-structure. It is shocking to many when they see videos of people turning on their water and fire comes out of the faucet in other states, such as Wyoming. Some people have family members, whose tap water can be lit on fire. Californians hear people are getting sick. The last thing the people of California need is burning water.
1945	4690-6 At what price do we pay by extracting oil and gas by hydraulic fracking? At what price do we let the gas, oil and drilling industry control our country? In the coming year(s), what will be the environmental impact and health cost to all of us because of fracking?
1946	4691-1 Millions of gallons of water, sand, and poisonous chemicals are injected into the wells to extract

	gas and oil has devastating effects on the environment and our natural resources. In a dry land like California which may even face dryer changing climate, polluting our water sources by fracking doesn't make sense. California is an earthquake prone state too. Well stimulation is equal to exploding a massive pipe bomb underground, which again doesn't make sense in California.
1947	4695-1 All processes under the umbrella of well stimulation are toxic to the air, soil, water, animals, and humans. Well stimulation is a hostile, violent act. Regardless of advanced notification to property owners or any water tests offered, life and health will be in jeopardy for big oil profits, once these wells are active. Well stimulation is not conservation.
1948	5529-1 Much of the opposition to fracking seems to be that the products that are used in the fracturing process are dangerous. One percent of the fluids are additives, most of those products you will find in food products, you will find in household cleaners, you will find in products that you have stacked in your shelves at home, and there are, perhaps, some components of products, a percent of a percent, that may be considered carcinogenic, perhaps. As an industry, we are doing what we can to eliminate those products, eliminate those. When I went to Starbucks this morning, I saw a Prop 65 warning that store have acrylamide which is a carcinogenic product. If we are going to let concern over fractions of a percent in a material that is pumped at one gallon per thousand or another amount cause us concern, then are we looking at regulations for coffee shops and anywhere else that has a potentially-carcinogenic product.
1949	5526-3 USEPA's 2004 extensive survey of hydraulic fracturing and its effect on drinking water concluded with its agreement with the GWPC and the IOGCC that hydraulic fracturing is safe. That was the EPA's conclusion. The EPA also concluded that hydraulic fracturing does not create pathways for fluids to travel between rock formations to affect water supply.
1950	5526-2 The GWPC's survey of state energy regulatory agencies found no documented cases of contaminated drinking water linked to hydraulic fracturing. A 2002 study conducted by the Interstate Oil and Gas Compact Commission confirmed the conclusions, the GWPC's conclusion, that no evidence could be found of contaminated drinking water related to hydraulic fracture.
1951	5514-6 The permitting process is ridiculously complex. It is labor intensive. It's expensive. Nobody understands it. I have talked to people in District 4, and they say, dude, we can't tell you anything about it. You need to call Sacramento. It's a frickin' disgrace.
1952	5538-2 As far as damage from fracking to the state there is no evidence because it has never been regulated by the Department until now. So there is just a trickle of data coming in as far as what happened over the last 50 years. There could have been ground water contamination. There could have been spills. Certainly there have been well casing failures which are not able to be documented so that we can see those too. So there's really a lack of record of whether well stimulation caused damage to resource. We can't say either way. Certainly can't say it's been particularly safe or that it's been terrible for the state, because we don't know.
1953	4737-1 I don’t trust the oil industry. They are similar to the Tabaco and wireless industries, they all lie about the negative health impacts they have on people.

1954	8331-14 It is time to write laws which interpret the Constitution the way it was designed by the founding fathers.
1955	4737-2 The automobile and oil industries don't want people to take public transit because it is better for their business if people drive their cars.
1956	4736-1 I heard two people mention that the industry is the best people to lay out the regulations and that kind of stuff. What kind of bizarre concept is that? The banking industry really did a good job with that kind of stuff. Of course the oil companies want to frack California because they don't pay any extraction tax. They treat California like a God-damned pincushion. Thank you.
1957	4724-1 Big oil companies, they manipulate the facts, like that gentleman talked about the 115 billion barrels of oil that was here, and then they changed it a couple of years later and said, "Well, our other study shows it's really not there." So they continue to manipulate the facts.
1958	4643-2 This committee is actually funded by permitting fees is that true or not It's funded through the development of oil, it's a fee that you are paid through that? Is that true? But if it's so much per barrel to funding your work, that's a conflict of interest.
1959	4638-2 Just because nothing bad has happened from fracking doesn't mean that it can't or won't happen.
1960	8388-4 The public would like to know if any studies have been conducted to examine long-term impacts of fracking and if so, they'd like to see both sides of the story, not just that in favor of fracking.
1961	4632-6 The nuclear industry for years said that like its too cheap to meter, well, that was just a lie, not true at all. Never was, it never will be. There's some of the most expensive form of energy there is because they're socializing all the negative neutrality, all the costs, you know, all this bad costs are being socialized and they are postponed until far in the future when the person who did the regulations isn't around even to answer for it anymore. So when you have a meltdown in Fukushima, it's approaching a trillion dollars of public damage, you know, that totally negates all of the benefits that came along with it. The same will be true of poisoned water systems, if we poisoned all our water systems, all the cheap energy isn't going to be worth anything.
1962	4632-5 There's a clause in the bill that allows the already investigated wells, the wells that have already been investigated by another environmental agency to be exempt from further scrutiny by the new regulations which is also unacceptable. That's just not reliable regulation so that's unacceptable.
1963	4627-4 Seeing that a lot of these fields are going to be repurposed. Wells that are now surrounded by homes, what's in the immediate neighbor is coming off of those well heads •in terms of gases needs to be addressed and needs to be spelled out specifically.

1964	4625-2, 8134-3 I don't know how can I go face those kids and tell them that their government had their best interest at heart if they're putting industry and money, greed and power before what's most important, and what's most important to those kids. Those kids are going to pay a much heavier price than any of us in this room here today if we continue down this course. So I know that one industry has an unlimited financial resources right now, but I think it's time that everyone as humans put our humanity first, put it before your cushy well-paid lobbying job, your cushy oil industry job.
1965	4607-10 When there is -- and there will be – some spill, unlike in previous years it will become national news, and we'll be left to defend that our food safety is still maintained even if the spill is miles away. The public in the nation won't really understand the distinction.
1966	4611-5, 4615-6, 5523-3, 8327-4 A well integrity plan must be prepared for every well that's going to be stimulated, which means every well in the state of California. A well integrity plan which will not only go for what is being drilled, but all the way to its abandonment, a life cycle, well integrity permit because that's where the real issues are in many cases. Part of that is pressure testing doesn't really give you an idea as to the integrity of a well and the bonds between the casings, the cements and the outside walls. So logging of the well bonding is required, must be required. You can do pressure work for operational, but logging is a real-time specific, foot-by-foot examination and verification of the well bonding.
1967	4614-1, 9315-18, 8363-4, 8336-6 I'm concerned that the regulations are inadequate because they do not prohibit stimulation in, under, or around sensitive areas, including but not limited to the Pacific Ocean. I'm concerned about those offshore oil platforms, coastal bays, an estuary, coastal dunes draining into ocean bays and estuaries. I'm concerned about well stimulation near residential areas, sensitive receptors such as hospitals, schools, •daycare facilities, elderly housing and convalescent facilities. These need to be addressed in the regulations, sensitive ecosystems, wetlands, critical water shift, round water recharge areas, national forest land, national monument, national wild life refuge area, state ecological reserves, areas classified as environmentally sensitive.
1968	4620-3 With respect to the proposed regulations, we continue to believe that the applicability thresholds and the proposed rules create a double standard for protecting public health in the environment and should be eliminated.
1969	4628-1 SB 4 it says that the acts of God are omitted.
1970	4628-2 There are loopholes that have been put into the EPA from damage or over usage of water systems when they owned the water, when they underreport usage.
1971	8084-3 Citizens want to know if anyone reads history anymore.
	Response to Comments 1886-1971: These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written

	format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations. The potential impacts on the environment and public health will be considered in the Environmental Impact report and independent scientific study required by SB 4. Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015. SB 4 also amended the Public Resources Code to add Section 3160 (a), which requires the Secretary of the Natural Resources Agency to 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 independent scientific study is to 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. This study will be completed on or before July 1, 2015.
	1751. Single-Project Authorization
1972	9311-13, 9312-4, 9319-2, 9321-9 Section 1751 of the proposed regulations defines a “single-project authorization” as a “single Division approval for multiple applications for permits to perform well stimulation treatments and/or notices of intent to drill or rework wells.” There is no authority in Senate Bill 4 that would allow this circumvention of the permitting process. While the Department of Conservation mentions Governor Brown’s signing statement which encourages “group[ing] permits together,” Senate Bill 4 does not allow DOGGR to authorize multiple well stimulation projects simultaneously. The only “grouping” that is authorized under the law is the authorization of a single drilling application together with a single well stimulation treatment application. Otherwise, “prior to performing a well stimulation treatment on a well, the operator shall apply for a permit to perform a well stimulation treatment…” Grouping multiple well stimulation applications into a single approval process would be clearly beyond the authority granted by SB 4 and would undermine DOGGR’s ability to fully assess the risks of individual permits and the public’s ability to stay apprised of new well and distinct stimulation operations.
1973	9282-14, 9283-4, 9315-3, 9319-4, 9320-15 Revise the definition of Single Project Authorization to limit of 5-10 wells per NOI and a single calendar year and a single lease, reservoir/pool, or field of up to 640 acres total area of surface or subsurface operations which has been reviewed and assessed in appropriate local certified CEQA compliance documents. CEQA Compliance shall require Programmatic EIR for Division delineated Fields under current Unit/Field Rules practice.
1974	4611-2 One of the additions that has been made is the concept of multiple well permitting. This is inconsistent with the existing well permitting through the notice and permit requirements. So is

	this only going to apply to stimulation, or does it apply or will it apply to all well permits issued by DOGGR?
1975	9300-1 1751(c): How does this correspond to the same language as used in documents of the EIR and Biological Assessment (cumulative impacts) regarding exploratory wells, and production wells?
1976	9300-2 What is the benchmark process for review and comparison (in either negative declarations or positive) regarding the use of the terms; “project site” and “project area” which are used in both the permit applications and also EIR documents, and SB 4 WST Regulations in which “project operations” and “single project authorization” are used?
1977	007030-4 The regulations’ “single project authorization” provision might be interpreted by oil officials as allowing them to approve many applications with one rubber-stamp approval.
1978	9299-1 Section 1751 is without definition or parameters, does this mean to include all types of well stimulation treatment in one project which could include a combination of high volume hydraulic fracturing, conventional fracking, acidization, acid fracturing, acid matrix, high rate gravel packing, CO2 fracking, etc. How many wells per single-project authorization? Should reworks be combined with new drills under the same project heading; no. There isn’t even a section for tiered inspections of a single project approval. Single well permit applications only Why is this even here where did it come from certainly not SB4?
1979	9280-7, 4664-2, 4600-1, 4632-3, 4617-1, 8414-2, 8327-3, 8328-1 In order to fully understand the impacts of unconventional well stimulation, and fully comply with CEQA, permits must be issued, and regulations must be met, on a well-by-well basis. This will allow for fuller protection of all resources surrounding each well. During such individual well permitting, consideration of impacts to water, air, public health, and economic resources, among others can be undertaken.
1980	4695-3 1751. So easy- one approval- thousands of wells infect CA like a plague of pustules filling the host with poison.
1981	4692-1 Each proposed well should be evaluated individually with respect to its site specific characteristics including surface, hydrologic, topographic and geologic conditions. Permits for the multiple steps of the well drilling and stimulation process may be combined into one permit application for each well, but should not be extended to cover multiple wells.
1982	4611-3, 4627-5, 5548-1, 5538-7, 5523-1, 7753-4, 7753-5 We're against multiple well permitting especially since there's no definition as to what the scope is. One producer within the state of California could dump all of his permits for every field, every well that he wanted to do on an annual basis. Each well that is stimulated should have its own well integrity plan which would cover that well from first creation to closure.
1983	4612-2, 4618-1 How many permits at a time from one application under these regulations, three or a thousand? Who knows? And since no action on the permit is required, it is required for ten days already in the process. If there is no action, we know that the oil industry gets their permit. So this just doesn't seem like what we need to be doing at this point.

1984	4620-6 We also continue to object to the single-project authorization provisions which go beyond the authority granted to DOGGR by SB 4.
1985	9300-6 “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.” Under Public Resources Code section 3160 - (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: (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. (C) In considering the permit application, the supervisor shall evaluate the quantifiable risk of the well stimulation treatment….. Concern: How is “risk” used here? What is the risk of the well stimulation treatment that is quantifiable? How is that risk characterized?
1986	8392-13 The citizens wonder if regulations prevent continuous stimulation and fracking treatments—they don’t see provisions limiting the number of treatments.
1987	9300-3 Over-production (as catalogued throughout every State) has already created many problems nation-wide. Without approval of a UIC Class 2 “disposal well” program in the initial single project authorization, 'tied to specific project operations' wastewater could become a toxic burden on the environment and the public health. Illegal dumping, and 'waivers' for 'releases' to the environment are common industry-wide practices. No single-project authorization should be granted where project operations result in production before certainty of disposal methods (particularly location and status of disposal wells) are known. DOGGR's recent review of UIC disposal wells accents this concern.
1988	9324-18 We believe a revision to Section 1751(d) is warranted to allow extensions of the single-project authorization as opposed to a new application requirement. Rationale: We believe this preserves the intent of the section to review operations that have been previously approved without adding additional regulatory burdens on operators who have already complied with applicable requirements.
	Response to comments 1972-1988: Rejected. Section 1751 specifies that each application and notice submitted for single-project authorization will be reviewed in the same manner as it would had the application or notice been submitted individually. The purpose of Section 1751 is to establish a procedure for requesting a single-project review

	and authorization for multiple well stimulation treatment permit applications or notices of intent to drill or rework a well. Operators commonly plan to conduct multiple drilling and well stimulation operations in short period of time. In those instances, consideration of each permit on an individual basis can be much less efficient than considering the group of operations as a single project. Each individual application within the group of proposed operations will be subject to the same scrutiny and requirements as it would had it been submitted individually, and Section 1751 in no way relieves operators of any requirements.
	1761. Well Stimulation and Underground Injection Projects
1989	9311-14, 9315-7, 9319-3 The Proposed Regulations mistakenly and unnecessarily excludes certain types of gravel packing from the definition of "well stimulation treatment." Gravel packing that "does not exceed the formation fracture gradient" is exempt under the proposed definition. But under SB4, well stimulation is "any treatment of a well designed to enhance oil and gas production or recovery by increasing the permeability of the formation." Whether the treatment exceeds the fracture gradient is irrelevant. Thus, a gravel packing treatment that does not exceed the fracture gradient of the formation may nonetheless be well stimulation if the gravel pack increases the permeability of the formation. Indeed some types of gravel packing (open-hole gravel packing) are not contained within the well casing. Gravel and chemicals are instead injected into the formation itself. These techniques are clearly within the statutory definition of "well stimulation," even if they stay below the fracture gradient, and the Proposed Regulations' definitions should be amended to be consistent.
1990	5538-8 Last on the definition of well stimulation and versus clean-out maintenance. I think there's a tension here that the Department is having to deal with between the industry one and say we do a lot of work with acid, for example, to maintain the well and clean it out, whereas other people are saying, As long as you're increasing permeability, which happens to be the definition in Senate Bill 4, that's well stimulation. So I see you have tried another attempt at defining that. We still have concerns about that, for example, gravel packing may not be just a method of wellbore construction. It may be actually well stimulation. So we're looking closely at that tension and the exact definitions and we will have comments on that.
	Response to comments 1989-1990: Rejected. A gravel pack is designed to provide a screen to the formation to limit the formation's fine material from entering the well. There are high-rate gravel pack operations that inject the gravel at such high pressure, that which exceeds the formation fracture gradient, that places the gravel deep into the formation and increase the permeability. These operations, although called a gravel pack, would be considered a well stimulation because the injection pressure exceeded the fracture pressure. A gravel pack done at lower pressure is only filling up the void space between the production liner and the wellbore with the gravel and is not increasing the permeability of the formation, and therefore it is not a well stimulation treatment.
1991	9311-15 The definition for "Acid Volume Threshold" is not based on an assessment of the risks of acid matrix treatments – a direct contradiction to the requirements of SB 4. DOGGR is required to conduct a risk-based analysis before promulgating and implementing a definition. DOGGR suggests that the threshold value will not be known until 2020.
	Response to comment 1991:

	As explained in the *DOGGR Discussion of Calculated Acid Volume Threshold* included in the rulemaking record, the Division has determined that the quantitative assessment of risks contemplated in Public Resources Code section 3160, subdivision (b)(1)(C) is not feasible given the limited data presently available and the timeframe during which the Division must promulgate regulations regarding well stimulation treatment. For this reason, the proposed Acid Volume Threshold is not intended to be a basis for making the risk-based distinction called for under Public Resources Code section 3160, subdivision (b)(1)(C). That is, the proposed Acid Volume Threshold is not intended to be a basis for acid matrix stimulation treatments that will enhance the permeability formation to be excluded from regulation. Instead, the sole purpose of the proposed Acid Volume Threshold is to distinguish acid matrix stimulation treatment from the routine uses of acid that are already expressly excluded from the definition of well stimulation treatment under Public Resources Code section 3157.
1992	4611-1 What are these regulations for? Because number one, definition of stimulation is based upon permeability in one section, pressure in another section, breaking the rock in another section. So here is not that consistent definition and use of the word "stimulation."
1993	9321-11 Section 1761(a)(1)(A), the Division's definition of well stimulation treatment still contains vague and undefined terms that should be removed. These terms have no basis in SB 4 or the newly added sections of Article 3, Chapter 1 of Division 3 of the Public Resources Code, and the use of such terms creates uncertainty and invites abuse.
	Response to comments 1992-1993: Public Resources Code section 3157 defines the term "well stimulation treatment," but further elaboration is necessary to make it clear whether specific types of operations do or do not meet the definition. Public Resources Code section 3157 distinguishes well stimulation treatment from routine well cleanout, well maintenance, removal of formation damage from drilling, bottom hole pressure surveys, and other routine operations that do not affect the integrity of the well or the formation. The purpose of Section 1761 is to build upon the statutory definition of "well stimulation treatment" to make it as clear as possible what operations are subject to the proposed regulations and to the permitting requirements of Public Resources Code section 3160, subdivision (d).
1994	9299-9 Section 1761(a)(3) Don't really understand this formula is it 48,858 or 48.858?
1995	9291-2 "The Revised Regulations include the defined term "Acid Volume Threshold" in section 1761, subdivision (a)(3). Based on the Division's determination that wellbore damage generally extends 20-50 inches from the wellbore, the proposed acid volume threshold is designed to calculate the formation bulk volume per treated foot of the wellbore for a 36-inch radius from the wellbore."
1996	9291-3 Wellbore damage generally extends 20 to 50 inches from the wellbore? Is that measured as a radius? So drilling a horizontal borehole for production casing diameter of 9 inches a mile and a half away on the horizontal axis, will cause damage to the formation across an area of 8 feet in diameter?
	Response to comments 1994-1996: The number in the Acid Volume Threshold formula was 48,858 inches. However, that number has been removed as the formula has been revised to account for the variable size of the

	wellbore. A 50" radius equals a 100" diameter.
1997	9324-19 In Section 1761(a)(1)(A) we recommend revising this section to read "Well stimulation is a short term and non-continual process for the purposes of opening and stimulating channels for the flow of hydrocarbons. Examples of well stimulation treatments include hydraulic fracturing, acid fracturing and acid matrix stimulation. *Except for operations excluded from the scope of well stimulation treatment pursuant to Sections 1761(a)(1)(B) and 1761(a)(2):"*
1998	9324-22 In section 1761(a)(1)(B) the list of exclusions needs to explicitly include cyclic steaming to be consistent with the Legislature's intent. This addition would make the section consistent with the exclusions contained in section 1761(a)(1)(B)(2).
	Response to comments 1997-1998: Accepted. Section 1761(a)(1)(A) has been revised to further specify operations that are underground injection project operations are not well stimulation treatment.
1999	9315-5 Provisions addressing the scope of the regulations have improved but still need greater specificity and justification for excluding certain treatments from the regulations. In the current regulations, under 1761(a)(1)(A)(i) and 1761(a)(1)(A)(ii), both fracking and acid emplacement that exceed the "formation fracture gradient" or "uses a volume of fluid equal to or greater than the Acid Volume Threshold" during their operations will be considered well stimulation unless proven to the Division's satisfaction that the procedures do not enhance oil and gas production or recovery. However, what will satisfy the Division for exclusion is not clear, and the Acid Volume Threshold itself is problematic since it is an arbitrary value. And, keeping in mind the definition of "well stimulation" in SB 4, volumes of acid below the threshold can still cause increased permeability in the formation.
2000	9324-2 WSPA, CIPA, and IOPA oppose the addition of Section 1761(a)(1)(A)(i) and (ii) which provides that any treatment meeting the formation fracture gradient and/or acid volume criteria "shall be presumed to be a well stimulation treatment" unless the applicant demonstrates otherwise to DOGGR's satisfaction. Our members are greatly concerned that this presumption could create confusion as to whether the well stimulation treatment regulations apply to operations such as well maintenance and cleanout, steam flooding, water flooding and cyclic steaming. Those categories of operations are expressly excluded from the scope of well stimulation treatment under SB 4 (Pub. Res. Code Section 3157(b)) yet the language contained in the revised draft regulations create more confusion as opposed to providing more clarity. Moreover, the demonstration necessary to rebut the presumption would be burdensome and time-consuming for both operators and DOGGR staff.
2001	9324-20 In section 1761(a)1(A)(i) we recommend deleting the following verbiage: "*A treatment at pressure exceeding the formation fracture gradient shall be presumed to be a well stimulation treatment unless it is demonstrated to the Division's satisfaction that the treatment, as designed, does not enhance oil and gas production or recovery by increasing the permeability of the formation."*
2002	9288-2 Presumably with the intention to provide better clarity, the Division has created a more convoluted applicability criterion by creating new regulatory parameters to define well stimulation in the proposed regulations (fracture gradient and acid volume). These new criteria muddle what

	is recognizable by common industry language and, because they relate to a broader set of well related activities, require an operator to make a submittal for otherwise exempt activities to prove that they are truly exempt. As a result, otherwise exempt activities would be subject to regulations that require a discretionary review before they can be conducted. This is not the intent of SB 4. Fundamentally, we recommend that the Division continue to implement SB 4 to oversee hydraulic and acid fracturing and acid matrix stimulation activities as currently defined in the Interim Regulation and by statute.
2003	9288-4, 9291-1 We opposes the addition of Section l76l(a)(l)(A)(ii) that creates an added regulatory construct around an Acid Volume Threshold (AVT) which is unnecessary, given that clear delineation already exists between a routine acid cleanout activity and an acid matrix stimulation in SB 4. This section would add an administrative burden to report otherwise exempt activities and calculate artificial volume parameters that are not physically measureable. For these reasons, we recommend the deletion of this section and the AVT construction altogether.
2004	9317-5 The Acid Volume Threshold calculation is completely arbitrary and unsupported by any objective criteria, as is the pretention that it somehow differentiates between Well Stimulation Treatments and skin damage removal treatments. Neither should require permitting as neither, due to the insignificant volume represented in these individual well treatments, has the ability to materially impact USDW water quality.
2005	9294-3 The provision allowing a treatment which involves insertion of acid in a well and uses volume of fluid equal to or greater than the Acid Volume Threshold to proceed without a permit so long as "it is demonstrated to [DOGGR's] satisfaction" that the treatment does not enhance oil and gas production or recovery is vague and overbroad. This language should be revised to provide specific guidance to DOGGR as to how it should exercise this authority. In particular, the Section should outline some bases upon which DOGGR can rest its decision not to require a permit for a treatment that is "presumed to be a well stimulation treatment" pursuant to subsection (a)(1)(A)(ii).
	Response to comments 1999-2005: Rejected. Public Resources Code section 3157 distinguishes well stimulation treatment from routine well cleanout, well maintenance, removal of formation damage from drilling, bottom hole pressure surveys, and other routine operations that do not affect the integrity of the well or the formation. This distinction will not always be clear cut and the Division anticipates case-by-case technical discussion with operators regarding whether certain treatments are or are not well stimulation treatment. The purpose of Section 1761(a)(1)(A) is to establish a basic framework for that analysis, and to dispense with discussion of certain treatments that clearly are not well stimulation treatment because of the low volume of fluid used.
2006	9322-2 In section 1761(a)(1)(A)(i) and (ii) the wording "emplacing acid in a well" is vague. It should explicitly state the means of emplacement.
	Response to comment 2006: Rejected. The means of emplacing the acid is not relevant.
2007	9322-3 Section 1761 (a)(1)(A)(iii): This is not a definition. This statement is duplicated under §1777.4(d)

	without additional information.
2008	9321-12 Section 1761(a)(1)(A)(iii), as currently written, the intent of subsection (iii) is unclear and the language should be revised.
	Response to comments 2007-2008: Rejected. The provision in Section 1777.4(e) for clear indexing of exception of treatments over the Acid Volume Threshold is repeated in Section 1761(a)(1)(A)(iii) to make it clear to the public that it will be easy to locate this information on the Division's website.
2009	9321-10 We continue to believe that the applicability thresholds in the proposed rule create double standards for protecting the environment and public health and should be eliminated. SB 4 qualitatively excluded certain activities from the definition of "well stimulation" – notably "routine treatment for the purpose of removal of formation damage due to drilling," which is one of the most common forms of reservoir stimulation. The Division's AVT calculation seeks to provide a quantitative method to distinguish between these exempt and covered activities. These qualitative and quantitative thresholds have the potential to exempt many stimulation treatments from coverage under these rules, despite the fact that those treatments may pose the same risks as treatments that are covered. As such, they create a system in which environmental and human health and safety risk is not consistently managed across all oil and gas operations.
2010	4684-5 Section 1761(a)(1)(A)(ii) allows DOGGR to determine that an acid treatment is not well stimulation, even if it is above threshold volume. The Division should also be allowed to determine that an acid treatment below the threshold volume is in fact well stimulation.
2011	9299-5 Section 1761(a)(1)(A)(ii) What would they be doing it for if not to increase efficiency of well?
	Response to comments 2009-2011: Rejected. The purpose of the Acid Volume Threshold is to identify a conservative volume threshold, under which it can safely be said that a treatment does not meet the definition of a well stimulation treatment. Public Resources Code section 3157 defines "well stimulation treatment" to mean a treatment of a well that is designed to enhance oil and gas production by increasing the permeability of the formation. The definition of "well stimulation treatment" expressly excludes routine well cleanout work, well maintenance, removal of formation damage, bottom hole surveys, and other activities that do not affect the integrity of the well. Based on the Division's determination that wellbore damage generally extends 20 to 50 inches from the wellbore, the Acid Volume Threshold is designed to calculate the formation bulk volume per treated foot of the wellbore for a 36-inch radius from the wellbore. A distance of 36 inches was selected because it is a conservatively smaller area than the area where wellbore damage could typically occur. If a treatment is below the Acid Volume Threshold, then it is clearly within the range of wellbore cleanout, maintenance, and removal of formation damage. Well treatments using acid that exceed the Acid Volume Threshold are presumed to be well stimulation treatment, unless it is successfully demonstrated to the Division that the treatment will not increase the permeability of the formation. Additional discussion of the basis for the Acid Volume Threshold can be found in the document

	titled *Discussion of Calculated Acid Volume Threshold*, which is included in the rulemaking record.
2012	9321-13 Section 1761(a)(1)(B), additional clarification and detail is needed in subsection (a)(1)(B) to ensure that acid matrix stimulation treatments are being properly covered under the rules using the new Acid Volume Threshold (AVT) calculation. The Division must clarify which fluid volume should be used to determine the applicability of each treatment using the AVT threshold method. This is critical because, as demonstrated below, the volume per foot of treatment fluid used may vary by stage and fluid (preflush, main fluid, overflush). The AVT should be based on the total fluid volume.
2013	9324-23 In section 1761(a)(1)(B)(3) we recommend revising the section to read that the "Acid Volume Threshold means" a volume of acid, in gallons..." This change will provide clarification that the "volume" referenced is the acid volume and does not include non-acid fluid volumes such as displacement water volumes.
2014	9299-7 Section 1761(a)(1)(B) What type of treatment are they speaking of here?
2015	9303-10 I'm confused why the legislative standard appears to be set on a gallon/foot basis (although I know service company representatives speak in this jargon). Porosity is the variable that will determine the acid volume and control the gallon/foot result. Truly, each well will need to be evaluated on a case-by-case basis, but please correct the threshold formula calculation to that described above so that operators can actually remove damage.
2016	9324-21 Section 1761(a)(1)(A)(ii) & (a)(1)(A)(iii) needs to clarify that the "volume of fluid" referenced is the acid volume and does not include non-acid fluid volumes such as displacement water volumes.
2017	9298-5 Section 1761(a)(3) the term "treated formation porosity" should be defined. The definition should either appear here when the term is introduced or the reader directed to the page where the definition appears. In addition, the formula used to determine the "acid volume threshold" requires, at least, a justifying reference.
	Response to comments 2012-2017: Accepted in part. Section 1761(a)(1)(A)(ii) was revised to clarify that for the purpose of determining whether a treatment is greater than the Acid Volume Threshold, the volume of fluid used in a treatment does not include the volume fluid used for a pre-flush that does not use acid or an overdisplacement that does not use acid. Section 1761(a)(1)(B)(3) was revised to clarify that the lowest calculated or measured porosity in the zone of treated formation is the treated formation porosity to be used for calculating the Acid Volume Threshold.
2018	9298-4 Section 1761(a)(1)(B) excludes "routine well cleanout" (which may involve any number of hazardous chemicals) and "routine treatment for the purpose of removal of formation damage" (which again may involve the use of hazardous chemicals) and "treatment that involves emplacing acid in a well and that uses a volume of fluid that is less than the Acid Volume Threshold for the operation" (which again, by definition, involves the use of hazardous chemicals). Despite the fact that these processes are not inherent to the definition of "well

	stimulation treatment", they are nonetheless inherently dangerous. The regulation of these processes should either be included here or the reader directed to that section of the bill where the regulation of these processes are clearly defined.
2019	9322-4 Section (a)(1)(B)(1) Since §1781(a) and (b) define acid stimulation treatments that are or can be applied at pressures lower than the formation fracture gradient, it is not clear how the definition of Well Stimulation Treatment can exclude a process that involves emplacing acid in a well using a volume of fluid that is less than the Acid Volume Threshold for the operation, and is below the formation fracture gradient.
2020	4618-2, 9315-6 Chemical and acids should be reported regardless of the volume thresholds to allow the operator not to report it, the acid concentrations are below the seven percent or less would not document the potential cumulative effects of such chemicals.
2021	9283-8 Although section 1761 defines well stimulation with reference to the acid volume threshold, we emphasize that DOGGR should require reporting of all uses of acids to DOGGR, without regard to an acid volume or concentration threshold. Reporting on all acid use should be disclosure should be required even if only treatments using acid in excess a particular threshold are regulated as well stimulation treatments.
2022	9280-8, 9282-4, 9282-15 Expand the scope of the regulations to cover all forms of well stimulation regardless of penetration distance from the well-bore or acid concentration. Include gravel packing in the scope. The intent of SB 4 was to regulate all forms of well stimulation; as proposed, the regulations may leave some forms of well stimulation unregulated.
2023	4695-4 A free pass! Well stimulators are exempt from clean-up. They can leave it all.
2024	4620-4 The proposed rules will still exempt acid matrix stimulation operation that do not penetrate more than 36 inches in new formation. All types of stimulation should be subject to these rules.
2025	4608-5 I don't see anything, and I have to read it for a third time, but I don't see anything that says that the type of acid needs to be gathered, that DOGGR needs to be allowed to know what -- DOGGR or the people doing the scientific study need to know whether it's acetic acid, which is potable, it's called vinegar; or whether it's hydrofluoric acid, which at the same concentration if you splash a couple of tablespoons on your skin, you may die. Additionally the concentration is extremely important.
2026	4615-2, 4620-9 All acidizing activities should be reported. There shouldn't be any arbitrary threshold to be reported.
	Response to comments 2018-2026: Rejected. Public Resources Code section 3157 distinguishes well stimulation treatment from routine well cleanout, well maintenance, removal of formation damage from drilling, bottom hole pressure surveys, and other routine operations that do not affect the integrity of the well or the formation. Section 1777.4 is added to specify data that must be submitted for acid treatments that do not

	meet the definition of a well stimulation treatment.
2027	9321-15 Section 1761(a)(3), the Acid Volume Threshold (AVT) calculation relies on a number of simplifying assumptions to calculate the volume of acid that could penetrate 36 inches into a given formation. We recommend that the Division reevaluate the concept of the AVT calculation, including an evaluation of alternate, more robust methods of calculating penetration distance and volume threshold, provide additional guidance on inputs to this or an alternate calculation, and provide examples of acid treatments that have been performed in California that would fall both above and below the threshold calculation in order to allow stakeholders to better assess the implications of such a threshold.
	Response to comment 2027: Rejected. Simplification is built into the Acid Volume Threshold to minimize complications added to an already complicated regulatory scheme. The Acid Volume Threshold has been set at a conservatively low level, in part to account for distortions caused by that simplification.
2028	9298-3 The term “formation fracture gradient” should be defined. The definition should either appear here when the term is introduced or the reader directed to the page where the definition appears.
	Response to comment 2028: Rejected. The term “formation fracture gradient” is commonly understood by the Division and the regulated public.
2029	9294-2 We agree that all submissions for well treatment that exceeds the formation fracture gradient and or inserts acid in the well above the Acid Volume Threshold as well as DOGGR’s determination that the well treatment is not a well stimulation and the basis for the determination should be available to the public. This requirement should be further strengthened by specifying that the submissions should be available for public review and comment at least 30-days prior to DOGGR issuing its determination.
	Response to comment 2029: Rejected. A treatment that is not a well stimulation treatment is not subject to the permitting and public disclosure requirements of Public Resources Code section 3160 and these regulations. Requiring 30-day waiting period for such a treatment would impose an unnecessary regulatory burden.
2030	9283-6 There is an error in the definition of “well stimulation treatment:” Public Resources Code §3157(a) provides that “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.” Proposed § 1761(a) unlawfully narrows this definition by adding conditions not present in the statute. The proposed regulation specifies that “Well stimulation is a short term and non-continual process,” but the statute provides no support for these qualifiers. Limiting well stimulation to “short term and non-continual process[es]” invites needless dispute over the meaning of these undefined and imprecise terms and potentially excludes treatments that are well within the legislative mandate. Similarly, proposed § 1761(a)(1)(B) excludes from the definition of well stimulation treatment numerous activities, such as gravel pack treatment, not

	excluded by PRC section 3157(b).
2031	9299-2 Section 1761(a)(1)(A) “short term” is not correct as well stimulations can be repeated multiple times on same well. Well stimulation process is of short duration.
2032	9321-16 Regarding Section 1761(b), well stimulation vs. underground injection, we approve of the Division’s proposal to ensure that well stimulation treatments performed in any well, regardless of well type (e.g. production, injection), are subject to these rules. However, we recommend that the Division accomplish this simply by deleting subsection (b). The language added as subsection (b)(3) also appears to conflict with Article 4, Section 1780, Subsection (b) of the proposed rules. The Division should clarify in this section that all well stimulation treatments that meet the definition of well stimulation treatment in Section 1761 will be subject to these rules, regardless of the type of well in which such a treatment is performed.
2033	9283-7 Well stimulation treatment can coincide with underground injection projects, and DOGGR must clarify its language regarding the relationship between the two. Nothing in the statutory definition of “well stimulation treatment” excludes underground injection projects. DOGGR’s proposed § 1761(b)(3) explicitly acknowledges that a well can undergo well stimulation treatment while part of an underground injection project. In some cases a process may meet the definitions of both an underground injection project and a well stimulation treatment. In other cases, well stimulation and underground injection may be used at different times on the same well. In either situation, both regulatory frameworks must apply. DOGGR must therefore clarify proposed § 1780(b) to indicate that where an underground injection project or other well would ordinarily be subject to sections 1724.6 through 1724.10 or 1748 through 1748.3, addition of a well treatment does not remove the well from the ambit of these regulations, consistent with proposed §1761(b)(3).
2034	9321-14 Section 1761(a)(2), the Division’s definition of “underground injection project” still contains vague and undefined terms. As stated in our previous comments, we believe this definition is unnecessary, creates uncertainty and invites abuse, and should be deleted from the rules altogether. Enhanced recovery techniques that do not fall under the definition of well stimulation treatment should instead be listed in subsection (a)(1)(B).
2035	9299-3, 9299-6 Section 1761(a)(1)(A)(i) and (iii) violates CCR 1724.10.
2036	9299-8 Section 1761(a)(2) No mention of maintaining pore pressure to prevent subsidence.
2037	9288-3 We oppose the addition of Section 1761(a)(l)(A)(i), which creates a presumption that any treatment at pressure exceeding the formation fracture gradient is a well stimulation treatment unless proven otherwise to the Division's satisfaction. Given the potential confusion that underground injection projects permitted separately under the Underground Injection Control (UIC) program could also be subject to the requirements of the proposed regulations (a presumption that operators would need to rebut in each case), we recommend deleting the language in Section 1761(a)(l)(A)(i) entirely.
2038	9299-4 Section 1761(a)(1)(A)(ii) Issue of inclusion by definition of injection well acid fracturing and methanol use.

