



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

August 25, 2016

OIL AND GAS DOCKET NO. 02-0294421

**ENFORCEMENT ACTION AGAINST BAYTEX USA DEVELOPMENT, LLC (OPERATOR NO. 058912)
FOR VIOLATIONS OF STATEWIDE RULES ON THE JULIE BECK LEASE, WELL NO. 9H (PERMIT NO.
768246), EAGLEVILLE (EAGLE FORD-2) FIELD, LIVE OAK COUNTY, TEXAS.**

HEARD BY: Marshall Enquist, Administrative Law Judge
Paul Dubois, Technical Examiner

APPEARANCES:

FOR RESPONDENT:

Doug Dashiell, Attorney
Barclay M. Ridge, Vice President - Land
Luis Chirinos, Director of Subsurface Engineering

Baytex USA Development, LLC
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“

FOR THE RAILROAD COMMISSION OF TEXAS:

David W. Cooney, Jr., Attorney
Kristi M. Reeve, Attorney
James Huie, District 1 & 2 Director
Olin McNamara, Geoscientist

Director, Enforcement Section, RRC
Enforcement Section, RRC
RRC - San Antonio
Oil & Gas Division, RRC

PROPOSAL FOR DECISION

PROCEDURAL HISTORY

COMPLAINT FILED:	December 1, 2014
NOTICE OF HEARING:	October 19, 2015
DATE CASE HEARD:	November 3, 2015
HEARING CLOSED:	December 11, 2015
PFD PREPARED BY:	Marshall Enquist, ALJ Paul Dubois, Technical Examiner
CURRENT STATUS:	Contested

PFD CIRCULATION DATE:

August 25, 2016

STATEMENT OF THE CASE

This proceeding was called by the Commission on the recommendation of the District Office to determine the following:

1. Whether the Respondent Baytex USA Development, LLC (“Baytex”) violated Statewide Rule 13(b)(2)(A)(i)¹ [Tex.R.R. Comm’n., 16 TEX. ADMIN. CODE §3.13(b)(2)(A)(i)] by failing to set and cement sufficient surface casing to protect all usable quality water strata in the abandoned wellbore on the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas;
2. Whether the Respondent Baytex violated Statewide Rule 13(b)(2)(B)[Tex. R.R. Comm’n., 16 TEX. ADMIN. CODE §3.13(b)(2)(B)] by failing to fill the annular space outside the casing with cement from the casing shoe to the ground surface or the bottom of the cellar, and by also failing to obtain the approval of the District Director for additional cementing operations because cement had not circulated to ground surface in the abandoned wellbore in the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas;
3. Whether the Respondent Baytex violated Statewide Rule 14(a)(3) [Tex. R.R. Comm’n., 16 TEX. ADMIN. CODE §3.14(a)(3)] by failing to notify the District office and obtain approval of the work it proposed to do before setting the plug to cement the abandoned wellbore on the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas;
4. Whether Respondent Baytex violated Statewide Rule 14(d)(1) [Tex. R.R. Comm’n., 16 TEX. ADMIN. CODE §3.14(d)(1)] by setting only one plug at the top of the abandoned wellbore, thereby failing to plug the abandoned wellbore in a manner that ensures protection of the formations bearing usable quality water and gas on the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas;
5. Whether Respondent Baytex violated Statewide Rule 14(d)(2) [Tex. R.R. Comm’n., 16 TEX. ADMIN. CODE §3.14(d)(2)] by failing to set cement plugs to isolate each usable quality water strata in the abandoned wellbore on the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas; and
6. Whether Respondent Baytex violated Statewide Rule 14(d)(7) [Tex. R.R. Comm’n., 16 TEX. ADMIN. CODE §3.14(d)(7)] by failing to notify the District Director and set

¹ Statewide Rule 13 was modified effective January 1, 2014. The Rule 13 violations cited in this docket occurred before the modifications and are cited under the version of the rule in effect in October, 2013.

additional cement plugs that might have been required by the District Director in the abandoned wellbore on the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas.

7. Whether Respondent Baytex should be required to place in compliance with Statewide Rules 13(b)(2)(A)(I); 13(b)(2)(B); 14(a)(3); 14(d)(1); 14(d)(2) and 14(d)(7), the abandoned wellbore on the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas; and
8. Whether, pursuant to Texas Natural Resources Code §81.0531(a), Baytex has violated provisions of this title which pertain to safety or the prevention and control of pollution or the provisions of a rule, order, license, permit, or certificate which pertain to safety or the prevention or control of pollution and are issued under this title. If so, Baytex may be assessed a civil penalty by the Commission. Pursuant to Texas Natural Resources Code 81.0531(b), the penalty may not exceed \$10,000 a day for each separate violation. Each day a violation continues may be considered a separate violation for purposes of penalty assessments; and
9. Whether any violations of Statewide Rules 13, 14(a)(3), 14(d)(1), 14(d)(2) and 14(d)(7) made by Baytex should be referred to the Office of the Attorney General for further civil action pursuant to Texas Natural Resources Code §81.0534.

Notice of Hearing was issued in this case on October 19, 2015 for the hearing date of November 3, 2015. Attorney Doug Dashiell; Barclay M. Ridge, Vice President - Land; and Luis Chirinos, Director of Subsurface Engineering, appeared on behalf of respondent Baytex. David Cooney Jr., Director of Enforcement; Kristi M. Reeve, Staff Attorney, Enforcement; James Huie, Director of District Offices 1 and 2, San Antonio; and Olin Macnamara, Geoscientist, Oil & Gas Division, appeared on behalf of the Texas Railroad Commission.

Enforcement's certified hearing file was entered into evidence. Late-filed Baytex Exhibit 5 was entered into evidence. Enforcement's written Closing Argument was filed December 1, 2015. Baytex's written Closing Argument was filed December 11, 2015 and the hearing was closed.

Enforcement requested a total administrative penalty of \$30,000, composed of a \$4,000 penalty for violations of Statewide Rules 13(b)(2)(A)(I) and 13(b)(2)(B); a \$2,000 penalty for the violation of Statewide Rule 14(a)(3); a \$3,000 penalty for violations of Statewide Rule 14(d)(1), 14(d)(2) and 14(d)(7), plus a \$21,000 enhancement for threatened pollution of a major aquifer. Baytex has paid \$30,000 to the Commission, through Enforcement, as an agreed recommended settlement of the penalty portion of the docket. Enforcement states that an assessment of a \$30,000 penalty by the Commission will result in no further payment of penalty due the Commission from Respondent Baytex.

AUTHORITY

Statewide Rule 13(b)(2)(A)(i) [16 TEX. ADMIN. CODE §3.13(B)(2)(A)(i)], as effective on October, 2013, the time the violations in this docket occurred, requires an operator to set and cement sufficient surface casing to protect all usable quality water strata.

Statewide Rule 13(b)(2)(B) [16 TEX. ADMIN. CODE §3.13(b)(2)(B)], as effective on October, 2013, the time the violations in this docket occurred, requires that cementing be by the pump and plug method. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. If cement does not circulate to ground surface or to the bottom of the cellar, the operator or his representative shall obtain the approval of the District Director for the procedures to be used to perform additional cementing operations, as needed, to cement surface casing from the top of the cement to the ground surface.

Statewide Rule 14(a)(3) [16 TEX. ADMIN. CODE §3.14(a)(3)] requires operators to notify the District Office at least four hours before commencing plugging operations and then proceed with work at the scheduled time, as approved by the district.

Statewide Rule 14(d)(1) [16 TEX. ADMIN. CODE §3.14(d)(1)] provides that all wells shall be plugged to ensure that all formations bearing usable quality water, oil, gas, or geothermal resources are protected.

Statewide Rule 14(d)(2) [16 TEX. ADMIN. CODE §3.14(d)(2)] requires operators to set cement plugs to isolate each productive horizon and usable quality water strata.

Statewide Rule 14(d)(7) [16 TEX. ADMIN. CODE §3.14(d)(7)] states that the District Director may require additional cement plugs to cover and contain any productive horizon or to separate any water stratum from any other water stratum if the water qualities or hydrostatic pressures differ sufficiently to justify separation. The tagging and/or pressure testing of any such plugs, or any other plugs, and respotting may be required if necessary.

Texas Natural Resources Code §81.0531(a) provides that “If a person violates provisions of this title which pertain to safety or the prevention or control of pollution or the provisions of a rule, order, license, permit, or certificate which pertain to safety or the prevention or control of pollution and are issued under this title, the person may be assessed a civil penalty by the Commission. Texas Natural Resources Code 81.0531(b) provides “The penalty may not exceed \$10,000 a day for each violation. Each day a violation continues may be considered a separate violation for purposes of penalty assessments.”

Texas Natural Resources Code §89.002(a)(2) defines “Operator” as “...a person who assumes responsibility for the physical operation and control of a well as shown by a form the person files with the commission and the commission approves.”

Texas Natural Resources Code §89.011(a) requires that the “...operator of a well shall

properly plug the well when required and in accordance with the commission's rules that are in effect at the time of the plugging."

DISCUSSION OF THE EVIDENCE

A. Stipulations of Fact Between Enforcement and Baytex

Prior to presentation of this case at hearing, Enforcement and Baytex agreed to 25 Stipulations of Fact, and also agreed, in the same document, to the points of contention that remained between Enforcement and Baytex. The Written Contentions between the parties will be outlined after the Agreed Stipulations of Fact. The following paragraphs attempt to summarize Stipulations of Fact 1 through 25. The summary begins with Stipulations of Fact 1 through 19, and 22 through 24, relating mainly to the timeline of events. Stipulations 20 and 21 relate to stratigraphic information in the area of the Julie Beck Lease, Well No. 9H (hereinafter the "Julie Beck 9H"), while Stipulation 25 attempts to describe the purpose of this contested hearing.

The subject well, the Julie Beck 9H (API# 42-297-35443), was drilled for Aurora USA Development LLC² by its drilling contractor, HTK Drilling Management, LC ("HTK"). The well was spudded October 1, 2013. Between September 30 and October 1, 2013, HTK drilled a 12 1/4" hole to a depth of 5,679 feet MD (Measured Depth) in order to set 9 5/8" surface casing. At 1:12 A.M., on October 2, 2013, HTK notified the San Antonio District Office of its intent to set surface casing. Between 7 P.M. and 9 P.M. on October 2, 2013, while the surface casing was being run in the hole, the casing parted, dropping 3,618 feet of pipe toward the bottom of the wellbore. The hole was filled with 9.2 PPG (Pounds Per Gallon) drilling mud at the time. The top of casing was later tagged with fishing tools at a depth of 1,997 feet MD. The calculated base of the parted surface casing was 5,615 feet, or 64 feet above the bottom of the hole.

From approximately 2:00 A.M. until 10:30 A.M. on October 3, 2013, HTK conducted fishing operations in the well in an attempt to recover the lost casing string. At 11:21 A.M. on October 3, 2013, the president of HTK, Mr. Bob Zaunbrecher, in his capacity as a Drilling Engineer, emailed Scott Rosenquist, an engineer from the Engineering Unit of the Technical Permitting Section in Austin, stating that surface casing had parted while being run, leaving junk in the hole, requiring a mechanical bypass. Mr. Zaunbrecher advised Mr. Rosenquist that HTK intended to bypass the junk in the hole and drill the well to the same bottomhole location as the original drilling permit. Mr. Zaunbrecher requested confirmation that if the purpose of a sidetrack is to avoid fish in the hole, the operation is considered a "random deviation", which requires notification to the Commission and to the District Office, but not a permit amendment unless the well is deviated to a different bottom hole location. Mr. Zaunbrecher's email had a copy of the drilling permit for the subject well attached and a wellbore diagram showing approximately where the casing was lost and a depiction of a 500

² On October 31, 2014, Aurora USA Development LLC changed its name to Baytex USA Development LLC. The entity responsible for Well No. 9H on the Julie Beck Lease is Baytex USA Development LLC. The ORNQ screen of the Commission's Mainframe indicates Aurora's name was changed to Baytex and financial assurance was transferred from Aurora to Baytex, along with all outstanding drilling permits and Forms P-4, on July 15, 2014.

foot cement plug to be set above the lost casing. The diagram showed the base of Carrizo fresh water at 5,550 feet.

At 11:40 A.M. on October 3, 2013, Mr. Rosenquist replied by email that he agreed the operation described by Mr. Zaunbrecher constituted a “random deviation” and that the operator had complied with the Commission notification requirement. However, under the Commission’s Statewide Rules and organizational structure, the Engineering Unit of the Technical Permitting Section is not responsible for receiving notice of, or oversight of, the setting of surface casing, cementing or plugging. Responsibility for receiving notice of those activities, and their oversight, lies with each respective District Office. HTK did not provide notice of the random deviation or the setting of a plug to the San Antonio District Office.

Between 11:40 A.M. and 7 P.M. on October 3, 2013, HTK placed a 500 foot cement plug above the lost casing. The top of the plug was tagged at 1485 feet. HTK did not contact the San Antonio District office before setting the 500 foot plug and did not advise the San Antonio District Office of its intent to abandon the original hole. HTK did nothing to cement the lost casing in the abandoned wellbore. HTK did nothing to isolate fresh water strata. After setting the plug, HTK abandoned the original hole, sidetracked the well from the top of the cement plug, and drilled the sidetrack hole to a measured depth (MD) of 17,823 feet (11,304 feet True Vertical Depth or TVD). Drilling operations ceased November 22, 2013 and the well was completed on November 29, 2013.

