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MAR 26 2013

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICANT:	**DEVON ENERGY PRODUCTION CO., L.P.**	
RELIEF SOUGHT:	**HORIZONTAL SPACING**	**CAUSE CD NO. 201202300**
LEGAL DESCRIPTION:	**SECTION 10, TOWNSHIP 24 NORTH, RANGE 1 EAST, NOBLE COUNTY, OKLAHOMA**	

FILED
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COURT CLERK'S OFFICE - OKC
CORPORATION COMMISSION
OF OKLAHOMA

APPLICANT:	**DEVON ENERGY PRODUCTION CO., L.P.**	
RELIEF SOUGHT:	**EXCEPTION TO OAC 165:5-7-6**	**CAUSE CD NO. 201202328**
LEGAL DESCRIPTION:	**SECTION 10, TOWNSHIP 24 NORTH, RANGE 1 EAST, NOBLE COUNTY, OKLAHOMA**	

APPLICANT:	**DEVON ENERGY PRODUCTION CO., L.P.**	
RELIEF SOUGHT:	**WELL LOCATION EXCEPTION**	**CAUSE CD NO. 201202857**
LEGAL DESCRIPTION:	**SECTION 10, TOWNSHIP 24 NORTH, RANGE 1 EAST, NOBLE COUNTY, OKLAHOMA**	

APPLICANT:	**DEVON ENERGY PRODUCTION CO., L.P.**	)
RELIEF SOUGHT:	**HORIZONTAL SPACING**	) **CAUSE CD NO. 201202914**
LEGAL DESCRIPTION:	**SECTION 11, TOWNSHIP 24 NORTH, RANGE 1 EAST, NOBLE COUNTY, OKLAHOMA**	)

APPLICANT:	**DEVON ENERGY PRODUCTION CO., L.P.**	)
RELIEF SOUGHT:	**WELL LOCATION EXCEPTION**	) **CAUSE CD NO. 201202915**
LEGAL DESCRIPTION:	**SECTION 11, TOWNSHIP 24 NORTH, RANGE 1 EAST, NOBLE COUNTY, OKLAHOMA**	)

REPORT OF THE OIL AND GAS APPELLATE REFEREE

These Causes came on for hearing before **Paul Porter**, Administrative Law Judge for the Corporation Commission of the State of Oklahoma, on the 27th and 28th days of June, 2012 and the 19th day of July, 2012, at 8:30 a.m. in the Commission's Courtroom, Jim Thorpe Building, Oklahoma City, Oklahoma, pursuant to notice given as required by law and the rules of the Commission for the purpose of taking testimony and reporting to the Commission.

APPEARANCES: **Michael D. Stack**, attorney, appeared on behalf of applicants, Devon Energy Production Co., L.P. ("Devon"); Erwin and Dolores Wyckoff; Territory Resources, L.L.C.; and Donald Wyckoff; **Richard J. Gore**, attorney, appeared on behalf of protestants Francis C. Edwards; Cow Creek Resources, Inc.; and Garry Davis Oil, L.L.C. (collectively "protestants"); and **Jim Hamilton**, Assistant General Counsel for the Conservation Division, filed notice of appearance.

The Administrative Law Judge ("ALJ") filed his Report of the Administrative Law Judge on the 19th day of November, 2012, to which

Exceptions were timely filed and proper notice given of the setting of the Exceptions.

The Appellate argument concerning the Oral Exceptions was referred to **Patricia D. MacGuigan**, Oil and Gas Appellate Referee ("Referee"), on the 4th day of January, 2013. After considering the arguments of counsel and the record contained within these Causes, the Referee finds as follows:

STATEMENT OF THE CASE

"PROTESTANTS" TAKE EXCEPTION TO THE ALJ's recommendation that the Devon applications should be granted to allow horizontal development of the Mississippian because they best prevent waste. Devon owns 240 acres and has support from another 80 acres in the S/2 of Section 10 and Devon therefore controls the S/2 of Section 10 and the Edwards interest controls the N/2 of Section 10. The Mississippian formation is unspaced in this section and there is a producing well in the NE/4. The well is operated by Cow Creek, one of the protestants in this matter. The horizontal project would not affect the producing vertical well. Devon requests 640 acre spacing and an exception to the Commission rule requiring 50% approval to begin a horizontal project in an area with a vertical producing well. Devon requested a location exception for the ability to drill the longest possible lateral component. Devon desires operations and they are a bonded operator in Oklahoma. Devon owns 421 acres of leasehold interest in the Mississippian formation and 240 acres in formations other than the Mississippian formation comprising the S/2 and the NW/4 of Section 11. The protestants own the NW/4 of Section 11 and the Wyckoff family, who support Devon, own the SW/4. Devon believes 640 acre spacing and a location exception were necessary because a longer lateral component would expose more of the Mississippian formation allowing more frac stages and increasing production potential. There would also be less surface impact with a few horizontal wells with long laterals. The Mississippian and Woodford are both tight formations. It takes fewer horizontal wells to obtain equal or greater production than vertical wells.

THE PROTESTANTS TAKE THE POSITION:

1) The ALJ's Report is contrary to the law, contrary to the evidence, is arbitrary, unreasonable and discriminatory, and fails to effect the ends of the prevention of waste and the protection of correlative rights as is required by applicable laws of the State of Oklahoma.

