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

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 13888
ORDER NO. R-12864

APPLICATION OF BURLINGTON RESOURCES OIL & GAS COMPANY, L.P. FOR APPROVAL OF A PILOT INFILL WELL PROJECT WITHIN THE SAN JUAN 27-5 UNIT, RIO ARRIBA COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on March 15th, 2007, and again on September 20, 2007, before Examiners David K. Brooks and William V. Jones.

NOW, on this 3rd day of January, 2008, the Division Director, having considered the testimony, the record, and the recommendations of the Examiners,

FINDS THAT:

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) Burlington Resources Oil & Gas Company, L.P. ("Burlington" or "applicant"), seeks an order approving a pilot infill well project within Section 8, of Township 27 North, Range 5 West, NMPM, Rio Arriba County, New Mexico, including directionally drilled wells and exceptions from Rule I.B of the Special Rules and Regulations for the Blanco-Mesaverde (Prorated Gas) Pool (72319) and Rule II.B of the Special Rules and Regulations of the Basin Dakota (Prorated Gas) Pool (71599) whereby 15 new producing and 2 pressure observation wells may be drilled to determine proper well density and well location requirements for Mesaverde and Dakota wells within the San Juan 27-5 Unit.

(3) This project is proposed within Section 8, which is contained within the San Juan 27-5 Unit and is within the boundaries of the Blanco-Mesaverde Gas Pool and the Basin Dakota Gas Pool and within the Mesaverde and Dakota Participating Areas of that Unit.

(4) No other party entered an appearance in this case or otherwise opposed this application.

(5) Well spacing and well locations within the Basin Dakota Gas Pool are governed by the Special Rules and Regulations as detailed in Division Order No. R-10987-B(2) effective January 29, 2002, which provide for 320-acre gas proration units ("GPU") with up to four wells per GPU (80-acre effective well spacing.)

Rule II.B specifically governs the number of wells per GPU and the location at which each of those wells must be drilled, and is stated as follows:

B. Well density:

(1) Up to four (4) wells may be drilled on a standard GPU, as follows:

(a) the FIRST OPTIONAL INFILL WELL drilled on a GPU shall be located in the quarter section not containing the INITIAL Dakota well;

(b) the SECOND OPTIONAL INFILL WELL drilled on a GPU shall be located in a quarter-quarter section not containing a Dakota well and within a quarter section not containing more than one (1) Dakota well;

(c) the THIRD OPTIONAL INFILL WELL drilled on a GPU shall be located in a quarter-quarter section not containing a Dakota well and within a quarter section not containing more than one (1) Dakota well;

(d) at the discretion of the operator, the second or third optional infill well may be drilled prior to the drilling of the first optional infill well;

(e) no more than two wells shall be located within either quarter section in a GPU; and

(f) any deviation from the above-described well density requirements shall be authorized only after hearing.

Rule II.C governs well locations as follows:

Wells shall be located 660 feet from the outer boundary of the GPU or 10 feet from any interior quarter or quarter-quarter section line or subdivision inner boundary. However, if the GPU is within a federal exploratory unit, the 660 feet setback no longer applies unless the well is close to the outer boundary of the federal unit or outer boundary

of the participating area or the well is next to (or within) uncommitted tracts of land within the federal unit.

(6) Well spacing and well locations within the Blanco-Mesaverde Gas Pool are governed by the Special Rules and Regulations as detailed in Division Order No. R-10987-A(1) effective December 2, 2002, which provide for 320-acre gas proration units ("GPU") with up to four wells per GPU (80-acre effective well spacing). This order amended Order R-10987-A and standardized Mesaverde well locations within federal exploratory units with mandated Dakota locations.

Rule I.B specifically governs the number of wells per GPU and the location in which each of those wells must be drilled, and is stated identically as the rule for Dakota wells:

Rule I.C governs well locations and is stated identically as the rule for Dakota wells.

