REPORT OF THE CHIEF LEGISLATIVE ANALYST

DATE: August 28, 2013

TO: Honorable Members of the Rules, Elections and Intergovernmental Relations Committee

FROM: Gerry F. Miller
Chief Legislative Analyst

Council File No: 13-0002-S108
Assignment No: 13-08-0698

SUBJECT: Resolution (Parks - Blumenfield) to SUPPORT SB 4 (Pavley) IF AMENDED as specified

CLA RECOMMENDATION: Adopt Resolution (Parks - Blumenfield) to include in the City's 2013 -2014 State Legislative Program SUPPORT for SB 4 (Pavley) which would strengthen regulations surrounding fracking activities by requiring the issuance of public notices, permits, and details of chemicals used in the fracking process, and would require a complete scientific study on the impacts of fracking on surrounding communities/environment, IF AMENDED to:

- Ensure that any language and provisions related to "trade secrets" do not conflict with mandates to ensure that the chemicals used - including formaldehyde, acetic acids, citric acids, and boric acids - are fully disclosed, along with the amount of contaminated "flowback" fracking fluid that remains underground;

- Ensure that the required scientific study include information on the seismic impacts of fracking, including micro-seismic monitoring, specific risk geographies, areas and properties that are at increased risk of earthquake damage, and the correlation between base-water injection on seismic activity;

- Include requirements that industry conform to best management practices that protect water resources and do not negatively impact the State's supply of clean and potable water, and that industry undergo a full CEQA review of proposed fracking projects;

- Provide full access to any and all information about community and employee health concerns, and ensure that residential zoned areas are fully protected from any health impacts; and

- Ensure that the public is given a full opportunity to provide input during any and all permitting processes.

SUMMARY:
Resolution (Parks - Blumenfield), introduced on August 6, 2013, states that hydraulic fracturing (commonly known as fracking) is a method of extracting petroleum and gas from rock layers and shale. The Resolution follows that fracking may pose a public health risk and lead to property damage, contaminated air and groundwater, and increased seismicity.

The oil and gas industries have been granted exemptions from several environmental and public health laws and regulations to allow them to engage in fracking. The Resolution notes that current fracking operations in and around the communities of Baldwin Hills, Inglewood, and Culver City may be seriously endangering the health and well-being of nearby residents.

The Resolution maintains that it is vital that the health and well-being of all City residents is protected, and until a full and proper study on fracking - complete with risk mitigation strategies and public health and environmental protection requirements - is complete, the City residents should not be subject to the increased risks.

The Resolution states that SB 4 (Pavley), which is currently pending in the State Legislature, seeks to strengthen regulations surrounding fracking activities by requiring a complete scientific study of its impacts on communities and the environment. In addition, SB 4 seeks to require the issuance of public notices, permits, and details of chemicals before fracking operations are permitted.

SB 4 will help limit fracking's potential impact on public safety, however, the Resolution concludes that the bill can be improved by providing greater clarity on how the proposed study will be conducted, how its terms will be defined, and that the impacts of fracking on seismic activity are accurately represented. Therefore, the Resolution requests that the City support SB 4 if amended as specified above.

BACKGROUND:
In 2005, Congress exempted hydraulic fracking from the Federal Safe Drinking Water Act except when involving the injection of diesel fuels. As a result, the United States Environmental Protection Agency lacks the authority to regulate hydraulic fracking activities that do not use diesel fuel as an additive. Since 2007, fracking-related oil production has increased from approximately 39 barrels to 217 million barrels and similar gas production increased from 1.6 trillion cubic feet to 7.2 trillion cubic feet.

In terms of the environmental risks, the United States Government Accountability Office (GAO) identifies potential risks of fracking as follows:

- *Air quality* - these risks are generally a result of engine exhaust from increased traffic and equipment emissions with a risk of unintentional emissions of pollutants from faulty equipment;

- *Water quality* - Water quality risks result from spills or releases of fracking fluids from tank ruptures, operational errors or underground migration. Fracking chemicals may contaminate the surface or groundwater under these conditions. In addition, water is the primary component of fracking fluids thereby having an impact on local water supplies.

- *Land and wildlife* - Impacts to land and wildlife occur as vegetation is cleared and wildlife displaced to facilitate fracking operations such as road construction, pipeline and storage tanks placement. Also, unintentional oil or toxic chemical spills occur resulting in detrimental impacts to wildlife and habitat.

  There is also the related issue of earthquakes stemming from fracking . According to the GAO, well injections have been connected to seismic activity.

