STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION, THROUGH THE ENVIRONMENTAL BUREAU CHIEF, FOR ADOPTION OF AN AMENDMENT TO 19.15.39 NMAC ADDING NEW SECTIONS TO BE CODIFIED AT 19.15.39.9 AND 19.15.39.10 NMAC ADDRESSING SPECIAL PROVISIONS FOR SANTA FE COUNTY AND THE GALISTEO BASIN; SANTA FE, SANDOVAL AND SAN MIGUEL COUNTIES.

CASE NO. 14255

TESTIMONY OF GLENN VON GONTEN

My name is Glenn von Gonten and I have worked for the Oil Conservation Division in its Environmental Bureau since January 2005. As a senior hydrologist I handle oil field related ground water and soil contamination cases, issue discharge permits, deal with other projects as assigned, and supervise two other hydrologists.

I received my B.Sc. in Geology from Texas A&M University and a M.Sc. in Geology from the University of Texas at Arlington. I also have post-graduate training in hydrogeology from the University of Houston and from Oklahoma State University.

I have over 30 years experience as a geologist. Starting in 1977, I worked in the oil and gas industry for several companies. I worked for Exploration Logging as a trailer captain. I worked for two small independents while working my way through graduate school. After getting my master's degree, I worked for Conoco and then for Arco as an explorationist.

I have worked as a state regulator in three separate environmental programs for the past 15 years. I worked for 6 years for the Department of Environmental Quality in Virginia its hazardous waste program's ground water/corrective action group as a senior geologist. After moving to New Mexico in 1999, I worked in the Hazardous Waste Bureau as a supervisor until January 2005 when I transferred to OCD. My group in the Hazardous Waste Bureau dealt with permitting and corrective action issues at five military bases, one federal facility, and over 200 formerly used defense sites.

I have previously testified before the commission on four occasions. The first was as a factual witness in 2005. The second time was for the Surface Waste Management Facility rulemaking in 2006, Case No. 13586, and I was accepted as an expert hydrologist. The third time was for the Pit Rule in 2007, Case No. 14015, and I was accepted as an expert hydrologist. The fourth time was for an application by the Harvey E. Yates Company in 2008 for an expansion of a unit area in Otero County, Case No. 14000, and I was accepted as an expert hydrologist.

My testimony today will address the contents of an application for an exploration and development plan under numbered paragraphs 1-8 of Subsection B of 19.15.39.9 NMAC. The

Before the OCC
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OCD Exhibit 4

provisions regarding drilling and mud-logging programs in numbered paragraph 7 will be addressed by Mr. Will Jones. Mr. Brad Jones will testify on the requirements set out in numbered paragraphs 9-13.

19.15.39.9B NMAC APPLICATION FOR EXPLORATION AND DEVELOPMENT PLAN.

Rule 9B(1) requires the operator to include some very basic contact information with its Exploration and Development Plan application, including: the operator's name, address and telephone number, with an e-mail address and facsimile number if available. OCD obviously needs this information to process the application and to be able to contact the operator for additional information or clarification.

Rule 9B(2) requires the operator to provide a "legal description" of the area covered by its Exploration and Development plan. OCD needs the detailed legal description because some of areas covered by this rule have not been surveyed as part of the Public Lands Survey System (PLSS). These un-surveyed areas include various land grants.

Rule 9B(2) also requires the operator to provide OCD with the operator's best estimate of the potentially productive area. That means the operator should include the entire area that it estimates will be covered by its Exploration and Development Plan. If the operator were to underestimate the area to be covered by its plan, then it would be required by the proposed rule to amend its plan to include the additional area as its operations expand. Operators must provide OCD with an estimate of the area that will be covered by its Exploration and Development Plan so that OCD will be able to focus on any special issues that might arise in that the potential productive area, such as the local surface hydrology, ground water hydrology, geology, soils, culturally sensitive areas, *etc.* In addition, the public notice required under the rule also depends on what area is covered by the plan. If the operator's proposed plan is approved, OCD will approve it only for a specific area.

Rule 9B(3) requires the operator to identify all target zone or zones. Target zones include the potentially productive formations. OCD needs this information when evaluating proposed mud programs and logging programs.

Rule 9B(4) requires the operator to submit a topographic map of the area to be covered by the proposed plan and one half mile beyond the boundary of that area. OCD requires this locational and geographic information to use as a base for assembling all the other information that it needs to consider when processing the operator's application.

