

BILLING CODE 6717-01-P

FEDERAL ENERGY REGULATORY COMMISSION

Transcontinental Gas Pipe Line Company, LLC

Docket No. CP11-551-000

NOTICE OF APPLICATION

Take notice that on September 29, 2011, Transcontinental Gas Pipe Line Company, LLC (Transco), P.O. Box 1396, Houston, Texas 77251-1396, filed in Docket No. CP11-551-000 an application pursuant to Section 7(b) and 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission's regulations for permission and approval to abandon Caverns 1, 2, 3, and 4 and the associated storage deliverability and capacity at the Eminence Storage Field (Eminence) in Covington County, Mississippi, all as more fully set forth in the application, which is on file with the Commission and open to public inspection. This filing may also be viewed on the web at <http://www.ferc.gov> using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, contact FERC at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or call toll-free, (886) 208-3676 or TYY, (202) 502-8659.

Transco states that it has experienced structural integrity problems with four of its seven caverns at Eminence. On December 26, 2010, a large, unexpected pressure drop occurred in Cavern 3. Subsequently, Transco experienced problems with Caverns 1 and 2 and began to reduce the pressure in those caverns by withdrawing gas. Cavern 4 has been out of service since 2004 due to collapsed casing which is not connected to the December incident. Transco seeks permission and approval to abandon Caverns 1, 2, 3, and 4, and reduce deliverability and capacity from 20.5 Bcf to 15.025 Bcf in Caverns 5, 6, and 7. Transco also seeks to partially abandon the total storage capacity and deliverability quantities Transco provides to its customers under Rate Schedules ESS and EESWS. Transco further seeks to reduce the total capacity and deliverability quantities available to Transco for system flexibility. Contingent upon receiving approval of its request from the Commission, Transco and its Rate Schedules ESS and EESWS customers would amend their applicable service agreements to reflect their revised Storage Capacity Quantity and the Storage Demand Capacity. Transco states that it intends to reflect the rate impact of the reduction in at the Eminence Storage Field's deliverability and capacity, as well as any costs incurred thus far, in Transco's next section 4 general rate case which will be filed no later than August 31, 2012. Transco estimates that it has already expended \$76,000,000 as part of its emergency response to the events at Eminence.

Any questions regarding this application should be directed to Ingrid Germany, Staff Regulatory Analyst, Transcontinental Gas Pipe Line Company, P.O. Box 1396, Houston, Texas 77251-1396, at (713) 215-4015.

Pursuant to section 157.9 of the Commission's regulations, 18 CFR 157.9, within 90 days of this Notice, the Commission's staff will either complete its environmental assessment (EA) and place it into the Commission's public record (eLibrary) for this proceeding; or issue a Notice of Schedule for Environmental Review. If a Notice of Schedule for Environmental Review is issued, it will indicate, among other milestones, the anticipated date for the Commission's staff issuance of the EA for this proposal. The filing of the EA in the Commission's public record for this proceeding or the issuance of a Notice of Schedule for Environmental Review will serve to notify federal and state agencies of the timing for the completion of all necessary reviews, and the subsequent need to reach a final decision on a request for federal authorization within 90 days of the date of issuance of the Commission staff's EA.

There are two ways to become involved in the Commission's review of this project. First, any person wishing to obtain legal status by becoming a party to the proceedings for this project should, on or before the comment date stated below, file with the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, D.C. 20426, a motion to intervene in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) and the Regulations under the NGA (18 CFR 157.10). A person obtaining party status will be placed on the service list maintained by the Secretary of the Commission and will receive copies of all documents filed by the applicant and by all other parties. A party must submit 14 copies of filings made with the Commission and must mail a copy to the applicant and to every other party in the proceeding. Only parties to the proceeding can ask for court review of Commission orders in the proceeding.

However, a person does not have to intervene in order to have comments considered. The second way to participate is by filing with the Secretary of the Commission, as soon as possible, an original and two copies of comments in support of or in opposition to this project. The Commission will consider these comments in determining the appropriate action to be taken, but the filing of a comment alone will not serve to make the filer a party to the proceeding. The Commission's rules require that persons filing comments in opposition to the project provide copies of their protests only to the party or parties directly involved in the protest.

Persons who wish to comment only on the environmental review of this project should submit an original and two copies of their comments to the Secretary of the Commission. Environmental commenters will be placed on the Commission's environmental mailing list, will receive copies of the environmental documents, and will be notified of meetings associated with the Commission's environmental review process. Environmental commenters will not be required to serve copies of filed documents on all other parties. However, the non-party commenters will not receive copies of all documents filed by other parties or issued by the Commission (except for the mailing of environmental documents issued by the Commission) and will not have the right to seek court review of the Commission's final order.

The Commission strongly encourages electronic filings of comments, protests and interventions in lieu of paper using the “eFiling” link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426. See, 18 CFR 385.2001(a) (1) (iii) and the instructions on the Commission's web site under the "e-Filing" link.

Comment Date: October 27, 2011

Dated: October 6, 2011

Kimberly D. Bose,  
Secretary.

[FR Doc. 2011-26573 Filed 10/13/2011 at 8:45 am;

Publication Date: 10/14/2011]

Transcontinental Pipeline Company, Eminence Gas Storage Facility, Covington County, MS

Image by bing.com/maps





**Gas Pipeline-Transco**  
2800 Post Oak Boulevard (77056)  
P.O. Box 1396  
Houston, Texas 77251-1396  
(713) 215-2000

September 29, 2011

Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Attention: Kimberly D. Bose, Secretary

Reference: Transcontinental Gas Pipe Line Company, LLC  
Partial Abandonment of Eminence Storage Field  
Docket No. CP11-\_\_\_\_\_

Ladies and Gentlemen:

Pursuant to Sections 7(c) and 7(b) of the Natural Gas Act and Part 157 of the regulations of the Federal Energy Regulatory Commission ("Commission"), Transcontinental Gas Pipe Line Company, LLC ("Transco") submits herewith for filing with the Commission an application, in abbreviated form, for an order permitting and approving the abandonment of Caverns 1, 2, 3 and 4 and the associated storage deliverability and capacity at the Eminence Storage Field located in Covington County, Mississippi ("Eminence"). Eminence is an on-system storage facility owned and operated by Transco that is used to provide (1) open access contract storage service under Rate Schedule ESS, (2) open access emergency storage withdrawal service for back-up supply during force majeure events under Rate Schedule EESWS, and (3) operating flexibility on Transco's system.

This application contains three types of information:

- Public;
- Critical Energy Infrastructure Information ("CEII"); and
- Privileged.

The Public information consists of the Application (including the Notice and Exhibits T, W, Y, Z, Z1, Z2, Z3, Z4, and Z5, the Environmental Report, in their entirety).

