

STATEMENT OF THE CASE

XTO TAKES EXCEPTION to the ALJ's recommendation that Johnston established the necessary facts to support the application for administrative approval to authorize the Johnston salt water disposal ("SWD") well #1 as a commercial SWD well as to the McLish and Oil Creek formations. The ALJ denied Johnston's application as to the Bromide formation because he found that the Bromide was intermittent and if from evidence it is found that the Bromide is available, Johnston can make a new application for that formation.

Johnston believes that it has found a superior location for the disposal of salt water by injection into the McLish and Oil Creek formations of a horst block located a few hundred feet southwest of the Mannsville Fault System. That system in Johnston County has through the years been the subject of numerous published articles and master's degree thesis. The conclusion Johnston's experts express is that injections into the truncated McLish and Oil Creek at the proposed location at the rate of 20,000 BWPD would fill the pore volume of 640 acres in 24 years. According to its experts' opinions the horst block is fault sealed preventing release. Also they reason that the Woodford formation present in the horst block is absent pressure required to produce. They deduce that the injected fluids would not hinder production of hydrocarbons and would remain contained in the injection formations.

Protestant XTO presented geological and engineering witnesses disputing the existence of the horst block. This evidence was generated through drilling experience in surrounding sections where wellbores should have, but did not, cross the fault lines relied upon by Johnston. XTO contends that the injected water can find its way to the known or unknown faults in the immediate area and by traveling the faults flood out the natural and/or frac induced collection systems of existing and future horizontal Woodford wells. XTO argues this potential waste should be eliminated by the denial of the application.

XTO TAKES THE POSITION:

- 1) The ALJ's Report is contrary to the law, not supported by substantial evidence, is arbitrary and capricious, and is not upon terms which are fair, just, and reasonable to all parties.
- 2) The ALJ began his analysis by noting, "There is no question but that XTO has superior geologic knowledge in the areas where wells have been drilled." The ALJ further noted the insufficiency of Johnston's geology when he found "area mapping based on an article published in 1987 (Johnston's map) must give way to knowledge obtained by subsequent drilling." After noting the

huge disparity in the quality of geologic testimony and exhibits, however, the ALJ accepted the later erroneous unfounded conclusions given by Johnston's geologic witness.

3) The ALJ correctly noted the unreliability of Johnston's testimony and exhibits by making the following finding:

"The inclusion in Exhibit 3 of the Bryan fault and the northern most thrust fault calls into question the opinions of the Applicant's witnesses concerning area mapping."

However, after noting the obvious problems with Johnston's opinions, the ALJ erroneously accepted the later unfounded opinions of Johnston's witnesses.

4) The ALJ correctly noted the inferiority of Johnston's engineering witness when, after describing one of Johnston's theories, the ALJ noted:

"Mr. Campbell presented this theory, but it was a little short on study and data."

After noting the clear inferiority of this engineering testimony, the ALJ nonetheless accepted the later unfounded conclusions of Johnston's engineering witness.

5) The testimony at trial clearly demonstrated that, where Johnston's witnesses brought "evidence" to support their conclusions, that "evidence" was clearly erroneous. In numerous instances where Johnston's witnesses set forth the "support" for their conclusions, that "support" was clearly demonstrated to be without merit. Having been shown to be clearly wrong, in those instances in which their opinions could be challenged, Johnston's witnesses thereafter set forth "conclusions" in the form of unsupported statements. After clearly noting that the underlying "support" for Johnston's mapping and other conclusions was erroneous, the ALJ committed error thereafter by accepting the unsupported statements of Johnston's witnesses.

6) After discarding the geologic and engineering testimony clearly shown to be wrong, and clearly rejected by the ALJ, there is no substantial evidence whatsoever to support Johnston's conclusions that the faults are sealing, that the water will not travel via the faults, and that there is no danger to recoverable hydrocarbons. XTO's evidence, in contrast, clearly showed that the faults are not sealing, that the water will travel via the faults, that Johnston's

operations will exceed the frac gradient of the injection formations, and that there is a clear and present danger to recoverable hydrocarbons.

7) The evidence clearly established that Johnston's operation will exceed the frac gradient of the Bromide and McLish. The ALJ committed error in finding that, because (in his opinion) there was insufficient evidence to establish that the frac gradient of the Oil Creek would be exceeded, there was no danger. Even if it is assumed, *arguendo*, that the frac gradient of the Oil Creek will not be exceeded, frac gradient of the Bromide and McLish will be exceeded, thus posing a clear and obvious danger to both existing oils and to wells that would otherwise be drilled in the future.

8) The ALJ erroneously substituted his own judgment for the lack of evidence on the part of Johnston. One example is the following finding by the ALJ:

"The area is highly faulted according to the statements of the geologists...However, the Administrative Law Judge takes it that most faults are sealing, a principle basic to discovery and production of hydrocarbons all over Oklahoma. (emphasis added)"

Johnston presented no evidence that most of the faults in this area are sealing. XTO presented clear evidence that most of the faults, including those in the Mannsville fault system, are not sealing. It was erroneous for the ALJ to disregard the evidence in this case in favor of his own beliefs regarding what he believes to be the situation in other parts of Oklahoma.