Rule 9B(5) requires the operator to provide a map or maps of the area to be covered by the proposed Exploration and Development Plan and one half mile beyond the boundary of that area. The maps must document the location of several specific items and must be practically surveyed using global positioning system coordinates to the sixth decimal point for un-surveyed areas.

The maps must depict the locations of:

(a) state, federal, private or tribal surface ownership, including for private lands the property boundaries and the name of the property owner at time of application;

(b) municipal and county boundaries;

(c) farms;

(d) all buildings and infrastructure including but not limited to highways and roads, railroads, pipelines, power lines, antennas, wind turbines, solar farms, and mines (surface and subsurface);

(e) watercourses, sinkholes, playas and unstable areas;

(f) municipal fresh water well fields covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended;

(g) wellhead protection areas;

(h) all existing oil and gas wells; and

(i) the location of proposed exploratory wells and related facilities, including but not limited to tank batteries, gathering lines, waste disposal facilities, compressor stations and access roads.

Rule 9B(5) requires the operator to provide information on boundaries, geographic and geologic features, and structures. This information is needed when OCD evaluates the sensitivity of a particular well site or other facility location. An operator's proposed productive area may be quite large and any siting restrictions that OCD imposes on an operator must be based on site specific information. Obviously, operators should not place wells or facilities in close proximity to occupied houses, environmentally sensitive areas such as playas or stream channels, or archaeological sites. The appropriate setback will depend on the sensitivity of the items. It is appropriate for OCD to require a greater setback distance from existing and occupied homes or buildings than it would for abandoned structures.

In addition, by requiring the operator to specify the proposed location of wells and other associated facilities, OCD ensures that the operator has adequately planned for siting and constructing the infrastructure that it must construct before its exploration and development program can be implemented.

These special requirements are in addition to the existing requirements for an Application for Permit to Drill, Deepen or Plug Back (APD - OCD Form C-101).

Rule 9B(6) requires that the operator submit a hydrogeologic and site report, based on available data and reports, that provides sufficient information and detail on the area's topography, soils, geology, surface hydrology and ground water hydrology to enable the division to evaluate the actual and potential effects on soils, surface water and ground water. This basic hydrogeologic and geologic information is routinely provided to OCD by operators conducting soil and ground water investigation and remediation operations. The information is fundamental to understanding the local site hydrogeology and geology. Given that the potential or proposed productive area may be large, the operator must provide a report that covers the entire productive area.

Rule 9B(7) requires the operator to propose several plans to proactively address potential problems that would be contrary to the interests of the state of New Mexico and its citizens. My

testimony will address plans for monitor wells, addressing wastes, minimizing pad size and consolidating facilities, and developing the area. OCD witness Mr. Will Jones will address plans for the drilling program and the mud-logging program.

Monitor wells. **Rule 9B(7)(a)** requires the operator to provide a ground water monitoring program plan which must propose the locations of monitor well(s) to determine depth to water and saturated thickness, to obtain baseline water samples, and to detect releases. Requiring Operators to have a ground water monitoring program ensures that the operator will help determine the three dimensional extent of ground water aquifers in Santa Fe County and the Galisteo Basin. According to the SEO's *Report on the Galisteo Basin*, the aquifers in the Galisteo Basin are poorly defined. By requiring the operators to propose and install a ground water monitoring program, OCD will be able to obtain much needed hydrogeologic information on the Galisteo Basin aquifers and will be better able to meet its obligation to protect fresh water and human health.

Waste Management. **Rule 9B(7)(d)** requires the operator to provide a waste management plan that specifies how the operator shall collect, manage, and dispose of all wastes generated during the drilling and production processes. A comprehensive waste management plan ensures that an operator exploring in Santa Fe County and the Galisteo Basin will properly manage its waste. Rule 10B(2) prohibits operators from disposing of waste onsite. All waste must be collected, properly stored and managed, and safely transported offsite for final disposition.

Infrastructure. **Rule 9B(7)(e)** requires that the operator propose an infrastructure plan that specifies how it will protect Santa Fe County and the Galisteo Basin by reducing the cumulative impact of the construction of well pads, including berms and ditches, and the operations at related facilities, including pipelines, pump stations, and compressor stations. Drilling and production activities will necessarily have an impact on the environment. Operators must propose plans that will minimize and mitigate undesirable impacts to the extent possible. Obviously, the less surface area that is disturbed by roads, pipeline right-of-ways, drilling pads, *etc.*, the less negative impact on the environment. From a regulatory perspective, it is easier for OCD to provide oversight of operations at centralized facilities. Operators may propose procedures specified in BLM's Gold Book that are already required on federal leases. Requiring the operator to carefully plan for the installation and operation of the necessary infrastructure, which may include, roads, pads, pipelines, compressor stations, pump stations, junction boxes, *etc.*, will help protect the environment.