2) The recommendation of the ALJ to grant 640 acre horizontal spacing and the related location exceptions should be reversed for the following reasons:

a) This is a case of first impression where the initial well costs (drill, test and complete) and the recoverable reserves from a horizontal well versus a vertical well have been compared, and in this case the vertical well comes out on top.

b) Such a head-to-head comparison using solely the numbers Devon provided clearly shows that massive waste will occur with the drilling of horizontal wells in Sections 10 and 11 compared to development using vertical wells:

Vertical Well Development of Sections 10 and 11

The following numbers are all taken from Devon exhibits. Estimated Ultimate Recovery and Pricing from Exhibits 11 and 12, Well Costs from Exhibit 10 and drainage from Exhibit 7.

Exhibits 11 and 12 Reserves and Pricing		gas not rounded
34,701 (BBLS Oil) X $80	$2,776,080	(346,918 MCF)
347 (MCF Gas) X $3.50	+ $1,214,500	$1,214,213
Gross Income per Vertical Well	$3,990,580	$3,990,293
Exhibit 10 Costs per Well	- 750,000	- 750,000
Net Income per Vertical Well	$3,240,580	$3,240,293
(Exhibit 7) Net Income for 40 Vertical Wells (640 acres divided by 16 acres = 40 wells)	$129,623,200	$129,611,720

Horizontal Well Development of Sections 10 and 11

The following numbers are all taken from Devon exhibits. Estimated Ultimate Recovery and Estimated Pricing from Exhibits 11 and 12, Well Costs from Exhibit 14 and Drainage from Exhibit 10.

Exhibits 11 and 12 Reserves and Pricing		
224,209 (BBLS Oil) X $80	$17,936.720	
2,293,360 (MCF Gas) X $3.50	+ $ 8,026,830	
Gross Income per Horizontal Well	$25,963,550	
Exhibit 14 Costs per Well	- $ 3,847,000	
Net Income per Horizontal Well	$22,116,550	
Exhibit 10 Net Income for 4.7 Horizontal Wells (640 acres divided by 135 acres = 4.74)	$ 103,947,785	(4.74 Horizontal Wells) $104,832,447

c) Comparison Vertical Well Development versus Horizontal Well Development:

Net Income 40 Vertical Wells	$129,623,200	$129,611,720
Net Income 4.7 Horizontal Wells	$103,947,785	$104,832,447
and 4.74 Horizontal Wells	$ 25,675,415	$ 24,779.273
Rounding Difference	$ 896,142	
Lowest Vertical Well Net Income	$129,611,720	
Highest Horizontal Well Net Income	$104,832,447	
Additional Net Income Using Vertical Well Development	$ 24,779,273	

d) The ALJ states the following in paragraphs #3 and #4 of the ALJ's Conclusions of Law:

> 3. The Edwards objection to 640-acre spacing rests primarily on fatally flawed evidence. They show cost comparisons without counting work performed by related entities. This unknown work is not monetized and not available to Devon. A meaningful analysis of potentially profitable production is not possible.
>
> 4. The Edwards next use Devon exhibits in an attempt to show the better value of vertical production. This is also fatally flawed because vertical wells are not comparable, as shown above.

The above statements are not accurate. In the two years before the hearing in these cases, Protestants actually drilled and completed 13 Mississippi vertical wells within two miles of the area involved herein for an average, total, out-of-pocket cost of $308,441.40. (Exhibits 16 and 21, Tr. 6-28, pp. 37-38, 47-49, and 73; Tr. 7-19, p. 21.) The ALJ incorrectly states that Protestants' well costs do not include "work performed by related entities." There are no related entities. The only "entities" involved in the drilling and completion of the referenced 13 wells are Protestants. Protestants will drill and complete the vertical Mississippi wells in Sections 10 and 11 just like the referenced 13 wells were drilled and completed. (Tr. 6-28, pp. 56-57.) The ALJ states that "unknown work is not monetized." There is no "unknown work." The cost estimates for the 13 wells include 100% of the costs. The only unknown is how the 100% costs are shared between Protestants which is irrelevant to the total well costs. (Tr. 6-28, pp. 68-69.) The ALJ states that "A meaningful analysis of potentially profitable production is not possible." Wrong again; it is relatively simple. The actual cost of $308,441.40 times 40 wells is

$12,337,656. According to Devon, the value of reserves produced from these 40 wells is $3,990,293 times 40 wells equals $159,611,720. Subtract the horizontal well net income of $104,832,447 and Protestants will produce a $42,441,617 net profit more from their vertical well development than Devon will produce from its horizontal well development. (See Exhibit 20).

$159,611,720	- 40 Vertical Wells Gross Income
- 12,337,656	- Actual cost of 40 Vertical Wells
147,274,064	- Net Income of 40 Vertical Wells
- 104,832,447	- Net Income from 4.74 Horizontal Wells
$ 42,441,617	- Net Profit from Vertical Wells

In addition to alleviate this objection, Protestants submitted Exhibit 25 which uses vertical Mississippi well costs compiled by Devon. (Tr. 6-28, pp. 5-8.) Devon's expert checked with other operators and determined that a vertical Mississippi well in this area will cost $750,000 (Tr. 6-27, p. 105), approximately twice the actual cost that Edwards incurred in drilling and completing 13 recent Mississippi wells in this area. (Tr. 6-28, pps. 69 and 73.) The ALJ fails to report that using only Devon's estimates of well costs, both vertical and horizontal, and recoverable reserves (based on the thousands of wells drilled by Devon) (Tr. 6-27, pp. 58 and 75) and thousands of Mississippi vertical wells reviewed by Devon's expert (Tr. 6-28, p. 37) that vertical well development will result in approximately $24,779,273 more net income than will be recovered by horizontal development. Consequently, Protestants' well costs are not a basis to deny Protestants relief herein, and Devon's evidence shows that vertical wells are not comparable; they are superior to horizontal wells in this area.