9) The ALJ correctly found:

"In weighing the probable benefits of the saltwater disposal well against the potential for harm in the event the expensive and valuable Woodford well are flooded, XTO is justified in its position. It has an enormous potential for loss against a negligible, if any, potential gain."

After having made this finding, however, the ALJ concluded that, because the XTO witnesses could not guarantee, without a doubt, that the Woodford would be damaged, the Application should be granted. The ALJ's finding is erroneous and should be reversed. The Commission's paramount duty is to prevent waste. The Commission has no duty to license commercial disposal facilities.

The evidence in this case demonstrates a clear and present danger to a prolific producing reservoir. It is not necessary, and should not be necessary, that all doubt be removed. It is sufficient that a clear and present danger was clearly established to a prolific producing reservoir. The ALJ committed error in finding that XTO's evidence was insufficient, particularly in light of the obvious defects in Johnston's testimony and exhibits. The Report should be reversed.

10) The undisputed evidence is that XTO owns and operates all of the wells in this vicinity, and will be the operator of the future wells in this area. XTO is in need of disposal facilities in this area. XTO could save substantial sums of money by using the proposed disposal well, if it were safe. It is not safe. This Commission should not allow the reservoir to be endangered by waste water produced miles away by operators having no stake in the production being endangered.

11) XTO respectfully requests that the Report of the ALJ be reversed.

THE ALJ FOUND:

1) Johnston seeks authority for a commercial SWD well to be located on a ten acre tract, to be specific the center of the NW/4 SW/4 SW/4 of a 640 acre section. That section is located well into the interior of a Woodford shale play being developed by XTO and the site is just a few hundred feet south of the Mannsville Fault System. Based on Viola mapping the proposed location is on the side of a geologic dome. The dome is truncated by at least two faults running in a NW to SE direction. On the northeast side of the fault system the Viola plunges some 8000' and on the southwest side of the fault system the Viola slants downward at 45 degrees some 10,000 or more feet. The dip of the Woodford formation as well as the dip of the proposed injection formations, the Bromide, McLish and Oil Creek, follow the Viola. The proposed injection site is then high on the Southwest and separated by the (very close) fault system to the northeast. Thus Johnston sees the location as near perfect with sealing faults to the northeast and dipping McLish and Oil Creeks (and maybe the Bromide) formations with voracious appetites for salt water retreating toward the northwest and southeast until encountering the Bryan Fault, the southern edge of the injected horst block. Johnston sees the concerns of XTO are false because the Woodford is either non-existent or pressure deficient in the Bryan horst block and the Woodford is sealed off from the injection formations by the Mannsville Fault System.

2) XTO disagrees arguing the Mannsville faults are probably not sealing and its drilling in the Bryan uplift reveals that the Bryan Fault does not exist. It states that it had a similar situation of invading water in Arkansas with the Fayetteville Shale and found that water from an injection well rose 500' and watered out three of its horizontal wells. The injected water (in this case) will

travel up and down the faults and probably enter the natural fractures or completion induced fractures and thereby water out XTO's gas gathering systems making its existing wells unproductive or increasing expenses of operation and reducing longevity of the wells. Each well represents an expenditure of \$6 to 8 million in drilling and completion costs and the risks are unsatisfactory. If this injection well is authorized XTO will never use it. Furthermore, XTO geology is superior because it has been working the area and has "lessons learned." It also states that it has 3-D seismic. XTO is the dominate developer of the Woodford in the entire area and plan to drill many more wells unless the investment is compromised by problems induced by injection.

3) There is no question that XTO has superior geologic knowledge in the areas where wells have been drilled. Area mapping based on an article published in 1987 must give way to knowledge obtained by subsequent drilling. The inclusion in Exhibit 3 of the Bryan fault and the northern most thrust fault calls into question the opinions of Johnston's witnesses concerning area mapping. However, the opinions of Mr. Boyd and Mr. Campbell seem to the ALJ to be sound and reasonable to the effect that the proposed site is to the south of the Mannsville Fault System and the injection of fluids in the McLish and Oil Creek formations would flow down dip to the northeast and southwest and below the Woodford formation. The pore space as testified to by Mr. Campbell is certainly sufficient to support disposal of 20,000 BWPD as requested in the application. At pg. 101 of Tr. 10/10/12 Mr. Campbell, in describing the volumetrics of Exhibit 10 stated, "...assuming we had a 100% water, which we do..." Mr. Books later led Mr. Roberts through an examination where Mr. Roberts assumed that Mr. Campbell was testifying in refuting the "0 Water Saturation" shown on Exhibit 10. The ALJ understands the testimony of Mr. Campbell to refer to the proposed fluid injected to be 100% water and not the receiving formation to be 100% saturated prior to any injection. Furthermore, the graphic illustration of the positions of the formations as shown by XTO's Exhibit 14 (and the testimony of Mr. Campbell) reveal the tortuous pathway water would be required to travel to reach the Woodford formation in the areas to the northeast of the Mannsville Fault System.

