RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

PROPOSAL FOR DECISION

OIL & GAS DOCKET NO. 08-0303932

THE APPLICATION OF PA PROSPECT, LLC PURSUANT TO STATEWIDE RULE 9 FOR A COMMERCIAL PERMIT TO DISPOSE OF OIL OR GAS WASTE BY INJECTION INTO A POROUS FORMATION NOT PRODUCTIVE OF OIL OR GAS FOR THE COUNTY ROAD 449 SWD LEASE, WELL NO. 1, RED BLUFF (CONSOLIDATED) FIELD, REEVES COUNTY, TEXAS

HEARD BY: Paul Dubois – Technical Examiner
Ryan M. Lammert – Administrative Law Judge

APPEARANCES:

APPLICANT:	REPRESENTING:
Jay Stewart Wes McGuffey James M. Clark, P.E. Carter Davis, P.E. Jimmy Jones Amanda Biediger	PA Prospect, LLC

PROTESTANTS:	REPRESENTING:
George Neale Christopher Hotchkiss Rick Johnston, P.E. Tim Jurco Joe Vargo	NGL Water Solutions Permian, LLC

PROCEDURAL HISTORY

Application Published:	November 22, 2016
Application Filed:	December 9, 2016
Protest Received:	December 15, 2016
Request for Hearing:	February 21, 2017
Referred for Hearing:	February 27, 2017
Pre-hearing Conference:	July 18, 2017

Notice of Hearing:	August 25, 2017
Revised Application Published:	September 5, 2017
Revised Application Filed:	September 8, 2017
Revised Application Staff Review Complete:	September 18, 2017
Hearing Held:	September 26, 2017
Transcript Received:	October 13, 2017
Proposal for Decision Issued:	November 9, 2017

STATEMENT OF THE CASE

Pursuant to Statewide Rule 9 (16 Tex. Admin. Code §3.9), PA Prospect, LLC ("PA Prospect") is applying for a commercial permit to dispose of oil and gas waste by injection into a porous formation not productive of oil and gas for its County Road 449 Lease, Well No. 1, in the Red Bluff (Consolidated) Field, Reeves County, Texas. PA Prospect request authority to inject up to 25,000 barrels per day ("bpd") of salt water and non-hazardous oil and gas waste exempt from the Resource Conservation and Recovery Act ("RCRA") into the Cherry Canyon and Brushy Canyon Formations in the depth interval from 4,450 feet to 6,000 feet. The application is protested by NGL Water Solutions Permian, LLC ("NGL"), an adjoining land owner and operator of commercial disposal wells in the area.

A notice of hearing was issued in this case on August 25, 2017. After the notice was issued, PA Prospect requested to make changes to the application. Specifically, PA Prospect requested the surface location be moved 610 feet to the west of the originally requested location. Moving the location resulted in a nominal change in the requested depth interval, but no change to the proposed disposal formations. PA Prospect refiled the application with Commission for staff review, and re-noticed and re-published the application. Commission staff forwarded the revised application to the Hearings Division on September 18, 2017. The revised application was considered at the September 26, 2017 hearing on the merits.

The technical examiner and administrative law judge ("Examiners") recommend PA Prospect's application be approved and the commercial disposal permit be issued.

APPLICABLE LAW

The Railroad Commission may grant an application for a disposal well permit under Texas Water Code § 27.051(b) and may issue a permit if it finds:

1. *The use or installation of the injection well is in the public interest;*

2. *The use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation;*

3. *With proper safeguards, both ground and surface fresh water can be adequately protected from pollution; and*

4. *The applicant has made a satisfactory showing of financial responsibility as required by Section 27.073.*

DISCUSSION OF THE EVIDENCE

APPLICANT'S EVIDENCE

At the hearing, PA Prospect offered testimony from Jim Clark, P.E., and Carter Davis, P.E., who were both qualified as expert witnesses in petroleum engineering. Testimony was also offered by Jimmy Johns, the manager of PA Prospect.

PA Prospect proposes the County Road 449 SWD Well No. 1 will be a newly-drilled injection well located on a 5-acre lease on a 30-acre tract of land located south of Reeves County Road 449 and about 1,800 feet west of U. S. Highway 285. The wellsite is about 6 miles northwest of Orla, in northern Reeves County, Texas, and about 7 miles south of the New Mexico state line.[1]

Notice

On November 22, 2016, notice of the initial application was published in the *Pecos Enterprise*, a newspaper of general circulation in Reeves County, Texas. On December 9, 2016, PA Prospect mailed copies of the initial application to the owner of the surface tract, owners of the adjacent tracts, operators of wells within a one-half mile radius, and the Reeves County Clerk.