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
September 29, 2011  
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The CEII information consists of Exhibit V, Flow Diagram Showing Operating Conditions Before and After Abandonment. Pursuant to Order No. 630, Critical Energy Infrastructure Information, 68 FR 9862 P 33 (2003), Transco requests that the CEII Section be treated as Critical Energy Infrastructure Information.

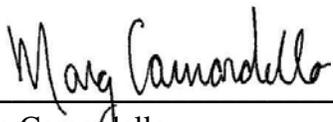
The Privileged information consists of a list of landowners whose property abuts the Eminence property. This document has been labeled "CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE."

In addition to electronically submitting the complete application through the Commission's eFiling system, Transco is also submitting three courtesy copies of the filing in paper to the Commission's Staff.

If you have any questions regarding this filing, please contact the undersigned.

Respectfully submitted,

TRANSCONTINENTAL GAS PIPE LINE  
COMPANY, LLC

By:   
Marg Camardello  
Manager, Certificates & Tariffs  
713-215-3380

Enclosures

**UNITED STATES OF AMERICA**

**BEFORE THE**

**FEDERAL ENERGY REGULATORY COMMISSION**

**In the Matter of** )  
 )  
**Transcontinental Gas Pipe Line** ) **Docket No. CP11-**  
**Company, LLC** )

**ABBREVIATED APPLICATION FOR ORDER PERMITTING AND  
APPROVING ABANDONMENT OF FACILITIES, AMENDING CERTIFICATE  
OF PUBLIC CONVENIENCE AND NECESSITY AND  
AUTHORIZING PARTIAL ABANDONMENT OF SERVICE**

Communications with respect to this application  
should be addressed to:

Scott Turkington, Director, Rates & Regulatory  
Transcontinental Gas Pipe Line Company, LLC  
Post Office Box 1396  
Houston, Texas 77251-1396  
(713) 215-3391

\* David A. Glenn, Senior Counsel  
Transcontinental Gas Pipe Line Company, LLC  
Post Office Box 1396  
Houston, Texas 77251-1396  
(713) 215-2341

A copy should also be sent to:

Marshia M. Younglund  
Manager, Regulatory Affairs  
The Williams Companies, Inc.  
1627 Eye Street, N.W., Suite 900  
Washington, D.C. 20006  
(202) 833-8994

Filed: September 29, 2011

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\* Designated to receive service in accordance with Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2010.

**UNITED STATES OF AMERICA**

**BEFORE THE**

**FEDERAL ENERGY REGULATORY COMMISSION**

<b>In the Matter of</b>	)	
	)	
<b>Transcontinental Gas Pipe Line</b>	)	<b>Docket No. CP11-</b>
<b>Company, LLC</b>	)	

**ABBREVIATED APPLICATION FOR ORDER PERMITTING AND  
APPROVING ABANDONMENT OF FACILITIES, AMENDING CERTIFICATE  
OF PUBLIC CONVENIENCE AND NECESSITY AND  
AUTHORIZING PARTIAL ABANDONMENT OF SERVICE**

Transcontinental Gas Pipe Line Company, LLC (“Transco”), pursuant to and in accordance with Sections 7(b) and 7(c) of the Natural Gas Act (“NGA”), 15 U.S.C. §717, *et seq.*, and Part 157 of the Federal Energy Regulatory Commission’s (“Commission”) regulations, hereby makes application, in abbreviated form, to abandon Caverns 1, 2, 3 and 4, and the associated storage deliverability and capacity, at the Eminence Storage Field located in Covington County, Mississippi. The Eminence Storage Field is used by Transco to provide (i) open access Part 284 contract storage service under Rate Schedule ESS (Eminence Storage Service), (ii) open access emergency storage withdrawal service for back-up supply during force majeure events under Rate Schedule EESWS (Emergency Eminence Storage Withdrawal Service), and (iii) operating flexibility on Transco’s system. Subsequent to Commission approval of the authorizations requested herein, Transco and its Rate Schedule ESS and Rate Schedule EESWS customers intend to execute amendments to the applicable service

agreements (and to any then effective service agreements applicable to released capacity, as necessary) to reflect the resulting revised Storage Capacity and Storage Demand Quantities proposed herein.

In support thereof, Transco shows as follows:

**I.**  
**GENERAL**

The exact legal name of the applicant is Transcontinental Gas Pipe Line Company, LLC. Transco is a limited liability company formed and existing under the laws of the State of Delaware, having its principal place of business in Houston, Texas.

The names, titles, addresses and telephone numbers of the persons to whom correspondence and communications concerning this application are to be addressed are as follows:

Scott Turkington, Director, Rates & Regulatory  
Transcontinental Gas Pipe Line Company, LLC  
Post Office Box 1396  
Houston, Texas 77251-1396  
(713) 215-3391  
[scott.c.turkington@williams.com](mailto:scott.c.turkington@williams.com)

David A. Glenn, Senior Counsel  
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[david.a.glenn@williams.com](mailto:david.a.glenn@williams.com)

With a copy to:

Marshia M. Younglund  
Manager, Regulatory Affairs  
The Williams Companies, Inc.

1627 Eye Street, N.W., Suite 900  
Washington, D.C. 20006  
(202) 833-8994  
[marshia.younglund@williams.com](mailto:marshia.younglund@williams.com)

## **II.** **DESCRIPTION OF EXISTING OPERATIONS**

Transco is a natural gas pipeline company engaged in the transportation of natural gas in interstate commerce by means of its natural gas transmission system extending from Texas, Louisiana, Mississippi, Alabama and the offshore Gulf of Mexico area, through the states of Georgia, South Carolina, North Carolina, Virginia, Maryland, Pennsylvania and New Jersey, to its termini in the New York City metropolitan area.

## **III.** **BACKGROUND**

### A. Development of the Eminence Storage Field

The Commission initially authorized Transco to construct and operate the Eminence Salt Dome Storage Field (“Eminence”) by certificate orders issued January 20, 1970, in Docket No. CP70-135<sup>1</sup> and April 7, 1972 in Docket No. CP72-145.<sup>2</sup> As ultimately constructed pursuant to these authorizations, four underground natural gas storage caverns (numbers 1 through 4) were created,<sup>3</sup> a new Compressor Station (“Station 77”) consisting of three compression units totaling 10,900 horsepower was constructed to facilitate a maximum deliverability of 750 MMcf per day, and facilities were installed to produce a maximum storage injection capability of 100 MMcf per day. The storage field

<sup>1</sup> Transcontinental Gas Pipe Line Corp., 43 FPC 100 (1970), as amended, 51 FPC 261 (1974).

<sup>2</sup> Transcontinental Gas Pipe Line Corp., 47 FPC 1018, as amended, 48 FPC 1325 (1972), as amended, 51 FPC 261 (1974).