4) Added to this mixture is the consideration of whether the Mannsville Fault System is a sealing fault at the relevant formations. Mr. Boyd states that he has never seen water go up and down faults in Oklahoma. In contrast, Mr. Burch cites a situation in Arkansas in the Fayetteville Shale play. There XTO had three wells watered out by a saltwater injection operation where the injected water traveled up a fault approximately 500' to reach the producing formation. He even states that the Fayetteville Shale and the Woodford Shale are similar, the orientation of the faults are similar, and the formations of offsets are similar. Mr. Boyd was surprised by this illustration first expressed in the hearing and pointed out that the mechanics of that instance were not

explained, just certain similarities. He speculated that the route of the offending water was through juxtaposed porous formations hence into the Fayetteville Shale. Mr. Burch denied that was the case. The problem the ALJ has in accepting the Fayetteville Shale as an example is that it is antidotal. One might find thousands of illustrations where the phenomena did not occur.

5) Next, there is the testimony of Mr. Burch that the Oil Creek formation in his opinion is non sealing at the fault. He reasons that if it were sealing there should have been hydrocarbons trapped by the fault. Since none have been produced the absence requires explanation. His explanation is that the hydrocarbons escaped probably through the fault system. (Tr. 10/10/12, Pg. 157, line 18 to Pg. 158, line 2) This reasoning to the ALJ assumes the existence of hydrocarbons.

6) The evidence seems to be that if water gets into the fault and travels the fault and if it gets into the Woodford's natural fractures or XTO's massive hydraulic fractures it will penetrate the flow regime causing XTO to dewater, if possible. If dewatering is necessary it will be expensive and a continuing operating expense together with reduction in the well's longevity. XTO has spent millions of dollars per well times a great number of wells to develop the area and has an ongoing development plan involving millions of dollars. The prospect of errant water injection has caused XTO to state that it will never use the proposed SWD well. It does not want importation of salt water from other plays threatening its operations.

7) In the matter of waste Johnston argues that reducing costs of disposal will prevent waste thus allowing more money to be spent on development. Mr. Campbell presented this theory but it was a little short on study and data. The best that XTO can present is to argue that the allowance of the application would potentially result in waste. Of course, XTO can assert the risk of loss of millions and millions of dollars to established and producing wells and gas gathering systems if the venture is allowed and fails.

8) The ALJ believes that Johnston established the necessary facts to support the application as to the McLish and Oil Creek formations. The Bromide is intermittent. If it turns out the Bromide is available the Applicant can make a new application for that formation. There appears to be greater than 2000' of separation between the bottom of the Woodford and the top of the McLish. The argument that the injection pressure at bottom hole of .79 psi per foot exceeding the frac gradient of the Bromide and McLish does not take into account that the Bromide will not be perforated and the McLish will be joined by the Oil Creek in hosting the injected salt water. The Oil Creek is very porous. The frac gradient of the Oil Creek and its ability to accept salt water was left out of the illustration. The argument that the injected water can enter the fault and fall to the Woodford formation is blunted by the fact that the fault

is against the Springer shale. The Springer shale swells when in contact by water. The pathway of a great quantity of water down the most southern fault would take the water next to the Bromide, Viola, Sylvan and Hunton formations, each porous and capable of receiving the escaping water. The same formations must be encountered by water going up the fault on the south side of the fault zone.

9) The area is highly faulted according to the statements of the geologists. However, the ALJ notes that most faults are sealing, a principle basic to discovery and production of hydrocarbons all over Oklahoma. In this case it looks like two faults cut an anticline. The soft Springer Shale would have two opportunities to seal the faults. Certainly no direct evidence was presented in this case showing the location and rationale to support a finding of non sealing. That there is a fault in Arkansas leaking through a different but similar fault into a different but similar gas bearing shale is a remote circumstance. A geologic opinion in this case of same cause and effect based upon the Fayetteville shale situation in Arkansas would not pass the Daubert Test

10) In weighing the probable benefits of the salt water disposal well against the potential for harm in the event the expensive and valuable Woodford wells are flooded XTO is justified in its position. It has an enormous potential for loss against a negligible, if any, potential gain. However, Johnston complies with OCC-OAC 165:10-5-5, particularly (4)(B). When that provision and evidence of overlying strata sufficient to protect potential hydrocarbon producing zones is established, the Commission must determine that the injection well "has caused, will cause, or is reasonably likely to cause any pollution of surface or subsurface waters or any damage to any of the oil or gas bearing strata," to deny the application. *Appeal of Cummings and McIntyre*, 319 P.2d 602 (Okl. 1957). Mr. Burch through questioning by his counsel stated that there is a "possibility" of reserves being compromised and that waste occurring would be "Potentially." (TR10/11/12, Pg 35, lines 9 to 24) Mr. Roberts, XTO's engineering expert stated in response to his counsel's question:

Q.: All right. What in general terms is your concern about having a saltwater well so close to the faults?