On September 5, 2017, notice of the revised application was published in the *Pecos Enterprise*, a newspaper of general circulation in Reeves County, Texas. On September 8, 2017, PA Prospect mailed copies of the revised application to the owner of the surface tract, owners of the adjacent tracts, operators of wells within a one-half mile radius, and the Reeves County Clerk. The proposed well is not located in the city limits or extra territorial jurisdiction of any city or town.[2]

Facility Design and Operation

PA Prospect proposes to drill and complete the County Road 449 SWD Well No. 1 as follows[3]:

- The well will be drilled to a total depth of 6,100 feet.
- Surface casing (9 5/8-inch) will be set to a depth of 800 feet and cemented to the surface with Class C cement.

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[1] PA Prospect Ex. No. 3.

[2] PA Prospect Ex. Nos. 3 & 5.

[3] PA Prospect Ex. No. 3.

- Production casing (7-inch) will be set to a depth of 6,100 feet and cemented to the surface with Class C cement using a multi-stage tool at 4,000 feet.

- Injection tubing (3 ½-inch) will be set with a packer at a depth of 4,350 feet.

- The injection interval will be perforated in porous zones in the lower portion of the Cherry Canyon Formation and the Brushy Canyon Formation in the depth interval between about 4,450 feet and 6,000 feet.

PA Prospect proposes to operate the County Road 449 SWD Well No. 1 as follows[4]:

- The maximum injection volume will be 25,000 bpd, and the estimated average injection volume will be 15,000 bpd.

- The maximum surface injection pressure will be 2,195 pounds per square inch gauge ("psig"), and the average surface injection pressure will be 1,500 psig.

- Injected waste will be limited to produced salt water and RCRA-exempt non-hazardous oil and gas waste.

- This will be a commercial disposal well.

Groundwater, Geology and Resource Development

To protect usable-quality groundwater at this location, the Commission's Groundwater Advisory Unit ("GAU") recommends the interval from the land surface to the base of the Rustler Formation (which is the base of usable quality groundwater, or "BUQW"), at an estimated depth of 750 feet, be protected. In addition, the GAU estimates the base of underground sources of drinking water (USDW) occurs at a depth of about 1,450 feet. Based on the GAU's review of available geologic data, it concludes that, if the proposed well is otherwise compliant with Commission rules and guidance, drilling and using this disposal well and injecting oil and gas waste into the subsurface stratum will not endanger the freshwater strata in the area.[5]

A significant anhydrite/evaporite interval is present below the BUQW from about 750 feet to 2,650 feet. The anhydrite interval is a confining layer that will prevent injected fluids from migrating into the overlying freshwater strata. In addition, a 50-foot thick shale stratum is below the anhydrite and above the Delaware Mountain Group. PA Prospect proposes to inject waste into the lower part of the Cherry Canyon Formation and all of the Brushy Canyon Formation, which are the lower members of the Delaware Mountain Group.[6]

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[4] PA Prospect Ex. No. 3.

[5] PA Prospect Ex. No. 3.

[6] Tr. 38: 2-14. PA Prospect Ex. No. 6.

PA Prospect proposes an injection interval from about 4,450 feet to 6,000 feet. The proposed disposal formations are clastic strata that consist of porous sand with interbedded shale. Mr. Clark stated, "these sands, not only by log appearance, but by nearby well performance, have a very high capacity to take water."[7] Above the injection interval, Mr. Clark identified a regional shale marker at about 4,380 feet to 4,388 feet. Mr. Clark stated his opinion that this shale interval will also confine injected fluids to the injection interval. In addition, Mr. Clark indicated there were other shale layers above and within the disposal interval itself.[8]

Mr. Clark noted that the proposed PA Prospect well and the nearby NGL Well No. 1 are 1,346 feet apart, and both wells have large disposal intervals that only partially overlap. In his opinion, these wells will have no difficulty injecting water into the subsurface, and that the NGL well has already injected several million barrels of fluid.[9]

A review of the records of the U. S. Geologic Survey did not identify any seismic events with a magnitude greater than 1.0 within a 9.08 kilometer radius (100 square miles) of the proposed disposal well between January 1, 1973 and September 25, 2017.[10]

Area of Review

PA Prospect conducted a review of Commission records to identify all wellbores within a one-quarter mile area of review around the proposed well location. This review identified one wellbore that penetrated the proposed disposal interval within one-quarter mile of the proposed County Road 449 SWD Well No. 1. The Cimarex Reeves "BU" Fee Well No. 2 was drilled in 1982 to a depth of 4,975 feet. The well was plugged on August 17, 2016 when four plugs were placed in the well at depths of 3,750 feet, 2,780 feet, 878 feet, and a surface plugs. The well is plugged in such a manner that it will not act as a vertical conduit for injected fluids to migrate from the disposal interval.