<sup>3</sup> Salt dome storage field caverns are created using a leaching process.

was connected to Transco's main line by 1.56 miles of 30-inch pipeline. Total certificated capacity was 8.3 Bcf, which was comprised of approximately 6.24 Bcf of top gas and approximately 2.06 Bcf of base gas.<sup>4</sup>

By orders issued April 18, 1991,<sup>5</sup> June 19, 1991,<sup>6</sup> and August 4, 1994<sup>7</sup> in Docket No. CP90-2230, the Commission authorized the expansion of Eminence to increase the top gas capacity to a total of 15 Bcf by the creation of three additional caverns (numbers 5, 6 and 7) and to double the deliverability to a total of 1.5 Bcf per day. The expansion included dehydration facilities and a 30-inch pipeline loop on the existing lateral line. As such, the total capacity of Eminence is currently certificated at 20.5 Bcf, of which 15 Bcf is top gas.<sup>8</sup>

By order issued February 27, 2009, in Docket No. CP08-430-000,<sup>9</sup> the Commission authorized Transco's Eminence Enhancement Project, which involved the installation of an additional 4,735 hp reciprocating compressor unit and related facilities at Station 77 to add 44.6 MMcf (46,161 dekatherms, "Dth") per day of incremental injection capability at Eminence. The additional compression enabled participating Rate Schedule ESS customers to increase their firm storage injection

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<sup>4</sup> Transcontinental Gas Pipe Line Corp., 47 FERC ¶ 61,078 (1991).

<sup>5</sup> Id.

<sup>6</sup> Transcontinental Gas Pipe Line Corp., 55 FERC ¶ 61,443 (1991).

<sup>7</sup> Transcontinental Gas Pipe Line Corp., 68 FERC ¶ 61,218 (1994).

<sup>8</sup> Although the April 18, 1991 order limited the maximum volume of natural gas in each of the three expansion caverns, the June 19, 1991 order amended the certificate to eliminate the specific cavern capacity limitations and substituted a total capacity limitation for the entire field of 20.5 Bcf.

<sup>9</sup> Transcontinental Gas Pipe Line Corp., 126 FERC ¶ 61,189 (2009).

rights at Eminence, thereby allowing for more injection and withdrawal cycles per year. The completion of the Eminence Enhancement Project increased the field's certificated injection capability to 149,651 Dth per day. The Eminence Enhancement Project did not create any additional storage capacity or daily withdrawal capability.

B. Current Use of the Eminence Storage Field

The nature of the services provided from Eminence and the allocation of its capacity among customer groups have a varied history that has been set forth in detail in previous Commission orders.<sup>10</sup> Currently, the field's top gas capacity and withdrawal and injection capability are allocated to (i) an open access, unbundled, contract storage service under Rate Schedule ESS; (ii) an open access emergency storage withdrawal service providing back-up supply during force majeure events under Rate Schedule EESWS; and (iii) Transco to provide system operating flexibility.<sup>11</sup> The current entitlements are as follows:

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<sup>10</sup> See e.g., Transcontinental Gas Pipe Line Corp., 106 FERC ¶ 61,299 at PP 146-56 (2004); Transcontinental Gas Pipe Line Corp., 65 FERC ¶ 61,023 (1993); Transcontinental Gas Pipe Line Corp., 55 FERC ¶ 61,446 (1991).

<sup>11</sup> The most recent allocation of Eminence capacity between Rate Schedule ESS, Rate Schedule EESWS and Transco system flexibility was established by the September 25, 2006 Stipulation and Agreement ("Agreement") approved by Commission order issued November 27, 2006 in Docket No. RP01-245-016. The Agreement became effective March 1, 2007. Transcontinental Gas Pipe Line Corp., 117 FERC ¶ 61,232 (2006). Subsequent to the effective date of the Agreement, a number of customers have elected to convert their service under Rate Schedule EESWS to service under Rate Schedule ESS.

### Current Eminence Storage Field Entitlements

	Capacity (Dth)*	Deliverability (Dth / Day)*	Injection (Dth / Day)*
R/S ESS	14,444,229	1,443,977	142,416
R/S EESWS	171,601	17,229	1,149
Transco System Flexibility	909,169	91,288	6,086
TOTAL	15,524,999	1,552,494	149,651

\*Conversion factor of 1.035 Dth per Mcf.

#### IV. REASONS FOR ABANDONMENT

##### A. Force Majeure Event

On December 26, 2010, Transco detected a large, unexpected pressure drop in Cavern 3, one of the seven gas storage caverns at Eminence. On December 28, 2010, Transco determined that natural gas was leaking from Cavern 3. In response to this emergency, Transco reduced the pressure in Cavern 3 by safely venting and flaring gas into the atmosphere. Based on a determination that the reduced pressure in Cavern 3 created a risk to the salt pillars separating Cavern 3 from adjacent Caverns 1 and 2, Transco reduced the pressures in Caverns 1 and 2 by withdrawing gas from those caverns beginning January 4, 2011.

On January 10, 2011, Transco began drilling monitoring wells in the surrounding shallow fresh water zones to determine the footprint of escaped gas and to confirm that gas had not migrated beyond the Eminence boundaries into residential water wells.<sup>12</sup>

On January 1, 2011 Transco discovered gas escaping from the ground around the Cavern 1 wellhead. Transco continued to withdraw gas from Caverns 1 and 2, and by January 24, 2011, the pressure in those caverns was reduced to a level sufficient to avoid potential effects on Cavern 3. However, due to the leak at Cavern 3 and the damage to the well at Cavern 1, both Caverns 1 and 3 were taken out of service. Due to the instability of the well at Cavern 1 caused by escaping gas and soil erosion around the well and wellhead, Transco began filling Cavern 1 with water to address this threat to safety. Cavern 1 was completely filled with water by the end of March 2011.

1. Emergency Blanket Certificate Activities

On January 31, 2011, in accordance with Section 157.207 of the Commission's regulations, Transco submitted to the Commission, in Docket No. CP11-73-000, an "Advance Report of Emergency Blanket Certificate Activities" ("Advance Report") notifying the Commission of the activities that Transco would undertake in response to the emergency at Eminence. Specifically, Transco outlined its plans to drill a pilot/test well and to drill a relief well into Cavern 3. Information gleaned from drilling the pilot well(s) would be used to develop a drilling plan for the relief well into Cavern 3.

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<sup>12</sup> Since January 2011, Transco has drilled 258 monitoring wells at varying depths between 30 and 600 feet to locate and flare gas that escaped from Cavern 3 into freshwater formations. Some of the wells continue to flare gas, but most of these zones have been depleted by flaring. Currently, Transco does not plan to drill additional monitoring wells unless warranted by unforeseen circumstances.

