

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION**

**APPLICATION OF DCP OPERATING
COMPANY, LP TO RE-OPEN CASE NO.
15073 TO AMEND ORDER NO. R-13809 TO
REMOVE THE REQUEST TO REMEDIATE
THE WELLS IDENTIFIED IN PARAGRAPH
33, LEA COUNTY, NEW MEXICO.**

**CASE NO. 15073
ORDER NO. R-13809**

APPLICATION TO RE-OPEN

DCP OPERATING COMPANY, LP (formerly DCP Midstream, LP) (“DCP”) through its undersigned attorneys, hereby makes application to the Oil Conservation Commission pursuant to the provisions of NMSA 1978, Sections 70-2-11 and 70-2-12, to re-open Case No. 15073 to amend Order R-13809 for the sole and limited purpose of modifying paragraph 33 of that Order regarding DCP’s existing Zia AGI #1 acid gas injection well (API No. 30-025-42208), located in Section 19, Township 19 south, Range 32 East, N.M.P.M., Lea County, New Mexico. In support of this application, DCP states:

1. Paragraph 33 of Order R-13809 currently reflects a request by the Oil Conservation Division for DCP to evaluate and potentially conduct remedial work on the following four wells offsetting Applicant’s existing Zia AGI #1 injection well:
 - a. Delhi Federal-001 well (API No. 30-025-20025);
 - b. Lusk Deep Unit A-005 well (API No. 30-025-20122);
 - c. Gulf Federal-003 well (API No. 30-025-20876); and
 - d. Lusk Deep Unit-008 well (API No. 30-015-10382).
2. The existing Zia AGI #1 injection well will be maintained by the Applicant as a redundant back-up well to the existing Zia AGI #2D injection well.

3. The anticipated limited injection into the Zia AGI #1 well is not expected to affect the four identified offsetting wells, making the requested remedial work no longer necessary.

4. Applicant therefore seeks to amend Order R-13809 to remove the Division's request to conduct remedial work on these wells.

5. Applicant filed an administrative application with the Division on May 1, 2018, attached hereto as **Exhibit A**, seeking the Division's approval to amend its requested remedial work. After reviewing the application and DCP's request, the Division asked DCP to file an application with the Commission to re-open Case No. 15073 and amend Order R-13809.

6. The granting of this Application will prevent waste and protect correlative rights.

WHEREFORE, DCP Operating Company, LP requests that this application be set for hearing before the Oil Conservation Commission on September 13, 2018, and, after notice and hearing as required by law, the Commission amend Order No. R-13809 modifying Paragraph 33 to remove the Division's request to conduct remedial work on the foregoing identified wells.

Respectfully submitted,

HOLLAND & HART, LLP

By: 

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August __, 2018

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

TO: AFFECTED PARTIES

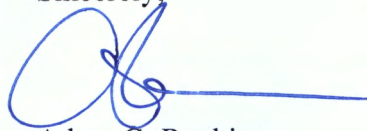
Re: Application of DCP Operating Company, LP to Re-Open Case No. 15073 to Amend Order R-13809 to Remove the Request to Remediate the Wells Identified in Paragraph 33, Lea County, New Mexico.

Ladies and Gentlemen:

This letter is to advise you that DCP Operating Company, LP has filed the enclosed application with the New Mexico Oil Conservation Commission. This application has been set for hearing before a Division Examiner at 9 a.m. on September 13, 2018. The hearing will be held in Porter Hall in the Oil Conservation Division's Santa Fe Offices located at 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505. You are not required to attend this hearing, but as an owner of an interest that may be affected by this application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date.

Parties appearing in cases are required by Division Rule 19.15.4.13.B to file a Pre-hearing Statement four days in advance of a scheduled hearing. This statement must be filed at the Division's Santa Fe office at the above specified address and should include: the names of the parties and their attorneys; a concise statement of the case; the names of all witnesses the party will call to testify at the hearing; the approximate time the party will need to present its case; and identification of any procedural matters that are to be resolved prior to the hearing.