Four other wells (two producing, one injector[11], and one plugged and abandoned well) are located within a one-quarter mile radius of the proposed PA Prospect well, but none of those four wells penetrate the proposed disposal interval. In addition, NGL's North Reeves 5885 SWD Well No. 1 is located just outside of the one-quarter mile area of review, about 1,346 feet east of PA Prospects proposed County Road 449 SWD Well No. 1.

Mr. Clark further stated his opinion that pressure front calculations will not provide meaningful information to assess reservoir pressure changes as a result of

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[7] Tr. 42: 12-17; 49: 19-24.

[8] Tr. 37: 7-20.

[9] Tr. 82: 1-3 and 12-20.

[10] PA Prospect Ex. No. 9.

[11] The one injection well is NGL's North Reeves 5885 SWD Well No. 2.

disposal in this case. Mr. Clark stated that the traditional pressure front calcuations are derived from two key assumptions: (1) the reservoir is infinite acting, and (2) there is radial flow within the reservoir. In this case the injection intervals for PA Prospect's proposed well and NGL's nearby North Reeves 5885 SWD Well No. 1 overlap but are not identical. As the pressure fronts from each well grow towards the other, a no-flow boundary will form and radial flow will be inhibited. Therefore, Mr. Clark states that pressure front calculations in such cases do not provide meaningful information.[12]

One drilling permit was also identified within a one-quarter mile area of review. That location was permitted by PA Prospect for a brine mining well to be drilled to a depth of 2,600 feet. Mr. Clark stated that the brine mining well will not be drilled at that location and that the permit has been cancelled.[13]

Public Interest and Need for Additional Disposal Capacity

PA Prospect asserts that there is a continuing and growing need for waste water disposal capacity in the area of its proposed County Road 449 SWD Well No. 1. PA Prospect supports this assertion by first identifying protestant NGL's own recent expansion of disposal capacity and facilities along the U.S. Highway 285 corridor, and second with an analysis of exploration and production trends in the area.

PA Prospect asserts that protestant NGL is a competitor that is aggressively expanding its presence in northern Reeves County. PA Prospect demonstrated protestant NGL's own disposal well permitting activity in the immediate area, especially along the U.S. Highway 285 corridor that runs northwest to southeast through Reeves County. The Examiners have summarized PA Prospect's evidence and testimony below:

1. NGL North Reeves 5885 SWD Well No. 1 (API No. 42-389-34661, W-14 Permit No. 14770).[14]
    a. Located on U.S. Highway 285 about 1,346 feet to the east of the PA Prospect proposed disposal well.
    b. Permit granted to BMG Angeles, LLC, on October 20, 2014 to inject 25,000 bpd at a maximum pressure of 2,500 psi into the Brushy Canyon Formation, which does overlap with the lower part of PA Prospect's proposed disposal zone.
    c. BMG Angeles, LLC permit amended on April 23, 2015 to increase the daily capacity to 35,000 bpd.
    d. Permit amended on March 21, 2017 to increase the daily capacity to 40,000 bpd and to identify NGL as the operator and permittee.

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[12] Tr. 79-82.

[13] Tr. 26: 6-9.

[14] PA Prospect Ex. Nos. 11, 12 & 14.

2. NGL North Reeves 5885 SWD Well No. 2 (API No. 42-389-35357, W-14 Permit No. 15088).[15]
    a. Located on U.S. Highway 285 about 1,100 feet to the east of the PA Prospect proposed disposal well.
    b. Permit granted to Black Mountain SWD LP on September 11, 2015 to inject 30,000 bpd at a maximum pressure of 1,525 psi into the Lower Delaware Formation, which does not overlap with the lower part of PA Prospect's proposed disposal zone.
    c. Permit amended on October 16, 2015 to identify NGL as the operator and permittee.

3. High Roller Wells LLC Angeles SWD Well No. 1 (API No. 42-389-35762, disposal permit pending).[16]
    a. Located on U.S. Highway 285 about 3,600 feet east-southeast of the PA Prospect proposed disposal well.
    b. High Roller Wells LLC applied for a W-14 commercial disposal permit to inject up to 30,000 bpd into the Delaware Sands, which overlaps with the PA Prospect proposed disposal zone.
    c. PA Prospect asserts a business relationship between High Roller Wells LLC and NGL.[17]

4. High Roller Wells LLC Angeles SWD Well No. 2 (API No. 42-389-35762).[18]
    a. Located on U.S. Highway 285 about 3,600 feet east-southeast of the PA Prospect proposed disposal well.
    b. On March 3, 2017 the Commission issued a drilling permit for this well.
    c. The Form W-1, "Application for Permit to Drill, Recomplete or Re-Enter" indicates this well will be an injection well drilled to a total depth of 6,400 feet.
    d. A Form W-14 has not been filed.