The relief well would be used to remove any remaining gas from Cavern 3 and fill it with water in order to stabilize the cavern and ensure the safety of the field. The Advance Report also stated that additional pilot wells might be required and that if gas was discovered at the pilot well(s), flaring would be necessary. Transco estimated that it would begin drilling the relief well into Cavern 3 in April 2011 and begin filling the cavern with water in July 2011. (A copy of the Advance Report is attached hereto as Exhibit Z-1.)

After drilling the initial pilot wells, Transco determined that it was necessary to drill additional pilot wells into the deeper zones above the caprock and into the caprock of Cavern 3 to locate and safely flare stranded gas in order to reduce the pressure in the caprock. Pressure in the caprock must be reduced in order to safely drill the relief well.

On July 15, 2011, Transco submitted to the Commission, in Docket No. CP11-73-000, a “Supplement to Advance Report of Emergency Blanket Certificate Activities” (“Supplemental Report”) to update the Commission on additional activities Transco expected to undertake in response to the ongoing emergency at Eminence. The Supplemental Report notified the Commission that Transco had drilled twelve pilot wells to remove gas stranded in the caprock and sands above Cavern 3, and anticipated the need for additional pilot wells.<sup>13</sup> Transco also updated its estimate of the time frame for drilling the relief well into Cavern 3, stating that it would be completed in the fall of 2012 or later.

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<sup>13</sup> To date Transco has drilled 14 pilot wells.

In the Supplemental Report, Transco notified the Commission that it planned to capture the gas produced at the pilot wells and inject it into Transco's pipeline system, rather than continuing to flare the gas.<sup>14</sup> This activity would consist of the construction of temporary yard piping, treatment facilities, and measurement facilities. The gas would be treated to remove H<sub>2</sub>S and injected into Transco's pipeline system using temporary compression. Transco expects these facilities to be installed and operable by October 2011.

Further, the Supplemental Report notified the Commission that the integrity of storage Caverns 1 and 2 had been compromised due to the event at Cavern 3. As a result, Transco stated that it had removed the gas from Cavern 1 and filled it with water, and intended to do the same with Cavern 2 in the near future. (A copy of the July 15, 2011 Supplemental Report is attached hereto as Exhibit Z-2.)

## 2. State of Mississippi Activities

Transco notified the Mississippi Department of Environmental Quality ("MDEQ") and the State Oil and Gas Board of Mississippi ("MOGB") within 24 hours of the force majeure event at Eminence and has since provided both agencies with periodic reports and responses to their inquiries. Representatives from both agencies have made site visits to Eminence and they continue to closely monitor activities at the field. The MDEQ and Transco continue to discuss the most appropriate methodologies to safely mitigate the impacts of those activities.

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<sup>14</sup> On September 12, 2011 Transco filed a petition with the Mississippi Oil and Gas Board for authorization to produce the gas located in the caprock.

B. Consultant Recommendation to Abandon Caverns

Within twenty-four hours of experiencing the unexpected pressure drop on December 26, 2010, Transco retained Subsurface Technology, Inc. (“Subsurface”), a consulting and engineering firm, to assist in the emergency response. Subsequently, Transco requested that Subsurface conduct an evaluation of Caverns 1, 2, 3 and 4. After completing their evaluation, Subsurface presented its findings in a report dated May 12, 2011. Among other things, the report concluded:

Based on the age of these four caverns, the documented history and condition of Cavern Nos. 1 through 4, and the documented salt creep conditions at Eminence, it is unlikely that any demonstration of long-term integrity and reliability can be made.

Based on the findings and recommendations provided by Subsurface, Transco made the decision to request authorization to abandon Caverns 1, 2, 3 and 4. (A copy of the Subsurface report is attached hereto as Exhibit Z-3.)

**V.**  
**EFFECT OF ABANDONMENT ON CUSTOMERS**

On February 17, 2011, Transco sent a “Notice of Force Majeure Event” to its Rate Schedule ESS and Rate Schedule EESWS customers (collectively, “ESS Customers”).<sup>15</sup> Transco informed the ESS Customers that, as a result of the events at Eminence, Caverns 1 and 3 would not be returned to service and that Transco intended to file an application seeking Commission authorization to abandon those caverns. The notice also informed

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<sup>15</sup> Transco also posted the force majeure notice on its ILine website.

customers that, notwithstanding the field's reduced capability, Transco to that point had been able to perform its contractual obligations to its ESS customers and had not ordered a reduction in Rate Schedule ESS or EESWS entitlements pursuant to Transco's Tariff.<sup>16</sup> (A copy of the February 17 "Notice of Force Majeure Event" is attached hereto in Exhibit Z-4.)

Subsequent to Transco's issuance of the force majeure notice, Transco has continued to communicate with its ESS Customers, including at a meeting held on May 24, 2011 in Baltimore, Maryland, to provide updates on the force majeure event and information addressing the impact of the event on service from Eminence. Included in that information is Transco's estimate of the affect of the abandonment of Caverns 1 through 4 on total service levels under Rate Schedules EESWS and ESS and on customers' individual contract entitlements under those rate schedules, and on Transco's system flexibility. (Copies of written communications with the ESS Customers are attached hereto in Exhibit Z-4.)

In that regard, Transco has informed its ESS Customers that their top gas inventory balances were not affected by the event, and that Transco will not seek to recover gas losses from the event through the fuel tracker provisions of Section 38 of the General Terms and Conditions of its tariff ("GT&C"). Further, Transco informed the customers that the recovery of costs related to the abandonment of Caverns 1, 2, 3 and 4

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<sup>16</sup> As of the date of this Application, Transco has not ordered a reduction in Rate Schedule ESS or EESWS entitlements.

would be addressed in Transco's next NGA general rate case which must be filed no later than August 31, 2012.

## **VI. AUTHORIZATIONS REQUESTED**

By this application, Transco seeks the necessary certificate and abandonment authorizations under Sections 7(b) and 7(c) of the NGA, and Part 157 of the Commission's regulations, to abandon Caverns 1, 2, 3 and 4 at Eminence and their associated deliverability and capacity, to reduce the Storage Demand Quantity and Storage Capacity Quantity provided to Transco's Rate Schedule ESS and Rate Schedule EESWS customers to reflect the reduced capability of the field and, as discussed further below, authorization to reduce the operating pressure of Cavern 7.

In addition, as discussed in more detail below, Transco intends to sell any base gas recovered as a result of the abandonment of Caverns 1, 2, 3 and 4 and surplus base gas in Caverns 5, 6 and 7. To that end, Transco requests a waiver of section 358.5 of the Commission's Standards of Conduct regulations, 18 C.F.R. Part 358, to allow a Transco transmission function employee to administer the sale of Eminence base gas.

### **A. Physical Abandonment of the Caverns**

In order to abandon Caverns 1 through 4, the gas must be removed (top and base gas) and the caverns filled with water. Certain activities related to the gas removal and water fill are currently underway or have already occurred as part of Transco's emergency response at Eminence, to stabilize the caverns and ensure the safety of the field.