Currently, the State's Department of Conservation, specifically its Division of Oil, Gas, and Geothermal Resources (DOGGR), maintains statutory authority to regulate fracking; however it has not implemented regulations to sufficiently control fracking activity. To address this, the agency is proposing regulations that require oil and gas operators to take certain protective measure and provide information about hydraulic fracking operations. The proposed regulations seek to improve transparency and safety of fracking activity throughout the State.

The proposed regulations will be vetted through a formal rule-making process beginning in the fall of 2013. In the meantime, DOGGR has conducted public workshops throughout the State.

Environmental organizations and opponents of fracking activity state that DOGGR's proposed regulations do not go far enough to ensure the public health and protection of the environment. They further indicate that DOGGR has not been conducting adequate environmental review of fracking projects through the California Environmental Quality Act (CEQA) process. They state that the agency has been approving permits for oil and gas wells after exempting projects from environmental review; or issuing boilerplate negative declarations finding no significant impacts.

SB 4

The measure seeks to address a number of concerns associated with fracking by establishing a comprehensive regulatory program which consists of a more stringent permitting process; including clear public notification and disclosure requirements than currently exist. However, this effort is preliminary and more work may need to be done to effectively regulate fracking activities.

The Resolution (Parks - Blumenfield) highlights these limitations in SB 4 and requests amendment language, as noted above, to address them. For example, the Resolution seeks stronger language on "trade secrets" provisions thereby limiting the fracking industry's ability to withhold information on chemical additives; and strengthening requirements associated with ground water monitoring and protecting water quality. Currently, the author of the measure is

involved in on-going discussions with the Governor's administration and interested stakeholders regarding these concerns and how to best regulate fracking.

SB 4 calls for a comprehensive independent scientific study on fracking to be conducted by the State's Natural Resources Agency on or before January 1, 2015. The study is required to evaluate the hazards and risks that fracking poses to natural resources and the public. In essence, the study is intended to provide a full and unfettered diagnostic on its impacts and to potentially guide future regulatory actions.

It is likely that any unresolved issues associated with SB 4 may be ultimately assessed by the comprehensive study.

DEPARTMENTS NOTIFIED

Department of Water and Power

BILL STATUS

12/3/12	Introduced
8/19/13	Author's amendments; re-referred to the Assembly Committee on Appropriations

Rafael E. Prieto
Analyst

Attachment: 1. Resolution (Parks - Blumenfield)
2. SB 4

RESOLUTION

WHEREAS, any official position of the City of Los Angeles with respect to legislation, rules, regulations or policies proposed to or pending before a local, state or federal governmental body or agency must have first been adopted in the form of a Resolution by the City Council with the concurrence of the Mayor; and

WHEREAS, hydraulic fracturing, commonly known as fracking, is a method of extracting petroleum and gas used for energy from rock layers and shale, and may pose public health risks and lead to property damage, contaminated air and groundwater, and increased seismicity; and

WHEREAS, the oil and gas industries have been granted exemptions from several environmental and public health laws and regulations to allow them to engage in fracking, and current fracking operations in and around the communities of Baldwin Hills, Inglewood, and Culver City may be seriously endangering the health and wellbeing of nearby residents through the risks associated with fracking; and

WHEREAS, it is vital that the health and wellbeing of all Los Angeles residents is protected, and until a full and proper study on fracking – complete with risk mitigation strategies and public health and environmental protection requirements – is complete, Los Angeles residents should not be subject to the increased risks that come with fracking operations in and around their communities; and

WHEREAS, currently pending in the state legislature is SB 4 (Pavley), which would strengthen regulations surrounding fracking activities by requiring a complete scientific study on the impacts of fracking on surrounding communities and the environment, followed by the issuance of public notices, permits, and details of chemicals used during the fracking before fracking operations are permitted; and

WHEREAS, while SB 4's regulations may help ensure that fracking operations are not allowed to have any negative impact on public safety, the bill could be improved by providing more clarity on how the proposed study will be conducted, how its terms will be defined, and ensuring that the impacts of fracking on seismic activity are fully and accurately represented;

NOW, THEREFORE, BE IT RESOLVED, with the concurrence of the Mayor, that by the adoption of this Resolution, the City of Los Angeles hereby includes in its 2013-2014 State Legislative Program SUPPORT of SB 4 (Pavley), which would strengthen regulations surrounding fracking activities by requiring the issuance of public notices, permits, and details of chemicals used during the fracking process, and would require a complete scientific study on the impacts of fracking on surrounding communities and the environment, IF AMENDED to:

1. Ensure that any language and provisions related to 'trade secrets' do not conflict with mandates to ensure that the chemicals used – including formaldehyde, acetic acids, citric acids, and boric acids – are fully disclosed, along with the amount of contaminated 'flowback' fracking fluid that remains underground;