A.: The concern with that proximity, if the water is able to access that fault, it can travel the fault. And at Woodford depth, if it gets into – whether it be and natural or our massive hydraulic fractures, that water is going to penetrate our flow regime, flow system, and we will have to dewater it. And, unless we are able to dewater it, the well won't produce. (Tr. 10/11/12, Pg. 40, line 9 to Pg. 41, line 2)

In short, XTO has not shown that the well will cause, or is reasonably likely to cause any pollution of surface or sub surface waters or any damage to any of the oil or gas bearing strata. An "if" with grave consequences does not fall within the proscriptions of *Appeal of Cummings and McIntire*, supra.

11) It is recommended that the application be granted as to the McLish and Oil Creek formations and declined without prejudice, as to the Bromide.

POSITIONS OF THE PARTIES

XTO

1) **Richard K. Books**, attorney, appeared on behalf of XTO, stated XTO believes that Johnston's evidence was deficient to justify the ALJ's recommendation. XTO notes that both Exhibit 13 (1987 map) and Johnston's Exhibit 3 are basically identical as to location, with only contours varying.

2) XTO notes that Johnston's geologist initially stated that it would be preposterous to believe that water can travel down a fault yet upon cross-examination he said "Well, water could travel down a strike slip fault". Transcript Volume 21, page 102 and 104. XTO believes this is important as each time that XTO has pointed out discrepancies in Johnston's testimony Johnston turns around and changes their story.

3) XTO thinks the Johnston's witnesses are confused about their interpretation as to how water and faults coexist. XTO notes if water cannot travel in a fault, then it is not possible for water to travel in a strike-slip fault as Johnston has stated in the transcript. XTO believes that Johnston has the burden of proof here, not XTO.

4) XTO believes the Woodford zone is valuable. XTO notes the Oil Creek zone does not produce. That shows that the Oil Creek hasn't been trapped. XTO thinks the fault complex clearly adds to the risk out here.

5) XTO notes the ALJ stated that a lot of this water would go to the porous zones. XTO notes that regardless of the porous zones, the fact remains fractures will be created if the frac gradient is exceeded. XTO notes it is unknown as to how these new fractures will communicate with the reservoir and could possibly destroy the Woodford.

6) XTO notes the ALJ said XTO has superior geologic knowledge in the area. Further, the ALJ stated that area mapping, based on the 1987 article, must give way to knowledge obtained from actual drilling. XTO believes the

Johnston geologic witness Exhibit 3 map showing the Bryan fault and the northern-most fault are questionable.

7) XTO notes all parties agreed that Johnston's conclusions were reasonable with respect to the fact that the well is south of the fault. XTO disagrees with the ALJ's implication in his Conclusions that XTO was attempting to use the fact that the Fayetteville shale in Arkansas not being sealing fault would prove the faults here were not sealing also. XTO notes Johnston said "Water can't travel in a fault. That's preposterous." XTO notes however the ALJ concluded the Fayetteville Shale was "antidotol" and there are many illustrations where the "phenomena" did not occur. XTO asserts the purpose of this evidence was to show that water can travel in a fault.

8) XTO indicated the ALJ thought the BHP pressure of .79 psi per foot exceeding the McLish and Bromide frac gradient does not consider the Bromide will not be perforated and the McLish will be merged with the Oil Creek in hosting the injected salt water. XTO notes the Oil Creek is very porous here. XTO thinks the frac gradient of the Oil Creek and its ability to accept salt water was left out of the equation due to the fact that the Oil Creek had no production. XTO thinks there is no way to get a finite frac gradient as a frac must occur in order to get one. In every other formation, there is a frac gradient between .6 and .8. In every other formation the frac gradient will be exceeded.

9) XTO notes Johnston's first witness made a geologic survey based on two geological bulletins, which were not submitted to the Court, to determine acceptable sites in the area far away from the faults. XTO notes Johnston's first witness also prepared a structure map, which was not submitted to the Court. XTO notes that Johnston said the Springer zone has a tendency to swell, which was not supported by any empirical data. XTO believes that recent information indicated that these faults do not exist.

10) XTO states Johnston's pressure will not be high enough to push the water into the Woodford zone. XTO notes that Johnston's engineer says that gravity will take the water down and the pressure is not enough that the water will rise 2000 feet into the Woodford zone. XTO notes that a fault here will not be a sealing fault if there is less than 200 feet of throw in the fault. XTO thinks there are smaller faults not visible that can pose just as much problems as the big faults. XTO notes all witnesses believe this is a fault complex, whether sealing faults or not.

11) XTO notes that Johnston's location had been selected prior to his being hired. XTO notes Johnston made no geologic study to determine alternate sites for the SWD well. XTO notes this SWD well would be within 700 feet of the fault. XTO notes Johnston had no seismic data, no data on XTO's horizontal wells, but only 3 vertical wells with data. XTO notes that Exhibit 3

is an update of the 1987 map, yet a key well shown previously as annotated faulted is missing.

12) XTO notes that the three vertical wells drilled since then had not modified the fault's placement today. XTO notes that Johnston's witness failed to update the 1987 map with any seismic, or info about horizontal wells recently drilled. XTO notes that the Saxon horizontal well in Section 26 to the east, and horizontal wells in Sections 29, 32 and 36 were excluded on Johnston's updated map. XTO notes the Little #1-A well is suddenly not now faulted.