The completion information for the Julie Beck 9H was submitted via the online process on March 17, 2014. On April 7, 2014, during routine review of operator-filed completion data, staff noticed the section of abandoned, uncemented casing. Upon realizing that the operator of the Julie Beck 9H had abandoned 3,618 feet of pipe in 3,682 feet of uncemented wellbore, inclusive of the Carrizo interval, the Engineering Completions staff emailed Baytex to ask for documentation that it had (1) contacted the San Antonio District Office prior to plugging the abandoned section of wellbore and (2) plugged the abandoned section of wellbore per District Office instructions consistent with Statewide Rule 14 or had been granted an exception.

On May 9, 2014, Baytex notified Commission staff that it was working on resolving the matter. On July 22, 2014, Commission Staff notified Baytex that the matter was being considered for Enforcement action. Between the Fall of 2014 and the filing of the stipulations between the parties on November 2, 2015 (the day before the hearing), Commission Staff and Baytex negotiated, without success, the steps Baytex must take to achieve compliance in this case.

Baytex does not dispute that it violated Statewide Rules 13 and 14 and has paid a \$30,000 agreed administrative penalty arrived at between Baytex and Enforcement in June 2015. Enforcement staff does not seek additional penalties and acknowledges that Baytex has no previous history of violations of Commission rules.

Stipulations of Fact 20 and 21 relate to neutral statements of fact regarding the formations and fields penetrated by the abandoned wellbore. Enforcement and Baytex agree to these facts, but, as will be seen, disagree about the impact of these facts on this case. These stipulations are

reproduced verbatim below.

Stipulation of Fact 20 - "The Atkinson Sand of the Lower Reklaw formation occurs at depths of approximately 4,434 feet to 4,597³ feet at this location. The Julie Beck 9H encounters the Atkinson Sand below the original gas/water contact of an Atkinson Sand field that produced over 39.1 BCF of gas before it was abandoned. That depleted reservoir was approved by the Commission as a gas storage project in 1993 and later amended in 2001, but no actual injection or storage has taken place. On February 22, 1993, the Commission found in Oil & Gas Docket No. 02-0200375 that the Atkinson Sand in the Atkinson Field is a depleted reservoir that has produced 39.14 BCF of gas. The original reservoir pressure was 1895 psi, but the reservoir pressure as of 1993 was 70 psi. Rule 4 of the Order in that docket limits injection volumes by placing a maximum bottom hole pressure of 1,798 psi on any gas injection operations."

Stipulation of Fact 21 - "The Queen City Sand formation occurs from 3,300 feet to 4,174 feet in this well and is known to produce saltwater in the area."

The final stipulation, Stipulation of Fact 25, purports to define the purpose and scope of the Enforcement case, despite the fact that such matters that are always within the discretion of the Commissioners. Stipulation 25 is reproduced verbatim below.

Stipulation of Fact 25 - "The purpose of the contested portion of this Enforcement case is to determine how Baytex is to achieve compliance or obtain exceptions or extensions of time to comply with Statewide Rules 13 and 14, particularly Rule 13's requirement to isolate and seal off all usable quality water zones, and to isolate and seal off all potentially productive zones to prevent vertical migration of fluids or gas behind the casing, and Rule 14's requirement that the operator set cement plugs to isolate each productive horizon and usable quality water strata."

B. Enforcement's Written Contentions 1 through 3

(1) Enforcement argues that Baytex must achieve compliance by isolating the Carrizo with cement plugs above and below the interval identified for protection in the August 20, 2013 Groundwater Advisory Unit's Groundwater Protection Determination letter, which requires that "The interval from the land surface to a depth of 700 feet and the Carrizo from 4550 feet to 5550 feet must be protected." ⁴

Enforcement states there is not sufficient basis for granting an exception to the requirement that usable quality water strata be isolated with cement because (i) the rules do not provide for such an exception, (ii) the rules are based on sound oil field practice and history, (iii) the operator's own conduct is a major factor in this problem being as complex as it is.

³ These figures may be a typographical error or may refer to the tops of the Atkinson Sand. The log of the offset Filon Exploration Edward B. Sturcken Well No. 1 (API# 297-31858), only 1,350 feet away, indicates the Atkinson Sand interval is approximately 42 feet thick.

⁴ GAU letter, August 20, 2013.

The freshwater Carrizo Aquifer should be isolated by cement surrounding the abandoned casing, and cement plugs above and below the aquifer. The measured depth of the lost casing is 5,615 feet and the total measured depth of the abandoned wellbore is 5,679 feet, while the GAU letter states the base of the Carrizo is 5,550 feet. Baytex has failed to isolate the Carrizo in any manner. This presents an unacceptable risk of pollution of usable quality groundwater in violation of Statewide Rules 13 and 14.

(2) Enforcement contends that Baytex's notice to the Engineering Unit relating to a random deviation did not satisfy Baytex's obligation to notify the District Office on matters regarding casing cement and plugging. Baytex knew, or should have known, that it was required to advise the San Antonio District Office of the abandonment of uncemented surface casing in a wellbore that included a 1,000 freshwater zone. Baytex knew, or should have known, it was required to involve the District Office in efforts to isolate and seal off all usable quality water zones and set cement plugs at the time it lost the surface casing string. Baytex knew, or should have known, that it was required to obtain District Office approval before it set the 500 foot plug at the top of the abandoned wellbore.

(3) Enforcement urges the Commission to order Baytex to take immediate steps to isolate the Carrizo with cement. In the alternative, if Baytex is not ordered to take immediate action, Enforcement urges the Commission to order Baytex to post financial assurance in the amount the Commission determines is necessary to take corrective action, and order that such financial assurance be attached to the Julie Beck 9H and remain an obligation of the responsible operator of the Julie Beck 9H until the corrective action is performed or otherwise resolved to the satisfaction of the Commission.

C. Baytex's Written Contentions 1 through 5

(1) Baytex argues that there is no realistic need to place a cement plug in the abandoned well, or, alternatively, that such an attempt should be postponed until the Julie Beck 9H is depleted.

The Carrizo Aquifer is at a higher pressure than the Atkinson Sand or the Queen City Sand. Any flow of fluids between these formations would flow out of the higher pressured Carrizo and into the lower pressured Atkinson Sand. Over 39 BCF of replacement gas would have to be injected into the Atkinson Sand to re-pressure the field and restore the old gas/water contact, which would be 22 feet up dip and 3,800 feet laterally from the location of the Beck 9H.

The abandoned wellbore is filled with 9.2 PPG mud. Over time, the solids in the drilling mud will settle to the bottom of the hole within the Carrizo, further creating a barrier to fluid flow within the wellbore. There is no rational basis to require a plug to be set below the base of the fresh water Carrizo because that portion of the wellbore is still within the Carrizo reservoir.

(2) Enforcement staff has never explained to Baytex how compliance with Commission rules should be achieved at this time given the current condition of the well. Specifically, Baytex has

never been advised where and how a cement plug should be placed in this section of the original wellbore to isolate the Carrizo or what would be required of Baytex if a plugging operation was attempted and the result is not definitive.

(3) In discussions, Enforcement staff has suggested drilling a new well from the surface to a point in the original wellbore to attempt an intersection above the top of the Carrizo at 4,479 feet. An attempt could then be made to pump cement into the annulus between the original hole and the abandoned surface casing, which is currently filled with mud. Baytex contends this procedure is neither prudent nor necessary, for several reasons: (1) there is a significant risk that an intersecting well would not encounter the original wellbore at all, (2) there is a collision risk due to the close proximity of the sidetrack well as the magnetic equipment of directional drilling tools could steer the drillstring toward the sidetrack well, (3) if an intersecting well encounters the original hole, it may be impossible to pump cement if the surface pipe lies in the hole flush against the side of the hole, (4) the Atkinson Sand is a porous sand that lies directly above the Carrizo Sand -- cement pumped into the interval at 4,479 feet would seek the path of least resistance and likely flow into the Atkinson Sand or the Carrizo Sand rather than placing a plug in the original hole - - there will be no way to determine the direction cement pumped into the hole will go - - there will be no way to confirm whether or not an effective plug has been set in the wellbore, (5) the cost of performing such an operation is excessive given the low possibility of success and impossibility of confirming success.

(4) Commission staff have also suggested the possibility of milling through the casing in the currently sidetracked hole, drilling out the 500 foot plug at the top of the original hole and re-entering the surface casing at approximately 1,997 feet. This would involve substantial technical difficulty and would destroy the producing Beck No. 9H well, resulting in waste. This solution should only be attempted after the Julie Beck 9H's reserves are depleted.

(5) Baytex has exhibited good faith in attempting to resolve this case. There have been numerous personal meetings, telephone calls, letters and reports provided by Baytex to the Commission over the past year. Baytex, through its drilling consultant Mr. Zaunbrecher, notified the Commission's Scott Rosenquist of its intentions to leave the surface casing uncemented as shown in the wellbore diagram, attached to the email to Mr. Rosenquist. No intent to deceive or withhold information related to the condition of the wellbore from Railroad Commission Staff ever existed in this case.

Enforcement's Case as Presented at the Hearing

Enforcement stated the present case arises out of the Commission's discovery that Baytex had left 3,618 feet of lost surface casing in an abandoned wellbore that TD'd at 5,679 feet. The abandoned wellbore passed through 1,000 feet of the Carrizo Aquifer, with no cementing of the casing and no properly set plugs. Failure to cement the casing is a violation of Statewide Rule 13 and failure to properly set plugs is a violation of Statewide Rule 14.

Enforcement Staff and Baytex have agreed to settle the penalty portion of the case, with

Baytex paying \$30,000 for violations of Statewide Rules 13 and 14. However, Enforcement and Baytex are still at odds over the compliance portion of the case. Enforcement believes Baytex should immediately reenter the abandoned wellbore and isolate the Carrizo Aquifer with cement plugs.

Enforcement's first witness was Mr. James Huie, Director of the San Antonio District Office. Mr. Huie has a degree in Business and started out in the pressure pumping business with over 20 years experience in cementing, acidizing, fracturing, coil-tubing and nitrogen, both onshore and offshore. He then went to work for the Texas Railroad Commission for over 13 years, starting with state-funded clean-up, then onto the technical staff, then to Assistant Director and then Director.

Mr. Huie testified that he first became aware of the problem with the Julie Beck 9H when he received a call from a regulatory employee at Baytex. The Baytex employee had been requested by the Commission in Austin to establish that Baytex had gotten approval from the District Office for the plugging that had transpired. That call occurred, to the best of Mr. Huie's recollection, in July, 2014.⁵

His next contact about the issue, in an email dated July 22, 2014, was from Rick Behal, Team Leader of the Engineering Unit in Technical Permitting, asking Mr. Huie if he thought the matter was worthy of a penalty action. Mr. Huie replied that "...they have no protection across the Carrizo from 4500' to 5500' in the original surface hole. I don't feel comfortable approving this well completed in this manner and have been discussing this with Aurora."⁶ Mr Huie noted another and more basic problem with the Julie Beck Well No. 9H. "The problem is that we were never given proper notification in order to reconcile it and rectify it before it got to this point."⁷

Q. (David Cooney) And let's talk about that time period a little bit and your role as District Director, so - - and we mentioned it in stipulations when they lost the surface casing and set the plug, had you - - did you receive any contact from Aurora at that time?

A. (Mr. Huie) At that point in time, we were never given any notification that there was an issue with that wellbore.

Q. If you had been given notification at that time, what would you have done?

A. Well, we would have first and foremost opened up a dialogue with the operator to, you know, establish what - - what transpired and formulate a go-forward plan in order to

⁵ Tr., p. 13, lines 14 and 15.

⁶ Enf. Exhibit 1.

⁷ Tr., p. 20, lines 5-7.

reconcile and rectify the situation and it's going to be an iterative type conversation where, you know, we might say, hey, what have you done and they tell us and we might suggest, have you tried this and they would go try it and come back and we would, you know - - it would be a dialog where we could finally get to the end game which we all want is the protection of that aquifer, you know, to - - it's not one easy, you know, it's not one quick fix. You have to try something and see what the results are of that attempt and then go back and get another plan if the first plan isn't successful and try another attack.”⁸

In further testimony, Mr. Huie stated that it is the obligation of the operator to know the rules of the Commission. Baytex's contract driller, HTK, demonstrated they were well aware of the rules of the Commission by calling in notice that they were preparing to set surface casing. Although HTK contacted the Engineering Unit in Austin to report the random deviation under Statewide Rule 11, the Rule further indicates they should have also given notice to the San Antonio District Office, but HTK did not.⁹

Statewide Rule 11(d)(3)(C) states:

If the necessity for random deviation arises unexpectedly after the drilling has begun, the operator shall give written notice by letter or telegram of such necessity to the appropriate district office and to the commission office in Austin, and, upon giving such notice, the operator may proceed with the random deviation...[emphasis added]

Not having been given notice of the random deviation, the District Office never had a chance to address the problems of cementing or plugging the lost casing.

Statewide Rule 13(b)(2)(B) states:

Cementing shall be by the pump and plug method. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. If cement does not circulate to ground surface or the bottom of the cellar, the operator or his representative shall obtain the approval of the District Director for the procedures to be used to perform additional cementing operations, if needed, to cement surface casing from the top of the cement to the ground surface. [emphasis added]

⁸ Tr., p. 20, lines 14-25, p. 21, lines 1-13.

⁹ Tr., p. 22, lines 7-11.

Despite knowing that the annular space between the hole and the casing should be filled with cement, HTK did not notify the District Office for procedures to be used in performing additional cementing operations.

Statewide Rule 14(a)(3) states:

The operator shall cause the notice of its intention to plug to be delivered to the district office at least five days prior to the beginning of plugging operations. The notice shall set out the proposed plugging procedure as well as the complete casing record. The operator shall not commence the work of plugging the well or wells until the proposed procedure has been approved by the district director or the director's delegate.....The operator shall notify the district office at least four hours before commencing plugging operations and proceed with the work as approved. [emphasis added]

Statewide Rules 11, 13 and 14 are clear. All require notice to the appropriate District Office of random deviations, cementing operations and plugging operations. However, HTK did not provide notice to the San Antonio District Office of (1) the random deviation of the wellbore, or (2) HTK's decision not to cement the lost casing in the abandoned wellbore, or (3) HTK's decision to set a 500 foot plug over the lost casing.

