

June 5, 2007

Mr. William Jones  
Hearing Officer  
NM Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

VIA E-MAIL ONLY

RE: ADDITIONAL INFORMATION RELEVANT TO CASE 13865 (TARGA REQUEST FOR AUTHORIZATION TO INJECT IN SECTION 27, T22S, R37E; LEA COUNTY, NEW MEXICO) IN RESPONSE TO ISSUES RAISED BY NMOCD ENVIRONMENTAL BUREAU

Dear Hearing Officer Jones:

As you know, since the February 1 hearing, we have been in contact with Mr. Carl Chavez, Mr. Wayne Price of the NMOCD Environmental Bureau and Mr. Chris Williams of the District Office to provide additional information and clarification with respect to the above-referenced case which was heard on February 1, 2007. In an attempt to resolve all the outstanding issues in this case and allow you to issue an order permitting Targa to proceed with the drilling of this well, I have put together this additional package of supplemental information to address enquiries and questions raised by NMOCD staff.

I have put together this letter and attachments to address all of the comments that have been raised to us relative to this case by NMOCD staff. Furthermore, we have requested a meeting to go over these issues with Mr. Chavez and Mr. Price to assure that we have provided all requested information and answered their questions satisfactorily.

It should be noted from the outset, as is clear from the hearing testimony that I presented and the answers to questions at the hearing posed by you and Mr. Brooks, that TARGA, by this C-108 application, is merely seeking approval for the injection well and not consideration or approval of any of the appurtenant surface facilities which will be required if the well is found to be adequate for the proposed injection of acid gas and produced fluids currently being injected into the existing SWD at the site (API #3002521497). As you know this existing SWD well will be replaced by the proposed injection well. We are aware that Targa will have to separately apply for approval of the surface facilities associated with the acid gas injection well including any pipeline or compression facilities which will handle H<sub>2</sub>S at the wellhead. Furthermore, we are aware that NMOCD Environmental Bureau (EB) will require modifications to the existing discharge plans at Targa's Eunice Plant before injection of acid gas can commence. We have been, and continue to be, in discussions with the NMOCD EB to accomplish this after we have determined that the well is going to be capable of taking the required volume of injection fluid.

I have organized this document to follow the EB comments and concerns expressed in a June 1, 2007 email from Mr. Chavez dated to me and copied to you, Mr. Price and Mr. Williams. In addition, I address several issues that were raised in previous correspondence including issues about the final exact location of the well and questions on well construction. These issues are all discussed separately in the pages and attachments that follow.

***Targa Resources, LLC  
Case 13865  
OCD Exhibit No. 1***

**ISSUE 1: INACTIVE GAS STORAGE FACILITIES IN CAVITIES IN SALADO  
FORMATION AT THE SITE**

Since the February 1<sup>st</sup> hearing, NMOCD has raised additional questions regarding the potential impacts of the four existing natural gas-storage wells (NGS) located in the vicinity of the proposed AGI well located on the South Eunice Gas Plant. As discussed below, it is clear from the geology of the site and the size, location and relative positions of the salt cavities associated with the 4 inactive NGS wells that there is no potential for impacts to the proposed AGI well nor do they communicate with or impact in any way the existing SWD well.

The relative locations of the existing SWD well, the proposed AGI well and the NGS wells with the associated gas storage cavities in question are shown on Figure 1, plotted on a 2007 aerial photograph. For additional reference, the site and locations are shown on the USGS Eunice 7 ½ Minute Quadrangle map. As shown on Figures 1 and 2, the proposed AGI well will be located approximately 500 feet southwest of the nearest NGS (Skelly #4), and is also over 250 feet from the existing SWD (please recall that this SWD will be plugged and abandoned as it will be replaced by the proposed AGI well).

