



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

**OIL & GAS DOCKET NO. 01-0295746**

---

**THE APPLICATION OF NGL WATERSOLUTIONS EAGLEFORD, LLC,  
PURSUANT TO STATEWIDE RULE 9 FOR A COMMERCIAL PERMIT TO  
DISPOSE OF OIL AND GAS WASTE BY INJECTION INTO A POROUS  
FORMATION NOT PRODUCTIVE OF OIL OR GAS, HR COTULLA SWD LEASE,  
WELL NO. 2, EAGLEVILLE (EAGLE FORD-1) FIELD, LA SALLE COUNTY,  
TEXAS**

---

**HEARD BY:** Brian Fancher, P.G. – Technical Examiner  
John Dodson – Administrative Law Judge

**REVIEWED BY:** Marshall F. Enquist – Administrative Law Judge

**APPEARANCES:**

**APPLICANT:**

Jay Stewart, Attorney  
Wesley McGuffey, Attorney  
Rick Johnston  
Todd Reynolds  
Doug White  
Joseph Vargo  
Neel L. Duncan  
Kelly Knight  
Heath Herring

**REPRESENTING:**

NGL Watersolutions Eagleford, LLC

**PROTESTANTS:**

Mark Mayfield, Attorney  
Eddy Reese

James Strawn, Attorney

**REPRESENTING:**

Pinnergy, Ltd.

Dr. Edward Miesch, Scott Wilkinson,  
Richard Wilkinson, Georgeann Ericson,

Waypoint Eagleford, MKM Business Holdings, LLC, and South Texas Holdings

**PROTESTANTS:**

Peter Gregg, Attorney  
Ed Walker  
Dr. Ronald Green

**REPRESENTING:**

Wintergarden Groundwater Cons. District

**PROCEDURAL HISTORY**

Application Published:	December 4, 2014
Application Filed:	December 9, 2014
Protest Received:	December 8, 2014
Revised Application Filed:	January 21, 2015
Request for Hearing:	February 18, 2015
Notice of Hearing:	April 10, 2015
Hearing Held:	May 5 <sup>th</sup> and May 11, 2015
Transcript Received:	May 26, 2015
Proposal for Decision Issued:	May 26, 2016

**STATEMENT OF THE CASE**

NGL Watersolutions Eagleford, LLC (NGL) seeks authority to commercially dispose of produced water and RCRA-Exempt fluids into its HR Cotulla SWD Lease (“Subject Lease”), Well No. 2 (Subject Well), pursuant to Statewide Rule 9 [16 Tex. Admin. Code §3.9]. The Subject Lease is composed of roughly 10-acres. The Subject Lease contains NGL’s existing commercial disposal well, the HR Cotulla SWD Lease, Well No. 1 (NGL’s 1<sup>st</sup> Well).

NGL’s original application included requests to inject 25,000 barrels of fluid per day into the Edwards Formation from 8,000 to 10,000 feet through the Subject Well. In addition to the named Protestants, EP Energy (EP) and Chesapeake Operating, LLC (Chesapeake) submitted letters of protest on December 17<sup>th</sup> and December 22, 2014, respectively.

On January 21, 2015, NGL submitted its revised application for the Subject Well. NGL’s revised application amended the top of the well’s proposed injection interval from 8,000 feet to 8,400 feet. Subsequently, EP and Chesapeake withdrew their protests to NGL’s original application on April 20, 2015, and February 5, 2015, respectively.

NGL’s revised application (Subject Application) is protested by Pinnergy, Ltd. (Pinnergy), Dr. Edward Miesch, Scott Wilkinson, Richard Wilkinson, Georgeann Ericson, Waypoint Eagleford, MKM Business Holdings, South Texas Holdings (collectively, South Texas Holdings, et. al), and Wintergarden Groundwater Conservation District (Wintergarden).

Pinnergy originally opposed the subject application and appeared at the hearing as a protestant to it. Representatives of Pinnergy participated throughout the proceeding held for the

**Proposal for Decision**

captioned docket through cross examination of NGL's witnesses, and direct evidence through testimony of Mr. Reese. By letter dated March 30, 2016, however, Pinnergy withdrew its protest to the subject application.

Wintergarden is the groundwater district established in La Salle County, Texas. Wintergarden indicated that with certain special conditions, it would not oppose NGL's application. Wintergarden's counsel stated it would withdraw its protest so long as NGL performed the following: (1) with regard to the Subject Well's surface facility, increase its secondary surface containment capacity to account for 100% of the tank battery volumes of the tanks for the Subject Well; (2) either extend the Subject Well's surface casing setting depth, or install intermediate casing setting depth accordingly, through the depths that make up the Underground Source of Drinking Water (USDW); and (3) raise the cement behind the long-string casing to a depth that is above the surface casing shoe.

The remaining Protestants believe that the Subject Application should be denied, as a result of its proposed location, due to the following: (1) the Subject Well's proximity to NGL's 1<sup>st</sup> Well and Pinnergy's Cotulla SWD Lease, Well No. 1 (Pinnergy Well) is too close; (2) use of the Subject Well would result in stranding hydrocarbons that reside in the Eagle Ford Formation that will go unrecovered; (3) the Subject Well's proposed injection interval is productive of oil or gas; and (4) there are better alternative locations for the Subject Well than its proposed location.

**Ruling on Standing of Edward Miesch**

At the hearing, NGL objected to Mr. Miesch's standing in the subject application and argued that he, as an individual, did not have a particularized justiciable interest in the immediate case. NGL did not object to Mr. Miesch's standing as a petroleum engineer to testify as a witness on behalf of other protestants in the docket. NGL argued, instead, that Mr. Miesch does not qualify as an "affected person" under Statewide Rule 9.

Statewide Rule 9(5)(E)(ii) states:

For the purposes of this section, "affected person" means a person who has suffered or will suffer actual injury or economic damage other than as a member of the general public or as a competitor, and includes surface owners of property on which the well is located and commission-designated operators of wells located within one-half mile of the proposed disposal well.<sup>1</sup>

Mr. Miesch testified that he does not have an interest in the wells that are drilled around the subject well, but he has an interest in a 472-acre lease approximately four miles north of the subject well. He also claimed a working interest in approximately 80 wells in the area operated by either EP, Carrizo, or Chesapeake.<sup>2</sup>

---

<sup>1</sup> 16 Tex. Admin. Code §3.9(5)(E)(ii).

<sup>2</sup> Tr., Vol. I., Pg. 25, L. 7 – 10.

**Proposal for Decision**

Hearings Examiner Dodson asked Mr. Miesch to be more explicit about the location of wells he claimed an interest in that conferred standing upon him in regard to the proposed disposal well. Mr. Miesch answered, “Well, I have a – I have a working interest in all of the wells that were drilled on the Armstrong acreage, which is a little over 18,000 feet.”<sup>3</sup>

Technical Examiner Fancher also asked Mr. Miesch if he could be more specific about the distance between the proposed disposal well and the nearest well in which Mr. Miesch had an interest. Mr. Miesch replied, “About 2 miles, a mile and a half – no, I guess it’s just about – no, about a mile. Technical Examiner Fancher then said “Okay”, but Mr. Miesch continued “Actually, I take that back. Carrizo just hasn’t reported yet, but they’ve got a well that 4 – or 350 feet off my property line, that – you know, I don’t have an interest in that well, though. My working interest is probably 2 miles from my lease.”<sup>4</sup>

When asked by the Examiners, “Can you briefly describe how you think you’d be affected by the subject well with relation to your acreage four miles north,” Mr. Miesch responded, “ It’s not going to affect my lease, per se, but it is going to affect oil and gas for the state of Texas, and it could condemn somebody coming down and drilling later a deeper well and finding, you know a productive...If someone were to drill in this location and test the Edwards, and it came in as a good well, it would open up a new area of exploration. And they’re condemning it by just drilling and injecting into it immediately without ever testing it. And as a petroleum engineer and a citizen of the state of Texas, I strongly object to that philosophy.”<sup>5</sup>

The discussion of Mr. Miesch’s standing to participate in the hearing as an affected party runs from page 15 through page 38 of volume one of the transcript. His most specific statement indicated he has a working interest in a well a little over 18,000 feet away, or 3.4 miles away. The standard for determining if an interval is productive is to search a 2 mile radius from the proposed disposal well. The Examiners rule that Mr. Miesch did not demonstrate a sufficient particularized injury to himself other than as a member of the general public, and did not have standing to participate in the hearing as a protestant. This ruling is somewhat moot, as Mr. Miesch never did participate in the hearing as a protestant in his own right, but did participate as an expert witness presented by Attorney James Strawn. In his testimony as an expert witness for Mr. Strawn, Mr. Miesch repeated many of the arguments he recited in his earlier 24 pages of testimony on the standing issue.

**DISCUSSION OF THE EVIDENCE****Governing Statues and Rules**

Tex. Water Code §27.051(b) states:

The railroad commission may grant an application for a permit under Subchapter C (Oil and Gas Waste; Injection Wells) in whole or part and may issue the permit if it finds:

<sup>3</sup> Tr., Vol. I., Pg. 24, L. 20 – Pg. 25, L. 1.