Mr. Huie further testified that, had HTK notified the District Office on October 1st, 2nd or 3rd, there would have been many more options available to deal with the problem.¹⁰ Baytex made only one fishing attempt. The District Office might have suggested additional fishing efforts. Had that not been successful, then the District Office might have suggested other scenarios regarding cementing and plugging the lost surface casing.

Prior to HTK setting the 500 foot plug, while the casing was open, it might have been possible to get in it and set a packer and pump through the flow collar and the casing shoe (the accessory at the bottom of the casing), or, if that did not work, go in the casing and perforate and perhaps establish circulation that way.¹¹

Mr. Huie described some of the options available to deal with the lost casing while access to it was still possible:

Well, you have options at that point in time. If you're unable to fish the casing out of the hole, you can still have the opportunity to go inside and perhaps establish some circulation. The - - setting the tool in a packer or something of that nature and being able to perhaps pump through the collar and the shoe. I didn't see on the drilling reports anywhere that there was a circulation, had been attempted to

¹⁰ Tr., p. 26, lines 4-5.

¹¹ Tr., p. 33, lines 24-25; p. 34, lines 1-6.

establish circulation, and this is just looking at the drilling reports, but, you know, there is options that you've got when the wellbore is open and you can go into that casing with tools that you have at your disposal that aren't currently available now because that's a - - you know, it's obviously closed up and encased but, you've got a plug above it and it's going to make remediation somewhat more difficult.¹²

There are several scenarios to correct the current problem, one of which is the drilling of a relief well and attempting to put cement between the annulus, that is, between the current open wellbore and the lost casing. Basically, to achieve compliance, the District Office lays out to the operator the requirements of a Statewide Rule and what is considered compliance under the rule. The District Office might offer suggestions based on their experience on how compliance might be achieved, but the ultimate responsibility is on the operator to achieve compliance¹³. The operator must make the necessary business decisions required to achieve compliance. Mr. Huie stated:

"I think we've established we need to get the Carrizo protected from the top and the bottom and like I stated earlier, it's incumbent upon them to do that and we'll offer suggestions but the ultimate responsibility for getting that protection is going to be up to the operator."¹⁴

Baytex had offered one possible solution, to perforate the casing on the existing Julie Beck 9H and attempt to squeeze cement across to the abandoned wellbore. Mr. Huie did not believe this was a feasible solution.¹⁵ Baytex has since withdrawn that proposal.

On cross-examination, Mr. Huie was asked if he thought the fact that the 3,618 foot lost casing string did not fall all the way to the bottom of the 5,679 foot wellbore implied that something in the bottom of the hole prevented that. Mr. Huie replied "Not necessarily."¹⁶

As its second witness, Enforcement presented Commission employee Olin Macnamara, a Geoscientist in the Oil & Gas Division. Mr. Macnamara has a Bachelors Degree in Geology, and subsequently spent 10 years as a Petroleum Geologist, followed by 10 years working in Environmental Geology, and then became employed by the Railroad Commission in 2001.

Mr. Macnamara stated he had nothing to add to Mr. Huie's suggestions of the ways Baytex might come into compliance, but did state "No. I mean, really, I don't feel like its my position or

¹² Tr., p. 27, lines 14-25; p. 28, lines 1-4.

¹³ Tr., p. 29, lines 12-15.

¹⁴ Tr., p. 32, lines 6-11.

¹⁵ Tr., p. 30, lines 2-4.

¹⁶ Tr., p. 38, line 7.

really the agency position to tell someone how to do something. We just tell people, you know, this is what compliance is and it comes down to the operator to make the business decisions to get to that point.”¹⁷

Q. (Cooney) Do you agree that there is no realistic need to place a cement plug in the well?

A. (Macnamara) Well, it's my opinion that, you know, we have a major aquifer exposed in this wellbore and the rule states it should be isolated, and I agree with that.¹⁸

Asked if he would consider migration of Carrizo water into the Atkinson Sand to be pollution of the Carrizo water, Mr. Macnamara replied, “I don't know that I'd call it pollution. It would be a loss of freshwater. That water as it migrated out of the aquifer into another zone, you know; therefore it is not recoverable from the aquifer at that point.”¹⁹ In Mr. Macnamara's recollection, the Atkinson Sand contains saltwater.²⁰

Turning to Baytex Contention 3, Parts (A)-(E), regarding the risk of various proposed operations to correct the existing problem, Mr. Macnamara testified there is risk in all of the proposed operations, but that there is risk in any operation.

Q. (Cooney) Well, is it - does it mean you shouldn't try?

A. (Macnamara) No, I believe the rule states this needs to be done and, at this point, we haven't really seen any attempt to gain compliance.²¹

Mr. Macnamara testified that consideration had been given to the installation of monitoring wells, three at a minimum to establish the gradient and direction of groundwater flow, but by the time the monitor wells pick up a problem, the aquifer would have already been impacted.²² Likewise, consideration was given to reports issued in 2010 and 2014 by the Water Development Board. The calculations in the report were basic, that is, they were not actual measured calculations, but calculations based on depths and a few other constants. Aquifers change over time, gaining or

¹⁷ Tr., p. 49, lines 4-8.

¹⁸ Tr., p. 49, lines 16-20.

¹⁹ Tr., p. 50, lines 11-15.

²⁰ Tr., p. 50, line 25; p. 51, lines 1-3.

²¹ Tr., p. 51, lines 13-16.

²² Tr., p. 53, lines 2-10.

losing water. As volume goes down, pressure goes down.

Q. (Cooney) So when compared to the requirements of Statewide Rule 14 to isolate the freshwater zone with cement, when you compare that to protecting the freshwater zone because of the nature of the pressure underground, you come down on the - I mean - what do you say about that?

A. (Macnamara) I believe that the cement is the better way of protection.²³

Enforcement offered as an exhibit a map titled "Major Aquifers of Texas" and asked Mr. Macnamara to comment on it (**see Exhibit I**).

Q. (Mr. Cooney) What is the new Staff Exhibit 2?

A. (Mr. Macnamara) This is a plot of the major aquifers of the State of Texas as designated by the Water Development Board. If you look at the red is the Carrizo-Wilcox Aquifer - - if you look down to, you know, Live Oak County is identified here. Kind of in south central Texas or just South Texas, I guess. The actual location of the Julie Beck Lease is not identified on this, but, as Live Oak County has a little hook up to the right, it's located in that position so it puts it at the down-dip edge of the Carrizo-Wilcox.

Q. And Carrizo-Wilcox is a major aquifer included in one of the major aquifers, correct?

A. Correct.²⁴

Baytex provided Enforcement with the log of a well only 1,345 feet west-southwest of the Julie Beck 9H. The log is a Dual Induction Sonic Log run on Filon Exploration's Edward Sturcken No. 1 (API# 297-31858) in Live Oak County, drilled in 1978 as a dry hole. Enforcement offered the log as its Exhibit 10. Mr. Macnamara testified regarding the information shown by the log.

From the top of the Queen City Sand at 3,300 feet to the base of the Reklaw at 4,450 feet, the log records saltwater. The top of the Atkinson Sand appears to be at 4,450 feet and the bottom at 4,490 feet. The log indicates it contains brackish water. From the top of the Carrizo Sand at 4,490 feet to the base at 5,680 feet, the Carrizo Sand holds mainly freshwater, except near the base of the Carrizo Sand, which is brackish in the last 190 feet from 5490 feet to 5680 feet. Between 5670 feet

²³ Tr., p. 58, lines 15-22.

²⁴ Tr., p. 61, lines 7-21.

or 5679 feet is where Baytex locates the base of the borehole that was abandoned in the Julie Beck 9H.

Q. (Cooney) Let's turn our attention now to a couple more flips down to the area between 5,500, 56 and 5,700 feet.

A. (Macnamara) No, about 5,670 - - 79 is where they marked the equivalent point of the base of the borehole that was abandoned and we refer to the brackish water above that.

Q. And does that brackish water pose a threat to the Carrizo?

A. Well, it's brackish as opposed to fresh, so, I would have to say yes.²⁵

In further testimony, Mr. Macnamara stated that his recommendation to Baytex would be to isolate the aquifer with cement. "How they do that, I cannot say. It's not my place to say, I don't believe."²⁶

Enforcement offered its Exhibit 11, the daily drilling reports for the Julie Beck 9H as it was drilled by what was then Aurora USA Development, LLC. These were used by Mr. Macnamara to gain an understanding of the conditions surrounding the drilling of the well.

Q. (Mr. Cooney) And is Staff Exhibit No. 11 one of the sources you used to put together the stipulations and evaluate the conditions of the well at the time it was drilled?

A. (Mr. Macnamara) Yes, this is the record of the 24-hour period for the well for that 24-hour period, so I mean if you look through here, it tells you what is going on from this time to that time. There's information here about the mud and, you know, the current depths; who is doing what; pump information; directional survey data.²⁷

Under cross-examination, Mr. Macnamara was asked if he had a good understanding of the mechanical status of the subject well.

Q. (Dashiell) If you were the operator of this well, Mr. Macnamara, and the

²⁵ Tr., p. 65, lines 14-22.

²⁶ Tr., p. 67, lines 6-7.

²⁷ Tr., p. 66, lines 12-20.

Commission is telling you to put cement plugs in this well, how would you do it?

A. (Macnamara) If I was the operator, I - - I mean, I would have to hire somebody to tell me how to do it.

Q. Well, is it part of the Railroad Commission's job to approve plugging proposals when operators submit a W-3A to plug a well?

A. It is.

Q. So is there someone at the Railroad Commission that could review a plugging proposal and say this proposal will be acceptable or not?

A. Well, you really can't compare a W-3A to this situation because a W-3A - - I mean, it's just a totally different situation. You're talking about a well that's probably been through its economic life; it's accessible from the surface. You know, that said, you complete a W-3A and you tell an operator where you want the plugs to go and he goes out there and he can't get to the bottom to set that first plug. His responsibility is to call you and say, hey, I can't get to the bottom and then you discuss it. It's a dynamic situation that can change.²⁸

On further cross, Mr. Dashiell explored the question of how much cement it would take to fill the abandoned borehole.

Q.(Dashiell) Okay. Again, if you were the operator of this well, and you were required to isolate the Carrizo with a cement plug, where would you attempt to place that cement plug in this wellbore?

A. (Macnamara) I would find some people to ask that question. I do believe there is a type of cement - - I mean, let's say you are pumping into a zone and I have a little bit of experience with pluggings where you have this problem. It's taking all your cement, so,

²⁸ Tr., p. 69, lines 11-25; p. 70, lines 1-8.

you know, you mix lost circulation material.²⁹ It's not like you're going to have to fill that entire Atkinson zone with cement to get it to hold. You can seal that off and plug from there.³⁰

Enforcement Staff Exhibit 7 is a Groundwater Availability Model provided to Staff by Baytex. The relevant portion of the exhibit models vertical flow between aquifers, described in the report as "leakage". According to the model, roughly 70 acre-feet per year flows out of the Carrizo-Wilcox into the overlying Reklaw formation. Mr. Dashiell and Mr. Macnamara agreed that the model only discusses volume, not pressures between the formations.³¹

Mr. Dashiell noted that the lost string of casing fell almost to the bottom of the hole, but not all the way, with the calculated bottom of the casing string 60 to 65 feet from the bottom of the borehole.

Q. (Dashiell) And that could have been caused, for example, by there being fill material that had fallen into the hole, for example. Is that one possibility?

A. (Macnamara) That's a possibility. I wouldn't say it's the greatest possibility.

Q. Could there be junk from the cementing tools that were at the end of the surface casing that could be crushed down there that could have fallen?

A. I'm not sure what you mean by junk at the bottom of the surface casing when they are running the hole.

Q. When the surface casing is set, are there certain tools that are put at the very first joint to facilitate the cementing operation?

A. Right. That's all part of the shoe and that's all part of the measurement of the casing, I believe.

²⁹ Lost-circulation material is used when the formation being drilled through contains voids that take the mud being circulated in the drill hole, resulting in a loss of returns. Lost-circulation material is defined in the Online Schlumberger Oilfield Glossary as "The collective term for substances added to drilling fluids when drilling fluids are being lost to the formation downhole. Commonly used lost-circulation materials included are fibrous (cedar bark, shredded cane stalks, mineral fiber and hair), flaky (mica flakes and pieces of plastic or cellophane sheeting) or granular (ground and sized limestone or marble, wood, nut hulls, Formica, corncobs and cotton hulls). Laymen have likened lost-circulation materials to the "fix-a-flat" materials for repair of automobile tires."

³⁰ Tr., p. 73, lines 10-22 .

³¹ Tr., p. 75, lines 6-10.

Q. So would it at least indicate to you that there is some barrier that prevented the surface casing, 3,800 foot of casing which is going to be a very heavy piece of pipe from going that last 65 feet?

A. It could have been the deviation of the hole. It could have been the fact that maybe that corkscrewed as it was going down a little bit and just happened to stick right there. We really don't know what's down there.³²

Mr. Dashiell then crossed Mr. Macnamara regarding the issue of immediately correcting the problem of the lost casing or waiting until the Julie Beck 9H has produced the bulk of its available reserves and then trying to access the abandoned borehole from the Julie Beck 9H.

Q. (Dashiell) So, really, the issue is one of timing here. If the operator was willing to do that type of an operation at a later point - - Well, first of all, it would cause the loss of whatever reserves were remaining in that producing well if you did that, correct?