It is critical to understand the small size and capacity of the cavities in the salt associated with each of the NGS wells and it is important to visualize the vertical and horizontal separations between the existing NGS cavities and the proposed AGI zone. Geolex has provided schematic cross-sections to illustrate the relative geological spacing between the inactive gas storage cavities and NGS wells and the proposed location of the AGI well and its associated injection zone. The locations of these cross-sections are shown on Figure 3. Figure 4 is a cross-section along NGS wells J.V. Baker 001, 002 and 003, and includes the projected location of the existing SWD and the Langlie Mattix #136. The Langlie Mattix #136 is added to provide vertical control to the existing SWD injection zone and the proposed AGI zone. This section shows that the storage cavities are stratigraphically and vertically separated by a distance of approximately 2500 feet, including approximately 500 feet of the Salado Formation beneath the cavities. Figure 5, which connects the wells J.V. Baker #1 and #2, as well as Skelly #4 and has the proposed AGI well (located 350' to the SW of the section line) projected onto the section, also clearly shows the separation of the proposed AGI from the salt cavities associated with the NGS wells.

With respect to horizontal separation, it is critical to understand the insignificant sizes of the gas storage cavities associated with the NGSs. The cavities associated with the J.V. Baker #1, #2 and #3 have a combined total volume of 302,381 barrels, and the Skelly #4 has a total volume of 59,524 barrels. (See information included as Attachment A) As detailed in the calculations presented in the table below, these volumes would represent roughly spherical cavities with a diameter of only approximately 86 feet for the Skelly #4 and approximately 103 feet each for the J.V. Baker #1, #2 and #3 (at an average capacity of approximately 101,000 barrels each). If the cavities were more cube-shaped than spherical, then the cube associated with Skelly #4 would be approximately 69 feet on a side and 83 feet on a side for the cavities associated with the J.V. Baker #1, #2 and #3. It is clear that the size of these cavities and their stratigraphic position are such that they will not interfere in any way or endanger the integrity of the proposed AGI or provide any conduit for injected fluids to in any way affect the cavities.

<b>Size for 59,524 Barrel Salt Cavity</b>	
Gallons/Barrel	42
Gallons/ft <sup>3</sup>	7.48
ft <sup>3</sup> /Barrel	5.61
Storage Cavity Capacity (Barrels)	59524
Storage Cavity Capacity (ft <sup>3</sup> )	333930
Vol. of Sphere = $(4/3)\pi r^3$	333930
Vol. of Cube = L <sup>3</sup>	333930
Radius of Sphere (r) (feet)	43
Length of Sides of Cube (feet)	69
Diameter of Sphere (feet)	86

<b>Size for 101,000 Barrel Salt Cavity</b>	
Gallons/Barrel	42
Gallons/ ft <sup>3</sup>	7.48
ft <sup>3</sup> /Barrel	5.61
Storage Cavity Capacity (Barrels)	101000
Storage Cavity Capacity (ft <sup>3</sup> )	566610
Vol. of Sphere = $(4/3)\pi r^3$	566610
Vol. of Cube = L <sup>3</sup>	566610
Radius of Sphere (r) (feet)	51.33
Length of Sides of Cube (feet)	82.75
Diameter of Sphere (feet)	103

In addition, this analysis and the fact that the current SWD well (which was drilled closer to the NGS wells than the proposed AGI well after the cavities were created) did not intersect any of the cavities demonstrates that it is not necessary to conduct any sonic testing of any of the cavities to assure the integrity of the proposed AGI well location. Furthermore, it is the intent of Targa to plug the NGS wells in accordance with the requirements of the NMOCD prior to initiating injection of acid gas into the proposed AGI well.

Therefore Targa would request that the final location of the proposed AGI well be modified to be as shown on Figures 1 and 3 (attached) which would be **2250 FSL, 1200 FWL of Section 27, T 22 S, R 37 E** (essentially 350 feet south of the current SWD well which will be plugged). This assures no potential risk with respect to the gas storage cavities and the well bore of the proposed AGI well and a convenient location with respect to other existing site features.