AMENDED IN ASSEMBLY AUGUST 19, 2013

AMENDED IN ASSEMBLY AUGUST 6, 2013

AMENDED IN ASSEMBLY JUNE 25, 2013

AMENDED IN ASSEMBLY JUNE 18, 2013

AMENDED IN SENATE MAY 24, 2013

AMENDED IN SENATE MAY 7, 2013

AMENDED IN SENATE APRIL 24, 2013

AMENDED IN SENATE MARCH 11, 2013

SENATE BILL **No. 4**

Introduced by Senator Pavley
(Principal coauthor: Assembly Member Gray)
(Coauthors: Senators De León, Leno, and Monning)
(Coauthors: Assembly Members Levine, Muratsuchi, Stone, and Williams)

December 3, 2012

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

LEGISLATIVE COUNSEL'S DIGEST

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

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

This bill would define, among other things, the terms well stimulation treatment, hydraulic fracturing, and hydraulic fracturing fluid. The bill would require the Secretary of the Natural Resources Agency, on or before January 1, 2015, to cause to be conducted an independent scientific study on well stimulation treatments, including acid well stimulation and hydraulic fracturing treatments. The bill would require an operator of a well to record and include all data on well stimulation treatments, as specified. The bill would require the division, in consultation with the Department of Toxic Substances Control, the State Air Resources Board, the State Water Resources Control Board, the Department of Resources Recycling and Recovery, and any local air districts and regional

water quality control boards in areas where well stimulation treatments may occur, on or before January 1, 2015, to adopt rules and regulations specific to well stimulation, including governing the construction of wells and well casings and full disclosure of the composition and disposition of well stimulation fluids. The bill would require an operator to apply for a permit, as specified, with the supervisor or district deputy, prior to performing a well stimulation treatment of a well and would prohibit the operator from either conducting a new well stimulation treatment or repeating a well stimulation treatment without a valid, approved permit. The bill would prohibit the approval of a permit that presents an unreasonable risk or is incomplete. The bill would require the division, within 5 business days of issuing a permit to commence a well stimulation treatment, to provide a copy to specific boards and entities and to post the permit on a publicly accessible portion of its Internet Web site. The bill would require the well stimulation treatment to be completed within one year from the date that a permit is issued. The bill would require the division to perform random periodic spot check inspections during well stimulation treatments, as specified. The bill would require the Secretary of the Natural Resources Agency to notify various legislative committees on the progress of the independent scientific study on well stimulation and related activities, as specified, until the study is completed and peer reviewed by independent scientific experts. The bill would require the operator to provide a copy of the approved well stimulation treatment permit to specified tenants and property owners at least 30 days prior to commencing a well stimulation treatment. The bill would require the operator to provide notice to the division at least 72 hours prior to the actual start of a well stimulation treatment in order for the division to witness the treatment. The bill would require the supplier, as defined, of the well stimulation treatment to provide to the operator, within 30 days following the conclusion of the treatment, certain information regarding the well stimulation fluid. The bill would require the operator, within 60 days of the cessation of a well stimulation treatment, to post or cause to have posted on an Internet Web site accessible to the public specified information on the well stimulation fluid, as specified. The bill would provide that where the division shares jurisdiction over a well with a federal entity, the division's rules and regulations apply in addition to all applicable federal law and regulations. The bill would require a supplier claiming trade secret protection for the chemical composition of additives used in a well stimulation treatment to disclose the composition to the division, in conjunction with a well stimulation treatment permit application, but would, except as specified, prohibit those with access to the trade secret from disclosing it. Because this bill would create a new crime, it would impose a state-mandated local program.

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

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

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

This bill would allow the moneys described above to be used for all costs associated with (A) well stimulation treatments, including scientific studies required to evaluate the treatment, inspections, and any air and water quality sampling, monitoring, and testing performed by public entities, and (B) the development and implementation of specific consultation processes and agreements.

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

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

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

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

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

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

P4 SECTION 1. The Legislature finds and declares all of the following:

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

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

(c) Providing transparency and accountability to the public regarding well stimulation treatments, including, but not limited to, hydraulic fracturing, associated emissions to the environment, and the handling, processing, and disposal of well stimulation and
P5 related wastes, including from hydraulic fracturing, is of paramount concern.

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

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

Article 3. Well Stimulation

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

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

3152. "Hydraulic fracturing" means a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid or fluids into an underground geologic formation in order to fracture or with the intent to fracture the

formation, thereby causing or enhancing, for the purposes of this division, the production of oil or gas from a well.

3153. "Hydraulic fracturing fluid" means a base fluid mixed with physical and chemical additives for the purpose of hydraulic fracturing. A hydraulic fracturing treatment may include more than one hydraulic fracturing fluid.