A. (Macnamara) I don't know. Would it?

Q. Well, as geologists, these wells produce - - they have production casing set through to total depth, correct?

A. Uh-huh.

Q. So if you had to cut a hole in that production casing at three or four thousand feet to plug this old hole, that would ruin the producing well, wouldn't it?

A. It seems like - - I mean, I'm not an expert but I would think that you would go in there, seal off somewhere down near the production interval: cut that casing and pull it out so you wouldn't have to drill through it - - well, unless it is cemented. I don't know where the top of cement is on these wells, but if it was free enough to pull it out, you would pull it out and then would just have the existing casing to cut through.

Q. Okay. That scenario, as well, you would lose whatever reserves remained in that producing well.

³² Tr., p. 76, lines 21-25; p. 77, lines 1-21.

A. You would be isolating that well while you did this other operation. This is part of the risk. Hopefully you could go back in there and put that well back online.

Q. Mr. Macnamara, if you cut out the production casing and pull it out of the hole, how can you ever produce that well?

A. You put it back in there and you patch it.

Q. That's all I have. I pass the witness.³³

Baytex's Case as Presented at the Hearing

Baytex wishes to protect the Julie Beck 9H and produce it as long as possible. A Form W-2 submitted by Aurora USA Development, LLC on June 6, 2014, shows the well tested, on January 18, 2014, at a rate of 656 BO and 1,341 MCF over a 24-hour test period.

The first witness for Baytex Energy USA was Mr. Barclay Ridge, Vice President of Land for Baytex. Mr. Ridge has a Bachelor of Business Administration degree from the University of Mississippi. He has been with the companies under both names, Aurora and Baytex, for four years. Baytex is a Canadian public production company that acquired Aurora in 2014. Baytex operates 26 wells in the State of Texas.

The subject well was drilled for Aurora by HTK Drilling Management, L.C. ("HTK"). HTK was hired as Aurora's primary drilling engineers and drilling consultants in the field. Baytex does not dispute that it is the P-4 operator of, and ultimately responsible for, the Julie Beck 9H. Mr. Ridge asserts that it has never been the intention of Baytex or anyone associated with Baytex to hide any information from Commission staff.³⁴

The basic problem with the well was that surface casing parted when being set on October 3, 2013. HTK communicated that problem the morning of the occurrence to Aurora/Baytex through John Campbell, who is no longer with the company. When the top of the lost casing, or fish, was tagged in the fishing operation, it became apparent that the lost casing did not extend all the way to the bottom of the borehole. The mud in the hole at the time of casing loss was water-based mud at 9.2 PPG.³⁵

Mr. Dashiell called Mr. Ridge's attention to Stipulation Exhibit 3, in which Bob

³³ Tr., p. 80, lines 4-25; p. 81, lines 1-10.

³⁴ Tr., p. 85, lines 14-18.

³⁵ Tr., p. 86, lines 17-18.

Zaunbrecher, acting as Drilling Engineer for Aurora, notified Scott Rosenquist at the Commission by email that, while drilling the Julie Beck 9H, Aurora had surface casing part, leaving junk in the hole (**see Exhibit II**). Mr. Zaunbrecher notified Mr. Rosenquist that his intent was to sidetrack around the junk and retain the original bottomhole location, stating that he had been informed in the past that such an operation was a “random deviation”, and further stating his belief that a “random deviation” required notification, but did not require an amended permit unless the sidetrack was being directionally deviated to a different bottomhole location. Mr. Zaunbrecher affirmed his intention to drill the well to the same bottomhole objective as the original drilling permit. According to Baytex, the email had two attachments, the first being a copy of the drilling permit for the Julie Beck 9H. The second attachment was a copy of a proposed wellbore diagram showing that Aurora intended to place a 500 foot cement plug over the lost casing and then kick off at the top of the cement plug and bypass the junk in the hole (**see Exhibit III**). Mr. Zaunbrecher’s email was dated Thursday, October 3, 2013, 11:21 AM.

Mr. Rosenquist replied “I would agree that the operation does constitute “random deviation” and that the operator has complied with the requirement of Commission notification.” Mr. Rosenquist’s email was dated Thursday, October 3, 2013, 11:40 AM.

Mr. Zaunbrecher replied “Thank you, sir. I appreciate your prompt response.” Mr. Zaunbrecher’s email was dated Thursday, October 3, 2013, 11:35 AM. (See attached Exhibit). Oddly, Mr. Zaunbrecher’s “Thank you” response to Mr. Rosenquist appears to have been sent 5 minutes before the answer received from Mr. Rosenquist.

Although Baytex cannot say whether Mr. Rosenquist ever opened up the attachments to the email and looked at them, it emphasizes that the attachments to the Zaunbrecher email show that Aurora and HTK were not trying to hide anything from the Commission.

Baytex Exhibit 2 is another email chain, this time from Mr. Zaunbrecher to John Campbell, Vice President of Aurora. The subject line of the email states “FW - Notification of mechanical bypass due to random deviation - Aurora USA Development, LLC - Julie Beck #9H”. The text of the message begins “No action required” (**see Exhibit IV**). The text further states “Also, I am attaching onto this email what was originally attached to the RRC email, so that you have a complete record.”

Baytex also provided a Chronology of Events, labeled as its “Exhibit A”, outlining its contacts with the RRC that were made in an effort to resolve the issue of the lost casing over the period of October 9, 2014 through July 13, 2015. The list records contacts with the Commission by teleconference, email and actual meetings. The list also records Baytex’s intent to request exceptions to Statewide Rules 13 and 14 in the present docket.

At hearing, Baytex dropped its request for exceptions to Statewide Rules 13 and 14, and instead requested an extension of time in which to attempt a plugging operation.

Q. (Dashiell)

But, as far as the company’s contentions, Mr. Ridge, is it

Baytex's contention in this case that the wellbore, as it's currently configured, does not pose a significant risk to freshwater in the Carrizo formation?

A. (Ridge)

To the best of my understanding, yes.

Q.

And we will give the technical reasons for that through Mr. Chirinos?

A.

Yeah.

Q.

And based on that belief, are we requesting simply an extension of time, although I know our contentions in the stipulation refer to an exception but we're no longer seeking an outright exception to the rules, we're simply asking for an extension of time to attempt a plugging operation.

A.

That is correct, yes.

Q.

And how long of an extension are we seeking in this case?

A.

Preferably, it would be a five-year extension. ³⁶

Baytex argues that it has explored with Commission staff the ways it might achieve compliance. It has sought guidance in what would be acceptable to the Commission in complying, but has not received that guidance.

Q. (Dashiell)

In your opinion, Mr. Ridge, has Baytex been given any clear guidelines as to what must be accomplished to successfully cement off the Carrizo?

A. (Ridge)

Nothing other than to comply with 14(b).

Q.

All right. Obviously this is not a typical case where you can simply run cementing tools down the casing of a hole and perforate and squeeze cement. We're dealing with a varied section of hole, correct?

A.

Correct.

Q.

And it requires - it's a unique situation that requires a unique solution, correct?

³⁶ Tr., p. 95, lines 13-25; p.96, lines 1-6.

A. Absolutely.

Q. Without knowing what solution would be acceptable to the Commission, would Baytex - - or in your opinion any prudent operator attempt an open-ended job that has no definitive objective?

A. No, and also without receiving some sort of approval of permitting from the Railroad Commission on what is acceptable, we don't know the next direction to take.

Q. In the event the Commission decides in this case that some action should be taken to attempt to place cement in the well, does Baytex request that we be given some - - be given some specific guidance as to where cement should be placed and what amount should be placed in the well?

A. Absolutely.³⁷

On cross-examination, Enforcement Director Cooney asked Mr. Ridge, Vice President of Baytex, about the Zaunbrecher email. Specifically, he established that the text of the Zaunbrecher email was about a sidetrack to get around a fish in the hole, questioning whether or not the Commission agreed that was a random deviation. Mr. Cooney also established that the text of the Zaunbrecher email did not mention setting a plug, nor did it mention that the abandoned wellbore passed through 1,000 feet of aquifer. Mr. Cooney asked if Baytex had an estimate of the cost of performing a plugging operation. Mr. Ridge replied that "The range of costs are probably in the, you know, in the million dollar range to fix this, potentially."³⁸

Q. (Mr. Cooney) And so the question is: Do you agree that Mr. Huie's willingness to engage in an interactive process in working through this problem is a reasonable approach?

A. (Mr. Ridge) No, I agree. I agree with that.

Q. Do you agree that it is the operator's responsibility to abide by the regulations of the Commission?

A. No question, yeah.

³⁷ Tr., p. 96, lines 22-25; p. 97, lines 1-23.

³⁸ Tr., p. 103, lines 1-3.

Q. Do you agree that more likely than not as we - - with all due respect to Olin - - I'm sorry about this, but the operator is particularly equipped, particularly an operator such as Baytex with the expertise and resources to address a complicated problem like this?

A. Yes, I do.³⁹

On re-direct, Mr. Dashiell asked Mr. Ridge to clarify that the three wells on the drilling pad were horizontal wells at the depth of the Eagle Ford, but were drilled vertically from the pad. Mr. Ridge replied that the wells are a little offset, but that they were generally drilled vertically. "At the surface, the wells are 20 to 30 feet apart."⁴⁰

At this point, Baytex called its second witness, Mr. Luis Chirinos. Mr. Chirinos is the Director of Subsurface Engineering for Baytex and has a Bachelor of Science in Petroleum Engineering. He also has a Masters in Business Administration from the University of Texas at Arlington. At the time of the hearing, he had been employed by Baytex for approximately two months.

Mr. Chirinos testified that the original wellbore is 5,679 feet deep and its bottom is still within the Carrizo. The drilled hole was 12 1/4 inches in diameter with 9 5/8 inch diameter casing. The casing weighs 40 pounds per foot and has an inside diameter of 8.835 inches. During the running of the casing in the hole, the casing parted between joints number 87 and 88. Mr. Chirinos stated that, at the time the casing was lost, the hole was filled with "9.2 mud water base."⁴¹

It was initially believed the casing dropped all the way to the bottom of the hole, but when the lost casing was tagged, it was determined the casing had fallen 64 feet short of total depth (TD). The fact that the casing did not fall all the way to the bottom indicated to Mr. Chirinos that debris in the bottom of the hole prevented the casing string from falling all the way to the bottom. Mr. Chirinos believes the debris is compacted, making it impossible, at the present time, to pump cement into the hole.⁴²

Baytex set a 500 foot plug in the abandoned hole over the lost casing. The top of the plug was at 1,489 feet and the bottom at 1,989 feet. Baytex then kicked off the new wellbore at the 1,489 foot depth, sidetracked, drilled hole to 5,678 feet, and then set a string of 9 5/8 casing with cement returns to the surface. The sidetracked well was then drilled with 8 1/2 inch casing through the Eagle

³⁹ Tr., p. 103, lines 20-25; p. 104, lines 1-9.

⁴⁰ Tr., p. 105, lines 22-23.

⁴¹ Tr., p. 110, line 10.

⁴² Tr., p. 111, lines 9-11.

Ford where it was completed as a horizontal producer.

Baytex then discussed the well log of the Edward B. Sturcken #1, drilled by Filon Exploration approximately 1350 feet west/northwest of the Julie Beck 9H. This log was presented as a close match to the log that might have been taken on the Julie Beck 9H. Both wells pass through the Atkinson Sand, a 40 foot sand interval that produced 39.14 BCF of gas prior to 1991. The original pressure in the Atkinson Sand was 1,895 psi. After depletion, the reservoir pressure dropped to 70 psi. In 1993, the Commission approved the Atkinson Sand as a gas storage reservoir. Subsequent to that Commission Order, there has not been any attempt to use the Atkinson Sand as a storage reservoir and, Baytex contends, it remains pressure-depleted. Technical Examiner Dubois asked if the Julie Beck 9H was located within the gas storage unit area. Mr. Ridge replied that the Julie Beck 9H was not located within the gas storage unit area, which was to the north of the Julie Beck 9H. Wells drilled through the gas storage unit area had to comply with special requirements that Baytex did not have to meet.⁴³

Baytex believes the de-pressured Atkinson Sand creates a problem for pumping cement. If cement were pumped into the abandoned hole, it would naturally attempt to fill the pressure sink provided by the pressure-depleted Atkinson Sand.

Baytex reminds us that we are dealing with a 12 1/4 inch hole with 9 5/8 diameter casing within it, and with drilling mud in the annulus between the pipe and the wall of the hole. Baytex has considered several ideas in terms of where cement could be placed in the hole to isolate the Carrizo. If the abandoned hole is encountered higher up in the stratigraphic section, above the Atkinson Sand, it would be possible to fill the annular space and isolate the freshwater below the Atkinson Sand from the saltwater above. Baytex calculates the volume of the annulus to be 211 barrels of cement. Baytex believes the best place to intersect the abandoned hole would be at roughly 4,350 feet, which would be in the overlying Reklaw Formation

In theory, the intersection could be made, but it would involve drilling a 4,000 foot wellbore and trying to locate a 12 1/4 inch diameter target. Cumulative deviation could cause the 12 1/4 inch hole to be missed. Even if the intersection were possible, it might intersect the hole where the pipe was leaning against the sidewall of the hole, making it difficult to pump cement into the hole. If the intersection was successful, Baytex would pump in 420 barrels of cement, which is twice the volume calculated to fill the hole. However, even pumping twice the calculated volume, there is no way to know where the cement actually goes.⁴⁴ In Mr. Chirinos' opinion, the last 65 feet of the hole will not take any cement, as he believes it is filled with debris.

Technical Examiner Dubois asked if there was any mud loss when the Julie Beck 9H was drilled through the Atkinson Sand. Mr. Chirinos replied that there was not, to his knowledge, but anecdotally, there was mud loss when one of the other wells on the pad was drilled. Mr. Dubois then

⁴³ Tr., p. 118, lines 6-14.