**ISSUE 2 CONSTRUCTION OF PROPOSED AGI WELL RELATIVE TO FRESH WATER SOURCES AT THE SITE**

The proposed AGI well construction is provided behind the tab labeled Section III Data (2) in the original application. It shows conductor casing being set to 45' depth with surface casing as part of a telescoped design cemented to the surface set below all fresh water sources at the site to a depth of 500'. Given the depths of water wells in the vicinity and the available information on the hydrogeology of the area including, but not limited to, Nicholson & Clebsch, 1961, the proposed 9 5/8" casing set to 500' and cemented to the surface this will be more than adequate to protect all fresh water sources in the area and indeed is 200' deeper than the surface casing set in the existing SWD well at the site (see information on the existing SWD in the original application).

**ISSUE 3 RULE 118 PLANS FOR PIPELINE AND AGI SURFACE FACILITIES**

As discussed above, this requirement and all other requirements associated with NMOCD DP modifications for the site(s) will be addressed in a manner similar to the AGI well proposed for

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DCP Midstream's Linam Facility when the design for these facilities is completed and prior to the injection of any acid gas into the proposed AGI well. All appropriate public notices for the proposed modifications would be made at that time.

**ISSUE 4 POTENTIAL FOR STRUCTURAL DISCONTINUITIES OR RECENT  
TECTONIC ACTIVITY IN AREA**

There is a clear statement in the application and in the hearing record that the proposed injection zone is a closed system and this is borne out by the geologic information provided in Section VII Data (1) and Section VIII Data (1) of the original C-108 application. The regional cross section is highly generalized and only intended to provide an overall understanding of the regional stratigraphy and structure and not site specific. The site-specific maps and cross sections constructed with actual well logs across the site and shown in Figures 2, 4, 5, 6, 7 of Section VII Data (1) and Figures 1, 2 and 3 of Section VIII Data (1) clearly show that there are no structures that can affect the closed system injection zone in the San Andres assuring that other oil and gas producing zones and fresh water zones in the area are protected.

I trust that with these clarifications and the additional information and discussion provided herein, you will find everything you need to promptly issue an order approving our C-108 application in NMOCD Case #13865 pursuant to the original application, information presented at the February 1 hearing and the additional clarifications and discussions which have taken place since the hearing with NMOCD EB staff summarized herein. If you have any additional questions, please contact me at the address below or at my office in Albuquerque: 505-842-8000.

Sincerely,  
Geolox, Inc.®

  
Alberto A. Gutierrez, CPG  
President



Enclosures: Figures 1-5  
Attachment A

cc: w/ enclosures

Carl Chavez, NMOCD EB  
Wayne Price, NMOCD EB  
Chris Williams, NMOCD District Office  
Cal Wrangham, TARGA  
Clark White, TARGA  
William Carr, Holland & Hart  
Gail MacQuesten, NMOCD



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION  
HOBBS DISTRICT OFFICE

BRUCE KING  
GOVERNOR

June 12, 1992

POST OFFICE BOX 1980  
HOBBS, NEW MEXICO 88241-1980  
(505) 393-6161

Texaco Exploration & Production Inc.  
Box 1065A  
Eunice, NM 88231

Attn: Jerry Brittain

RE: J.V. Baker - #1-LPG Storage  
Unit E, Sec. 27, T22S, R37E (2310/N & 990/W)

J. V. Baker - #2-LPG Storage  
Unit E, Sec. 27, T22S, R37E (2310/N & 330/W)

Gentlemen:

The above-referenced wells were drilled by Skelly Oil Company as LPG wells prior to the time the Oil Conservation Division started issuing LPG Storage permits. They were properly permitted through the Hobbs District office at the time they were drilled.

Your J.V. Baker #3 LPG was our first well to be issued an LPG order.