5. NGL has permitted six disposal wells within a one-half mile radius of the townsite of Orla, on U.S. Highway 285 about 6 miles southeast of the proposed PA Prospect well.[19]
    a. Reeves 25 SWD No. 4 is authorized to inject up to 40,000 bpd.
    b. Reeves 630 SWD No. 1 is authorized to inject up to 40,000 bpd.
    c. Reeves 630 SWD No. 2 is authorized to inject up to 35,000 bpd.
    d. Townside SWD No. 2 is authorized to inject up to 35,000 bpd.
    e. Orla Townsite SWD No. 1 is authorized to inject up to 20,000 bpd.
    f. Orla 5476 No. 1SW is authorized to inject up to 20,000 bpd.

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[15] PA Prospect Ex. No. 13 & 14.

[16] PA Prospect Ex. No. 15.

[17] PA Prospect Ex. No. 20.

[18] PA Prospect Ex. No. 16.

[19] PA Prospect Ex. Nos. 18 & 19.

6. NGL has permitted its Hwy 285 SWD Well Nos. 1 and 2 about 7.5 miles northwest of the proposed PA Prospect well.[20]
    a. NGL Hwy 285 SWD Well No. 1 was initially authorized to inject up to 25,000 bpd on January 21, 2016.
        i. A permit amendement dated April 27, 2017 increased the injection authority to 40,000 bpd.
        ii. On September 13, 2017 High Roller Wells, LLC applied for an amended drilling permit to correct the well location.
        iii. On September 16, 2017, NGL filed an amended Form W-14 for this well to correct the well location.
    b. NGL Hwy 285 SWD Well No. 2 was authorized to inject up to 25,000 bpd on January 21, 2016.
        i. On September 12, 2017 High Roller Wells, LLC applied for a drilling permit for this well.
        ii. September 17, 2017, NGL filed an amended Form W-14 for this well to correct the well location.
    c. The Hwy 285 SWD Well Nos. 1 and 2 are located 250 feet apart and are intended to operate concurrently.

7. NGL has a disposal permit for its Orla SWD Well No. 1 on U.S. Highway 285 about 2 miles southeast of the proposed PA Prospect well.
    a. NGL has applied for three additional drilling permits on the Orla SWD lease, Well Nos. 2, 3 and 4.
    b. For Well Nos. 2 and 4, NGL sought injection well permits to depths up to 6,000 feet.[21]

PA Prospect Exhibit Nos. 18 and 22 also indicated several other injection and/or disposal wells in the area, but those were not specifically identified by name, operator or API Number.

Mr. Davis testified that the Delaware Basin, including northern Reeves County and surrounding area, continue to see significant oil and gas development. In Reeves and the adjacent 6 counties (including two counties in New Mexico), an average of more than 300 drilling permits have been issued each month for 2017 through August. Within a 50-mile radius of the proposed PA Prospect well about 200 to 250 drilling permits have been issued each month during the same time span. Within a 15-mile radius 30 to 80 drilling permits have recently been issued each month.[22] Similar metrics support the increased activity. The weekly rig count in the 7 county area has increased from about 60 in early 2016 to about 170 currently.[23]

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[20] PA Prospect Ex. No. 21.

[21] PA Prospect Ex. No. 22. Notably, the proposed depth for Orla SWD Well No. 3 is 17,500 feet, but the Form W-1 indicates a vertical well profile.

[22] PA Prospect Ex. No. 25.

[23] PA Prospect Ex. No. 26.

In addition to drilling, however, the average fracture treatment of a horizontal well requires about 250,000 barrels of water.[24] Wells in Culberson, Loving, Reeves and Ward Counties currently produce about 2.5 million barrels of water per day, which is a steep increase from about 0.5 million barrels of water per day in 2012. Within a 15-mile radius of the proposed well, Mr. Davis estimates more than 200,000 barrels of water are produced daily.[25]

Mr. Davis analyzed water disposal records that indicate water is routinely transported from 10 to 20 miles from the production lease to the disposal location. Mr. Carter stated that the transportation distance increases costs to operators, and that additional disposal facilities will benefit the industry activity in this area. However, Mr. Carter also indicated that transportation distance is likely not the only factor; operators appear to truck water past some disposal facilities in favor of others, perhaps for contractual obligations or other reasons. Additional disposal wells may provide opportunities for the industry to become more efficient.[26]

Finally, Mr. Davis stated protestant NGL's actions in northern Reeves County is a significant indicator of the public interest need for the exploration and production industry to have additional disposal capacity in the Delaware Basin. Since August 2016, NGL has applied for 25 drilling permits for injection wells in Reeves County. For 23 of these wells, a permit was sought after NGL protested PA Prospect's County Road 449 SWD Well No. 1.[27] In addition, since March 2017 has made 19 applications for new disposal wells or to increase the saltwater disposal capacity of existing disposal wells in Reeves County.[28]

Mr. Jimmy Johns, a manager for PA Prospect, stated that the proposed disposal well will be a part of a combined facility that also offers fresh water and brine. The freshwater supply facility is already operating.