⁴⁴ Tr., p. 123, line 7.

asked if a gyro survey was run on the abandoned hole. Mr. Chirinos replied that there had been, meaning that Baytex has a survey showing where the abandoned drillhole was at the time of casing loss.⁴⁵

Baytex believes the most feasible way to isolate the Carrizo Sand is to use the existing producing wellbore of the Julie Beck 9H (see Exhibit V). At the top of the Reklaw Formation, the holes are 146 feet apart, and at the top of the Atkinson Sand, they are 125 feet apart. Once the Julie Beck 9H is depleted, Baytex will set cement plugs in the well according to Commission requirements, setting one plug that Baytex can sidetrack off of. Baytex would mill a hole in the 5 ½ inch production casing and the 9 5/8 surface casing and drill a hole in the direction of the abandoned original hole. The intercept point would be just above the top of the Atkinson Sand, at 4,400 MD (or 4,362 TVD). When the intersection is complete, Baytex would pump cement that should isolate the freshwater in the Carrizo from the saltwater in the overlying Reklaw.

Baytex asserts the proposed procedure would result in the loss of any further ability to produce the current Julie Beck 9H in the Eagle Ford. The Eagle Ford produces sour gas, which compromises the integrity of the production casing. Baytex asserts it would no longer be able to produce the Julie Beck 9H after cutting through the production casing and the surface casing.

One option Baytex offered earlier in discussions with Commission staff was an attempt to squeeze cement from the sidetrack hole across to the abandoned hole. Baytex no longer thinks that is a good idea. Likewise, Baytex no longer believes an attempt to drill through the 500 foot cement plug and intercept the fish is a viable possibility.

Mr. Chirinos states that the interception described on its Exhibit 4 was the most feasible solution. Baytex has directional surveys on both holes and believes it has a good chance of making the intersection. However, Baytex would like the Commission to specify ahead of time what will satisfy successful isolation with cement.

Mr. Chirinos believes the method depicted on Baytex Exhibit 4 is better than attempting to intersect by drilling a new hole from the surface. The drill pad has three producing wells, plus the abandoned casing, so the chances of collision increase. The cumulative error drilling from the surface to the intersection point reduces the chances of a successful intersection.

Baytex believes that drilling from the surface and trying to intersect the top of the 500 foot cement plug is also risky. The drillbit would have a tendency to walk off the cement plug and drift into the adjacent softer sediments, missing the fish below.

On cross-examination, Mr. Cooney asked how long Mr. Chirinos had been employed by Baytex. Mr. Chirinos replied two months. Mr. Chirinos had nothing to do with the decision making in Aurora/Baytex at the time the casing parted in the original hole.

⁴⁵ Tr., p. 128, lines 1-8.

- Q. (Mr. Cooney) You talked a lot about a lot of complications when you were talking about the Baytex Exhibit No. 4, agreed?
- A. (Mr. Chirinos) Yes.
- Q. If Baytex would have attempted to plug this well at the time they lost the surface casing string, more or less complications? Fewer complications, right?
- A. Absolutely. It was a fresh hole and yes.
- Q. There are a lot more options in dealing with a fresh hole, correct?
- A. Absolutely, if you knew the exact location of the fish.⁴⁶

Under cross-examination, Mr. Chirinos stated that Baytex Exhibit 4, as presented in the present hearing, was the first time Commission staff had seen the diagram. "I know this is the first time the proposal to kick off from the producing well and intersect the junked hole has been put forth, yes. I can't testify to whether the diagram that that proposal is sketched into has not been produced before."⁴⁷

- Q. (Mr. Cooney) And in getting ready for this case, did you study the well reports for any of the other ten wells that are on this lease?
- A. (Mr. Chirinos) I did not study the drilling reports for the other wells. No, sir.
- Q. So you wouldn't know if the Atkinson sand caused any problems with surface casing cement in any of the other wells.
- A. I don't have that knowledge.⁴⁸

⁴⁶ Tr., p. 139, lines 2-12.

⁴⁷ Tr., p. 140, lines 10-14.

⁴⁸ Tr., p. 140, lines 15-23.

Regarding the salinity of the water in the Atkinson Sand, Mr. Cooney asked Mr. Chirinos to look at the log section at 5,640. Handwritten notes on the log describe the water at that point as “brackish”. Mr. Chirinos agreed that it indicated higher salinity than in a freshwater zone. Mr. Cooney then noted that the log section Mr. Chirinos had just looked at was very similar to the log section through the Atkinson Sand between 4,450 feet and 4,500 feet, demonstrating the two log sections both indicated “brackish water”, or, at least, water higher in salinity than a freshwater zone. Mr. Chirinos stated that he agreed with that.⁴⁹

Q. (Mr. Cooney) Would you recommend that Baytex or you certainly wouldn’t expect Baytex to consult the Railroad Commission to ask the Railroad Commission to tell Baytex how to drill and complete its wells, would you?

A. (Mr. Chirinos) No sir. Ultimately, it is our responsibility.⁵⁰

On re-direct, Mr. Dashiell attempted to distill Baytex’s position in the hearing.

Q. (Mr. Dashiell) Mr. Chirinos, if the Railroad Commission wants to tell us to go out there and plug the well in any way we think is proper and that satisfies them, are we willing to do it that way? I mean, essentially, we’re simply seeking some cooperation into what is compliance with this unique situation, correct?

A. (Mr. Chirinos) We are, yes, seeking cooperation because as I stated before in my testimony, I can pump 2,000 sacks of cement and the Commission’s technical staff may not deem that satisfactory.⁵¹

Enforcement’s Rebuttal Case

Enforcement indicated that it wished to recall Mr. Macnamara to rebut statements made regarding the role of Commission employee Scott Rosenquist. Counsel for Baytex indicated this would be waste of time.

Mr. Dashiell Examiners, we are beating a dead stipulated horse here. We’re not claiming that we complied with any

⁴⁹ Tr., p. 142, lines 11-19.

⁵⁰ Tr., p. 145, lines 22-25; p. 146, line 1.

⁵¹ Tr., p. 146, lines 7-16.

notification requirements by anything we gave Mr. Rosenquist. We're not claiming it satisfied the District Office notification requirement. We've admitted it did not. All...

ALJ Enquist

And that's what I've taken from that.

Mr. Dashiell

All we were showing was that we did not hide anything from them. That's it.⁵²

Mr. Cooney asked that the ALJ and Technical Examiner take Official Notice of the production records for the lease and the P-5 filings. The ALJ and Technical Examiner indicated they would take Official Notice of the production records and the P-5 filings of Baytex and its predecessor.

Mr. Cooney then asked that the ALJ and Technical Examiner take Official Notice of a Commission Order concerning the White Point East well. This was designated Staff Exhibit 12 and admitted into the record. The Final Order in Oil & Gas Docket No. 4-83,328 required an operator, Phillips & Spradley, to post a \$250,000 letter of credit to ensure the plugging of the Kirk A-1 and A-3 wells upon depletion of their respective reservoirs. This was offered as precedent for Staff's alternative position that Baytex, or its successor, be required to post additional financial assurance in the event that the Commissioners decided to grant Baytex its requested five year extension to produce the Julie Beck 9H.

Staff indicated its suggested financial assurance amount would be \$1,000,000. Mr. Ridge, on behalf of Baytex, stated that the estimate of \$1,000,000 was based on previously considered options for plugging off the abandoned hole, but was not based on the option offered by Baytex in its Exhibit No. 4 late in the current hearing.

Closing Statement - Enforcement

Baytex and Enforcement have agreed, subject to approval by the Commissioners, that the penalty portion of the case be settled for \$30,000. Enforcement asks that the ALJ and Technical Examiner memorialize the penalty agreement by assessing the \$30,000 penalty or otherwise acknowledging the settlement recommendation in the Final Order.

The case came to hearing because Baytex abandoned a wellbore without isolating 1,000 feet of a major fresh water aquifer with cement plugs. Statewide Rule 14(d)(2) provides "Cement plugs shall be set to isolate each...usable quality water strata." Enforcement urged presentation of a Final Order requiring Baytex to re-enter the abandoned wellbore in accordance with a plan approved by the District Office, and isolate the Carrizo Aquifer with cement plugs above and below the aquifer,

⁵² Tr., p. 146, lines 24-25; p. 147, lines 1-8.

as required by the Groundwater Advisory Unit letter. Staff maintains that it is Baytex's responsibility to determine how they achieve compliance. Staff will work with the operator through the process until everyone agrees that the operator has done all it can reasonably do. However, that point cannot be reached until the operator begins actual operations to isolate the Carrizo Aquifer. Enforcement urges the ALJ and Technical Examiner to recommend an order requiring Baytex to initiate plugging procedures within six months of the signing of a Final Order. At this point, Staff cannot and should not be expected to identify and agree to any stopping point other than successful isolation of the aquifer with cement.

Alternatively, if the ALJ and Technical Examiner recommend an Order allowing Baytex to delay plugging, staff urges adoption of an Order requiring Baytex to post additional financial assurance in the form of a letter of credit in the amount of \$1,000,000. The financial assurance should remain in place until the plugging of the abandoned wellbore is completed and approved by the Commission, and should run with the well upon every transfer to subsequent operators.

Staff notes that it has no legal basis for unilaterally deviating from the requirement that fresh water zones be isolated with cement. The language of Statewide Rule 14(d)(2) is mandatory - the language used is "shall", not "may". If Baytex is allowed to further delay engaging in an effort to isolate the Carrizo, it will be more difficult to draw a firm line with operators in the future on this point.

Closing Statement - Baytex

Baytex states that the present situation arises from a mis-communication between Baytex's Engineering Consultant (Mr. Zaunbrecher), the Railroad Commission Austin office (Scott Rosenquist) and Baytex. Baytex believed in good faith that it had obtained approval to set a 500 foot cement plug above lost casing, and to sidetrack and continue drilling to its Eagle Ford target. At no point did Baytex or its consultants attempt to withhold any information from the Commission. Baytex included a diagram of the proposed cement plug and abandoned surface casing in its email communications to Mr. Rosenquist prior to setting the plug.

Baytex recognizes that the abandoned wellbore is not in compliance with Commission rules and has reached an agreed penalty settlement with Enforcement staff. Baytex joins in Enforcement's request that the penalty agreement be memorialized by assessing a \$30,000 penalty, acknowledging Staff's penalty recommendation and acceptance of the payment in the Final Order in this case.

Baytex continues to assert that the Carrizo Aquifer is not threatened by the abandoned Julie Beck 9H wellbore. The Carrizo is normally pressured, at about 1,890 psi, while the overlying Atkinson Sand was de-pressured in 1991 through production of 39 BCF of gas, dropping its pressure to 70 psi. The overlying Queen City Sand is normally pressured, so any saltwater in the Queen City Sand would not migrate down into the Carrizo Sand, but would flow directly into the Atkinson Sand due to its low pressure. Baytex believes the Atkinson Sand is a freshwater sand that poses no threat to the Carrizo. Baytex also notes that the abandoned hole is filled with 9.2 PPG mud, which acts as a further barrier to saltwater intrusion into the Carrizo. Reports from the Texas Water Development

Board show that there is a naturally occurring outflow from the Carrizo into the overlying Reklaw Formation (of which the Atkinson Sand is a member).

Baytex has met with Commission Staff for over a year, asking what procedure would be acceptable to the Commission, but has not received an answer. When asked why Staff would not approve a procedure, when it routinely reviews applications to plug presented on Forms W-3A, Staff's response was that the situation with the abandoned wellbore cannot be compared to review of a Form W-3A, as they are totally different situations. Given that a W-3A is the Commission Form for plugging a well, Baytex is uncertain as how to apply for the plugging operation.

Baytex has considered several means of achieving compliance. One idea is to drill a new wellbore from the surface to intersect the abandoned wellbore just above the Carrizo and attempt to pump cement into the annulus between the 9 5/8 casing and the 12 1/4 inch hole. The first problem with this is that the a new intersecting well would be positioned on a three well drilling pad, which would pose a risk of wellbore collision. Then there is the risk of actually being able to intersect the new wellbore with the abandoned wellbore at a depth of 4500 feet. Even if this could be successfully achieved, the orientation of the abandoned surface casing in the wellbore would impact the ability to pump cement into the abandoned wellbore. Even then, it would be impossible to determine where and whether a cement plug had been set.

Baytex has also considered drilling through the 500 foot cement plug on top of the wellbore and attempting to enter the abandoned fish. Baytex believes this is impossible, as the inside diameter of the fish is 8.8 inches, and any attempt to re-enter this small target with a drillbit of almost the same diameter is not technologically feasible.

Baytex believes the best of the available options is to allow the present producing well, the Julie Beck 9H, to continue producing to depletion, and then cutting a window for a sidetrack from that well. The abandoned wellbore is nearby, and a cement plug could be placed above the top of the Carrizo, thereby isolating it.

No matter which method is used, Baytex proposes that the Final Order recommend collaboration between Baytex and the RRC as to the volume, blend of cement and pumping technique, at Baytex's discretion, to obtain the best isolation around the casing.

Baytex does not believe any additional financial assurance is necessary. The figure requested by Enforcement, \$1,000,000, far exceeds Baytex's estimate of the expense involved in sidetracking from the existing Julie Beck 9H producing well.

Baytex requests that any requirement of plugging the abandoned well be deferred for a period of five years. Baytex further requests that the Order allow Baytex to utilize the best method, in its discretion, for attempting to plug the well at the time it is ordered to conduct the operation. At that time, Baytex would inform the Commission of its preferred method and seek to coordinate its efforts with Staff.