Sincerely,



Adam G. Rankin

ATTORNEYS FOR DCP OPERATING COMPANY, LP

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO**

The State of New Mexico through its Oil Conservation Commission hereby gives notice pursuant to law and the Rules and Regulations of the Commission of the following public hearing to be held at 9:00 A.M. on August 16, 2016, in Porter Hall, 1st Floor, Wendell Chino Building, 1220 South St. Francis, Santa Fe, New Mexico, before the Oil Conservation Commission. If you are an individual with a disability who is in need of a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing, please contact Commissioner Clerk Florene Davidson at 505-476-3458 or through the New Mexico Relay Network, 1-800-659-1779 by August 15, 2016. Public documents including the agenda and minutes, can be provided in various accessible forms. Please contact Ms. Davidson if a summary or other type of accessible form is needed. A preliminary agenda will be available to the public no later than two weeks prior to the meeting. A final agenda will be available no later than 72 hours preceding the meeting. Members of the public may obtain copies of the agenda by contacting Ms. Davidson at the phone number indicated above. Also, the agenda will be posted at www.emnrd.state.nm.us/OCD/. A party who plans on using projection equipment at a hearing must contact Ms. Davidson seven (7) business days prior to the hearing requesting the use of the projection equipment. Wireless internet is available; however, the party must provide its own laptop computer.

**STATE OF NEW MEXICO TO:
All named parties and persons
having any right, title, interest
or claim in the following cases
and notice to the public.**

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian whether or not so stated.)

Case No. 15073: Application of DCP Operating Company, LP to Re-Open Case No. 15073 to Amend Order R-13809 to Remove the Request to Remediate the Wells Identified in Paragraph 33, Lea County, New Mexico.

Applicant DCP Operating Company, LP seeks an order from the New Mexico Oil Conservation Commission to amend Order R-13809. Specifically, Applicant seeks to modify paragraph 33 of Order R-13809, which currently reflects a request by the Oil Conservation Division for DCP to evaluate and potentially conduct remedial work on four wells offsetting Applicant's existing Zia AGI #1 injection well: the Delhi Federal-001 well (API No. 30-025-20025), the Lusk Deep Unit A-005 well (API No. 30-025-20122), the Gulf Federal-003 well (API No. 30-025-20876), and the Lusk Deep Unit-008 well (API No. 30-015-10382). Applicant seeks to amend Order R-13809 by removing the Division's request to conduct remedial work on these wells. The existing Zia AGI #1 injection well will be maintained by the Applicant as a redundant back-up well to the existing Zia AGI #2D injection well. The anticipated limited injection into the Zia AGI #1 well is not expected to affect the four identified offsetting wells, making the requested remedial work no longer necessary. Said area is located approximately 30 miles northeast of Carlsbad, New Mexico.

Given under the Seal of the State of New Mexico, Oil Conservation Commission, Santa Fe, New Mexico on this ____ day of August 2016.

**STATE OF NEW MEXICO
OIL CONSERVATION DIVISION**

Heather Riley, Division Director

S E A L

May 1, 2018

Mr. Phillip Goetze
NM Oil Conservation Division
1250 South St. Francis Drive
Santa Fe, NM 87501

RE: APPLICATION TO ADMINISTRATIVELY MODIFY OCD PARAGRAPH 33 REQUEST
IN ORDER R-13809

Dear Mr. Goetze:

Per our discussion, and on behalf of DCP Midstream, LP ("DCP"), enclosed please find an "Application for OCD to Administratively Modify its Paragraph 33 Request in NMOCC Order R-13809".

For the reasons set forth in the attached application, DCP and Geolex believe that the Division's requests reflected in Para. 33 of the Order have been obviated by events subsequent to the issuance of the order and are no longer necessary, and that the Division can modify its requests administratively as reflected in Section 5.0 of the attached application document. If the Division agrees with the administrative modification of the Division's requests, we have respectfully prepared and are providing for the Division's use a draft letter from the Division Director to DCP administratively modifying the Division's request reflected in background Para. 33 of R-13809.

We sincerely appreciate the Division's consideration of this application and request by DCP. If you or other Division staff have any questions or would like to meet to further discuss the enclosed application, please email me at aag@geolex.com or call me at 505-842-8000 office or 505-259-4283 cell.

Sincerely,
Geolex, Inc.