2039	9299-10 Section 1761(b)(3) should apply to LAI-1-2267 injection frack well.
	Response to comments 2030-2039: Rejected. It is necessary to define “underground injection project” or “subsurface injection or disposal project” in order to distinguish underground injection projects from well stimulation treatment. Injection projects for enhanced oil recovery, injection disposal, and underground gas storage are covered by extensive, existing regulations, found in sections 1724.6 through 1724.10 and sections 1748 through 1748.3 of the regulations. These requirements for a “subsurface injection or disposal project” do not apply to well stimulation treatments. The scope, duration, and purpose of injection projects and well stimulation treatments are substantially different, and therefore the regulatory approach to each practice is different. However, because both practices involve putting fluids into an oil or gas well, some have advocated that the Division should apply the underground injection project regulations to well stimulation treatments. Disagreement about the distinction between these two categories of operations has been the subject of litigation in state and federal courts. For this reason, Section 1761 clearly defines the term “underground injection project” and is intended to resolve any confusion about the Division’s intention to regulate well stimulation treatments in a manner that is distinct from the way that underground injection projects are regulated. The definitions note that well stimulation treatment is a short term and non-continual process and that an underground injection project involves sustained or continual injection, as these are salient distinctions between the two types of operations. Section 1761(b)(3) was added to further clarify that regulations regarding well stimulation treatment apply to well stimulation treatment operations and regulations regarding underground injection project operations apply underground injection project operations. Wells that are part of underground injection project are not exempt from these regulations. If well stimulation treatment is done on a well that is part of an underground injection project, then the well stimulation treatment operations are subject to the requirements for well stimulation treatment. However, the requirements for well stimulation treatment do not apply to the underground injection project operations, as there are separate requirements that apply to those.
2040	5518-1 On page 4, I note how you describe how the acid volume threshold is calculated, and it starts out -- basically, it's the third paragraph on the fourth page where it talks about the 36-inch radius from the wellbore, emphasis on the word "from." That is the description that you have given for this calculation on Page 4. If you turn to page 5 where it illustrates the calculation, the calculation is not correct based on what you stated on Page 4 there. It starts at the center of the wellbore for the 36-inch radius, and I believe your calculation is incorrect, and I hope you guys can revisit that and straighten it out because it takes two and a half inches to three and a half inches away from the area calculation which restricts the acid volume we are already being hit pretty hard on.
2041	9284-1 The well is often flushed immediately prior to applying acid stimulation treatment fluid. This “pre-flush” serves a number of important purposes: to ensure that formation will receive fluids (one would not want a column of acid sitting in the wellbore because the injectivity of the formation had not been established), to condition the formation for the fracture (e.g., stripping oil off the grains of the formation) and to establish conductivity. Similarly, the well is often flushed immediately following the application of acid stimulation treatment fluids to displace the spent acid and associated near-wellbore damage deeper into the formation (such displacement is measured in inches or feet). These three phases—pre-flush, acid stimulation treatment, and over

	displacement) are pumped in a continuous flow, and so it is important to clarify that pre-flush and over displacement fluid volumes are not included within the “Acid Volume Threshold” for the purposes of calculating treatments subject to the Proposed Rule. Inclusion of these fluids within the definition of “Acid Volume Threshold” would significantly reduce the area of near-wellbore formation damage that could be effectively treated without triggering the Proposed Rule, frustrating the express intent of the Legislature and the Division to exclude such routine wellbore operations from the Proposed Rule because they do not pose a significant risk. With an important exception described below, these pre-flush and over displacement fluids are not comprised of acid, but rather water (either freshwater or lease water) or nitrogen conditioned with a non-emulsifier, clay stabilizer and/or surfactant. Wells requiring multiple stages of stimulation treatment may utilize the volume of acid for the next stage to displace the spent acid and associated near-wellbore damage from the last stage, conserving water resources that would otherwise be used for over displacement. Inclusion of this displacement volume in the calculation of the Acid Volume Threshold would the acid to two treatments even though it comes into contact with the formation only once.
2042	9303-9 Referring to page 4 of the “Discussion of Calculated Acid Volume Threshold”, the basis for the calculation is “a 36-inch radius FROM (my emphasis) the wellbore”. That implies, at minimum, that the damaged radius begins at the OUTSIDE of the casing (there would also be a cement sheath which could also be estimated) and extends 36” into the formation. Therefore, the wellbore radius, rw, needs to be added to the arbitrarily established damaged radius (36”), rd, to get the correct “Acid Threshold Radius” (or “Sub-SB 4 Reporting Radius”), which truly permits removing damage 36” into the formation. As correctly stated in the proposed regulation, the wellbore acid volume (πrw 2h) would have to be subtracted from the resultant corrected formation volume calculation to determine the acid threshold volume. As a comparative example, for a 7” wellbore, the bulk volume (no porosity) calculation on a footage basis would yield the following: ((3.5” + 36”) 2 x π x 12”) – (3.5” 2 x π x 12”) = 58,358 in3 versus the 48,858 in3 calculated from the point source cylinder on Page 5 of the “Discussion of Calculated Acid Volume Threshold”, an almost 20% volume increase. Even if the casing was only 5”, the corrected volume increase is over 13%.
2043	4703-1 On page 4 of the 5 page document (Discussion of Calculated Acid Volume Threshold), Paragraph 3, the following statement is made: "is designed to calculate the formation bulk volume per treated foot of the wellbore for a 36-inch radius from the wellbore." My interpretation of the wording would be that the 36" radius of the volume to be treated would start from the wellbore. However, in the example given on Page 5, which is replicated in Figure 1, the radius pictured emanates from the center of the wellbore. To determine the volume of gallons needed to occupy (treat) the 36" radius per treated foot, the following formula in gallons was presented: Cylinder Volume = *n* R^ 2 H / (231 in^3/gallon) Where R = 36" and H = 12" Multiply by porosity (φ) of the formation to obtain Pore Volume The calculated pore volume defines the maximum treating volume of acid that could be used, but the formula does not take into consideration the size of the hole drilled. Further confusing the issue is the statement "Depending on the size of the casing, the volume of the casing for the number of treated feet is subtracted to fully account for the volume placed into the formation." If I interpret this correctly, the operator is to deduct the volume that would remain inside the casing. This would be in direct contravention of Chapter 4, Subchapter 2, Environmental Protection, section 1782, clause (5): "The well stimulation treatment fluid shall not be of a concentration level that will damage the well casing, tubing, cement, or other well equipment, or would otherwise cause degradation of the well's mechanical integrity during the treatment process". When dealing with acid, you always try to displace the acid away from inside the wellbore so that the contact time made with the casing and the cement sheath is minimized. If we agree that typically, the

	radius of formation damage is between 20 to 50 inches beyond the hole drilled by the bit (page 4 paragraph 2 of Discussion of Calculated Acid Volume Threshold), I believe a more correct approach to determining the threshold volume would be to consider the 36" radius of the volume to be treated as starting from the outside of the cement. This is at a minimum, the first formation that would be contacted by any remedial treatment. To ensure casing and cement integrity, the operator would displace the acid beyond the bit diameter, not leave any acid inside the casing (Rc). Thus, the volume contacted by the acid will be the circular ring between the bit diameter and the bit diameter plus 36". I also believe this more accurately describes the volume that is initially damaged during drilling and should be acidized. The problem with the initial diagram drawn on page 5 is that in the extreme, an operator that drills a well with casing equal to or exceeding 36", would not be allowed to inject any acid into the formation at all because it would exceed 36".
	Response to comments 2040-2043: Accepted in part. Acid Volume Threshold calculation formula in Section 1761(a)(3) is revised to reflect a volume extending 36” from the outside of the wellbore, based upon the size of the drill bit used in the treated zone.
2044	9284-2 The Division has published a thoughtful account of the reasoning behind the Proposed Rule’s quantitative method for calculating the Acid Volume Threshold in a white paper entitled Discussion of Calculated Acid Volume Threshold (the White Paper). The White Paper acknowledges that wellbore damage generally extends up to 50 inches from the wellbore, yet has proposed a calculation for the Acid Volume Threshold that reflects a “conservatively smaller area”—a 36-inch radius from the center of the wellbore. In practice this means that the routine removal of wellbore damage between 30 and 50 inches from the wellbore would potentially trigger application of the Proposed Rule despite the express exclusion of such maintenance operations under Public Resources Code section 3157. As this reflects 40% of the general extent of wellbore damage recognized as typical by the Division, we respectfully suggest that the calculation is over-inclusive. We recommend increasing the volume of the cylinder to 94,248 inches. We believe that a 50-inch radius (or 44 inches into the formation if measured from a typical wellbore center) is sufficiently conservative for the Division’s purposes and would preserve the ability to remove damage from the wellbore. Without this change, the Proposed Rules would significantly increase the difficulty of treating those last 14 inches, limiting the effectiveness of the treatments, risking a decrease in production and frustrating the intent of SB 4, without any significant corresponding benefit. Because every inch of formation damage is so significant to production, we also respectfully request the radius of the wellbore be excluded from the calculation of the cylinder volume.
2045	9324-3 WSPA, CIPA, and IOPA’s members have reviewed the proposed acid volume threshold calculation in detail. Based on our review, we believe there is substantial technical basis for modifying the proposed definition of “Acid Volume Threshold” as it defines acid treatments with a radius greater than 36 inches as stimulations even though the majority of acid treatments are simply cleaning out formation damage to distances greater than 36 inches. In fact, the State’s own white paper that accompanied the release of the revised regulations acknowledges: “Typically, the radius of formation damage is between 20 to 50 inches.” Consistent with the Division’s white paper, WSPA, CIPA, and IOPA believe it is imperative that the draft regulation clearly allow for a radius of 50 inches, calculated from the external portion of the wellbore to account for routine cleanout of deeper formation damage. SB 4 is clear that these kinds of routine well maintenance operations are excluded to avoid excessive administrative burden on operators and DOGGR and to keep the regulations focused appropriately on true well stimulation treatments.

2046	9324-4 WSPA, CIPA, and IOPA are also requesting modification of the Acid Volume Threshold (AVT) calculation as proposed. As we understand the intent of the AVT formulation, it is a calculation of the pore volume in the cylindrical volume outside of the wellbore 36" (as noted earlier, we believe 50" is the appropriate value) from the well centerline, on a gallon per foot basis. Currently, the equation incorrectly calculates the pore space in this cylindrical volume by first treating the well bore as porous rock and then deducting an empty well bore volume, thus under calculating the true value. WSPA, CIPA, and IOPA propose modifying the calculation to allow for penetration up to a radius of 50", including the volume needed to initially fill the wellbore prior to being displaced into the formation. The proposed modification is: R= Outside radius of well bore (correctly being the outside dimension of the cement around the external casing) (inches) Rlim = Nominal limit of acid penetration from centerline of the well (50"+ Radius of the well and cement) (inches) H = Length of perforation section along the well centerline (Set to be 12" so it becomes a volume per foot) (Inches) P = % porosity (as a fraction) 231 cubic inches in a gallon AVT (gallons/foot) = π x (Rlim2 - R2) x P x 12] / 231 + [π x R2] / 231 WSPA, CIPA, and IOPA would also recommend that DOGGR consider alternative means to distinguish well maintenance using acid from acid fracturing or acid matrix stimulation, based upon the distinct differences in these operations.
	Response to comments 2044-2046: Rejected. The purpose of the Acid Volume Threshold is to identify a conservative volume threshold, under which it can safely be said that a treatment does not meet the definition of a well stimulation treatment. Public Resources Code section 3157 defines "well stimulation treatment" to mean a treatment of a well that is designed to enhance oil and gas production by increasing the permeability of the formation. The definition of "well stimulation treatment" expressly excludes routine well cleanout work, well maintenance, removal of formation damage, bottom hole surveys, and other activities that do not affect the integrity of the well. Based on the Division's determination that wellbore damage generally extends 20 to 50 inches from the wellbore, the Acid Volume Threshold is designed to calculate the formation bulk volume per treated foot of the wellbore for a 36-inch radius from the wellbore. A distance of 36 inches was selected because it is a conservatively smaller area than the area where wellbore damage could typically occur. If a treatment is below the Acid Volume Threshold, then it is clearly within the range of wellbore cleanout, maintenance, and removal of formation damage. Well treatments using acid that exceed the Acid Volume Threshold are presumed to be well stimulation treatment, unless it is successfully demonstrated to the Division that the treatment will not increase the permeability of the formation. Additional discussion of the basis for the Acid Volume Threshold can be found in the document titled *Discussion of Calculated Acid Volume Threshold*, which is included in the rulemaking record.
	<u>1777.4. Well Maintenance and Cleanout History</u>
2047	9324-5 WSPA, CIPA, and IOPA strongly oppose the addition of language requiring reporting for maintenance activities that are explicitly exempted in the legislation authorizing this rulemaking.

	This section imposes burdensome new reporting requirements for operations that are not within the scope of well stimulation treatments regulated under SB 4 (see Section 1777.4(c)).
2048	9288-6 Section 1777.4 imposes an onerous reporting requirement to conduct AVT calculations on all acid-related activities performed on a well and provide that information to the Division within 60 days. As a result, many thousands of calculations and reporting would be required for well work that is not acid well stimulation. This is clearly outside the scope of SB 4. In any event, oversight of this process is already provided via the well history and agency inspection. While Chevron understands the Division's reasons for requesting this information, we do not support this proposed requirement. The Division has not demonstrated the necessity to impose these new reporting requirements on operations that are not statutorily defined well stimulation treatments. Chevron strongly opposes Section 1777.4 and recommends the Division delete this requirement.
2049	9317-6 Section 1777.4 requirements to submit detailed reports on every procedure that employs acid, regardless of it reaches the completely arbitrary level that requires permit approval, is excessively burdensome and intrusive. Forcing operators to work for the state of California by gathering and reporting data for their study to attempt to identify potential negative impacts from stimulations is a form of state sponsored slavery. It is immoral, indefensible, and doesn't even have any upside of consequence.
	Response to comments 2047-2049: Rejected. Public Resources Code section 3213 requires that acid treatment data be included in the well history. Section 1777.4 implements that statutory requirement by specifying certain information that must be included in the acid treatment data. The further purpose of Section 1777.4 are to create a record that the Division can use to verify that treatments are correctly identified as not being a well stimulation treatment. Operations involving pressure to the well are also included in Section 1777.4 for the purpose of generating a record for verification. Under Section 1777.4, operators are required to submit a brief description of the treatment and include the calculations that would demonstrate that the treatment is not a well stimulation treatment. Section 1777.4(d) has been added, providing for submission of acid treatment data on an aggregated basis, at the Division's discretion. Under Section 1777.4(d), an aggregation plan would specifically describe the treatment and identify the number of times it is performed on a given well, but the information would be submitted annually and fluid volume can be aggregated by oil field.
2050	9322-5 Section (a)(2). The record of fluid volumes emplaced in the well during the stimulation operation must specify the volume of water used separately from other components of the fluid. Other components should be identified by types and concentrations.
2051	9311-16, 9312-3 Many of the same dangers to public health and safety are present when a well operator conducts a well maintenance or well cleanout procedure. Given that the type of risks are mostly unchanged, DOGGR should require operators to submit the same information for well maintenance and cleanout as they do for well stimulation, including the disclosure of chemicals used and their quantities and chemical analysis of water used and the quantity of water used. As currently drafted, the Proposed Regulations would not alert nearby residents to potential risks posed by using harmful chemicals in the process of maintaining or cleaning a well. With no data on the chemicals used in well maintenance, the public also has no way of knowing the quantity of chemicals being used across a county or the state in the aggregate. Furthermore, having a

	separate set of disclosure requirements for well maintenance creates an incentive for well operators to avoid SB 4's disclosure requirements by mischaracterizing their operations. Applying the same disclosure requirements to well maintenance would reduce the incentive for operators to abuse this loophole. For these reasons, well history reports should require disclosure of chemical information.
2052	9294-4 This Section should be revised to require that whenever fluid containing acid is placed in a well or pressure is applied to the well for reasons other than well stimulation, the operator must submit information regarding the chemical composition, including the acidity, of the fluid used.
2053	9294-5 The regulations should require that the operator submit information regarding the quantity and chemical composition of any fluids or substances recovered from the well after the acid or pressure is applied and the methods of disposal and/or treatment of any recovered fluid or substances.
2054	9298-6, 9321-17 The information in this section should be submitted to the Division before well stimulation has begun… not after it is completed.
2055	4684-4 The 7% concentration threshold is innocuous for acetic acid (vinegar) but extremely hazardous for hydrofluoric acid. The revised regulations replace the concentration threshold with a volume per treated foot threshold, as required by SB 4. However, both volume and concentration are needed to calculate the amount of acid emplaced in the well. Different acids or mixtures of acids will have different effects in terms of penetrating the formation and reacting with minerals and wellbore deposits. So it is also important to know the concentration of each acid. 1777.4 We recognize that you are only beginning to collect data leading to a quantitative risk assessment, and urge you to include more information in the below-threshold reporting requirements. At a minimum, the chemical names of the acids and their concentrations and volumes should be reported for the below-threshold well logs. Note that the most hazardous acid used, hydrofluoric acid, is often transported and reported as a solid compound, ammonium bi-fluoride (sometimes abbreviated as ABF). ABF is less dangerous to ship and handle, but when dissolved in water, produces hydrofluoric acid. ABF must therefore be considered as its equivalent concentration of hydrofluoric acid (chemical formula HF) for all reporting of either above- or below-threshold acids.
	Response to comments 2050-2055: Rejected. Public Resources Code section 3157 distinguishes well stimulation treatment from routine well cleanout, well maintenance, removal of formation damage from drilling, bottom hole pressure surveys, and other routine operations that do not affect the integrity of the well or the formation. A treatment that is not a well stimulation treatment is not subject to the permitting and public disclosure requirements of Public Resources Code section 3160 and these regulations. Section 1777.4 is added to specify data that must be submitted for treatments that do not meet the definition of a well stimulation treatment.
2056	9324-24 In section 1777.4(b) we recommend revising the section to read "Within 60 days of completing an operation on a well that involves application of pressure <u>exceeding formation pore p</u>ressure, the operator shall submit the following information with the division for inclusion in the well history" The revision makes it clear that simple hydrostatic pressure maintenance does not require the submittal of the required information.

	Response to comment 2056: Accepted.
2057	9298-7 The term “bottom-hole pressure” should be defined and (ideally) a short statement of its significance/importance included. The definition should either appear here when the term is introduced or the reader directed to the page where the definition appears.
2058	9284-3 Add the term “calculated bottom-hole pressure applied to the formation” to Section 1777.4(b)(2) of the regulations. Explanation: Methods for calculating bottom-hole pressure are well-established and eliminate the need for physically measuring bottom-hole pressure during routine operations. This revision clarifies that bottom-hole pressure can be calculated for the purposes of section 1777.4.
	Response to comments 2057-2058: Accepted in part. Bottom-hole pressure can be measured or it can be calculated. Section 1777.4(b)(3) was added, stating that if the bottom-hole pressure was calculated, then the calculation must be provided.
2059	9299-11 Section 1777.4(b): What happened to field rules here?
	Response to comment 2059: Existing regulation Section 1722(k) states that when sufficient geologic and engineering information is available from previous drilling or producing operations, operators may make application to the Supervisor for the establishment of field rules, or the Supervisor may establish field rules or change established field rules for any oil or gas field. There is not apparent connection between Section 1722(k) and Section 1777.4(b).
2060	9294-6 All the information required in Section 1777.4 and the additional information outlined above should be provided within 30 days of completing any of the operations envisions in this section.
	Response to comment 2060: Rejected. The 60-day timeframe is consistent with the timeframe for submitting well history under Public Resources Code section 3215.
2061	9298-8 Section 1777.4(c)(2) states that “this section does not apply to” “underground injection project operations” regulated under Sections 1724.6 through 1724.10 or Sections 1748 through 1748.3”. Given the importance of “underground injection project operations” and their potential impact on groundwater quality and public safety, the relevant information stipulated in those sections should be supplied in an Appendix to SB 4 so that the reviewing public can actually get some idea of what actually is being “excepted (not legally considered)” in this provision.
2062	9298-9 Section 1777.4(c)(3) states that “this section does not apply to” “drilling, redrilling, reworking, plugging or abandonment operations” permitted under “Public Resources Code section 3203 or 3229”. ”. Given the importance of “drilling, redrilling, reworking, plugging or abandonment operations” and their potential impact on groundwater quality, public safety and public legal liability, the relevant information stipulated in those sections should be supplied in an Appendix to

	SB 4 so that the reviewing public can actually get some idea of what actually is being "excepted (not legally considered)" in this provision.
	Response to comments 2061-2062: The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division's goals in the development of these processes and technologies.
2063	8300 -1 This is a confusing sentence that citizens believe should be rewritten for clarity: *1777.4 3-d The searchable index will clearly indicate each submission for a treatment that exceeds the formation fracture gradient ...or exceeds the Acid Volume Threshold, and such submissions shall include the Division's determination that the treatment is* ***not*** *well stimulation treatment and (include) the basis for the determination.* It is the citizens' opinion that the above provides a loophole for the well-stimulation treatment applicant and the Division, allowing the Division to determine that exceeding the thresholds is not breaking the law when it is. If this is not the intention of the above sentence, citizens believe that it should be rewritten to say exactly what is intended and perhaps the word **not** should be eliminated.
	Response to comment 2063: Rejected. The Acid Volume Threshold is a tool for identifying treatments that clearly are not well stimulation treatment. Exceeding the Acid Volume Threshold creates a presumption that the treatment is a well stimulation treatment, but does not necessarily mean that the treatment meets the definition of a well stimulation treatment. As stated in Section 1761(a)(1)(A)(ii), "A treatment that involves emplacing acid in a well and that uses a volume of fluid equal to or greater than the Acid Volume Threshold for the operation shall be presumed to be a well stimulation treatment unless it is demonstrated to the Division's satisfaction that the treatment, as designed, does not enhance oil and gas production or recovery by increasing the permeability of the formation."
	1780. Purpose, Scope, and Applicability
2064	9321-18 Subsection (b) appears to conflict with Section 1761(b)(3), which clarifies that these rules do apply to underground injection projects when stimulation is performed in wells that are part of those projects. The use of broad terms like "underground injection projects" and "subsurface injection and disposal projects" creates confusion and should be eliminated. The Division should make clear that all operations that meet the definition of well stimulation treatment in Section 1761 will be subject to these rules, regardless of the type of well in which such a treatment is performed. The activities that define the beginning and end of the well stimulation treatment should be broadened to also encompass those activities performed in preparation for pumping fluids into the well, including the pressure testing activities required by Section 1784.1.
	Response to comment 2064: Section 1761(b)(3) and Section 1780(a) and (b) are consistent in stating that regulations regarding well stimulation treatment apply to well stimulation treatment operations and regulations regarding underground injection project operations apply underground injection project operations. Wells that are part of underground injection project are not exempt from these regulations. If well stimulation treatment is done on a well that is part of an underground injection project, then the well stimulation treatment operations are subject to the requirements

	for well stimulation treatment. However, the requirements for well stimulation treatment do not apply to the underground injection project operations, as there are separate requirements that apply to those.
2065	9289-4 In section 1780(b), add the phrase "except to the extent that Section 1785.1 expands upon the requirements of Sections 1724.6 through1724.10 and Sections 1748 through 1748.3 for any and all underground injection projects that result fully or in part from well stimulation activities,"
	Response to comment 2065: Rejected. Section 1785.1 does not expand upon the requirements of Sections 1724.6 through1724.10 and Sections 1748 through 1748.3 for any underground injection projects. Regulations regarding well stimulation treatment apply to well stimulation treatment operations and regulations regarding underground injection project operations apply underground injection project operations.
2066	9288-5 Since the straightforward acid concentration of seven percent is deleted in Section 1780(a), a greater number of acid jobs that are currently exempted by statute will now qualify as a presumptive well stimulation treatment that each operator will in each case need to rebut. Further, the language does not include a timeline for the Division's determination following the operator's rebuttal of whether a treatment qualifies as a well stimulation treatment or is otherwise exempt.
	Response to comment 2066: Public Resources Code section 3157 distinguishes well stimulation treatment from routine well cleanout, well maintenance, removal of formation damage from drilling, bottom hole pressure surveys, and other routine operations that do not affect the integrity of the well or the formation. This distinction will not always be clear cut and the Division anticipates case-by-case technical discussion with operators regarding whether certain treatments are or are not well stimulation treatment. The purpose of Section 1761(a)(1)(A) is to establish a basic framework for that analysis, and to dispense with discussion of certain treatments that clearly are not well stimulation treatment because of the low volume of fluid used.
2067	9282-16 The purpose, scope, and applicability of Article 4 (Well Stimulation Treatments) is too narrowly defined in the draft regulations, and must be amended in the final regulations. In addition, an acid concentration threshold is in contravention of the plain text of SB 4. SB 4 mandates that the Division establish a threshold volume for acid not a threshold concentration. SB 4 directs the Division to set the volumetric threshold "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." The Department does not provide any assessment or basis to support the proposed concentration threshold. In the absence of such an assessment, the Department must set the volumetric threshold at zero; any volume of acid should be subject to the proposed rules.
2068	9308-3 The exception for up to 7% acid concentration is too high for some acids, in particular, hydrofluoric acid, which because of its extraordinary properties should have either no exception or at most a 1% limit. In addition, SB 4 refers to acid volume per treated foot and/or total acid volume—neither of which is mentioned in the interim regulations. We also expressed our concern about this issue in our comments on the interim regulations last December.

	Response to comments 2067-2068: Accepted. The acid concentration threshold has been removed from Section 1780(a).
2069	9299-12 Section 1780(c), Flowback? For how long?
2070	9299-14 Flowback continues after equipment removed for well stimulation process continues past removal of equipment.
	Response to comment 2070: Rejected. The commencement and termination of treatment operations do not mark the beginning and end of the regulation treatment operations. There are requirements that must be complied with in advance of well stimulation, and there are requirements that must be complied after well stimulation treatment is complete. It is necessary to define the commencement and termination of well stimulation treatment operations because the timeframes for certain requirements are triggered at the commencement or end of a well stimulation treatment. Section 1780(c) identifies concrete activities that clearly indicate the time when the actual treatment is occurring, and therefore these activities are ideal for staging the pre-treatment and post-treatment requirements. If well stimulation treatment were said to begin and end long before or after the treatment was actually occurring, then the timing public disclosures, neighbor notifications, and well evaluations would be disrupted and statutory purposes would be undermined.
2071	4627-1 Section 1780 states that regulation is for onshore and offshore, but nothing in what I was reading was actually dealing with the specialized requirements that would happen if there was an accident offshore, be it natural or man-made.· And that really needs to be addressed.
	Response to comment 2070: Rejected. There are numerous federal, state, and local requirements for reporting and responding to unauthorized releases. The exact requirements that apply depend on various factors including what substances are in involved, the volume of the release, and the setting of the incident. It would be impractical and confusing to attempt to iterate all of those requirements in the Division's regulations and it is not the Division's intent to modify those requirements. The purpose of Section 1786(a)(2) is to make a general admonition that operators must be familiar with and comply with those requirements.
	1781. Definitions
2072	8327-2 The regulations need to include a consistent definition of what stimulation means.
2073	8326-3 Reduce the complexity of SB 4. It provides complex definitions that often conflict with each other. Anything injected into any well is an injection fluid. Anytime a procedure intends to exceed 50% of the formation fracturing pressure it should be called a hydraulic fracture procedure. People feel there is no need to complicate issues.