(7) Section 8 appears in older Division records as a standard 640-acre square mile; however, recent surveys by Burlington show Section 8 to have sides which are not exactly 5280 feet in length. Section 8 has existing E/2 and W/2 gas spacing and proration units in both the Basin Dakota Gas Pool and the Blanco-Mesaverde Gas Pool, with the following active producing wells. The only other producing formation in Section 8 is the Pictured Cliffs which is spaced on 160 acres.

API Number	Well	Status	Surf UL	Surf Feet	NS	Surf Feet	EW	Latest DHC Order	Spacing Unit Orientation	
30-039-07131	070	Active	G	1650	N	1850	E	2736	E/2	Mvrd/Dkta Downhole Commingle
30-039-26613	070F	Active	I	1755	S	930	E	1340az	E/2	Mvrd/Dkta Downhole Commingle
30-039-27244	070Y	Active	O	915	S	1595	E	1212az	E/2	Mvrd/Dkta Downhole Commingle
30-039-82360	063	Active	N	850	S	1840	W	Dual	W/2	Mvrd/PC Dual Completion
30-039-20239	112	Active	L	1840	S	960	W	2285	W/2	Mvrd/Dkta Downhole Commingle
30-039-26614	112F	Active	F	2485	N	2445	W	1341az	W/2	Mvrd/Dkta Downhole Commingle
30-039-26044	112M	Active	C	665	N	1655	W	2214	W/2	Mvrd/Dkta Downhole Commingle

(8) Burlington re-opened this case, amended its application, and appeared before the Division in September of 2007, in order to change the proposed surface well locations for the newly proposed wells within Section 8 and reduce the number of observation wells from two to only one. All proposed wells would still be twinned from existing, older well locations, except for one proposed new location. The revised surface locations for the proposed pilot wells were found to be necessary to avoid buried pipelines or to avoid damage to archeological sites.

(9) Burlington now proposes to add 15 producing wells and one observation well within Section 8. The pressure observation well ("pow") will be drilled from the

existing Well No. 112F surface location ("pad"). Ten of the proposed new producing wells will be directionally drilled from 5 existing well pads. Five of the proposed new producing wells will be drilled from a newly constructed surface location – four of these will be directional wells. The proposed additional wells will be located as follows:

			Surface Hole Location								Bottomhole Location				
API Number	Well	Status	Surf UL	Surf Feet	NS	Surf Feet	EW	Latest DHC Order	Spacing Unit Orientation	Twin Well Loca	BH UL	BHL Feet	NS	BHL Feet	EW
30-039-30299	903	New	G	1595	N	1860	E	2733az	E/2	70	B	925	N	1665	E
30-039-30305	906	New	G	1752	N	1868	E		E/2	70	G	2280	N	1705	E
30-039-30302	907	New	G	1699	N	1865	E		E/2	70	H	1675	N	1015	E
30-039-30351	910	New	J	1586	S	1745	E	2707az	E/2	New	J	2710	S	2350	E
30-039-30422	911	New	J	1536	S	1757	E		E/2	New					
30-039-30348	912	New	J	1635	S	1733	E	2706az	E/2	New	I	2610	S	1150	E
30-039-30347	914	New	J	1486	S	1768	E	2705az	E/2	New	O	1125	S	2410	E
30-039-30346	915	New	J	1437	S	1780	E	2698az	E/2	New	P	1115	S	1050	E
30-039-30309	909	New	N	886	S	1892	W	2693az	W/2	63	K	1920	S	2280	W
30-039-30318	913	New	N	853	S	1840	W		W/2	63	N	1135	S	1605	W
30-039-30306	908	New	L	1852	S	984	W	2692az	W/2	112	K	2605	S	1590	W
30-039-30301	902	New	C	591	N	1614	W	2694az	W/2	112M	C	920	N	2325	W
30-039-30317	901	New	E	1646	N	1146	W	2695az	W/2	150R	D	960	N	1040	W
30-039-30307	904	New	E	1794	N	1193	W	2697az	W/2	150R	E	2310	N	890	W
30-039-30310	905	New	E	1695	N	1161	W	2696az	W/2	150R	F	1635	N	1665	W
Pressure Observation Well															
30-039-30300	916	New	F	2541	N	2452	W			112F	K	2655	S	2300	W

(10) The applicant presented testimony and evidence showing that:

(a) The Bureau of Land Management is in support of this project. The project has been proposed to the working interest owners in the San Juan 27-5 Unit, and notice of this hearing was provided to all Unit owners.