<sup>4</sup> Tr., Vol. I., Pg. 29, L. 8 – Pg. 30, L. 9.

<sup>5</sup> Tr., Vol. I., Pg. 30, L. 12 – 25.

**Proposal for Decision**

- (1) that the use or installation of the injection well is in the public interest;
- (2) that the use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation;
- (3) that, with proper safeguards, both ground and surface fresh water can be adequately protected from pollution; and
- (4) that the applicant has made a satisfactory showing of financial responsibility if requires by Section 27.073.

Statewide Rule 9 (Disposal Wells)

Statewide Rule 9 (SWR 9) generally requires that a permit be approved prior to conducting fluid disposal operations in nonproducing zones of oil, gas, or geothermal resources bearing formations that contain water mineralized by processes of nature to such a degree that the water is unfit for domestic, stock, irrigation, or other general uses.<sup>6</sup>

An applicant is required to file its disposal application to the Commission's Austin office, as well as supply a copy to affected persons who include: (1) the owner of record of the surface tract on which the well is located; (2) each commission-designated operator of any well located within one-half mile of the proposed disposal well; (3) the county clerk of the county in which the well is located; and (4) the city clerk or other appropriate city official of any city where the well is located within the corporate city limits of the city.<sup>7</sup> An applicant for a commercial disposal well permit is further required to give notice to owners of record of each surface tract that adjoins the proposed disposal tract.<sup>8</sup> Lastly, in order to give notice to other local governments, interested, or affected persons, notice of the application must be published once by the applicant in a newspaper of general circulation for the county where the well will be located.<sup>9</sup>

**Applicant's Direct Evidence (NGL)**Notice of Application

On December 4, 2014, NGL published a copy of its original application in the *Frio-Nueces Current*, a newspaper of general circulation in La Salle County, Texas.

On December 9, 2014, NGL mailed notice of its original application to those persons required to be noticed pursuant to SWR 9(5).

---

<sup>6</sup> 16 Tex. Admin. Code §3.9(1).

<sup>7</sup> 16 Tex. Admin. Code §3.9(5)

<sup>8</sup> *Id.*

<sup>9</sup> *Id.*

Johnston's Supporting Testimony

Rick Johnston, a consulting petroleum engineer, testified as an expert in Petroleum Engineering on behalf of NGL. Mr. Johnston is a registered Professional Engineer through the Texas Board of Professional Engineers.

Administrative Application

By letter dated January 26, 2015, the Commission's Underground Injection Control Group (UIC) issued a letter to NGL that indicated the Subject Application was reviewed and determined to be administratively complete. The January 26<sup>th</sup> letter also indicated that the Subject Application could not be granted administratively, as a result of the application's protest letters.

Subject Well's Proposed Drilling and Completion

The Subject Well has yet to be drilled. NGL plans to drill the well to a total depth of 10,000 feet, and complete the well as follows:<sup>10</sup>

1. 10-<sup>3</sup>/<sub>4</sub>" 40.5# surface casing set at a depth of 2,600 feet and cemented to surface with 1,600 sacks of cement.
2. 7" 26.0# long-string casing set at a depth of 10,000 feet and cemented to surface with 2,900 sacks of cement.
3. 4-<sup>1</sup>/<sub>2</sub>" tubing set on a packer no higher than 8,300 feet inside 7" 26# casing.

Mr. Johnston testified that completion of the Subject Well, as proposed above, would be protective of groundwater and compliant with the Commission's requirements.<sup>11</sup> When asked by NGL's counsel whether the Subject Well will be protective and not injure or endanger oil, gas, or other mineral [formations], Mr. Johnston testified "I don't believe that it's [Subject Well] gonna endanger oil and gas resources...[a]nd, certainly, the existing well [NGL's 1<sup>st</sup> Well] has not caused any problems."<sup>12</sup>

¼-mile and ½-mile Areas of Review (AOR)

SWR 9(7)(A) requires that the applicant review the public record for wells that penetrate the proposed disposal zone within ¼-mile radius of the proposed disposal well to determine if all abandoned wells have been plugged in a manner that will prevent the movement of fluids from the disposal zone into freshwater strata. Then, the applicant must identify any wells which appear to be unplugged or improperly plugged, including any other unplugged or improperly plugged wells of which the applicant has actual knowledge.

---

<sup>10</sup> NGL Exh. No. 2.

<sup>11</sup> Tr., Vol. I, Pg. 44, L. 13.

<sup>12</sup> Tr., Vol. I, Pg. 81, L. 17 – 24.

**Proposal for Decision**

The Subject Well's proposed location is situated in the northwest corner of a ten-acre lease.<sup>13</sup> NGL performed a review of each Commission-regulated well located within the ¼-mile and ½-mile radii of the Subject Well's proposed location.<sup>14</sup> There are five horizontal wellbores operated by EP that traverse the ¼-mile AOR. Mr. Johnston testified that those five horizontal wellbores are Eagleford-producing wells that do not penetrate the Subject Well's proposed injection interval.<sup>15</sup>

NGL identified a total of 12 wellbores that are located inside the ½-mile AOR. EP operates a total of 10 horizontal, Eagleford-producing wellbores that transect the ½-mile AOR. The remaining two wells are the Pinnergy Well and NGL's 1<sup>st</sup> Well, respectively. Mr. Johnston testified that the Pinnergy Well and NGL's 1<sup>st</sup> Well are disposal wells that penetrate the Subject Well's proposed injection interval.<sup>16</sup> The Pinnergy Well is located roughly 1,500 feet north – northeast of the Subject Well, while NGL's 1<sup>st</sup> Well is located roughly 1,500 feet east of the Subject Well.<sup>17</sup> Mr. Johnston testified that no other wells penetrate the proposed injection interval within a two-mile radius of the Subject Well's proposed location.<sup>18</sup>

Earthquake Review

SWR 9(3)(B) requires that the applicant for a disposal well permit show the results of a survey of information from the United States Geological Survey regarding the locations of any historical seismic events within a circular area of 100 square miles (*i.e.*, 9.08 kilometer radius) centered around the proposed disposal well location.

NGL submitted a respective printout from the USGS that is centered on the Subject Well. No earthquakes of record were identified by NGL.

Background on the Pinnergy Well and NGL's 1<sup>st</sup> Well

NGL submitted a copy of the commercial disposal permit for the Pinnergy Well (Permit No. 14177), which indicates that the well is permitted to dispose of salt water and RCRA-Exempt fluids in the injection interval between 8,000 feet to 10,000 feet at a rate of 25,000 barrels of fluid per day, and a maximum surface injection pressure of 4,000 pounds per square inch gauge.<sup>19</sup> The Pinnergy Well was originally completed on November 7, 2014.<sup>20</sup> Mr. Johnston testified that the Pinnergy Well disposes into the same injection interval sought by NGL for the Subject Well.<sup>21</sup>

NGL submitted multiple copies of Commission Form P-18 (Skim Oil/Condensate Report – Liquid Hydrocarbons Recovered from Salt Water Gathering Systems Prior to Injection or Other Disposal of Water) that were submitted for the Pinnergy Well between November 2014

---

<sup>13</sup> NGL Exh. No. 6.

<sup>14</sup> NGL Exh. Nos. 7 and 8.

<sup>15</sup> Tr., Vol. I., Pg. 53, L. 14.

<sup>16</sup> Tr. Vol. I., Pg. 54, L. 14.

<sup>17</sup> NGL Exh. No. 31.

<sup>18</sup> Tr., Vol. I., Pg. 75, L. 23.

<sup>19</sup> NGL Exh. No. 14.

<sup>20</sup> NGL Exh. No. 15.

<sup>21</sup> Tr., Vol. I., Pg. 54, L. 21.

**Proposal for Decision**

through March 2015.<sup>22</sup> Among other things, that exhibit shows the reported volumes of salt water received at the Pinnergy Well during that time frame. Mr. Johnston testified that Pinnergy received the following salt water totals between November 2014 through March 2015: 47,845 barrels; 72,520 barrels; 4,290 barrels; 0 barrels; and 260 barrels, respectively. When asked by NGL's counsel as to why the injection amount seems to change from month to month at the Pinnergy Well, Mr. Johnston testified, "I don't know if they have some sort of operational issue with the well, or if they've lost market. I don't know."<sup>23</sup>

NGL submitted a copy of the commercial disposal permit for NGL's 1<sup>st</sup> Well (Permit No. 13655), which indicates that the well is permitted to dispose of salt water and RCRA-Exempt fluids in the injection interval between 8,100 feet to 12,000 feet at a rate of 25,000 barrels of fluid per day, and a maximum surface injection pressure of 4,050 pounds per square inch gauge.<sup>24</sup> NGL's 1<sup>st</sup> Well was originally completed on November 10, 2012.<sup>25</sup> Mr. Johnston testified that NGL's 1<sup>st</sup> Well also utilizes the same injection interval sought by NGL for the Subject Well.<sup>26</sup> NGL's 1<sup>st</sup> Well utilizes its permitted injection interval through an open-hole completion from 8,240 feet to 9,000 feet.