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

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

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

3157. For purposes of this article, "well stimulation treatment" means any treatment of a well designed to enhance oil and gas production or ~~recovery, including, but not limited to, hydraulic fracturing and acid well stimulation~~ *recovery*. Well stimulation treatments include, but are not limited to, hydraulic fracturing treatments and acid well stimulation treatments. Well stimulation treatments do not include steam flooding, water flooding, or cyclic steaming *and do not include routine well cleanout work, routine well maintenance, bottom hole pressure surveys, or routine activities that do not affect the integrity of the well or the formation*.

3158. "Acid well stimulation treatment" means a well stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation with the intent to cause or enhance the production of oil or gas from a well. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments.

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

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

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

(3) (A) Evaluate all aspects of hydraulic fracturing, including, but not limited to, the hydraulic fracturing treatment, additive and water transportation to and from the well site, mixing and handling of the hydraulic fracturing fluids and additives onsite, the use and potential for use of nontoxic additives and the use or reuse of

treated or produced water in hydraulic fracturing fluids, wastewater and waste hydraulic fracturing fluid handling, treatment, and disposal.

(B) Evaluate all aspects of acid well stimulation treatments, including the use and potential use of large-scale acidization treatments and waste handling, treatment, and disposal.

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

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

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

(b) (1) On or before January 1, 2015, the division, in consultation with the Department of Toxic Substances Control, the State Air Resources Board, the State Water Resources Control Board, the Department of Resources Recycling and Recovery, and any local air districts and regional water quality control boards in areas where well stimulation treatments, including acid well stimulation treatments and hydraulic fracturing treatments may occur, shall adopt rules and regulations specific to well stimulation

P8 treatments. The rules and regulations shall include, but are not limited to, revisions, as needed, to the rules and regulations governing construction of wells and well casings to ensure integrity of wells, well casings, and the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation treatments, and full disclosure of the composition and disposition of well stimulation fluids, including, but not limited to, hydraulic fracturing fluids, acid well stimulation fluids, and waste hydraulic fracturing and acid stimulation fluids.

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

(A) The date of the well stimulation treatment.

(B) A complete list of the names, Chemical Abstract Service (CAS) numbers, and maximum concentration, in percent by mass, of each and every chemical constituent of the well stimulation treatment fluids used. If a CAS number does not exist for a chemical constituent, the well owner or operator may provide another unique identifier, if available. Chemical information claimed as a trade secret, pursuant to subdivision (j), shall be identified as such and reported as described in subdivision (j).

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

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

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

P9 (F) The specific composition and disposition of all well stimulation treatment fluids, including waste fluids, other than water.

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

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

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

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

(2) On or before January 1, 2015, the division shall enter into formal agreements with the Department of Toxic Substances Control, the State Air Resources Board, any local air districts where well stimulation treatments may occur, the State Water Resources Control Board, the Department of Resources Recycling and Recovery, and any regional water quality control board where well stimulation treatments may occur, clearly delineating respective authority, responsibility, and notification and reporting requirements associated with well stimulation treatments and well stimulation treatment-related activities, including air and water quality monitoring, in order to promote regulatory transparency and accountability.

(3) The agreements under paragraph (2) shall specify the appropriate public entity responsible for air and water quality monitoring and the safe disposal of materials in landfills, include

trade secret handling protocols, if necessary, and provide for ready public access to information related to well stimulation treatments and related activities.

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

(A) The well identification number and location.

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

~~(C) An estimate of the amount of water to be used in the treatment and its source.~~

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

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

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

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

(D) A complete list of the names, Chemical Abstract Service (CAS) numbers, and estimated concentrations, in percent by mass, of each and every chemical constituent of the well stimulation fluids ~~planned~~ *anticipated* to be used in the treatment. If a CAS number does not exist for a chemical constituent, the well owner or operator may provide another unique identifier, if available. Chemical information claimed as a trade secret, pursuant to subdivision (j), shall be identified as such and reported as described in subdivision (j).

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

(F) A groundwater monitoring plan. A groundwater monitoring plan is not required if the appropriate regional water quality control board confirms that the well subject to the proposed well stimulation treatment does not or will not penetrate or does not or will not influence an aquifer that is designated for a beneficial use. The groundwater monitoring plan shall include, at a minimum, all of the following information:

(i) The current water quality of the groundwater basin through which the well subject to the proposed well stimulation treatment is or will be drilled that is sufficient to characterize the quality of any aquifer through which the well is or will be drilled.

(ii) An estimate of the zone of influence of the well subject to the proposed well stimulation treatment.

(iii) Water quality data or a plan to obtain data regarding the presence and concentration of the constituents to be used in, or