13) XTO clearly believes that Exhibit 3 is based without facts to justify current area conditions. XTO firmly believes that both Exhibits 3 and 13 utilized by Johnston, are fundamentally flawed.

14) XTO notes its witness was familiar with the area and experienced in horizontal well drilling. XTO witness used Exhibit 11 structure map to support their protest claim here. XTO thinks Exhibit 11 has been proven by recent drilling development, thus Exhibits 3 and 13 are incorrect. XTO notes it used three vertical wells for well control, as well as current horizontal wells and seismic data to select well spots. XTO notes that Johnston had less factual information than that of XTO, using an outdated 1987 map not updated with the information shown on XTO's Exhibit 11.

15) XTO notes that Johnston's Exhibit 3 shows the Bryan fault exists, which is contrary to XTO's seismic data or that of Exhibit 13. XTO notes the Bice #1-36 well in E/2 of Section 36 encountered no fault yet Johnston's Exhibit 3 map shows there was a fault present. XTO notes the Chapman well in Section 21 would have cut the fault yet seismic data did not prove this. XTO notes that Johnston's witness said it would be imprudent to drill south of the fault, yet XTO had done this successfully in at least two wells. XTO notes that Johnston had no rebuttal evidence as to the recently drilled horizontal wells south of these faults. XTO believes there is no empirical or real evidence/data in which to support the opinions/conclusions of the Johnston's witness.

16) XTO notes that it shows 1700 pounds pressure could raise the water 2000 feet and possibly reach the Woodford zone. XTO believes these faults are not present. XTO admits that no one knows for sure how many faults are out there, how big they may be and what type of faults they are. XTO wants to protect the Woodford play here from all disposal wells. XTO notes clearly the Johnston's testimony was based on the wrongly modified 1987 map.

17) XTO notes that Johnston's rebuttal testimony on the injection pressure states that Johnston was unsure if the injected water would be at 1700 psi in the Oil Creek, noting that there was a relationship between volume and pressure. XTO notes the Johnston witness gave no calculations to support

his believe that there would never be enough injection pressure to raise the water 2000 feet.

18) XTO thinks within one year's time that 7.2 MMB of salt water would be placed in this reservoir. XTO notes the frac gradients for the zones here are: Bromide .7 to .8; McLish .7 to .8; and Woodford .6 to .8 yet Johnston's figures in their frac gradient come to .79 which exceeds the frac gradient. If the frac gradient is exceeded, fractures will be created which can communicate with the Woodford reservoir

19) XTO notes this area is highly faulted. XTO notes the ALJ interprets that most faults are of sealing type and states that this is "a principle basic to discovery and production of hydrocarbons all over Oklahoma." XTO thinks that no one knows if these faults are truly sealing type.

20) XTO notes the Bromide and McLish have a .6 to .8 frac gradient which will be exceeded. XTO has spent approximately \$8 to 10 million here. XTO notes all parties agreed this is a fault complex with many unlocated small faults.

21) XTO found the Johnston's witness, for his study, assumed a 60 foot thickness in the McLish and 180 feet in the Oil Creek. If there is less than 200 feet of throw in a fault it is not going to be a sealing fault. XTO believes that Johnston's Exhibit 3 is inaccurate. XTO notes that regardless of how Exhibit 3's contours vary, the fault placement has not changed since 1987. XTO notes Johnston's fault interpretation for this cause is based off the 1987 map. XTO thinks that Johnston's witnesses gave no factual basis to support Johnston's relief.

22) XTO disagrees that the nearly 15 year of map and the two geological bulletins accurately support Johnston's position that this SWD well would be a safe operation. XTO notes that for every set of circumstances XTO raises, then Johnston changes its story/theory accordingly. XTO notes Johnston claims the Springer here tends to swell yet there is no evidence to support this in the record. XTO does not believe the Springer will provide an effective seal here.

23) If this were a safe location for a SWD well, XTO realizes it could save money since XTO trucks salt water 25 miles at a price of \$2 a barrel. XTO requests the Court take judicial notice that most faults are anything but sealing type, dependent on whether there is production present. XTO believes with the multiple big and little faults in this area yet unknown, it would be wrong to define them as sealing without evidence to the contrary.

24) XTO submits the ALJ is basically substituting his own judgment due to lack of evidence in the record on the part of Johnston. XTO would urge the

Court to review the full transcript and concur with XTO that the ALJ had made a gross error in his recommendation.

JOHNSTON

1) **Cheri Wheeler**, attorney, appeared on behalf of Johnston, stated that its witnesses reviewed all electric logs, the 1987 geological survey, and updated Exhibit 3 accordingly. Johnston notes these exhibits above were not presented at the hearing, only during the exhibit exchange. Johnston notes the McLish and Oil Creek are juxtaposed to the Springer formation, which is impermeable and tight.

2) Johnston notes when water hits the Springer, which is not an oil and gas target, the Springer swells and blocks anything going past it. Johnston notes the Springer, being an impermeable barrier, requires use of oil-based mud or use of casing run through it. Johnston believes there is no dispute as to the Springer swelling.