NGL submitted a daily tabulation, which spans from January 1<sup>st</sup> to April 20, 2015, of water disposed in NGL's 1<sup>st</sup> Well.<sup>27</sup> That tabulation indicates that NGL has increased the daily disposal volumes in NGL's 1<sup>st</sup> Well from roughly 18,000 to 25,000 barrels of water per day, respectively. Based on that daily tabulation, Mr. Johnston testified that NGL's 1<sup>st</sup> Well has "run in to the ceiling of 25,000 barrels a day in the existing permit [NGL's 1<sup>st</sup> Well] since mid-February."<sup>28</sup>

Mr. Johnston testified that the respective injection intervals permitted for the Pinnergy Well and NGL's 1<sup>st</sup> Well share some overlap.<sup>29</sup> When asked by NGL's counsel whether the two wells would experience any consequential interference, Mr. Johnston testified that "in this case, the two wells are roughly ¼-mile apart. You're going to have pressure interference. The injection operation in one well is going to increase the reservoir pressure [injection interval], and that will impact the other well. You'll have some pressure increase. They'll affect both."<sup>30</sup> Later, Mr. Johnston testified that "I believe that with these wells [the Pinnergy Well, NGL's 1<sup>st</sup> Well, and the Subject Well] spaced the way they are, that while there will be some interference, it should be manageable."<sup>31</sup>

When asked by NGL's counsel whether that interference will present a problem, Mr. Johnston testified that "[i]t does not appear thus far to, no. The pressures that we're seeing right now in the NGL No. 1 [NGL's 1<sup>st</sup> Well] are still well below their permitted limit. They currently

---

<sup>22</sup> NGL Exh. No. 16.

<sup>23</sup> Tr., Vol. I., Pg. 74, L. 3.

<sup>24</sup> NGL Exh. No. 11.

<sup>25</sup> NGL Exh. No. 12.

<sup>26</sup> Tr., Vol. I., Pg. 59, L. 6.

<sup>27</sup> NGL Exh. No. 13.

<sup>28</sup> Tr., Vol. I., Pg. 66, L. 19.

<sup>29</sup> Tr., Vol. I., Pg. 69, L. 5.

<sup>30</sup> Tr., Vol. I., Pg. 69, L. 2 – 21.

<sup>31</sup> Tr., Vol. I., Pg. 89, L. 12.

**Proposal for Decision**

have injection pressures on the order of 3,000 to 3,100 pounds [pounds per square inch gauge]. They're permitted to go as high as 4,000 [pounds per square inch gauge]."<sup>32</sup>

NGL's counsel subsequently asked Mr. Johnston whether the formation [injection interval] today is presenting an over-pressurized situation. Mr. Johnston testified, "We have no evidence that's occurring...to my knowledge, there's not been any water production problems in any of these horizontal wells [surrounding Eagleford-producing wells]. If some of these horizontal wells started producing large volumes of water, as though [it] migrated up...and out of some of these horizontal wells, it would materially impact the oil production from those wells. And I would expect the operator would have filed some sort of complaint with the district office. It [water production problems] would have been anomalous, unwanted water production."<sup>33</sup>

Area Disposal Wells

NGL submitted a well location map, and a respective well tabulation, to identify the active commercial disposal wells within a 15-mile radius of the Subject Well's proposed location.<sup>34</sup> That well tabulation indicates that 25 active wells are authorized for disposal within 15 miles of the Subject Well. Of those 25 active disposal wells, 11 active wells are authorized for commercial disposal. When asked to clarify what an "active" disposal well means, Mr. Johnston testified that "it [a well] has to have a permit issued, then we look at the UIC query to see if it reflects it as being active, and [whether] there is an H-5 on file. All those things have to happen, and then we consider it active."<sup>35</sup>

Area Production Wells

NGL submitted a map to show the locations of all wells located within a two mile-radius of the Subject Well's proposed location.<sup>36</sup> In addition, NGL submitted a tabulation composed of the wells identified within that two-mile radius map.<sup>37</sup> Based on those exhibits, Mr. Johnston testified that neither the Edwards, nor the Glen Rose [Formations] have been found to be productive within the two-mile area."<sup>38</sup>

NGL submitted an aerial map to show the locations of production wells that produce from the Edwards Formation (*i.e.* part of the Subject Well's proposed injection interval), with regard to the Subject Well's proposed location.<sup>39</sup> Mr. Johnston asserted that the nearest Edwards-producing wells are predominantly located roughly 15 miles south of the Subject Well, and that they exhibit a northeast to southwest trend.

---

<sup>32</sup> Tr., Vol. I., Pg. 70, L. 3 – 12.

<sup>33</sup> Tr., Vol. I., Pgs 70 and 71.

<sup>34</sup> NGL Exh. Nos. 21 and 22. Noteworthy, that well tabulation identifies 51 wells have been granted a disposal permit. Of those 51 disposal permits, 6 are no longer valid because the respective disposal permit was either cancelled or the permit's respective well was plugged and abandoned. Of the remaining 45 disposal permits, 20 disposal permits are classified by NGL as "inactive" due to either the respective well not being drilled or there being no Form H-10 (Annual Disposal/Injection Well Monitoring Report).

<sup>35</sup> Tr., Vol. I., Pg. 85, L. 15.

<sup>36</sup> NGL Exh. No. 17.

<sup>37</sup> NGL Exh. No. 18.

<sup>38</sup> Tr., Vol. I., Pg. 81, L. 14.

<sup>39</sup> NGL Exh. No. 23.

**Proposal for Decision**NGL's Organization Report (P-5)

NGL holds an active-status as an operator (Op No. 609267) in Texas. NGL is the operator of record for 16 wells in Texas and has financial assurance in the form of a \$50,000 bond on file with the Commission.<sup>40</sup> Mr. Johnston testified that NGL's \$50,000 bond allows it to operate up to 99 wells in Texas.<sup>41</sup>

Based on his above testimony and the exhibits that he sponsored, Mr. Johnston testified that the Subject Well will be protective of usable-quality water, will be protective of oil and gas, and that it will serve the oil and gas industry in its current and future needs.<sup>42</sup>

Reynold's Supporting Testimony

Todd Reynolds, a consulting geologist, testified as a fact witness on behalf of NGL. Mr. Reynolds has over 29 years of exploration experience and specializes in seismic interpretation and analysis.<sup>43</sup>

Injection Interval and Surrounding Geologic Formations

SWR 9(2) requires that the applicant show that all formations used for disposal are separated from freshwater formations by impervious beds to give adequate protection of freshwater. Furthermore, the applicant must submit a letter from the Commission's Groundwater Advisory Unit (GAU) stating "that the use of such formation will not endanger the freshwater strata in that area and that the formations to be used for disposal are not fresh-water bearing."

By letter dated December 8, 2014, the GAU determined that the BUQW occurs at 2,500 feet beneath the proposed location for the Subject Well, and the base of USDW occurs at 3,900 feet.<sup>44</sup> On December 8<sup>th</sup>, the GAU also determined that disposal of oil and gas waste into the interval from 8,000 feet to 10,000 feet would not endanger freshwater strata in the Subject Well's area.<sup>45</sup>

NGL submitted a cross section that traverses west to east and is composed of three well logs measured from three different wells. One of those wells is NGL's 1<sup>st</sup> Well. The remaining two wells are identified as the Ehlert No. 1 and Storey No. 1.<sup>46</sup> From west to east, the wells occur as the Ehlert No. 1, NGL's 1<sup>st</sup> Well, and the Storey No. 1, respectively. In summary, that cross section indicates regional dip is southeast and that the Subject Well's proposed injection interval is continuous.

NGL submitted a structural contour map for the base of the Eagleford Formation/top of the Buda Formation. Mr. Reynolds testified that few data points (*i.e.* wells) exist deep enough to

---

<sup>40</sup> NGL Exh. No. 10.

<sup>41</sup> Tr., Vol. I., Pg. 57, L. 7.

<sup>42</sup> Tr., Vol. I., Pg. 89, L. 17 – Pg. 90, L. 12.

<sup>43</sup> NGL Exh. No. 28.

<sup>44</sup> NGL Exh. No. 4.

<sup>45</sup> *Id.*

<sup>46</sup> NGL Exh. No. 29.

**Proposal for Decision**

show the Subject Well's injection interval. He testified, however, that the Buda Formation thicknesses is fairly uniform, which indicates that the previously mentioned structure map is representative of Edwards Formation's structure.<sup>47</sup>

NGL's proposed injection interval is from 8,400 feet to 10,000 feet, which includes the Edwards and Glen Rose Formations. Mr. Reynolds testified that the top of the Buda Formation occurs at 7,900 feet in NGL's 1<sup>st</sup> Well.<sup>48</sup> Immediately overlying the Buda Formation is the Eagleford Formation. Immediately below the Buda Formation is the Del Rio Formation. Below the Del Rio Formation are the Georgetown, Edwards, and Glen Rose Formations, respectively.

