

Los Angeles  Department of Water & Power

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December 11, 2013

The Honorable City Council
Office of the City Clerk
Room 395, City Hall
Mail Stop 160

Attention: Councilmember Felipe Fuentes
Chair, Energy and Environment Committee

Honorable Members:

Subject: Response to Energy and Environment Committee Motion No. 13-1152-S2 – Extraction Processes Used in its Gas Producing Properties in Wyoming

This is in response to the Motion No. 13-1152-S2 of October 23, 2013, by Councilmembers Bob Blumenfield and Paul Koretz in which the Energy and Environment Committee requested the Los Angeles Department of Water and Power (LADWP) "*Report in 30 days on the extraction practices including and especially fracking, and chemicals used by the contractor to access the natural gas from fields in Wyoming; and on the status of the natural gas acquisition agreement.*" The motion further moved "*that the LADWP report on any potential impact that the contractor's extraction method (fracking) may have on the public health and the environment and ways to mitigate its impact.*"

Summary and Conclusion

The LADWP has no involvement in any current fracking operations. The LADWP has completed its purchase of gas producing acreage in Wyoming through participation in a Southern California Public Power Authority (SCPPA) project. All drilling and fracking activity have been completed according to the regulations of the Wyoming Oil and Gas Conservation Commission (WOGCC) with no reported incidences of ground water contamination or other environmental or health impact. No further drilling is planned. The impacts of fracking are being studied by the Wyoming Department of Environmental Quality (WDEQ) and WOGCC which together will release their joint report, by September 30, 2014, and the federal United States Environment Protection Agency (EPA) which will release its congressionally-directed study of whether fracking impacts drinking water supplies, in 2016. After the release of these reports the effects of fracking on the environment will be better understood.

Acquisition Agreement Background

The LADWP participated in a SCPPA project which acquired the assets of the Anschutz Pinedale Corporation that included an undivided 42.5 percent working interest in three natural gas leases on which 38 at the time (and now about 131) operating oil and gas wells were producing, located in the Pinedale Anticline in the southwest region of the State of Wyoming. The LADWP's ownership interest is 74.4681 percent of the 42.5 percent previously owned and subsequently

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purchased by SCPA from the Anschutz Pinedale Corporation. The LADWP's share is then approximately 31.65 percent of the total. At present approximately 13 percent of the LADWP's annual gas requirements comes from these operations. Receipt of natural gas from the Pinedale acreage is anticipated to last another 30 years, although at a reduced level. The other participants are the cities of Anaheim, Burbank, Colton, Glendale, Pasadena and the Turlock Irrigation District. The largest owner of the balance of the working interests in the properties is Ultra Resources Corporation which also acts as the operator of the leases. This company presumably is the "firm" referred to in the Motion. The operator initiates new drilling activity and brings the wells into production. There is an agreement between SCPA and Ultra called the Joint Operating Agreement (JOA) (copy enclosed) which defines the activities and relationships between the operator and the working interest holders. Ultra contracts with drilling rig operators to actually drill wells in locations Ultra selects. Ultra also hires the services of Halliburton as an independent contractor to do the actual well completion activity, including fracking. Halliburton we assume is the "contractor" referred to in the Motion who is using chemicals and fracking techniques to extract the natural gas from the field. WOGCC regulates this activity. Ultra has ceased all drilling and fracking activity on acreage in which the LADWP has an interest. We believe the drilling rigs have been moved to other parts of the Pinedale Anticline in which Ultra has a majority or exclusive interest. We have enclosed summary fracking information for the last seven wells fracked (over a year ago) in which the LADWP has an interest. This information is required by the WOGCC as part of its oversight responsibility and is readily available on the Frac Focus Chemical Disclosure Registry.

The acquisition agreement exists between SCPA and the LADWP as a Part C project participant in which the LADWP provided its own funds for the purchase by SCPA, without resorting to SCPA bonds. Since the acquisition, the only money paid to SCPA to maintain the ownership interest has been to cover LADWP's share of operating costs for such things as royalty payments to government entities and other nonworking interests, additional drilling and Operating and Maintenance costs.