e) The ALJ's Report omits the significant fact that Devon's expert submitted that vertical development will result in 30% more reserves than will be recovered by horizontal development. (Exs. 7 and 10; Tr. 6-27, p. 101; and Tr. 6-28, p. 26.)

f) Title 52 O.S. Section 87.1 clearly indicates that units are to be approximately the size one well can drain. Devon readily admits it will require multiple horizontal wells to drain 640 acres. (Tr. 6-27, pp. 90 and 104 and Ex. 10.) Based on Devon's own evidence that one horizontal well will drain 135 acres and that Devon desires to drill a North/South lateral (Tr. 6-27, pp. 59-62), Devon's own evidence at best justifies only standup 160 acre spacing, not 640 acre spacing.

g) The ALJ fails to note that vertical Mississippi development is prevalent in this area. (Tr. 6-27, pp. 27, 37-38) where two sections have 39 and 35 wells, respectively, and that vertical well development is still appropriate in some areas. (Tr. 6-27, p. 120.)

h) The ALJ also fails to include that, as shown by Devon Exhibit 13, multiple formations are potentially productive in this area and that 640 acre horizontal Mississippi spacing will destroy any possibility of producing those hydrocarbons resulting in additional waste. (Tr. 6-27, pp. 76, 128 -132; Tr. 6-28, pp. 45-47, 57-62, and 71.)

i) The ALJ incorrectly indicates that Edwards recommended 160 acre spacing. Edwards recommended denial of the 640 acre horizontal spacing and the related location exceptions (Tr. 6-28, p. 61) but recommended in the alternative, a 320 acre lay down unit comprised of the S/2 of Section 10 and a standup 320 acre unit comprised of *E/2* of Section 11, leaving the N/2 of Section 10 and the W/2 of Section 11 unspaced or spaced on 20 acre vertical units consistent with Devon's evidence.

j) The ALJ did not take into consideration that it is inappropriate to combine proven productive acreage (N/2 Section 10) with proven nonproductive acreage (S/2 Section 10). (Tr. 6-28, pp. 43-44.)

(k) The ALJ also did not take into consideration that Protestants have an existing SWD well, and can develop Sections 10 and 11 with vertical wells more efficiently or with lower costs than Devon who will have to drill a SWD well. (Tr. 6-29, pp. 72- 73; Tr. 6-27, p. 73).

l) The Briefs filed herein by Protestants on August 7 and August 24, 2012 are incorporated herein by reference.

m) The ALJ fails to note that Section 11 can be developed using vertical wells more cost effectively than using horizontal wells because the Edwards #1-11 well exists in the NW/4 of Section 11 which has a log similar to the No Ear #1 well which can be recompleted in the Mississippi Solid and which will save the cost of drilling one vertical well. (Tr. 6-27, pp. 73, 79- 81; Tr. 7-19, pp. 35-36 and 40.)

n) Applicant Devon requests in Cause CD No. 201202328 an exception to OCC-OAC 165:5-7-6(h) which provides, in part:

> (h) No order of the Commission authorizing a horizontal well unit that overlies any existing well or portion of any existing drilling and spacing unit producing from the same common source of supply will become effective until at least fifty percent (50%) of the ownership having a right to drill in each such well and/or drilling and spacing unit consents in writing to the horizontal well unit by filing such written consent with the Court Clerk of the Commission in such cause.

Protestants own 50% of the right to drill in Section 10, operate an existing Mississippi vertical well in the NE/4 of Section 10-24N-1E, Noble County, Oklahoma, and object to the 640 acre horizontal spacing requested in Cause CD No. 201202300. OCC-OAC 165:5-7-6(i) provides, in part:

> If the required percentage of consent cannot be obtained, the applicant may make application to the Commission for a waiver of the consent requirement, and upon a showing of good cause by the applicant, the commission may waive the consent requirement.

The ALJ recommended the waiver, even though Applicant did not submit any evidence of "good cause"; unless the filing of an application for spacing is "good cause." If OCC-OAC 165:5-7-6(h) is to have any meaning, horizontal spacing, which adversely impacts existing production and development, should not be allowed without a showing of "good cause." In this case, the granting of a waiver destroys Protestants' ability to develop their own property. Consequently, the lack of good cause in this case requires reversal of the ALJ's recommendation.

THE ALJ FOUND:

1) Devon, through much horizontal drilling experience, strongly urges 640 acre spacing to have a long lateral. This will allow them to expose more of the nonhomogenous Mississippian reservoir.

2) The Protestants' interest has been successful with vertical production and does not wish to be forced to participate in expensive horizontal drilling. They also do not wish to have possibly better production areas joined with possibly worse production areas. They wish to save some "sweet spots" in the Mississippian for their heirs and see this application process as condemning their property and plans.

3) Protestants' objection to 640 acre spacing rests primarily on fatally flawed evidence. They show cost comparisons without counting work performed by related entities. This unknown work is not monetized and not available to Devon. A meaningful analysis of potentially profitable production is not possible.

4) Protestants next use Devon exhibits in an attempt to show the better value of vertical production. This is also fatally flawed because vertical wells are not comparable, as shown above.