3) Johnston notes there had been two previous SWD wells for the McLish yet these were no longer active wells. Johnston notes the ALJ had stated that XTO's evidence did not meet the Daubert test. Johnston notes all parties agree the Mansfield fault does exist though there is a dispute as to whether the Bryan fault is present here.

4) Johnston notes the ALJ stated it was XTO that had raised the Fayetteville shale where water in the past had traveled up a fault and watered out XTO's production. Johnston notes XTO had implied that was similar to the current circumstances here in the Woodford. Johnston would remind the Court that XTO provided that information and the ALJ determined it to be "antidotal".

5) Johnston points out due to none of the 1002A forms having been filed on XTO's horizontal wells, there were no well logs available. Johnston had no reason to input XTO's horizontal wells onto Exhibit 3. Johnston notes that XTO could have brought this information to the Court to support their belief yet opted to leave the mud, open hole and seismic logs at the office. Johnston notes that both Exhibit 11 and Exhibit 3 are both based on the same vertical well control. Johnston notes XTO however chose not to use the well control that Johnston did for the Viola zone.

6) Johnston notes that XTO did make their map for the Woodford zone, which they appear to be most concerned with. Johnston notes that XTO did

not bring to the hearing evidence to support the Bryan fault's existence nor whether there were any faults present here. Johnston notes the ALJ noted both sides lacked support for any particular fault's existence.

7) Johnston notes that XTO did not exchange any of those exhibits with Johnston; hence Johnston was not privy to XTO's horizontal well data when preparing these exhibits for the hearing. Johnston notes that it prepared its own exhibits based on information in its possession, just as XTO did their exhibit preparation. Johnston notes that XTO did not present any well logs or 3-D seismic to support XTO's belief that the Bryan fault existed here. Johnston notes a sealing fault involves an impenetrable formation where another formation hit and water can't enter it. Johnston notes whether it is a sealing fault or not, such is not important.

8) Johnston notes XTO implies the possibility that the McLish injection and Oil Creek injection will somehow leak beyond the Springer and enter a higher up porous zone. Johnston notes for this possibility to occur the water would need to skip or jump from one fault into another fault. Johnston notes that XTO has used a proppant and then hydraulically frac'd the Woodford and got 200 feet away from the wellbore.

9) Johnston notes that XTO thinks that by disposing water into a SWD well that such water will go down to the McLish zone, past the swollen Springer, skip to a highly porous zone, then skip to two different fault levels and jump into and flood the Woodford zone. Johnston believes that XTO is fussing about an event that is not going to occur.

10) Johnston notes XTO's concern about exceeding the frac pressure. Johnston notes the McLish and Oil Creek are not at 100% water saturation or else Johnston would not waste their money filing this application. Johnston does not understand why XTO would think Johnston would want to inject water into a formation that is already water saturated. Johnston notes Exhibit 10 showed the well could take up to 20,000 BWPD to fill up the pore volume of the McLish and Oil Creek formations for approximately 24 years.

11) Johnston notes on Form 1015 the UIC department used a rule of thumb of .5 times the top of the injection interval to determine the maximum injection rate, without exceeding the frac gradient, which comes to 2,415. Johnston was only asking for 1700 frac gradient. Johnston notes once a well is opened up for water business, over time it will build up to 1700 psi, a cushion number to avoid having to reapply to the Commission for higher injection pressure. Johnston notes the Form 1012 must be filed monthly recording the pressure used and the BWPD injected. Johnston notes there was no evidence had by XTO of any Oil Creek reserves.

12) Johnston notes that the well control of both Exhibits 3 and 11 are based on vertical wells, not horizontal wells. Johnston notes the basic difference between these exhibits is the top for the Little #1 well; otherwise, basically the same. Johnston notes XTO claims to know lots about the Woodford zone yet declined to base XTO's own exhibits on this zone. Johnston notes that XTO wants the Court to deny Johnston's request due to XTO's desiring protection of the Woodford zone.

13) Johnston would request the Court also look at the transcript to determine the outcome of this appeal. Johnston believes the record is solid and that the ALJ is correct. Johnston does not believe that XTO make their protest supported with evidence that Johnston's request will affect any drilling had in the Woodford zone.

14) Johnston feels it is preposterous to think that injection water that goes downward in a fault will, without extra help from proppant or frac'ng, then jump up into a higher zone and water out all of the Woodford zone. Johnston feels that if XTO were truly intent on getting Johnston's relief denied, XTO would have brought their well logs, seismic and other necessary data to support their protest position. Johnston would request the Court to affirm the ALJ's decision/recommendation.

RESPONSE OF XTO

1) XTO notes the ALJ had concluded that XTO had not proven it was reasonably likely to affect XTO's wells. XTO notes it does not have to prove that it is reasonably likely to happen, only that it is unsafe. XTO would of course save money by less trucking if this SWD well were to be safe yet reminds the Court the burden of proof here is on Johnston.