Alberto A. Gutierrez, RG
President
Consultant to DCP Midstream, LP

Enclosure

cc: Paul Tourangeau, DCP Midstream LP, Denver
Adam Rankin, Holland & Hart, Santa Fe

Projects/18-004/Correspondence/Goetze003.ltr.docx

EXHIBIT A

Application for NMOCD to Administratively Modify Its Paragraph 33 Request Under OCC Order R-13809

1.0 EXECUTIVE SUMMARY

Under the New Mexico Oil Conservation Commission's (NMOCC) March 2014 Order R-13809, DCP Midstream, LP (now DCP Operating Company, LP, effective January 16, 2017) ("DCP") was approved to drill and inject two acid gas injection wells (AGI #1 and AGI #2) into the Permian Cherry Canyon and Brushy Canyon formations (Delaware zone) to dispose of approximately 15 MMSCFD of treated acid gases (TAG) from their new natural gas processing plant, known as the Zia II Gas Plant. Following the drilling, completion, and initial operations of the AGI #1, suboptimal reservoir performance led DCP to defer the drilling of the originally approved additional AGI #2, and DCP subsequently submitted an application for a deeper AGI well in the Devonian and lower zones to support the Zia II Gas Plant. This application was granted (Order R-14207) in September 2016, and the deeper well (AGI D#2) was completed and began successful injection in February of 2017. AGI #1 operates under the authority in R-13809 (2014) (as amended by R-13809-A to correct location of AGI #1) and AGI D#2 operates under the authority in R-14207 (2016).

The original Order (R-13809) required, among other conditions, the evaluation and potential remediation requested by the Division of four nearby wells that penetrated the proposed injection zone (Delaware zone), within 15 years or after the wells underwent workovers or were plugged and abandoned. *See* R-13809, ¶ 33.

Since the operations of AGI D#2 began, no injection has been conducted in the original AGI #1, and DCP plans to maintain and periodically operate this well to serve as a backup well during any short periods of maintenance or repair of AGI D#2.

As discussed in more detail in Section 2.0, below, AGI #1 was operated for 553 days at an average injection rate of approximately 2.6 MMSCFD of TAG, for a total injected TAG volume of approximately 1.4 BSCF.

The nearest of the four wells of concern (Gulf Federal 003) lies approximately 955 feet from the injection point of AGI #1. Calculations show that the amount of TAG required to reach half of the distance to the Gulf Federal 003 well (475 feet) would be approximately 10 BSCF, equivalent to approximately 10 years of continuous injection at the previous rate. Since regular, continuous injection is not contemplated for AGI #1, this volume of 10 BSCF will never be reached under any plausible scenario.

DCP Midstream hereby requests that the Division administratively modify the work requested by the Division in Order R-13809 to delete the remedial requirements regarding the four wells, since only minor, episodic injection will now occur in the zones of concern, at volumes on the order of a single digit percentage of the original anticipated rates. The requested administrative modification of the Division's requirements is reflected in Sec. 5.0.

EXHIBIT A

2.0 BACKGROUND

2.1 Original Order Provisions

In December 2013, DCP filed an application (Case No. 15073) seeking authority to inject treated acid gases (“TAG”) consisting of carbon dioxide and hydrogen sulfide into the Permian Cherry Canyon and Brushy Canyon formations (Delaware zone) at depths of approximately 5,500 to 6,200 feet, using two new acid gas injection (“AGI”) wells to be drilled in Section 19, Township 19 south, Range 32 East, N.M.P.M. in Lea County, New Mexico (Figure 1). These two wells were designed to permanently contain a total rate of approximately 15 MMSCFD of TAG generated from DCP’s new, proposed natural gas processing plant (“Zia II Gas Plant”) located in the same Section.

Following review of the application and an unopposed public hearing, on March 13, 2014, the New Mexico Oil Conservation Commission (“NMOCC”) approved the application in Order R-13809 including, among other conditions, the following:

- A maximum total injection rate of 15.0 MMSCFD, at a maximum allowable operating pressure (“MAOP”) of 2,233 pounds per square inch gauge (“psig”)
- A good-faith effort to perform reasonable and prudent remedial work required by the Division on four wells identified by the Division: (i) the Delhi Federal 001 (API No. 3002520025), Lusk Deep Unit A-005 (API No. 3002520122), and Gulf Federal 003 (API No. 3002520876), working with the operators to enhance the isolation of the injection zones when the operator either works-over the well, plugs and abandons the well, or after 15 years from the date of the Order, whichever is sooner, and; (ii) a review of the available records pertaining to Lusk Deep Unit 008 (API No. 3001510382), and if remedial work is required, to be completed within 15 years.