Mr. Reynolds testified that disposal in the Edwards Formation is confined below the top of the Edwards by tight limestone intervals in the Georgetown, Del Rio, and Buda Formations. Furthermore, he testified that faulting does not appear to occur in the area.<sup>49</sup>

NGL submitted a multi-component log (Type Log) taken from NGL's 1<sup>st</sup> Well.<sup>50</sup> The Type Log is composed of numerous curves on various scales that measure gamma ray, resistivity, drill rate, lithologic percentage, gas chromatography, and lithologic description. The Type Log also identifies the formation-tops as they occur sequentially down-hole. Mr. Reynolds testified that the Subject Well's proposed injection interval is not productive of oil or gas.<sup>51</sup> Moreover, he testified that no production wells exist in the Edwards Formation within 100 square miles of the Subject Well.<sup>52</sup>

#### Herring's Supporting Testimony

Heath Herring, an Operations Manager at Shale Tank Truck, LLC, (STT) testified as a fact witness on behalf of NGL. STT is a water-hauling company in Texas utilized by operators to haul produced water from production well locations to disposal wells for disposition. Mr. Herring oversees all of STT's south Texas operations.

Mr. Herring testified that STT hauls between roughly 7,000 to 10,000 barrels per day to existing NGL-operated disposal wells. He testified that STT is required by EP to haul its produced water to NGL-operated disposal wells, such as the NGL's 1<sup>st</sup> Well.<sup>53</sup> He also testified that he generally prefers to haul produced water to NGL-operated disposal wells because he believes that NGL is reliable and safe.<sup>54</sup>

With regard to NGL's 1<sup>st</sup> Well, Mr. Herring testified that he has experienced times when that well was disposing at capacity (presumably while waiting to dispose of a truckload of produced water).<sup>55</sup> He testified that as a result, he redirects his efforts to the nearest NGL-operated disposal well that is located between 12 to 15 miles away from NGL's 1<sup>st</sup> Well. He

---

<sup>47</sup> Tr., Vol. I., Pg. 186.

<sup>48</sup> Tr., Vol. I., Pg. 189.

<sup>49</sup> Tr., Vol. I., Pg. 191.

<sup>50</sup> NGL Exh. No. 32.

<sup>51</sup> Tr., Vol. I., Pgs. 198 – 199.

<sup>52</sup> Tr., Vol. I., Pg. 197.

<sup>53</sup> Tr., Vol. I., Pg. 125, L. 22 and Pg. 127, L. 6 – 23.

<sup>54</sup> Tr., Vol. I., Pg. 128.

<sup>55</sup> Tr., Vol. I., Pg. 128, L. 18.

**Proposal for Decision**

concluded that if the Subject Application were granted for the Subject Well, then it would lower the total disposal cost per barrel and reduce trucking time on the road.<sup>56</sup>

Mr. Herring testified that approval of the Subject Application for the Subject Well would be beneficial for STT's operations, and that it is needed in his area of operation.<sup>57</sup>

White's Supporting Testimony

Douglas White, a Senior Vice President at NGL Energy Partners, the parent company of NGL, testified as a fact witness on behalf of NGL. Mr. White manages all saltwater disposal-related operations in the U.S. for NGL.

Mr. White testified that NGL owns 48 saltwater disposal facilities and 57 injection wells in the U.S, with 36 of those facilities and 43 of those injection wells being located in Texas.

Mr. White provided a general description of the existing surface facility, composed of a tank battery, injection and transfer pumps, an office building, and a truck off-load pad, utilized by NGL's 1<sup>st</sup> Well. Mr. White testified that the local land use surrounding that surface facility is mostly ranch land, but as of late has grown into oil and gas industry-related yards. He testified that the nearest surface watercourse from that surface facility is located two miles south. He also testified that surface facility is not located in the 100-year flood plain.<sup>58</sup>

NGL's standard construction design for its disposal facilities include multiple steel and fiberglass tanks, secondary concrete containment, equal to one-and-a-half times the largest storage vessel plus the 25-year, 24-hour rain event for a facility's associated area, and tertiary containment comprised of an earthen berm large enough to capture a facility's total vessel capacity.<sup>59</sup> Mr. White testified that NGL plans to install a new tank battery, complete with transfer and injection pumps, on the Subject Lease for the Subject Well, and to utilize the truck-off-load pad at the existing surface facility in place at NGL's 1<sup>st</sup> Well.

Necessity for the Subject Well

With regard to drilling activity, Mr. White testified that the area surrounding the Subject Well is very active. He testified that water from some of those area wells is sent to NGL.<sup>60</sup>

Mr. White testified that EP owns a pipeline that enters the surface facility dedicated to NGL's 1<sup>st</sup> well. He testified NGL receives 3,000 to 5,000 barrels of fluid per day from that EP-owned pipeline. He testified that NGL anticipates receiving an additional 15,000 barrels of fluid per day from EP via pipeline, with plans to deliver it to the Subject Well. He stated that the result of that additional 15,000 barrels of fluid per day delivered through pipeline will remove

---

<sup>56</sup> Tr., Vol. I., Pg. 129.

<sup>57</sup> Tr., Vol. I., Pg. 130.

<sup>58</sup> Tr., Vol. I., Pgs. 138 – 139.

<sup>59</sup> Tr., Vol. I., Pg. 140.

<sup>60</sup> Tr., Vol. I., Pg. 146.

**Proposal for Decision**

approximately 125 [water hauler] truck trips per day. He testified that the Subject Well is needed to adequately service that additional fluid from EP.<sup>61</sup>

With regard to NGL Exhibit No. 21 (the 15-mile radius map surrounding the Subject Well), Mr. White testified that most of the water delivered to NGL's 1<sup>st</sup> Well originates from [production wells] located north, northwest, and west of that disposal well. He identified seven other disposal wells located inside the 15-mile radius (*i.e.*, two Pena Wells, two Artesia Wells, and three Blackwater Wells) and testified that those other disposal wells either don't have a lot of capacity, or are full.<sup>62</sup>

Of those seven other disposal wells previously mentioned, Mr. White provided further detail about the two Artesia Wells and three Blackwater Wells. Mr. White testified that the two Artesia Wells are owned by NGL. He testified that the two Artesia Wells are ¼-mile apart from one another.<sup>63</sup> With regard to the three Blackwater Wells, he testified that those wells are located less than one mile from the Artesia Wells.

In conclusion, Mr. White indicated that NGL's 1<sup>st</sup> Well is only capable of disposing 24,000 barrels of fluid per day, yet NGL has long-term commitments from customers to bring additional water.<sup>64</sup> He testified that the Subject Well would provide an alternative, redundant disposal option for NGL's customers, and that NGL operates about 15 multi-well saltwater disposal facilities in the U.S.<sup>65</sup>

**Protestant's Argument (Wintergarden)****Walker's Supporting Testimony**

Ed Walker, General Manager of Wintergarden, testified on behalf of that ground water district. Wintergarden is charged with the conservation, preservation, and protection of the groundwater in Dimmit, La Salle, and Zaval Counties, Texas.

Wintergarden opposes the Subject Application as requested by NGL. Mr. Walker testified that Wintergarden's concerns are as follows: (1) the volume of surface containment proposed to be built for the Subject Well; (2) NGL's proposed surface casing setting depth for the Subject Well being above USDW; and (3) NGL's proposed cementing operations for the Subject Well's long-string casing.

**Green's Supporting Testimony**

Dr. Ronald Green, Groundwater Hydrogeologist at Southwest Research Institute, testified on behalf of Wintergarden. Dr. Green's background is in geosciences and engineering. He has testified at the Commission on past occasions.

---

<sup>61</sup> Tr., Vol. I., Pg. 148.

<sup>62</sup> Tr., Vol. I., Pg. 151 and Pg. 152, L. 18 - 24.

<sup>63</sup> *Id.*

<sup>64</sup> Tr., Vol. I., Pg. 155.

<sup>65</sup> *Id.*

**Proposal for Decision**

Dr. Green testified that the Subject Application should not be approved, as requested by NGL due to how it proposes to construct its secondary containment [around the tank battery for the Subject Well], and how it proposes to construct the Subject Well.

With regard to containment capacity, Dr. Green testified that it behooves Wintergarden for NGL to have capacity sufficient to contain all of the fluids stored should there be a catastrophic failure of the tank battery.<sup>66</sup> Wintergarden submitted a list of hydrocarbon-loss “events” that occurred in 2014. Those events listed the cause of loss as an act of God. That list is composed of 15 events that were instigated by a lightning strike that resulted in fire and some type of event that impaired the ability of the tank battery to contain fluid.