2) XTO notes though that Exhibits 13 and 3 show 2 faults that are not present. XTO notes that XTO and Johnston did not exchange their seismic data or their well logs with each other. XTO was not aware Johnston was going to base its case on an outdated 1987 map.

3) XTO believes the motivations of the parties here are important. XTO notes Johnston's geologist had made a study, prepared a structure map that was not submitted to the court, noted there were 2 old SWD wells no longer in use and based their relief on two geological bulletins. XTO notes that Johnston's witness used a 1987 map, no 3-D seismic and/or available horizontal well data to support its belief that it was a safe location for a SWD well.

4) XTO notes it has nothing to gain by Johnston's relief here being denied. XTO notes that Johnston can't gain a thing by moving the SWD well to another spot or get it denied, unless Johnston can prove the Woodford zone will be unharmed. XTO notes Johnston is in the SWD business.

5) XTO recognizes the counsel's ability to advocate to let the record speak for itself here. XTO notes Johnston believes no water will get past the Springer zone yet XTO differs as occasionally the Springer zone has been known to swell. XTO notes the Commission's Technical department uses a .5 frac gradient, which supports XTO's view here; thus, it is clear the frac gradient here will yield .79. XTO notes Johnston merely says it won't harm anything, yet lacks calculations to back up his statement. XTO notes due to the Oil Creek not yet producing, this zone has yet to be frac'd. XTO only knows that all formations except the Oil Creek, vary from .6 to .8.

6) XTO notes the original record here does not show Johnston's calculations, nor were these calculations placed in his rebuttal. XTO points out that the Johnston witness just said "Well, initially we won't be at 1700 pounds." XTO notes Johnston could frac this well six months from now if it so desired to.

7) XTO believes the ALJ merely shifted the burden of proof from the applicant to XTO. XTO notes there are lots of reserves here. XTO merely wants the SWD well denied for part of the area. XTO, if this well was not 700 feet from a fault, might like to have a SWD well.

8) XTO notes the main duty of the Commission is to prevent waste, rather than to allow a person to profit off a SWD well. XTO notes it drilled through this very section that Johnston claims to have faults and found none.

9) Johnston was the one who had to provide the burden of proof here. XTO was not required to provide its 3-D seismic data. XTO notes that Johnston did not request this information either.

10) XTO believes that when the Referee reviews the full record the Court can determine where the ALJ placed his burden of proof in his recommendation. XTO believes the ALJ committed reversible error here.

CONCLUSIONS

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

1) The Referee finds that the ALJ's recommendation to grant the Johnston application for approval of the Johnston SWD well #1 is contrary to the weight of the evidence and contrary to the law. The Referee finds that Johnston failed to carry their burden of proof.

2) The issue presented before the Commission is whether the commercial disposal of salt water in the ground through the Johnston SWD well #1 into the McLish and Oil Creek formations located a few hundred feet southwest of the Mannsville Fault system would cause, or is reasonably likely to cause any pollution of surface or subsurface waters or any damage to any oil and gas bearing strata. *Appeal of Cummings and McIntyre*, 319 P.2d 602 (Okla. 1957).

3) The Referee finds that Johnston has failed to satisfy its burden of persuasion and its burden of production by the weight of the evidence. In administrative hearings, the applicant seeking relief has two burdens: 1) the burden of persuasion (that if the evidence is evenly balanced, the party that bears the burden of persuasion must lose); and 2) the burden of production (a party's obligation to come forth with evidence to support its claim). *Director, Office of Workers Compensation Program, Department of Labor v. Meher Terminals, Inc.*, 512 U.S. 267, 272, 275 (U.S. 1994).

4) The Commission takes its responsibility concerning prevention of pollution and protection of productive common sources of supply very seriously. It is for that reason that the Commission implemented its rules concerning the commercial disposal of salt water by calling upon a body of experts within the industry to help it design stringent rules, such that, if a well meets the requirements of the Commission rules for commercial salt water disposal and there is no reasonable likelihood of pollution or damage to oil and gas bearing stratas from the use of such well, then the well will be granted.

5) Johnston's Exhibit 3 is a structure map based on the Viola lime. The evidence reflected that this Exhibit 3 map was based upon a 1987 published map which had been updated by Johnston to include three vertical drilled wells and Johnston had also removed from one of the wells on the 1987 published map the annotation that it was faulted-the Little #1-A well in the north part of Section 34. There are also additional contours to the northeast of the Mannsville Fault complex. XTO's drilling showed that Johnston's interpretation of this area as reflected on Exhibit 3 was incorrect. XTO proved through drilling that the Bryan fault does not exist and that the northernmost thrust fault does not exist. Thus, the evidence reflected that XTO's Exhibit 11 was the most accurate depiction of the geology in this area. The testimony reflected that XTO's Exhibit 11 is not only based upon well control from vertical wells and horizontal wells and seismic data but is the map that XTO uses to select well locations.