	Response to comments 2072-2073: Thank you for your comments. This is a highly technical subject of regulation, but the Division has endeavored to define and use terminology that is clear, internally consistent, and consistent with statute.
2074	5523-2 Definition. You should review the DOGGR definitions glossary on the web page. They have two different sets, plus the ones that are in these regulations. There should be some consistency. There is a lot of differences, and the differences can be become issues of law. One of which is stimulation, old regulations based upon well stimulation, treatment. But the definition is not consistently implied in all sections. So watch out for stimulation.
	Response to comment 2074: The Division has provided glossaries of oil and gas production terminology for the benefit of members of the public who are interested in learning more about these issues. Those glossaries are not a part of this rulemaking.
2075	8059-1, 8059-7 The second revision does not address the National Pollutant Discharge Elimination System (NPDES). Definitions omit any reference to NPDES permitting and need additional related definitions.
2076	9282-17 This section appears to be incomplete. We note the absence of needed definitions for, at a minimum: "operations," "productive and non-productive horizons," and "repeat stimulation."
2077	9298-14 The definition of “produced water” should be included here. Basically, it could be defined as any “non-protected” water (water containing more than 10,000 mg/l total dissolved solids, present within or immediately bounding the hydrocarbon zone and not part of an aquifer), which is recovered during the process of oil or gas production.
	Response to comments 2075-2077: Rejected. The meaning of these terms is commonly understood by the Division and the regulated public.
2078	9320-17 The definitions of “Acid Fracturing” and “Hydraulic Fracturing.” In the 3rd and 4th line, respectively, of these definitions, it appears that acid fracturing and hydraulic fracturing would inadvertently not be included in the definition of well stimulation treatment unless they actually caused or enhanced the production of oil or gas. We suggest deleting the word “thereby” in the 3rd line and substituting “for the purpose of” in both definitions.
	Response to comment 2078: Rejected. The suggested revision would deviate from the statutory definition by emphasizing the subjective intent of the treatment over the likely result of the treatment.
2029	9305-1 Section 1781(a) reads as though if no oil or gas is produced, then there's been no fracturing. I believe it should be defined as Acid Fracturing, regardless of the consequent production or enhancement of oil and/or gas flow.

	Response to comment 2079: Rejected. The definition of “acid fracturing” in Section 1781(a) is consistent with the statutory definition of “hydraulic fracturing” found in Public Resources Code section 3152.
2080	5523-6 There is a lot of discussions regarding surface owners in these regulations, but no discussion or definition of what a subsurface property owner is and their relationship to both the groundwater and to stimulation beneath the groundwater.
	Response to comment 2080: Accepted in part. Section 1781(q) defines “surface property owner” and Section 1783.3 lays out procedures for requesting water testing under Public Resources Code section 3160, subdivision (d)(7).
2081	9298-10 The definition of “Acid stimulation treatment fluid” should be changed to “means one or more base fluids that may be mixed with physical and chemical additives, where the resulting fluid mixture could be used for the purpose of performing an acid well stimulation treatment.”
2082	9298-11 The definition of “Additive” should be changed to “means a substance or combination of substances added to a base fluid, where the resulting fluid mixture could be used in well stimulation treatments including, but not limited to, acid stimulation and hydraulic fracturing.” An additive may be of any phase and may include proppants.
	Response to comments 2081-2082: Rejected. The purpose of the suggested revisions is unclear. Disclosure of the identity and concentration of each chemical constituent in the well stimulation fluid is already required under Sections 1783.1 and 1788.
2083	9324-25 The definition of “Acid stimulation treatment fluid” adds confusion regarding how the “Acid Volume Threshold” is calculated. The definition inadvertently implies any fluid that is injected with the actual acid volume is included in the “Acid Volume Threshold” calculation.
2084	9324-26 The definition of “Base Fluid” adds confusion regarding how the “Acid Volume Threshold” is calculated. The definition implies any fluid that is injected with the actual acid volume is included in the “Acid Volume Threshold” calculation.
	Response to comments 2083-2084: Accepted in part. Section 1761(a)(1)(A)(iii) was revised to specify that for the purpose of determining whether a treatment is greater than the Acid Volume Threshold, the volume of fluid used in a treatment does not include the volume fluid used for a pre-flush that does not use acid or an overdisplacement that does not use acid.
2085	9322-6 The definition of “base fluid” includes water, and also can be a liquid or a hydrocarbon or non-hydrocarbon gas. Where the term “base fluid” is used the dominant fluid(s) must be separately identified and their proportions stated.

2086	8405-1 The people want any fluids, including water that is injected for the purpose of well stimulation to be listed as added ingredients.
2087	8298-1 Until the public is made aware of the contents of the materials used in fracking, it is highly irresponsible to allow it to take place anywhere in California.
	Response to comments 2085-2087: Rejected. Consistent with Public Resources Code section 3151, the definition of "base fluid" in Section 1781(g) already provides that a base fluid is not limited to water. Disclosure of the identity and concentration of each chemical constituent in the well stimulation fluid is required under Sections 1783.1 and 1788.
2088	9280-9, 4684-2, 9283-10, 9299-13, 9300-12, 4608-2, 9320-16, 9322-7 The Chemical Disclosure Registry, as defined by the regulations, will remain the website known as fracfocus.org. There is a clear conflict of interest in this website as self-reporting by the industry on an industry led website has proven unreliable, at best. The website is not user friendly, is difficult for the public to read, and much of the data is difficult to download. More importantly, there is no oversight to prevent the filing of inaccurate data on the website, nor is there a mechanism for operator accountability with individual state requirements. Under SB4, DOGGR is required to develop a website maintained by the agency. A local, user friendly website, available in the multiple languages spoken in California, will be far more in the public interest by helping increase public trust, ensuring accountability and allowing for easier access to the information Californians needs to protect their health and environment.
2089	4637-3 The Division should create a database similar to South Coast Air Quality Management District rather than using FracFocus.
2090	9319-6 FracFocus - only if all submissions are copied/submitted to and vetted by the Division and retain implications as to perjury, fraud, false representations, and other judicious issues/sanctions
	Response to comments 2088-2090: "Chemical Disclosure Registry" is a defined shorthand for the chemical registry Internet Web site known as fracfocus.org. Section 1788(b) was added to require that, in addition to posting chemical information to the Chemical Disclosure Registry, operators must submit all required public disclosures directly to the Division and that the Division will make the information available to the public in a format that can easily searched and aggregated. The defined term "Chemical Disclosure Registry" is functional and does not need to be changed.
2091	9298-12 The definition of "Flowback fluid" should be corrected to "means the fluid or slurry 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 contain materials of any phase.
	Response to comment 2091: Rejected. The definition of "flowback fluid" in Section 1781(j) already states that flowback fluid may include materials of any phase.

2092	9298-13 The definition of “Hydraulic fracturing fluid” should be changed to “means 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”. [Whether or not the formation is sufficiently fractured to enhance the production of oil or gas is irrelevant. If hydraulic fracturing fluid is applied to a formation under pressures designed to fracture the formation then hydraulic fracturing has occurred.]
	Response to comment 2092: Rejected. The suggested revisions would not add clarity to the regulations.
2093	9299-15 As used in the definition of “independent third party,” the word “responsible” implies allegiance and should not be considered an independent.
2094	9305-2, 9323-3 A truly independent third party should be responsible to the interests of the people of the State of California, not the operator.
	Response to comments 2093-2094: Rejected. The term “independent third party” is used in the context of the requirement that the operator hire an independent third party under Section 1783.2. The independent third party must be responsible to the operator so that the operator can give the independent third party requisite instruction and ensure that the work is performed.
2095	9313-1 We support the language defining “independent third party” as we believe it to be responsive to our concerns about clarity of what constitutes an “independent third party”. This definition substantially addresses our prior concerns expressed with respect to proposed regulation sections 1781, 1783, 1783.1, 1783.2, and 1783.3.
	Response to comment 2095: Thank you for your comment.
2096	4715-6 In section 1781(m). ‘Proppants' means materials inserted or injected into the underground geologic formation that are intended to prevent fractures from closing." That's not a definition. That's a function, but it's not a definition. What is a "proppant"? Is it Styrofoam, you know? Is it concrete? What is it?
	Response to comment 2096: A variety of materials are used as proppant, but sand is the most common.
2097	4642-3, 5523-4, 4630-3, 5538-3, 9280-10, 9282-5, 9283-9, 9294-7, 9298-16, 9322-8, 7766-7, 7763-7, 7757-7 The definition of protected water should be expanded. All surface waters that are federally protected and protected by the State should be included and ground water should be included, period, because first of all, surface water and ground water are quite often they're obviously connected especially here in our area. And sometimes we can have ground water that has more

	than ten thousand TDS level which is connected to other ground water that doesn't have it perhaps. Or surface water, so to ensure really we are not going to pollute our resource, we should make sure we protect it instead of trying to provide a narrow definition and excluding a lot of resources from protection.
2098	9315-8 Protected water" should include all water with current or potential beneficial uses, including water with up to 30,000 TDS, consistent with ocean water which is commonly desalinated.
2099	9315-9 Regulators have historically misinterpreted or do not know the locations and justifications for which aquifers should be exempt from protection. In order to rely on the aquifer exemptions, DOGGR must complete a thorough review of each aquifer believed to have an exemption, and make determinations that such aquifers are not and will not be sources of drinking water, and meet all criteria specified by EPA, including approval of the exempt status. Until such findings are made, aquifer exemptions are not a valid reason for excluding underground waters from protection. While the issue of aquifer exemptions extends beyond these well stimulation regulations, better protection for all underground waters from oil and gas impacts should begin in these regulations, and until those fundamental flaws are addressed, aquifer exemptions cannot be relied upon to justify lack of protection.
2100	9324-9 WSPA, CIPA, and IOPA appreciate the addition to Section 1781(n) of language excluding exempt aquifers from the definition of protected water. This is an important clarification that was lacking from previous versions of the draft regulations.
2101	8297-12 The United States EPA has set the standards for drinking water to be 500 ppm but "protected water" has concentrations 20 times higher than this federally established standard. People in California have heard about a recommendation to expand the protections to include all water with the potential to be treated or become protected waters. Residents find this to be more about waste water disposal related to oil production rather than fracking itself.
2102	9298-15 The definition of "hydrocarbon zone" should be included here. Basically, it could be defined as that portion of the rock formation specifically targeted by the drilling and/or hydraulic fracturing operation which presumably contains recoverable oil and/or gas and which completely excludes protected water.
	Response to comments 2097-2102: Rejected. The defined term "protected water" was removed from the regulations. Public Resources Code section 3160, subdivision (b), calls for regulations that ensure well integrity and geologic and hydrologic isolation of the stimulated hydrocarbon formation, regardless of the quality of groundwater in the area. Accordingly, the requirements of these regulations apply regardless of the groundwater quality and therefore it is not necessary to define "protected water."
	1782. General Well Stimulation Treatment Requirements
2103	4695-5 1782. This is not protection. The world is full of negative examples such as: BP and the gulf.
2104	9321-19 The well integrity parts of this section should be strengthened.

	Response to comments 2103-2104: Thank you for your comments.
2105	9324-27 In section 1782(a), we are concerned by and recommend removal of the language “conditions are continually met.” Rationale: No explanation of “continuously” is provided, nor how you would prove it. WSPA, CIPA, and IOPA agree that all conditions of the regulations and permits must be met, but it may be infeasible or unnecessary to continuously test them.
2106	9322-9 The requirement of Section 1782(a)(2) cannot be fulfilled. There is no way to assure the geologic and hydrologic isolation of an oil and gas formation during and following the well stimulation treatments, and particularly during and following acid stimulation treatments.
	Response to comment 2105-2106: Rejected. The purpose of Section 1782 is to establish a set of governing principles under which all well stimulation treatments must be conducted, and to specify that the operator has the burden of operating in accordance with those principles.
2107	9320-18 Section 1782(a)(1). This provision would allow the operator to anchor casing by methods other than cement “in order to effectively control the well at all times.” If inadequate cementing of casing is ever to be permitted, those alternative methods and the basis for using them should be spelled out. More importantly, “well control” should be defined to include prevention of the migration of fluids and gases behind the casing, which is also a purpose for cement integrity. Division discretion to approve alternate cement evaluation methods in Section 1784.2(c) should be eliminated.
	Response to comment 2107: Rejected. When evaluating an application for a permit and otherwise supervising well stimulation treatment, the Division proposals and actual operations on a case-by-case to ensure that well integrity and geologic and hydrologic isolation of the stimulated hydrocarbon formation are maintained during and after treatment.
2108	9320-19 Section 1782(a)(3). All zones capable of transmitting fluids or gases into fresh water zones or to the surface should be isolated and sealed off.
	Response to comment 2108: Rejected. Zones must be sealed to the extent necessary to ensure geologic and hydrologic isolation of the stimulated hydrocarbon formation.
2109	4715-1 Section 1782(a)(4) says, “All well stimulation treatment fluids are directed into the zone of interest and the well wall's mechanical integrity is tested and maintained." But that's all it says. How is it tested and maintained, and by whom, and what are the criteria? What are the criteria by which this is going to be judged as having integrity or not having integrity?

2110	9320-20 Section 1782(a)(7). While we are supportive of this provision, further clarity is needed for determining what the precluded constituents and concentration levels should be, based on an independent, third party review.
2111	9284-4 Amend Section 1782(a)(7) to read “The well stimulation treatment fluid is not of a concentration level that will not damage the well casing, tubing, cement, or other well equipment, or would otherwise cause degradation of the well’s mechanical integrity during the treatment process.” Explanation: The “well stimulation treatment fluid” as defined in section 1781 means a “base fluid mixed with physical and chemical additives,” i.e., 100% of the fluid being pumped for the purpose of well stimulation treatment. It is not the “concentration” of the well stimulation fluid (which, being treated as a single unit under the Proposed Rule, will always be 100%) that is relevant to the well’s mechanical integrity, but rather fluid’s conditioning (eg for corrosion or friction), the length of exposure to the well, etc.
2112	9289-5, 9298-17 In section 1782 (a) (7) add the phrase "or after," to read "The well stimulation treatment fluid is not of a concentration level that will damage the well casing, tubing, cement [....] during or after the treatment process."
2113	9282-18 Current regulations lack formal relationships between information submitted by the operator(s) as part of an application to drill for consideration by the Division. Studies and analyses may be performed by the operator, but are not required to be submitted nor reviewed by the Division and not made available to the public. Section 1782 should be amended to require submission of documents and review by DOGGR of the documents.
	Response to comments 2109-2113: Rejected. The purpose of Section 1782 is to establish a set of governing principles under which all well stimulation treatments must be conducted. Section 1782(a)(7) was reworded to provide a broader admonition that well stimulation treatment shall not damage the well during treatment. Specific requirements for ensuring the mechanical integrity of a well during and after well stimulation treatment are found in Sections 1784.1, 1784.2, 1785, and 1787.
2114	9298-17, 9320-21 Subsection (a)(8). To be consistent with the rest of the regulations, well breaches or any other occurrence listed in Section 1785 subdivision (b) should require immediate reporting as required by Section 1785 subdivision (d). In addition, “well breach” should be a defined term, and include all types of well failures such as fluid or gas flow behind casings or between a casing strings and the open hole.
2115	9320-23 Section 1782(c). To align with Section 1785, this provision should require both immediate termination and reporting in the event any conditions of subdivision (a) are not met: “The operator must immediately report on and terminate well stimulation treatment as soon….”
	Response to comments 2114-2115: Rejected. The purpose of Section 1782 is to establish a set of governing principles under which all well stimulation treatments must be conducted. Identification and response to potential well breach

	are already more specifically addressed in Sections 1785 and 1787.
2116	9320-22 Subsection (a)(9). Since the state Department of Fish and Wildlife (DFW), as well as other state and federal agencies may administer requirements applicable to the location and conduct of permitted well stimulation operations, the list of agencies should include, after 'agency' in the 4th line, "the Department of Fish and Wildlife and any other state federal or local agencies with jurisdiction over the location or conduct of the well stimulation activities."
2117	9289-6 In section 1782(a)(9) add the phrases "State and" and "and shall not commence until the applicable requirements of said agencies are fully adopted in final form and implemented," to read, "Well stimulation treatment operations are conducted in compliance with all applicable requirements of the State and Regional Water Boards, the Department of Toxic Substances [...] and shall not commence until the applicable requirements of said agencies are fully adopted in final form and implemented."
2118	9315-20 Section 1782(a)(9) should be strengthened to require the relevant agencies to issue a finding and approve each permit prior to DOGGR's final approval.
	Response to comments 2116-2118: Rejected. Although Section 1782(a)(9) calls attention to certain agencies that may play a role in the regulation of well stimulation treatment, it is not necessary for this regulation to identify every entity that may exercise regulatory authority.
2119	9301-2 Section 1783(b): The requirement that the operator shall "follow the intent of all applicable well construction requirements" should be revised to require the operator "to follow all applicable well construction requirements." Whether an operator is following the "intent" is very subjective and does not ensure compliance with the requirements.
	Response to comment 2119: Rejected. The purpose of Section 1782(b) is to point out that operators must adhere to the general principles of Section 1782, even when adherence to all specific requirements might not be enough to do so.
2120	9301-3 Section 1782(c): The word "shall" is missing following the word "operator".
2121	8300 -2 1782 has a typo. There is an 's' missing at the end of the word 'terminate'.
	Response to comments 2120-2121: Accepted.
2122	9289-7 In section 1782(c) add the phrase "or any of the above-named agencies or local agencies with jurisdiction over the location of the well stimulation activities," to read: "The operator will terminate well stimulation treatment as soon as it is safe to do so after it determines, or is informed by the Division or any of the above named agencies or local agencies with jurisdiction over the location of the well stimulation activities, that any of the conditions of subdivision (a) are not being met."

	Response to comment 2122: Rejected. Division does not have authority to grant such authority to other agencies.
	<u>1783. Application for Permit to Perform Well Stimulation Treatment</u>
2123	9309-14 The regulations do not describe the review process or other regulations that govern the review process. Public Resources Code Section 3160(d)(2&3) references discretionary actions from DOGGR's supervisor to review environmental impacts and quantifiable risks of proposed permits. This discretion or review is not reflected in DOGGR's regulations and is a significant omission. Section 3160(d)(2)(C) states that the time period available for approval of the portion of the combined authorization applicable to well stimulation treatment is subject to terms of this section and not Section 3203; however that section did not describe the time parameters for review and should be clarified in Subchapter 2.
2124	9311-23 The regulations fail to describe any criteria under which DOGGR will accept or reject a permit for well stimulation treatment. Without standards, the public has no way of knowing whether DOGGR will consider health and safety concerns that are apparent in a permit application. DOGGR should not approve any permit application that presents a risk to public health and safety or the environment.
2125	5514-6 The permitting process is ridiculously complex. It is labor intensive. It's expensive. Nobody understands it. I have talked to people in District 4, and they say, dude, we can't tell you anything about it. You need to call Sacramento. It's a frickin' disgrace.
	Response to comments 2123-2125: Accepted in part. Section 1783.1 details the information and analysis that must be included in an application for a well stimulation treatment permit. As required under Public Resources Code section 3160, subdivision (d), the Division will not approve an incomplete permit application and the Division's review of an application will include an evaluation of the quantifiable risk of the well stimulation treatment. Section 1783(c) was added specifying that as a matter of course complete well stimulation treatment application will be shared other state agencies in accordance with the written agreements with those agencies. Public Resources Code section 3160, subdivision (d)(5), requires the Division to share approved well stimulation treatment permits with the local planning entity. However, the Division invites discussion with any and all local agencies regarding information sharing in advance of permitting.
2126	9324-18 Propose the addition of a set timeline for the Division to act on completed SB 4 applications. WSPA, CIPA, and IOPA believe 10 days is warranted.
2127	9288-7, 9324-12 We are concerned that there is no language regarding when the Division will act upon a permit application submittal. Consistent with other statutory permitting requirements, we recommend a timeline for acting on completed applications. For example, Notices of Intent to drill a well must be acted upon within ten days; a similar timeline would be helpful in providing certainty to operators for well stimulation treatments.

	Response to comments 2126-2127: Rejected. Public Resources Code section 3160, subdivision (d), specifies that the 10-day timeframe for response to drilling notices does not apply to review of well stimulation treatment permit applications, and that neighboring surface property owners and tenants must be notified at least 30 days before commencing treatment.
2128	9299-17 Section 1783(a): How does this apply to single project?
	Response to comment 2128: Each well stimulation treatment permit application within a proposed single-project authorization will be subject to the same scrutiny and requirements as it would had it been submitted individually, and single-project authorization in no way relieves operators of any requirements for a given well stimulation treatment.
2129	9324-29 In section 1783 (c) please revise the requirement to "<u>At least</u> three hours prior to commencing, the operator shall confirm with the Division that the well stimulation treatment is proceeding". Well stimulation treatments, especially in summer months, begin at very early hours. For example, if a well stimulation treatment is set to begin at 7am, we would expect that it would be impractical to confirm with DOGGR staff at 4am. WSPA, CIPA, and IOPA request the flexibility to confirm earlier than the three hour window.
	Response to comment 2129: Rejected. Public Resources Code section 3160, subdivision (d)(9), requires a minimum 72 hours of notice to the Division before commencing treatment so that the Division may witness the treatment. The additional confirmation three hours prior is necessary to avoid Division staff driving to a well site to witness an operation that does not occur as scheduled. Division staff is on-call at all hours to witness operations.
2130	9299-18 Section 1783(c & d) do the AQMD and other agencies have this worked out yet?
	Response to comment 2130: Formal agreements between the Division and the agencies specified in Public Resources Code section 3160, subdivision (c), will be completed by January 1, 2015.
2131	9289-8 In section 1783(c) add the phrase "Water District" to read: "The Division will relay the notice to the Regional Water Board, [...] and the local Water District and air district where the well stimulation treatment may occur [...]."
2132	4684-1 1783(c), the chemical information should be provided to CUPAs as well as the other agencies mentioned. This would be consistent with 1786(a) (5) and (7). 1783.2(a) (1) appears to exclude from notification the surface owner of the parcel where the oil or gas well is located. Unless the operator is the surface owner of this parcel, the owner should certainly receive neighbor notification including the opportunity to request water testing.

2133	9315-21 In section 1783(c) DOGGR should clarify the language so that it is clear that no well stimulation treatment can commence until all agencies receive the permit application and at least 72 hours have passed, allowing for all relevant agencies to witness the well stimulation treatment.
2134	9315-22 Section 1783 should be revised because currently there are two 1783(c) sections. In the second 1783(c) section, that requires the notification of the Division 72 hours and then 3 hours before the well stimulation treatment occurs, it should state that the Division will notify the other agencies not just upon receipt of the 72 hour notice, but also immediately upon receiving the 3 hour notice.
2135	9301-4, 9309-1 Section 1783(c): we see that Section 1782.9 includes local land use agencies, but Section 1783 in the proposed regulations does not require notification to local agencies. This is required by SB 4 [reference PRC section 3160(d)(5)]. Please correct section 1783 to include notification to counties.
2136	9301-5, 9282-18 Section 1783(c): The municipality and any other local agencies with jurisdiction should also be notified concurrent with the Division prior to the commencement of any well stimulation within its jurisdiction or if the wellhead is located within 1,500 feet of the local jurisdiction.
2137	9301-6, 9295-1 The municipality and any other local agencies with jurisdiction should be notified in a timely manner of any applications pursuant to this section and their comments invited. Information regarding the city where the well is going to be located should be included.
2138	4642-4 The regulation should provide an opportunity for the public to comment on the proposed permit, the permit application. Right now this is not provided and we think that's important.
2139	9294-8, 9321-20 Section 1783 of the Regulations should be revised to require all permit applications to be made available on DOGGR's website for review by the public. Furthermore, Section 1783 must provide specifically that DOGGR will be required to ensure a qualified representative will be present to witness the well stimulation treatment operation. The addition of these requirements will incentivize well treatment operators' compliance with SB4 and other regulations and will give an opportunity to DOGGR not only to examine first-hand the well stimulation treatment operation but also to identify and potentially prevent problems associated with the operation.
2140	9320-24 Section 1783. Application for Permit to Perform Well Stimulation Treatment. In both (duplicate) subsections (c), public notice should be expanded to include notice of when applications are deemed complete and receipt of 72 hour notifications of the commencement of operations. Also, the second subsection (c) should be changed to subsection "(d)".
2141	9294-10 The Regulations should include a provision on public notice and opportunity for review and comment on the Permit application for any well stimulation treatment. Moreover, DOGGR should not be allowed to approve a Permit application without previously reviewing groundwater monitoring results and any other data and information, consulting with the public and coordinating with all administrative agencies that have authority to regulate the activities and impacts of the proposed well treatment. These agencies may include, but are not limited to, the Air Quality Management Districts, Department of Toxic Substances Control, State and Regional Water

	Boards and local agencies. Finally, each Permit must be supported by findings demonstrating the proposed well stimulation treatment will not impact public health or natural resources.
2142	9309-8 If DOGGR receives an overwhelming amount of public comment on well permits the application should not be ministerially approved. There should be a channel for public comment and testimony to be heard and questions to be answered. Public comment received by DOGGR and applicant should be included in 1788, Required Public Disclosures, and posted to the public website.
2143	9309-9 Unless the proposed regulations are to be completely ministerial, they should be revised to state how public or local agencies can request a public hearing for the approval of certain permits. If they are ministerial, then criteria for denial should be outlined.
	Response to comments 2138-2143: Rejected. As required under Public Resources Code section 3160, subdivision (d), approved permits will be available on the Division's public website within five days of approval and operators are not permitted to commence well stimulation treatment unless all surface property owners and tenants with a specified distance have been given at least 30 days in advance. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Section 1783(c) and (d) reference information sharing with agencies listed in Public Resources Code section 3160, subdivision (c), but the specifics of the information sharing will be detailed in the formal agreements required under that statute. The Division invites discussion of similar information sharing agreements with any other state or local agency.
2144	5541-8 "The operator shall notify the division at least 72 hours prior to commencing the well."· If you make it 168 instead, so that is a full week instead of three days, it would give more time for the Division to take care of any problems that might arise. Seems like a good idea to me.
	Response to comment 2144: Rejected. Notice that well stimulation treatment will occur in 72 hours comes only after the Division has approved a permit for well stimulation treatment and required neighbor notification is complete.
2145	9313-4 Sections 1783 and 1783.1: WM requests clarification as to whether provision of support services to well operators would, in any way, jeopardize WM "independence" with respect to providing "independent third party" services to operators pursuant to subsequent section 1783.3. WM notes that the terms "owner", "operator" and "independent third party" are not defined in the proposed regulations. WM requests clarification of these definitions so as to clearly delineate the services that WM may provide to owners and operators of wells receiving well stimulation treatment.
	Response to comments 2145: Accepted in part. Section 1781(m) was added to provide a definition of the term "independent third party." The

	term “operator” is defined by statute in Public Resources Code section 3009, and the term “owner” is commonly understood.
2146	5538-4 The Department should outright prohibit the injection of certain chemicals. Although SB 4 doesn't say certain chemicals are prohibited, it's perfectly within the jurisdiction and authority of the Department to say "you can't inject X,” like the BTEX chemicals, because of the threat of getting into ground water. Well stimulation can occur without using the most noxious and toxic chemicals.
2147	5540-6, 9315-14 Chemicals that do not have established testing protocols should be prohibited to from injecting into a well because that presents problem with detecting it. If you are landowner owner nearby and you don't have information on how to monitor for certain contaminates, that's a problem.
	Response to comments 2146-2147: Rejected. Consistent with the mandate of Public Resources Code section 3160, subdivision (b), the purpose of these regulations is to ensure well integrity and geologic and hydrologic isolation of the hydrocarbon zone during and after well stimulation treatment. In addition, all wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783.
2148	4630-2 In Section 1783, the regulations -- a spill contingency plan that identifies how spills of well stimulation treatment fluids add to the wastes will be managed. The spill contingency plan should be processed through CEQA and provided to the relevant agencies.
	Response to comment 2148: Rejected. This would not be feasible because the Spill Contingency Plan required under existing regulation Sections 1722(a) and 1722.9 is intended to be updated on a continual basis to reflect changing operations and the plan.
2149	4655-1 Has anyone in LA County applied for permit to frack in 2013 and 2014?
	Response to comment 2149: Since SB 4 went into effect, well stimulation treatment has not been proposed in Los Angeles County. A complete listing of approved Interim Well Stimulation Treatment Notices can be found on the Division’s website.
2150	9309-10 The HF1 form referenced in previous draft regulations should be included in this text as well. The form should be required to be submitted electronically, and the submittal system should be set up so that the form is automatically put on the web through that submittal action. Provide more than a 10-day period for notice. Provide notice to the property owner if they are not the applicant. At minimum, require posting of the notice in public areas in the vicinity of the site.

2151	5541-7 Under Section 1783, I was struck by this. It says here "as directed in Public Resources Code Section 3161, the Division must allow -- will allow well stimulation provided that the operator has provided all the required information certifications." Seems like there should be an "out" in there somewhere for the Department if they decided it isn't a good idea to allow that, apparently can put a moratorium in place, which would be a really good out. Like say, for example, the drought gets bad enough, the provision says, oh, we don't have enough water that we feel like we should use any more water whatsoever by this thing that's creating a situation which we have less and less water every day.
	Response to comments 2150-2151: These comments are directed to provisions in the preliminary discussion draft of the regulations and do not relate to the regulations as proposed.
	1783.1. Contents of Application for Permit to Perform Well Stimulation Treatment
2152	9319-9 Applications: Conduct must include Submissions and Reporting - Planned and Actual/As Builts Well Integrity - planned, tested, and verified: Pressure, Mechanical, Cement Specify short <30 days submissions for Timeliness of Submittals, Reporting a Notifications.
2153	9292-8 Permit applications should include a summary of information on the location of the stimulation notice provided by California EPA's CalEnviro Screen in order to assist DOGGR in eliminating the disproportionate impact of oil and gas drilling on overburdened communities of color. The U.S. Census reports Kern County is 50.9% Latino and current well stimulation notices are in cities and towns with even higher Latino populations. Title VI of the Civil Rights Act of 1964 and California Government Code 11135 protect people "on the basis of race, national origin, ethnic group identification, religion, age, sex, sexual orientation, color, genetic information, or disability" from discrimination by the state. The current well stimulations in California have a discriminatory effect on Latinos in the state in violation of state and federal laws.
2154	8327-8 Each permit for well stimulation should include the street address for the well.
2155	4615-4 The application for permit to perform well stimulation should include the actual street address so residents can know where it's going on.
2156	9292-7 The regulations fail to consider an operator's compliance history in its permit review process. An operator's prior environmental record is essential in DOGGR's ability to determine the sufficiency of their permit application. DOGGR should consider the length, number, and severity of prior environmental consideration of a facility proponents' environmental record is expressly mandated by the California Supreme Court in Lauren Heights Improvement Ass'n v. Regents of the University of California, 47 Cal.3d 376, 420. Because an EIR cannot be meaningfully considered in a vacuum devoid of reality, a project proponent's prior environmental record is properly a subject of close consideration in determining the sufficiency of the proponent's promises in an EIR. Consideration should also be given to measures the proponent proposes to take in the future not just the measures it took or failed to take in the past. In evaluating an operator's prior shortcomings to determine sufficiency of their application, DOGGR should consider relevant

	factors including: the length, number, and severity of prior environmental errors and the harm caused; whether the errors were intentional, negligent, or unavoidable; whether the operator's environmental record has improved or declined; whether he has attempted in good faith to correct prior problems; and whether the proposed activity will be regulated and monitored by a public entity.
2157	9320-25 Section 1783.1. Contents of application for Permit to Perform Well Stimulation Treatment. The application should include the following additional information: □ An electronic map of the well location from which the public will be able to easily determine the location of the proposed well stimulation treatment; □ Proof that an operator has received from the county or other local land use authority a land use permit or any necessary permission to conduct well operations; and, □ A description of how the proposed well stimulation treatment complies with requirements of CEQA.
2158	9299-19 Section 1783.1(a)(1) What about contractors name as they will be performing well stimulations?
2159	8340-6 California is known for its geological instability. There is no provision in the current regulations to refuse to grant a permit based on the potential to cause earthquakes.
2160	9294-9, 8327-5 Section 1783.1 should be revised to require the Permit application to include the start and end date of the proposed well stimulation treatment, baseline groundwater monitoring data collected during the three months prior to the date of the proposed well treatment, the names and locations of all surface water bodies that may be impacted by well treatment and provide baseline surface water monitoring data collected during the three months prior to the proposed well stimulation treatment. Furthermore, the application should provide the Spill Contingency Plan specific to the particular well stimulation operation and should specify how the Spill Contingency Plan is addressing any potential impact on surface water bodies, including in particular, surface waters that are impaired under Section 303(d) of the Clean Water Act.
2161	4692-2 Section 1783.1 and 1784 each permit application shall also include site plans showing the location of the proposed well with respect to existing and proposed surface structures, proposed haul roads and other proposed modifications. Regional maps shall be included that show all mapped faults/fracture zones, all known existing and planned wells, including water wells and plugged and abandoned oil wells within the radius of 5 times the proposed treatment length. Cross sections shall be submitted that show subsurface information including the geologic formations, mapped faults, location and path of the proposed well, the depths and paths of the wells noted above, and all available groundwater level data. The maps and cross sections are visual tools that should help prevent accidental intersections of the proposed well with other wells, groundwater and faults/fracture zones.
	Response to comments 2152-2161: Rejected. The purpose of Section 1783.1 is to implement the statutory permitting requirement of Public Resources Code section 3160, subdivision (d). The specified permit application contents reflect the statutory requirements for a permit application under Public Resources Code section 3160, subdivision (d)(1); the Division's assessment of the information that it will need to effectively evaluate a permit application; and interagency consultation, as contemplated in Public Resources Code section 3160, subdivision (b)(1)(A).