5) They also note that Devon admits it will take several horizontal wells to drain the section so they are asking for a larger spaced area than one well will drain. Spacing a unit larger than one well will drain is the most common

method of development in Commission practice and the one well per unit factor has apparently assumed a less important role than other factors when the Commission considers the proper size to space a unit. There is no reason to make this area of development an exception to common Commission practice.

6) Protestants' believe it wrong for someone to buy nearby leases, use the Commission to space it such as to dilute their interest and force them to spend a great deal of money to participate or lose their rights to develop their own resources.

7) The law shows us that our law makers consider the prevention of waste (no production in an area) as the premier reason for altering rights and obligations of a person's own property. Horizontal drilling has revived the oil and gas business and re-invigorated the Oklahoma economy. Horizontal drilling is only possible with long horizontal components, especially in a nonhomogenous reservoir with wide variance in porosity. Although clearly interfering with individual plans in these cases, such individual plans are insufficient to overcome the State interest in preventing waste by the efficient and planned production of hydrocarbons.

8) Protestants also wish to save some "sweet spot" areas for their heirs and this plan, although noble for the family estate, clearly violates the mandate to prevent waste. Devon is prepared to proceed and Protestants have not proceeded for several years. They still wish to reserve some of the best possible production, exactly the area best produced to prevent waste. Although it costs significant monies to participate in a horizontal well, that is the choice unless accepting a lesser interest with bonus money.

9) For the prevention of waste the ALJ found no other possible outcome than to recommend granting each and every Devon Application consolidated in this matter.

POSITIONS OF THE PARTIES

PROTESTANTS

1) **Richard J. Gore**, attorney, appearing on behalf of the Protestants, stated the Francis C. Edwards has 100% ownership of the N/2 of Section 10 and the NW/4 Section 11 in Noble County.

2) Protestants note that while Francis C. Edwards is the mineral owner, her son Bob Edwards manages the development of the mineral resources through Cow Creek Resources ("Cow Creek"). These mineral interests are then

farmed out to the operator, Garry Davis Oil, L.L.C. ("Davis"), who drills the wells.

3) Protestants note they have drilled 13 vertical wells targeting the Mississippi formation within the last two years in an area approximately two miles north of Section 10 and 11. Consequently Protestants are familiar with the cost of vertical drilling.

4) Protestants note that they own several vertical wells in Section 10 and 11, including the No Ear #1 well in the NE/4 of Section 10. This is a productive oil well supplied by the lower Mississippi formation. Protestants contend that the N/2 of Section 10 has been proven to be productive based on the No Ear #1 well, while at least the SE/4 of Section 10 has been proven to be unproductive based on the dry Wyckoff #1 well.

5) Protestants note that this area has been historically developed using vertical wells. Protestants point to nearby Sections which have 39 and 35 vertical wells, all targeting the Mississippi formation.

6) Protestants argue that the ALJ was wrong to deny their request to prohibit horizontal spacing. Protestants contend that developing this area with vertical wells, instead of horizontal wells, is the more economical option. Protestants note that, except for the exhibits showing the cost of the Salt Fork wells, the economic analysis is exclusively based on the exhibits submitted by Devon.

7) Protestants point to Devon's exhibit showing that a horizontal well would drain 135 acres. Protestants note that, according to Devon's estimates, a horizontal well would cost approximately $3,847,000 to drill and complete. Protestants note that it would take 4.74 horizontal wells to drain the entire 640 acre unit. The potential revenue from one horizontal well would be $25,963,550. If the entire Section were developed horizontally, the net revenue would be approximately $104 million.

8) Protestants argue that a vertical well in the same section, exploiting the same common source of supply, would likely drain 16 acres based on the performance of the No Ear #1 well. Protestants estimate it would then require 40 vertical wells to fully drain a section.

9) Protestants contend that the cost to drill a vertical well would be approximately $308,000. This value is derived from the average drilling cost incurred by Protestants' operator Davis and Cow Creek after drilling the 13 Salt Fork wells. At this cost, 40 vertical wells would result in a net income of $147 million.

10) Protestants take issue with the ALJ's assertion that the $308,000 figure is fatally flawed because it does not take into account the cost of work

performed by related entities. However, Protestants argue that if this point is conceded, the objection of the ALJ in the original proceeding would be cured by using only Devon's cost estimate. Devon estimates the cost of drilling a vertical well to the Mississippi formation at approximately $750,000. At this cost, 40 vertical wells would result in a net income of approximately $129 million.

11) Protestants note that no matter which figure is applied, $308,000 or $750,000, the cost of drilling vertical wells would be less than the cost of drilling horizontal wells. By applying these two cost estimates, Protestants believe that vertical development will result in a profit of $25 to $42 million above what could be realized through horizontal development.

12) Protestants note that vertical wells have the advantage of producing from formations up hole of the target zone and that this surplus production is not realized through horizontal drilling. Protestants argue that it would be waste to not exploit these potential surplus hydrocarbons.

13) Protestants point out that units can be established up to 640 acres but that the statute governing these units allows for modifications based on the approximate area that one well can efficiently drain. Protestants point to Devon's estimate that a horizontal well would drain only 135 acres and argues that this would be an inefficient use of the 640 acre unit.

14) Protestants feel that a 20 acre drilling and spacing unit would be appropriate for development of the section with vertical wells. Protestants point to *Hladik v. Lee*, 541 P.2d 196 (Okl. 1975); which holds that the Commission may limit the size of spacing units on the grounds that one well will not efficiently drain a larger tract and that a larger unit may not assure the maximum recovery of minerals.