Natural gas in the Pinedale Anticline area is locked in tight rock formations. Wells in the Pinedale area use a multi-stage fracturing method to extract the gas. First the well is drilled, the casing perforated with a shaped charge to provide communication between the inside of the well bore and the hydrocarbon formation, and then the formations must be further broken down, creating channels for gas to flow. This stage is accomplished by hydraulic fracturing of a formation, when fluid and/or compressed gas is forced at high pressure down the wellbore, fracturing the gas-bearing rocks, creating cracks and fissures. These fissures become conduits for gas to flow out of the formation and up the steel pipe set in the well. The method for extraction of crude oil and natural gas is the same. To keep the formation from closing back on the fissures and resealing the rock, solid material is mixed in the "frack fluid" to prop the channels open. The State of Wyoming requires the disclosure of the chemicals that are used in the fluids during the operations for hydraulic fracturing. The Pinedale wells are drilled down to a depth of almost 14,000 feet. The well construction and completion procedures include numerous barriers to control the fracturing process and to prevent the migration of hydraulic fracturing fluid into underground drinking sources.

Potential Impacts

As to the potential impact on public health and safety, no impacts have been uncovered in the general area directly attributable to Ultra's drilling activity, and since all drilling activity on acreage in which the LADWP has an interest has ended, there are no impacts to report. About 62 miles

northeast of the city of Pinedale, the town of Pavillion, Wyoming has very publically alleged its water supply was contaminated by fracking operations from drilling activity by Encana Corporation (LADWP has no involvement in the natural gas production activities performed by Encana Corporation). The EPA initiated a study of this problem but later dropped its draft study in which it initially claimed the contamination was “likely” related to fracking operations. Upon withdrawing its draft study, the EPA backed a joint WDEQ and WOGCC investigation slated to be released by September 30, 2014. The EPA indicated it will continue its congressionally-mandated study of the effects of fracking on the nation’s drinking water supplies, to be finalized in 2016.

The LADWP conducted an environmental review of Ultra’s operations and examined reports issued by the Sublette County Conservation District (SCCD) of hydrocarbon contamination in some industrial wells in the Pinedale Anticline and the nearby Jonah natural gas field. Water quality testing detected hydrocarbons in a number of industrial wells at an average depth of 683 feet. The testing was performed under the SCCD’s and other agencies’ Sampling and Analysis Plan (SAP) to monitor water quality. The source for the contamination has not been determined. No contamination has been detected in drinking water wells that are typically at a depth of 130 feet. The SAP is reviewed annually with the entire project funded by oil and gas operators. The pay zone for the Pinedale wells resides at about 14,000 feet below the surface, substantially below the water table which lies only slightly below the surface. The LADWP believes the role faulty casings may play in any potential water contamination issues bears close scrutiny.

Beginning in the winter of 2005, the WDEQ has been monitoring 8-hour ozone concentrations in the vicinity of the Pinedale Anticline and Jonah gas field areas. Elevated ozone levels have been detected in the Pinedale Anticline and Jonah areas, and consequently have been declared a non-attainment area by the EPA. Much of this problem may have been attributable to the use of diesel trucks used to transport hydrocarbon liquids from the wells to processing plants. However the practice of liquids transport by truck has been eliminated by the development of pipeline gathering systems which will obviate the need for tank trucks.

LADWP also noted that the United States Department of the Interior, Bureau of Land Management (BLM) has reported a decline in the mule deer population to such an extent it had to limit drilling during critical winter months, until 2008, when a new drilling plan was put in place to help maintain herd populations. Two of the factors cited in the population decline were a 9-year drought and the increased number of new roads which resulted in a jump in vehicle collisions.

The LADWP continues to monitor its two main concerns: 1) non-compliance issues and the reports sent to the BLM; and 2) the extent to which Ultra monitors and tests the integrity of well casings. LADWP has noted that casing integrity may be the source of most perceived ground water contamination and so continues to inquire about the status of Ultra’s quality assurance program for its wells.

Chemicals Used in Hydraulic Fracturing

Below is a Table containing chemicals used in the hydraulic fracturing process. It should be noted that the top two constituents are water and sand which together make up over 96 percent of the materials used in the hydraulic fracturing process.