ALJ's and Technical Examiner's Opinion

Baytex does not dispute that it has violated a number of Commission rules regarding protection of usable quality water strata and the proper plugging of an abandoned wellbore. Baytex USA Development, LLC ("Baytex") does not dispute that is the same entity as, and was previously named, Aurora USA Development, LLC, ("Aurora") having made a name change in 2014. Aurora was the entity responsible for drilling the Julie Beck 9H in October, 2013. The Julie Beck 9H, as reported on Commission Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log) on a 24-hour test, had an initial potential of 656 barrels of oil and 1,341 mcf of gas.

The Daily Drilling Reports⁵³ (see **Exhibit VI**) show that Aurora's drilling contractor, HTK Drilling Management, LC, began drilling the Julie Beck 9H on September 30, 2013 at approximately 9:00 PM. By 6:00 AM on October 1, the wellbore had been drilled to 2,640 feet. Drilling proceeded rapidly, and between 6:00 AM and 7:00 PM on October 1, 2013, the hole had been drilled to 5,679 feet and was circulated at 795 GPM at 3,000 psi to clean out the hole.

In the early morning hours of October 2, 2013, between midnight and 4:00 AM, pipe was tripped in the hole from surface to 5,679 feet. The ALJ and Technical Examiner find it significant that the Daily Drilling Report states "...work thru tight spots @ 519', 2,920', 3,342' and 3,500'." (underlining added) We believe that the casing failure was likely caused by the casing seizing in the drillhole, leading to the parting of the casing between joints 87 and 88. This belief is bolstered by the Daily Drilling Report for the well when the sidetrack was being run. The October 7, 2013 Daily Drilling Report indicates the sidetrack had been completed to depth (5,678 feet), on October 6, 2013. Between 4:30 PM and 7:00 PM on the same day, the drilling report notes "POOH (pulled out of hole) from 5,678 to BHA (bottomhole assembly) - No tight spots" (explanatory parentheticals and underlining added). This indicates HTK had learned from its previous experience with tight spots in the hole and sought to avoid a repetition of the previous casing failure.

Returning to the ill-fated original wellbore, between 5:30 AM and 6:00 AM on October 2, the casing was being pulled out of the hole from 5,679 feet up to 4,400 feet. Between 6:00 AM and 8:00 AM on October 2, the crew finished pulling the casing out of the hole. The process was reversed between noon and 6:00 PM on October 2, with surface casing being run in the hole to 3,410 feet, and then from 6:00 PM to 7:00 PM run to 3,950 feet. From 6:00 PM to 7:00 PM, surface casing had been run to 3,950 feet.

Between 7:00 and 9:00 PM on October 2, 2013, the surface casing parted between joints 87 and 88, leaving 3,618 feet of casing in the hole. HTK began fishing operations in an attempt to recover the lost casing and succeeded in attaching a grapple to the lost casing between 5:00 and 6:00 AM on October 3. From 6:00 AM to 9:00 AM, the crew attempted to jar the casing loose with no

⁵³ The Daily Drilling Reports record events over a 24-hour period in military time, with the peculiarity that each report details the events of the preceding day starting at 06:00 hours, or 6:00 AM, proceeding to the current day (as noted in the upper left hand corner of the report) to 06:00 hours or 6:00 AM.

success. The Daily Drilling Report indicates that at some time between 10:30 AM and 11:00 AM on October 3, the crew released the fish. Daily Drilling Reports are a reconstruction of events and their timeline will be an approximation of events, but will not always agree exactly with other time-stamped documents. The Daily Drilling Report reported time is probably off by an hour, with the fish being released upon receipt of the Zaunbrecher email informing Aurora “No action required”.

Baytex Stipulation Exhibit No. 3 indicates that Bob Zaunbrecher of HTK Drilling Management sent an email to the Engineering Unit of Technical Permitting in Austin at 11:21 AM on October 3, 2013. The email informed the Engineering Unit that HTK has lost casing in the hole of the Julie Beck 9H, requiring a mechanical bypass to continue to the permitted bottomhole location. Mr. Zaunbrecher asked for verification that this constituted a “random deviation” under the Rule (a reference to Statewide Rule 11). By 11:40 AM on the same day, the Engineering Unit replied to Mr. Zaunbrecher, agreeing that the operation he described constituted a random deviation.

The text of the HTK/Zaunbrecher email spoke solely in terms of whether or not a sidetrack around junk in the hole is considered a “random deviation” as long as the sidetrack is not directionally deviated to a different bottomhole location. The email states that the originally permitted bottomhole location remained the target.

Statewide Rule 11(d)(3)(C) states:

If the necessity for random deviation arises unexpectedly after drilling has begun, the operator shall give written notice by letter or telegram of such necessity to the appropriate District office and to the Commission office in Austin, and , upon giving such notice, the operator may proceed with the random deviation. [emphasis added]

The reply from the Commission’s Engineering Unit of the Technical Permitting Section in Austin merely stated agreement that the described operation did constitute a “random deviation” and that the operator had complied with the requirement of Commission notification.

Based on this single reply, HTK emailed management at Aurora the message “No action required”, plus the statement “See RRC’s acknowledgment of notification of our intent to sidetrack, for your records. Also, I am attaching onto this email what was originally attached to the RRC email, so that you have a complete record.”

The attachments to the Zaunbrecher email were a copy of the drilling permit for the well, and a wellbore schematic, showing that HTK planned to place a 500 foot plug over the lost surface casing. Baytex’s counsel, Mr. Dashiell, acknowledged in his Opening Statement that Baytex has no way of knowing if the Engineering Unit ever opened the attachments.

Dashiell: The consultant that Baytex was using to drill the well, the engineering consultant contacted Mr. Rosenquist. He actually attached a diagram that will show you, that shows the condition of the well and where

they proposed to put a plug. Now, I don't - - I have no idea whether Scott even looked at it and we're not putting any blame on Scott Rosenquist, but the only significance we place on that is from the beginning, we were, you know, trying to lay all our cards on the table and believed - - at least the drilling contractor believed that simply notifying and getting the OK from Mr. Rosenquist was sufficient." [emphasis added]⁵⁴

After informing the RRC Engineering Unit that it was going to perform a "random deviation", and receiving confirmation that the maneuver constituted a "random deviation", HTK apparently informed the drilling crew that it could abandon fishing operations and begin the random deviation operation, first setting a 500 foot plug over the lost casing.

The ALJ and Technical Examiner do not believe HTK acted in good faith at this point. The response from the Engineering Unit merely indicated agreement with the body of the Zaunbrecher email, confirming that the text of the email properly referred to a "random deviation" around junk in the hole. Whether or not anybody in the RRC Engineering Unit opened the attachments to the email is immaterial. The Engineering Unit did not offer any opinion on HTK's proposed cementing procedures, nor should they have, as this is not within their area of responsibility. Cementing issues are a matter for District Office approval.

Statewide Rule 11 (d)(3)(C) requires notice of a "random deviation" to both the Commission in Austin and to the District Office. HTK did not notify the District Office of the "random deviation", not did it seek the approval of the District Office for its proposed 500 foot plug over the lost casing. As a drilling contractor, HTK knew, or should have known, that cementing operations required the approval of the District Office.

Baytex asserts that the email from HTK to the Engineering Unit of the Technical Permitting Section at the Commission on October 3, 2013, demonstrates that it did not try to hide anything from the Commission. As Baytex phrased it in its Closing Statement, "Due to mis-communication between Baytex's Engineering Consultant (Mr. Zaunbrecher), the Railroad Commission's Austin office (Scott Rosenquist), and Baytex, Baytex believed in good faith that it had obtained approval to set a 500 foot cement plug above the casing (from 1489 feet to 1989 feet) and to sidetrack and continue drilling to its Eagle Ford target."⁵⁵

The term "mis-communication", as employed here by Baytex, implies an unfortunate misunderstanding in which all parties shared the blame for subsequent events. All parties do not share the blame. Referring to the email exchange between HTK and the RRC Engineering Unit as a "mis-communication" is a mis-characterization used by Baytex to evade responsibility.

⁵⁴ Transcript, p. 8, lines 22-25, p. 9, lines 1-4.

⁵⁵ Baytex Closing Statement, beginning of second full paragraph.

The ALJ and Technical Examiner find the October 3, 2013 HTK/Zaunbrecher email to be a variation of an old practice operators have long used at the Commission. Basically, an operator with a difficult or expensive problem will “shop” around at the Commission, sometimes calling or communicating with several Commission employees and providing them with a carefully crafted and limited set of facts. The limited facts are designed to elicit a response from at least one Commission employee that would provide the operator with a plausible way to dodge responsibility for its problem. Depending on the department of the Commission involved, the practice has been known as “examiner shopping”, “engineer shopping”, “proration shopping” or “P-5 shopping” (this is not an exhaustive list). The goal of this practice has always been to elicit an answer from a Commission employee that the operator could consciously misconstrue and later rely on while professing “Hey, I wasn’t trying to hide anything and I only did what the Commission told me to do.”

Although there is no evidence HTK/Zaunbrecher contacted several Commission employees to obtain a desired answer, the October 3, 2013 HTK/Zaunbrecher email is a good example of “engineer shopping”. The response HTK obtained from the RRC’s Engineering Unit merely stated agreement that the proposed bypass of junk in the hole constituted a random deviation and that HTK had correctly Communicated the problem to the RRC’s Austin Office as required by Statewide Rule 11. The Engineering Unit email did not indicate that HTK has satisfied the obligation to report the problem to the District office and did not grant authority to set a cement plug. The Engineering Unit was not the Commission entity responsible for granting permission to set cement plugs. The Engineering Unit email did not grant an exemption to the requirement to isolate freshwater strata. Baytex knew, or should have known, that the District Office was the proper Commission entity for obtaining permission to set cement plugs and determine how freshwater strata were to be isolated. Rather than correct the problem when the greatest number of options were open, HTK and Aurora elected to forego those options and continue drilling. Unfortunately for HTK and Aurora, the Engineering Unit later reviewed Aurora’s completion documents for the Julie Beck 9H and found the problem.

Obviously, time is money when drilling operations are being conducted. In the interest of continuing the drilling of the Julie Beck No. 9H with the least interruption and expense, HTK and Aurora avoided contact with the District Office even though they knew, or should have known, that Statewide Rule 11 required notification of the District Office regarding a random deviation. If HTK and Aurora had contacted the District Office, they would have become involved in what District Director Huie referred to as an “iterative discussion” as a means of resolving the problem of the lost casing and proper plugging. Acting in bad faith, and with disregard for the protection of a major Texas aquifer, Aurora and HTK deliberately avoided contact with the District Office.

When the borehole was still open, HTK had no trouble attaching a grapple to the lost fish. This was the point in time at which a broad range of possibilities existed for correcting the problem. HTK, working in conjunction with the District Office, might have been able to cut the lost casing into manageable lengths and pull those lengths of pipe out of the hole. If the casing was suspended in the hole, it might have been possible to pump cement into the casing and circulate through the casing shoe back up to the top of the fish. Even if the lower end of the casing was buried in sloughed-off sediment, it might have been possible to perforate the casing above the sediment and

circulate cement through the perforations to the top of the fish. These and other options for correcting the problem quickly and relatively economically were lost when HTK hurriedly set a 500 foot cement plug and bypassed the lost casing.

The ALJ and Technical Examiner believe Baytex has employed a number of arguments, in bad faith, for purposes of delay. Baytex has argued that the lost casing is no threat to the Carrizo Aquifer because, according to Baytex, the lower end of the casing is buried in sloughed-off sediments at the bottom of the abandoned wellbore. Based on this assertion, Baytex argues that there is no need to place a plug in the abandoned wellbore.

There are two problems with Baytex's argument. First, no knows, or can know, if the bottom of the lost casing string is buried in sediments or wedged and hanging above the bottomhole. Second, it is not just the casing string that threatens the Carrizo Aquifer. The abandoned uncemented wellbore is also a conduit between the freshwater Carrizo Aquifer and the overlying saltwater of the Queen City Sand, Reklaw Formation and Atkinson Sand. Baytex attempted to assert that the Atkinson Sand is a freshwater sand, but we note that Baytex's expert witness, Mr. Chirinos, admitted under cross-examination that the water in the Atkinson Sand appeared to be brackish or at least higher in salinity than a freshwater zone.⁵⁶

Baytex complains that Enforcement has never explained how compliance could be achieved. It is not the place of Enforcement, the District Office or Field Operations to tell an operator what it must do to achieve compliance. It is their place to explain to the operator which Commission rules apply and what constitutes compliance with Commission rules. Additionally, the District Office may make suggestions based on its years of dealing with particular fields within the District boundaries. Baytex, in the person of its Vice President, Barclay Ridge, agreed that an iterative process through the District Office was a reasonable approach, that it was the operator's responsibility to abide by Commission regulations, and that Baytex was equipped with the expertise and resources to address the problem (see testimony of Barclay Ridge, footnote 38).

Baytex has argued that drilling a new well to intersect the old abandoned well is neither prudent nor necessary for a number of reasons: (1) a new well might miss the old wellbore; (2) there is a collision risk due to the three producing wells on the pad; (3) even if the old wellbore was intersected, the abandoned casing might lie against the old wellbore, making pumping cement into it difficult; (4) the Atkinson Sand is a porous, depleted sand that might absorb the cement pumped downhole, preventing the setting of a good plug; (5) the cost of the operation would be excessive, given the low possibility of success and the impossibility of confirming success.

Undoubtedly, there is risk inherent in any drilling operation. However, Baytex has gyro surveys of the wells that were drilled on its pad and has a good chance of making a successful interception, while avoiding collision with the existing producing wells. If the old wellbore is intercepted, and the abandoned casing is leaning against the interception point, it may be possible

⁵⁵ Tr., p. 142, lines 11-19.

to mill into the abandoned casing and clear the way for cementing operations. Once interception is initiated, these will be multiple decisions that Baytex must make to achieve compliance.

