

Before the Oil Conservation Division  
Exhibit No. 13  
Burlington Resources Oil & Gas Company LP  
**OCD CASE 14734**  
Hearing: October 13, 2011

## Article XV J.

### REVENUE ALLOCATION PROCEDURE – “Spinner Test”

#### GALLUP/DAKOTA WELLS

#### Allocation of Oil and Condensates

For purposes of allocating production and revenues attributable to oil and condensates, Operator and Koch Exploration Company agree that the following method shall be used: One hundred per cent (100%) of the of the oil and condensate production from the well shall be allocated to the Gallup formation less an oil and condensate yield of 6.53 barrels per 1 million scf which shall be allocated to the Dakota formation throughout the producing life of the well.

#### Gas Allocation

- 1) Frac and flowback the Dakota formation
- 2) Frac and flowback and clean up Gallup formation
- 3) Stabilize Gallup flow up casing against area line pressure
- 4) Record a Gallup flow rate through a choke using an orifice meter
- 5) Drill out bridge plug over Dakota formation
- 6) Cleanup Dakota formation
- 7) Run Spinner production profile across Dakota formation
- 8) Add Gallup flow rate from previous test to Dakota flow rate from spinner to get total flow
- 9) Allocation is based upon Gallup or Dakota rates as a percentage of total flow

**This is not the only method of allocating production and ConocoPhillips, as a prudent operator, reserves the right to use other methods approved by the New Mexico Oil & Gas Commission to allocate production.** Once allocation is established, it will be used for the life of the well. Below is a summary of how the Spinner Method testing is performed.

#### **Field Test (Spinner Method)**

##### **Summary**

This example covers the procedure used to allocate production using the spinner method with field tests. This method was used by ConocoPhillips prior to the Burlington Resources acquisition and has been chosen as the preferred allocation method on commingled wells. The allocation is based on two separate tests. The first is a stabilized rate test on the shallower formation up the casing-tubing annulus with line pressure simulated by a choke at the surface. The second test is performed by running a production log over the lower formation interval. The rate from each layer is used in a simple calculation to determine the contribution percentage.

##### **Procedure**

Allocation testing is performed after the well has been completed. A composite bridge plug is normally located above the lower formation and a composite frac plug is sometimes located within the upper formation.

The first step in testing the upper formation is drilling out the plugs and cleaning out the well. Once water and sand volumes reach acceptable levels (less than 5 bph), the tubing is set at the mid-point of upper formation perms. The well is then opened to flow up the casing-tubing annulus with a positive choke at the surface to simulate a back-pressure on the well. The upper formation is tested for a minimum of 4 hours or until pressure stabilizes. Tubing and casing pressures are reported every 15 minutes and when pressure is the same three times then it is considered stabilized. Metered gas, water, and condensate rates and volumes are all documented as well as testing conditions (tubing location, choke size, pressures).

After the upper formation has been tested, the composite drill plug over the lower formation is drilled out and the well is cleaned out to PBD. Once the water and sand volumes reach acceptable levels (less than 5 bph), the bottom-hole assembly is configured and the tubing is landed approximately 100 feet above the lower formation perms. A slickline or wireline unit is used to run the production loggings tools. The logging tools are lowered to the bottom perms and the lower formation interval is logged while the well is producing up the tubing against a choke. Once again, the well is tested for a minimum or 4 hours or until the pressure has stabilized. The log is run across the entire lower formation interval to 50 feet above the top lower formation

perforation. The log data is interpreted by the service company and returned to the completions group within a few days.

The stabilized upper formation rate is combined with the stabilized lower formation rate to come up with a total well production rate. The ratio of the upper formation rate to the total rate is used as the upper formation allocation percentage and the same is done for the lower formation. An example test and corresponding calculations are included in the report.

Huerfano unit Com 31 1  
Gallup and Dakota

Wells Studied To Determine Fluids To Be Allocated To Dakota Fm In Huerfano Unit Com 311

Well:Num	API NUMBER	DATE	CUM GAS	CUM OIL	B/MM	Location	Qtr	Unit	POOL_NAME
YUCCA COM: 1	3004526584	31-Jul-11	422,302	18,667	44.2	X	NE	H	GALLUP DAKOTA
HUERFANO UNIT: 309	3004534772	30-Jun-11	212,512	1,340	6.31	Low	SW	L	DAKOTA
NAGEEZI: 4	3004521514	30-Jun-11	770,083	11,448	14.87		NW	D	GALLUP DAKOTA
NAGEEZI: 2	3004521307	30-Jun-11	1,236,044	30,633	24.78	High	SE	I	GALLUP DAKOTA
NAGEEZI: 1	3004520915	31-Jul-11	125,362	40,899	326.25	X	NE	G	GALLUP DAKOTA
NAGEEZI: 5	3004523885	30-Jun-11	2,911,612	54,840	18.83		NW	E	GALLUP DAKOTA
HUERFANO UNIT NP: 284	3004526164	30-Jun-11	799,398	14,720	18.41		SE	O	DAKOTA
HUERFANO UNIT: 313	3004534566	30-Jun-11	78,158	982	12.56		NW	F	DAKOTA
HUERFANO UNIT: 308	3004534567	30-Jun-11	209,455	3,002	14.33		NE	B	DAKOTA
HUERFANO UNIT: 289	3004534638	30-Jun-11	219,153	3,137	14.31		SE	J	DAKOTA
HUERFANO UNIT: 314	3004534741	30-Jun-11	258,149	3,137	12.15		NE	B	DAKOTA
HUERFANO UNIT: 307	3004534635	30-Jun-11	128,053	2,736	21.37		SW	K	DAKOTA
HUERFANO UNIT: 283	3004523835	30-Jun-11	1,338,054	17,208	12.86		SE	O	GALLUP DAKOTA
HUERFANO UNIT: 554	3004534558	30-Jun-11	157,271	2,087	13.27		NE	B	DAKOTA
DOW MARK COM: 1	3004521586	31-Dec-10	385,086	5,561	14.44		SE	J	GALLUP DAKOTA
BURROUGHS COM H: 10	3004521585	30-Jun-11	739,329	7,606	10.29		NW	D	GALLUP DAKOTA
<b>TOTALS</b>			<b>7,993,801</b>	<b>126,464</b>	<b>15.82</b>	<b>Avg</b>			

**NOTES:** Yucca Com #1 and Nageezi 1 were discarded because they were perforated from base MV to base DK and production is not shown separately by zone. Huerfano Unit 309 was discarded as the low well. Nageezi was discarded as the high well.

# LEGEND

★ Huerfano Unit Com 311

○ Wells Perf'd in Both DK & GP (Discarded)

● Low Well

● High Well

● Wells Used In Calculation



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## HUERFANO UNIT COM 311 DK FLUIDS ALLOCATION PLAT

Author:	Date:	10/17/2011
Compiled by:	Scale:	
Project File:		