Financial Assurance

PA Prospect holds an active organizational report (Form P-5, Operator No. 631641). The Form P-5 expiration date is November 1, 2018. PA Prospect filed a $25,000 cash deposit for financial assurance.[29]

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[24] PA Prospect Ex. No. 27.

[25] PA Prospect Ex. No. 28.

[26] PA Prospect Ex. No. 29. Tr. 116: 20-23; 118.

[27] PA Prospect Ex. Nos. 30 & 31; Tr. 121-122.

[28] PA Prospect Ex. No. 32.

[29] PA Prospect Ex. No. 2. The current expiration date of November 1, 2018, was validated per Commission records by the Examiners on November 1, 2017.

PROTESTANT'S EVIDENCE

At the hearing, NGL offered the testimony of Tim Jurco, Vice President of NGL, and the expert testimony of Rick Johnston, P.E., a consulting petroleum engineer. Mr. Jurco stated the basis for NGL's protest is "...around the fact that we think the (PA Prospect) well is too close to our existing well and will interfere with our well."[30] Mr. Jurco further stated his agreement that additional disposal capacity is needed in Reeves County, and that NGL was actively seeking Commission authority for additional disposal capacity in the area.[31]

NGL operates two commercial disposal wells near the proposed PA Prospect well. The North Reeves 5885 SWD Well No. 1 is located about 1,346 feet to the east of the proposed PA Prospect well and is currently permitted to inject up to 40,000 bpd at a maximum surface injection pressure of 2,500 psig into the Brushy Canyon Formation in the depth interval from 5,000 to 6,100 feet. This disposal interval partially (about 60.9 percent) overlaps with the proposed depth interval (4,450 to 6,000 feet) of the PA Prospect well. Well No. 1 was completed on December 3, 2014, and it is an active disposal well.[32]

NGL's second nearby well is the North Reeves 5885 SWD Well No. 2, which is located 1,099 feet east of the proposed PA Prospect well and is currently permitted to inject up to 30,000 bpd at a maximum surface injection pressure of 1,525 psig into the shallower Bell Canyon Formation in the depth interval from 3,050 to 3,580 feet. This disposal interval does not overlap with the proposed depth interval of the PA Prospect well. Well No. 2 was completed on November 13, 2016, but was not active at the time of the hearing.[33] Well No. 2 is capable of being immediately utilized if needed.

The basis for NGL's protest is that the proposed PA Prospect disposal well will harm NGL's existing commercial disposal activites at the nearby North Reeves Well No. 1. The harm may come in the form of reservoir pressure increases that require additional surface pump pressure (and therefore additional cost) to NGL's well. In addition, increased reservoir pressure from PA Prospect may result in non-productive shut-in time or premature abandonment of NGL's well.[34] Mr. Johnston prepared several pressure-front calculations as evidence of increased reservoir pressure at NGL's Well No. 1 as a result of PA Prospect's proposed injection well:

- The first series of calculations assume 60.9 percent of the PA Prospect fluids will be injected into the common disposal interval shared by the PA Prospect and NGL Wells in the Brushy Canyon Formation. After one year of injection, the PA Prospect well will cause reservoir pressure to increase 143.3 pounds per square

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[30] Tr. 243: 3-5.

[31] Tr. 241: 20-23. 243: 6-9.

[32] NGL Ex. Nos. 1-3, 9, 10 & 19. Tr. 189: 12-13.

[33] NGL Ex. Nos. 4-6, 9 & 10. Tr. 190: 1-4.