Baytex has made much of the Atkinson Sand, an area gas sand that was depleted, and was subsequently designated a gas storage reservoir by the Commission. However, testimony by Baytex's own expert, Mr. Ridge, indicated the Julie Beck 9H does not lie within the footprint of the designated gas storage reservoir. In 1993, the Atkinson Sand was estimated to have a depleted reservoir pressure of about 70 psi following the production of 32 BCF of gas. There is no evidence of reservoir pressure since 1993. However, Staff's Exhibit Nos. 7 and 8 indicate water flow from the Carrizo into the Reklaw, suggesting the Atkinson Sand pressure may have equalized somewhat over time. Further, the log of the Edward B. Sturcken #1, located only 1350 feet west/northwest of the Julie Beck 9H⁵⁷, demonstrates that the Atkinson Sand, at this location, is wet. It is most likely normally pressured at 0.45 or 0.47 psi/ft at this location, the pressures for brackish water and saltwater, respectively. It's ability to act as a sink for cement dispersal would more likely be related to pore volume than pressure.

Baytex has also argued that the cost of the cementing operation would be excessive, considering the low possibility of success and what Baytex terms the impossibility of confirming success. The situation Baytex finds itself in is one of its own making, a natural consequence of failing to take steps to correct the problem of lost casing in October, 2013 when the incident occurred. The problem is basic in concept; an open wellbore and uncemented casing possibly compromising a major Texas aquifer. The solution may be difficult and expensive, and the success of the operation may have to be inferred rather than measured, but one of the Commission's central duties is protection of freshwater (see Texas Natural Resources Code §89.001).

Last, Baytex argues that the solutions it has proposed to Enforcement prior to this hearing are all fatally flawed, and that the only feasible solution is to use the wellbore of the producing Julie Beck 9H to access the abandoned wellbore. Baytex states that the Julie Beck 9H should be allowed to produce at least another five years, to prevent waste, before a window is cut in its casing and interception of the old wellbore is attempted. To say the least, this solution is self-serving. Under Baytex's proposal, operations to protect the Carrizo Aquifer would not begin until 2021, meaning the aquifer would have been exposed to cross-contamination or loss of freshwater for eight years before any effort is made to isolate it.

The ALJ and Technical Examiner find that Baytex has not acted in good faith in its negotiations with Enforcement and has not acted in good faith in its representations in this hearing. The record evidence establishes that Baytex has gyro surveys of the wells it drilled, which give it a very good chance of intercepting the abandoned wellbore from a surface location, sparing the use of the producing Julie Beck No. 9H.

The ALJ and Technical Examiner agree with Enforcement's assessment that it is

⁵⁷ Tr., P. 112, lines 21-22.

Commission Staff's responsibility to inform Baytex of what constitutes compliance under Commission rules. It is then up to Baytex to decide how to achieve compliance. The process of compliance is necessarily open-ended. The first attempt to achieve compliance may fail due to an unforeseen circumstance, and multiple attempts may be necessary. Staff will work with Baytex until everyone agrees that Baytex has done all that it reasonably can do.

The ALJ and Technical Examiner agree with Enforcement that Baytex violated several Commission Statewide Rule provisions. Baytex has previously agreed that it violated those rules.

Baytex set a 500 foot cement plug over the lost casing and left 9.2 PPG mud surrounding the lost casing. In doing so, Baytex violated Statewide Rule 13(b)(2)(A)(I) by failing to set and cement sufficient surface casing to protect all usable quality water in the abandoned wellbore of the Julie Beck Lease, Well No. 9H. Additionally, Baytex violated Statewide Rule 13(b)(2)(B) by failing to fill the annular space outside the casing with cement from the casing shoe to the ground surface or the bottom of the cellar, and by also failing to obtain the approval of the District Office Director for additional cementing operations because cement had not circulated to ground surface in the abandoned wellbore of the Julie Beck Lease, Well No. 9H, Permit No. 768246, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas.

Baytex violated Statewide Rule 14(a)(3) by failing to notify the District Office and obtain approval of the work it proposed to do before setting the plug to cement the abandoned wellbore of the Julie Beck Lease, Well No. 9H, Permit No. 768246, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas.

Baytex violated Statewide Rule 14(d)(1) by setting only one plug at the top of the abandoned wellbore, thereby failing to plug the abandoned wellbore in a manner that ensured protection of the formations bearing usable quality water and gas on the Julie Beck Lease, Well No. 9H, Permit No. 768246, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas.

Baytex violated Statewide Rule 14(d)(2) by failing to set cement plugs to isolate each usable quality water strata in the abandoned wellbore on the Julie Beck Lease, Well No. 9H, Permit No. 768246, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas.

Baytex violated Statewide Rule 14(d)(7) by failing to notify the District Director and set additional cement plugs that might have been required by the District Director in the abandoned wellbore of the Julie Beck Lease, Well No. 9H, Permit No. 768246, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas.

Enforcement and Baytex have agreed to a penalty assessment of \$30,000 for the above violations. The ALJ and Technical Examiner note that this assessment has not yet been approved by the Commissioners. The Third Amended Notice of Hearing in this docket contains the standard reference to Section 81.0531 of the Texas Natural Resources Code, under which the Commission may assess an administrative penalty of up to \$10,000 per day per violation. In the instant case, Baytex has committed six violations of Commission rules. Counting the days from the date of

violation, October 3, 2013, to the date of the hearing, November 3, 2015, yields 761 days. The Commission has the authority to assess \$10,000 per day for each of the six violations for 761 days, for a total of \$45,660,000. In view of the facts that (1) the violations committed by Baytex affect a major aquifer, the Carrizo Aquifer, and (2) that as little as a half day of the initial production from the Julie Beck No. 9H would offset the \$30,000 penalty that Enforcement and Baytex have agreed to, the ALJ and Technical Examiner recommend, in the alternative, that the Commissioners assess an administrative penalty in this docket of \$250,000, or such other amount, not to exceed \$45,660,000, that the Commissioners find appropriate.

The ALJ and Technical Examiner are of the opinion that uncertainty will always exist in a situation such as this. Indeed, uncertainty is a normal part of oil and gas exploration and production activities. Uncertainty is not a sufficient reason to delay protection of the Carrizo Aquifer. We recommend that Baytex be ordered to begin drilling, within 90 days of the date of the Commission's Final Order, a new borehole from the surface to intercept the abandoned wellbore and attempt to cement the annulus between the casing and the borehole, and also be ordered to attempt to enter the abandoned casing and fill it with cement. This approach has the advantage of not interfering with current production from the Julie Beck 9H.

In the event that the Commissioners agree with Baytex in this docket and allow Baytex to produce the Julie Beck 9H for five more years before it addresses the abandoned wellbore problem, the ALJ and Technical Examiner recommend that Enforcement's suggestion of requiring Baytex to provide additional financial assurance in the amount of \$1,000,000 be approved. Enforcement requested that the additional financial assurance requirement run with the well, in anticipation that the well may be transferred to other operators.

Based on the record in this docket, the ALJ and Technical Examiner recommend adoption of the following Findings of Fact and Conclusions of Law:

FINDINGS OF FACT

1. Baytex USA Development, LLC ("Baytex") was given at least ten (10) days notice of this hearing by certified mail sent to its most recent Form P-5 address. Baytex appeared at the hearing through its Attorney Doug Dashiell.
2. Well No. 9H on the Julie Beck Lease, in the Eagleville (Eagle Ford-2) Field, Live Oak County, Texas was drilled by Aurora USA Development, LLC ("Aurora") beginning on September 30, 2013. Aurora's drilling contractor was HTK Drilling Management, L.C.
3. On July 15, 2014, Aurora changed its name to, and transferred its financial assurance to, Baytex USA Development, LLC ("Baytex"). All outstanding drilling permits and Forms P-4 in Aurora's name were transferred to Baytex. Baytex is the operator of Well No. 9H on the Julie Beck Lease.
4. The violations in this docket are violations of Commission rules related to safety and the

prevention or control of pollution.

5. The convention followed on the Daily Drilling Reports dates the Report on the day it was compiled, but records operations for the previous 24-hour period, broken down in a variant of military time. For example, a Daily Drilling Report dated October 2, 2013, reports operations from 06:00 hours (6:00 AM on October 1, 2013) through 06:00 hours (6:00 AM on October 2, 2013).
6. The drilling of the subject well, the Julie Beck Lease, Well No. 9H (Permit Number 768246 and API# 42-297-35443), in the Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, began on September 30, 2013 according to the Daily Drilling Report dated October 1, 2013.
 - a. On September 30, 2013, between 21:00 and 21:30 hours, the initial hole was tagged at 113 feet.
 - b. Between 21:30 hours on September 30 and 06:00 hours on October 1, rotary drilling deepened the hole from 113 feet to 2,640 feet.
 - c. According to the Daily Drilling Report dated October 2, 2013, from 06:00 hours (6:00 AM) on October 1, to 10:30 hours (10:30 AM) on October 1, the hole was deepened from 2,640 feet to 3,581 feet.
 - d. After a 30 minute break to service the rig, drilling resumed from 11:00 hours to 19:00 hours (7:00 PM) on October 1, reaching total depth at 5,697 feet.
 - e. From 19:00 hours to 20:30 hours (8:30 PM), the hole was circulated clean at 795 gallons per minute at 3,000 psi.
 - f. From 21:30 hours to midnight of October 1, the pipe was tripped from 5,679 feet to the surface, and the bottomhole assembly was found to be clean.
 - g. From midnight of October 1 to 04:00 hours of October 2, 2013, pipe was tripped in the hole from surface to 5,679 feet, and worked through tight spots at 519 feet, 2,920 feet, 3,342 feet and 3,500 feet.
 - h. At 01:15 hours (1:15 AM) on October 2, the operator sent notification to the RRC that surface casing was about to be cemented.
 - i. From 04:00 hours to 05:30 hours (5:30 AM) on October 2, 2013, while reciprocating pipe in the hole, the hole was circulated clean and returns were monitored.
 - j. From 05:30 hours to 06:00 hours (6:00 AM) on October 2, 2013, the casing was pulled out of the hole from 5,679 feet to 4,400 feet.

- k. The Daily Drilling Report date October 3, 2013 shows that from 06:00 hours to 08:00 hours (8:00 AM) on October 2, the drilling contractor finished pulling the casing string out of the hole, including the bottomhole assembly.
 - l. From 08:00 hours to 12:00 hours (noon) on October 2, the bottomhole assembly was laid down, the rig was serviced, the top drive and block were greased, and IronGate casing equipment was rigged up.
 - m. From noon to 18:00 hours (6:00 PM) on October 2, a safety meeting was first held and then the crew began running 9 5/8", 40#, J-55 surface casing into the hole, reaching 3,410 feet.
 - n. From 18:00 hours to 19:00 hours (7:00 PM), surface casing was run to 3,950 feet.
 - o. From 19:00 hours to 21:00 hours (9:00 PM), as joints 96 and 97 were made up, the weight indicator dropped from 155,000 to 65,000, indicating a loss of 90,000 pounds of casing. Casing was pulled out of the hole, demonstrating casing separation between joints 87 and 88. 87 joints were left in the hole, with a total length of 3,618 feet. The box end was up on the fish (the box end is the female thread end).
 - p. From 21:00 hours on October 2 to 05:00 hours (5:00 AM) on October 3, the crew rigged up Weatherford fishing tools, and tagging the top of fish at 1,997 feet with the grapple assembly.
 - q. From 05:00 hours to 06:00 hours (6:00 AM) on October 3, the grapple was attached to the fish and an attempt was made to work the pipe free.
 - r. From 06:00 hours to 09:00 hours (9:00 AM) on October 3, further attempts to jar the surface casing loose were made without success.
 - s. From 09:00 hours to 14:00 hours (2:00 PM) on October 3, the iron gate casing tools were rigged down, the spear was released and pulled out of the fish, and the Weatherford fishing tools were pulled out of the hole and laid down.
 - t. From 14:30 hours to 19:00 hours (7:00 PM) on October 3, pipe was tripped in the hole to 1,889 and cement circulated from 1,989 to 1,489 (500 feet), creating a 500 foot cement plug over the fish.
7. The top of the abandoned casing was capped with a 500 foot cement plug. The abandoned casing contained 9.2 PPG drilling mud, which also filed the annulus between the casing and the wall of the borehole.
8. The abandoned casing and borehole penetrated roughly 1,000 feet of the Carrizo Aquifer.