(b) Burlington's comprehensive evaluation of the gas resources in the Mesaverde and Dakota formations of the San Juan basin included (i) a scoping study, (ii) a pilot proposal, and (iii) preliminary modeling of the actual project.

(c) The Scoping Study consisted of using available data to evaluate several reservoir and rock property parameters over a broad, NW to SE, swath of the San Juan Basin – all on a "per square mile" basis and mapping that data to quickly see where 80-acre well density has been most successful in recovering the

available gas and the general areas where increased density drilling may be of the most value and should be further studied.

(i) A database of digital data from electric logs yielded volumetric rock and fluid saturations, and those were compared with material balance evaluations to arrive at an estimate of original gas in place "OGIP" per section.

(ii) Ultimate recovery under existing well spacing was estimated by adding cumulative gas production to remaining recoverable gas; which was calculated using decline-curve analysis.

(iii) The ultimate gas recovery as a percentage of OGIP under the existing well density was calculated per section, then mapped and an estimate was made of the additional gas that could possibly be recovered with additional drilling.

(iv) Those factors were input into economic models to determine if increased density drilling would meet financial hurdles under reasonable gas pricing scenarios.

(v) This research shows significant areas of the San Juan Basin, specifically the Southeast Federal Units Area ("SEFU"), have not recovered enough of the OGIP and may have upside potential for infill drilling. The San Juan 27-5 Unit itself has potential as far as overlap in both the Dakota and the Mesaverde formations. A pilot is needed in the SEFU area to test and refine parameters and assumptions from the Scoping Study.

(d) Burlington identified Section 8 within the San Juan 27-5 Unit as a good candidate for the increased density Pilot project.

(i) This section is interior to the San Juan 27-5 Unit, surrounded by other Unit wells and therefore correlative rights should not be an issue.

(ii) This section has a representative, average overlap of Mesaverde and Dakota potential.

(iii) There is good pipeline capacity in this area so as not to constrain production.

(iv) Wells in this section have good electric logs and good "layer" pressure tests obtained during completion.

(e) The pressure observation well is needed to monitor pressure decline, validate volumetrics, and obtain interference test data to help evaluate the variation in permeability or anisotropy.

(f) Volumetric data is less certain as compared to some of the other data needed to ultimately reach a conclusion about the need for infill drilling. The Mesaverde volumetrics are harder to arrive at than in the Dakota due to the variation in the permeabilities and measured pressures between the members, and the presence of the discontinuous Menefee member.

(g) Downhole commingling of production from the Mesaverde with the Dakota formations is the most economical way to produce wells in this southeastern portion of the San Juan Basin. Commingling enables additional wells to be drilled that would not otherwise be drilled. Burlington is planning to monitor commingled wells in the pilot project with periodic spinner surveys to ensure production from each layer or formation member is accurately measured.

(h) Pipeline gathering in this San Juan 27-5 Unit area are currently generating bottomhole well pressures of approximately 350 psi, which is expected to continuously improve, but was not considered in the calculations.

(i) There is a significant potential for additional development drilling within a reasonable range of gas price assumptions. Under various reasonable assumptions of future gas prices, 40-acre infill drilling appears to be possible.

(j) Burlington feels it can drill the pilot wells in an S-shape starting from existing well pads and thereby minimize surface disturbances and possibly save on surface facilities costs.

(k) Burlington plans to implement the pilot, monitor and model it for a few years, then possibly propose regulatory rule changes to increase the well density within an extended and similar area.