### Cavern 1

As discussed above, Cavern 1 has already been emptied of gas and filled with water in an effort to stabilize the cavern following the force majeure event.

### Cavern 2

In late May and early June 2011, Transco conducted a mechanical integrity test and discovered a leak in Cavern 2. As Transco stated in its July 15, 2011 “Supplement to Advance Report of Emergency Blanket Certificate Activities,” Cavern 2 has been compromised due to the event at Cavern 3. As part of Transco’s emergency response and to address associated safety concerns, Transco began the process of emptying Cavern 2 of gas and filling it with water in early September 2011. Transco expects this process to be completed by November, 2011.

### Cavern 3

Transco is unable to use the existing well at Cavern 3 due to the leak and the collapse of casing in the well bore. As discussed above, the drilling of pilot wells and a relief well into Cavern 3 is being undertaken as part of the emergency blanket certificate activities reported to the Commission; the costs of those wells are reflected in Exhibit Y. Transco expects to begin drilling the relief well in early 2012, and to have removed any remaining gas and filled the cavern with water by summer 2012. Transco will then clean out and enter the original wellbore to investigate the cause of the event.<sup>17</sup>

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<sup>17</sup> Although Transco expects to enter Cavern 3 by drilling a relief well into the cavern, Transco continues to explore the feasibility of sidetracking from Cavern 4’s wellbore to enter Cavern 3, as noted in Transco’s July 15, 2011 Supplemental Report to the Commission. If Transco alters its course of action and pursues the sidetrack from Cavern 4, it will further supplement its Advance Report of Emergency Blanket Certificate Activities submitted in Docket No. CP11-73-000.

### Cavern 4

Cavern 4 was taken out of service in 2004 and filled with water due to collapsed casing at 5,379 ft. Transco had planned to undertake further investigation of Cavern 4 to determine if the cavern could be salvaged by sidetracking the collapsed casing. However, as a result of the force majeure event and the recommendation of Subsurface, Transco seeks authorization to abandon Cavern 4.

Once Caverns 1, 2, 3 and 4 are filled with water, Transco also seeks authorization from the Commission, as necessary, to undertake the following activities:<sup>18</sup>

- Convert four of the pilot wells in the caprock to observation wells.
- Plug and abandon Transco's two existing observation wells.<sup>19</sup>
- Remove above-ground 12", 14" and 16" diameter high pressure gas piping and pipe supports connecting the Caverns 1, 2, 3 and 4 wells to yard piping.
- Install pressure gauges to monitor pressure in the caverns.
- Install one 210-barrel tank, foundation and piping at each cavern to collect water that flows from each of the caverns due to salt creep, and install a flow meter to record the flow volume.
- Plug and abandon the injection/withdrawal wells in Caverns 1 through 4, as described below.

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<sup>18</sup> Transco plans to begin the post-water fill activities associated with Caverns 1, 2, and 4 upon receipt of the authorizations requested herein. The same activities at Cavern 3 will begin after Cavern 3 has been filled with water, which Transco currently expects will be in late 2012.

<sup>19</sup> These two existing observation wells were utilized to flare gas from the deeper sand zones above Cavern 3 which were charged with escaped gas. One of these two wells poses an ongoing safety concern, and will be plugged and abandoned as soon as reasonably practicable, currently expected to be in January 2012. The second observation well will be plugged and abandoned as part of the post-water fill activities.

Following the physical abandonment of Caverns 1, 2, 3 and 4, pressure in the caverns will continue to be monitored in accordance with the requirements of the MOGB.<sup>20</sup> Water in the caverns will be allowed to free-flow out of the caverns and into the 210-bbl tanks until temperature gauges indicate the water in the cavern has reached a stable temperature. It is anticipated this may take ten to twenty years. Once a stable temperature is reached, the cavern wellhead will be closed and the cavern wellhead pressure will be monitored. When the pressure becomes stable at a level that does not jeopardize the casing shoe or the salt dome, the wellbore will be plugged and abandoned as requested herein and in accordance with MOGB regulations.

As set forth in Exhibit Y attached hereto, costs incurred in conjunction with the abandonment of Caverns 1 through 4, including related costs incurred as part of Transco's emergency response at Eminence, are estimated to be approximately \$76 million.<sup>21</sup> This amount reflects total costs exclusive of amounts that may be recovered from insurance claims. At this time, Transco does not know how much of the total costs ultimately will be reimbursed by insurance. Issues related to the final abandonment costs and recovery of those costs from customers will be addressed in Transco's next NGA general rate case, which must be filed no later than August 31, 2012.

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<sup>20</sup> On August 12, 2011 Transco petitioned the MOGB in Docket 324-2011-D to authorize construction of a Consolidated Reserve Pit for storage of accumulated and future drilling fluids and cuttings and in Docket 325-2011-D to approve Transco's plan for abandonment of Cavern Wells 1, 2 and 4 and to allow the drilling fluids resulting from the drilling operations (including the drilling fluid from all wells preliminary to the Cavern 3 relief well, drilling fluids from the relief well and cuttings temporarily stored in an unlined reserve pit) to be slurried and injected into Caverns 1, 2 or 4 for disposal. Upon completion of operations, the Consolidated Reserve Pit will be closed pursuant to the requirements of the MOGB. Transco received approval for its plan on the September 21, 2011 Board minutes.

<sup>21</sup> The cost of converting four of the pilot wells to observation wells is not included in the \$76 million estimated cost of abandonment.

Attached hereto, as Exhibit Z-5, is the Environmental Resource Report. This report reflects Transco's analysis of impacts to the environment associated with the abandonment of Caverns 1 through 4.

B. Partial Abandonment of Deliverability and Capacity

Transco commissioned sonar surveys of Caverns 5, 6 and 7 to determine the caverns' maximum capacity. Based on these surveys, Transco seeks authorization to reduce Eminence's total maximum certificated capacity from 20.5 Bcf to 15.025 Bcf (15.551 MMDth). The 15.551 MMDth is comprised of 10.4 MMDth of top gas and 5.151 MMDth of base gas.<sup>22</sup> Transco also seeks authorization to reduce the field's certificated maximum deliverability to 1.24 MMDth/day, based on each cavern's maximum capability of approximately 414 MMDth/day (400 MMcfd). The current injection capability at Eminence of 149,651 dt/day will remain unchanged.