9. The Carrizo Aquifer is recognized as a major aquifer in Texas by the Texas Water development Board.
10. The top of the abandoned casing is at 1,989 feet. The bottom of the abandoned casing is at 5,615 feet, or 64 feet short of the bottom of the wellbore.
11. Baytex provided Enforcement with the log of the Edward B. Sturcken Well No. 1 (API# 42-297-31858), drilled by Filon Exploration in 1978, which was offered as a close approximation of what the log for the subject Julie Beck 9H would look like as the Sturcken Well No. 1 is only 1,345 feet west southwest of the Julie Beck 9H.
12. The log of the Sturcken Well No. 1 indicates that the strata at the top of the abandoned casing (1,989 feet) contain brackish water, turning to saltwater at 2,350 feet. The formation water continues to show as saltwater to the top of the Queen City Sand at 3,300 feet, to the boundary between the Queen City Sand and the Reklaw Formation at 4,195 feet and continuing to show saltwater to the top of the Atkinson Sand member of the Reklaw at 4,500 feet, changing to brackish water (or at least water higher in salinity than freshwater) from 4,500 feet at the top of the Atkinson to 4590 feet at the base of the Reklaw and top of the Carrizo Sand (Carrizo Aquifer).
13. At 11:21 AM on October 3, 2013, Mr. Bob Zaunbrecher, President of HTK Drilling Management, L.C. ("HTK"), sent an email to Scott Rosenquist in the Engineering Unit of the Technical Permitting Section of the Oil and Gas Division of the Commission in Austin, stating that he was the Drilling Engineer for Aurora USA Development drilling the Julie Beck 9H in Live Oak County. Mr. Zaunbrecher stated that casing had parted, leaving junk in the hole requiring a mechanical bypass to reclaim the hole. Mr. Zaunbrecher stated his intent to retain the originally permitted bottomhole location and sidetrack around the junk.
 - a. Mr. Zaunbrecher wrote that he had been advised in the past that if the purpose of the sidetrack is to get around a fish in the hole, this is considered an operation of "random deviation".
 - b. Mr. Zaunbrecher wrote "Per the rule, please be advised of Aurora's intent to bypass the junk in the Julie Beck #9H, for the purpose of drilling the well under the same BHL objectives as the original drilling permit."
 - c. Mr. Zaunbrecher further wrote "I have attached a copy of the Drilling permit and a Wellbore Diagram, for your convenience and additional information."
 - d. The subject line of the Zaunbrecher email was "Notification of mechanical bypass due to random deviation - Aurora USA Development, LLC - Julie Beck #9H"
14. At 11:40 AM on October 3, 2013, Scott Rosenquist of the Engineering Unit of the Technical Permitting Section of the Oil and Gas Division of the Commission responded to Mr.

Zaunbrecher's email, stating "I would agree that the operation does constitute "random deviation" and that the operator has complied with the requirement of Commission notification."

15. At 11:51 AM on October 3, 2013, Mr. Zaunbrecher sent an email to several individuals, and to at least one with an Aurora email address, stating "No action required." The email further stated, " See RRC's acknowledgment of notification of our intent to sidetrack, for your records. I am attaching onto this email what was originally attached to the RRC email, so that you have a complete record."
16. The reference to the rule concerning "random deviation" is a reference to Commission Statewide Rule 11(d)(3)(C), which states "If the necessity for random deviation arises unexpectedly after drilling has begun, the operator shall give written notice by letter or telegram of such necessity to the appropriate district office and to the commission in Austin, and, upon giving such notice, the operator may proceed with the random deviation..."
 - a. The body of the 11:21 AM Zaunbrecher email refers solely to a proposed random deviation under Statewide Rule 11.
 - b. The body of the 11:40 AM Rosenquist email response refers solely to the proposed random deviation, a matter falling under Statewide Rule 11, and agrees that the operator has properly notified the Commission.
 1. Mr. Rosenquist, as a member of the Commission's Engineering Unit, has authority to accept notification of Statewide Rule 11 matters.
 2. Mr. Rosenquist's email response does not indicate that he speaks for the District Office, and, in fact, he cannot speak for the District Office.
17. Mr. Zaunbrecher, HTK Drilling Management, L.C. and Aurora USA Development, LLC failed to inform the local District Office in San Antonio of the proposed "random deviation", and failed to inform the District Office that the abandoned wellbore and casing would be isolated by a single 500 foot cement plug over the abandoned wellbore and casing.
18. If the District Office in San Antonio had been notified of the casing lost downhole in the wellbore of the Julie Beck #9H, and if it had known that the lost casing traversed approximately 1,000 feet of the Carrizo Aquifer, the District Office would have entered into an "iterative discussion" with HTK and Aurora on various ways to recover the lost casing from the hole, or, failing recovery, the best way to isolate the Carrizo Aquifer by cementing the well inside and outside the casing.
19. Statewide Rule 13 was amended effective January 1, 2014. The provisions of Statewide Rule 13 cited in this docket are those in effect at the time the violations occurred, in October of 2013.

20. Statewide Rule 13(b)(2)(A)(I), in October 2013, stated “An operator shall set and cement sufficient surface casing to protect all usable-quality water strata, as defined by the TCEQ.”
21. Statewide Rule 13(b)(2)(B), in October 2013, stated “Cementing shall be by the plug and pump method. Sufficient cement shall be used to fill the annular space outside the casing from the shoe to the ground surface or to the bottom of the cellar. If cement does not circulate to ground surface or the bottom of the cellar, the operator or his representative shall obtain the approval of the District Director for the procedures to be used to perform additional cementing operations, if needed, to cement surface casing from the top of the cement to the ground surface.”
22. Statewide Rule 14(a)(3) states “The operator shall cause the notice of its intention to plug to be delivered to the district office at least five days prior to the beginning of plugging operations. The notice shall set out the proposed plugging procedure as well as the complete casing record. The operator shall not commence the work of plugging the well or wells until the proposed procedure has been approved by the district director or the director’s delegate.....The operator shall notify the district office at least four hours before commencing plugging operations and proceed with the work as approved.”
23. Statewide Rule 14(d)(1) states “Wells shall be plugged to insure that all formations bearing usable quality water, oil, gas, or geothermal resources are protected. All cementing operations during plugging shall be performed under the direct supervision of the operator or his authorized representative, who shall not be an employee of the service or cementing company hired to plug the well. Direct supervision means supervision at the well site during the plugging operations. The operator and the cementer are both responsible for complying with the general plugging requirements of this subsection and for plugging the well in conformity with the procedure set forth in the approved notice of intention to plug and abandon for the well being plugged. The operator and cementer may each be assessed administrative penalties for failure to comply with the general plugging requirements of this subsection or for failure to plug the well in conformity with the approved notice of intention to plug and abandon the well.”
24. Statewide Rule 14(d)(2) states “Cement plugs shall be set to isolate each productive horizon and usable quality water strata.”
25. Statewide Rule 14(d)(7) states “the district director or the director’s delegate may require additional cement plugs to cover and contain any productive horizon or to separate any water stratum from any other water stratum if the water qualities or hydrostatic pressures differ sufficiently to justify separation. The tagging and/or pressure testing of any such plugs, or any other plugs, and respotting may be required if necessary to ensure that the well does not pose a potential threat of harm to natural resources.”
26. Regarding the surface casing in the abandoned wellbore, the operator , Aurora, failed to set and cement the surface casing to protect usable quality water strata as required by Statewide

Rule 13(b)((2)(A)(I).

27. The operator, Aurora, failed to seek approval from the San Antonio District Director for procedures to be used where cement had not been circulated to surface, as required by Statewide Rule 13(b)(2)(B).
28. The operator, Aurora, failed to notify the San Antonio District Office and obtain approval of the plugging procedure before setting the 500 foot plug over the abandoned surface casing, as required by Statewide Rule 14(a)(3).
29. The operator, Aurora, failed to set plugs to ensure all formations bearing usable quality water were protected, as required by Statewide Rule 14(d)(1).
30. The operator, Aurora, failed to isolate each usable quality water strata as required by Statewide Rule 14(d)(2).
31. The operator, Aurora, by failing to contact the District Office, prevented the District Director from having the opportunity to properly assess the situation and potentially require additional plugs or other measures to isolate and protect the Carrizo Aquifer pursuant to Statewide Rule 14(d)(7).
32. As stated in V.T.C.A., Natural Resources Code §89.001, it is the declared policy of the Commission to protect the natural resources of the state, and protect water and land of the state against pollution. “The conservation and development of all natural resources of this state are declared to be a public right and duty. It is also declared that the protection of water and land of the state against pollution or the escape of oil or gas is in the public interest. In the exercise of the police power of the state, it is necessary and desirable to provide additional means so that wells that are drilled for the exploration, development, or production of oil or gas, or as injection or salt water disposal wells, and that have been abandoned and are leaking salt water, oil, gas, or other deleterious substances into freshwater formations or on the surface of the land, may be plugged, replugged, or repaired by or under the authority and direction of the commission.
33. Baytex has asserted that its predecessors, HTK and Aurora, acted in good faith when Mr. Zaunbrecher notified the Engineering Unit in Austin on October 3, 2013 of Aurora’s intention to sidetrack the Julie Beck 9H due to junk in the hole.
 - a. Baytex asserts that it believed in good faith that it had obtained approval to set a 500 foot cement plug above the lost casing.
 - b. The Engineering Unit response to the Zaunbrecher email did not state approval of any cementing operations for the Julie Beck 9H.
 - c. The Engineering Unit is not responsible for approving cementing operations for wells

drilled in Texas, and that is not an matter within their authority. Approval of cementing operations for wellbores and casing is matter for District Office approval.

- d. HTK and Aurora made no attempt to contact the District Office in San Antonio regarding the cementing operations concerning the lost casing in the Julie Beck 9H.
 - e. HTK, Aurora and Baytex could not have believed in good faith that they had obtained approval to set a 500 foot cement plug over the lost casing in the Julie Beck 9H from the RRC's Engineering Unit in Austin.
34. On April 7, 2014, during routine review of operator-filed completion data, Commission staff noticed the section of abandoned, uncemented casing associated with the Julie Beck 9H. Engineering Completions staff emailed Baytex asking for documentation that it has (1) contacted the District Office in San Antonio prior to plugging the abandoned section fo wellbore, and (2) that the abandoned section of wellbore was plugged pursuant to District office instructions consistent with Statewide Rule 14.
35. A Commission Form W-2 (Oil Well Potential Test, Completion or Recompletion Report, and Log) submitted to the Commission on June 6, 2014 for the sidetracked and completed Julie Beck 9H indicates the well tested, over a 24-hour period on January 18, 2014, at an initial potential of 656 barrels of oil and 1,341 MCF of gas.
36. On May 9, 2014, Baytex notified Commission staff that it was working on the problem.
37. On July 22, 2014, Commission staff notified Baytex that the matter was being considered for Enforcement action. Between the Fall of 2014 and the filing of stipulations between the parties on November 2, 2015, Commission Staff and Baytex negotiated, without success, the steps Baytex must take to resolve the issue.
38. Baytex has consistently acted to delay resolution of the central issue in this docket, that is, the proper cementing and isolation of the abandoned wellbore and abandoned casing in the Julie Beck 9H.
- a. At the conclusion of the present hearing, Baytex asserted that the best solution to the central issue is to allow the Julie Beck 9H to continue producing for at least five more years, and only then attempt to cement and isolate the abandoned wellbore and casing to protect the Carrizo Aquifer. This solution would leave the Carrizo Aquifer unprotected from saltwater intrusion, or the reverse, the flow of freshwater out of the Carrizo Aquifer into saltwater bearing formations from October 3, 2013 to some date in 2021, a period of roughly eight years.
 - b. Baytex has argued that it cannot act to cement and isolate the abandoned wellbore and casing without the Commission providing it with an upper limit on the amount of cement that must be pumped to achieve isolation. This argument is not made in

good faith. The Commission cannot pre-approve an economic limit to an attempt to cement and isolate the abandoned wellbore and casing.

39. Respondent Baytex has not acted in good faith because it failed to correct the violations of Commission rules on the Julie Beck Lease, Well No. 9H, and failed to explain its inaction to the Commission.
40. Respondent Baytex and Enforcement have tentatively agreed to an agreed recommended settlement of the penalty portion of this docket in the amount of \$30,000. Respondent Baytex has already paid \$30,000 as an agreed recommended penalty.
41. The Third Amended Notice of Hearing in this docket contains the standard reference to Section 81.0531 of the Texas Natural Resources Code, under which the Commission may assess an administrative penalty of up to \$10,000 per day per violation.
 - a. In the instant case, Baytex has committed six violations of Commission rules.
 - b. Counting the days from the date of violation, October 3, 2013, only to the date of the hearing, November 3, 2015, yields 761 days.
 - c. The Commission has the authority to assess an administrative penalty of up to \$10,000 per day for each of the six violations for 761 days, for a total of \$45,660,000.
42. The August 20, 2013 Groundwater Advisory Unit's Groundwater Protection Determination letter for the Julie Beck 9H requires that "The interval from the land surface to a depth of 700 feet and the Carrizo from 4550 feet to 5550 feet must be protected."

CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued to the appropriate persons entitled to notice.
2. All things necessary to the Commission attaining jurisdiction have occurred.
3. Baytex USA Development, LLC (Operator No. 058912) is the operator of the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas.
4. Regarding the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, Baytex USA Development, LLC violated the provisions of Statewide Rule 13(b)(2)(A)(i), as in effect at the time of the violation on October 3, 2013.
5. Regarding the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, Baytex USA Development, LLC violated the provisions of Statewide Rule 13(b)(2)(B), as in effect at the time of the violation on October 3, 2013.

6. Regarding the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, Baytex USA Development, LLC violated Statewide Rule 14(a)(3).
7. Regarding the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, Baytex USA Development, LLC violated Statewide Rule 14(d)(1).
8. Regarding the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, Baytex USA Development, LLC violated Statewide Rule 14(d)(2).
9. Regarding the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, Baytex USA Development, LLC violated Statewide Rule 14(d)(7).
10. Baytex USA Development, LLC is subject to the assessment of an administrative penalty by the Commission of from \$30,000 to \$45,660,000 or such other amount as the Commissioners find appropriate.
11. Baytex USA Development, LLC must place the subject lease and well, the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, in compliance with all Commission Statewide Rules, as directed by the Commission's Final Order in this docket.

RECOMMENDATION

The ALJ and Technical Examiner recommend that Baytex USA Development, LLC be required, within 90 days of the date the Final Order in this docket becomes effective, to place in compliance with all Commission Statewide Rules the Julie Beck Lease, Well No. 9H, Eagleville (Eagle Ford-2) Field, Live Oak County, Texas, and pay an administrative penalty ranging from \$250,000 to \$45,660,000 or such other amount as the Commissioners direct.

Respectfully submitted,



Marshall Enquist
Administrative Law Judge



Paul Dubois
Technical Examiner