OIL & GAS DOCKET NO. 03-0253659

THE APPLICATION OF GOLDEN TRIANGLE STORAGE, INC. FOR AUTHORITY PURSUANT TO STATEWIDE RULE 97 FOR A PERMIT TO CREATE, OPERATE AND MAINTAIN AN UNDERGROUND HYDROCARBON STORAGE FACILITY, GOLDEN TRIANGLE STORAGE LEASE, SPINDLETOP FIELD, JEFFERSON COUNTY, TEXAS

HEARD BY: Donna K. Chandler on October 26, 2007

APPEARANCES:	**REPRESENTING:**
Jamie Nielson Joe T. Ratigan James Pitts Steve Seni Sam Smith Kimberly Tarr Shannon Pierce Kimberly Watson	Golden Triangle Storage, Inc.
Tim George	Coastal Caverns, Inc.
Phil Gamble	Centana Intrastate Pipeline

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Golden Triangle Storage, Inc. ("GTS") seeks a permit to create, operate and maintain an underground natural gas storage facility in the Spindletop salt dome on its Golden Triangle Storage lease in Jefferson County. The application is filed pursuant to Statewide Rule 97.

The application was unprotested and the examiner recommends approval.

DISCUSSION OF THE EVIDENCE

The proposed gas storage facility is located atop the Spindletop salt dome in northeast Jefferson County. The Golden Triangle Storage lease consists of approximately 80 acres about two miles south/southwest of the City of Beaumont. The Spindletop dome is approximately one-mile in diameter with steeply dipping flanks. The proposed facility is located on the central portion of the salt dome. The top of the anhydrite caprock is expected to occur at approximately 800 feet and the top of the salt is estimated to occur at approximately 1,600 feet in the area of the proposed caverns.

GTS plans to create five storage caverns on its lease in the Spindletop salt dome. To create the caverns, five wells will be drilled to a total depth of approximately 5,200 feet and will be completed with several casing strings: 42" conductor pipe driven to 150 feet; 36" surface casing set at 600 feet and cemented to surface; 30" intermediate casing set at 850 feet and cemented to surface; 24" intermediate casing set at 1,900 feet and cemented to surface No. 2; 20" production casing set at 3,300 feet and cemented to surface; 16" hanging string No. 1 and 10¾" hanging string No. 2. The Texas Commission on Environmental Quality recommends that usable quality water be protected to a depth of 350 feet.

Each of the caverns will be created by brine mining. During this process, fresh water is injected under controlled conditions to dissolve the salt and create the cavern space, and brine fluid is removed for disposal. A nitrogen blanket will be used to prevent washing of the cavern above the desired depths. The nitrogen blanket/brine interface depth will be continuously calculated and interface logs will be run to verify the nitrogen blanket depth. The boundaries of the cavern will be determined by periodical sonar caliper surveys during the development. When fully leached, cavern Nos. 1, 2 and 3 will have capacities of 12.5 million barrels each; Nos. 4 and 5 will have capacities of 10 million barrels each. The top of each cavern will be at a depth of approximately 3,500 feet and the bottom of each cavern will be at a depth of approximately 5,200 feet. Cavern Nos. 1, 2 and 3 will be approximately 300 feet in diameter and Nos. 4 and 5 will be approximately 250 feet in diameter.

There are numerous other caverns located on the dome and several more have recently been approved by the Commission. GTS's proposed caverns are located more centrally on the dome than all of the other caverns. The proposed locations for the five storage wells were selected to afford ample distance between the existing and/or permitted caverns and sufficient distances from adjacent properties to insure that the caverns stay on the GTS lease. The proposed locations are also based on the avoidance of planes of preferred dissolution of the salt.

Through a search of public records, GTS has identified 484 oil and gas related wells which have penetrated the caprock within 1,370 feet (¼ mile + 50 feet buffer) of each of the proposed storage wells. The majority of these wells have been plugged and abandoned and available plugging reports were submitted. Eight storage related wells have been identified within the same area.

Salt cores have been taken from existing wells/caverns on the dome. This data is available from wells near both the northern and southern boundaries of the GTS lease. A salt core testing program will be performed on a sample taken from the first well drilled on the GTS lease. Tests will be performed on cores taken from the top, middle and bottom of the cavern. These tests will determine strength and deformation characteristics of the salt and will be used in the design of the caverns to insure cavern stability. A geomechanical study will also be performed to assess the salt web which will separate the proposed caverns from other caverns on the dome.