Very truly yours,

OIL CONSERVATION DIVISION

Jerry Sexton  
Supervisor, District I

JS/ed



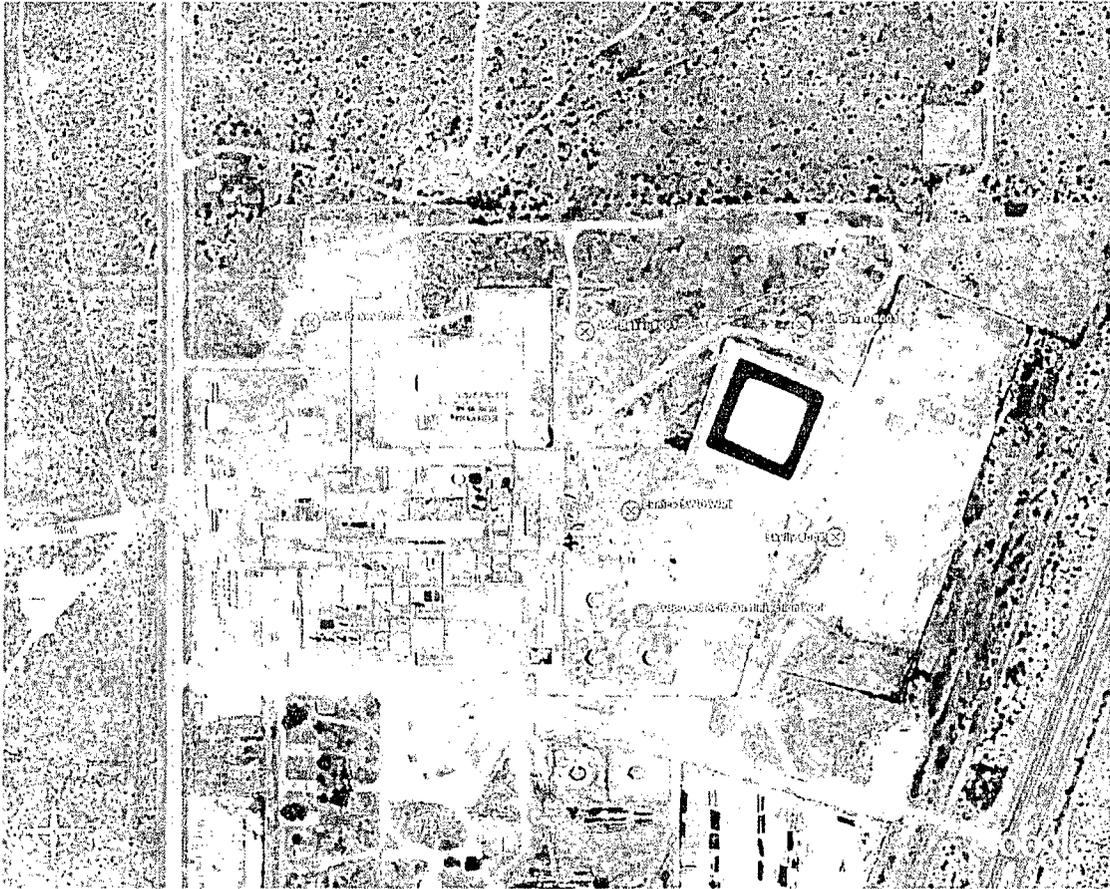


Figure 1: 2007 Satellite Photograph Showing Locations of Existing and Proposed Wells