	Some of the suggested contents for permit applications are already addressed, at least in part, in Section 1783.1. Other suggested contents for permit applications were not included in Section 1783.1 because the Division did not deem them necessary for review of an application for a well stimulation treatment permit. However, Section 1783.1(a)(31) provides that the Division may request additional information from an applicant on a case-by-case basis.
2162	4715-3 Directional Drilling: What about the records of any actual coordinates that are reached. Okay? You can say, "We're going to submit our permit application, and we're going to drill here, here, and here, and these are the coordinates we plan to go."· Well, things happen. You run into some rock, or you run into something and you have to change your direction, and it doesn't say anything about, you know, defining where we actually ended up and what happened.· Where are going to be all the records of the drilling activities so that when things happen as a result, you can go back to the records and say, "I see on such-and-such-a-date they went down to this place and that place, and so on and so forth"?
	Response to comment 2162: Specification of the wellbore path is a necessary part of a notice of intent to drill a well under Public Resources Code section 3230, and Section 1783.1(a)(12) requires that the well stimulation treatment permit application include a description of the wellbore path that is specific enough to identify the location of the well stimulation treatment.
2163	9324-30 In section 1783(a)(14), revise to read “The <u>estimated</u> number of stages in the well stimulation treatment;” Reason, the actual number of stages will not be known until the wells are drilled.
	Response to comment 2163: Accepted in part. Section 1783.1(a)(14) is revised to require the <u>maximum</u> number of stages in the well stimulation treatment. Although it may not be possible to accurately predict the number of stages, the outer limit can and should be identified.
2164	9298-19 In section 1783.1(a)(14) the number of “stages” in well stimulation is referred to here but the “stages” in well stimulation are not defined anywhere in the bill. The “stages in well stimulation” should be formally defined and included in the collection of definitions assembled in Article 2, section 1761 or in Article 4, section 1781.
	Response to comment 2164: Rejected. What constitutes a “stage” of a well treatment is commonly understood by the Division and the regulated public.
2165	9324-31 In section 1783(a)(15), revise to read “For each stage of the well stimulation treatment, the <u>estimated</u> measured and true vertical depth of the planned interval of the well stimulation treatment on the well bore;”. Reason, the actual depths will not be known until the wells are drilled.

	Response to comment 2165: Accepted.
2166	9323-4 Section 1783.1(16): Do not delete the indicated wording ", if any, and the location of existing wells, including plugged and abandoned wells, that may be impacted by these fractures and modifications."
2167	5538-6 On the location of surrounding wells, I believe -- plug wells, abandoned wells, I believe SB4 asked for that. I think the new draft regulations deleted that requirement that before you well stimulate as part of the application you have to identify those surrounding wells.
2168	9299-20 Section 1783.1 (a)(16) Why was the word "modifications" deleted from the earlier version of the regulations?
2169	9315-27 While 1783.1(a)(16) now includes measured estimates of both the length and height of the planned modifications, it no longer requires the locations of existing wells, including plugged and abandoned wells that may be affected by the stimulation envelope, to be reported. This should be rectified in the final revision. All wells that could be impacted by an altered formation should be reported as required pursuant to 3160 (d)(1)(E) of SB 4.
	Response to comments 2166-2169: Accepted in part. The requirements for identifying wells within the area of a proposed well stimulation treatment are now addressed in Section 1784(a)(2), which provides, "The well stimulation treatment analysis shall include identification and review of all well bores located completely or partially within two times the ADSA to ensure the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation. The "ADSA" is defined in Section 1781(f) as the "estimated axial dimensions, expressed as maximum length, width, height, and azimuth, of the area(s) stimulated by a well stimulation treatment." The revised requirements now found in Section 1784(a)(2) specifies a process for identifying wells that may be impacted by well stimulation treatment, and remove the redundancy that was in Section 1783.1.
2170	8317-2 People want to know if California's groundwater is thoroughly mapped by qualified geologists and hydrologists employed by the California State or Federal Governments. If not, people submit that the "Operator" of any kind of drilling operation should not be authorized to calculate, estimate or otherwise determine the depth of the base of protected water regardless of the method chosen (1783.1 (a) (17).
	Response to comment 2170: Rejected. The defined term "protected water" was removed from the regulations. Public Resources Code section 3160, subdivision (b), calls for regulations that ensure well integrity and geologic and hydrologic isolation of the stimulated hydrocarbon formation, regardless of the quality of groundwater in the area. Accordingly, the requirements of these regulations apply regardless of the groundwater quality and therefore it is not necessary to define "protected water."

2171	9324-13 WSPA, CIPA, and IOPA are concerned that the flexibility to submit a permit application for drilling a well concurrently with a well stimulation permit will be jeopardized by the requirement to provide the cement evaluation results with the well stimulation permit, rather than as part of the well history. This will require that the well stimulation permit await the outcome of the evaluation and then the resulting 30 day notice period, significantly delaying an integrated well drilling and completion program. WSPA, CIPA, and IOPA request that any cement evaluation outcome be part of the well history report and submitted with the 60 day completion report. Oversight of this process is already provided via operator reporting and agency inspection.
	Response to comment 2171: Accepted. Section 1783.1(a)(20) is revised to reflect the fact that the well may not yet be drilled at the time that the well stimulation treatment permit application is submitted, and therefore actual cement evaluation may occur after a permit is issued.
2172	8317-3, 8340-3 If during the current drought emergency people are being required to conserve water, citizens feel that before new fracking wells begin, a total number of wells throughout the state and the total amount of water allocated to these wells ought to be known, rather than piecemeal on a well-by-well basis. Otherwise, the entire aquifer and all the communities it serves are in danger. People want to know an estimate of the amount of water that will be used in treatment, an estimate of the water to be recycled, a description of how and where the water from treatment will be recycled, the anticipated source of the water to be used in the treatment, including how the water will be acquired, where the water will be acquired and if the water will be purchased. Citizens need to know from whom the water would be purchased and if the anticipated disposal method used for the recovered water in the flowback fluid from the treatment that is not produced water that would be reported pursuant to Section 3227.
2173	9282-20 The contents of the permit application must be publicly available and readily accessible on the Division's website within 24 hours of submittal. The water management plan attachment must be standardized to ensure that all required information is disclosed on every well stimulation permit application. Water source disclosure must provide more specific information so as to accurately describe the precise source of all water to be used in a stimulation treatment. The radius of review must be extended. The interim language requires evaluation of water wells and geology within the same radius as that specified for notification to neighbors, 1500 feet of the oil/gas well-head and 500 feet of the surface projection of an oil/gas well path. Potential impacts on water contamination could have a much larger reach. The Division must increase the radius for water testing to at least one mile (5280 feet) or twice the anticipated stimulation radius, whichever is greater. Section 1783.4(b)(3) of the interim regulations applies to “information that is publicly available.” Since the exact location of public supply wells may not be publicly available – exact locations are obfuscated to one mile – it may be impossible for an operator to know whether or not any public supply wells lie within the 1500 foot radius of the well head, or 500 feet of the surface projection of a well path. Require that the appropriate Regional Water Board certify compliance with the appropriate type of groundwater monitoring plan. For any well stimulation activities occurring on state or federal lands, the application should contain certification from the appropriate land management authority stating that the activity complies with any relevant land management plans.
2174	9283-14, 9309-16 Support the June 13, 2014 revision to proposed § 1783.1 to include information regarding water acquisition and recycling. The regulations must continue to require a water of the following: (A) An estimate of the amount of water to be used in the treatment; (B) An estimate of water to be

	recycled following the well stimulation treatment; (C) A description of how and where the water from a well stimulation treatment will be recycled, including a description of any treatment or reclamation activities to be conducted prior to recycling and reuse; and (D) The anticipated source of the water to be used in the treatment, including how the water will be acquired, where will be purchased, from whom the water will be purchased.
2175	9298-20 Section 1783.1(a)(24)(B) should be corrected to read, "An estimate of the amount of water to be recycled following well stimulation, including any treatment and/or purification performed on the water and the purpose (fate) to which this recycled water is used. If any portion of that recycled water is to be injected underground for disposal into any formation not shown to be geologically and hydrologically isolated from all aquifers and/or any other supplies of protected water, that water must first be subjected to rigorous chemical analysis to determine the presence of hydraulic fracturing fluid components, contaminating hydrocarbons, caution and anion constituents, an pH and the results reported to the "Division" to obtain approval for such underground injection."
2176	9299-21 Section 1783.1(a)(24)(D): Should this include a water analysis profile of the water being used?
2177	9309-6, 9322-10, 8405-3 Section 1783.1(a)(24)(D) To protect the interests of all, we believe the application for well stimulation treatments should not only identify the source of water, but the aquifer source and water basin as well. Furthermore, the regulations should include a process to deny a permit that identifies aquifers that are overdrawn or may become overdrawn as a result of well stimulation techniques. Using water from over drafted basins potentially impacts other property and business owners. The regulations must also specify reporting of actual water uses, distinguishing the use for drilling distinct from use for stimulation treatments.
2178	9324-32 In section 1783.1(a)(24)(D), revise to read "The anticipated source of the water to be used in the treatment, ~~including how the water will be acquired, where the water will be acquired, and, if the water will be purchased, from whom the water will be p~~urchased; and" Rationale: WSPA, CIPA, and IOPA believe the disclosures in these sections go beyond the authorization of SB4 to require general disclosure of the "source, volume, and specific composition and disposition" of water and "the anticipated source of the water to be used in the treatment." Pub. Res. Code Section 3160(b)(2)(E), (d)(1)(C)(ii). Water purchases are private contractual arrangements, and DOGGR has not demonstrated the necessity to require disclosure of this information.
2179	4692-3 Section 1783.1(a)(24) DOGGR should not permit use of aquifer water for well stimulation purposes. During all California State declared droughts, water suitable for irrigation and domestic purposes shall not be used in well stimulation treatment.
2180	9299-22 Section 1783.1(a)(24)(E): Is this possible if 90% of LA Basin fields are water-flood UIC?
	Response to comments 2172-2180: Accepted in part. As required under Public Resources Code section 3160, subdivision (d)(1)(C), Section 1783.1(a)(23) requires that an application for a well stimulation treatment permit include a water management plan that includes an estimate of the amount of water to be used in the treatment; the anticipated source of the water to be used in the treatment; and the disposal method

	identified for the recovered water in the flowback fluid from the treatment. Section 1783.1(a)(23) also specifies what information must be provided regarding the source of the water to be used. That specification is consistent with the definition of "source of water" added to Public Resources Code section 3227 by the recently chaptered Senate Bill 1281. Other suggested specifications for the contents of the water management plan were not included in Section 1783.1(a)(23) because the Division did not deem them necessary for review of an application for a well stimulation treatment permit. All wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division's goals in the development of these processes and technologies.
2181	9324-33 In section 1783.1(a)(26) correct incorrect citation. The section should be revised to read "The anticipated source, amount, and composition of the base fluids to be used in the treatment, including pH, flash point, and any constituents listed in *California Code of Regulations, Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24*"
	Response to comment 2181: Rejected. The comment suggests a different citation form for referencing the same regulation. The citation is clear as written.
2182	9299-23 In section 1783.1(a)(27) why don't they identify the materials here?
	Response to comment 2182: Rejected. Consistent with Public Resources Code section 3160, subdivion (d)(1)(G), Section 1783.1(a)(26) requires the anticipated disposal method that will be used for the recovered water in the flowback fluid from the treatment that is not produced water that would be reported pursuant to Section 3227.
2183	9299-24 Section 1783.1(a)(28) Is this a less than requirement of strikethrough or good because I assume it involves SWB?
2184	9323-5 Section 1783.1(a)(28): Do not delete the wording "by a well specific, field wide, or regional ground water monitoring plan developed."
	Response to comment 2183-2184: Rejected. The State Water Resources Control Board is still in the process of developing the model groundwater monitoring criteria under Water Code section 10783. Regardless of the outcome of

	that process, it is necessary for the Division to coordinate with the State Water Resources Control Board and the Regional Water Quality Control Boards to ensure that well stimulation treatments are conducted in accordance with the requirements of Water Code Section 10783. Section 1783.1(a)(27) is revised to reflect the fact that an operator may still be working with Water Boards staff on compliance with Water Code section 10783 at the time application to the Division for a well stimulation treatment permit.
2185	9317-13 The GWMP requirements eliminate the possibility of ever doing WST permitted treatments in any of my small clients' oilfields located in USDW areas. They simply can't afford the financial cost and litigation risk of doing so. But of course that's probably just SB 4 working exactly as intended.
	Response to comment 2185: Thank you for your comment. All wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783.
2186	8327-10, 8351-2 The public desires for the chemical nature and makeup of all fracking and well injection fluids must be the subject of full prior disclosure to the State at the time of permit application, and receive prior regulatory agency approval, and any subsequent modifications of type, concentration, formulation or quantity must also be pre-approved by the State of California regulatory authorities
2187	9311-17 Due to the required disclosures of chemical identities and their concentrations, it is unclear what, if any, information could be legitimately protected under a trade secret claim. The Proposed Regulations should make clear that information submitted to DOGGR cannot be withheld under a claim of trade secrecy. Despite the clear disclosure requirements of SB 4, an operator may attempt to hide information with an illegitimate claim for trade secrecy. The process by which the public can eventually obtain this information and reject such a frivolous claim is long and cumbersome. In the meantime, it may be necessary to disclose this information in emergencies. SB 4 clearly mandates that DOGGR “shall develop a timely procedure to provide trade secret information” to health professionals and other persons that may need access to information immediately. In spite of its mandate to delineate a process to transmit critical information in such situations, DOGGR merely states that “[a] claim for trade secret protection … shall be handled in the manner specified under Public Resources Code section 3160, subdivision (j).” The lack of process for handling trade secret claims is in violation of the clear mandate of SB 4.
2188	9301-7 Section 1783.1(a)(29): Any substances used in well stimulation fluids should be disclosed to the municipality and any other local agencies with jurisdiction regardless of any claim of trade secret.
2189	9322-11 (a)(29). SCWC strongly urges that all permit submittals for fracking operations must include a list of all chemicals to be used, and additional responses of "YES" or "NO" in a complete list of chemicals known to have been used in fracking, that also shall be appended to the regulations. If exact chemical formulas will not be required in reports, the chemicals used must be represented by a list of chemical species. The number of different chemicals/compounds to be used must be reported by species category.

	Response to comments 2186-2189: Accepted in part. The required contents of an application for a well stimulation treatment permit are specified in Public Resources Code section 3160, subdivision (d)(1), and Section 1783.1, and include the identity and estimated maximum concentration of the chemical constituents of the anticipated well stimulation treatment fluid. Public Resources Code section 3160, subdivision (d)(5), requires that the Division post an approved well stimulation treatment permit application on its public website within five business days of approval. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Public Resources Code section 3160, subdivision (j), imposes strict limitations on the ability to claim trade secret protection as a basis for not making required public disclosures required under SB 4.
	1783.2 Neighbor Notification, Duty to Hire Independent Third Party
2190	4692-3 1783 .2. The neighbor notification area should be enlarged to extend one mile beyond the anticipated well stimulation treatment length from each point of well stimulation treatment. There's a 6 fold increase of methane in drinking well water within one kilometer of gas wells. The water wells have depths of 60 to 90 meters and the Marcellus Shale is at depths of 1500 to 2500 meters. It is not clear whether the gas is leaking directly from the gas wells into the aquifers or is migrating upward through unidentified abandoned wells and/or fractures in the bedrock, but it is clearly migrating laterally for at least one kilometer, or 3,281 feet.
2191	8057-3 People of California firmly believe that each drilling projects should require permits and part of the permit process should include notification and agreement by all property owners and residents within a ten mile area of a proposed fracking site.
2192	9305-3 Section 1738.2(a)(1): Operators should be required to notify ALL persons residing vertically above the formation to be impacted, regardless of distance from Well Head.
2193	007523-2 Notification of Fracking should be based on the water aquifer that is being effected; not the distance from the fracking site.
2194	007520-4 The 1500foot surface / 500 ft. subsurface "buffer zone" between a well operation and a private land holding is greatly insufficient as far as the large scale development of the Monterey Shale in concerned.
2195	9323-6 Copy of Well Stimulation Permit, etc. This entire section should be reinstated— not eliminated. Also property owners and tenants within at least five miles of a wellhead should be notified per this section. Tenants should not be excluded from notification, and 1500 feet is a ridiculously inadequate distance regarding one's potential risk of harm from the fracking operations.
2196	9321-21 We continue to believe that the Division should revise the notification and testing radius to match

	the radius in Section 1784(a) (twice the anticipated well stimulation treatment radius).
2197	4737-3 This section has to do with notification of property owners, but not notification of people, everyone that is hooked into that aquifer, or the down-stream people, or the people affected by any emissions. I mean, these are things that everyone in the region is affected by. And contamination of one source migrates, as we know water does.
2198	9294-11, 9298-21, 4637-2, 9309-15 Section 1783.2 of the regulations must be revised to expand the radius of property owners and tenants that should be provided with a copy of the issued Permit to 5,000 feet (or one mile) radius from the wellhead of the well where well stimulation will occur and 1,500 feet of the horizontal projection of the subsurface parts of the well.
2199	8347-2 Neighbors ought to be expanded to 5 miles instead of 1500 feet. 5 miles ought to be the zone with which notifications are mandatory.
2200	8364-3 Only tenants and property owners are notified of drilling activity. California citizens believe that anyone that has water rights within the notification area should be notified as well. Some water agencies may have only an easement over certain areas and may not be an owner or tenant. They may be excluded from being noticed. This party would have an interest to the use of well stimulants and citizens believe should be notified as well.
2201	4712-1, 5542-7 I think this buffer zone -- I'd rather see a stronger buffer zone. I don't want to see 1,500 feet. I want to see something more meaningful. I don't want to think that someone on their ranch land or on their agricultural land can have an oil field 1,500 feet from their house. Maybe I'm reading it incorrectly
2202	4637-4 You should take into account the entire site as to where the traffic sits [not just the well head and line of frack job], and where your notifications.
2203	4615-5 Include street addresses and sites and also notify residents, preschools, parks and other sensitive receptors within the one-fourth mile.
2204	4624-3 We would ask that notification of any kind of new well activity be made to residents within a certain area because things are happening in our neighbor and we don't know what's going on.
2205	9283-5 The process for neighbor notification of well stimulation, proposed §1783.2, should be expanded to provide affirmative notification to neighbors during the application and environmental review, rather than merely notifying neighbors of the impending execution of already-approved permits. When a well and well stimulation treatment would, if authorized, require neighbor notification under § 1783.2, all persons for whom notification would be required should receive, pursuant to the same process, notice of CEQA documents and public comment periods.
2206	9301-10, 9283-11, 5541-9, 5542-6, 9294-15, 9298-24, 9323-7 Section 1783.2 should be revised to extend the period between neighbor notification and well stimulation treatment to 45 or more calendar days, to ensure adequate opportunity for baseline

	water which a property owner may request water quality testing, pursuant to proposed § 1783.3(a), should be extended from 20 to 30 days or more. The Neighborhood Notification Form should be revised to reflect this change.
2207	4685-1, 4686-1, 4687-1, 4688-1 Section 1783.2 Copy of Well Stimulation Permit, Notice: 30 days prior notice to surface land owners in the area is dangerously insufficient and should be increased to a minimum of 6 months. There should be public disclosure of all chemicals and phases prior to awarding permits.
2208	9300-5 Neighbor Notification is woefully inadequate, and narrowly defines the demographic area of impact, or concern regarding the environment and public health. This is a self-limiting approach to fulfill the mandate of SB4, even in areas of California where urban drilling occurs, and the associated oil/gas fields of Southern California.
2209	9300-7 Given the lax requirements of Neighbor Notification to even notify the general public living in close proximity to potential impacts (health, environment) some of whom may experience health impacts from ground level ozone, and VOC's drifting in the air during acid WST or HF. How does the “combined” single-project authorization obscure the actual timeframe of the notification process of the WST within the Neighbor Notification section of SB 4?
2210	9300-8 Under the Neighbor Notification requirements, from the standpoint of public health, it is important to know the specific timeframe of the WST. Example: If the operator provides the signed statement to the Division within 3 months after a single-project authorization, but it is six months before the WST actually occurs, the subsequent flowback period (highest occurrence of VOC's) could be unknown (from a public health concern). Documenting trends in impacts associated with the WST requires independent analysis of recorded data. The concern here is that the 'Notification' is only considering groundwater monitoring.
2211	9298-26 If no owners or tenants respond in time and/or simply opt not to have any water testing done, does that mean that no water testing will be done and no baseline water quality data collected? That seems an absurd proposal. There should be a specified minimum number of water samples taken from within the notification area, and those samples then analyzed by an accredited laboratory, regardless of how many owners/tenants respond. Ideally, a statistically significant number of samples would be analyzed.]
	Response to comments 2190-2211: Rejected. Public Resources Code section 3160, subdivision (d), requires operators to hire an independent entity to provide notification to every tenant and owner of neighboring property within 1500 feet of the wellhead or 500 feet of the surface representation of a well that will have a well stimulation treatment performed on it. The statute requires operators to provide neighbor notification at least 30 days prior to commencing the well stimulation treatment, and the notice must consist of the approved permit and notification that the property owners may request water quality testing at the operator’s expense. Public Resources Code section 3160, subdivision (b)(1)(B) expressly requires the Division to adopt regulations implementing the statutory neighbor notification requirement. The purpose of Section 1783.2 is to establish procedures implementing the neighbor notification requirement of Public Resources Code section 3160, subdivision (d), and the suggested revisions to Section 1783.2 would be a departure from the statutory requirements.

	Although testing of neighbors' water wells and surface water is optional at the election of the surface property owner, all wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783.
2212	9301-8 The municipality and any other local agencies with jurisdiction should receive a sample copy of all Neighbor Notifications submitted with a list of the addressees if the notices are sent to surface property owners and tenants within and immediately adjacent to its jurisdiction.
	Response to comment 2212: The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division's goals in the development of these processes and technologies.
2213	9282-21 The Division, in consultation with the State Water Resources Control Board ("Board") must develop and implement formats and systems to disseminate information to neighbors regarding the availability of water testing. A template for neighbor notification is needed to ensure that landowners and tenants within the specified radius receive all required information in an easy to read format, in English and other appropriate languages, and have a standardized method to request monitoring, such as a pre-paid and addressed postcard with a check box. A system is also needed that will allow the Division to verify that all required information and notification has been properly distributed to the appropriate recipients.
2214	9321-22 The Well Stimulation Treatment Neighbor Notification Form should be in both English and Spanish.
	Response to comments 2213-2214: Accepted.
2215	4692-7 The neighbor notification should include a 24 hour telephone hotline to knowledgeable personnel at the operator, who can answer any questions or concerns during both the stimulation and production phases of the operation. Email contact information to the operator personnel should also be provided. Additionally, a list of all the governing agencies and their telephone and email contact information should be included.
2216	4725-2 The notice assumes that you already know what fracking is and what sort of activities are proposed and what that means and what possible implications that has for water quality. So to suggest that if you respond to this notice, you can get water quality testing, first there has to be a little information about why suggest getting water quality testing.
	Response to comments 2215-2216: Accepted in part. The required Well Stimulation Treatment Neighbor Notification Form includes contact information

	for both the Division and the State Water Resources Control Board, either of which could provide information about the subject treatment.
2217	4615-7, 8347-3 Neighbor notification, it should be a hand delivery service. People are notarized mail and it needs to be in multiple languages, you know, here in Long Beach we are a very diverse community, so these notifications need to be in languages if there's like 20 percent of folks that speak a certain language, they should go out in that language as well.
	Response to comments 2217: Rejected. Section 1783.2(d) also allows for notification by mail or private carrier, both of which are reliable methods. It would not be feasible to translate notification into all languages spoken in the state in a timely manner.
2218	9324-35 In section 1783.2(a)(1), recommend revising the section to read as follows: "Identify surface property owners and tenants of legally recognized parcels of land situated within a 1500-foot radius of the wellhead receiving well stimulation treatment, or within 500 feet of the surface representation of the horizontal path of the subsurface parts of such well, other than the surface property owner of the parcel upon which the oil or gas well receiving the well stimulation treatment is located *or a surface property owner who has waived the operator's obligation to provide such neighbor notification;*" Reasoning, circumstances exist where surface property owners may wish to "opt out" of neighbor notification requirements
2219	9324-11 WSPA, CIPA, and IOPA believe that the Division has the authority to allow for individual surface owners or tenants to "opt-out" or waive future notices. We would recommend the division provide that this waiver be executed in writing. Operators have already encountered instances of surface owners wishing to opt out of the notifications.
	Response to comments 2218-2219: Rejected. Public Resources Code section 3160, subdivision (d)(6), states that 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 whose property line is within the specified area.
2220	8364-2 Section 1783.2(a)(1) seems to people to be written to leave out some citizens that could be impacted by proposed lateral drilling by giving oil operators a choice of notification. The regulation at this time requires notification of surface property owners within 1500 feet of the surface well, or within 500 feet of the underground drilling area, as measured from the surface. In this section of the regulation, people ask that the word "or" be changed to "and" to make it clear that all potential parties are notified.
	Response to comment 2220: Rejected. The use of the conjunction "or" in Section 1783.2(a)(1) is inclusive and "and" would be exclusive. The suggested revision would be contrary to the stated purpose.
2221	9301-9 Section 1783.2 (a)(2): An easy-to-understand map of the proposed well stimulation location should also be included with the notification. The Neighborhood Notification Form should be revised to reflect this change.

	Response to comment 2221: Rejected. The Well Stimulation Treatment Neighbor Notification Form directs people to the Division's public website, which has intuitive tools for mapping wells.
2222	9313-5 WM has the capability of assisting operators with the provision of services to provide copies of permits and notify surface property owners and tenants of the availability of water well testing. However, we request clarification as to whether provision of such notification services under this section would jeopardize WM's ability to provide "independent third party" well notice and sampling pursuant to subsequent section 1783.3. Again, WM notes that the terms "owner", "operator" and "independent third party" do not appear to be defined in the proposed regulations. WM requests clarification that provision of well services does not jeopardize WM ability to provide "independent third party" services.
	Response to comments 2222: Accepted in part. Section 1781(m) was added to provide a definition of the term "independent third party." The term "operator" is defined by statute in Public Resources Code section 3009, and the term "owner" is commonly understood.
2223	4618-4 Definition of independent party should not have direct, well how about also indirect financial interests to the industry.
	Response to comment 2223: Rejected. It would not be possible for the independent third party to have no indirect financial interest because the independent third party must be hired by an operator.
2224	9294-12 Section 1783.2(b) of the regulations should be revised to provide specific guidance on the methods by which the independent third party would determine the surface property owners or tenants that should be notified of the planned well stimulation treatment.
	Response to comment 2224: Rejected. Research of property boundaries and ownership is a well-established professional function and it is not necessary to explain how to do it in regulation.
2225	9320-26 Under subsection 1783.2.(c), the proposed regulations should clarify that the well stimulation treatment shall not commence until the later of (i) 30 days after notices are provided, or (ii) all of the baseline water testing required to be completed prior to well stimulation commencement under section 1783.3 is completed.
2226	9298-25 If drilling is to be done in areas that have a significant percentage of people who do not speak or read English fluently (as is the case for many agricultural and rural areas), 20 days may simply not be enough time for them to obtain a translation of the notification in their native tongue, research the topic of hydraulic fracturing to the point that they can see that having their drinking water/well sampled is to their benefit, and submit the formal request for water sampling.

2227	4640-1 The water testing portion of the bill it was saying in order for you to request for water quality testing, you do basically submit a request and it has to be dated within 20 calendar days of the notice. So it look like apparently it's our responsibility to test the water that the oil companies are going to be polluting, and I actually thought that was the role of government, apparently, so if this is supposed to be a regulatory agency, I really wonder how any of this testing is actually impacting this decision making.
	Response to comments 2225-2227: Accepted in part. Section 1783.3(b)(4) specifies that if the request for water testing is made within 20 days of notice being provided, then the operator must ensure that baseline sampling occurs before well stimulation treatment commences. If the surface property owner does not make a timely request for testing, then property owner is responsible for ensuring sampling gets done before the treatment commences.
2228	9305-4 Section 1738.2(c): When the independent third party determines that neighbor notification is not required well stimulation SHOULD NOT PROCEED until the sixth BUSINESS DAY after written notification by that agent is received by the department. (Instead of 72 hours as currently written. Six business days will allow reasonable time for the Department of conservation to quality control that determination.
2229	9299-25 Section 1783.2(c) If the independent third party is in error how would 72 hours allow challenge or correction?
	Response to comments 2228-2229: Rejected. Neighbor notification is not required where there are no neighbors within the specified area. Public Resources Code section 3160, subdivision (d)(6), requires the Division to audit the performance of neighbor notification, but that audit will not contemporaneous with performance. Public Resources Code section 3160, subdivision (d)(9) requires the operator to provide the Division notice 72 hours prior to commencing well stimulation treatment.
2230	9298-23, 9312-5, 7030-5, 8059-6 Section 1783.2(h) should be rewritten. ALL rental units within a residential or commercial property must be individually notified to increase the likelihood that all tenants (regardless of the number) are aware of the imminent well stimulation operation in their vicinity. Giving a single notice to an 18 year old at the property does in no way guarantee that all rental units (let alone all tenants) have been informed. A notification addressed to each rental unit within the residential or commercial property makes it much more likely that all tenants are informed.
2231	9311-18 For commercial or residential buildings with 10 or more individual units, notification is only required to be delivered to one unit. This contradicts the letter and spirit of SB 4, which requires that notice be provided to “every tenant of the surface property and every surface property owner…” Adopting the Proposed Regulations as currently written would be a violation of the statute.
	Response to comments 2230-2231: Accepted. Although Section 1783.2(h) already required notification of each unit in a multi-unit building, language has been added to that Section 1783.2(h) for the purpose of clarifying that point.

2232	9301-11 Section 1783.2(i): If any additional surface property owners or tenants are provided notice after the original declaration, the time period under Subsection (c) upon which well stimulation shall commence should be re-calculated from the date of the last notice provided to ensure that all interested parties have a fair opportunity to raise any concerns with the proposed well stimulation. This provision would not be applicable to surface property owners or tenants that are not required to be notified under the provisions of Subsection (a)(1).
2233	9324-34 In section 1783.2 (j), please clarify the procedure in this provision to address how supplemental declarations affect the notification timelines. Reason, WSPA, CIPA, and IOPA are concerned that this requirement could cause undue delays to well stimulation operations.
	Response to comments 2232-2233: Accepted. Section 1783.2(c) states that a well stimulation treatment subject to the neighbor notification requirements of this section shall not commence until 30 calendar days after all required notices are provided.
2234	9324-10 With respect to neighbor notification, WSPA, CIPA, and IOPA are under the impression that the Division's intent is to allow non-specific addressees such as "current resident" or "current occupant" to be utilized in meeting the notification and disclosure requirements. We would request that the Division revise the regulation to provide strict clarity on this topic and to revise as appropriate other sections of Section 1783.1 to ensure that other provisions do not conflict with the use of general addressee formats.
	Response to comment 2234: Accepted.
2235	9299-26 Section 1783.2(g) this is use of John Doe which became an issue in CEQA lawsuit with County Judge made us identify and notice every surface landowner whether trustees or individual owners.
	Response to comment 2235: Thank you for your comment. The Division believes that providing notice to non-specific addresses is an effective means to provide notice to tenants.
2236	9298-22 Use of a third party to notify owners and tenants should not absolve the oil company (the "operator") from full and complete responsibility if one or more owners or tenants are not notified properly, and this stipulation of full and complete responsibility on the part of the "operator" should be included in this section.
	Response to comment 2236: Rejected. Public Resources Codes section 3160, subdivision (d)(6)(B)(i) states that the operator shall identify the area requiring notification and shall contract with an independent entity or person who is responsible for, and shall perform, the required notification.