GTS will conduct annual subsidence monitoring of each wellhead and eleven surface benchmarks at the facility. Other operators on the dome are negotiating to develop a dome-wide subsidence monitoring program.

The facility is in the public interest as its use will increase the stability of the natural gas market. The facility will be capable of rapid withdrawal of natural gas to supply gas to the market place as needed. Each cavern will be capable of an instantaneous peak withdrawal of 450 MMCF per day or a sustained average of about 300 MMCF per day.

Notice of application and hearing were provided to each person and entity entitled to notice. Notice of the hearing was published in the *Beaumont Enterprise*, a newspaper of general circulation in Jefferson County, on June 30, July 7 and July 14, 2007.

In addition, on October 12, 2007, GTS mailed a copy of the Notice of Hearing to those persons entitled to receive notice of the application but had not filed a notice of intent to appear at the hearing.

FINDINGS OF FACT

1. Notice of application and hearing were provided to each person and entity entitled to notice. Notice of the hearing was published in the *Beaumont Enterprise*, a newspaper of general circulation in Jefferson County, on June 30, July 7 and July 14, 2007. On October 12, 2007, GTS mailed a copy of the Notice of Hearing to those persons entitled to receive notice of the application but had not filed a notice of intent to appear at the hearing.

2. GTS seeks permits to create, operate and maintain an underground hydrocarbon storage facility in the Spindletop salt dome in Jefferson County. The facility will consist of five caverns on the Golden Triangle Storage lease.

3. When fully leached, cavern Nos. 1, 2 and 3 will have capacities of 12.5 million barrels each; Nos. 4 and 5 will have capacities of 10 million barrels each.

4. The top of the salt is estimated to occur at approximately 1,600 feet in the area of the proposed caverns. The top of each cavern will be at a depth of approximately 3,500 feet and the bottom of each cavern will be at a depth of approximately 5,200 feet. Nos. 1, 2 and 3 will be approximately 300 feet in diameter and Nos. 4 and 5 will be approximately 250 feet in diameter.

5. A nitrogen blanket will be used to prevent washing of the cavern above the desired depths. The nitrogen blanket/brine interface depth will be continuously calculated and interface logs will be run to verify the nitrogen blanket depth. The boundaries of the cavern will be determined by periodical sonar caliper surveys during the development.

6. Usable quality ground water occurs to a depth of 350 feet and will be protected in each well.

7. The facility will be used for the storage of compressed natural gas.

8. GTS will conduct an annual subsidence survey monitoring program of wells and benchmarks at the facility.

9. Through a search of public records, 484 oil and gas related wells have been identified which have penetrated the caprock within 1,370 feet (¼ mile + 50 feet buffer) of each of the proposed storage wells. A total of eight storage related wells have been identified within the same area.

10. Each cavern will be capable of an instantaneous peak withdrawal of 450 MMCF per day or a sustained average of about 300 MMCF per day.

CONCLUSIONS OF LAW

1. Proper notice was timely given to all parties entitled to notice pursuant to applicable statutes and rules.

2. All things have occurred and have been accomplished to give the Commission jurisdiction in this case.

3. The use of the proposed gas storage caverns will not endanger oil, gas, or geothermal resources or cause the pollution of surface water or fresh water strata unproductive of oil, gas, or geothermal resources.

4. The facility is in the public interest as its use will increase the stability of the natural gas market.

5. The applicant has complied with the requirements for approval set forth in Statewide Rule 97.

EXAMINER'S RECOMMENDATION

Based on the above findings and conclusions, the examiner recommends that the application of Golden Triangle Storage, Inc. to create, operate and maintain a facility to store natural gas and then retrieve it from solution-mined caverns, be approved pursuant to Statewide Rule 97. Technical Permitting is directed to issue the appropriate permit with the usual conditions, restrictions and limitations as required by the Commission. Golden Triangle Storage, Inc. shall comply with all applicable rules and safety standards adopted by the Commission pursuant to Statewide Rule 97.

Respectfully submitted

Donna K. Chandler
Technical Hearings Examiner