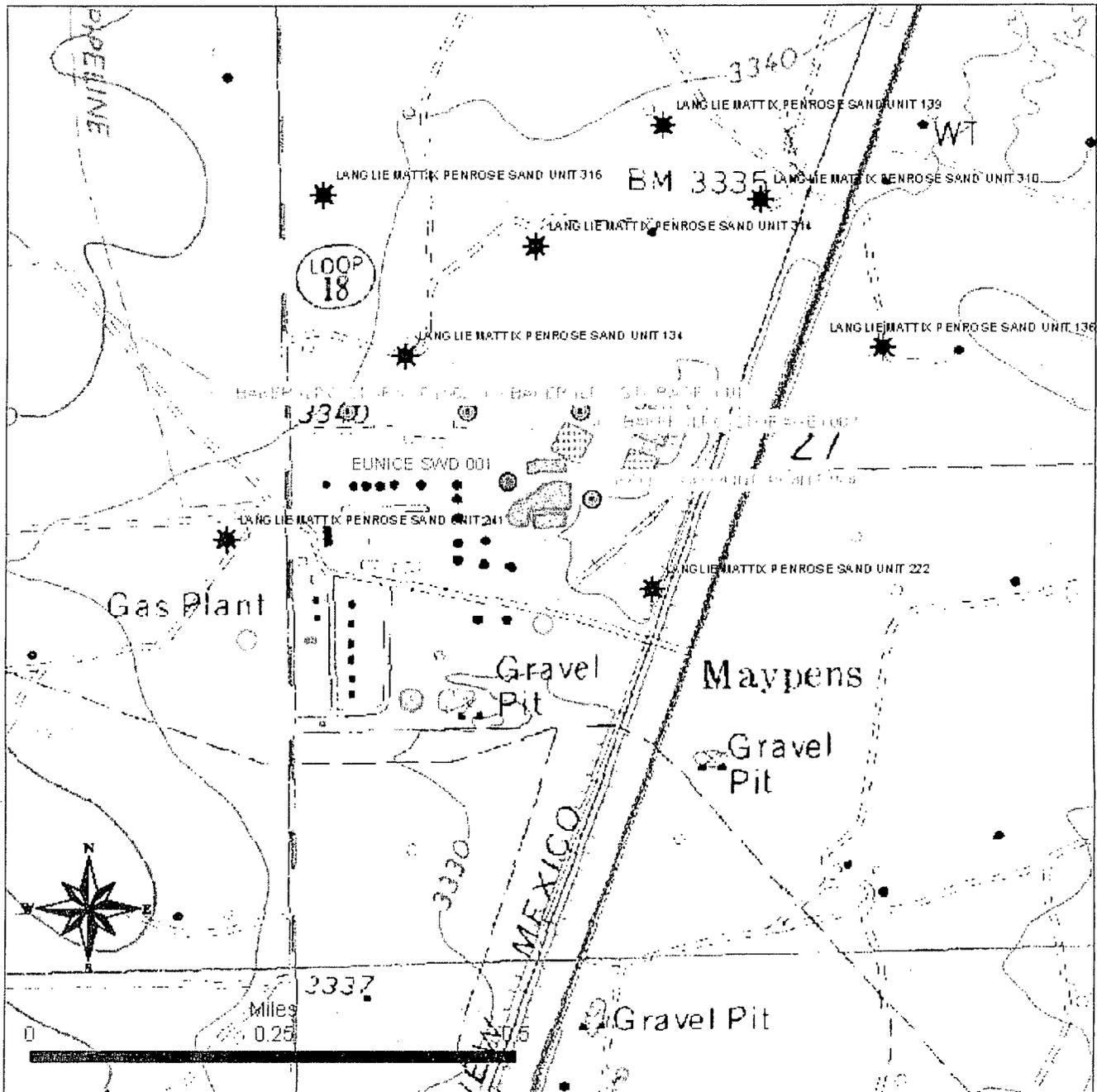