15) Protestants point to the productive No Ear #1 well in the NE/4 of Section 10 and the dry Wyckoff #1 well in the SE/4. Protestants feel that it is inappropriate to combine both proven and unproven acreage into a single unit which would likely result if horizontal spacing were granted.

16) Protestants note that they already have a SWD well and would not need to drill another for further development. Devon, however, would have to drill a disposal well which would further add to their costs.

17) Protestants note that the Edwards #1 well, in the NW/4 of Section 11, has never been tested in the Mississippi Solid formation, the same formation that supplies the productive No Ear #1 well. Protestants believe that this well is likely productive and could easily be recompleted if the section was not developed horizontally.

18) Protestants argue that if Devon's spacing request is granted then Protestants' right to produce and explore on their property, as they wish, would be destroyed.

19) Protestants argue that the ALJ made reversible error and that proceeding with horizontal spacing would clearly result in economic waste. Affirming this decision would be at odds with the purpose of the commission to prevent such waste. Protestants respectfully requests that the decision of the ALJ be reversed.

DEVON

1) **Michael Stack**, attorney, appearing on behalf of Devon stated that Devon owns 100% of the S/2 of Section 10 as well as 421 acres in Section 11.

2) Devon states that under *Grison Oil Corp.* 99 P.2d 134 (Okl. 1940); the ALJ is "the trier of fact, and it is the duty as the trier of fact to observe the demeanor of the witnesses to assess their credibility and to assign the appropriate weight to their opinion." Devon further observes, as stated in *Winters v. Corporation Com'n of State of Oklahoma*, 660 P.2d 145 (Okl. 1983); "Having been given a choice of remedies, it is incumbent upon the commission to prevent waste and to protect correlative rights." Devon also cites *Denver Production v. Refinery Co. v. State,* 184 P.2d 961 (Okl. 1947); which holds that the balance between the conservation of natural resources and the protection of correlative rights should be weighted in favor of the reasonable exercise of the former.

3) Devon contends that the ALJ's decision, granting Devon's horizontal spacing request, correctly conforms to this principal by preventing economic waste.

4) Devon notes that 52 O.S. Section 87(a) grants the Commission the power to establish well spacing and to authorize additional drilling on any spacing unit. Furthermore, the Commission has the authority to establish 640 acre units for development from a common source of supply using horizontal drilling technology under OCC-OAC 165:10-3-28(e)(3). The Commission may create a unit of any configuration or shape deemed necessary for the development of the reservoir.

5) Devon contends that there was sufficient evidence presented in the original proceeding that a 640 acre unit for the Mississippi and Woodford formations would be best served by horizontal spacing.

6) Devon notes that the Commission has determined that when there is uncertainty as to the number and location of wells required, it is necessary for the Commission to provide flexibility to properly locate the horizontal wells to develop a common source of supply.

7) Devon notes that their engineers estimated that the No Ear #1 well would drain approximately 16 acres and would require 40 similarly productive vertical wells to drain the unit. Devon argues that the No Ear #1 well is the most productive well in the area and that Protestants did not drill that particular well. Protestants had drilled 13 vertical wells into the Mississippi formation with an estimated drainage of 5.3 acres per well. Devon argues that Protestants would have to drill 120 vertical wells to adequately drain a single unit.

8) Devon notes that a single horizontal well would drain 135 acres and would cost approximately $3,800,000.

9) Devon asserts that Protestants' cost comparison is faulty because the actual costs of the proposed vertical wells were never actually presented.

10) Devon stresses that the Mississippi reservoir is not homogeneous and the wide variations in the porosity of the formation make Protestants' cost estimates suspect. A nonhomogeneous reservoir makes dry holes a likely result from drilling a vertical well. This can be the case even when productive vertical wells are in close proximity and the new well is drilled to a common source of supply. Devon observes that the long lateral provided by a horizontal well exposes more of the formation than a vertical well. Consequently, an area of high porosity is more likely to be encountered in a horizontal well, thereby increasing the potential productivity.

11) Devon argues that drilling vertical wells would constitute extreme waste in several ways: a) Unnecessary drillings would result in waste of expensive labor and materials; b) This development would result in the unnecessary scarring of the farmland in Sections 10 and 11 which would be largely mitigated through horizontal drilling; c) Drilling that many vertical wells would unnecessarily increase the risk of pollution; and d) The cost for maintenance and upkeep for 40 to 120 vertical wells would be far greater than for 5 horizontal wells.

12) Devon argues that Protestants' economic argument is predicated on three faulty assumptions: a) That a vertical well would cost approx. $308,000; b) 40 vertical wells will all be productive; and c) Each vertical well would produce a gross income of $3,990,580.

13) Devon contests the first assumption because it is based on a faulty estimate of the cost. Devon points to the testimony of J.P. Dick who testified that an "arms length" transaction between parties could result in a cost of

approximately $750,000 for a vertical well. Also, one of Protestants' witnesses, Mr. Fletcher Lewis, testified that he believes that Francis C. Edwards and Davis split the cost of drilling though a farm out agreement, making Protestants' estimated cost of $308,000 only a partial total. Mr. Lewis further testified that, referring to the vertical well, "I do not know what the real 100 percent cost is." Devon contends that this ambiguity makes a meaningful analysis of the expenses impossible.

14) Devon contests the second assumption by observing that Protestants' estimated need for 40 wells is based on the production of the No Ear #1 well. Devon notes that the No Ear #1 well was not drilled by operator Davis. The 13 wells drilled by Davis in the immediate area only average 5.3 acres of drainage, with many of these wells being dry holes.