CHEMICALS REPORTED IN FRAC FOCUS

CHEMICAL	PURPOSE	INGREDIENTS	MAXIMUM CONCENTRATION IN HYDRAULIC FRACTURING FLUID(% BY MASS)
Water	Carrier	Water	77.160 to 80.203
Sand	Proppant	Crystalline Silica, Quartz	18.900 to 22.369
WG-36 Gelling Agent	Gelling Agent	Guar Gum	0.00 to 0.21262
MO-67	pH Control	Sodium Hydroxide	0.0489 to 0.0619
CL-22 UC	Crosslinker	Potassium Formate	0.04761 to 0.05060
BA-20 Buffering Agency	Buffer	Ammonium Acetate	0.00892 to 0.14157
		Acetic Acid	0.00268 to 0.04247
Optiflo-III Delayed Release Breaker	Breaker	Ammonium Persulfate	0.00163 to 0.00478
		Crystalline Silica, Quartz	0.00049 to 0.00143
Optiflo-II Delayed Release Breaker	Breaker	Ammonium Persulfate	0.00160 to 0.00824
		Crystalline Silica, Quartz	0.00016 to 0.00082
SP Breaker	Breaker	Sodium Persulfate	0.00188 to 0.00443
WG-39	Gelling Agent	Polysaccharide	0.00 to 0.57334
CL-23 Crosslinker	Crosslinker	Zirconium, acetate lactate oxo ammonium complexes	0.00 to 0.05748
		Ammonium chloride	0.00 to 0.02874
CL-41	Crosslinker	Inorganic Salt	0.00 to 0.02337
		Lactic Acid	0.00 to 0.02337
MO-67	pH Control Additive	Sodium Hydroxide	0.00 to 0.04888

If you have any further questions or if additional information is required, please contact me at (213) 367-1338, or you may have your staff contact Ms. Winifred J. Yancy, Manager, Intergovernmental Affairs and Community Relations, at (213) 367-0025.

Sincerely,



Ronald O. Nichols
General Manager

RLP:veh

Enclosures

c/enc: Councilmember Bob Blumenfield, Vice-Chair, Energy and Environment (E&E) Committee
Councilmember Tom LaBonge, Member (E&E) Committee
Councilmember Jose Huizar, Member, (E&E) Committee
Councilmember Paul Koretz, Member, (E&E) Committee
Mr. Gerry Miller, Chief Legislative Analyst (CLA)
Mr. Rafael Prieto, Legislative Analyst, Office of the CLA
Ms. Winifred J. Yancy

13-1152-52

OCT 23 2013

ENERGY & ENVIRONMENT

MOTION

The use of hydraulic fracturing (fracking) to extract natural gas is of great concern since it may pose a public health risk. Fracking has been linked to groundwater contamination and increased seismicity. The Los Angeles Department of Water and Power (DWP) currently procures natural gas to support its power generation from gas fields in Wyoming. This arrangement is conducted through a long-term natural gas acquisition contract with the Southern California Public Power Authority (SCPPA).

The firm that provides natural gas to the DWP and SCPPA reportedly uses fracking methods to extract it. There have been reports linking aquifer contamination in Wyoming to fracking practices. The full environmental impacts of fracking are yet to be fully defined. Given this, it is vital that the DWP report to the Council as to the status of the gas acquisition contract in Wyoming and the extraction practices that the contractor engages in. Furthermore, the DWP should report on the chemicals used in the extraction process and where they pose a threat to the public health and the environment.

I THEREFORE MOVE that the Los Angeles Department of Water and Power (DWP) be requested to report in 30 days on the extraction practices, including and especially fracking, and chemicals used by the contractor to access the natural gas from gas fields in Wyoming; and on the status of the natural gas acquisition agreement.

I FURTHER MOVE that the DWP report on any potential impact that the contractor's extraction method (fracking) may have on the public health and the environment and ways to mitigate its impact.

PRESENTED BY:

Bob Blumenfeld
BOB BLUMENFIELD
Councilmember, 3rd District

SECONDED BY:

Pat Koretz

COUNCIL MEMBER PAT KORETZ

ORIGINAL

[Signature]

10/23/13