2237	5540-7 There's a few areas that need clarification. I would say on tenants' rights to monitoring, there's been some changes in the regulations that are little unclear. I don't believe it was intentional to exclude tenants' rights to request monitoring; however, on my last read of the regulations, it looks like that might be the case.
2238	4608-3, 4725-4, 9280-11, 9283-12, 9294-13, 9321-25 While surface owners have the ability to have all costs associated with baseline water monitoring and testing paid for by the industry, the Regulations do not allow legal tenants of surface properties, with lawful access to surface water that is suitable for drinking or irrigation, to do the same. DOGGR has provided no legal defense for this exemption. Tenants have the right to protect and safeguard the water they have a legal right to use. Operators of wells must cover all expenses related with water testing on a property, including testing requested by legal tenants.
2239	4725-5 If you do require tenants to pay for water-quality testing, there is no link to a place where they can find more information about where to solicit the services of a water-testing company.
	Response to comments 2237-2239: Rejected. In accordance with Public Resources Code section 3160, subdivision (d)(7)(C), Section 1783.3(d) states that a tenant who has lawful access to a water well or surface water may independently contract with a designated contractor, but is not entitled to reimbursement from the operator. The Well Stimulation Treatment Neighbor Notification Form includes information about how to find a list of Designated Contractors for Water Sampling.
2240	4608-4 Is surface water included in water testing? If not, it should be added.
	Response to comment 2240: Section 1783.3(a) states that a surface property owner notified pursuant to Section 1783.2 may request water quality testing on any existing water well or surface water located on the parcel that is suitable for drinking or irrigation purposes.
2241	4599-1 When Section 1783.2 is combined with Section 1780 it means that offshore well stimulation would need to hire a third party to notify neighbors. I would like the regulations to clarify that neighbor notification is not needed when well stimulation takes place offshore.
	Response to comment 2241: Rejected. Public Resources Codes section 3160, subdivision (d)(6)(B)(i) states that the operator shall identify the area requiring notification and shall contract with an independent entity or person who is responsible for, and shall perform, the required notification.
2242	5514-7 The groundwater monitoring requirements, in aid of nothing, would cost the industry hundreds of millions, if not billions, if we chose to do permit well stimulation in areas having USDWs. Obviously, most of us will not.
2243	8409-3 Citizens are upset about the seemingly casual approach to neighbor notification of well stimulation, particularly those experiencing health effects attributed to polluted air.

2244	8392-16 There are feelings that the regulations need to do more to empower the public as well as the surface property owners.
2245	8297-16, 8297-17, 8297-18 Californians now know that any citizen who has even the loosest definition of tenant has the right to order a water test which creates a barrier to operations and investment. People have seen a reduced rig count as a result of this and companies are getting the message that they can't afford to drill there anymore. CBD organizes tenants to file lawsuits on their collective behalf with the intention of stopping drilling via perceived abuse of the law. Citizens know this is found in public record and have aggressively demanded having this data made available to them instantly on the internet. Virtually all fracking in California occurs in Kern County. Virtually all there is at Belridge Field. There is no drinking water aquifer there so people see that it is impossible for frack jobs to violate the high drinking water and contamination standards maintained by law. People think law firms look for new ways to sue oil companies.
2246	8387-4 California citizens expect that well stimulation companies will send notification letters to residents whose water, air and land will be polluted because people appreciate advance notice. In doing the above, people do not see how anything can go wrong.
2247	4659-1 Neighbor notification does not represent protection. It does not protect ground water from permanent contamination and does nothing to protect our air.
2248	5514-8, 9317-7 1783.2 Neighbor Notification requirements are thinly veiled "Please Sue Me" requirements to allow untrained laymen to interfere with, claim harm from, and generally disrupt normal oilfield operations while drastically driving up their costs. Requiring 3rd party notification is an insulting presumption that Operators will somehow "cheat" on notification (rather than finding and prosecuting the ones that do), and it also drastically increases stimulation costs. The 1,500' notification radius is arbitrary and excessive, as is the requirement to test water before and after every acid stimulation. It's as if this provision, and the entire regulation, was specifically designed to drive all but the largest Multinational Oil Companies and Service Providers out of California.
	Response to comments 2242-2248: Thank you for your comments.
	<u>1783.3 Availability of Water Testing, Request for Water Testing</u>
2249	9299-27 Section 1783.3(a) it seems any water that could be further contaminated should be able to be tested if requested.
2250	9299-30 Section 1783.3(d): Annual test should be requirement over life of well and past.
2251	9322-12 1783.3(b)(4)(A). Since the purpose of post-stimulation water quality sampling and testing is to detect contamination from the treatment. Because processes leading to contamination of surface and well water may take longer periods to show up, in addition to measurements between 30 and

	60 days after treatment, follow-up measurements should be required 1, 2, and 3 years following well stimulation treatments.
2252	9347-4 Water testing is hopelessly inadequate to Californians. People want to know that in the event their tests show water contamination what possible remedies can be made. Citizens have thought of trucking in water for affected neighbors. The concerned citizens also believe there needs to be a requirement that testing occurs daily in eight compass locations on the area's perimeter and that it should be ongoing. Results should be reported to any neighbors who get water from affected aquifers.
2253	9315-24 Section 1783.3(b)(6), increases transparency of water quality testing data. However, only providing data to tenants based on the "extent authorized by the tenants lease," is problematic. Any lawful tenant, and any water user, for that matter should receive testing data regardless of written agreements. In the example of a school, for instance, all students, parents and teachers should also have access and be notified of the water quality data.
2254	9298-29 This section stipulates that the results of any water quality testing shall be provided to the Division, the appropriate Water Quality Boards, and the surface property owner and tenant(s), but does not designate a time frame for notifying each party of the results. This deficiency should be corrected.
2155	4692-3 1783.3. Water testing, paid for by the operator, shall be provided not only to owners but also tenants within the enlarged notification area recommended above. In addition to the testing described in subsection A of 1783.3, annual testing should be performed to verify that migration of gases and fluids has not occurred during the first five years of production of the well. Not everyone is connected to the internet. Instead of listing the division of oil and gas website where a template form to request water testing may be found, the operator shall be required to include the template form with the neighbor notification.
2256	9320-27 To ensure compliance, the operator should provide documentation demonstrating that all required water quality testing (including both baseline and follow-up testing) has been completed.
2257	9320-12 We also strongly recommend that the Department require baseline water testing of both surface water and groundwater. Although the law and the proposed regulations allow for neighbors to request testing, the operator should be required in all instances to obtain baseline and follow-up testing by a Designated Contractor for Water Sampling.
2258	4642-5 Ground water monitoring must be required prior and after fracking and that's required not only done when it's requested because as someone mentioned earlier, the procedure for requesting water testing that's proposed by the frack rules is too onerous and will likely be considered very complicated by owners and tenants.
2259	9294-14 Rather than making water testing available to owners and tenants upon request, as the current language of Section 1783.3 proposes, the Regulations should mandate water testing of wells to be conducted as a matter of course whenever well stimulation treatment in the vicinity of the property is taking place.

2260	9301-15 Subsection (b)(6): The municipality and any other local agencies with jurisdiction should also receive copies of any water quality testing results. Subsection (d): If the surface property owner declines to request water quality testing, a tenant should be entitled to request the same options as the surface property owner for water quality testing, including reimbursement by the operator for the testing. However, only one request for water quality testing for each property should be reimbursed.
	Response to comments 2249-2260: Rejected. Public Resources Code section 3160, subdivision (d)(7) requires operators to pay for testing of water wells or surface water suitable for drinking located on neighboring parcels within 1500 feet of the wellhead or 500 feet of the surface representation of a well, if the neighboring surface property owner requests the water testing. The statute specifies testing is to consist of baseline testing prior to well stimulation treatment and follow-up testing after well stimulation, testing must be conducted in accordance with standards and protocols specified by the State Water Resources Control Board, and testing must be conducted by a qualified independent third-party contractor designated by the State Water Resources Control Board. The statute further specifies that results of the water testing must be reported to the Division, the appropriate Regional Water Quality Control Board, and the surface property owner. Public Resources Code section 3160, subdivision (b)(1)(B) expressly requires the Division to adopt regulations this statutory neighbor water requirement. The purpose of Section 1783.3 is to establish procedures implementing the water testing requirement of Public Resources Code section 3160, subdivision (d), and the suggested revisions to Section 1783.3 would be a departure from the statutory requirements. Although testing of neighbors' water wells and surface water is optional at the election of the surface property owner, all wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783.
2261	9301-13, 9321-23 Section 1783.3(a): A notified surface property owner should be given thirty (30) calendar days from the date notice is provided to request water quality testing. The Neighborhood Notification Form should be revised to reflect this change.
2262	9324-36 Comment: Please include a time frame for surface property owners to elect water sampling. Rationale: WSPA, CIPA, and IOPA are concerned that the without time frames, groundwater testing provisions could cause undue delays to well stimulation operations.
2263	9303-3 1783.3(b)(4)(B): It appears that there is no control to keep a surface owner who chooses to select his own sampling contractor from "dragging his feet" to perform the work. Need clarification for when the operator can begin?
2264	9324-15 We believe that the regulations should specify a timeline for surface owners to request and complete water sampling prior to well stimulation operations. To align with the surface

	owner/tenant 30-day notification timeline, WSPA, CIPA, and IOPA request that the deadline to elect water sampling be 10 days after notification. Should the surface owner/tenant elect to use their own contractor for sampling, we recommend sampling and analysis of the results must be completed 20 days following the original 10-day sampling election deadline.
	Response to comments 2261-2264: Accepted in part. One of the purposes of Section 1783.3 is to prevent a late request for water testing from delaying well stimulation treatment beyond the required 30-day neighbor notification period, while protecting surface property owners' right to have water testing paid for by the operator. Section 1783.3(b)(4) specifies that if the request for water testing is made within 20 days of notice being provided, then the operator must ensure that baseline sampling occurs before well stimulation treatment commences. If the surface property owner does not make a timely request for testing, then the property owner is responsible for ensuring sampling gets done before the treatment commences, and the operator is not required to delay commencement of treatment beyond the required 30-day neighbor notification period. Regardless of the timing of the request or the sampling, the operator is responsible for cost of sampling and testing requested by surface property owner in accordance with Section 1783.3.
2265	9289-9 In sections 1783.3 (a), (b), (b)(4), (b)(4)(A), (b)(4)(B), add the "and/or tenant" after each use of the existing phrase, "surface property owner." Delete section1783.3 (d), as the rights of tenants have been made identical to those of surface property owners with our suggestion for 1783.3 (a) et al. In section 1785(d)(3) re-include the list of deleted chemical constituents.
2266	9315-28 It appears that the intent of Section 1783.3(a) was to provide water monitoring rights to both the surface property owners and tenants notified in Section 1783.2, but the language makes that right unclear. In order to comply with Section 3160(d)(6)(A) of SB 4, this section of the regulations must clearly give the right to water quality testing to tenants, and not only surface property owners.
2267	8414-1 The proposed SB4 regulations indicate that property owners may request water quality testing at the driller's expense whereas tenants would not have the right to be reimbursed for the costs of such testing (Section 1783.3(d)). Some find this unjust and feel that tenants should not be at a disadvantage when it comes to finding out if their water is safe. The financial burden should be on the driller to prove that the water is safe for all who drink it whether they own property or not.
2268	4692-3 1783.3. Water testing, paid for by the operator, shall be provided not only to owners but also tenants within the enlarged notification area recommended above. In addition to the testing described in subsection A of 1783.3, annual testing should be performed to verify that migration of gases and fluids has not occurred during the first five years of production of the well. Not everyone is connected to the internet. Instead of listing the division of oil and gas website where a template form to request water testing may be found, the operator shall be required to include the template form with the neighbor notification.
	Response to comments 2265-2268: Rejected. In accordance with Public Resources Code section 3160, subdivision (d)(7)(C), Section 1783.3(d) states that a tenant who has lawful access to a water well or surface water may independently contract with a designated contractor, but is not entitled to reimbursement from the operator.

2269	8392-2 Who has jurisdiction over the Well Owner and Operator if they fail to comply with 1783.3 (4)(A) or 1783.3(4)(B)?
	Response to comment 2269: The Division is charged with enforcing these regulations.
2270	9309-13 The proposed regulations do not specify where in the process groundwater sampling should take place for baseline and follow up testing. This should be mandatory as part of the groundwater monitoring plan, not just when requested by property owners.
2271	9299-28 Section 1783.3(b)(4): What about lab used by the DCWS analysis?
2272	9321-24 Section 1783.3(b)(4)(A), the Division remove the proposed requirement to arrange for follow-up measurements between 30 and 60 days after the well stimulation treatment and instead defer to the standards to be developed by the State Water Board to determine the timing of follow-up testing. Specifying the timing of follow-up testing before the State Water Board has created the water quality testing standards and protocols creates a potential conflict. We further suggest that the Division remove the phrase “moves expeditiously” as it is an undefined term that introduces ambiguity and uncertainty.
2273	9298-27 This section should be corrected to read, “Water quality testing shall be performed using a Designated Contractor for Water Sampling and the water sample analyzed by a laboratory that is certified by the California Department of Public Health Environmental Laboratory Accreditation Program (ELAP)”.
2274	9298-28 This section stipulates that the water quality testing shall include baseline measurements, but does not define what tests must be performed. Since the water samples to be tested are drinking water samples, the “baseline measurement” should be associated with EPA tests typically employed for drinking water analysis.
2275	9297-1 Section 1783.3(b)(2) states “Water quality testing shall be conducted in accordance with the standards and protocols specified by the State Water Board pursuant to Public Resources Code section 3160, subdivision (d)(7)(B).” A review, however, of the State Water Board code section does not specify what standards are to be met or what protocols are to be conducted. We understand that the State Water Board is in the process of drafting these applicable regulations to fill this gap. We, therefore, urge that a provision be added after 1783.3 (b)(2): “The baseline measurements requested by a surface property owner should be specified in detail per section State Water Board, Public Resources Code 3160, subdivision (d)(7)(B).” And at the end of this section a statement should be added: “The water tests should be compared with the results per section 1787.”
2276	9294-16 Assuming the water testing of wells under section 1783.3 is optional, the regulations should be revised to require that DOGGR and/or the Regional Board with jurisdiction over the location of the well treatment or a local agency are the agencies managing the Designated Contractor for Water Sampling and ensuring water testing is conducted. While we agree that the costs of water

	testing under Section 1783.3 should be covered by the entities conducting well stimulation treatments, we believe that, to ensure there is no bias or perceived bias in the water testing process and results, the well stimulation operator should not be in any way involved in the process. Rather, the request from the owners and tenants should be handled by the public agencies outlined above who can then direct the Designated Contractor for Water Sampling to collect the requested water samples. The proposition that the owners or tenants should contact the Designated Contractor directly is also unworkable as many owners or tenants would be discouraged to follow through on water testing if they had to coordinate personally with the contractor. For these reasons, we believe that DOGGR, the local Regional Board or local governments should be tasked with handling the water testing provided for under Section 1783.3.
2277	9282-22 This section should be amended to allow the performance of the independent entity or persons under this section shall be subject to independent review and audit by the Division.
	Response to comments 2270-2277: Accepted in part. Public Resources Code section 3160, subdivision (d)(7), specifies testing is to consist of baseline testing prior to well stimulation treatment and follow-up testing after well stimulation, testing must be conducted in accordance with standards and protocols specified by the State Water Resources Control Board, and testing must be conducted by a qualified independent third-party contractor designated by the State Water Resources Control Board. The statute further specifies that results of the water testing must be reported to the Division, the appropriate Regional Water Quality Control Board, the surface property owner, and tenants, to the extent authorized by a tenant's lease. Water Code section 10783 requires the State Water Resources Control Board to develop model criteria for groundwater monitoring by July 1, 2015, and standards and protocols for water sampling and testing will be part of that criteria. Section 1783.3(b)(7) states that the Regional Water Quality Control Board must be given advance notice of water sampling so that it may have an opportunity to witness the sampling.
2278	9324-36 In section 1783.3 the regulation should expressly allow for operator to be present during water testing that has been requested by surface property owner. Sections 1783.3 (b)(4)(A) & (b)(4)(B)
	Response to comment 2278: Rejected. Public Resources Code section 3160, subdivision (d)(6), does not provide operators with a right of access to neighboring property for the purpose of witnessing sampling.
2279	9301-14, 9299-29, 8392-3 Section 1783.3(b)(5): All costs of conducting water quality testing should be paid by the operator. The word "reasonable" is under subjective judgment of operator and should be struck.
2280	8392-4 There is concern that the well operators and owners will refuse to pay for any testing and hide behind legal statements like "the charges are unreasonable."
	Response to comments 2279-2280: Rejected. Under Public Resources Code section 3160, subdivision (d)(7), the operator is responsible is responsible for the cost of sampling and testing, but would not be responsible for billing that does not reflect the cost of sampling and testing. The statute provides that sampling and testing

	preformed shall be subject to audit and review by the State Water Resources Control Board or the Regional Water Quality Control Board, as appropriate.
2281	8392-1 Section 1781 (h) and 1783.3 (1) has people wondering if the property owner will have more than one Designated Contractor to choose from.
	Response to comment 2281: The State Water Resources Control Board maintains a list of Designated Contractors for Water Sampling on its website. There is more than one to choose from.
2282	8392-8 Citizens want to know how property owners can track groundwater quality data if it's only submitted to the EDF in accordance with California Code of Regulations, title 23, chapter 30. They want to know if this is a State Water Resources Control Board agency issue or a Certified Unified Program Agencies (CUPA's) Leak Prevention Program issue.
	Response to comment 2282: The State Water Resources Control Board's groundwater quality database is available to the public on the State Water Resources Control Board's website.
2283	9313-6 WV request confirmation that any services provided to well owners or operators would not jeopardize WM's standing as an independent third party pursuant to this section. DOGGR should consider the inclusion of a definition of "independent third party" in the regulations. WM recommends that DOGGR consider the following: (a) As used in this subchapter, "independent third party" means a technically competent entity responsible to and compensated by the owner or operator of an oil or gas well receiving stimulation treatment that is independent of direct management control by the well owner or operator. (b) An independent third party may provide other oil and gas well services as prescribed in this chapter to the owner and or operator of the oil and gas well subject to stimulation treatment. (c) Pursuant to PRC 3160, a person or persons who provides independent third party services as required by Section 1783.3 shall also be designated a qualified independent third-party contractor or contractors that adhere to standards and protocols to perform the water sampling and testing specified by the State Water Resources Control Board. The well owner or operator shall pay for the sampling and testing. The sampling and testing performed by this independent third party or parties shall be subject to audit and review by the State Water Resources Control Board or applicable regional water quality control board, as appropriate.
	Response to comment 2283: Rejected. The definition of "independent third party" in Section 1781(m) does not preclude a contractor from performing more than one service for an operator as an independent third party. Under Public Resources Code section 3160, subdivision (d)(7), Designated Contractors for Water Sampling are identified by the State Water Resources Control Board.
2284	9301-12 A DOGGR ombudsman should be designated on DOGGR's website to provide assistance to parties receiving the Neighbor Notification, including assistance on requesting water testing.

	Response to comment 2284: The required Well Stimulation Treatment Neighbor Notification Form includes contact information for both the Division and the State Water Resources Control Board, either of which could provide information about requesting water testing.
	<u>1784. Well Stimulation Treatment Radius Analysis and Design</u>
2285	9282-24 1784(a)(2): We support the Division's proposed requirement to perform a well stimulation radius analysis. This analysis is crucial to ensure that any potential pathways by which injected or displaced fluids could reach groundwater are identified and remediated, if necessary.
2286	4620-7 We support, we continue to support the requirement that operators conduct a well stimulation radius analysis to look for pathways where injected fluids can get to ground water or the surface
	Response to comments 2285-2286: Thank you for your comments.
2287	9282-25 1784(a)(2)(i): We support the requirement to perform appropriate modeling to determine the well stimulation treatment area of influence (AOI), but request additional clarifications about what constitutes an "appropriate model." Operators should also model the volume of rock in which chemical reactions between the formation, hydrocarbons, formation fluids, or injected fluids may occur and should consider and account for potential migration of fluids and chemical reaction byproducts over time.
2289	9282-26 1784(a)(2)(ii): We support the requirement to identify potential migration pathways within the well stimulation treatment radius, plus a safety factor. However, the safety factor should be twice the largest dimension anticipated by the AOI modeling, rather than twice the well stimulation treatment length. Depending on the specifics of the stimulation treatment, depth of the well, and other geologic and engineering factors, the length may not always be the greatest dimension of the AOI. We support the proposed requirement to review all offset wells and faults within the well stimulation treatment radius, plus a safety factor. However, the rules should require the operator to provide the Division with additional information about any such features identified and take additional steps to prevent communication with such feature.
2290	8425-1, 8425-2 Citizens question inter-wellbore communication. Their understanding of this is that a licensee has to investigate all wells within two times the fracking radius—if during the investigation it is noted that some wells have the potential to be affected by the proposed stimulation, people want to know what the procedure is for monitoring the adjacent wells and reporting any inter-wellbore communication (pressure, fluid, etc.) to the division. Some jurisdictions require licensees to report instances of inter-wellbore communication and provide any data requested about the stimulation activity. The inspector then takes the data and analyzes it on a quarterly basis, providing an internal report to the organization.
2291	9300-9 This Section does not appear to cover multiple wells drilled from a single well pad - directionally or horizontally drilled laterals to any of several 'production horizons' including the "same production horizon" either previously having undergone well stimulation or known planned well

	stimulation operations. It also does not cover offset wells and faults within any determined distance. As such, the AOI appears to be solely based mathematically upon the Fracture Radius. How did DOGGR decide on the quation “twice the fracture radius”? What supplementary information was evaluated in setting this distance as the standard for evaluating inter-wellbore communication and the potential for impacts? What were the parameters of any “Risk Assessment” analysis that was performed in determining the AOI.
2292	9321-26 Section 1784(a)(1), we recommend that the Division include additional specifics regarding what constitutes an appropriate model, and a more thorough description of the necessary capabilities of such a model.
2293	9321-27 Section 1784(a)(2), needs additional requirements are still needed to ensure that wells within the stimulation treatment radius are not only identified, but that the integrity and potential for communication with such wells during stimulation is also assessed and managed.
2294	9301-16 Section 1784(a)(2): The language currently calls for review of "all wells", and it is not clear what that covers. The radius analysis should include a review of both active and abandoned wells.
2295	4685-2, 4686-2, 4687-2, 4688-2 Section 1784(a)(2)(ii): Evaluation prior to Well Stimulation Treatment: Increase the radius to at least 4 times the anticipated well treatment length for the review of prior local wells.
2296	9282-27 Communication between offset wells during stimulation is a serious problem, risking blowouts in adjacent wells and/or aquifer contamination during well stimulation. A New Mexico oil well recently experienced a blowout, resulting in a spill of more than 8,400 gallons of fracturing fluid, oil, and water. The blowout occurred when a nearby well was being hydraulically fractured and the fracturing fluids intersected this offset well. The incident led the New Mexico Oil Conservation Division to request information about other instances of communication between wells during drilling, completion, stimulation or production operations. Incidents of communication between wells during stimulation have been documented in British Columbia, Pennsylvania, Texas, and other states across the country. The oil and gas regulator in Alberta, Canada recognized that communication between wells during fracturing is a serious risk to well integrity and groundwater, and created requirements to reduce the likelihood of occurrence. Similarly, Enform, a Canadian oil and gas industry safety association, published recommended practices to manage the risk of communication.
	Response to comments 2287-2296: Accepted in part. The requirements for identifying wells within the area of a proposed well stimulation treatment are now addressed in Section 1784(a)(2), which provides, “The well stimulation treatment analysis shall include identification and review of all well bores located completely or partially within two times the ADSA to ensure the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation.” The “ADSA” is defined in Section 1781(f) as the “estimated axial dimensions, expressed as maximum length, width, height, and azimuth, of the area(s) stimulated by a well stimulation treatment.” Section 1784(a)(1) requires the operator to submit for review the modeling and analysis supporting the ADSA, and Section 1784(a)(2) provides that the Division may allow modification of the review area based on modeling and analysis provided by the operator that demonstrates geologic and hydrologic isolation of the oil and gas formation during and following well stimulation

	treatment. Section 1784(a)(2)(A) details information that must be provided for each well within the approved review area.
2297	9324-6 The proposed requirements of Section 1784(a)(2) also clearly exceed the authority originally granted in SB 4 and later re-conferred in SB 861 (Public Resources Code Section 3160(d)(1)(E)). SB 861 only requires that the operator to provide "the location of existing wells, including plugged and abandoned wells, that may be impacted by these fractures and modifications". This section of the Public Resources Code does not require or grant the Division authority to require the casing diagrams and additional information required by Section 1784(a)(2) of the proposed regulations. WSPA, CIPA, and IOPA strongly oppose the requirements contained in Section 1784 (a)(2) of the proposed regulations. As proposed in the draft, this section would require that the operator perform an analysis of all wellbores within a distance of two well stimulation radii of the well to be stimulated. The analysis requires detailed casing diagrams and enumerated information for each of the well bores within the two radii, notwithstanding the results of the simulation model required in Section 1784(a)(1).
2298	9288-8 Chevron opposes the Division's approach to the well stimulation treatment radius analysis and design as creating an uncertain compliance requirement. Consistent with Chevron's prior comments on the regulations, Chevron recommends the Division develop definitive criteria to address what is acceptable for overlying strata, faults, and adjacent wellbores. We believe that providing a well log to identify low permeable zones above the target formation suffices for the overlying seal. For faults, a map determination showing no intersections with faults of concern within a fracture zone provides clear criteria. Finally, for any adjacent well within a fracture zone, the operator should only need to show a valid operating permit or a proper well abandonment to establish that the adjacent well does not create a pathway to groundwater.
	Response to comments 2297-2298: Accepted in part. Consistent with the mandate of Public Resources Code section 3160, subdivision (b), Section 1784 requires modeling and analysis to evaluate wells and geologic features within the area of a proposed well stimulation treatment in order to ensure geologic and hydrologic isolation of the treated hydrocarbon formation. Section 1784 is revised to provide a flexible framework for making this demonstration and does not prescribe analytical or modeling technology. However, showing a permit or a record of well abandonment may not be sufficient. Many wells that were plugged and abandoned may be to standards that would not ensure geologic and hydrologic isolation. These wells will be evaluated to ensure zonal isolation. Consistent with the mandate of Public Resources Code section 3160, subdivision (b), Section 1784 applies to all forms of well stimulation treatments, not only hydraulic fracturing. If the type of well stimulation treatment has a smaller treatment area than what is typical of hydraulic fracturing, then the area review will be easier.
2299	9298-30 For clarity sake, the section could be changed to read, "As part of an application for a permit to conduct well stimulation, the operator shall conduct a well stimulation treatment radius analysis <u>(defined in subsequent portions of this section)</u> to…
	Response to comment 2299: Rejected. The suggested addition is not necessary because it is clear from the structure of Section 1784(a) that Section 1784(a)(1)-(5) constitute the contents of the required analysis.

2300	9309-17 Section 1784(a)(2)(iii): County of Monterey supports this section only if the division intends to be present for other evaluations and testing prior to well stimulation treatments, i.e. no well stimulation treatments should be performed on a well that has not physically been inspected by the DOGGR.
	Response to comment 2300: Rejected. Section 1783(d) requires 72-hour and 3-hour notice to the Division so that the Division will have an opportunity to witness well stimulation treatment operations. Section 1785(a) requires operators to record monitoring parameters during well stimulation treatment, so if Division staff are unable to witness a treatment there will be a record of the treatment for the Division to review. If there is any indication of a well breach during well stimulation treatment, Section 1785(c) requires the operator to notify the Division and allow the Division to witness the diagnostics performed. If diagnostics indicate that a well breach did occur, Section 1785(d) and (e) require that the well be shut-in and that operation of the well cannot resume without approval from the Division. Although the regulations provide for extensive oversight by the Division, well stimulation treatment is conducted by the operator, and it is the operator's responsibility to comply with all applicable requirements.
2301	9299-31 Section 1784(a)(2)(A)(iii): Would this as written include the length and position on casing of perforations?
	Response to comment 2301: Section 1784(a)(2)(A)(iii) requires the location of the perforations in the well to be identified, including perforations and their exact locations.
2302	9298-31 Section 1784(a)(2)(iii) currently reads, "Depths of perforation intervals, water shutoff holes, cement port, cavity shots, cuts, casing damage, and top of junk or fish left in well." It will be unclear to most readers if the phrase "top of junk or fish left in well" is legitimate oil industry terminology or a bad joke with no place in a legal bill. As such, the meaning of the phrase should either be supplied here or the phrase deleted.
	Response to comment 2302: Rejected. The terms "top of junk" and "fish left in well" are both commonly understood by the Division and the regulated public.
2303	9321-28 Strengthen section 1784(a)(3), by adding the following: "(i) An evaluation of whether such features may act as migration pathways for injected fluids or displaced formation fluids to reach protected water or the surface (ii) An assessment to determine the risk that the stimulation treatment will communicate with such features. (iii) If such features may act as migration pathways and are at-risk for communication, the stimulation design must be revised to ensure that the treatment will not communicate with such features or the well must be re-sited.
	Response to comment 2303: Accepted. Suggested items (i) and (ii) are included in Section 1784(a)(3). Suggested item (iii) was already

	mandated under Section 1784(b).
2304	9324-37 In section 1784(a)(3) Comment: Recommend revising the section to read as follows: “The well stimulation treatment radius analysis shall include a review of all geologic features, including known faults (active or inactive *as identified by the California Geological Survey*) within a radius of five times the anticipated well stimulation treatment length from each point of the well stimulation treatment to evaluate the geologic and hydraulic isolation of the oil and gas formation during and following well stimulation.” Rationale: DOGGR and the California Geological Survey have maps showing known active and inactive faults. Without this limitation, one could argue that the operator must run seismic surveys prior to any well stimulation treatment which is infeasible from cost and logistics perspective.
2305	9299-32 Section 1784(a)(3): What about requirement to identify faults with Seismic sonar testing before drilling?
2306	9301-17 Section 1784(a)(3): The review of all faults (active or inactive) should be more carefully spelled out. In addition to including known faults, the review should include any faults that can be identified with reasonable diligence, using the latest technology and information. Operators that have conducted any subsurface seismic testing should be required to provide any data suggesting or demonstrating such faults.
2307	9301-18 Section 1784(a)(4): The second sentence, which states "The operator shall assess the mechanical rock properties, including permeability, relative hardness (using Young's Modules), relative elasticity (using Poisson's Ratio), and other relevant characteristics of the geological formations to determine whether the geological formations will ensure the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation" should also apply to Subsection (3).
2308	9298-32 Section 1784(a)(2)(B)(3) wording presents a number of potential problems. First, it seems to imply that simply stating in the well stimulation treatment radius analysis that an active earthquake fault is present in the drilling zone will somehow “ensure” the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation. Clearly, simply knowing that an active earthquake fault is present will not ensure isolation of the hydraulically fractured formation in the event of an earthquake. If there are engineering steps that can be taken to ensure complete geological and hydrological isolation of a formation in or near an active fault zone, then the bill should state that those steps must be specified in the radius analysis and carried out in the field. Second, the stipulation of “a radius of five times the anticipated well stimulation treatment length” should be justified and referenced. Why not six times or ten times? Third, it is unclear what is meant by saying, “a radius of five times the anticipated well stimulation treatment length from each point of well stimulation treatment”. Finally, it is completely counter-intuitive to most people as to why DOGGR would permit an oil company to carry out hydraulic fracturing on a well in or near an active earthquake fault. Compelling evidence should be presented here (or at least carefully referenced) to support the idea that this will always result in (“ensure”) complete geologic and hydrologic isolation of the formation… especially in the event of an earthquake along that fault. The section should be rewritten to address these concerns.
2309	9303-6 Section 1784(a)(4): Adjacent formation rock property analysis - some old fields do not have

	porosity or acoustic logs to permit this analysis. Does an operator have to incur additional cost and run cased-hole logs prior to performing a stimulation?
	Response to comments 2304-2309: Rejected. Consistent with the mandate of Public Resources Code section 3160, subdivision (b), Section 1784 requires modeling and analysis to evaluate wells and geologic features within the area of a proposed well stimulation treatment in order to ensure geologic and hydrologic isolation of the treated hydrocarbon formation. The regulation does not prescribe a specific technology to achieve this standard. In addition to California Geological Survey maps, there are other sources of information available to operators regarding the location of faults, and all available data should be consulted when identifying "known faults."
2310	9321-29 Add the following to section 1784(a)(5): "including maps and stratigraphic cross sections indicating the general vertical and lateral limits of all water, their positions relative to the production/stimulated zone(s), and the direction of water movement, where known."
	Response to comment 2310: Rejected. The form of the groundwater information submitted Section 1784(a)(5) will depend on the form of the available information and the most efficient means of filling information gaps in each circumstance.
2311	9298-33 Section 1784(a)(2)(B)(5) currently stipulates "radius analysis shall include identification of all water within a radius of twice the anticipated well stimulation length." Again, why two times the radius and not five or more? The multiplier (2 or 5, for example) should be justified and referenced.
	Response to comment 2311: The purpose of Section 1784 is to ensure hydrologic and geologic isolation. Although the presence of groundwater in the stimulated area is relevant, the information is not essential to the determination of whether the well stimulation treatment design ensures confinement to the hydrocarbon zone.
2312	9320-28 Subsection 1784(b) should also require the well stimulation treatment design to prevent the migration of "produced water."
	Response to comment 2312: Rejected. The defined term "protected water" was removed from the regulations. Public Resources Code section 3160, subdivision (b), calls for regulations that ensure well integrity and geologic and hydrologic isolation of the stimulated hydrocarbon formation, regardless of the quality of groundwater in the area. Accordingly, the requirements of these regulations apply regardless of the groundwater quality and therefore it is not necessary to define "protected water."
2313	9324-38 In section 1784(b), recommend replacing the term "pressure" with "casing differential pressure". Rationale: It is the differential pressure on the casing (i.e. the difference in pressure inside the casing to the pressure exerted by the externally to the casing that is the key to determining casing integrity.