6) Johnston's engineer initially stated that it would be "preposterous" for water to travel in a fault. However, on cross-examination he stated that water could travel down a "strike-slip fault". Also, in the Johnston engineer's testimony, he stated that the water would be taken down by gravity and 1700 psi would not push the water up 2000 feet and get into the Woodford. XTO's engineer testified that these faults were not sealing and even if these faults were sealing this is a fault complex with many, many small faults that nobody has been able to identify or locate. Testimony reflected that the Oil Creek reservoir does not produce which indicates that the Oil Creek reservoir hasn't been trapped. Thus, this is an indication that water could go either up or down and cause the fault to act like a conduit. XTO is concerned that injected water would enter into the fault travel down into the Woodward into either the natural fractures or the hydraulic fracture system. Water would then penetrate the flow system and productive wells would either stop producing or need to be dewatered. There was no substantial evidence brought forth by Johnston that the faults are sealing and that water would not travel via the faults.

7) The evidence also reflected that if applicant is allowed to inject into the formation at 1700 pounds of pressure which would result in a pressure gradient of .79 psi per foot that that pressure exceeds the fracturing of the Woodford by XTO which uses a pressure gradient in the range of .6 to .8 psi per foot. Johnston's requested pressure clearly jeopardizes production in the area. XTO operates wells in the West Durant field in T6S-R8E that are in the Bromide and the McLish. The frac gradient in those wells ranges from .7 to .8 psi per foot. The water that will be disposed of here will be brackish which means it would be heavier. Given the pressure Johnston could be injecting water above the frac gradient and frac pressure necessary to cause fractures in the Bromide and McLish. This would therefore increase the chances that the proposed injection zones would fracture and create additional pathways to get into the Woodford. The frac gradient for the Oil Creek has never been determined because the Oil Creek has never been produced.

8) Because of the faulting, the Bromide and Oil Creek are up against the Springer pool formation which Johnston alleges is impermeable by swelling. The problem is not that the water will go into the Springer, but the water will go either up or down and cause the fault to act like a conduit.

9) There was also evidence by XTO that they have produced horizontal wells in the Fayetteville play in Arkansas which were watered out because of SWD wells placed near faults. The Fayetteville play is a shale just like the Woodford. The testimony reflected that in the Fayetteville shale, water did not go from one side of the fault to another side of the fault because of a porous zone on one side transposed against a porous zone on the other side but water traveled down a fault and watered out these horizontal wells in the Fayetteville play in Arkansas.

10) The Commission must base its rulings on evidence that would convince a reasonable man that the granting of the application was proper. *El Paso Natural Gas Company v. Corporation Commission of Oklahoma*, 640 P.2d 1336 (Okl. 1981); *Kuykendall v. Corporation Commission*, 634 P.2d 711 (Okl. 1981); and *Landowners, Oil, Gas and Royalty Owners v. Corporation Commission*, 415 P.2d 942 (Okl. 1966). After reading the transcripts the Referee believes that the evidence presented by Johnston and the opinions given by their expert witnesses do not support the granting of Johnston's application. There is not substantial evidence to support such an order. The Supreme Court of Oklahoma in *Application of Choctaw Express Company*, 253 P.2d 822 (Okl. 1953) states:

In these cases we defined "substantial evidence" as something more than a "scintilla of evidence" and said it means evidence that possesses something of substance and of relevant consequence and such that carries with it fitness to induce conviction. Other courts have said the principle which applies in determining whether the evidence that will support a jury verdict, applies to findings of the Commission. We think that every order of the Commission must be sustained by competent and material evidence, and that an order is not justified without a basis in evidence having rational probative force.

11) The Commission must follow the procedure set forth in *Downs v. Longfellow Corporation*, 351 P.2d 999 (Okl. 1960) and *Haymaker v. Oklahoma Corp. Com'n*, 731 P.2d 1008 (Okl.App. 1986). The Court states in the *Haymaker v. Oklahoma Corp. Com'n* case:

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):

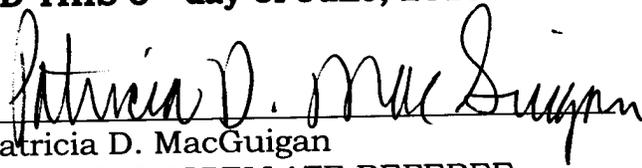
The reasons given in support of the opinions [of an expert witness] rather than the abstract opinions are of importance, and the opinion is of no greater value than the reasons given in its support. If no rational basis for the opinion appears, or if the facts from which the opinion was derived do not justify it, the opinion is of no probative force, and it does not constitute

evidence sufficient to...sustain a finding or verdict.

12) One of the Commission's primary duties is to prevent waste and there is no substantial evidence in this case to support Johnston's conclusions that the faults are sealing and that the water will not travel via the faults and that there is no danger to recoverable hydrocarbons. On the contrary, the substantial evidence reflects that there is a danger to a prolific producing reservoir. The Referee believes that Johnston's evidence was insufficient, including their exhibits which demonstrated defects.

13) Therefore, considering the facts and circumstances and the record before the Commission concerning the proposed SWD well requested by Johnston, the Referee recommends that the Commission reverse the ALJ's Report.

RESPECTFULLY SUBMITTED THIS 6th day of June, 2013.


Patricia D. MacGuigan
OIL & GAS APPELLATE REFEREE

PM:ac

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Commissioner Murphy
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