C. Operation of Cavern 7 at Reduced Pressures

The operating history of Cavern 7 indicates that gas is lost from the cavern when operating at the currently certificated pressure of 3200 psig. Transco first became aware of this issue during mechanical testing of the cavern in November and December of 2009. Further testing was completed in 2010 to confirm the leakage. This gas was likely accumulating in the caprock over the salt dome. Additional testing was conducted in November and December of 2010, with testing concluding in January of 2011. On February 19, 2011, Transco reduced the operating pressure at Cavern 7 in order to eliminate further gas loss from Cavern 7. The 2011 testing confirmed that Cavern 7 does

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<sup>22</sup> Upon the effective date of the authorizations requested herein, Transco intends to reduce the base gas currently recorded on its books for Caverns 5, 6 and 7 to 5.151 MMDth.

not lose gas at 2500 psig. Therefore, Transco requests authorization to operate Cavern 7 at a certificated pressure of 2500 psig.

D. Partial Abandonment of Customers' Deliverability and Capacity Entitlements

Transco seeks the necessary certificate and abandonment authorizations to reduce the total storage capacity and deliverability quantities Transco provides to its ESS Customers. Transco will also reduce the total capacity and deliverability quantities available to Transco for system flexibility. The proposed reduced deliverability and capacity quantities are derived from a pro rata reduction of each of the currently effective entitlements for ESS, EESWS and Transco system flexibility.

Transco seeks authorization to reduce the total Storage Capacity Quantity provided to Rate Schedule ESS customers from 14,444,229 Dth to 9,676,006 Dth and to reduce the Storage Demand Quantity from 1,443,977 Dth per day to 1,153,326 Dth per day. The total Rate Schedule ESS maximum injection quantity would remain at its current level of 142,416 Dth per day.

Transco seeks authorization to reduce the total Storage Capacity Quantity provided to Rate Schedule EESWS customers from 171,601 Dth to 114,953 Dth and to reduce the Storage Demand Quantity from 17,229 Dth per day to 13,761 Dth per day. The total Rate Schedule EESWS maximum injection quantity would remain at 1,149 Dth per day.

The remaining Eminence top gas capacity of 609,041 Dth, deliverability of 72,913 Dth per day, and injection capability of 6,086 Dth per day would be allocated to Transco for system operating flexibility.

Following the Commission's approval of the instant application, Transco and each Rate Schedule ESS and Rate Schedule EESWS customer will amend the applicable service agreement to reflect the revised Storage Capacity Quantity and the Storage Demand Quantity, as shown in Exhibit W hereto. To the extent there are any Rate Schedule ESS or Rate Schedule EESWS capacity release transactions in effect at the time the contract quantities are revised, the service agreements applicable to those capacity release transactions also will be amended, as necessary.

Upon the effective date of the authorizations requested herein, the ESS Customers (and any Replacement Shippers in then-effective ESS or EESWS capacity release transactions) will be billed based on the then-effective rates and the revised Storage Capacity and Storage Demand Quantities. Transco intends to reflect the rate impact of the reduction in Eminence deliverability and capacity in Transco's next NGA general rate case to be filed no later than August 31, 2012.

E. Disposition of Base Gas

Transco intends to sell any base gas recovered from Caverns 1, 2, 3 and 4 and the surplus base gas in Caverns 5, 6 and 7 pursuant to the posting and bidding procedures set forth in Sections 43.2, 43.3, and 43.4 of the GT&C of Transco's tariff. These proposed sales will be accomplished under the same procedures previously followed by Transco in making sales of gas from Eminence and the Hester storage facility, as approved by the Commission in Docket No. RP09-441-000.<sup>23</sup> In that regard, and consistent with the Commission's action in that proceeding, Transco requests that the Commission grant any

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<sup>23</sup> Transcontinental Gas Pipe Line Co., LLC, 128 FERC ¶ 61,111 (2009). The procedures are discussed at PP 18-19 of that order.

necessary waivers of the Standards of Conduct, 18 C.F.R. Part 358, to permit Transco's transmission function employees to make those sales. In particular, Transco requests a waiver of the Independent Functioning Rule in section 358.5 of the Commission's regulations, 18 C.F.R. § 358.5, to allow Transco's transmission function employees to accomplish these sales. Transco submits that good cause exists to grant the requested waivers.

The base gas from Eminence will become available for sale as a result of the Commission's authorization in this proceeding, and the sale of this gas is not in furtherance of any merchant function of Transco. The sales of the base gas from Eminence will be conducted pursuant to transparent posting and bidding procedures, and will be made on an unbundled basis.

Under the Standards of Conduct, a "marketing function employee" is defined in section 358.3(d) as "an employee, contractor, consultant or agent of a transmission provider or of an affiliate of a transmission provider who **actively** and personally **engages on a day-to-day basis** in marketing functions" (emphasis added). The sales of gas from the Eminence are expected to be accomplished by the equivalent of one employee, who will spend, at most, one hour per day administering and monitoring the sales as and when they occur. It would be unduly burdensome to require Transco to designate that employee as a "marketing function employee" for purposes of the Standards of Conduct and establish compliance procedures to address that designation, solely in order for that employee to "actively" engage in a marketing function for, at most, one hour per day. That particularly is true in this case given that, under the transparent procedures established to conduct these sales, the employee's active

engagement will be to conduct essentially ministerial activities. Accordingly, consistent with the Commission's action in Docket No. RP09-441-000,<sup>24</sup> Transco requests that the Commission grant any necessary waivers of the Standards of Conduct to allow Transco's transmission function employees to make the sales of the base gas from Eminence as described herein.

Transco initially paid for the base gas. The ESS Customers have not reimbursed Transco through depreciation or amortization expense for the capital used to purchase the base gas, and have not borne the risks associated with the base gas. Transco has recorded the cost of the base gas as a fixed asset in Account No. 117.1 of the Uniform System of Accounts. In accordance with established Commission precedent,<sup>25</sup> Transco will retain the gain from the sale of its base gas.

## **VII. EFFECTIVE DATE**

Transco requests that the certificate amendment and abandonment authorizations requested herein, including the revised Rate Schedules ESS and EESWS Storage Capacity and Storage Demand Quantities, be made effective the later of April 1, 2012 or the first day of the first month following not less than 60 days after the date the Commission order approving the instant application becomes final and no longer subject to rehearing.

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<sup>24</sup> Id. at P 23.

<sup>25</sup> See, Texas Gas Transmission, LLC, 122 FERC ¶ 61,190 at P 48 (2008) and the cases cited therein.

**VIII.**  
**PUBLIC CONVENIENCE AND NECESSITY**

Transco submits that approval of the instant application is required by the public convenience and necessity. Caverns 1, 2, 3 and 4 can no longer be relied upon for the storage of natural gas and must be permanently removed from service. The authorizations requested herein will allow Transco to abandon Caverns 1 through 4 and revise its Rate Schedules ESS and EESWS service agreements consistent with the current capabilities of the remaining Caverns 5, 6 and 7.