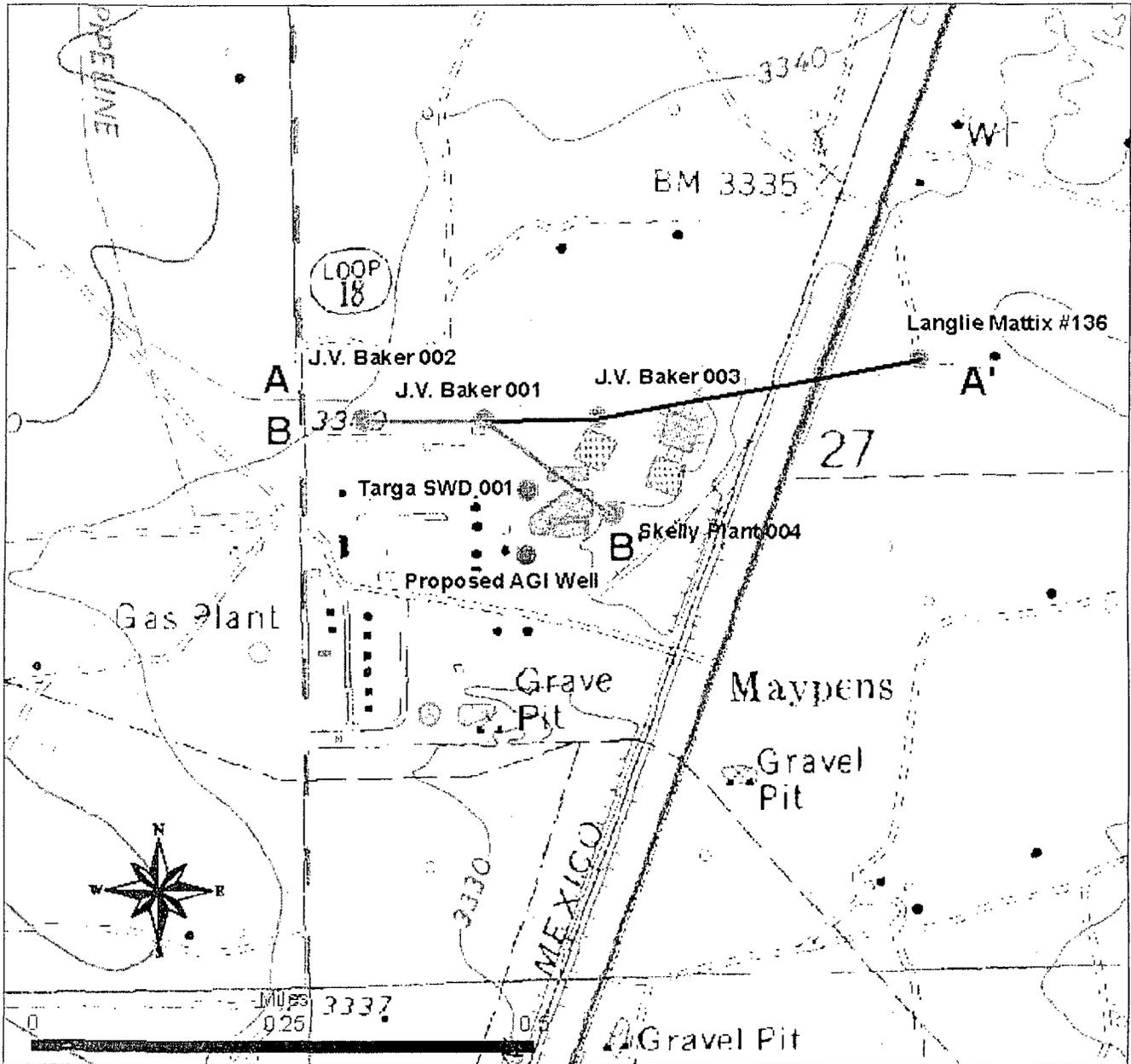