2.2 DCP Actions

Following the approval of Order R-13809, DCP proceeded to drill, test and complete the first well, now named DCP Midstream Zia AGI #1 (API No. 3002542208). The well was spudded on December 23, 2014, at the approved location (2,100’ FSL, 950’ FWL in Section 19, Township 19 south, Range 32 East) and was deviated, per plan, to a bottom hole location of 2,090’ FNL, 826’ FWL in the same Section, approximately 1,000 feet north of the surface location. The completed well had a true vertical depth (TVD) of 6,158 feet and a true measured depth (TMD) of 6,158 feet. The well was placed in service in September of 2015.

Subsequent operational pressure and volume data showed the AGI #1 was suboptimal with respect to its intended injection capacity, due in part to lower than anticipated permeability in the Cherry Canyon and Brushy Canyon formations. DCP investigated the injection potential for deeper zones, and selected the units in the Devonian and Upper Silurian Wristen and Fusselman formations.

EXHIBIT A

DCP then filed an application with the NMOCC in July 2016 (Case No. 15528) for authorization to inject in the deeper zones (Devonian and Upper Silurian Wristen/Fusselman). On September 6, 2016, the application was approved under Order R-14207 for the new well, designated as DCP AGI D#2. This Order did not include any conditions regarding the four wells identified in Order R-13809.

The AGI D#2 (API No. 3002542207) was spudded on November 2, 2016, at 1,893 feet from the south line (FSL) and 950 feet from the west line (FWL) in the same Section of AGI #1 (Figure 2). The well was drilled vertically to a TVD of 14,750 feet and was cased to a TVD of 13,622 feet, with an open-hole completion of approximately 1,100 feet. Following testing and evaluation, the well was placed in service in February 2017.

Following the successful operation of Zia AGI D#2, the original AGI #1 was placed on standby status to be used generally as a backup well. DCP Midstream is now confident that AGI D#2 will be capable of injecting the entire anticipated TAG flow of 15 MMSCFD, and only plans to keep AGI #1 in working order to be used as a backup well during any maintenance or repairs of AGI D#2.

3.0 OPERATIONAL PLANS FOR AGI SYSTEM

The AGI D#2 well will be used on a regular basis as testing and recent operations show that this well can take the entire TAG flow of 15 MMSCFD without exceeding the MAOP.

There are several reasons for keeping AGI #1 in operational standby status. First, the plant's air permit requires two working AGI wells to ensure reliable and consistent injection of the Zia Gas Plant's TAG volume. Second, DCP intends to keep AGI #1 as a redundant back-up well to be used should there be a problem or maintenance issue with AGI D#2, to promote plant operational reliability. With this in mind, DCP will operate AGI #1 intermittently to ensure that it remains operational.

4.0 ANALYSIS OF INJECTION INTO AGI #1 FROM START-UP THROUGH FEBRUARY 2017

4.1 Analysis of Previous Injection into AGI #1

Table 1 shows that from August of 2015 through February 2017, AGI #1 was in operation for a total of 553 days, at injection rates ranging from 1.61 to 3.67 MMSCFD, with an average injection rate of 2.6 MMSCFD. The total amount of injected TAG was 1,449.8 MMSCF, or 1.4 BSFC.

Analysis shows that the TAG is almost entirely CO₂ (98.8% CO₂ and 0.2% H₂S, with approximately 1.0% miscellaneous hydrocarbons).

Table 2 shows the calculated radius of eighteen months of injected TAG migration in the Cherry Canyon and Brushy Canyon formations. These calculations indicate that the TAG plume only migrated approximately 186 feet from the bottom hole injection point after the 553 days of injection at the average rate of 2.6 MMSCFD.

EXHIBIT A

4.2 Analysis of Projected Future Injection into AGI #1

In Order R-13809 the Division identified four production wells penetrating the Delaware formation in the general vicinity of AGI #1, and the Order requests an assessment for potential remediation or additional isolation work associated with those four wells in the Delaware formation. The Division's request is reflected in background Paragraph 33 of the Order.

The nearest of the four wells of interest is the Gulf Federal 003, which lies approximately 950 feet northeast of the bottom hole injection point of AGI #1 (Figure 2). Table 3 provides the calculations that indicate that a volume of over 10 BCF will be required for the TAG to migrate from the bottom hole location of AGI #1 to one half of the distance (475 feet) to the Gulf Federal 003. Figure 2 shows a blue circle representing half the distance from Zia AGI#1 to the Gulf Federal 003 within which a total TAG volume of 10 BCF would be contained. At the average injection rate used prior to ceasing injection (2.6 MMSCFD), approximately nine years of continuous injection would be required to reach 10 BCF (including the 1.5 BSCF injected to date). AGI #1 will never see a rate equivalent to even 5% of that rate per annum, if that. Accordingly, there is no practicable possibility that the four identified wells would ever need any assessment or potential remediation/ isolation since TAG from AGI#1 will never reach even the closest well (Gulf Federal 003).