	Response to comment 2313: Rejected. Differential pressure would take the outside pressure into consideration and therefore decrease the amount of pressure used to test the well from the inside.
2314	9313-7 WM is unclear as to the meaning of the verb "do" within the context of the introductory sentence to this section. Does this verb mean that the operator is required to directly "do" these activities may the well operator contract with an independent third party to perform these activities? If a third party conducts these activities, does that adversely affect their "independence" within the meaning of Section 1783.3. WM recommends that this section be amended to change the word "do" to "arrange" within the first sentence of this section as follows: (a) The operator shall ~~do~~ ***ensure*** all of the following prior to commencing or recommencing well stimulation treatment operations: . . .
	Response to comment 2314: Rejected. Operators are responsible for effective and timely compliance with the Division's regulations, and it is well understood by the Division and the regulated public that operators can do and do employ contractors to accomplish this.
2315	9303-4 How do these requirements differ from a UIC permit application?
	Response to comment 2315: Injection projects for enhanced oil recovery, injection disposal, and underground gas storage are covered by extensive, existing regulations, found in sections 1724.6 through 1724.10 and sections 1748 through 1748.3 of the regulations. The scope, duration, and purpose of injection projects and well stimulation treatments are substantially different, and, accordingly the scope of review for an underground injection project will generally be much greater than for a well stimulation treatment.
2316	9282-28 Section 1784(a)(2)(iii): We object to the proposed requirement to exempt operators from reviewing the properties of geological formations adjacent to the productive horizon unless a radius of five times the anticipated well stimulation treatment length from a point of treatment extends beyond the productive horizon. This proposed rule appears to be a misinterpretation of the requirements of SB 4 at 3160(i)(1)-(2). Operators should be required to demonstrate the presence of a suitable confining zone for all wells that will be stimulated, not only for fracture stimulated wells and not only for those wells where a radius of five times the anticipated well stimulation treatment length extends beyond the productive horizon.
	Response to comment 2316: Rejected. Section 1784(a)(4) requires assessment of adjacent formations that the well stimulation treatment might interact with. In addition, Section 1784(a)(3) requires assessment of all geologic features within a safety factor of five, as contemplated in Public Resources Code section 3160, subdivision (i).
2317	9284-5 Amend Section 1784(b) to read "Utilizing the well stimulation treatment radius analysis conducted pursuant to subdivision (a), The operator shall design the well stimulation treatment so as to

	ensure that the well stimulation treatment fluids or hydrocarbons do not migrate and remain geologically and hydrologically isolated to the hydrocarbon formation." Explanation: When designing a well stimulation treatment to ensure well integrity, the differential pressure on the casing string is more relevant than the pressure at which the well stimulation treatment fluid is pumped, and differential pressure will vary by job. We believe that existing language in section 1784(b) (indeed, throughout the Proposed Rule) is sufficient to ensure that well integrity is taken into account while designing the well stimulation treatment.
	Response to comment 2317: Rejected. It is necessary to specify a pressure limit relative to the API rated minimum internal yield of the casing string to ensure that a well stimulation treatment, as designed, does not overpressure the casing. Differential pressure would take the outside pressure into consideration and therefore decrease the amount of pressure used to test the well from the inside.
2318	9282-29 The operator shall assess the mechanical rock properties, including permeability, relative hardness (using Young's Modulus), relative elasticity (using Poisson's Ratio), and other relevant characteristics of the geological formations to determine whether the geological formations will ensure the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation. The results of this analysis should be submitted with the well stimulation application.
	Response to comment 2318: Accepted. Section 1783.1(a)(21) requires that the permit application include the well stimulation treatment area analysis conducted under Section 1784(a).
2319	9317-8 1784 requirements are completely irrational; one wonders how we managed to avoid completely obliterating USDWs in the 70 years of fracking/acidizing wells prior to SB 4.
2320	9322-13 How can an acceptable regulation be based on the hope of getting adequate data to base it on in the future? SCWC recommends that all chemical stimulation treatments, including chemical fracturing, be disallowed until such time the risks can be predicted with greater confidence. Otherwise, these permits will allow risky experimentation that will put life-supporting aquifers at risk.
	Response to comments 2319-2320: Thank you for your comments.
	<u>1784.1. Pressure Testing Prior to Well Stimulation Treatment</u>
2321	9298-34 Section 1784.1(a)(1) stipulates that "if during testing, and after equilibrium has been reached, there is a pressure change of 10% or more from the original pressure, then the operator shall immediately notify the Division". First, the duration of the monitoring period after equilibrium has been reached should be defined. Does the pressure drop 10% in 5 minutes or 5 hours? A measurable pressure drop over 5 minutes indicates a fairly large leak, while the same pressure drop over 5 hours suggests a smaller one. There is a more important point, however, that needs to be addressed. If, after equilibrium has been reached, there is indeed a pressure drop over a

	fixed period… even a "relatively small" pressure drop… then a breach (a leak) in the casing is suggested. If hydraulic fracturing fluid was being applied to the well under pressure and the casing leak… even if it was a "relatively small leak"… occurred within or near an aquifer, then the aquifer could suffer significant contamination from those "fracking fluids". This line of questioning requires that another, fundamental question be addressed. What makes a 9% drop in pressure (a "small leak") acceptable while a 10% drop in pressure sufficient to mandate that "the tested casing or tubing shall not be used until the cause of the pressure drop is identified and corrected"? Is it the position of the bills authors that "a small leak is the same as no leak"? Alternatively, is it the position of the bills authors that "a small leakage of hydraulic fracturing fluid out the well casing and potentially into an aquifer is acceptable"? Would it not be more prudent to simply require that all casings hold their equilibrium pressure over the entire duration of the monitoring period? These concerns should be addressed in this section.
2322	9309-18 Section 1784.1(a)(1) Please provide comments and documentation to explain why a pressure drop of up to 10% is protective of the public health and environment. Specifically, address protection of the groundwater aquifers from both well stimulation fluids and oil and gas. We want to understand why the value of 10 percent is chosen. For example, was it based on a study that we can review?
	Response to comments 2321-2322: Any leakage from the well into zones not approved for well stimulation is a problem. The question is determine when there is a leak. There is variance in the equipment used and this includes the pumping rates and the accuracies of the gauges. Taking these variances under consideration, the Division's opinion is that a 10% pressure change over the required 30 minutes is an adequate method to test for leaks.
2323	9303-5 1784.1(a)(1): Pressure Testing Prior to Well Stimulation Treatment – perhaps limit this to 90% of API internal yield to be somewhat consistent with 1785(b)(2)?
	Response to comments 2323: Rejected. A higher pressure is called for during testing than what is allowed during well stimulation treatment because it is better if well breach to occurs during testing then during treatment.
2324	9324-39 In section 1784.1 (a)(1) recommend revising to read as follows: "All cemented casing strings ~~and all tubing strings~~ to be utilized in the well stimulation treatment operations shall be pressure tested for at least 30 minutes at a pressure equal to ~~125%~~ *100%* of the maximum surface pressure anticipated during the well stimulation treatment, but not at a *differential* pressure greater than *80% of* the API rated minimum internal yield of the tested casing. *Tubing used as to inject the well stimulation treatment fluid may be pressure tested on a multi-tubing joint basis before the multi-joint tubing assembly is installed in the well , or may be pressure tested as a complete tubing assembly once the entire tubing assembly in the well. Tubing test pressure shall be equal to 100% of the maximum surface pressure anticipated during the well stimulation treatment, but not greater than 80% of the API rated minimum internal yield of the tested tubing.* The operator shall chart the pressure testing. If during testing, and after equilibrium has been reached, there is a pressure drop change of 10% or more from the original test pressure, then the operator shall immediately notify the Division, the operator shall provide the Division with copies of the charting of the pressure testing, and the tested casing or tubing shall not be used until the cause of the pressure drop is identified and corrected to the Division's satisfaction. No casing or tubing shall be used unless it has been successfully tested pursuant to this section." Rationale: Requirement to test casing to 125% of MASP is onerous, and could require operators to breach their own internal

	safety guidelines.
	Response to comment 2324: Accepted in part. Section 1784.1(a)(1) has been revised to require minimum pressure testing of 100% of the maximum surface pressure anticipated during well stimulation treatment. Differential pressure would take the outside pressure into consideration and therefore decrease the amount of pressure used to test the well from the inside. Other suggested revisions were not adopted because the provision is clear and sufficiently specific as is.
2325	9324-40 In section 1784.1(b) recommend revising to read as follows: "The operator shall notify the Division at least 24 hours prior to conducting the pressure testing required under subdivision (a) so that Division staff may witness. The charting of pressure testing required under subsection (a)(1) *shall be maintained onsite by the operator and provided to the Division upon request* ~~not less than 12 hours before~~ commencing well *stimulation treatment and must be included in the well history."* Rationale: In order to pressure test the surface equipment the WST equipment must be rigged up before it can be pressure tested. The 12 hour provision means the rig will have to sit idle for 12 hours after the pressure test. DOGGR will always have the ability to verify that the pressure test was conducted after the WST has occurred.
	Response to comment 2325: Rejected. It is imperative that the well casing and tubing strings are tested and verified by the Division. The operators will need to plan to have this test not more than 30 days before and not within 12 hours of the well stimulation. With adequate planning, the operator will not need to idle the rig for 12 hours.
2326	9309-4 The regulations cited in 1784 and 1784.1 require testing and evaluation to be completed by the Operator. DOGGR should be supervising these actions. 1784.1(a)(2)(b) "The operator shall notify the Division at least 24 hours prior to conducting the pressure testing required under this section so that Division staff may witness." Revise to state "shall witness."
	Response to comment 2326: Rejected. The Division will be notified of the pressure testing. Staff will make every effort to witness all pressure testing, yet there are times when more pressing tests or emergencies will dictate that the Division waive a pressure test. For these times, the operator is required to record and provide charts of all pressure tests and certify that the pressure test was completed and showed mechanical integrity.
2327	4685-2, 4686-2, 4687-2, 4688-2 1784.1 Increase notification of pressure testing from 24 hours to 72 hours.
	Response to comment 2327: Rejected. The Division has staff on call to witness operations around the clock and on weekends. Twenty four hours is sufficient notice for Division staff to plan to witness pressure testing.
2328	9299-33 Section 1784.1(a)(2): Who and how would this be determined otherwise? Manufacturer? It could be same as Contractor.

	Response to comment 2328: In some cases the manufacturer of the equipment may also be the contractor employed by the operator to pressure test the equipment.
2329	9321-30 The proposed rules do not include testing standards for non-cemented completions. We suggest the following addition: “Non-cemented production completions shall be tested to a minimum of (i) 70% of the lowest activating pressure for pressure actuated sleeve completions or (ii) 70% of formation integrity for open-hole completions, as determined by a formation integrity test.”
2330	9282-30 The proposed rules fail to include testing and bond logging standards for un-cemented and deeper completions of existing wells subject to rework during the expected 25+ years of production.
	Response to comments 2329-2330: If a well stimulation is to occur in an uncemented casing it must be verified that the well stimulation is confined to the intended zone. Well stimulation into an uncemented casing should only occur in a production liner. Under existing regulation Section 1722.4, a production string of casing must be cemented across the top of the zone with at least 500 feet of cement above the zone. No matter what the age of the well is, the well must still have zonal isolation. A pressure test of the casing would be conducted on the cemented production string of casing and/or the tubing used in the well stimulation, and the uncemented liner would not be pressure tested.
2331	9317-9 Section 1784.1 requirements to pressure test cemented casing strings to 125% of MASP pretty much eliminates fracking any well drilled before the 1960s, and >80% of the wells drilled before the 1990s. This is because most of these wells were equipped with surface flanges rated significantly below typical MASP, are not cemented to surface, and because their age-derated internal yield pressure ratings are now also well below MASP. Before this requirement, operators simply used frack packers, tubing, and tree savers to avoid subjecting casings to MASP, and annular pressure surveillance to enable shut down of frack jobs should frack strings lose integrity. The question of having frack strings isolating casing from frack pressure being sufficient protection to obviate MASP tests for casing strings was repeatedly raised in meeting with DOGGR, and repeatedly rebuffed. We were told instead, to run new inner casing strings and cement them in place to allow successful MASP testing. Think of what that says about the quality, intelligence, and integrity of those making these regulations.
	Response to comment 2331: Rejected. The pressure testing is required on the casing and tubing strings that will be used in the well stimulation. This means casing or tubing that will be exposed to the pressure during the well stimulation job must be tested. Those strings of casing in the well that will not be subjected to the pressure during well stimulation are not required to be tested.
2332	9313-8 As with the prior section, WM is unclear as to the meaning of the verb “do” within the context of the introductory sentence to this section. Does this mean that the operator is required to directly “do” these activities or may the well operator contract with an independent third party to perform these activities? If a third party conducts these activities, does that adversely affect their “independence” within the meaning of Section 1783.3. WM recommends that this section be amended to change the word “do” to “ensure” within the first sentence of this section as follows:

	(a) The operator shall do ensure all of the following not more than 24
	Response to comment 2332: Rejected. Operators are responsible for effective and timely compliance with the Division's regulations, and it is well understood by the Division and the regulated public that operators can do and do employ contractors to accomplish this.
	1784.2. Cement Evaluation Prior to Well Stimulation Treatment
2333	4618-5, 4620-5, 9300-10, 9301-19, 9311-19, 9320-30, 9321-31 We object to the division's proposal to allow the cement evaluation requirements to be waived. Proper well construction is critical to protecting ground water, and cement integrity should be evaluated for every well. The exemption for submitting information that "satisfies" DOGGR is an inappropriate and unnecessary loophole that further endangers the state's water resources.
2334	9282-23 In order to ensure reliable measurements, the cement must be sufficiently hard before running a cement evaluation tool (CET), among other factors. The proposal to allow the requirement to do a cement evaluation to be waived be deleted. We request a requirement to run cement bond evaluation logs (CELs) on production, intermediate, and surface casings.
2335	9315-29 Section 1784.2(c) should be removed because it gives the Division the ability to waive certain cement safety evaluation procedures and notification requirements if an alternate plan meets their approval. SB4 does not provide DOGGR with this authority.
2336	9320-29 Subsection 1784.2 (a)(2): The quality of the cement should be specified and not left to each operator to determine. At a minimum, cement bond logs and variable density logs should be required to measure the sealing quality, and the cement should be formulated to prevent shrinkage.
2337	9298-36 Section 1784.2(c) states "the Division may approve an alternative cement evaluation plan that waives the requirements of subdivisions (a) and (b)". Essentially, this waives the requirement that "the operator [shall] run a cement evaluation log or other cement evaluation method", and waives the requirement that "documentation of the cement evaluation [shall] be provided to the Division". This power to waive these requirements seems like a REALLY bad idea, and should be deleted from the section.
2338	9321-32 Proper well construction is paramount in protecting groundwater and cement integrity should be evaluated for every well. We recommend the following revisions: (a) In advance of conducting well stimulation treatment, but at least ~~48~~ 72 hours after cement placement, the operator shall run a radial cement evaluation log or other cement evaluation method that is approved by the Division ,. Cement evaluation logging must be performed on all strings of cemented casing that isolate protected water, potential flow zones, or through which stimulation will be performed. The Division may revise the wait-on-cement time if an ultrasonic cement analyzer (UCA) is used to more accurately

	determine the appropriate waiting-on-cement time. and the cement evaluation shall demonstrate the following:
	Response to comments 2333-2338: Rejected. Section 1784.2(c) allows the operator to propose a plan to ensure wells are adequately cemented without running a cement evaluation tool. An alternative will not be approved by the State Oil and Gas Supervisor unless the operator can conclusively prove that the plan will ensure zonal isolation. Existing well construction regulations require that surface casing is cemented to surface, and Section 1784.1 requires that production casing be pressure tested prior to a well stimulation. These requirements are in place to ensure mechanical integrity. In addition, Section 1785 requires that pressure is closely monitored during the well stimulation activity and well stimulation activity is required to cease if the pressure exceeds either 80 or 90 % of the tested pressure, depending on if the pressure test was performed up to 100% of the API rating for the casing. These requirements will effectively demonstrate the integrity of the well. The well-established standard for the wait time for cement to cure is 48 hours. This time will allow the cement to harden sufficiently prior to running a cement evaluation tool.
2339	9324-17 WSPA, CIPA, and IOPA recommends that the evaluation provision in the regulation be revised to require the operator to present a cementing plan, complete with parameter monitoring, as part of a drilling permit and allow the current process of conducting that plan and addressing any abnormal condition suffice for a well to be stimulated
2340	9317-10 1784.2 requirements instantly add ~$ to the cost of any WST permitted jobs on wells that don't already have CETs. The only purpose of this requirement seems to be so some bureaucrat is reassured that some engineer somewhere is doing what he's getting paid to do. The downside to society for NOT running a CET remains obscure.
	Response to comments 2339-2340: Accepted in part. Section 1784.2(c) allows the operator to propose a plan to ensure wells are adequately cemented without running a cement evaluation tool. An alternative will not be approved by the State Oil and Gas Supervisor unless the operator can conclusively prove that the plan will ensure zonal isolation.
2341	9298-35 Section 1784.2(b) states that the “documentation of the cement evaluation shall be provided to the Division not less than 72 hours before commencement of the well stimulation treatment”. Basically then, if the operator gets the document in right at the 72 hour cut off limit, the Division has only 72 hours to spot any problems with the results of the cement evaluation before the operator forges ahead with well stimulation treatment. Is 72 hours really an adequate amount of time for the Division to critically evaluate this technical documentation? Would not 5 days be a more prudent “minimum time” for evaluation of this critical document?
2342	9324-41 In section 1784.2(b) recommend deleting this section. The requirement to provide the cement evaluation to the Division not less than 72 hours prior to the well stimulation treatment represents an additional onerous reporting requirement. This data is available on-site, which should be sufficient.

	Response to comments 2341-2342: Rejected. Seventy-two hours is an appropriate amount of time to ensure that Division staff have an opportunity to review cement evaluation results before the treatment commences.
2343	9299-34 Shouldn't the cement evaluation be done after perfs shot?
	Response to comment 2343: Rejected. No, the purpose of Section 1784.2 is to evaluate the casing as installed.
	1785. Monitoring During Well Stimulation Treatment Operations
2344	9297-2 Section 1785(a) covers the monitoring required during treatment to prevent leakage; however, groundwater and protected water monitoring is not included. Including groundwater and protected water monitoring would provide several benefits: Groundwater monitoring would provide an indication of leakage or a breach, which may not be detectable by small pressure changes. The constituents monitored should be the same as per 1788(a)(12)(B). This would necessitate determining baseline levels. Groundwater monitoring provides a critical backstop when other monitoring efforts may fail to detect a leak. - If DOGGR accepts the change, then a new section should be added: 1785(b)(4), which would require termination of the treatment and disclosure of the leakage.
	Response to comment 2344: Rejected. All wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783.
2345	9324-42 In section 1785 (a)(5) recommend revising to read as follows: "All annuli pressures, *unless the annuli have been cemented to surface*". Rationale: Cement to surface should suffice as a gauge of casing integrity.
	Response to comment 2345: Rejected. To verify well integrity, annuli pressure should be monitored to the extent possible.
2346	9321-33 Section 1785(a), add "(6) Identities, rates and concentrations of additives used."
	Response to comment 2346: Rejected. The suggested additional monitoring would not help to identify a potential well breach.

2347	9290-1 USSI believes DOC should add one more parameter under Section 1785(a). We would suggest the following language be inserted after Section 1785 (a)(5) – "(6) Well stimulation treatment fluid migration through the formation…"Current technology is readily available to monitor well stimulation treatments and fluid migration through a formation. We propose the addition of this language as it relates to the language of 1785.(b)(3) and ensures the geologic and or hydrologic isolation of the formation during the well stimulation treatment.
	Response to comment 2347: Rejected. The monitoring required under Section 1785(a) will effectively verify the integrity of the well during well stimulation treatment, and it is not necessary to require additional monitoring that would effectively prescribe the use of a specific technology.
2348	9317-11 Section 1785(b) requirements obliterate any flexibility in responding to unusual events during treatment, and therefore forces failure on many jobs that could otherwise be successfully completed.
	Response to comment 2348: The Division disagrees. The conditions of Section 1785 provide the necessary flexibility and variability to perform the well stimulation as planned and described to the Division. If the operations go outside of these limits, there is a strong likelihood that there is a problem with the well stimulation operation.
2349	9298-37 In section 1785(b)(1), why is "a pressure change [a drop, for example] in the annulus between the tubing or casing" of 19.9% acceptable but a pressure change of "more than 20%" sufficient to force the operator to terminate well stimulation treatment and immediately provide the collected data to the Division"? A rationale for using 20%, (as opposed to 10%) should be presented here and supported by data and literature references.
	Response to comment 2349: A 20% change in annular is one of a few possible triggers for terminating a well stimulation treatment and conducting diagnostics. One of the other is if the operator has any reason to suspect a potential well breach. Under these regulations, the Division will often be on site to witness well stimulation treatment, and pressures encountered during treatment will always be recorded and provided to the Division. The Division will have ample opportunity to identify if an operator disregards indication of a potential well breach.
2350	9324-43 In section 1785(b)(2) recommend replacing the term "Pressure" with "Differential pressure". Rationale: It is the differential pressure on the casing (i.e. the difference in pressure inside the casing to the pressure exerted externally to the casing) that is the key to determining casing integrity.
	Response to comment 2350: Rejected. Differential pressure would take the outside pressure into consideration and therefore decrease the amount of pressure used to test the well from the inside, inconsistent with the Division's intent.

2351	9320-31 Subsection 1785(b)(3). A suspected potential breach of any casing or casing cement (not just production casing) should also be a reason for terminating treatment and reporting to the Division, which should make that information available to the public.
	Response to comment 2351: Accepted in part. Section 1785(b)(3) has been revised to more broadly state that the operator terminate the treatment if there reason to suspect a potential breach in the cemented casing strings, the tubing strings utilized in the well stimulation treatment operations production casing, production casing cement, or isolation of any sources of protected water the geologic or hydrologic isolation of the formation.
2352	9282-31 Language in this section should be tightened around mechanical integrity of a well. Additionally the following language should be added to this section.) Microseismicity (tremors of -3 to +2 Richter Magnitude) shall be monitored from at least three days prior to the stimulation treatment, throughout the treatment phases and for at least seven days after the last pressurized injection or until tremor events return to levels experienced prior to the treatment for the area and depths of five times the greatest dimension of the stimulation envelope.
	Response to comment 2352: Rejected. The purpose of Section 1785 is to require the operator to monitor during well stimulation treatment for indications that a well breach may have occurred or that fluid is not confined to the intended zone, and to require appropriate diagnostics and response if there is such an indicator. It is not necessary to prescribe microseismic monitoring before and after treatment to accomplish this.
2353	9321-34 In order to maintain consistency with Section 1784(b), subsection (b)(2) should be revised as follows: "(2) Pressure exceeding ~~90%~~ 80% of the API rated minimum internal yield on any casing string in communication with the well stimulation treatment; or" We also recommend the following additions; (4) Any monitored parameters indicate a loss or potential loss of mechanical integrity; (5) Injection pressure exceeds the fracture pressure of the confining zone(s); (6) Any indications that injected fluids or displaced formation fluids have contacted a transmissive fault or fracture or improperly constructed or plugged well; (7) Communication occurs with an offset well.
	Response to comment 2353: Accepted in part. The pressure threshold in Section 1785(b) is reduced to 80% for wells that are not first pressure tested to 125% of the anticipated pressure during treatment. If the wells has been successfully pressure tested to 125% of the anticipated treatment pressure, then the pressure threshold for monitoring during treatment remains 90%. Other suggested revisions are not necessary because they describe events that are already captured by the broader language of Section 1785(b).
2354	9323-8 Section 1785(c), If an "event" occurs, diagnostic testing should be done immediately—not as soon as is "reasonably practical." What is "reasonable"? This cannot be left open. The operator is not likely to be "reasonable." The public and our water and land resources must be protected.

	Response to comment 2354: Rejected. If there is indication of a potential breach during well stimulation, it is likely that steps will need be taken to wind down the treatment before diagnostics can be done safely and effectively.
2427	9297-6, 9301-21 This section requires pressure testing to determine a breach. And then if there is a breach, then water quality testing per 1785(d) is required. Unless water quality testing is required under 1785(d) then the water quality testing necessary to derive this data may not occur. For this reason, we reiterate our concern and suggestion raised above in 1785 (regarding ongoing groundwater monitoring) about the necessity of including details on the testing required: For clarity and uniformity of reporting, we suggest that specific parameters should be reinstated [in section 1785]. It is advisable to include specific chemical constituents, and it's worth noting that there are a range of technologies and methods to enable for analysis of the constituents mentioned. It is not clear why sections (d)(3)(A) though (C) and (4) and (5) were removed. Information should be provided regarding the reasons they were deleted.
2356	9298-38 This section should be changed to read, "An exact description of the chemical constituents of the well stimulation treatment fluid and of the fluid that is most representative of the fluid composition in the well at the time of well failure". [Both are useful, especially in the event of a well failure.]
2357	006977-2 1785(C) the deleted radioactive elements which may not be considered "fluid" are not represented in the added requirements for disclosure. Language specifying requirements proactive to preventing leaks and spillage needs to be included as does the nature of disposal of any toxic waste recovered and firm language as to who shall pay for this disposal.
2358	9297-3 Section 1785(d)(3) covers what an operator should do if there is suspected well breach during the operation. All specific parameters, however, were removed from (c)(3) including: (A) Total dissolved solids; (B) Chloride, sodium, and all organic or inorganic chemicals listed in the tables in California Code of Regulations, title 14, sections 64431 and 64444; and(C) Gross alpha, gross beta, uranium, tritium, radium 226+228, and all other radionuclides. (4) An estimate of the volume of fluid lost during well failure. (5) Groundwater quality data for the protected water closest to the well failure. For clarity and uniformity of reporting, we suggest that specific parameters should be reinstated. It is advisable to include specific chemical constituents, and it's worth noting that there are a range of technologies and methods to enable analysis of the constituents mentioned. Specifically: (A) Total dissolved solids can be assessed on-site using direct conductivity probes to estimate the ionic concentrations in solution. (B) Chloride, sodium and all organic or inorganic chemicals can be sampled and tested by certified laboratories using ion chromatography, ion selective electrodes, ion coupled plasma optical emission spectroscopy or gas chromatography. (C) Gross alpha and gross beta can be determined on-site using ionization or scintillation probes. Uranium, thorium and daughter isotopes Ra226 and Ra228 can be measured on-site with NaI-based scintillation gamma-spectroscopy system. Monitoring chemical constituents in 1785 enhances the capability to fulfill the spirit and intent sections 1787 (Well Monitoring After Well Stimulation Treatment) and 1788 (Required Public Disclosures). Specifically, 1788(a)(15) and (16) require monitoring radiological components or tracers injected into the well and radioactivity of recovered well stimulation fluids, respectively. This disclosure can be effectively accomplished

	with proper and thorough monitoring under 1785.
2359	9297-4 Section 1785(c)(3)(C): Regarding inclusion of tritium: Quantifying uranium, thorium, Ra226 and Ra228 provides a radiological baseline and would detect any subsequent contamination. This, therefore, mitigates the need to also measure tritium which requires a more comprehensive lab testing procedure. For this reason, tritium monitoring can be removed from the regulation to ensure cost-effective radiation monitoring on-site.
2360	4695-7 Section 1785: Monitoring will confirm after the fact, that something has gone wrong. That's too late. What will be done about "Gross alpha, gross beta, uranium, tritium, radium 226-228 and all other radionuclides, secret chemicals?
2361	9321-36 In section 1785(d) We recommend that the Division restore subsections (3)(A)-(C), (4), and (5) and also add the following to subsection (d): "<u>If a loss of mechanical integrity is discovered, if the integrity of the confining zone has been compromised, or if fluids have reached a transmissive fault or communicated with an offset well, operators must take all necessary steps to evaluate whether injected fluids or formation fluids may have contaminated or have the potential to contaminate any unauthorized zones. If such an assessment indicates that fluids may have been released, or pose any risk of release into a source of protected water or any unauthorized zone, the operator must notify the Division immediately, take all necessary steps to characterize the nature and extent of the release, and comply with and implement a remediation plan approved by the Division. If such contamination occurs in a source of protected water that serves as a water supply, a notification must be placed in a newspaper available to the potentially affected population and on a publicly accessible website and all known users of the water supply must be individually notified immediately by mail and by phone."</u>
	Response to comments 2355-2361: Rejected. The specifications of water quality data to be collected in response to a well breach have been removed from Section 1785(d). In the event of a well breach, Section 1785(d) requires the operator to cease operations and notify the Division and the Regional Water Quality Control Board. The Regional Water Quality Control Board would take the lead in the groundwater investigation and would specify what water quality testing is necessary based on the specifics of the situation.
2362	9321-35 In section 1785(c) we recommend that the following be added to subsection (c): "<u>Prior to any further operations, mechanical integrity must be restored and demonstrated to the satisfaction of the Division and the operator must demonstrate that the ability of the confining zone(s) to prevent the movement of fluids above the stimulated zone has not been compromised.</u>"
	Response to comment 2362: Accepted. Section 1785(e) was added specifying that the operator shall not resume operation of a well that has been shut-in under Section 1785(d) without first obtaining approval from the Division.
2363	9299-35 Section 1785(d) should require site visit by agencies within 24 hours of notification.
	Response to comment 2363: Rejected.