[34] Tr. 253: 17-22. 256: 17-22.

inch absolute (psia) in the reservoir at the NGL well; after 10 years of injection the pressure will increase a total of 201.8 psia.[35]

- The second series of calculations assume all of the PA Prospect fluids will be injected into the common disposal interval shared by the PA Prospect and NGL Wells in the Brushy Canyon Formation. After one year of injection, the PA Prospect well will cause reservoir pressure to increase 303.1 psia in the reservoir at the NGL well; after 10 years of injection the pressure will increase a total of 427.0 psia.[36]

Mr. Johnston stated his opinion that the proposed PA Prospect well will have a negative impact on the life of NGL's Well No. 1.[37] Mr. Johnston indicated that increased reservoir pressure could present harm to NGL by way of additional costs, but that the calculated pressure increase would not harm the disposal reservoir.[38]

Mr. Jurco testified that NGL's business approach included ensuring redundancy in disposal capacity at its facilities such that if one disposal well is disabled, waste disposal can continue through another well without interruption to its customers.[39] At its North Reeves 5885 SWD facilities, NGL is currently only utilizing about half of the disposal capacity at its Well No. 1. The average surface injection pressure is less than 1,000 psi and the well is permitted for a maximum injection pressure of 2,500. Well No. 2 is not active. Excess (redundant) disposal capacity currently exists at the NGL North Reeves 5885 SWD facility.[40]

EXAMINERS' ANALYSIS

The evidence in the record demonstrates PA Prospect has met its burden of proof and that the proposed County Road 449 SWD Well No. 1 disposal well application meets the requirements of Chapter 27 of the Texas Water Code and Statewide Rule 9. The Examiners conclude the Commission may grant PA Prospect's application for the County Road 449 SWD Well No. 1 because the requirements of Texas Water Code §27.051(b)(1-4) have been met. The Examiners recommend the Commission grant the application and issue PA Prospect a commercial permit for the County Road 449 SWD Well No. 1.

Below, the four required elements of the Texas Water Code § 27.051(b) will discussed sequentially. First, however, as a preliminary matter the Examiners will

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[35] NGL Ex. No. 13.

[36] NGL Ex. No. 14.

[37] Tr. 217: 20-25.

[38] Tr. 203: 23 to 204: 8.

[39] Tr. 226: 19-23.

[40] Ex. No. 19. Tr. 223: 11-16.

consider the appropriate disposition and weight to assign to the evidence in the record offered by NGL.

Disposition and Weight of NGL's Evidence

NGL is an affected person in this case pursuant to Statewide Rule 9(5)(E)(ii) because it is a Commission-designated operator of wells within a one-half mile radius of the proposed PA Prospect well. This was not disputed at the hearing. NGL received notice of the application, filed a protest, and participated in the hearing. The Examiners understand that an operator of nearby wells may be in a position to provide the Commission useful factual information regarding a particular geographic and geologic area as such facts pertain to the permitting requirements of the Texas Water Code §27.051(b)(1-4).

However, the evidence offered by NGL was either (1) oddly supportive of the public interest requirement in §27.051(b)(1), or (2) not pertinent to the requirements of the Texas Water Code §27.051(b)(2-4):

- NGL provided extensive evidence of its own ongoing business activities that support a continued public interest need for saltwater and oil and gas waste disposal wells in northern Reeves County.
- NGL provided no evidence that an oil, gas, or other mineral bearing formation may or will be endangered by the proposed PA Prospect well.
- NGL provided no evidence that both ground and surface fresh water may or will be polluted by the proposed PA Prospect well.
- NGL provided no evidence challenging PA Prospect's financial responsibility.

Instead, NGL protested the application, in the words of its Vice President, Mr. Jurco:

> *But the protest is based around the fact that we think the well is too close to our existing well and will interfere with our well.*[41]

The assertion of interference from the proposed PA Prospect well was described (although not quantified) by Mr. Johnston's testimony of harm to NGL:

> *It will shorten the injection life of the well, and it'll increase the operating expenses. And you have to -- to pump these pressures, you have to buy electricity. So it'll increase the operating expenses. And, ultimately, it will, at some point, cause the pressure to go up against the maximum surface injection pressure.*[42]

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[41] Tr. 243: 3-5.

[42] Tr. 203: 24 to 204: 8.

NGL is an affected person in this case because it is a Commission-designated operator within one-half mile of the proposed well. The substance of NGL's protest, however, is a competitor's argument that is contrary to Statewide Rule 9(5)(E)(ii), which states:

> *For 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. (emphasis added)*

That is, NGL's protest is based entirely on grounds that otherwise would have precluded it from being an affected person had NGL not also been a nearby operator. Therefore, the Examiners conclude that NGL's evidence pertaining to any actual injury or economic damage as a competitor of PA Prospect will be assigned no weight.

Public Interest

PA Prospect demonstrated that the proposed disposal well is in the public interest. The oil & gas exploration and production activity in northern Reeves and adjacent counties continues to expand, as does the volume of produced water and the need for additional disposal capacity. Other disposal well operators, notably NGL, are aggressively expanding their own business services in the area.

The Cherry and Brushy Canyon Formations are used throughout the Delaware Basin for the disposal of produced fluids and oil and gas waste. The evidence suggests the Cherry and Brushy Canyon Formations are capable of accepting the proposed disposal fluids at the requested permit rate and pressure.