15) Devon argues that Protestants' estimated income of $3,990,580 for each vertical well is an unrealistic account of future earning potential because this estimate was again based on the best well and did not take into account the several adjacent dry holes. According to Devon, it would be unreasonable to expect this income from all 40 potential vertical wells.

16) Devon dismisses Protestants' assertion that Devon would have to drill a SWD well, thereby increasing costs. Devon notes that there is no indication that Protestants would allow Devon to use their SWD well and that Devon would have to drill a SWD well for any proposed development.

17) Devon suggests that Protestants are "playing the numbers game" by applying Devon's cost estimates in the most favorable possible light, while neglecting to account for other factors such as the unknown cost sharing arrangements between Francis C. Edwards and Davis and the possibility of dry holes. Devon notes that the ALJ declined to consider Protestants' cost estimates because these factors made a meaningful cost analysis impossible.

18) Devon argues that the ALJ's decision granting their request for horizontal spacing and a well location exception was supported by substantial evidence and was free of reversible error. Accordingly, Devon believes the ALJ's decision should be affirmed by the Referee.

RESPONSE OF PROTESTANTS

1) Protestants reassert that the importance of the protection of correlative rights and the prevention of waste, noting again that the costs used to support their position were taken from the exhibits entered by Devon. Protestants argue that granting horizontal spacing would be "a money losing proposition."

Based on Devon's numbers, applying either the $308,000 or the $750,000 cost per vertical well would result in more economical development than horizontal drilling.

2) Protestants deny that they are "playing the numbers game" as suggested by Devon. The $308,000 estimate represented the total well cost no matter how any of the expenses were shared. Protestants point out that this figure is irrelevant because they are also applying Devon's own cost estimates without modification. Applying Devon's numbers still results in $25 million more profit.

3) Protestants note that the Salt Fork wells drilled to the north of Sections 10 and 11 help to provide an estimate of the cost of the proposed vertical wells. Protestants assert that the geology of the Salt Fork wells is poor compared to the more productive geology in Section 10 and 11. Protestants argue that the information regarding the Salt Fork wells was introduced solely to demonstrate well costs. A comparison between the productivity of the Salt Fork wells and the proposed wells in Section 10 would be improper because of the poor permeability surrounding the Salt Fork wells.

4) Protestants take issue with the ALJ for disregarding the economics of drilling vertical as opposed to horizontal wells. Protestants argue that the well costs presented by Davis, and verified by Fletcher Lewis, should have been considered.

5) Protestants note that even if Devon's estimate of $750,000 per vertical well is accepted as accurate, development of the Mississippi formation using vertical wells would still be $25 million more profitable than horizontal development. Protestants believe this fact is fatal to Devon's argument.

6) Protestants argue that while it is uncontested that the No Ear #1 well is the best well in the area, it is also the only well that has been completed and has produced for an extended period of time. Protestants speculate that there may be more productive vertical wells in the area if they could only be produced.

7) Protestants close by reemphasizing that, according to Devon's own numbers, vertical development would be far superior to the horizontal development advocated by Devon.

CONCLUSIONS

The Referee finds the Report of the Administrative Law Judge should be affirmed.

1) The Referee defers to the ALJ's opportunity as the finder of fact to observe the demeanor of the witnesses, assess their credibility, and assign the appropriate weight to their opinions. *Grison Oil Corporation v. Corporation Commission*, 99 P.2d 134 (Okl. 1940); *Palmer Oil Corporation v. Phillips Petroleum Company*, 231 P.2d 997 (Okl. 1951).

2) In *Texas County Irrigation and Water Resources Association v. Dunnett*, 527 P.2d 578 (Okl. 1974) the Supreme Court states:

> Under Art IX, § 20, of the Oklahoma Constitution, this Court's review shall not extend further than to determine whether the Commission's "findings and conclusions...are sustained by...substantial evidence." In *City of Edmond v. Corporation Commission of Oklahoma*, Okl., 501 P.2d 211 we followed *Cameron v. Corporation Commission*, Okl., 414 P.2d 266 and quoted the following language therefrom:
>
> > "2. The Corporation Commission has a wide discretion in the performance of its statutory duties and this court may not substitute its judgment on disputed questions of fact for that of the Commission, unless the findings of the Commission are not supported by the law and substantial evidence.
> >
> > "3. The determination whether there is 'substantial evidence' to support an order made by Corporation Commission does not require that the evidence be weighed, but only that the evidence tending to support the order be considered to determine whether it implies a quality of proof which induces the conviction that the order was proper or furnishes a substantial basis of facts from which the issue tendered could be reasonably resolved."

3) The Commission derives its jurisdiction under the state's conservation laws primarily from the spacing statute, 52 O.S. Section 87.1 which provides in relevant part:

> (a) To prevent or to assist in preventing the various types of waste of oil or gas prohibited by statute, or any of said waste, or to protect or assist in protecting the correlative rights of interested parties, the Corporation Commission, upon a proper application and notice given as hereinafter provided, and after a hearing as provided in said notice, shall have the power to establish well spacing and drilling units of specified and approximately uniform size and shape covering and common source of supply, or prospective common source of supply, of oil or gas within the State of Oklahoma;

4) Pursuant to Title 52 O.S. Section 87.1 (f) the Commission "...shall have jurisdiction...to establish spacing rules for horizontally drilled oil wells whereby horizontally drilled oil wells may have well spacing units established of up to six hundred forty (640) acres plus tolerances and variances as allowed for gas wells pursuant to subsection c of this section.