Dr. Green testified that there are approximately 10,000 or 20,000 salt water disposal wells in Texas. He opined that those events are not rare because in his view a rare event occurs on the magnitude of  $10^{-5}$  to  $10^{-6}$ . He testified, therefore, that if those events were rare then they would occur at a rate of roughly 1 per year, not 15 per year.<sup>67</sup> He concluded that in order to guard against inadvertent releases of waste fluids to the environment, NGL should have 100% capacity in the secondary containment, plus the volume of displacement that would be afforded by the actual tanks, and capacity to account for the 25-year, 24-hour record rain event.<sup>68</sup>

With regard to NGL’s proposed construction of the Subject Well, Dr. Green testified that Wintergarden desires to see it built with a redundancy that goes beyond protection of fresh water.<sup>69</sup> He testified that Wintergarden’s district has endangered water resources due to the increased need for water seen in the oil and gas industry, coupled with a surface water pressure level decreasing 400 feet in the past 100 years. Dr. Green testified that as a result, brackish water should be afforded the same protection that applies to fresh water. As a result, Wintergarden prefers to see NGL lower its surface casing setting depth in the Subject Well to the base of USDW (*i.e.*, from 2,600 feet to 3,900 feet).<sup>70</sup>

**Protestant’s Direct Evidence (South Texas Holdings, et. al)****Meisch’s Supporting Testimony**

Dr. Edward Miesch testified as an expert in petroleum engineering on behalf of South Texas Holdings, et al. (“STH, et al.”).<sup>71</sup> No other persons on behalf of South Texas Holdings, et. al provided evidence or public comment in opposition of the subject application hearing.

Through Mr. Miesch’s testimony, STH, et al. contends that the subject application should be denied because, “no one should be allowed to put a disposal well in the middle of a productive field without confirming positively that zone that they want to inject into [the subject application’s proposed injection interval] is non-productive. And I believe the only way they can

---

<sup>66</sup> Tr., Vol. I., Pg. 223.

<sup>67</sup> Tr., Vol. I., Pg. 235.

<sup>68</sup> Tr., Vol. I., Pg. 237.

<sup>69</sup> Tr., Vol. I., Pg. 239.

<sup>70</sup> Tr., Vol. I., Pgs. 239 – 240.

<sup>71</sup> Tr., Vol. I., Pg. 259, L. 3; Pg. 11, L. 4; Pgs. 15 – 38.

**Proposal for Decision**

do that is to drill it, run sufficient logs, and core it, and see if they've got residual hydrocarbons in it."<sup>72</sup>

STH, et al., focused on an existing production well that, in part, was drilled by Mr. Miesch at some point in time prior to the hearing held for the Subject Application. Mr. Miesch identified that well as the Katrina No. 1 Well ("Katrina Well").<sup>73</sup> The Katrina Well was shut-in at the time of the hearing,<sup>74</sup> and is located about four miles north of the Subject Well's proposed location.<sup>75</sup> He testified as to the drilling, completion, and testing of the Eagleford, Buda, Georgetown, Edwards, and Glen Rose Formations encountered in the Katrina Well. Mr. Miesch asserted that oil was observed from the bottom of the Eagleford throughout the Buda and Georgetown Formations in the Katrina Well. He testified that the upper 75 feet of the Edwards Formation was cored in the Katrina Well, which revealed residual oil. He further testified that an oil cut was observed at the bottom of the Edwards Formation from 8,690 to 8,630 feet on the mud log for the Katrina Well. Mr. Miesch testified that he and an unknown geologist later concluded that thirty feet of lower Edwards Formation was an oil productive interval.<sup>76</sup>

STH, et al. submitted a multi-page exhibit that consisted of the following:<sup>77</sup>

1. a cover page identified as "Attachments to Miesch Interrogatories for Clearwater, LLC 4-19-15";
2. four pages in black and white copy of a mudlog for the Katrina Well from depths of about 7,650 to 9,520 feet;
3. three pages in black and white copy of an open-hole well log for the Katrina Well measuring gamma ray, SP, resistivity and conductivity at a scale of 5" per 100 feet from depths of about 7,740 to 9,520 feet;
4. one page in black and white copy of the open-hole log previously mentioned at a scale of 1" per 100 feet from depths of about 9,150 to 9,520 feet;
5. side-wall core analysis results performed by Western Atlas International for the Katrina Well at various depths ranging from 7,498 feet to 8,734 feet;
6. petrophysical analysis performed by OMNI Laboratories, Inc., of two thin-sections identified as Plate 2A and Plate 2B that from the side-wall core at 8,723 feet in the Katrina Well;
7. a single page, color copy of the thin-sections previously mentioned;
8. copy of an email to Dr. Miesch from Dee Jenkins that indicates Mr. Jenkins' opinion with regard to the previously mentioned thin-section analysis;<sup>78</sup>

---

<sup>72</sup> Tr., Vol. I., Pg. 21, L. 17 – 23.

<sup>73</sup> Tr., Vol. I., Pg. 257, L. 16.

<sup>74</sup> Tr., Vol. II., Pg. 36, L. 8 – 25.

<sup>75</sup> Tr., Vol. I., Pg. 258, L. 10 – 13.

<sup>76</sup> Tr., Vol. I., Pg. 261, L. 3 – Pg. 262.

<sup>77</sup> See STH, et al., Exh. No. 2. At the hearing, the issue of whether or not Mr. Miesch alone would be granted party status in this case was carried throughout the proceeding to later be ruled on in this Proposal For Decision. All exhibits referenced in this Proposal For Decision as STH, et al., were identified at the hearing as Protestants Miesch, Scott Wilkinson, et al. For the purpose in writing this Proposal For Decision, all exhibits marked and offered as Protestants Miesch, Scott Wilkinson, et al., are identified by the Examiners as South Texas Holdings, et al. For example, Protestants Miesch, Scott Wilkinson, et al. Exh. No. 2 is identified in this Proposal For Decision as STH, et al., Exh. No. 2.

<sup>78</sup> Tr., Vol. II., Pg. 18, L. 18 – 21; Pg. 23, L. 16-18. The single-page email copy, identified as item no. 8 above in STH, et al. Exh. No. 2, was ruled on as "hear say" by the Administrative Law Judge in this proceeding, and therefore not admitted as evidence in the record for this case. The remaining portions of STH, et al., Exh. No. 2 were admitted in to the record.

**Proposal for Decision**

9. a single page entitled, "Completions, 42-283-31556-0000, Page 2" that provides initial potential results, production test data, logs and surveys, drilling media, and miscellaneous information as to the Katrina Well; and
10. two pages of sidewall core descriptions made for the Katrina Well at various depths ranging from 7,498 to 9,510 feet.

Mr. Miesch provided detailed testimony as to STH, et al., Exh. No. 2.<sup>79</sup> The cover page of that exhibit includes a list of sixteen items that describe the salient points of the entire exhibit. For example, the first item on that list reads, "mud log showing bottom of Eagleford and top of Buda – Interval 7,610 – 7,760 feet." Mr. Miesch testified the purpose of that description is to identify that a show was observed at that interval, and that interval does not necessarily reflect the top of the Buda Formation. The remainder of that cover page includes as follows (collectively item nos. 1 through 5 of that cover page):

1. Mud log showing bottom of Buda and top of Georgetown – Interval 7,740 – 7,890 feet;
2. Mud log showing top of Edwards – Interval 7,870 – 8,020 feet;
3. Mud log showing interval of Edwards with oil cut and dull gold flor [florescence] – Interval 8,690 – 8,840 feet and top of Glen Rose;
4. Mud log showing interval of Glen Rose with flor – trc [trace], dull gold, and brt [bright] yellow and lost returns;

With regard to the mud log copies found in STH, et al., Exh. No. 2, Mr. Miesch testified that the tops of the Georgetown, Edwards, and Glen Rose Formations occur at 7,860 feet, 7,990 feet, and 8,790 feet, respectively, in the Katrina Well. With regard to the open-hole well log portion of that exhibit, he testified that the Georgetown Formation was perforated and produced fifty percent oil and fifty percent water from the Katrina Well.<sup>80</sup> He stated that an oil cut was observed in the Edwards Formation from 8,690 to 8,720 feet, and that 30 foot interval is full of oil.<sup>81</sup> Mr. Meisch testified that although the Glen Rose Formation tested "wet" in the Katrina Well, the Glen Rose Formation would be productive further up dip from the Katrina Well.<sup>82</sup> He did not, however, specify the dip direction of the Glen Rose Formation at the Katrina Well.

With regard to the side wall core analysis report found in STH, et al., Exh. No. 2, Mr. Miesch testified that two cores were taken from the Georgetown and four cores were taken from the Edwards Formations in the Katrina Well. He stated that a total of 84 feet of core was taken from the upper Edwards Formation, and that residual oil was found within that cored section of the upper Edwards Formation.<sup>83</sup> Specifically, he focused at the interval 8,072 feet and asserted that interval recorded 11.1 percent residual oil in the core.

With regard to the thin section analysis found in STH, et al., Exh. No. 2, Mr. Miesch testified that those thin sections were created from cores taken in the Edwards Formation at depth 8,723 feet. Based on the thin section analysis, he testified that the upper and lower

<sup>79</sup> Tr., Vol. I., Pgs. 265 – 272; Vol. II., Pgs. 5 – 22.