**IX.**  
**OTHER AUTHORIZATIONS REQUIRED**

Other than authorizations required by the MOGB and the MDEQ, Transco is not aware of any application to supplement or effectuate the proposals set forth herein which must be or is to be filed by Transco, any of Transco's customers, or any other person with any other Federal, State, or other regulatory body. Transco will acquire the necessary authority from the MOGB to conduct its planned abandonment of Cavern Wells 1 through 4 and to address issues which may arise ancillary to the abandonment plans in order to protect public health, safety and the environment. Transco is working with the MDEQ to comply with any applicable environmental laws and regulations, including, but not limited to, air permitting for flaring natural gas trapped in the subsurface.

**X.**  
**EXHIBITS**

A list of the exhibits filed with this application and the exhibits incorporated by reference is set forth below. In accordance with Section 157.7 of the Commission's regulations, Transco has omitted from this abbreviated application those exhibits and data

that are inapplicable or unnecessary to fully disclose the nature and extent of the proposed abandonment. To the extent Transco has omitted an exhibit, the reasons relied on in support of such omission are stated.

#### Notice of Application

Attached.

#### Exhibit T – Related Applications

Transco began developing the Eminence Storage Field in 1970 pursuant to a certificate of public convenience and necessity issued January 20, 1970 in Docket No. CP70-135. Transcontinental Gas Pipe Line Corp., 43 FPC 100 (1970). The certificate was amended as follows:

April 7, 1972	CP72-145	47 FPC 1018 (1972)
January 15, 1974	CP70-135	51 FPC 261 (1974)
	CP72-145	
April 18, 1991	CP90-2230-000	55 FERC ¶ 61,078 (1991)
June 19, 1991	CP90-2230-002	55 FERC ¶ 61,443 (1991)
August 4, 1994	CP90-2230-005	68 FERC ¶ 61,218 (1994)
February 27, 2009	CP08-430-000	126 FERC ¶ 61,189 (2009)

#### Exhibit U – Contracts and Other Agreements

Omitted. The abandonment proposed herein will result in a reduction of the Storage Capacity Quantity and the Storage Demand Quantity set forth in Article I of each ESS Customer's service agreement (see Exhibit W). To the extent that any ESS or EESWS capacity release transactions are in effect at the time of such reduction, the applicable service agreement with the Replacement Shipper will be amended, as necessary.

Exhibit V – Flow Diagram Showing Operating Conditions Before and After Abandonment

Attached.

Exhibit W – Impact on Customers Whose Service Will Be Terminated

Schedule attached.

Exhibit X – Effect of the Abandonment on Existing Tariffs

Omitted. The abandonment will have no effect on existing tariffs.

Exhibit Y – Accounting Treatment of Abandonment

Attached.

Exhibit Z – Location of Facilities to be Abandoned

Attached.

Exhibit Z-1 – January 31, 2011 Advance Report of Emergency Blanket Activities

Attached.

Exhibit Z-2 – July 15, 2011 Supplement to Advance Report of Emergency Blanket Certificate Activities

Attached.

Exhibit Z-3 – Subsurface Technology, Inc. Report

Attached.

Exhibit Z-4 – Copies of Written Communications with ESS Customers

Attached.

Exhibit Z-5 – Environmental Report

Attached.

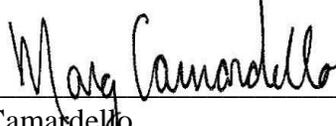
**X.**  
**CONCLUSION**

WHEREFORE, Transco hereby respectfully requests:

1. That the Commission act expeditiously to issue the certificate amendment and abandonment authorizations requested herein to be effective the later of April 1, 2012 or the first day of the first month following not less than 60 days after the date the Commission order approving the instant application becomes final and no longer subject to rehearing;
2. That this application be processed in accordance with the shortened procedures set forth in Rules 801 and 802 of the Commission's Rules of Practice and Procedure, 18 CFR §385.801 and §385.802. In that regard, Transco requests that the intermediate decision procedure be omitted and waives oral hearing and opportunity for filing exceptions to the decision of the Commission; and
3. That the Commission grant such other and further relief as may be proper and appropriate in the premises.

Respectfully submitted,

TRANSCONTINENTAL GAS PIPE LINE  
COMPANY, LLC

By   
Marg Camardello  
Manager, Certificates & Tariffs  
(713) 215-3380

**STATEMENT UNDER RULE 2011(c)(5)**

In accordance with Rule 2011(c)(5) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2011(c)(5), I hereby state that the paper copies of this filing and the electronic medium enclosed herewith contain the same information, that I know the contents of the paper copies and the electronic medium, and that the contents as stated in the paper copies and electronic medium are true to the best of my knowledge and belief.

A handwritten signature in black ink that reads "Marg Camardello". The signature is written in a cursive style and is positioned above a horizontal line.

Marg Camardello  
Manager, Certificates and Tariffs

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Notice

NOTICE OF APPLICATION

**UNITED STATES OF AMERICA**  
**BEFORE THE**  
**FEDERAL ENERGY REGULATORY COMMISSION**  
**WASHINGTON, D. C.**

In the Matter of )  
 )  
Transcontinental Gas Pipe Line ) Docket No. CP11-  
Company, LLC )

NOTICE OF APPLICATION  
( \_\_\_\_\_ )

Take notice that on \_\_\_\_\_ Transcontinental Gas Pipe Line Company, LLC (“Transco” or “Applicant”), Post Office Box 1396, Houston, Texas 77251, filed with the Federal Energy Regulatory Commission an application, in abbreviated form, pursuant to and in accordance with Section 7(b) and Section 7(c) of the Natural Gas Act and Part 157 of the Federal Energy Regulatory Commission’s (“Commission” or “FERC”) regulations issued thereunder, for an order permitting and approving the partial abandonment of facilities, storage capacity and deliverability at the Eminence Storage Field in Covington County, Mississippi. Subsequent to Commission approval of the abandonment, Transco and its Rate Schedule ESS and Rate Schedule EESWS customers will execute amendments to the applicable service agreements to reflect the resulting revised Storage Capacity and Storage Demand Quantities.

Questions regarding this Application may be directed to Ingrid Germany, Staff Regulatory Analyst, Transcontinental Gas Pipe Line Co., P.O. Box 1396, Houston, Texas 77251-1396 at (713) 215-4015.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. Such notices, motions, or protests must be filed on or before the comment date. Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant. On or before the comment date, it is not necessary to serve motions to intervene or protests on persons other than the Applicant.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the "eFiling" link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426.

This filing is accessible on-line at <http://www.ferc.gov>, using the "eLibrary" link and is available for review in the Commission's Public Reference Room in Washington, D.C. There is an "eSubscription" link on the web site that enables subscribers to receive email notification when a document is added to a

subscribed docket(s). For assistance with any FERC Online service, please email [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: 5:00 pm Eastern Time on (insert date).