(l) Burlington has set up a multilayer, single porosity (ECLIPSE) model, input with pressures for each layer of the Mesaverde and the Dakota and data from electric logs. Well number 112, located within Section 8, is the type log used to construct the model. The model can simulate various well densities. At this point in time, the model indicates that recoveries can be improved by increasing the well densities in both the Mesaverde and the Dakota formations.

(11) The Mesaverde/Dakota increased density pilot project as proposed by Burlington in this case will provide valuable data which could be used to prevent waste and prudently increase recovery of gas from these two pools in the vicinity of the San Juan 27-5 Unit.

(12) Applicant's request for approval of the simultaneous dedication of the aforementioned 15 new producing wells in the E/2 and W/2 gas spacing and proration units within the Basin Dakota Prorated Gas Pool and the Blanco-Mesaverde Prorated Gas Pool with the existing 7 producing wells should be approved in order to prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED THAT:

(1) The application of Burlington Resources Oil & Gas Company L.P. ("Burlington") to implement an increased well density pilot project in the E/2 and W/2 gas spacing and proration units of Section 8 of Township 27 North, Range 5 West, NMPM, Rio Arriba County, New Mexico, is hereby approved.

(2) Within Section 8, Burlington is permitted exceptions to provisions of the Special Rules and Regulations of the Blanco-Mesaverde (Prorated Gas) Pool (72319) and the Basin Dakota (Prorated Gas) Pool (71599) as promulgated by Division Orders No. R-10987-A(1) and R-10987-B(2), including provisions related to well density, well placement, and simultaneous dedication. Burlington is also permitted to produce gas at any rate necessary from either of these two pools in order to obtain data needed for the purpose of this pilot project.

(3) The following fifteen additional producing wells and one pressure observation well are allowed to be drilled at the following locations. The new producing wells are allowed to simultaneously produce within each well's respective gas spacing and proration unit along with previously permitted wells in those units:

			Surface Hole Location								Bottomhole Location				
API Number	Well	Status	Surf UL	Surf Feet	NS	Surf Feet	EW	Latest DHC Order	Spacing Unit Orientation	Twin Well Loca	BH UL	BHL Feet	NS	BHL Feet	EW
30-039-30299	903	New	G	1595	N	1860	E	2733az	E/2	70	B	925	N	1665	E
30-039-30305	906	New	G	1752	N	1868	E		E/2	70	G	2280	N	1705	E
30-039-30302	907	New	G	1699	N	1865	E		E/2	70	H	1675	N	1015	E
30-039-30351	910	New	J	1586	S	1745	E	2707az	E/2	New	J	2710	S	2350	E
30-039-30422	911	New	J	1536	S	1757	E		E/2	New					
30-039-30348	912	New	J	1635	S	1733	E	2706az	E/2	New	I	2610	S	1150	E
30-039-30347	914	New	J	1486	S	1768	E	2705az	E/2	New	O	1125	S	2410	E
30-039-30346	915	New	J	1437	S	1780	E	2698az	E/2	New	P	1115	S	1050	E
30-039-30309	909	New	N	886	S	1892	W	2693az	W/2	63	K	1920	S	2280	W
30-039-30318	913	New	N	853	S	1840	W		W/2	63	N	1135	S	1605	W
30-039-30306	908	New	L	1852	S	984	W	2692az	W/2	112	K	2605	S	1590	W
30-039-30301	902	New	C	591	N	1614	W	2694az	W/2	112M	C	920	N	2325	W
30-039-30317	901	New	E	1646	N	1146	W	2695az	W/2	150R	D	960	N	1040	W

30-039-30307	904	New	E	1794	N	1193	W	2697az	W/2	150R	E	2310	N	890	W
30-039-30310	905	New	E	1695	N	1161	W	2696az	W/2	150R	F	1635	N	1665	W
Pressure Observation Well															
30-039-30300	916	New	F	2541	N	2452	W			112F	K	2655	S	2300	W

(4) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MARK E. FESMIRE, P.E.
Director

SEAL