5.0 REQUESTED MODIFICATION OF DIVISION REQUIREMENTS

In summary, DCP will maintain AGI #1 as an operational well, to be used generally as a back-up well, consistent with the existing permits, and to allow plant operations to continue should maintenance and/or repairs be required for AGI D#2. Modeling and calculations have shown that, even at a total injected volume of 10 BSCF, TAG from the AGI #1 will be contained within less than half of the distance to the nearest well of concern (Gulf Federal 003). Accordingly, DCP will commit to notify the Division if injection into AGI #1 were ever to reach 9 BSCF, at which point the Division and DCP can re-evaluate the status of the four offsetting wells of concern and any remedial actions deemed appropriate. The Division currently receives and will continue to receive monthly reports of any volume of TAG injected into AGI #1 via C-115 reporting and quarterly through the injection data reports required under R-13809, confirming whether injection volumes into AGI#1 reach the notification threshold of 9 BSCF.

DCP respectfully requests, therefore, that the Division administratively modify its requirements under Order R-13809 to reflect that:

1. The Division's concerns, which led the NMOCC to incorporate the requirement to address Division's request to investigate and/or remediate the four wells identified in Paragraph 3 of Order R-13809, are obviated by the lack of injection into AGI #1 as it will generally serve as a backup injection well. The Division's request to conduct remedial work, outlined in Paragraph 33 of Order R-13809, is thus withdrawn by the Division.
2. Instead, the Division requests that DCP notify the Division in writing if injection into AGI#1 ever reaches 9 BSCF, at which point the Division may re-evaluate the condition and status of the four offsetting wells identified in Order R-13809 and any remedial actions deemed appropriate.

EXHIBIT A

TABLES

EXHIBIT A

Table 1: Summary of TAG Injection, 2015-2017			
Dates	Number of Days	Average Injection Flow Rate MMSCFD	Volume Injected (MMSCF)
8-24-15 through 12-31-15	130	2.03	263.9
1-1-16 through 3-31-16	90	2.38	214.2
4-1-16 through 6-30-16	91	3.67	333.97
7-1-16 through 9-30-16	92	3.1	285.2
10-1-16 through 12-31-16	91	2.83	257.53
1-1-17 through 2-28-17	59	1.61	94.99
TOTALS	553		1,449.8
Average Injection Rate (MMSCFD)			2.6

EXHIBIT A

Table 2: Pressure and Volume Calculations of Injected TAG, Zia AGI #1

PROPOSED INJECTION STREAM CHARACTERISTICS

TAG	H ₂ S	CO ₂	H ₂ S	CO ₂	TAG
Gas vol	conc.	conc.	inject rate	inject rate	
MMSCFD	mol %	mol %	lb/day	lb/day	lb/day
1500	0.2	98.8	284768	181658123	181942891

CONDITIONS AT WELL HEAD

Well Head Conditions					
Temp	Pressure	Gas vol	Comp	Inject Rate	Density ¹
F	psi	MMSCFD	CO ₂ :H ₂ S	lb/day	kg/m ³
100	1200	1500	99:0	181942891	379.00
					SG ²
					0.38
					density
					lb/gal
					3.16
					volume
					ft ³
					7686131
					volume
					bbl
					1368954

CONDITIONS AT BOTTOM OF WELL

Injection Zone Conditions					
Temp	Pressure ³	Depth _{top}	Depth _{bottom}	Thickness ⁴	Density ¹
F	psi	ft	ft	ft	kg/m ³
120	2400	5750	6170	420	728.00
					SG ²
					0.73
					density
					lb/gal
					6.08
					volume
					ft ³
					4001434
					volume
					bbl
					712684

CONDITIONS IN RESERVOIR AT EQUILIBRIUM

Injection Reservoir Conditions					
Temp ⁵	Pressure ³	Ave. Porosity ⁶	Swr	Porosity	Density ¹
F	psi	%		ft	kg/m ³
120	2400	15.0	0.41	37.17	728.00
					SG ²
					0.73
					density
					lb/gal
					6.08
					volume
					ft ³
					4001434
					volume
					bbl
					712684