NGL provided no evidence to suggest the proposed disposal well was not in the public interest; indeed, NGL is on record as stating there continues to be a need for disposal capacity in the area, and is actively pursuing its own business opportunities. The operational parameters of the proposed PA Prospect well are within the range of operational parameters sought by NGL for its own disposal operations in northern Reeves County. The Examiners conclude that the evidence in the record indicates the subject well is in the public interest pursuant to Texas Water Code §27.051(b)(1).

Endanger or Injure Any Oil, Gas, or Other Mineral Formation

PA Prospect demonstrated that the proposed disposal well will not injure any oil, gas, or other mineral formation. The proposed disposal well will inject oil and gas waste into a non-productive formation. The Bell Canyon Formation, which overlies the disposal interval, is productive of hydrocarbons in the area. There is adequate geologic confinement above and below the disposal zone. The well will be constructed with adequate mechanical confinement—steel casing and cement—to prevent fluids from

migrating out of the disposal zone. The surface injection pressure will be limited to 2,195 psig to prevent damage to the disposal reservoir.

NGL provided no evidence to suggest the proposed disposal well would harm oil, gas or other mineral resources. The evidence in the record demonstrates the proposed disposal well will not endanger or injure any oil, gas, or other mineral formation pursuant to Texas Water Code § 27.051(b)(2).

Prevent Pollution of Ground and Surface Fresh Water

PA Prospect demonstrated that the proposed disposal well will not cause the pollution of ground or surface fresh water. As a commercial disposal well, the permit issued by the Commission will include standard provisions for the surface facilities to prevent the pollution of ground and surface fresh water.

The BUQW is estimated to occur at a depth of 750 feet below ground surface. Surface casing will be set to a depth of 800 feet and cement circulated to the surface. The production casing will also be cemented to the surface. The surface injection pressure will be limited to 2,195 psig to prevent damage to the disposal reservoir.

One wellbore that penetrates the disposal interval is located within a one-half mile radius of the proposed disposal well. The Cimarex Reeves "BU" Fee Well No. 2 was drilled in 1982 to a depth of 4,975 feet. The well was plugged on August 17, 2016 when four plugs were placed in the well at depths of 3,750 feet, 2,780 feet, 878 feet, and a surface plugs. The well is plugged in such a manner that it will not act as a vertical conduit for injected fluids to migrate from the disposal interval.

NGL provided no evidence to suggest the proposed disposal well would cause the pollution of ground or surface fresh water. The evidence in the record demonstrates that with proper safeguards, both ground and surface fresh water can be adequately protected from pollution pursuant to Texas Water Code § 27.051(b)(3).

Demonstrate Financial Responsibility

PA Prospect has an active Organization Report (Form P-5, Operator No. 631641), and has filed a $25,000 cash deposit for financial assurance. NGL presented no testimony or evidence with regard to PA Prospect's ability to meet its financial assurance obligations. The evidence in the record demonstrates the applicant has made a satisfactory showing of financial responsibility as required by Texas Water Code § 27.073 pursuant to Texas Water Code § 27.051(b)(4).

FINDINGS OF FACT

1. On November 22, 2016, PA Prospect, LLC published notice of the application in the *Pecos Enterprise*, a newspaper of general circulation in Reeves County, Texas. On December 9, 2016, PA Prospect mailed copies of the initial application to the owner of the surface tract, owners of the adjacent tracts, operators of wells within a one-half mile radius, and the Reeves County Clerk. The proposed well is not located in the city limits or extra territorial jurisdiction of any city or town.

2. On September 5, 2017, a notice of the revised application was published in the *Pecos Enterprise*, a newspaper of general circulation in Reeves County, Texas. On September 8, 2017, PA Prospect mailed copies of the revised application to the owner of the surface tract, owners of the adjacent tracts, operators of wells within a one-half mile radius, and the Reeves County Clerk.

3. The application is protested by NGL Water Solutions Permian, LLC, a Commission-designated operator of wells within a one-half mile radius of the proposed PA Prospect commercial disposal well.

    a. NGL operates two commercial disposal wells within a one-half mile radius of the proposed PA Prospect commercial disposal well.

    b. NGL is a competitor of PA Prospect.

4. Statewide Rule 9(5)(E)(ii) defines an "affected person" who may protest an application.

    a. NGL is an affected person in this matter because it is a Commission-designated operator of wells located within one-half mile of the proposed disposal well.

    b. A competitor who has suffered or will suffer actual injury or economic damage is not an affected person.

    c. NGL's argument that it may suffer economic damage caused by PA Prospect's proposed disposal activities is the argument of a competitor.