<sup>80</sup> Tr., Vol. I., Pg. 267, L. 20 – Pg. 268. *See also* STH, et al., Exh. No. 2, single page entitled "Completions". The Georgetown Formation was perforated at various intervals between 7868 and 7,912 feet.

<sup>81</sup> Tr., Vol. I., Pg. 268, L. 4 – 11.

<sup>82</sup> Tr., Vol. I., Pg. 270 and Vol. II., Pg. 6.

<sup>83</sup> *Id.*

**Proposal for Decision**

Edwards Formation are capable of production.<sup>84</sup> He also asserted that the Georgetown Formation would be the best productive interval due to its inherent porosity.<sup>85</sup>

In comparing open hole well logs based on NGL's 1<sup>st</sup> Well and the Katrina Well<sup>86</sup>, Mr. Miesch testified that the difference in elevation of the mentioned formations is roughly 300 feet. In other words, those formations are about 300 feet higher in the Katrina Well when compared to NGL's 1<sup>st</sup> Well. The purpose of that exhibit is to show that those named formations are fairly uniform throughout.<sup>87</sup>

On cross-examination, Mr. Miesch testified that the Katrina Well has produced a total of around two thousand barrels of oil from the Georgetown Formation since it was drilled in 1994, and that it is shut-in today with over 2,000 pounds of surface pressure.<sup>88</sup> He testified that the Katrina Well has been shut in since December 2010.<sup>89</sup>

**Applicant's Rebuttal Evidence (NGL)**

Kelly Knight, a Vice President of New Asset Development at NGL, testified on behalf of NGL. Ms. Knight is responsible for siting and developing commercial disposal wells for NGL, and she oversaw submittal of the Subject Application to the Commission.<sup>90</sup>

In response to the concerns raised by Pinnergy at the hearing, Ms. Knight put forth testimony aimed at clarifying the following: (1) that proper notice of the Subject Application was sent to adjacent surface owners to the Subject Lease; and (2) that the Subject Well is needed and utilized by industry, thus in the public interest.<sup>91</sup>

When asked, "what is your opinion regarding whether the second well [Subject Well] is needed by industry and utilized by industry," Ms. Knight testified, "It is needed...[o]perators are trying to pipeline water in to reduce their lease operating expense, and as a result they're – there is an operator waiting to pipe water in to this facility. That's not possible right now because the water being trucked in is taking up much of the room. So there's a need for a second well at this facility, has been for some time."<sup>92</sup>

With regard to the Subject Well's proposed location, NRG put forth additional evidence in response to the potential shows and residual oil zones observed in the Katrina Well by STH, et al., and how those observations relate to the Subject Well. Todd Reynolds, NRG's expert geologist, testified as follows:

We have a log on the Cotulla No. 1 [Existing Well], which is just, I believe 1,500 feet away from the Cotulla No. 2 [Subject Well] and on strike. All subsurface points in the area suggest that we're just dealing with this simple geology in here

---

<sup>84</sup> Tr., Vol. I., Pg. 271.

<sup>85</sup> *Id.*

<sup>86</sup> STH, et al., Exh. No. 3.

<sup>87</sup> Tr., Vol. II., Pg. 24.

<sup>88</sup> Tr., Vol. II., Pg. 36.

<sup>89</sup> Tr., Vol. II., Pg. 40, L. 2.

<sup>90</sup> Tr., Vol. II., Pg. 51.

<sup>91</sup> Tr., Vol. II., Pgs. 54 – 66.

<sup>92</sup> Tr., Vol. II, Pg. 62.

**Proposal for Decision**

with regional dip to the southeast. And I would expect the Cotulla No. 2 well to have near identical characteristics on a log as the No. 1 well did, which was low resistivity through the proposed injection intervals, which is the Edwards and the Glen Rose.

[...]

For the Edwards and the Glen Rose to trap and be considered productive, either the zone has to pinch out to have a stratigraphic trap, or a fault to create a structural trap...we've heard testimony [Mr. Meisch] regarding some production in the Georgetown which is above the proposed injection interval. That well [Katrina Well] was noted to make some oil and water and there was indication that the possibly the lower perms [in the Edwards Formation] were wet. I would agree with that.

[...]

Generally, oil sits on top of water and if the lower part of the perms are wet...that same formation's going to be 250 feet deeper at the Cotulla No. 2 [Subject Well]...it's downdip to a well [Katrina Well] that made some oil and water in the Georgetown, which is not the interval we're proposed to inject into.<sup>93</sup>

NGL submitted copies of completion reports filed at the Commission for the Katrina Well. Those reports indicate a potential test was performed on that well around November 4, 1994, and resulted in about 30 barrels of oil per day and 10 barrels of water per day. They also indicate that well produced through perforations from 7,868 to 7,912 feet, which is in the Georgetown Formation. Mr. Reynolds asserted that the Katrina Well has cumulatively produced about 2,000 barrels of oil based on his tabulation of production reports filed with the Commission for that well.<sup>94</sup>

**EXAMINERS' DISCUSSION**

The overall contention in the immediate case centers on whether or not (1) both ground and surface fresh water can be adequately protected from pollution; (2) the Subject Well will not endanger or injure any oil, gas or other mineral formation; and (3) the Subject Well is in the public interest.<sup>95</sup> Based on the record evidence, the Examiners believe NGL has met its burden of proof, and that the Subject Application, therefore, meets the statutory requirements of Tex. Water Code §27.051(b), as well as the requirements of Statewide Rule 9. Therefore, the Examiners recommend that it be approved.

Again, Pinnergy withdrew its protest to the Subject Application by letter dated March 30, 2016. As a result, the remaining protestants in this case are Wintergarden and STH et al.

---

<sup>93</sup> Tr., Vol. II., Pgs 70 – 71.

<sup>94</sup> Tr., Vol. II., Pg. 73.

<sup>95</sup> See Tex. Water Code §27.051(b)(2).

Protection of Ground and Surface Fresh Water

Wintergarden was the only protestant to raise concerns on whether or not use of the Subject Well would protect ground and surface waters at its proposed location. Representatives of Wintergarden indicated that it is not necessarily opposed to the Subject Application provided that sufficient surface and subsurface protections are incorporated into the permit for the Subject Well.<sup>96</sup> Specifically, those concerns included as follows: (1) the volume of surface containment proposed to be built for the Subject Well; (2) NGL's proposed surface casing setting depth for the Subject Well being above USDW; and (3) NGL's proposed cementing operations for the Subject Well's long-string casing.

Surface Containment

NGL's standard construction design for its disposal facilities includes numerous tanks made of steel or fiberglass (*i.e.* primary containment), secondary concrete containment, equal to one-and-a-half times the largest storage vessel plus the 25-year, 24-hour rain event for a facility's associated area, and tertiary containment comprised of an earthen berm large enough to capture a facility's total vessel capacity.<sup>97</sup>

Wintergarden limited its argument in this context to the secondary containment that would surround the Subject Well's tank battery. Dr. Green's testimony inferred that based upon the history of the industry and tank batteries in general, Wintergarden believes that sufficient capacity should be utilized by NGL to contain the Subject Well's tank battery fluids in the event of a catastrophic failure of that tank battery.<sup>98</sup> In support of that argument, Wintergarden evidenced a list of hydrocarbon-loss "events" that occurred in 2014. Those events listed the cause of loss as an act of God. That list is composed of 15 events that were instigated by a lightning strike that resulted in fire and some type of event that impaired the ability of the tank battery to contain fluid. He concluded that in order to guard against inadvertent releases of waste fluids to the environment, NGL should have 100% capacity in the secondary containment, plus the volume of displacement that would be afforded by the actual tanks, and capacity to account for the 25-year, 24-hour record rain event.

The Examiners are sympathetic with Wintergarden's concern to protect surface water because that is a component required to be met under Chapter 27 of the Texas Water Code in the context of the immediate case. However, Statewide Rule 9 does not require specific criteria aimed at secondary containment of tank batteries. In other words, Statewide Rule 9 does not require sufficient secondary containment to capture 100 percent of a tank battery's fluids, plus the volume of displacement, and account for the 25-year, 24-hour record rain event. The Examiners agree with Dr. Green in that the events evidenced by Wintergarden are not necessarily rare. On the other hand, a permit requirement for NGL to adhere to that standard requested by Wintergarden seems improper because it is not an explicit requirement under Statewide Rule 9 or the Texas Water Code. The record evidence does not indicate that those or similar surface containment requirements were placed on the disposal permits for NGL's 1<sup>st</sup> Well

---

<sup>96</sup> Tr., Vol. II, Pg. 90.

<sup>97</sup> Tr., Vol. I., Pg. 140.

<sup>98</sup> Tr., Vol. I., Pg. 233.

