



**BRIAN SANDOVAL**  
Governor

STATE OF NEVADA  
COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**  
400 W. King Street, Suite 106  
Carson City, Nevada 89703  
(775) 684-7040 • Fax (775) 684-7052  
<http://minerals.state.nv.us/>

**Las Vegas Branch:**  
2030 E. Flamingo Rd.  
Suite #220  
Las Vegas, Nevada 89119  
(702) 486-4343  
Fax (702) 486-4345

**RICHARD PERRY**  
Administrator

## **HYDRAULIC FRACTURING IN NEVADA: HISTORY, CURRENT USE, DEVELOPMENT OF REGULATIONS AND SCHEDULE FOR ADOPTION**

**June 10, 2014**

### **HISTORY/GENERAL**

- Nevada has a 60 year history of oil production, primarily from several valleys in eastern Nevada. 335,672 barrels of oil were produced in 2013. Nevada is not a commercial producer of natural gas.
- Hydraulic fracturing has been used in oil extraction since 1947. Its use has become more common with the development of horizontal drilling.
- The successful use of hydraulic fracturing for oil exploration and production has generated new interest in geologic targets in eastern and central Nevada.
- The Nevada Division of Minerals lists all approved oil and gas drilling permits with specific conditions of approval on their web site at: [www.minerals.state.nv.us](http://www.minerals.state.nv.us) . Links to additional information on hydraulic fracturing can also be found on the Division's web site.

### **CURRENT USE**

- Nine drilling permits were issued to Noble Energy in 2013 that would allow for the use of hydraulic fracturing. The location of these is on private land. Specific conditions of approval to address the use of hydraulic fracturing were included in these drilling permits. Noble has drilled two wells to date in Elko County.
- The first well drilled was hydraulically fractured in March, 2014. Division of Minerals and Division of Environmental Protection staff were on-site to monitor the process. 0.76 acre-feet (250,057 gallons) of water was used in the hydraulic fracturing process. For comparison, a domestic well in Nevada can draft 2.0 acre-feet per year and a standard-size irrigation pivot in Nevada uses between 500 and 600 acre-feet per year.
- The second well drilled by Noble Energy was hydraulically fractured in June, 2014. Division of Minerals staff was on-site to monitor the process. 1.06 acre-feet (345,660 gallons) of water was used, of which 25% was recycled from the first well.
- Both hydraulic fracturing treatments were conducted with no accidents, incidents or spills.
- Noble has 7 additional approved permits to drill on private ground, and is awaiting permits from the BLM to drill other targets on Federal lands in Elko County.
- One existing production well on Federal ground in Eureka County was hydraulically fractured in June, 2014. 0.64 acre-feet (209,000 gallons) of water was used in the process. Division of Minerals and Bureau of Land Management staff were present to monitor the process, which was completed with no accidents, incidents or spills.

## DEVELOPMENT OF PROGRAM AND REGULATIONS

During the last legislative session, the Nevada Division of Minerals and Nevada Division of Environmental Protection were mandated in Senate Bill 390 (NRS 522.119) to jointly develop a program and regulations to update Nevada's oil and gas code to address the use of hydraulic fracturing.

- As required by the legislature, the Division of Environmental Protection and Division of Minerals have worked together to develop the new regulations. Once adopted, the new regulations will be found in Nevada Administrative code Chapter 522, Oil and Gas.
- As part of this process, other state's regulations and histories with regards to hydraulic fracturing were reviewed. Nevada's hydrology, geology and geography were considered in drafting the new regulations.
- Injection of water associated with oil production continues to be regulated by the Nevada Division of Environmental Protection, and it was determined that no additional changes were needed to those regulations as the program for hydraulic fracturing was being developed.
- Best practices have been included in the proposed regulations, which were developed with the assistance of a registered petroleum engineer. Recommendations from the public, conservation groups, local governments and industry were collected from public workshops and considered in development of the final draft. If adopted, the new regulations will be an update to the State's existing oil and gas code. The following is a summary of some of the proposed changes:
  - Water sampling of existing water wells before and after hydraulic fracturing of any wells within a one mile radius.
  - Additional casing and cement requirements to ensure the protection of fresh water.
  - Pressure testing and cement bond logging to ensure borehole integrity and protection of groundwater.
  - Chemicals proposed for hydraulic fracturing must be on the Division of Minerals reference list before use, and disclosure of all chemicals and amounts used on a public web site: [www.fracfocus.org](http://www.fracfocus.org).
- Water use for drilling and hydraulic fracturing is appropriated through the Nevada Division of Water Resources the same as any other beneficial use. The volume of water used for hydraulic fracturing is included in the [www.fracfocus.org](http://www.fracfocus.org) disclosure.

## SCHEDULE FOR ADOPTION OF REGULATIONS

1. Development of draft regulations by NDOM and NDEP staff – August to November, 2013
2. Stakeholder meeting – Nov 21, 2013
3. Draft changes to NAC 522 – Dec. 2013
4. Public meeting Jan 16, 2014. CMR approved draft
5. LCB pre-adoption review January, 2014.
6. Public Workshops – March 17-21 in CC, Elko, LV
7. Public comment ended 5 PM March 28th
8. Consideration of public comments April-June, 2014
9. LCB Pre-adoption review of edits – begins June, 2014
10. Commission on Mineral Resources public hearing to consider adoption ~ August 28<sup>th</sup> quarterly meeting, Elko
11. Adopted regulations will go to Legislative Commission for final review