5. The proposed disposal well will be completed and operated as follows:

    a. Drilled to a total depth of 6,100 feet;

    b. Set surface casing (9 5/8-inch) at a depth of 800 feet and cemented to the surface;

    c. Set long-string casing (7-inch) to a depth of 6,100 feet and cemented to the surface using a multi-stage tool at 4,000 feet;

d. The long-string casing will be perforated for injection in the disposal interval from about 4,450 feet to 6,000 feet, into the lower Cherry Canyon and Brushy Canyon Formations;

e. Injection tubing (3 ½-inch) will be set with a packer at a depth of 4,350 feet;

f. The maximum daily injection volume will be 25,000 barrels per day and the estimated average daily injection volume will be 15,000 bwpd;

g. The maximum surface injection pressure will be 2,195 pounds per square inch gauge ("psig") and the average surface injection pressure will be 1,500 psig;

h. Injected waste will be limited to produced salt water and non-hazardous oil and gas waste exempt from regulation under the Resource Conservation and Recovery Act.

6. The use or installation of the injection well is in the public interest.

a. The Delaware Basin, including northern Reeves County and surrounding area, is experiencing significant oil and gas development.

b. More than 300 drilling permits have been issued each month for 2017 through August Reeves and five adjacent counties (including two in New Mexico).

c. The weekly rig count in the 7 county area has increased from about 60 in early 2016 to about 170 currently.

d. The average fracture treatment of a horizontal well requires about 250,000 barrels of water.

e. Wells in Culberson, Loving, Reeves and Ward Counties currently produce about 2.5 million barrels of water per day, which is a steep increase from about 0.5 million barrels of water per day in 2012.

f. Within a 15-mile radius of the proposed well, more than 200,000 barrels of water are produced daily.

g. Water is routinely transported from 10 to 20 miles from the production lease to the disposal location.

h. Transportation distance increases costs to operators.

i. NGL is actively pursuing its own commercial disposal well business opportunities in the area by seeking new permit authority and by expanding the capacity of permits it has already been granted.

7. The use or installation of the injection well will not endanger or injure any oil, gas, or other mineral formation.

   a. The lower Cherry Canyon Formation and the Brushy Canyon Formation are not productive of oil or gas in this area.

   b. The Bell Canyon Formation, which overlies the top of the Cherry Canyon Formation, is productive in there area.

   c. The long-string casing will be cemented through the disposal interval and productive strata.

   d. There is geologic confinement between the top of the disposal interval and the Bell Canyon Formation.

   e. The surface injection pressure will be limited to 2,195 psig to prevent damage to the disposal reservoir.

8. With proper safeguards, both ground and surface fresh water can be adequately protected from pollution.

   a. The base of usable quality groundwater ("BUQW") occurs at a depth of 750 feet.

   b. The surface and long-string casing will be cemented through the BUQW.

   c. There is geologic confinement between the top of the disposal interval and the BUQW.

   d. The surface injection pressure will be limited to 2,195 psig to prevent damage to the disposal reservoir.

9. The applicant has made a satisfactory showing of financial responsibility as required by Section 27.073 of the Texas Water Code.

   a. PA Prospect, LLC has an active Organization Report (Form P-5, Operator No. 631641, expiring on November 1, 2018), and has filed a $25,000 cash deposit for financial assurance.

10. A review of the records of the U. S. Geologic Survey did not identify any seismic events with a magnitude greater than 1.0 within a 9.08 kilometer radius (100 square miles) of the proposed disposal well between January 1, 1973 and September 25, 2017.

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. All notice requirements have been satisfied. 16 Tex. Admin. Code § 3.9

3. The use or installation of the proposed disposal well is in the public interest. Texas Water Code § 27.051(b)(1).

4. The use or installation of the proposed disposal wells will not endanger or injure any oil, gas, or other mineral formation. Texas Water Code § 27.051(b)(2).

5. With proper safeguards, both ground and surface fresh water will be adequately protected from pollution. Texas Water Code § 27.051(b)(3).

6. PA Prospect, LLC has made a satisfactory showing of financial responsibility. Texas Water Code § 27.051(b)(4).

7. PA Propspect, LLC has met its burden of proof and its application satisfies the requirements of Chapter 27 of the Texas Water Code and the Railroad Commission's Statewide Rule 9.

EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend the Commission enter an order granting the application of PA Prospect, LLC for a commercial permit to dispose of oil and gas waste by injection into the Cherry and Brushy Canyon Formations, porous formations not productive of oil or gas, for the County Road 449 SWD Lease, Well No. 1, in the Red Bluff (Consolidated) Field, Reeves County, Texas.

Respectfully,

Paul Dubois
Technical Examiner

Ryan M. Lammert
Administrative Law Judge