	The Division and the Regional Water Quality Control Board will be actively involved in every case where diagnostics have indicated that a well breach has occurred. It is not necessary to state this in regulation.
2364	9308-2 Section 1785(e) we are pleased that the readopted regulations have broadened water testing to include not only wells, but also surface water. However, again there is what appears to be an inadvertent inconsistency. At the end of the regulations (p.12) is "*(e)* ***Groundwater*** *quality data reported under this section shall also be submitted to the State Water Resources Control Board …"* This should be changed to ***"Water*** *quality data . . ."*
2365	9320-32 Subsection 1785(d). Water quality data should also be reported to the Division and Regional Water, and made available to the public if a breach has occurred.
	Response to comments 2364-2365: Rejected. The State Water Resources Control Board maintains a groundwater quality database and Section 1785(f) requires that groundwater quality data submitted under Section 1785 be included in that database. The State Water Resources Control Board groundwater quality database is a public database.
2366	9324-44 In section 1785(f) recommend revising to read as follows: "If the surface casing is not open to atmosphere or the casing is not cemented to surface, then the surface casing…." Rationale: If the casing is cemented to surface there is no pressure to monitor.
	Response to comment 2366: Rejected. This provision is clear and sufficiently specific as is.
2367	9301-20 The operator should log and provide to DOGGR all data collected pursuant to this section regardless of whether any of the events in Subsection (b) occur. Relying entirely on the operator to self-report the problems described in Subsection (b) provides too much room for potential underreporting and does not give DOGGR the opportunity to enforce such underreporting.
	Response to comment 2367: Accepted. Section 1785(a) requires operators to record pressure monitoring and Section 1789(a)(1) requires that the information is provided to the Division within 60 days after completion of the well stimulation treatment.
2368	9313-9 WM's oil and gas field services are capable of providing these services to a well owner or operator. However, WM is uncertain whether these services may be performed by a third party and whether the provision of these services would jeopardize their "independent third party" standing pursuant to proposed section 1783.3. WM request clarification of these provisions and recommends the following amendment within the first sentence of this section: (a) The operator shall continuously ensure the continuous monitoring of all of the following parameters during the well stimulation treatment, if applicable:

	Response to comment 2368: Rejected. Operators are responsible for effective and timely compliance with the Division's regulations, and it is well understood by the Division and the regulated public that operators can do and do employ contractors to accomplish this.
2369	4619-2 Section 1785 regulations for monitoring are inadequate. How does that help us if the tourism industry is ruined because of a big fire or an explosion?
	Response to comment 2369: Thank you for your comment. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation.
	1785.1. Monitoring and Evaluation of Seismic Activity in the Vicinity of Hydraulic Fracturing
2370	8060-3 Citizens are pleased to see that the revised regulations have clarified Section 1785.1 and taken a more disciplined approach to induced seismicity.
	Response to comment 2370: Thank you for your comment.
2371	9324-7 WSPA, CIPA, and IOPA strongly oppose the addition of seismic monitoring requirements that are ill defined, not required by SB 4, and have not been proven necessary by any California-specific scientific research. Nationally, issues around induced seismicity have had significant review and are correctly focused around UIC disposal wells, not hydraulic fracturing activities. Even these events have proven to take considerable technical review and have not demonstrated exclusive causality with the disposal well process. If DOGGR retains the requirement, we recommend the regulations specify that the 5 fracture radii limitation for monitoring applies both horizontally and vertically. Furthermore, the magnitude that triggers this section should be increased to 3.0, which is generally accepted as a threshold where effects are felt at the surface. At 3.0, only a review should be considered, with a higher magnitude considered before any action to stop future activities is considered. Furthermore this section needs to be amended to include a provision allowing DOGGR to waive the moratorium on additional well stimulation while the DOGGR/ Geological Survey and the operator conduct their evaluation. The requested waiver could be rescinded at any time if additional seismic activity within five fracture radii of the well is experienced during the evaluation period.
2372	9324-45 In section 1785.1(a), as stated in the Seismic Monitoring section, WSPA, CIPA, and IOPA strongly oppose this provision. However, if DOGGR maintains the requirement, this section needs to specify that the 5 fracture radii limitation for monitoring applies both horizontally and vertically. Furthermore, the magnitude that triggers this section should be increased to 3.0, which is generally accepted as a threshold where effects are felt at the surface. At 3.0, only a review should be considered, with a higher magnitude considered before any action to stop future activities is considered. Rationale: This accounts for background seismicity, and also recognizes the geologic zones the Division should be most concerned about when attempting to ascertain

	whether seismic events have been induced.
2373	9324-46 In section 1785.1(b)(3) WSPA, CIPA, and IOPA oppose this provision. However, if it were retained, this section needs to be amended to include a provision allowing DOGGR to waive the moratorium on additional well stimulation while the DOGGR/ Geological Survey and the operator conduct their evaluation. The requested waiver could be rescinded at any time if additional seismic activity is experienced during the evaluation period. Rationale: Without the ability to obtain a waiver, hydraulic fracturing could be banned for extended periods of time or indefinitely based on a random seismic event unrelated to any hydraulic fracturing activity.
2374	8060-4 The reporting and assessment requirement may not be technically feasible with the current seismic network in California. The current requirement is to assess an earthquake greater than magnitude 2.0 within five times the anticipated fracture length. The people do not know if this is possible given the current seismic network detection capabilities and location accuracy.
	Response to comments 2371-2374: Rejected. There are two purposes for Section 1785.1. First, to make sure that well stimulation via hydraulic fracturing does not generate seismicity that causes the public concern or damage to structures. Second, the provision provides significant assurance that fractures created during hydraulic fracturing do not encounter, and then stimulate, a hidden fault such that the fracturing fluids might find a pathway out of the anticipated fracture stimulated volume. The proposed regulation addresses the need to assess the potential for felt seismic events to result from hydraulic fracturing and does so at low cost as the monitoring of the California Integrated Seismic Network (CISN) can be done via a free website in real time. The threshold magnitude was selected by assessment of the capabilities of the CISN in the Central Valley and other locations around the State (areas in which hydraulic fracturing is being employed or might be) to locate M 2-3 seismicity with sufficient accuracy so that the event could be located within a volume that is germane to hydraulic fracturing. At the same time there was a desire to keep the threshold as low as practical, and hence as protective as possible. The accuracy of the location of size and depth of a seismic event is directly related to the number and types of seismic instruments in a given area, hence in many areas of the Central Valley, network density is not sufficient to allow for a lower threshold. The magnitude threshold, M 2.7, was decided based on network capabilities and the desire for the provision to be as protective as practical and at the same time high enough so that background seismicity or poorly located seismic events outside of the volume of interest would not cause an unnecessary work stoppage that could impose an undue burden of cost and time on the industry. The second reason, assuring that conduits for the escape of fracturing fluids are not created by exciting small hidden faults within the anticipated fracture volume, speaks to the need for a review of the pattern of seismicity in which an alignment of events would suggest that a fault has been intersected by a stimulated fracture. Both reasons for the provision require a review if the threshold of M 2.7 is exceeded, and because of the concern for the escape of fluids beyond the intended zone, a review must proceed prior to any resumption of activities. Hence a waiver of any cessation of activity would undermine the very reason for the provision.
2375	9321-37, 9315-15 The Division has not provided any scientific justification for the proposed requirement to monitor for earthquakes within a radius of five times the anticipated fracture length. Furthermore, the proposed provisions only apply to fracture stimulation operations rather than all stimulation treatments. The Division also has not provided any justification for the proposed requirement to

	monitor for earthquakes greater than or equal to magnitude 2.0. Magnitude, intensity, or other thresholds to trigger actions by the operator or regulators (often referred to as a “traffic light” system) should be based on an assessment of seismic hazard and risk and site-specific conditions. We recommend that the Division, in consultation with the California Geological Survey and other appropriate partners, develop a more robust system of regulations to address the risk of induced seismicity from reservoir stimulation.
2376	9320-33 This section should not be limited to hydraulic fracturing but should extend to all well stimulation activities. In addition, an operator should be required to document the monitoring and submit the documentation under Section 1789.
2377	9289-10 In section 1785.1 replace the phrase "Hydraulic Fracturing" with "Well Stimulation Activities" and addition of the phrase "and Underground Injection associated with Well Stimulation Activities." Replace the phrase "hydraulic fracturing" with "well stimulation activity and any underground injection project wholly or partially with the well stimulation activity" throughout the section.
2378	9289-11 In section 1785.1 (a) replace existing text with the following: "From the commencement of a well stimulation activity or any underground injection project wholly or partially associated with the well stimulation activity until 90 days after the end of the activity or project, the operator shall monitor the California Integrated Seismic Network for indication of an earthquake of magnitude 2.0 or greater occurring within a radius of five times the anticipated fracture length from each point of fracture or within a radius of miles from the injection project or any greater distance that indent seismic experts deem to be within the range of correlation to the activity or project."
2379	9323-9 Monitoring re Seismic Activity. This is inadequate. We want to know about any and all earthquakes—not just those of magnitude 2.0 or greater. Also, importantly: (b)(2) The division in consultation with the California Geological Survey will conduct an evaluation—the operator should not be included. The operator, of course, will claim no liability. (b)(2)(A) The wording should be changed to “correlation” vs. “causal” connection between the hydraulic fracturing and the earthquake.
2380	9300-11 There should to be a requirement in the statute regarding a log of the sub-seismic events as recorded on-site by the operator both leading up to the reported earthquake, and following – making it available to Agencies and the public in the event of a registered earthquake. The log is standard operating procedure already and should be made available to be included under analysis.
2381	9283-15 The scope and duration of seismic monitoring and evaluation should be increased to ensure adequate data collection and to protect public safety, as DOGGR has not demonstrated that the sufficient to protect the public. In addition, the term “seismic activity” should be used rather than “earthquakes” for consistency.
2382	9315-16 We recommend that the Division, in consultation with the California Geological Survey and other appropriate partners, develop a more robust system of regulations to address the risk of induced seismicity from well stimulation.
2383	006974-2 Section 1785.1 is completely reactive and should be more proactive. The determination of

	suitability for fracking should be based on USGS earthquake probability maps. For example, any area that already has a probability greater than 0.2 of an earthquake of magnitude 5.0 or greater within 5 years shall be deemed off-limits for fracking.
2384	9305-5 1785(b)(1) If seismic activity occurs that may be related to fracturing it would make better sense to suspend fracturing activity in the full formation than just the regulatory 1,500 meters currently stated.
2385	5544-3 On page 22 of the revised text. There's a reference to what should be done in case there is an earthquake. The operator and the division should evaluate to see whether there is an indication of a causal connection between the hydraulic fractures and the earthquake. That concerns me, because I think we should know about that before we do the hydraulic fracturing. Also, they must discern whether there is a pattern of seismic activity in the area that correlates with nearby hydraulic fracturing. And, of course, there's a chance I could be reading this or interpreting it incorrectly, but I think it is extremely important to discern whether indeed there is a causal connection, and I thank you for your excellent work, by the way.
2386	9299-36, 9282-9 Require microseismic monitoring to establish baseline ground movement, and monitor seismic activity and post-stimulation seismicity in the surrounding area.
2387	4611-4, 5523-5 There is an issue of microseismicity. That was inclusive and monitoring of two or higher Richter scale events was required. However, right now for the last two weeks, existing systems have already recorded 720 seismic events within southern California and Nevada which were down to point 1 on the Richter scale. Existing technology can take it to point 1, therefore modify the seismicity element with the inclusion of down to at least zero on the Richter scale. Existing oil and gas operations often have microseismicity monitoring of their frack jobs when it is to their interest, and those go down to minus three on the Richter.
	Response to comments 2375-2387: Rejected. Section 1785.1 is based on sound scientific principles of rock physics and rock mechanics. In fracture theory, the stresses that build up at the tip of an advancing fracture exist ahead of the fracture by several times the width dimension of the propagating fracture. Therefore from the perspective of a single fracture, the five times the maximum length portion of the provision provides an unreasonably large margin of safety. However, as one purpose of the seismic provision is to assess the potential for fluids to find and activate a hidden fault and therefore escape from the zone of interest, as well as allow for other geologic uncertainties that affect fluid migration, the five-times fracture length margin is based on the limit of the possible extent of fluid flow under typical pressures and fluid volumes of hydraulic fracturing activities. Hence the rock volume of five times the maximum fracture length provides a large margin of safety while at the same time not making the volume so large that background seismic events or geologic variability outside any feasible volume of rock influenced by hydraulic fracturing does not create unnecessary or irrelevant impediments for industry. The focus of Section 1785.1 on hydraulic fracturing, as opposed to other or all stimulation techniques, is based on the fact that the volumes and pressures of fluids used in hydraulic fracturing impart the largest stresses into the rocks of any stimulation technique. In fact, some stimulation techniques reduce in situ stresses. Hence the provision is again based on sound scientific principles of rock physics and mechanics and is protective of the activities that conceivably create the greatest threat to public health and safety.

	The threshold magnitude was selected by assessment of the capabilities of the CISN in the Central Valley and other locations around the State (areas in which hydraulic fracturing is being employed or might be) to locate M 2-3 seismicity with sufficient accuracy so that the event could be located within a volume that is germane to hydraulic fracturing. At the same time there was a desire to keep the threshold as low as practical, and hence as protective as possible. The accuracy of the location of size and depth of a seismic event is directly related to the number and types of seismic instruments in a given area, hence in many areas of the Central Valley, network density is not sufficient to allow for a lower threshold. The magnitude threshold, M 2.7, was decided based on network capabilities and the desire for the provision to be as protective as practical and at the same time high enough so that background seismicity or poorly located seismic events outside of the volume of interest would not cause an unnecessary work stoppage that could impose an undue burden of cost and time on the industry. A seismic provision based on seismic hazard and risk would be a more refined approach to the one proposed. However, as the risk of even felt seismicity induced by hydraulic fracturing is very low, and approaching zero for damaging seismicity, the potential benefit of a full analysis of hazard and risk is far outweighed by the cost and time necessary for developing and implementing such a robust, and quite nuanced approach, which itself would have its own limitations and will greatly increase the costs of implementation.
2387	9301-22 Subsection (b)(1): The municipality and any other local agencies with jurisdiction should also be notified immediately of any seismic activity. Subsection (b)(2): The results of the evaluation in Subsection (b)(2) should be transmitted to the municipality and any other local agencies with jurisdiction.
	Response to comment 2387: Rejected. The Division invites discussion with local agencies regarding information sharing and notification.
	1786. Storage and Handling of Well Stimulation Treatment Fluids and Wastes
2389	9298-39, 9311-20, 9320-34 This section deals with “requirements for the storage and handling of well stimulation treatment fluid, additives and produced water”. It is thus extremely disturbing to see that “secondary containment is not required for production facilities that are in one location for less than 30 days”. Secondary containment of fluids of the type specified in this section should ALWAYS be stored in a secondary containment vessel or tray. Even if the material is to be held for less than 24 hours it should be held in secondary containment. Secondary containment should be mandatory regardless of the duration of the production facilities.
2390	9294-17 While this Section was revised to remove the categorical exemption of portable or temporary production facilities from the requirement to install secondary containment, the revisions have simply replaced the first exemption with an even broader exemption allowing any production facilities that are in one location for less than 30 days to proceed operating without secondary containment. No justification for treating all production facilities that are in one location for less than 30 days differently from other production facilities is provided. Indeed, since well stimulation treatments can often last less than 30 days, as well as the known dangers associated with well stimulation treatment fluid spills, secondary containment of these fluids should be required in all cases to ensure maximum protection of natural resources.

2391	4627-2 Second 1786 refers to a Section 1773.1 and I couldn't find that section anywhere in any of the documents online. I don't see it in anything here. And I'm wondering what exactly is approved for the ·treatment of disposal of fluids if because supposedly that's what that section deals with, but there's nothing written down if I declined about that, so what exactly is approved.
2392	4692-4 Due to California's seismicity, secondary containment should be required for all durations. The exception for 30 days or less should be removed.
	Response to comments 2389-2392: Rejected. Construction of effective secondary containment may not be cost effective for facilities that will only be on site for a short period of time. Section 1786(a)(1) provides that production facilities that are in place for less than 30 days are not required to have secondary containment, but a specific spill response plan for those facilities must be detailed in the operator's Spill Contingency Plan.
2393	9324-16 WSPA, CIPA, and IOPA seek to clarify that the secondary containment requirements of AB1960 is not intended to be applied to temporary or portable equipment normally associated with well stimulation activities. This is not the intent of AB 1960. WSPA, CIPA, and IOPA believe that the storage and handling requirements for well stimulation treatments should be consistent with current drilling and completion requirements for containment in accordance with Sections 1722(a) and 1722(b). Good industry practice already entails the use of portable tanks for drilling and completion activities. Portable equipment does not present the same leak potential as stationary tanks. Use of portable tanks in a drilling and completion setting is also bound by the known volumes being managed, and as such, they do not pose the same kind of risks as production tanks with the handling of throughput volumes. Overall, the use of portable equipment has resulted in the environmental benefit of enabling industry to move away from the use of pits in these circumstances. Burdening the use of portable equipment with stationary equipment risk mitigation may yield unintended consequences.
2394	9299-37 Section 1786(a)(1) not sure why waiver should be here especially if location is rural wilderness.
	Response to comments 2393-2394: Accepted in part. If facilities will be in place for a significant length of time, then they must be within secondary containment. However, Section 1786(a)(1) provides that production facilities that are in place for less than 30 days are not required to have secondary containment, but a specific spill response plan for those facilities must be detailed in the operator's Spill Contingency Plan.
2395	9324-47 In section 1786(a) (1) & (a)(5) recommend deletion of requirements regarding Spill Contingency Plans. Rationale: Spill Contingency Plans are an AB 1960 requirement that apply to permanent facilities and equipment only. Well stimulation by its nature is a temporary operation and AB 1960 does not apply to temporary equipment.
2396	9282-32 The language in this section should be strengthened with regard to the requirements of a spill contingency plan.

	Response to comments 2395-2396: Rejected. Existing regulation Section 1722.9 requires a Spill Contingency Plan that is designed to prevent and respond to unauthorized releases and that contains specific information about facilities and fluids on-site. If fluids on-site are not accounted for in the operator's Spill Contingency Plan, then the plan is inadequate.
2397	9315-11, 9320-11, 7753-12 The regulations should call for the requirement of closed-loop systems for waste handling and disposal, as well as mandate a prohibition on the use of unlined pits in any field where well stimulation occurs. Current language, which only requires flowback and produced water reporting 60 days after stimulation, does not ensure that unlined pits will not be used for disposal at a later date. While the use of unlined pits for any oil and gas waste should be prohibited, in the scope of these regulations, applying the prohibition to all produced water from fields where well stimulation occurs is the only way to ensure flowback that includes well stimulation fluids does not end up being disposed of into unlined pits.
2398	9280-18, 4620-8 The outdated and risky use of unlined and open-air pits to dispose of wastewater from the production process continues in California. These types of pits present a continued threat to ground and surface water, wildlife, and air quality. The use of unlined and open-air pits must be prohibited in order to safeguard public health and natural resources.
2399	8392-10 Will fluid containers be permanent fixtures in the landscape near sealed pumps?
	Response to comments 2397-2399: Accepted in part. Section 1786(a)(4) requires that well stimulation treatment fluid, additives, and produced water from a well that has had a well stimulation treatment must all be stored in containers and cannot be stored in sumps or pits. Management of fluids not associated with well stimulation treatment is outside the scope of this rulemaking.
2400	9321-38 This section should be strengthened. Spills and leaks of oil and gas wastes, in particular produced water, can cause serious environmental impacts. Properly managing this waste is crucial.
2401	9298-40 In this section the "clean up and remediation of the area" is limited only to the cleanup of spilled hazardous fluids stored on site, however, then a problem occurs. I cannot find, anywhere in the bill, a similar mandated requirement for "clean up and remediation" of an aquifer in the event of its contamination. If it is determined that a protected water source has been contaminated due to any aspect of a drilling or oil production operation, it should be the legal and financial responsibility of "the operator" to clean up/decontaminate that polluted protected water source, and that legal and financial responsibility should be clearly stated in this bill. This section raises another concern, in that a "Spill Contingency Plan" is mentioned, but there is no reference to how the public could review the document or comment upon it. The regulations should address this.
2402	9294-18 Section 1786 should be revised to require well operators to collect a sample of any well treatment fluid spill and provide information on the fate of the spill, including whether the fluid reached a storm drain, municipal or private road or surface water, the quantity of the spill and the amount that was contained and/or otherwise recovered before it reached a storm drains, road or water

	bodies.
2403	4695-8 "Unauthorized releases", unwise shortcuts, oversights are a historical given. The industry wants maximum gain for the least expenditure of any kind. Will your agency enforce penalties for damage after the fact? Will you even try?
2404	9301-23, 9295-2 Subsection (a)(5): DOGGR and the municipality and any other local agencies with jurisdiction should be notified within twenty-four (24) hours of any unauthorized release of fluids containing hazardous substances, if not earlier notified pursuant to this subsection. Subsection (a)(6): The municipality and any other local agencies should also receive the written report.
2405	9289-12 In section 1786(5) add the phrase "local Water District," to read as follows: "In the event of an unauthorized release, the operator shall immediately implement the Spill Contingency Plan; notify the Regional Water Board, local Water District and any other appropriate response entities [...].
	Response to comments 2400-2405: Rejected. There are numerous federal, state, and local requirements for reporting and responding to unauthorized releases. The exact requirements that apply depend on various factors including what substances are in involved, the volume of the release, and the setting of the incident. It would be impractical and confusing to attempt to iterate all of those requirements in the Division's regulations and it is not the Division's intent to modify those requirements. The purpose of Section 1786(a)(2) is to make a general admonition that operators must be familiar with and comply with those requirements.
2406	4617-2 The crucial agency left out of this section appears to be left out was the California Geological Survey that issued preliminary fault maps for the LA County for the first time in nearly two decades. Mapping earthquake faults is required under the Alquist-Priolo Earthquake Fault Zoning Act which prohibits building over active faults. Tanks or other permanent structure shall not be constructed in the Alquist-Priolo Fault Zone without preparation of a fault investigation report by a California certified engineering geologist to be reviewed and approved by the building official. Following the report, no such structure shall be placed within 50 feet of a known active fault in accordance with California Public Resources Code Division 2, Chapter 7.5 in California Code of Regulations, Title 14, Article 3.
	Response to comment 2406: Rejected. Although Section 1782(a)(9) calls attention to certain agencies that may play a role in the regulation of well stimulation treatment, it is not necessary for this regulation to identify every entity that may exercise regulatory authority.
2407	9315-12 Section 1786(a)(8) must be strengthened to include checks and balances to ensure compliance with testing and proper disposal for hazardous waste. The current language relies entirely on self-monitoring and testing without any accountability or involvement from the DOGGR or DTSC until an operator has made a determination about the characteristics of their waste.
2408	9313-3 WM requests clarification in the final statement of reasons confirming our interpretation that these requirements only apply to the production site under control of the operator. Once the fluids or

	wastes leave the production site for management in offsite locations, they may be managed pursuant to the requirements of DTSC, the Regional Water Quality Control Boards, and any other agency with jurisdiction.
2409	9313-10 Paragraph (8) of subdivision (a) of this section does state that fluids transported offsite (not injected in to a well regulated by DOGGR) must be evaluated for the presence of hazardous constituents regulated by the DTSC. <u>It appears that this section does not require such testing if the wastewaters are transported to an injection well regulated by DOGGR. WM is not clear why such testing is required for offsite fluids not going to underground injection, but is not required when transported for underground injection. WM requests clarification of this point.</u>
2410	9298-41 Section 1786(a)(8) specifies that the testing of hazardous waste must be done according to "the methods set forth in California Code of Regulations, title 22, division 4.5, chapter 11, article 13 (section 66261.20 et seq.) or according to an equivalent method approved by the Department of Toxic Substances Control… except where the operator has determined that the waste is excluded from regulation…". To facilitate public review of the testing methodology, those relevant regulations should be posted in an appendix to this bill to allow such public review and comment. Similarly, the conditions under which the operator can determine that the waste is excluded from regulation should also be included in that appendix to facilitate public review.
	Response to comments 2407-2410: Accepted in part. The vast majority of produced water is reinjected into a class II well regulated by the Division as part of an underground injection project. A portion of produced water is treated and used or disposed by a means other than injection. Section 1786(a)(8) makes a detailed admonition that all fluids associated with well stimulation treatment must be evaluated and managed in accordance with the existing waste management requirements of the Department of Toxic Substances Control.
2411	9297-5 In section 1786 DOGGR should incorporate, by reference, Chapter 5 of EPA SW-846, which includes testing for radium-228 (via Method 9320), gross alpha and gross beta (Method 9310), alpha-emitting radium isotopes (Method 9315).
	Response to comment 2411: Rejected. It is not clear what the purpose is of the suggested addition.
	<u>1787. Well Monitoring After Well Stimulation Treatment</u>
2412	9315-30 Section 1787(a) removes reporting requirements for suspected well leaks. It is imperative that DOGGR and the appropriate Regional Water Board be notified immediately of any suspected leaks.
	Response to comment 2412: Accepted. Section 1787 was revised for clarity and to specificity to the monitoring and response requirements. Section 1787(b) states that if diagnostic testing reveals that a breach has occurred, then the operator shall immediately shut-in the well, isolate the perforated interval, and notify the Division and the Regional Water Quality Control Board.

2413	9321-39 In section1787(a) add the following: **"**(a) Operators shall monitor each well that has had a well stimulation treatment at least weekly for any corrosion, equipment deterioration, hydrocarbon release or changes in well characteristics that could potentially indicate a deficiency in the wellhead, tree and related surface control equipment, production casing, intermediate casing, surface casing, tubing, cement, packers or any other aspect of well integrity necessary to ensure isolation of any underground sources of protected water and prevent any other health, safety or environmental issueas ….. If the operator is not able to effectively restore mechanical integrity and/or implement a pressure maintenance plan to ensure the protection of all underground sources of protected water and the environment, the operator shall be required to immediately plug and abandon the well.
	Response to comment 2413: Rejected. The purpose of Section 1787 is to verify ongoing well integrity after well stimulation treatment. Monitoring requirements are specified in Section 1787(d) and suggested additions are duplicative or unnecessary.
2414	9289-13 In section 1787(a) add the phrase "local Water District," to read as follows: "[...] and shall provide the Division, Regional Water Board and local Water District with the information described [...].
	Response to comment 2414: Rejected. In the event of a well breach, the Division and the Regional Water Quality Control Board would notify appropriate federal, state, and local agencies based on the nature of the incident.
2415	9324-48 In section 1787(a) the monitoring required by this section needs to be limited to the time period during which the well stimulation activity is occurring. Rationale: After the well stimulation activity, the individual well should be treated the same as any other production or injection well.
	Response to comment 2415: Rejected. The purpose of Section 1787 is to verify ongoing well integrity after well stimulation treatment.
2416	9324-49 In section 1787(b) recommend revising to read as follows: “Operators shall adhere to the following requirements for a well that has had a well stimulation treatment if not done as part of the normal production reporting process.” Rationale: Eliminates double production reporting.
	Response to comment 2416: Rejected. Regular monthly production reporting will satisfy the requirement for monthly production reporting under Section 1787(b)(1).
2417	9324-50 In section 1787(b)(1) this section needs to be revised to limit the application of section 1787(b)(1) to flowing wells. Rationale: Well pressures on wells using mechanical lift fluctuate and pressure measurements really provide no additional data regarding the wells integrity. Well integrity will already be established by the monitoring requirements contained in section 1787(a).

	Response to comment 2417: Rejected. If the well has no production pressure, then the reported pressure should indicate that.
2418	9324-51 In section 1787(b)(2) recommend revising this section to read as follows: "The annular pressures of the well shall be reported to the Division annually unless it has been demonstrated to the Division's satisfaction that there are no voids in the annular space….."Rationale: This revision is consistent with section 1787(b)(3).
	Response to comment 2418: Accepted.
2419	9324-52 In section 1787(b)(5)(B) recommend revising the set point for the relief valve to 70% of minimum yield strength is inconsistent with the 90% MYS. Rationale: This change would coincide with Section 1785(b)(2).
	Response to comment 2419: Rejected. The pressure thresholds under Section 1785 are higher because Section 1785 specify required monitoring during treatment, while Section 1787 specifies required monitoring after treatment. Pressures encountered should be lower when treatment is not occurring.
2420	9313-11 WM has the capability of providing services meeting the requirements of this section. WM requests the following amendments to this section: "(a) Operators shall monitor or arrange for the monitoring of each producing well that has had a well stimulation treatment to identify any potential problems with a well that could endanger any underground source of protected water or hydrocarbon zone. . ."
	Response to comment 2420: Rejected. Operators are responsible for effective and timely compliance with the Division's regulations, and it is well understood by the Division and the regulated public that operators can do and do employ contractors to accomplish this.
2421	9298-42 There is nothing in this section to address what steps the operator must take to clean up/decontaminate an underground source of protected water (an aquifer, for example) should it become contaminated as a result of well operations. That operator responsibility MUST be addressed (either here or in an associated section). In addition, this section specifically states the information supplied to the Division and the Regional Water Board conform to section 1785(d), but that section does NOT require an estimate of the volumes of fluids involved in the well breach (that requirement was specifically deleted from the previous bill draft). The requirement that the operator supply "an estimate of the volume of fluid lost during the well failure" should be reinstated.
	Response to comment 2421: Rejected. In the event of a well breach, Section 1787(b) requires the operator to cease operations and notify the Division and the Regional Water Quality Control Board. The Regional Water Quality Control Board would take the lead in the groundwater investigation and would specify what water quality testing is necessary based on the specifics of the situation.

2422	9298-43 Section 1787(b)(2) deleted was deleted from the previous version of the regulations. The section stated “The well shall be monitored at least once every two days for the first thirty days after well stimulation treatment and on a monthly basis thereafter to determine the amount of gas, oil and water produced, including the volume of readily identifiable well stimulation fluid flowback. The operator shall report the information to the Division on a monthly basis for 5 years or until there has been a 95% reduction in well stimulation fluid contained in the production fluid, whichever comes first.” This provision should be reinstated. It is important to know as precisely as possible how much of the well stimulation fluid (the hydraulic fracturing fluid) has been recovered and how much remains underground. Reinstating this section would accomplish that goal.
2423	9315-31 The deletion of 1787(b)(2) should be reversed. The section that was removed provides valuable information and stringent testing requirements for monitoring the well after it has undergone treatment.
2424	9294-19 The language in subsection (b)(2) specifically governs initial well monitoring to determine the amount of gas, oil, and water produced, including the volume of readily identifiable well stimulation treatment fluid flowback, as well as the monthly monitoring for 5 years after well stimulation treatment or until the well stimulation treatment fluid has been reduced by 95% has been deleted from this section. We believe this language should be re-inserted back into the Section to ensure adequate information of production resulting from well treatment is provided to the public and regulators.
2425	4685-3, 4686-3, 4687-3, 4688-3 1787. Well Monitoring after Well Treatment needs more frequent monitoring over a longer period, specifically: once a day for the first 90 days after cessation, and once a month for ten years or until there has been a 98% reduction in the well stimulation treatment fluid in the produced fluid.
2426	4695-9 Monitoring for "fluid flow back" contamination means well stimulation is a very unstable process.
2427	9297-7 After the stimulation, operator has to disclose the constituents in the base fluid under both 1788 and 66261.24, subdivision (a)(2)(A); however, there is no requirement to disclose the contents of produced and flowback fluid . For example, produced water may often contain TENORM (technologically enhanced naturally occurring radioactive material) and additional heavy metals and anions such as chloride and thorium, among others. These are commonly available and inexpensive tests that can be performed using EPA 300.1 and EPA 200.7 or 200.8. In addition, it is highly likely that dissolved methane concentrations will increase in the flowback fluid and in groundwater over time, well after the hydraulic fracturing stimulation. The regulation should encompass disclosure of produced water’s constituent compounds, regardless of whether it was in the base fluid. To accomplish this, we suggest adding the following, which is similar to disclosures required in other states including Colorado and Wyoming: “The analysis of dissolved gases and methane help measure gas migration to surface waters and buildings. Though not toxic, excess methane is explosive and may travel through subsurface cracks and fissures into private drinking water wells that provide a direct avenue to homeowners. The measurement of isotope ratios of methane enable to distinguish between thermogenic and anthropogenic sources of methane.
2428	9297-8 We assume and expect that DOGGR will determine the appropriate levels for each analyte. In doing so, it is important that the levels chosen distinguish between seasonal and/or natural

	variations and a spill from a hydraulically fractured aquifer. For example, isotopes of methane or other naturally occurring metals such as strontium and thorium should be measured when a variation greater than seasonal has been reached. Isotope ratios provide a signature for water and gas directly from a deep subsurface environment.
	Response to comments 2422-2428: Accepted in part. Section 1787(b)(2) was removed because it is redundant to the requirement under Public Resources Code section 3160, subdivision (b), that within 60 days after well stimulation treatment the operator must publicly disclose the composition of water recovered from the well after well stimulation treatment. That statutory disclosure requirement is implemented by Section 1788(a)(12)(D) and (E), which specify required sampling and testing analytics for that disclosure.
2429	9321-40 In section 1787(b) add the following requirements: <u>(A) The amount of oil, gas, and water produced Flowing and shut-in tubing pressure; All annular casing pressures.</u>
	Response to comment 2429: Rejected. The purpose of Section 1787 is to verify ongoing well integrity after well stimulation treatment, and the amount of oil, gas, and water produced are not indicators of well integrity. Monitoring of annular pressures is already required under Section 1787(d)(2).
2430	9282-33 As indicated for pre-treatment and during treatment activities, the Division's requirements for an approved oil spill/leak plan must be used for all levels of actions for breaches, leakage, or other failures for the well and related facilities and piping above and below ground. Similarly, all activities must be documented and reported/reports submitted to the Division and to the Water Board and such should be done in a matter of hours, not days, or as practical or reasonable. Continued confusion of leaks, breaches, and failures must be simplified down to leaks and included in definition.
	Response to comment 2430: Rejected. The Spill Contingency Plan required under existing regulation Sections 1722(a) and 1722.9 address spill at the surface and not response to a well breach. In the event of a well breach, Section 1787(b) requires the operator to cease operations and notify the Division and the Regional Water Quality Control Board. The Regional Water Quality Control Board would take the lead in the groundwater investigation and would specify what water quality testing is necessary based on the specifics of the situation. For consistency, the term “well failure” has been replaced with “well breach” throughout these regulations.
2431	9299-38, 9301-24 Subsection (b)(4): DOGGR should not be provided with the authority to waive the requirement for a pressure relief device. Such device should be included in all wells.
	Response to comment 2431: Rejected. As stated in Section 1787(d)(4), the requirement would only be waived if the operator demonstrates to the Division’s satisfaction that the installation of a pressure relief device is unnecessary based on technical analysis and/or operating experience in the area.