**Proposal for Decision**

or Pinnergy's nearby commercial disposal well that are located about 1,500 feet from the Subject Well. Therefore, the Examiners opine that Wintergarden's concerns as to sufficient secondary containment are better suited for a rule amendment process of Statewide Rule 9. While Wintergarden identified 15 events that impaired those tank batteries' ability to contain fluids, the Examiners find insufficient evidence to conclude that surface pollution occurred as a result of those events. In fact, when asked by opposing counsel, "can you specifically tell me what sources of surface water will be contaminated in your envisioned scenario of catastrophic failure," Dr Green testified, "I don't believe surface waters will be impacted."<sup>99</sup>

For those reasons, the Examiners are persuaded that NGL's proposed surface containment of the Subject Well's tank battery is sufficient to prevent pollution of surface waters.

Subsurface Containment

In this regard, the Examiners find no argument made by any of the protestants in the record as to whether or not disposal fluids would remain confined to the proposed injection interval through use of the Subject Well. Instead, Wintergarden expressed its concerns as to NGL's proposed well construction for the Subject Well.

NGL's proposed injection interval is from 8,400 feet to 10,000 feet, which includes the Edwards and Glen Rose Formations. Again, two existing commercial disposal wells exist within about 1,500 feet from the Subject Well's proposed location. Those two existing disposal wells utilize the same, or similar, injection interval as the Subject Well's proposed injection interval.

NGL evidenced that disposal in the Edwards Formation is confined below the top of the Edwards at the Subject Well's proposed location. NGL also evidenced that faulting does not occur in the area. The Examiners believe that NGL's argument as to the confinement of disposal fluids to the injection interval is underscored by Pinnergy's evidence for its existing nearby commercial disposal well.<sup>100</sup>

Well Construction of Subject Well

NGL proposes to complete the Subject Well as follows:

1. 10- $\frac{3}{4}$ " 40.5# surface casing set at a depth of 2,600 feet and cemented to surface with 1,600 sacks of cement.
2. 7" 26.0# long-string casing set at a depth of 10,000 feet and cement to surface with 2,900 sacks of cement.
3. 4- $\frac{1}{2}$ " tubing set on a packer no higher than 8,300 feet inside 7" 26# casing.

---

<sup>99</sup> Tr., Vol. I., Pg. 243, L. 12 – 17.

<sup>100</sup> See Section entitled "Background on NGL's 1<sup>st</sup> Well and the Pinnergy Well" above under NGL's direct evidence.

Mr. Johnson, NGL's expert engineer, testified that proposed completion procedure would protect groundwater and meet the Commission's well completion requirements.<sup>101</sup> However, Wintergarden expressed concerns as to the Subject Well's proposed completion. Dr. Green testified that, "it is the desire of Wintergarden that these wells [disposal wells] have redundancy in their protection...[it's] difficult to foresee and build everything so that the first line of defense is going to protect the natural resources."<sup>102</sup> He further stated that the same protections afforded to fresh water need to be extended to USDW.<sup>103</sup> Again, the Commission's GAU determined that the BUQW occurs at 2,500 feet beneath the Subject Well's proposed location, and the base of USDW occurs at 3,900 feet.<sup>104</sup>

The Examiners are again sympathetic to Wintergarden's concerns as to protection of groundwater because that is a component required to be met under Chapter 27 of the Texas Water Code in the immediate case. However, the Examiners believe that it would be inappropriate to apply Wintergarden's requested redundancies to the Subject Well because they are not required by Statewide Rule 9. The Examiners believe that NGL's proposed well construction for the Subject Well meets the minimum requirements of Statewide Rule 9. Noteworthy, the GAU determined that disposal of oil and gas waste into the interval from 8,000 feet to 10,000 feet would not endanger freshwater strata in the Subject Well's area.<sup>105</sup> The Examiners opine that Wintergarden's redundancy concerns as to disposal well construction are better suited for a rule amendment process of Statewide Rule 9. Noteworthy, on cross examination Dr. Green testified that he believes that NGL's proposed cementing evaluation for the Subject Well's casing meets the requirements of Statewide Rule 9.<sup>106</sup>

For those reasons, the Examiners are persuaded that NGL's proposed well construction for the Subject Well's is sufficient to prevent pollution of groundwater.

#### Endangerment or Injury of any Oil, Gas, or Other Mineral Interest Formation

Again, the Subject Well's proposed injection interval includes only the Edwards and Glen Rose Formations. STH et al., contends that use of the Subject Well for disposal into the Edwards and Glen Rose Formations may result in the waste of recoverable oil and gas as follows: (1) stranding Eagle Ford oil and gas that would not be recovered; and (2) that the Subject Well's proposed injection interval (*i.e.* specifically the Edwards Formation) is productive of oil and gas. STH et al. also lightly argued that a disposal well should be tested for oil and gas production before it begins injection of oil and gas waste into an injection interval.

The Examiners find little evidence in the record aimed at developing or supporting STH et al.'s concern that approval of the Subject Application would result in stranding recoverable reserves from the Eagle Ford Formation. In its closing arguments, STH et. al. made that allegation and opined that the Subject Well's proposed location interferes with a potential future location for an Eagle Ford-horizontal production well. STH et al. further opined that when Eagle

---

<sup>101</sup> See Tex. Admin. Code §3.9(8) – Casing.

<sup>102</sup> Tr., Vol. I, Pg. 238.

<sup>103</sup> *Id.*

<sup>104</sup> NGL Exh. No. 4.

<sup>105</sup> *Id.*

<sup>106</sup> Tr., Vol. I., Pg. 248, L. 10 – 18.

**Proposal for Decision**

Ford wells are fracked, they can subject a nearby disposal well to being crushed by the frack pressure. Again, the Examiners find insufficient probative evidence to support those claims. They remain unsupported allegations made by STH et al. in its closing statement.

STH et al., focused heavily on well bore evaluations performed on the Katrina Well. That well is situated roughly four to five miles north of the Subject Well's proposed location, and has historically produced about 2,000 barrels of oil from the Georgetown Formation. Mr. Miesch asserted that residual oil zones occur in the upper Edwards Formation at the Katrina Well's location. He then compared open-hole well logs recorded in the Katrina Well and NGL's 1<sup>st</sup> Well, and testified that those two well logs, "I really can't see that much difference in the log characteristics."<sup>107</sup> He concluded, therefore, that "you could have production in this well [NGL's 1<sup>st</sup> Well] if it had been tested".<sup>108</sup> As a result, STH et al.'s position is that the Subject Application should be denied.

The record evidence indicates that the disposal intervals utilized by NGL's 1<sup>st</sup> Well and the Pinnergy Well are in some form of communication because those wells largely share the same injection interval (*i.e.*, the Edwards Formation that is the proposed injection interval for the Subject Well).<sup>109</sup> Those wells are located about 1,500 feet away from the Subject Well's proposed location.<sup>110</sup> Importantly, the Pinnergy Well was not actively disposing of fluids at the time of the hearing due to downhole problems that may or may not have resulted from that communication between it and NGL's 1<sup>st</sup> Well. Mr. Johnston testified that communication did not appear to present a problem because NGL's 1<sup>st</sup> Well encountered surface injection pressures of about 3,000 psig, and that well is permitted to inject at surface pressures of up to 4,000 psig.<sup>111</sup>

NGL's counsel subsequently asked Mr. Johnston whether the formation [injection interval] today is presenting an over-pressurized situation. Mr. Johnston testified, "We have no evidence that's occurring...to my knowledge, there's not been any water production problems in any of these horizontal wells [surrounding Eagleford-producing wells]. If some of these horizontal wells started producing large volumes of water, as though [it] migrated up...and out of some of these horizontal wells, it would materially impact the oil production from those wells. And I would expect the operator would have filed some sort of complaint with the district office. It [water production problems] would have been anomalous, unwanted water production."<sup>112</sup>

After weighing the evidence, the Examiners are persuaded that NGL has shown that its proposed injection interval is not productive of oil or gas at the proposed location for the Subject Well. The proximity of the Subject Well to NGL's 1<sup>st</sup> Well and the Pinnergy Well is slightly more than ¼-mile distance. The record indicates that those two disposal wells are in communication due to their respective injection intervals being largely the same (*i.e.*, the Edwards Formation). If approved, then the Subject Well will likely be in communication with those disposal wells in a similar manner. Therefore, the Examiners opine that the Commission has already considered whether the Edwards Formation is productive of oil or gas near the

---

<sup>107</sup> Tr., Vol. II., Pg. 8, L. 18.

<sup>108</sup> Tr., Vol. II., Pg. 9, L. 12.

<sup>109</sup> Tr., Vol. I., Pg. 69, L. 5.

<sup>110</sup> NGL Exh. No. 31.

<sup>111</sup> Tr., Vol. I., Pg. 70, L. 3 – 12.

<sup>112</sup> Tr., Vol. I., Pgs 70 and 71.

**Proposal for Decision**

Subject Well because there are two existing commercial disposal wells within about 1,500 feet from the Subject Well (*i.e.*, slightly more than ¼-mile). In addition, there are no active protests to the immediate case by any oil and gas operators that operate production wells immediately near the Subject Well. In fact, those nearby operators withdrew their protests from the Subject Application prior to the hearing.