5) 52 O.S. Section 86.1 (3) states:

> 3. "Common source of supply" comprises and includes that area which is underlaid or which, from geological or other scientific data, or from drilling operations, or other evidence, appears to be underlaid, by a common accumulation of oil or gas or both.

6) The evidence of both engineers in the present case reflects that spacing the Mississippian common source of supply in Oklahoma on a 640 acre unit is the common practice in Oklahoma and has been approved by the Commission as the best method of development. There was also evidence reflecting that additional horizontal wells would be necessary to fully develop the 640 acre unit in the Mississippian common source of supply. Usually in these circumstances it is uncertain as to how many wells will be needed to develop the common source of supply or where they should be located. The Commission has found that when multiple horizontal wells are needed to develop a 640 acre unit, the larger unit is necessary to provide the necessary flexibility to properly locate the horizontal wells to develop the common source of supply. As the Oklahoma Supreme Court in *Calvert Drilling Company v. Corporation Commission of the State of Oklahoma*, 589 P.2d 1064 (Okl. 1979) determined:

> The appellant's argument then makes the assumption that the common source of supply, as defined in the statute, is limited not to the common formation in which the oil and gas is found, but to those portions of the formation to which a well may be drilled so as to produce in paying quantities. Under applicable statutes, the applicant for a spacing order need not establish the whole area is underlaid by a formation productive enough to support a well which would be economic in its own right; it is sufficient that the formation probably contains oil and gas capable of being withdrawn by a well on the drilling and spacing unit

7) 52 O.S. Section 87.1(c) provides in pertinent part:

> "...the shape thereof shall be determined by the Commission from the evidence introduced at the hearing, and the following facts, among other things, shall be material: (1) the lands embraced in the actual or prospective common source of supply; (2) the plan of well spacing then being employed or contemplated in said source of supply; (3) the depth at which production from said common source of supply has been or is expected to be found; (4) the nature and character of the producing or prospective producing formation or formations; and (5) any other available geological or scientific data pertaining to said actual or prospective source of supply which may be of probative value to said Commission in determining the proper spacing and well drilling unit therefor, with due and relevant allowance for the correlative rights and obligations of the producers and royalty owners interested therein.

8) As stated in *Winter v. Corporation Commission of State of Oklahoma*, 660 P.2d 145 (Okl.App. 1983):

> "Having been given a choice of remedies, it is incumbent upon the Commission to use the remedy which will best prevent waste and protect correlative rights."

In *Denver Production & Refining Company v. State*, 184 P.2d 961 (Okl. 1947), the Supreme Court stated

> "In most instances it is impossible to use a formula which will apply equally to all persons producing from a common source. In striking a balance between conservation of natural resources and protection of correlative rights, the latter is secondary and must yield to a reasonable exercise of the former."

9) The evidence reflected that the Mississippian is not a homogeneous reservoir but is a blanket formation which underlies all of Section 10 and Section 11 and is between 200 and 300 feet thick. In this area, the Mississippian formation is very tight with low porosity and low permeability and produces a great deal of water. The evidence reflected that a vertical well would only drain approximately 5.3 acres. The evidence also reflected that there is a range between 2.5% to 10% difference in porosity which is typical for a nonhomogenous reservoir. Protestants used a 10% porosity which allows them to solely rely on the 16 acres of acreage and the use of only 40 vertical wells to fully develop each section. Therefore, based on the evidence 40 wells is the bare minimum vertical wells needed to develop Section 10 or Section 11. The actual range of drainage however per well is 40 to 120 vertical wells. The testimony of Devon was that the actual drainage area of a horizontal lateral is not known yet. It may take three wells, four wells or five wells to drain the 640 acre unit. Using the 4.7 figure drainage however for the number of horizontal wells needed to develop the area, the competition vastly changes in favor of horizontal drilling once the true number of vertical wells (up to 120 wells is realized).

10) Also, using the figure of 40 wells per section to develop vertical wells and to fully develop the area needs to take into consideration the number of dry holes that inevitably result from a nonhomogeneous formation. The porosity therefore can vary within extremely short distances. Thus vertical wells will invariably encounter dry holes, evidenced by the three dry holes drilled in N/2 of Sections 10 and 11 on Protestants' ranch and the one dry hole in the S/2 of Section 10, the Wyckoff #1 well. Drilling dry holes necessitates drilling more vertical wells in order to drill productive wells that will fully develop the area. Thus, the evidence presented was that vertical wells can result in dry holes as opposed to horizontal wells which is another reason to utilize horizontal well technology. Because of the realistic possibility that dry holes will be encountered with the use of vertical well technology then more than 40 wells will be needed to be drilled to fully develop each section.

11) Devon's engineering witness states:

> No matter which group of wells I have analyzed, I still think the Mississippian formation for many reasons, including financial, is better developed on a horizontal basis. Transcript 6/28 page 23, lines 9-12.

He states further:

> That's the beauty of the horizontal well, is that you are giving it 12 to 15, 16 fracs every 300 to 400 feet to contact more reservoir around a given area than you can give your best chance...but if you drill a vertical well within a poor area you would have a poor well...It's just I think for this formation this has been shown to be a very commercial venture in a way to not have to drill multiple wells, because with one horizontal well you can do the equivalent of multiple vertical wells. Transcript 6/27, page 127, lines 21-24 and page 128, lines 2-8.