Development plan. **Rule 9B(7)(f)** requires the operator to provide a production or development plan that specifies how the operator will develop the area if the exploratory wells are productive, including the operator's best estimate of the number and location of development wells and related facilities. The more wells and production facilities that are necessary to properly develop a new field, the more impact there will be on the environment. For large discoveries, the operator might need directionally drill wells from a single location to properly develop the reserves, prevent waste, and still protect the environment.

Each of the plans specified in Rule 9B(7) is necessary in Santa Fe County and the Galisteo Basin because of the lack of existing oil field infrastructure. If new production is established, the

reserves cannot be successfully developed without comprehensive plans to address the issues specified above and the reserves might be "wasted."

Rule 9B(8) requires the operator to propose a written **contingency plan** for all releases with no exclusion for *de minimus* amounts. The written contingency plan shall include:

(a) best management practices for the prevention and detection of releases;
(b) instructions for notifying appropriate responders, with a contact list including current names, telephone numbers, e-mail addresses, facsimile numbers and addresses;
(c) identification of applicable equipment, materials and supplies available locally or regionally to respond to releases, with advance arrangements for acquiring the equipment, materials and supplies; and
(d) response plans based on the severity and nature of the release.

Rule 9B(8)(a) requires operators to implement a pollution prevention program to prevent all releases, including *de minimus* releases. The proposed rule differs from OCD's Rule 116, which generally only requires operators to report releases of more than 5 barrels. Given that there is no sure way of estimating the volume of a release by the size of the stained soil, OCD intends that all releases be reported and addressed. However, releases may occur and when they do, the operator should immediately detect the release and then report and mitigate the release regardless of the volume. A detection and monitoring program is an essential element of any pollution prevention program's best management practices because it ensures that operators prevent pollution in the first place, immediately detect any release that does occur, and appropriately remediate the release. The operator should propose a comprehensive detection and monitoring program that addresses all phases of exploration and development in Santa Fe and the Galisteo Basin, from the initial siting of wells and facilities, to the production of oil and gas and the operation of other facilities, through to the final abandonment of all wells and the decommissioning of all facilities.

Rule 9B(8)(b) specifies that operators have the necessary information on hand and immediately available so that if a release does occur, the operator can immediately notify the appropriate agencies. When dealing with a release, the operator must know who to contact so that no time is wasted and that the release is mitigated as soon as possible before it impacts surface water or ground water.

Rule 9B(8)(c) specifies that operators identify as part of its contingency plan all applicable equipment, materials and supplies it needs when it must respond to a release. When dealing with a release, operators must know what equipment, materials and supplies to use and where to obtain the necessary equipment, materials and supplies. Operators can store response equipment, materials and supplies onsite, at a nearby staging area, or have made binding prior arrangements with a service company to provide the necessary response equipment, materials and supplies in a timely manner.

Rule 9B(8)(d) requires operators to provide response plans for all releases. Existing Rule 19.15.16.12 NMAC (Blowout Prevention) specifies the general performance standards that operators must take to prevent blowouts and requires operators to propose a blowout prevention

program. Existing Rule 19.15.10.8 NMAC (Safety Procedures for Drilling and Production) specifies the general safety standards that operators must achieve during drilling and production operations, but does not require the operator to submit a written safety plan. Existing Rule 19.15.11 NMAC (Hydrogen Sulfide Gas (Hydrogen Sulfide)) already specifies that operators must submit a Hydrogen Sulfide Contingency Plan to OCD.

The response plans required by Rule 9B(8)(d) can be partly satisfied by the inclusion of the already required a blowout prevention program and Hydrogen Sulfide Contingency Plan. However, operators must also provide a written safety plan which specifies in writing how it would address other contingencies such as how to deal with fires, lost circulation, traffic accidents, pipeline ruptures, *etc.*

I, Glenn von Gonten, swear that the foregoing is true and correct.

Glenn von Gonten
Senior Hydrologist
Oil Conservation Division

Subscribed and sworn to before me this 3rd day of December 2008, by Glenn von Gonten.

Notary Public

My Commission expires:

1-09-2012