Public Interest

Absent Pinnergy's protest, STH et al., is the only remaining protestant to challenge whether or not the Subject Well is in the public interest. STH et al., argued that the Subject Well's proposed location is in the wrong place at the wrong time.<sup>113</sup> With regard to public interest, the Examiners find little to no evidence to support STH et al.'s claim. Representatives of STH et al. opined that the proximity of the Subject Well, NGL's 1<sup>st</sup> Well, and the Pinnergy Well are too close. The Examiners, however, did not correlate how STH et al. tied those wells' distance to each other to whether or not the Subject Well is in the public interest. Again, the nearest operators to the Subject Well's proposed location withdrew their protests to the Subject Application prior to the hearing. The record evidence also suggests that EP, the operator with active production wells nearest the Subject Well's proposed location, plans to utilize the Subject Well in the future if it is approved.

The Subject Application was supported by a waste-hauling company that utilizes NGL's 1<sup>st</sup> Well. Mr. Herring indicated that an industry need for the Subject Well based on his experience in the area surrounding the Subject Well.

With regard to drilling activity, Mr. White testified that the area surrounding the Subject Well is very active, and that EP owns a pipeline that enters the surface facility dedicated to NGL's 1<sup>st</sup> well. He indicated that NGL's 1<sup>st</sup> Well is only capable of disposing 24,000 barrels of fluid per day, yet NGL has long-term commitments from customers to bring additional water.<sup>114</sup> He testified that the Subject Well would provide an alternative, redundant disposal option for NGL's customers, and that NGL operates about 15 multi-well saltwater disposal facilities in the U.S.<sup>115</sup>

For the above reasons, the Examiners are persuaded that NGL evidenced a need for the Subject Well, and therefore, satisfied the public interest component of the Texas Water Code's Chapter 27.051.

Financial Assurance

NGL is an active operator (Operator No. 609267) in Texas. NGL is the operator of record for 16 wells in Texas and has sufficient financial assurance in accordance with Commission rules to operate the Subject Well.

---

<sup>113</sup> Tr., Vol. II., Pg. 82, L. 3 – 6.

<sup>114</sup> Tr., Vol. I., Pg. 155.

<sup>115</sup> *Id.*

**EXAMINERS' RECOMMENDATION**

For those reasons, in reviewing the record in this case, the Examiners conclude that NGL met its burden of proof in the Subject Application. Accordingly, the Examiners recommend that the application be granted and that the Commission adopt the following Findings of Fact and Conclusions of Law.

**FINDINGS OF FACT**

1. NGL Watersolutions Eagleford, LLC (NGL) seeks authority to commercially dispose of produced water and RCRA-Exempt fluids into its HR Cotulla SWD Lease ("Subject Lease"), Well No. 2 (Subject Well), pursuant to Statewide Rule 9 [16 Tex. Admin. Code §3.9].
2. The Subject Lease is composed of roughly 10-acres.
3. The Subject Lease contains NGL's existing commercial disposal well, the HR Cotulla SWD Lease, Well No. 1 (NGL's 1<sup>st</sup> Well).
4. NGL's original application was sought to inject 25,000 barrels of fluid per day into the Edwards and Glen Rose Formations from 8,000 to 10,000 feet through the Subject Well (Original Application).
5. EP Energy (EP) and Chesapeake Operating, LLC (Chesapeake) submitted letters of protest on December 17<sup>th</sup> and December 22, 2014, respectively, to the Original Application.
6. On January 21, 2015, NGL revised the Original Application by lowering the top of the proposed injection interval from 8,000 to 8400 feet in the Subject Well (Subject Application).
7. Notice of the Subject Application was sent by U.S. Mail to the Service List provided by NGL on April 10, 2013.
8. On December 4, 2014, NGL published a copy of its original application in the *Frio-Nueces Current*, a newspaper of general circulation in La Salle County, Texas.
9. On December 9, 2014, NGL mailed notice of its original application to those persons required to be noticed pursuant to SWR 9(5).
10. EP and Chesapeake withdrew their protests to the Original Application on April 20, 2015, and February 5, 2015, respectively.
11. The Subject Application was protested by Pinnergy, Ltd. (Pinnergy), Dr. Edward Miesch, Scott Wilkinson, Richard Wilkinson, Georgeann Ericson, Waypoint Eagleford, MKM Business Holdings, South Texas Holdings (collectively, South Texas Holdings, et al.) at the hearing held on May 5 and May 11, 2015.

**Proposal for Decision**

12. On March 30, 2016, Pinnergy effectively withdrew its protest to the Subject Application.
13. NGL proposes to drill and complete the Subject Well as follows:
  - a. Total depth of 10,000 feet;
  - b. 10- $\frac{3}{4}$ " 40.5# surface casing set at a depth of 2,600 feet and cemented to surface with 1,600 sacks of cement;
  - c. 7" 26.0# long-string casing set at a depth of 10,000 feet and cement to surface with 2,900 sacks of cement;
  - d. 4- $\frac{1}{2}$ " tubing set on a packer no higher than 8,300 feet inside 7" 26# casing;
  - e. Maximum daily injection volume not to exceed 25,000 barrels of fluid per day;
  - f. Maximum surface injection pressure not to exceed 4,000 pounds per square inch gauge (psig);
  - g. Injection fluids to be limited to salt water and Resource Conservation and Recovery Act (RCRA) – exempt oil and gas waste.
14. The use or installation of the Subject Well is in the public interest due to the following:
  - a. NGL received support at the hearing from a representative of Shale Tank Truck, LLC (STT);
  - b. STT is a water-hauling company in Texas utilized by operators to haul produced water from production well locations to disposal wells for disposition;
  - c. A representative of STT evidenced that it experienced wait times when NGL's HR Cotulla SWD Lease, Well No. 1 (NGL's 1<sup>st</sup> Well) was disposing at capacity;
  - d. STT evidenced that approval of the Subject Application will lower the total disposal cost per barrel and reduce truck time on the road.
15. The use or installation of the Subject Well will not endanger or injure any oil, gas, or other mineral formation due to the following:
  - a. The proximity of the Subject Well to NGL's 1<sup>st</sup> Well and the Pinnergy Well is slightly more than  $\frac{1}{4}$ -mile distance;
  - b. NGL's 1<sup>st</sup> Well and the Pinnergy Well both utilize the Subject Application's proposed injection interval, in part, for commercial disposal of oil and gas waste;

**Proposal for Decision**

- c. Approval of the commercial disposal permits for NGL's 1<sup>st</sup> Well and the Pinnergy Well show that the Edwards Formation is not productive of hydrocarbons at those wells' locations;
  - d. The Subject Well, NGL's 1<sup>st</sup> Well, and the Pinnergy Well will be in communication in the Edwards Formation through those wells' injection intervals;
  - e. There are no existing production wells completed in the Edwards Formation within two miles of the Subject Wells proposed location;
  - f. Disposal fluids will be confined to the Subject Application's proposed injection interval;
  - g. The production wells immediately surrounding the Subject Well's proposed location do not produce from the Edwards or Glen Rose Formations.
16. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution due to the following:
- a. The base of usable quality water occurs at 2,500 feet beneath the Subject Well's proposed location;
  - b. The base of underground sources of drinking water occurs at 3,900 feet beneath the Subject Well's proposed location;
  - c. NGL's proposed well construction for the Subject Well will protect the BUQW and USDW from harm through its use as a disposal well;
  - d. Disposal fluids will be confined to the Subject Application's proposed injection interval from 8,400 feet to 10,000 feet beneath the Subject Well's proposed location.
17. NGL is an active operator (Operator No. 609267) in Texas, and is the operator of record for 16 wells in Texas and has sufficient financial assurance in accordance with Commission rules to operate the Subject Well.
18. By letter dated January 26, 2015, the Commission's Underground Injection Control Group (UIC) issued a letter to NGL that indicated the Subject Application was reviewed and determined to be administratively complete.
19. NGL has met its burden of proof for approval of the Subject Application.

**CONCLUSIONS OF LAW**

1. Resolution of the Subject Application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code §81.051.
2. Findings of fact may be based only the evidence and on matters that are officially noticed. Tex. Gov't Code §2001.141(b).
3. All notice requirements for the Subject Application have been satisfied. 16 Tex. Admin. Code §3.9.
4. The use or installation of the Subject Well is in the public interest. Tex. Water Code §27.051(b)(1).
5. The use or installation of the Subject Well will not endanger or injure any oil, gas, or other mineral formation. Tex. Water Code §27.051(b)(2).
6. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution. Tex. Water code §27.051(b)(3).
7. The applicant has made a satisfactory showing of financial responsibility. Tex. Water Code §27.051(b)(4).
8. NGL Watersolutions Eagleford, LLC has met its burden of proof and the Subject Application satisfies the requirements of Chapter 27 of the Texas Water Code and 16 Tex. Admin. Code §3.9.

**EXAMINERS' RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the Examiners recommend that the Commission approve NGL's Subject Application.

Respectfully,



Brian Fancher, P.G.  
Technical Examiner



Marshall F. Enquist  
Administrative Law Judge