Figure 2: Locations of Shallow Gas Storage Wells and Targa Deep SWD Well

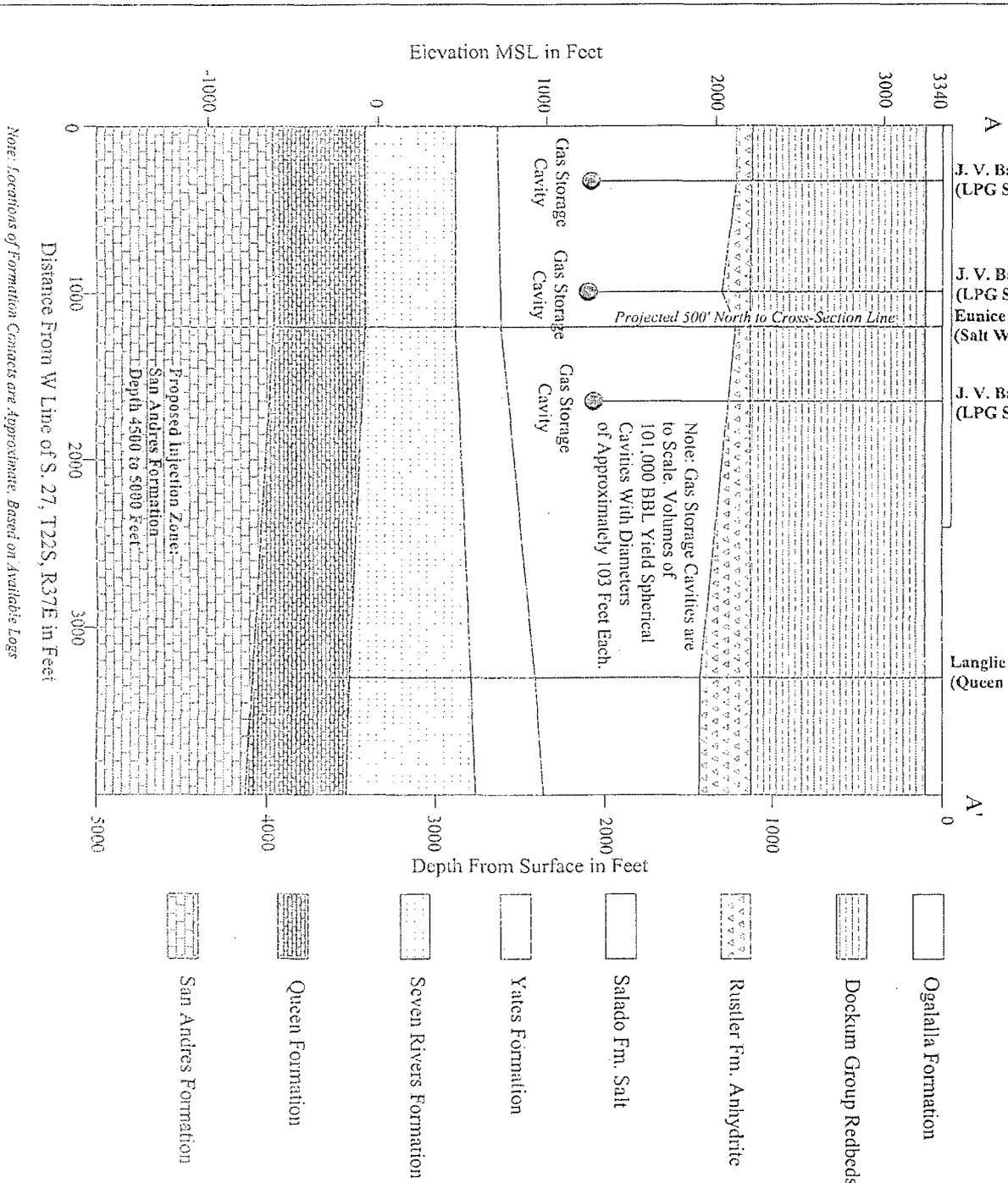
- Targa SWD Well
- Shallow Gas Storage Wells
- ★ Shallow Producing Well