	1788. Required Public Disclosures
2432	9301-25 Subsections (a): The public disclosure should be made within 30 days of cessation. In addition to the matters included in the section, the following should also be subject to public disclosure: the unauthorized release of any well stimulation treatment fluids, the matters set forth in section 1785 (b) indicating breach or other significant problems, or indication of problems arising from the well stimulation treatment. Any hazardous substances used in well stimulation fluids should be disclosed to the public regardless of any claim of trade secret.
2433	5541-10 Required public disclosure. Says "except as provided in Subdivision C within 60 days after cessation of well stimulation treatment or to publicly disclose all the following information." Why not reduce that to 30 days, since after all if they are keeping records of this to be begin with, it should be easy to take care of that within 30 days to make all that public.
2434	9294-20, 9298-44, 4685-4, 4686-4, 4687-4, 4688-4, 006919-2, 007030-3, 007441-2, 007520-3, 8330-3, 8411-3, 8200 -2, 8057-4, 8327-1, 8316-1, 8356-2, 8320-2 We believe Section 1788 should be revised to require public disclosure of the chemicals to be used in the well stimulation treatment (base fluids mixed with any physical and chemical additives, including acid) at least 60 days before, not after the well treatment is completed. Specifically, no exemption to this requirement shall be allowed for claims of trade secret exemption. Rather, all of the information related to the chemical constituents used in the well treatment should be provided to the public.
2435	9313-12 There is no mention of solid wastes or treatment residuals, WM assumes that the reporting of the disposition of solid wastes that may be treated and removed from the fluids is not required to be reported.
2436	8349-5 A list of all chemicals and their atomic makeup used in the fracking process shall be made available to, and approved by, the state prior to their use in the field. This list should be made available to the monitoring entities so that any intrusion into the surrounding water, if it occurs, can be detected as early as possible and stopped.
2437	8356-5 About half of fracking fluid returns to the surface where it is stored in steel containers until it can be injected deep underground in oil and gas waste wells. Californians want to know where the other half goes in this process and surmise that the water remains underground, although there are indications that at least some of the toxic cocktail makes its way back into the water supply.
2438	9299-40 Section 1788(a)(9) MSDS sheet should be provided.
2439	9298-45 Section 1788(a)(9) requires that the trade name of each additive be part of the information submitted for public disclosure. In order to facilitate any toxicological inquiry on a chemical additive, however, the IUPAC name (International Union of Pure and Applied Chemists, which sets the internationally recognized standards for chemical nomenclature) for each additive should also be required.
2440	9322-14 Section 1788(a)(10) The total volume of base fluid used in well stimulation treatment should

	separately account for water and total additives. In addition, water use for maintenance and cleanout and drilling operations should be listed separately from that used for stimulation treatment.
2441	9315-25 Section 1788(a)(12)(A-G), which requires reporting on “the source, volume, and specific composition and disposition of all water associated with the well stimulation treatment.” However, produced water will continue to come out of stimulated wells long after the 60 day post stimulation public disclosure. The division should also require subsequent reporting after the initial disclosure in order to create greater and more accurate transparency for aspects of well stimulation which do not follow the short timeframe that a 60-day post stimulation disclosure is appropriate for.
2442	9298-49 Section 1788(a)(19), when listing the components of the well stimulation treatment fluids used, the IUPAC term for each component should also be included.
2443	9322-15 Section 1788 (a)(19). We strongly urges that permit submittals for fracking operations must include a list of all chemicals to be used, and additional responses of "YES" or "NO" in a complete list of chemicals known to have been used in fracking, that also shall be appended to the regulations.
	Response to comment 2432-2443: Rejected. The purpose of Section 1788 is to implement the public disclosure requirements mandated by Public Resources Code section 3160, subdivision (b). Section 1788 reiterates the disclosures specified in the statute, with specification added where necessary to implement the purpose of Public Resources Code section 3160, subdivision (b). Some of the suggested public disclosures are already required under Public Resources Code section 3160, subdivision (b), as implemented in Section 1788. Other suggested public disclosure are beyond the scope of Public Resources Code section 3160, subdivision (b) and are therefore inconsistent with the purpose of Section 1788.
2444	9298-50 Section 1788(a), all operators MUST be required to disclose the details on-site spills of hazardous waste or well breach incidents to the public (dates, nature of the material involved, volumes, extent of recovery after cleanup etc), yet that provision is disturbingly absent from this section. Preventing the public from seeing this information… information which may directly impact them… is a breach of public trust that must not occur.
	Response to comment 2444: Rejected. There are numerous federal, state, and local requirements for reporting and responding to unauthorized releases. The exact requirements that apply depend on various factors including what substances are in involved, the volume of the release, and the setting of the incident. It would be impractical and confusing to attempt to iterate all of those requirements in the Division’s regulations and it is not the Division’s intent to modify those requirements. Section 1786(a)(2) makes a general admonition that operators must be familiar with and comply with those requirements.
2445	9283-13 Proposed § 1788 should be revised to emphasize that full transparency and public disclosure must be DOGGR’s baseline regulatory approach. In the event that DOGGR determines that

	public disclosures are not required pursuant to Public Resources Code section 3234, DOGGR must provide written documentation for the basis of that decision. In all instances where information is available prior to any well stimulation, disposal or related activities, that information shall be required to be disclosed to the public prior to those activities taking place.
	Response to comment 2445: Requests for and approval of confidential treatment of well records are public record. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated.
2446	9299-39 Identification of flow back disposal site and amounts of same.
2447	5541-11 Under the heading 1788 "required public disclosure." It occurred to me that disclosing the location of where the water, especially waste water contaminated, or just any waste in general and contaminates that might cause a health concern, should be disclosed where that's going to be disposed of.
	Response to comments 2446-2447: Accepted. Section 1788(a)(12) requires disclosure of the disposition of water recovered from a well after well stimulation treatment.
2448	9324-53 In section 1788(a)(12)(A) recommend revising to read as follows: “The source of the water used as a base fluid for the well stimulation treatment,”~~. including how the water was acquired, where the water was acquired, and, if the water was purchased, from whom the water was purchased;~~ Rationale: WSPA, CIPA, and IOPA believe the disclosures in these sections go beyond the authorization of SB 4 to require general disclosure of the “source, volume, and specific composition and disposition” of water and “the anticipated source of the water to be used in the treatment.” Pub. Res. Code Section 3160(b)(2)(E), (d)(1)(C)(ii). Water purchases are private contractual arrangements, and DOGGR has not demonstrated the necessity to require disclosure of this information.
	Response to comment 2448: Rejected. Public Resources Code section 3160, subdivision (b)(2)(E), requires public disclosure of the the source of water used for well stimulation treatment. Sections 1783.1(a)(23)(D) and 1788(a)(12)(A) have been revised to clarify that “source of water” means the well(s), water supplier, or point of diversion where the water was obtained. This language is consistent with the definition of “source of water” found in recently-chaptered Senate Bill 1281.
2449	5540-8 There are some things that we like that have changed in the regulations. Specifically the water use reporting detail is much improved showing the exact source of where water is coming from for well stimulation. I believe that should be expanded to all aspects of the oil and gas industry.
2450	4620-10 Support requiring operators to identify the exact source of water used.
	Response to comments 2449-2450:

	Thank you for your comments.
2451	9324-54 In section 1788(a)(12)(B) this section needs to be modified to only require base fluid testing once and additional testing is only required if the source of the base fluid changes. Rationale: WSPA, CIPA, and IOPA believe it is onerous to require compositional analyses for every well when base fluid characteristics will remain static.
	Response to comment 2451: Rejected. If the operator already has the required analytics for the water actually used as base fluid for the well stimulation treatment, then no further testing would be required.
2452	9298-47 Section 1788(a)(12)(C) This section is absolutely frightening for what it does NOT address. This section makes reference to the practice of injecting recovered ("flowback") water into an injection well, without making reference to specific provisions that must be in place to insure that the injected fluids are completely and permanently isolated from any underground sources of protected water. If "recovered water" or any other fluid is to be injected underground for "permanent" disposal, the provisions regulating the practice of underground injection should (MUST) be presented here and/or included in full in an appendix to the bill in order to allow public review and comment. The alternatives to underground injection should be explored and presented or referenced here as well.
	Response to comment 2452: Rejected. The Division regulates underground injection projects under its Underground Injection Control (UIC) Program. Injection operations regulated under the UIC Program include waterflood, steamflood, cyclic steam, water disposal, gas storage, and other enhanced oil recovery projects. The requirements of the Division's UIC Program are found in the Public Resources Code, the federal Safe Drinking Water Act (SDWA), and in state and federal regulation. The Division's UIC regulations are found in existing regulation Sections 1724.6 through 1724.10 and Sections 1748 through 1748.3.
2453	9298-46 Section 1788(a)(12)(D) The volume (as well as the composition) of water recovered from the well, should also be disclosed. As currently written this section requires only that the composition be reported.
	Response to comment 2453: Rejected. The volume of water produced from a well is already required to be reported under Public Resources Code section 3227.
2454	9324-55 In section 1788(a)(12)(D) recommend deleting this section. Rationale: Produced water volumes are generally plumbed directly to collection facilities, and most operator equipment is not designed to collect this fluid without the installation of additional tankage, increasing the likelihood of a loss of containment. This requirement would require supervision that the correct water is being collected in order to meet DOGGR's request of a

	sample after producing back one wellbore volume of fluid but prior to three wellbore volumes. This water would need to be kept separate from other water and sampled twice (30 days apart). Obtaining the results of the second test by the 60 days after the well stimulation treatment may be difficult for submittal within the requirements of 1788(a).
	Response to comment 2454: Rejected. Public Resources Code section 3160, subdivision (b)(2)(E), requires public disclosure of the composition of water recovered from a well after well stimulation treatment, and Section 1788(a)(12)(D) implements this statutory requirement. Section 1788(f) reflects that the Division understands that in some cases it will not be feasible to provide all required disclosures within the 60 day timeframe.
2455	9311-21 The composition of water recovered from the well should include testing for all chemicals used in the well stimulation treatment of that well. Under the Proposed Regulations, commonly used well stimulation fluid chemicals such as formaldehyde and methanol would not be tested for in the water that is recovered from the well following the well stimulation. In addition, while operators are required to disclose the location of the disposal of all recovered water, there is no correlating express requirement for the disclosure of the location of fracking fluid disposal.
2456	9298-48 Section 1788(a)(12)(E) defines what will be tested for in water recovered from the well following the well stimulation treatment, While this is a good start, this testing is inadequate, since no testing will be done for many other toxic hydrophobic and hydrophilic chemicals that are, depending upon the formulation, present in hydraulic fracturing fluid. It makes no sense to pretend they are not there (or presume they are all completely recovered) by not testing for them. The wording here should be changed to require testing the recovered water for chemical components present in the hydraulic fracturing fluid used, especially those known or suspected to be carcinogenic, teratogenic, mutagenic or toxic.
2457	9297-9 In addition to the required disclosures, there should be a requirement to disclose pH in section 1788(a)(12)(B) and (E). Since acids are sometimes used in the fracking fluids, the pH of the fluid and/or the recovered water can be very low.
	Response to comments 2455-2457: Accepted in part. The Division has expanded the list of required analytes in Section 1788(a)(12)(E) based on consultation with State Water Resources Control Board staff. Testing must include appropriate indicator compounds for the well stimulation treatment fluid used.
2458	9297-10 In addition to base fluid, the hydraulic fracturing wastewaters should also be analyzed. The base fluid does not account for metals, radioisotopes or methane that will be mobilized from the subsurface environment. While this analysis may be addressed under 1788(a)(12)(D,E), it is not clear whether the analysis would include both flowback fluid and produced water.
	Response to comment 2458: Accepted. Section 1788(a)(12) requires disclosure of the composition of water recovered from a well after well stimulation treatment, which would include flowback of well stimulation treatment fluid.

2459	9324-56 In section 1788(a)(14) this section needs to be modified by removing the requirement for testing of the composition of the flowback fluid. Rationale: See above. Also, the composition of the flowback will be the same as the composition that was used for the well stimulation treatment except it will be diluted by the oil and water produced in the well.
	Response to comment 2459: Rejected. Section 1788(a)(12) is specific to water associated with well stimulation treatment. Section 1788(a)(14) is regarding fluids other than water.
2460	9324-57 In section 1788(a)(16) recommend revising to read as follows: "*If radioactive elements were added to the well stimulation fluids*, the radioactivity of the recovered well stimulation fluids, and a brief description of the equipment and method used to determine the radioactivity" Rationale: WSPA, CIPA, and IOPA believe DOGGR should only require reporting under this provision when necessary, in this case, only when radioactive elements are added to the treatment fluid.
2461	9297-11 In 1788(a)(16), the radioactivity inclusive of "gross alpha, gross beta, uranium, tritium, radium 226+228, and all other radionuclides" should be added.
2462	9303-7 1788(a)(16) – Does this require a Geiger counter on location? Measured by who? There are naturally occurring radioactive minerals that may return with the stimulation fluids.
2463	9297-12 Monitoring chemical constituents in 1785 enhances the capability to fulfill section 1788 (Required Public Disclosures). Specifically, 1788(a)(15) and (16) require monitoring radiological components or tracers injected into the well and radioactivity of recovered well stimulation fluids, respectively. This disclosure can be effectively accomplished with proper and thorough monitoring under 1785.
	Response to comments 2460-2463: Rejected. Public Resources Code section 3160, subdivision (b)(2)(H), requires public disclosure of the radioactivity of recovered well stimulation fluids. Section 1788(a)(16) requires that the disclosure include a description of the equipment and method used to determine the radioactivity, but does not prescribe a particular technology.
2464	9311-22 The Proposed Regulations state that the public disclosures, if not made within 60 days, must be made as soon as possible thereafter. The language should clarify that this is not an extension of the 60-day deadline. DOGGR should make clear in its regulations that operators that submit information after 60 days will be assessed a fine and other appropriate penalties for the delay.
2465	9298-52 Section 1788(f) disturbingly, there are no penalties defined for the operator should they not meet the 60 day submission deadline. In fact, there are not penalties to the operator defined for failing to honor ANY provision, mandate or regulation specified in this bill.
	Response to comments 2464-2465: Rejected. Section 1788(f) was added because in some instances it may not be feasible to provide the

	feasible to provide the required information within 60 days. This is most likely to be that case for requirements that involve analytical testing of water samples. When disclosures are not provided within the required timeframe, the Division will evaluate on a case-by-case basis whether enforcement action is warranted.
2466	9311-22 In order to ensure that operators are reporting truthful, accurate information, the regulations must make clear that operators submit information to FracFocus and to DOGGR under penalty of perjury. Without such deterrents, DOGGR risks dealing with incomplete or false information. DOGGR should also make clear in the regulations that it will review applications, reports, and other submissions for accuracy. As the agency in charge of oversight, it is important for DOGGR to check submissions to ensure that operators are reporting truthful information. DOGGR should amend the language of the proposed regulations to place certain monitoring and verification requirements on DOGGR to induce better compliance with the regulations.
2467	4618-3 Where is the accountability when the industry can just misrepresent their mixture without any penalty of perjury?
	Response to comment 2466-2467: Rejected. The Division has several statutory enforcement authorities for ensuring accurate disclose of the information required under Section 1788. Those enforcement authorities include the authority to impose minimum civil penalties of $10,000 per violation under Public Resources Code section 3236.5. However, Public Resources Code section 3160 does not provide for criminal penalties.
2468	9308-1 The requirements for disclosure of other well stimulation treatments seem to have been inadvertently deleted. The following changes were made (p. 11): "*(b) For hydraulic fracturing well stimulation treatments, the operator shall post the information listed in subsection (a) to the Chemical Disclosure Registry, to the extent that the website is able to receive the information. ~~If the Chemical Disclosure Registry is unable to receive information required to be reported under this section, then the operator shall provide the information directly to the Division on the Well Stimulation Treatment Disclosure Reporting Form.~~ **~~For well stimulation treatments other than hydraulic fracturing,~~** In addition, the operator shall provide all of the information listed in subsection (a) directly to the Division on the Well Stimulation Treatment Disclosure Reporting Form."* By eliminating the phrase "*for well stimulation treatments other than hydraulic fracturing,"* it is no longer clear that reporting to the Division and use of the form are required for these treatments. We suggest changing this sentence to "*In addition, and for well stimulation treatments other than hydraulic fracturing, the operator shall provide all of the information . . ."* Alternatively, the beginning of the paragraph could be changed to read "*(b) For hydraulic fracturing and other well stimulation treatments . . ."* and the rest of the paragraph amended as DOC proposes.
2469	9301-26 Subsection (b): The language states that the operator shall post the information listed in the Chemical Disclosure Registry, "to the extent that the website is able to receive the information." What does that refer to? What occurs if the website cannot receive it regarding public disclosure of that information?
2470	4636-2, 5532-4, 5544-4, 4608-1, 4692-5 It looks like the draft regulations only require that fracking operations disclose all chemicals on FracFocus. Is that correct? The regulations should be written as to require all forms of well stimulation have to report chemicals and water used to FracFocus, this includes all chemical

	disclosure for all acid frack jobs or acid jobs even with the maintenance of wells.
2471	9299-41 Section 1788(b) If they can do it here they can do it for pre-permit not FracFocus?
2472	4684-3 1788(b) addresses only hydraulic fracturing and omits other methods of WST; it should be replaced in its entirety by the final language of the same subdivision in the readopted interim regulations, which as proposed, had the same omission, and was corrected in response to our comments. 1788(b) also includes the statement that DOGGR will "consolidate the information" and make the "consolidated information" available on its website. Since "consolidate" is not defined in the regulations, we would like to confirm that this means all data would be available for each well, in a more useable format. 1788(c) involves confidential wells, though that term is not used. If other wells whose records are "not public record" are to be included, that would appear inconsistent with SB 4. In the second sentence of 1788 (c), the information that is not being publicly disclosed should not on1y be "specified" but should also be *provided* to DOGGR and as necessary or as required for all other wells in these regulations, to other agencies.
2473	9321-42 In section 1788(b) the Division should clarify what is meant by the new proposed provisions that information submitted to the Division will first be “consolidated” prior to making the information publicly available. The public should have full access to all information required to be reported under this Section with no omissions.
	Response to comments 2468-2473: Accepted in part. Section 1788(b) requires operators to submit all of the required public disclosures directly to the Division on a spreadsheet developed by the Division for that purpose. Among the required public disclosures is the identity and concentration of each chemical constituent and additive in the well stimulation treatment fluid. The Division will organize the public disclosures submitted by the operators and make them publicly available in a format that is easily searched and aggregated, to the extent practicable. In addition to submitting the required public disclosures directly to the Division, operators are required to post the required public disclosures to the public internet website known as FracFocus.org maintained by the Ground Water Protection Counsel and Interstate Oil and Gas Compact Commission (the “Chemical Disclosure Registry”). The additional disclosure to the Chemical Disclosure Registry is necessary so that activities in California are accounted for in the national disclosure registry.
2474	9315-17 The regulations do not clearly specify that complete compliance, including transparency to the public, will be required and enforced for confidential wells, or that notification, disclosure, and monitoring for confidential wells must occur if they receive well stimulation. While keeping secret from competitors the initial hydrocarbon production numbers from confidential wells may be justifiable, clandestine well stimulation operations are not.
2475	9321-43 Revise section1788(c) to read “(c) Except for the information specified in subdivision (a) (1) through ~~(6)~~(8), (16), (17) & (18), operators are not required to publicly disclose information found in a well record that the Division has determined is not public record, pursuant to PRC section 3234.”

2476	9282-34, 9311-24 Section 1788(c) must be amended to clearly require that all information for confidential wells be disclosed to the public, the Division and other applicable agencies, including the Water Boards and CUPAs, and health professionals.
2477	9282-10 Require complete compliance with all notification, disclosure, and monitoring for confidential wells that receive well stimulation treatments.
2478	5538-5 On confidential wells, we -- I'm still looking at the whole issue of confidential wells looking over at that over at the last two or three years. We just think that well stimulation should be revealed. Period. So that if you are a confidential well, not a production well, that data shouldn't be hidden away and we'll never know what happened for two, three or four more years. I am finding wells in the database that say confidential that are a lot older than four years old, which is the -- usually I believe the max that can extended by the supervisor for the confidential well.
2479	4608-6 One of the other loopholes is confidential wells. They're not called confidential wells. They're called wells which aren't public record. And I think you want to call them what is the common, commonly used name.
2480	4608-7 Data needs to be gathered from those confidential wells even if it is not to be disclosed to the public. It needs to be gathered by DOGGR. It needs to be available to emergency response agencies. It needs to be available to physicians in case there's exposure.
	Response to 2474-2480: Rejected. Public Resources Code section 3234 states that well records that are required to be filed with the Division are not public record and shall be maintained as confidential information if the well is an exploratory well or if other extenuating circumstances warrant confidential treatment. Public Resources Code section 3160, subdivision (k), specifies that a well granted confidential status pursuant to Public Resources Code section 3234 is not be required to disclose well stimulation treatment fluid information until the confidential status of the well ceases. Public Resources Code section 3160, subdivision (k), also provides that, 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, but does not otherwise expressly invalidate confidential treatment of well records under Public Resources Code section 3234. Accordingly, Section 1788(c) provides that an operator is not required to disclose information found in well records subject to confidential treatment under Public Resources Code section 3234. Public Resources Code section 3160, subdivision (c), requires the Division to enter into formal agreement with other state regulatory agencies for the purposes of coordinating regulation of well stimulation agreement. Each of the required formal agreements will address confidential information sharing.
2481	9309-19 DOGGR's regulations governing trade secret refers to a code, which refers to three other codes. This is not consistent with the plain English requirement. What governs should be written and then referenced.
2482	9309-20 Public Resources Code section 3160(j)(S-7)describes the process to substantiate trade secret.

	This section does not penalize applicants for making invalid claims, there needs to be some restraint otherwise many companies will take advantage of this process.
2483	9309-21 Substantiating trade secret as described in Section 3160(j) is not reflected in DOGGR's proposed regulations, which should be along with the procedures for public request of trade secret information {Public Resources Code Section 3160(j)(9&10).
2484	8351-3 Citizens suggest that trade information be considered proprietary for a limited period of twenty-five years and should not be subject to general public disclosure except in cases of actual emergency, known contamination of surface or subsurface aquifers, reservoirs, conduits used for potable water collection, storage or distribution, or in cases of imminent hazard to life or property, or by order of the Court or Federal Government.
2485	4653-1 Why are the oil drilling companies not being transparent about the chemicals they are pumping into the ground? We (California) don't need more earthquakes or pollution in our soil or air.
2486	4654-2 Putting unknown (undisclosed chemicals) is a No. No!
2487	8387-3 Secret chemicals can be kept a secret. The people state that they will take oil and gas companies' word for it.
2488	4681-3 The public and all interested persons have full and complete access to the nature and extent of toxic chemicals that are being injected into the waters and air of this State. Persons who prepared the so-called well completion reports for submission to DOGGR of the California DOC do not even know what chemicals are in the mixes that are used in the fracking process, leave that information blank or specifically indicate that information is a trade secret. The well completion reports are kept secret. These facts hardly further the public interest and highlight the need for much more rigorous regulation. Independent analysis of well data should be encouraged, not decreased, and will further clean water and air. Not even the agencies who by law, are directed to administer and oversea well data do not accurately know what chemicals are being used to inject wells or even the pumpers of such chemicals do not even know and cannot provide proper information to regulators about chemicals that in fact pollute our water and air. No chemical should be inserted into the waters and air of this State that the public agencies that represent us is not fully apprised of. Anything short of that is irresponsible regulation and not in the public interest. All well reports regarding fracking be either posted in the California Register or notice of that well completion report should be posted somewhere online indication their specific availability to the public and interested persons. Regulations requiring the users and manufacturers of fracking chemicals, if used in California fracking projects, be required to be part of the disclosure process. Attorney-client and work product privileges and confidential manufacturing and commercial processes, so-called trade secrets should not be sued to shield what chemicals we as the public are exposed to.
2489	4682-7, 9298-51, 4632-4, 4615-3, 8055-1, 8327-2, 8385-3 There should be full discloser to the public of exactly what chemicals (and in what quantities) these businesses are dumping into our environment, whether it is in the air, in our water systems, on the surface of the land or below it. And they should be required to clean up after themselves as well.

2490	4690-1 Many of the chemical fluids in fracking include carcinogens and toxins such as lead, uranium, mercury, radium ethylene glycol, methanol and formaldehyde. At times, claiming "trade secret protection", companies have not disclosed what chemicals are used.
2491	4697-3 There are no safe guards possible to adequately inform or protect the public. Oil & gas does not have a good record of self- regulation. Transparency is denied with inadequate disclosure and information is veiled as trade secrets.
2492	4715-7 "Trade secrets." The trade secrets is what is in the hydraulic fracturing fluid and the components of these proppants and so forth. And that's, kind of, bologna too because we need to know
2493	007575-3 Oil and gas operator should be held to the same standards, regarding trade secrets, as other companies, like Coca Cola.
	Response to comments 2481-2493: Rejected. Public Resources Code section 3160, subdivision (j), imposes strict limitations on the ability to claim trade secret protection as a basis for not making required public disclosures required under SB 4, and it is therefore unlikely that a claim of trade secret protection will be made in the context of these regulations. In the event that a claim of trade secret protection is asserted, Public Resources Code section 3160, subdivision (j), provides detailed procedures for the Division's handling of that claim. Section 1788(d) indicates where those procedures can be found and it is not necessary to quote those statutory provisions in the regulations.
2494	9321-41 We commend the Division for making a number of positive revisions to this section of the proposed rules, including the requirements to report the source of water used as base fluid, and the chemical composition of stimulation base fluids and waste water. However, additional improvements are still needed. The proposed rules still do not establish a procedure for providing trade secret information to health professionals and other parties, as noted in our previous comments.
	Response to comment 2494: Rejected. Public Resources Code section 3160, subdivision (j), imposes strict limitations on the ability to claim trade secret protection as a basis for not making required public disclosures required under SB 4, and it is therefore unlikely that a claim of trade secret protection will be made in the context of these regulations. In the event that the Division does receive required disclosures subject to a claim of trade secret protection, the Division will inform local environmental and public health agency of the fact and ensure that they are aware of who to contact if they need access to that information. Public Resources Code section 3160, subdivision (c), requires the Division to enter into formal agreement with other state regulatory agencies for the purposes of coordinating regulation of well stimulation agreement. Each of the required formal agreements will address confidential information sharing.
2495	8392-11 Who do surface property owners/the public report issues to if problems become clear more than sixty days after the cessation of a well stimulation treatment?

	Response to comment 2495: Contact information for each of the Division's district offices is available on the Division's website at *http://www.conservation.ca.gov/dog/pages/doggr_contacts.aspx*.
	1789. Post-Well Stimulation Treatment Report
2496	9294-21 Section 1789 should be revised to provide the complete and accurate results of the well stimulation treatment, including the exact amount and source of all water used for the treatment, the exact amount and chemical composition of well stimulation flowback fluid and the exact amount of oil and gas that recovered as a result of well stimulation treatment.
	Response to comment 2496: Rejected. Volume and source of water used for well stimulation treatment are addressed in Sections 1783.1 and 1788. Public Resources Code section 3227 requires reporting of oil, gas, and water produced from a well.
2497	9315-32 The removal of 1789(a)(1) should be reversed. The results of well stimulation treatments should be reported to the Division.
	Response to comment 2497: Rejected. The requirement to provide the Division with the "results of the well stimulation treatment" was removed because it is redundant to the other more specific requirements, of Section 1789(a).
2498	9299-42 Section 1789(a)(2) seems waiver to follow permit as approved.
2499	9303-8 In section 1789(a)(3) by "location", do you mean interval or direction of treatment? If direction, that would imply a subsurface monitoring technique, such as tilt-meters, would be required to assess the fracture orientation. Need to clarify.
2500	9323-11 Section 1789 (a)(3) re how the actual location of the well stimulation treatment differs from what was indicated on the permit application. This should not be allowed to occur. If something is different from the permit application, they the operator has to get a new permit. It's not enough to put it into the report when it's after the fact.
	Response to comments 2498-2500: Rejected. While information in the well stimulation permit application will be based on what is anticipated, the actual results of the treatment are not known until the treatment is complete.
2501	9315-26 Section 1789(a)(4), which requires the operator to submit a description of hazardous wastes generated and their disposition, including copies of all hazardous waste manifests used to transport the wastes offsite to an authorized facility, to the Division within 60 days after the end of a well stimulation treatment. We support the inclusion of this provision. This section though, should be expanded to explicitly apply to all waste, including produced water.

	Response to comment 2501: Rejected. Management of fluids not associated with well stimulation treatment is outside the scope of this rulemaking.
2502	9324-58 In section 1789(a)(4) recommend deletion of this provision. Rationale: Hazardous waste generation and disposal is already regulated by the Department of Toxic Substances Control and the Department of Resources, Recycling and Recovery. WSPA, CIPA, and IOPA believe it is unnecessary to require redundant reporting when the agency with regulatory authority is already receiving the required information.
	Response to comment 2502: Rejected. Public Resources Code section 3160, subdivision (c), requires the Division to enter into formal agreements with the Department of Toxic Substances Control and the Department of Resources, Recycling and Recovery in order to promote regulatory transparency and accountability and to revise regulations as necessary to incorporate those agreements.
2503	4692-5 1788.4.b. Do not eliminate paragraph (b). The Required Public Disclosure should definitely include the USGS information on earthquakes that occur during well stimulation as well as during water injection for disposal purposes. A clear correlation between waste water injection and induced seismicity has increased dramatically. It is becoming evident that the duration of waste water injection is a major factor in the increased seismicity. California should closely monitor and regulate wastewater injection, particularly within 10 miles of known faults.
2504	8330-2 It has been suggested that Section 1789 not be changed as indicated but left as it was previously, especially in light of the earthquake reporting requirement from the U.S. Geological Survey date.
2505	9323-10 Post-Well Stimulation Treatment Report. Do not delete the sections and language as lined out on the draft. The report should include results, and certainly whether any earthquakes occurred.
	Response to comments 2503-2505: Accepted in part. Section 1785.1 has been added requiring monitoring of the California Integrated Seismic Network during and after hydraulic fracturing. If an earthquake of magnitude 2.7 or greater occurs within a specified area around the well, then further hydraulic fracturing in the area are suspended until the Division, in consultation with the California Geological Survey, determines that there is no indication of a heightened risk of seismic activity from hydraulic fracturing.
2506	9282-35 We note an apparent error in this section. The reference to 1784(a)(4) appears to be incorrect, as there is no such section and must be replaced with 1784(a)(2). All information eventually must be submitted to and integrated with the other records for any specific well, e.g., History of Well. Historic hardcopy files are being replaced with online and digital files and archives. Hardcopy submittal must be replaced with near-real time reporting to the Division and simple copying (cc/bcc) of the same to other agencies and subscribers. The post-event reporting must be linked to all other records related to the same well, usually through the American Petroleum Institute's numbering system – the API No. – including all records and histories of the same well resulting

	from the Notices of Intent and Permits processed through a currently separate system. Such isolation will lead to errors and required revisions of these and other regulations.
	Response to comment 2506: Accepted in part. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division's goals in the development of these processes and technologies. The erroneous reference to Section 1784(a)(5) has been corrected.
2507	8392-9 With regards to Section 1789, people want to know what happens to the by-product fluid containers once a well is closed.
	Response to comment 2507: Rejected. Decommissioning production facilities and site restoration are addressed in existing regulations and are outside the scope of this rulemaking.
	<u>Other Comments</u>
2508	9282-8, 9315-13, 9321-6 Eliminate injection of dangerous chemicals, and promote the use of food-grade and other benign additives, including a prohibition on the injection of any distillate hydrocarbon, BTEX, and other hydrocarbons.
2509	8297-15 Protected waters make monitoring wells extremely expensive.
2510	9317-12 Sections 1.785.1, 1787, and 1788 requirements are simply more state sponsored slavery based on imaginary science.
2511	8328-3 Great concerns regarding proprietary chemicals and contamination of aquifers exist. In addition, people feel in the case of migrating chemicals which affect human health and economic vitality in fracked regions is the responsibility and liability of gas and oil operators.
2512	4695-10 1788. Corporate disclosure will never occur unless forced. Voluntary disclosure by corporations is a Bush-era fiction.
2513	4695-11, 7713-3 California is earthquake prone. Fracking brings forth water that is laced with naturally-occurring radioactive materials that were underground up to the surface. Californians are concerned that such chemicals will increase in the environment, get into the water, the food, the soil in which food is grown. Since fracking isn't regulated under most federal environmental laws like the Safe Drinking Water and Clean Water Acts, the industry is in charge of policing itself. Noting an earthquake will not stop "flow back". All those radioactive fluids: gross alpha- beta uranium,

	tritium and radium 226-228, will flow easily through each fresh earthquake-enhanced fractured rock to hurt air, soil, water, livestock, crops and people.
	Response to comments 2508-2513: Thank you for your comments.