CONSTANTS

SCF/mol	
Molar volume at STD	0.7915
Molar weight of H ₂ S	34.0809
Molar weight of CO ₂	44.0096
Molar weight of H ₂ O	18.015
	0.0397

¹ Density calculated using AQUALIBrium software

² Specific gravity calculated assuming a constant density for water

³ PP is extrapolated using successful Drill Stem Tests at nearby wells

⁴ Thickness is the average total thickness of coarse sand units in the reservoir zone

⁵ Reservoir temp. is extrapolated from bottomhole temp. measured at nearby wells

⁶ Porosity is estimated using geophysical logs from nearby wells

CALCULATION OF MAXIMUM INJECTION PRESSURE LIMITATION

SG _{TAG}	0.5535
PG = 0.2 + 0.433 (1.04-SG _{TAG})	0.411 psi/ft
IP _{max} = PG *Depth	2361 psi

Where: SG_{TAG} is specific gravity of TAG; PG is calculated pressure gradient; and IP_{max} is calculated maximum injection pressure.

CALCULATION OF 30 YEAR AREA OF INJECTION

Cubic Feet/day (5.6146 ft ³ /bbl)	4,001,434 ft ³
Cubic Feet	4,001,434 ft ³
Area = V/Net Porosity (ft)	107652 ft ²
Area = V/Net Porosity (ft) (43560 ft ² /acre)	2.5 acres
Radius =	185 ft
Radius =	0.04 miles

EXHIBIT A

Table 3: Projected Pressure and Volume Calculations for TAG, Zia AGI #1

PROPOSED INJECTION STREAM CHARACTERISTICS

TAG	H ₂ S	CO ₂	H ₂ S	CO ₂	TAG
Gas vol	conc.	conc.	inject rate	inject rate	inject rate
MMSCFD	mol %	mol %	lb/day	lb/day	lb/day
10000	0.2	98.8	1898454	1211054154	1212952608

CONDITIONS AT WELL HEAD

Well Head Conditions					TAG		
Temp	Pressure	Gas vol	Comp	Inject Rate	Density ¹	SG ²	volume
F	psi	MMSCFD	CO ₂ :H ₂ S	lb/day	kg/m ³	lb/gal	ft ³
100	1200	10000	99:0	1212952608	379.00	0.38	51240876
							9126363 bbl

CONDITIONS AT BOTTOM OF WELL

Injection Zone Conditions					TAG		
Temp	Pressure ³	Depth _{top}	Depth _{bottom}	Thickness ⁴	Density ¹	SG ²	volume
F	psi	ft	ft	ft	kg/m ³	lb/gal	ft ³
120	2400	5750	6170	420	728.00	0.73	26676225
							4751225 bbl

CONDITIONS IN RESERVOIR AT EQUILIBRIUM

Injection Reservoir Conditions					TAG		
Temp ⁵	Pressure ³	Ave. Porosity ⁶	Swr	Porosity	Density ¹	SG ²	volume
F	psi	%		ft	kg/m ³	lb/gal	ft ³
120	2400	15.0	0.41	37.17	728.00	0.73	26676225
							4751225 bbl

CONSTANTS

SCF/mol	
Molar volume at STD	0.7915
Molar weight of H ₂ S	34.0809
Molar weight of CO ₂	44.0096
Molar weight of H ₂ O	18.015
	0.0397

¹ Density calculated using AQUAilbrium software

² Specific gravity calculated assuming a constant density for water

³ PP is extrapolated using successful Drill Stem Tests at nearby wells

⁴ Thickness is the average total thickness of coarse sand units in the reservoir zone

⁵ Reservoir temp. is extrapolated from bottomhole temp. measured at nearby wells

⁶ Porosity is estimated using geophysical logs from nearby wells

CALCULATION OF MAXIMUM INJECTION PRESSURE LIMITATION

SG _{TAG}	0.5535
PG = 0.2 + 0.433 (1.04-SG _{TAG})	0.411 psi/ft
IP _{max} = PG * Depth	2361 psi

Where: SG_{TAG} is specific gravity of TAG; PG is calculated pressure gradient; and IP_{max} is calculated maximum injection pressure.