**Figure 3: Locations of Cross-Sections**

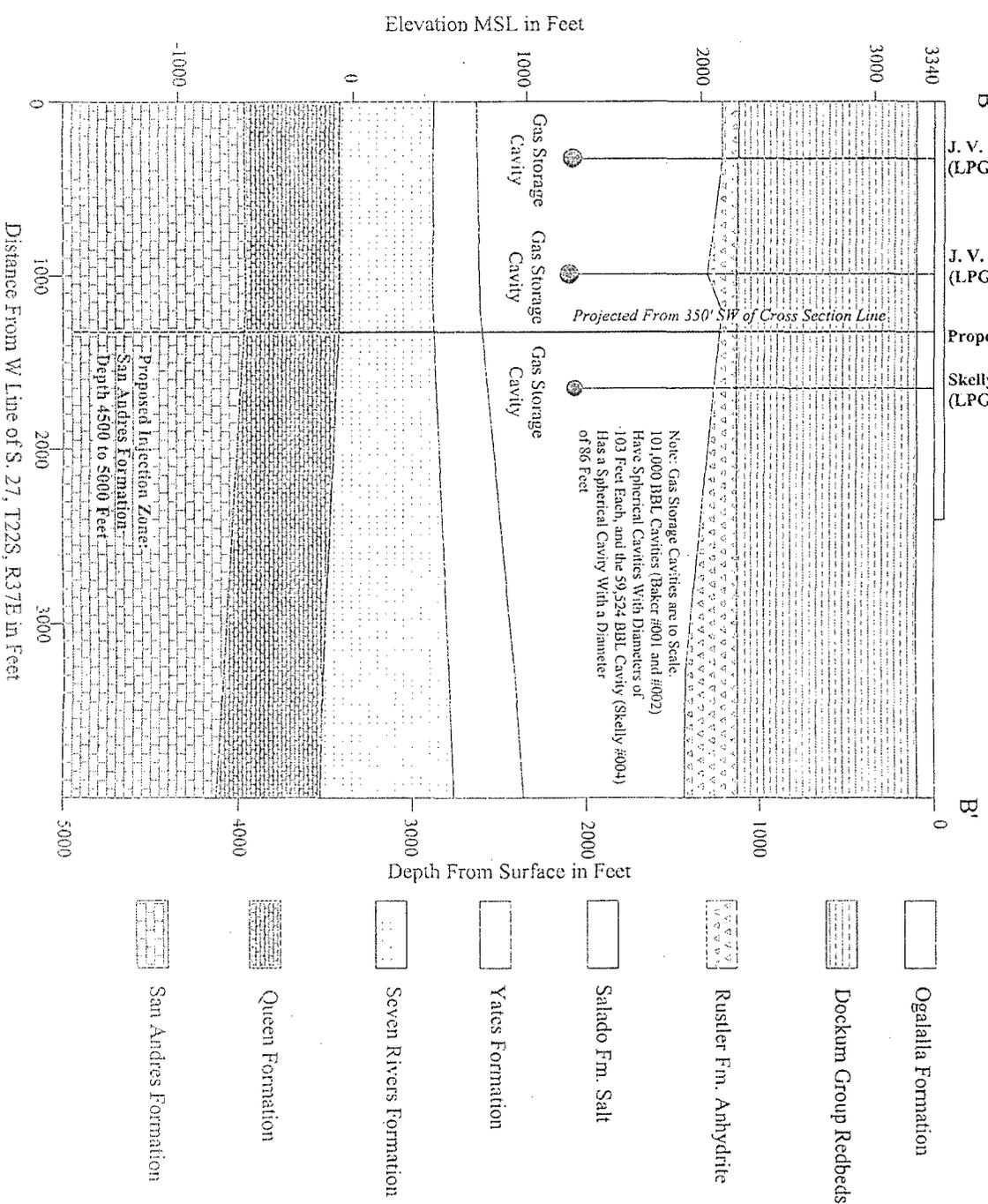
————— Cross-Section A - A'  
- - - - - Cross-Section B - B'

Figure 4:  
Cross-Section A-A' Showing Underground  
Gas Storage Facilities,  
Targa South Eunice Gas Plant  
Section 27, T22S, R37E



Note: Locations of Formation Contacts are Approximate. Based on Available Logs

Figure 5:  
Cross-Section B - B' Showing Underground  
Gas Storage Facilities,  
Targa South Eunice Gas Plant  
Section 27, T22S, R37E



Note: Locations of Formation Centers are Approximate, based on Available Logs