12) Mr. Walter Lamle, the geologist for Devon testified that:

> Geologically? Well, I think you can stimulate more reservoir with a lateral, throughout their lateral, and I think...from another point, you know, you have less of a surface impact you know. Scarring of the land. Transcript 6/27, page 56, lines 22-25 and page 57, line 1.)

The Referee agrees with Devon that their evidence on a whole demonstrated that horizontal drilling is more economical, better suited to full recovery of hydrocarbons and a better protection against waste.

13) The testimony also reflects that the drilling of a vast number of vertical wells would also result in unnecessary and unreasonable use of the surface. Result of drilling superfluous wells is the condemnation of a surface for any usage. Testimony reflected that both the surface and the subsurface would be irrepably damaged if numerous vertical wells are the chosen plan of development. The current surface owners in portions of Sections 10 and 11, who own minerals in those sections presently are using the land for farming purposes and their use, enjoyment and economic endeavors will be damaged if some 40 to 120 wells are drilled in each section. In addition the drilling of each well increases the risk of pollution problems which is a serious concern of the surface owners. In *Wrotenberry v. Xanadu Exploration Company*, 168 P.3d 791 (Okl.App. 2007) the Court states:

> The Legislature and Commission have clearly spoken: the prevention of pollution of the surface and subsurface from oilfield operations is of paramount public interest.

Lastly, the drilling of each additional well causes the cost of operation to increase. It costs logically more to operate and maintain 40 or 120 vertical wells than it would to operate possibly four horizontal wells. The engineer for Devon stated that in his opinion it would cost about $750,000 to drill one vertical well in the area. If 120 vertical wells were required to be drilled that cost would be $90 million.

14) The Referee notes that in making his determination the ALJ weighed the expert opinions presented before him and found the Devon opinions to be worth greater weight. The Commission must follow the procedure set forth in *Haymaker v. Oklahoma Corporation Commission*, 731 P.2d 1008 (Okl.App. 1986) wherein the Court stated:

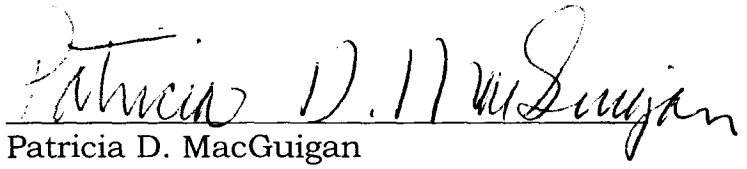
> Proper appraisal of the expert testimony requires observance of the following benchmark principle approved in *Downs v. Longfellow Corp.*, 351 P.2d 999 (Okl. 1960):
>
> > The reasons given in support of the opinions [of an expert witness] rather than the abstract opinions are of importance, and the opinion is of no greater value than the reasons given in its support. If no rational basis for the opinion appears, or if the facts from which the opinion was derived do not justify it, the opinion is of no probative force, and it does not constitute evidence sufficient to...sustain a finding or verdict. "

The ALJ followed the above procedure in determining which expert opinion was worthy of greater weight and simply found that the Devon expert opinion was based upon a more rationale basis than that of the Protestants' experts. Deference is given to the ALJ's opportunity to view the witnesses firsthand. See *Williams v. Volkswagenwerk Aktiengesellschaft, et al.*, 180 Cal.App. 3rd 1244, 226 Cal.Rpt. 306 (Cal.App. 2nd Dist. 1986).

15) Lastly the Referee would like to address the Protestants' proposition that the granting of a 640 acre horizontal drilling and spacing unit does not constitute "good cause" under OCC-OAC 165:5-7-6(h) which provides that no horizontal spacing will be effective until 50% of the working interest in a productive well agree to in writing to the spacing. Protestants assert that Devon has not shown good cause to obtain a waiver. The evidence reflected by Devon was that the spacing of the Mississippian common source of supply in a 640 acre unit was "...the norm for the majority of the 17 million acres that's been depicted as being productive from the Mississippian...It will be developed primarily through horizontal drilling." Transcript 6/27 page 119, line 25 and page 120, lines 1-5. The drilling of the horizontal well on a 640 acre basis will not disrupt the current producing well in the N/2 of Section 10, the No Ear #1 well. Protestants' witness also stated that the 640 acre unit is not unique for Section 10 and in fact was common throughout the state. Transcript 6/28, page 64, lines 6-9. Lastly, the evidence presented showed that there were both economical and recovery benefits to long laterals; there is prevention of economical and surface waste with the drilling of less, yet more efficient and better producing horizontal wells; and the 640 acre horizontal well unit is more in line with the vast majority of the units established to recover from the Mississippian common source of supply. Thus, the Referee would agree with the ALJ that Devon has the right to request the waiver from the 50% rule and has shown good cause for that waiver.

16) The Referee finds that there is substantial evidence showing that the prevention of waste and the protection of correlative rights will be better accomplished by the granting of the Devon relief. Substantial evidence suggests that waste will occur if the 640 acre horizontal well unit is not created as requested by Devon. Thus, the Referee believes that the best choice that can be made at this time is to grant the Devon applications for 640 acre horizontal spacing, exception to OCC-OAC 165:5-7-6(h), and well location exception in Section 10, T24N, R1E, Noble County, Oklahoma, and also grant the applications of Devon for 640 acre horizontal spacing and well location exception for Section 11, T24N, R1E, Noble County, Oklahoma.

RESPECTFULLY SUBMITTED THIS 12th day of March, 2013.



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