CALCULATION OF 30 YEAR AREA OF INJECTION

Cubic Feet/day (5.6146 ft ³ /bbl)	26,676,225 ft ³
Cubic Feet	26,676,225 ft ³
Area = V/Net Porosity (ft)	717682 ft ²
Area = V/Net Porosity (ft) (43560 ft ² /acre)	16.5 acres
Radius =	478 ft
Radius =	0.09 miles

EXHIBIT A

FIGURES

EXHIBIT A

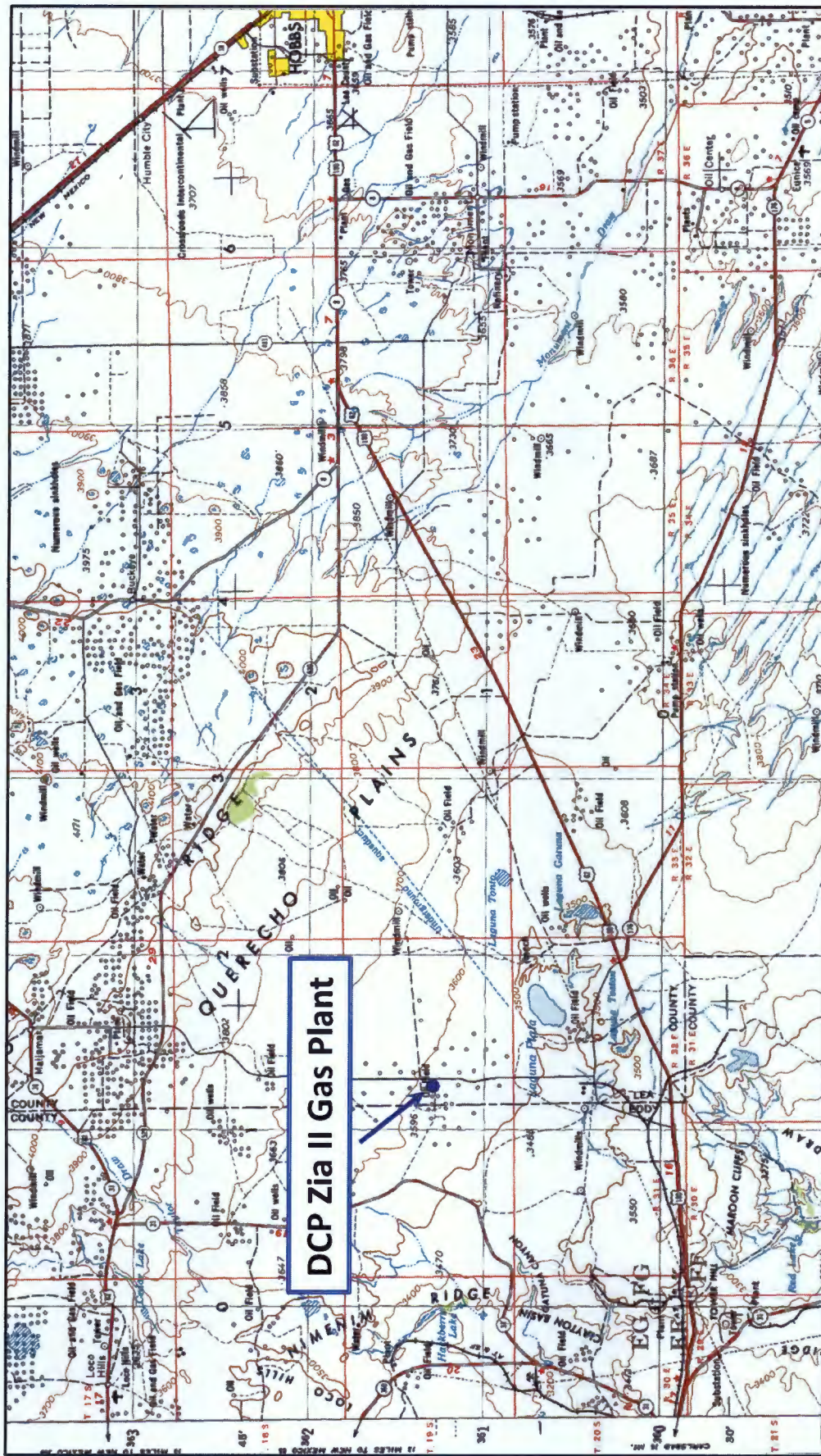


Figure 1: Location of the DCP Zia II Gas Plant.
(USGS 1:250,000)

GEOLEX
INCORPORATED

dcp
Midstream



Figure 2: Locations of Zia AGI #1 and D#2, and Other Wells of Interest