Kimberly D. Bose

Secretary

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit V

FLOW DIAGRAMS SHOWING OPERATING CONDITIONS BEFORE AND  
AFTER ABANDONMENT

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit V

Information submitted separately as CEII.

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit W

IMPACT ON CUSTOMERS WHOSE SERVICE WILL BE TERMINATED

Transcontinental Gas Pipe Line Company, LLC  
Impact of Abandonment of Eminence Caverns 1-4 on Customer Contract Entitlements  
All Quantities in Dth

Customer Name	Rate Schedule	Contract Number	Current Demand	Current Capacity	Current Injection	Revised Demand	Revised Capacity	Revised Injection	Demand Difference	Capacity Difference	Injection Difference
Cargill Inc	EESWS	9050780	198	1,976	13	158	1,324	13	(40)	(652)	-
City of Bessemer City North Carolina	EESWS	9050827	285	2,845	19	228	1,906	19	(57)	(939)	-
City of Bessemer City North Carolina	EESWS	9050826	103	1,028	7	82	689	7	(21)	(339)	-
City of Lexington North Carolina	EESWS	9050829	2,705	26,946	180	2,161	18,051	180	(544)	(8,895)	-
City of Monroe, North Carolina	EESWS	9052284	2,407	23,969	161	1,923	16,057	161	(484)	(7,912)	-
City of Shelby North Carolina	EESWS	9050835	2,429	24,195	163	1,940	16,208	163	(489)	(7,987)	-
Formosa Plastics Corporation USA	EESWS	9050805	346	3,445	23	276	2,308	23	(70)	(1,137)	-
J. P. Morgan Ventures Energy Corporation	EESWS	9106938	6,682	66,546	445	5,337	44,578	445	(1,345)	(21,968)	-
Smurfit-Stone Container Enterprises, Inc.	EESWS	9050840	167	1,662	11	133	1,113	11	(34)	(549)	-
Williams Gas Marketing Inc	EESWS	9050782	1,820	18,123	121	1,454	12,140	121	(366)	(5,983)	-
Unsubscribed EESWS	EESWS	9050782	87	866	6	69	580	6	(18)	(286)	-
<b>Total EESWS</b>			<b>17,229</b>	<b>171,601</b>	<b>1,149</b>	<b>13,761</b>	<b>114,953</b>	<b>1,149</b>	<b>(3,468)</b>	<b>(56,648)</b>	<b>-</b>

Customer Name	Rate Schedule	Contract Number	Current Demand	Current Capacity	Current Injection	Revised Demand	Revised Capacity	Revised Injection	Demand Difference	Capacity Difference	Injection Difference
Alabama Gas Corporation	ESS-ENH.	9014752	693	6,962	150	554	4,664	150	(139)	(2,298)	-
Alabama Gas Corporation	ESS-ENH.	9050383	21,010	209,230	4,560	16,781	140,161	4,560	(4,229)	(69,069)	-
Atlanta Gas Light Company	ESS-ENH.	1018467	31,357	315,490	6,854	25,045	211,343	6,854	(6,312)	(104,147)	-
Atlanta Gas Light Company	ESS-ENH.	9050385	32,879	327,445	7,135	26,261	219,351	7,135	(6,618)	(108,094)	-
Atmos Energy Corporation	ESS	1006569	3,305	33,249	220	2,640	22,273	220	(665)	(10,976)	-
Atmos Energy Marketing Llc	ESS	9067203	3,023	30,120	202	2,415	20,177	202	(608)	(9,943)	-
Chesapeake Utilities Corp-Delaware Division	ESS	9037883	4,727	47,262	314	3,776	31,660	314	(951)	(15,602)	-
Chesapeake Utilities Corp-Maryland Division	ESS	9037884	2,621	26,162	175	2,093	17,526	175	(528)	(8,636)	-
City of Alexander City, Alabama	ESS	9003272	1,424	14,326	95	1,137	9,597	95	(287)	(4,729)	-
City of Alexander City, Alabama	ESS	9050387	1,506	14,996	100	1,203	10,046	100	(303)	(4,950)	-
City of Bessemer City North Carolina	ESS	9001832	350	3,518	23	280	2,357	23	(70)	(1,161)	-
City of Buford Georgia	ESS	1041772	594	5,975	39	474	4,003	39	(120)	(1,972)	-
City of Buford Georgia	ESS	9050392	1,108	11,037	74	885	7,394	74	(223)	(3,643)	-
City of Danville Virginia	ESS	9050388	7,117	70,884	474	5,684	47,484	474	(1,433)	(23,400)	-
City of Danville Virginia	ESS	1006615	8,160	82,097	544	6,518	54,996	544	(1,642)	(27,101)	-
City of Fountain Inn South Carolina	ESS	1006619	1,007	10,080	67	804	6,752	67	(203)	(3,328)	-
City of Greenwood South Carolina	ESS	1041757	2,634	26,505	176	2,104	17,755	176	(530)	(8,750)	-
City of Greenwood South Carolina	ESS	9050445	3,842	38,260	256	3,069	25,630	256	(773)	(12,630)	-
City of Kings Mountain North Carolina	ESS	9003275	1,338	13,464	89	1,069	9,019	89	(269)	(4,445)	-
City of Kings Mountain North Carolina	ESS	9050446	1,013	10,093	68	809	6,761	68	(204)	(3,332)	-
City of Laurens South Carolina	ESS	9003276	2,743	27,591	183	2,191	18,483	183	(552)	(9,108)	-
City of Lexington North Carolina	ESS	9003277	2,915	29,321	195	2,328	19,642	195	(587)	(9,679)	-
City of Monroe, North Carolina	ESS	9051646	265	2,634	18	212	1,764	18	(53)	(870)	-
City of Shelby North Carolina	ESS	9003278	3,497	35,185	233	2,793	23,570	233	(704)	(11,615)	-
City of Union South Carolina	ESS	9003279	1,254	12,626	84	1,002	8,458	84	(252)	(4,168)	-
City of Union South Carolina	ESS	9071888	2,291	22,827	151	1,830	15,292	151	(461)	(7,535)	-
Clinton-Newberry Natural Gas Authority	ESS	1041755	3,727	37,495	248	2,977	25,117	248	(750)	(12,378)	-
Columbia Gas of Virginia Inc	ESS	1038366	1,399	14,074	93	1,117	9,428	93	(282)	(4,646)	-
Commission of Public Works, City of Greer South Carolina	ESS	9050447	1,512	15,057	101	1,208	10,086	101	(304)	(4,971)	-
Commission of Public Works, City of Greer South Carolina	ESS	9003274	1,632	16,419	109	1,304	10,999	109	(328)	(5,420)	-
Conocophillips Company	ESS	9050448	1,039	10,352	69	830	6,935	69	(209)	(3,417)	-
Conocophillips Company	ESS	9094928	10,083	100,416	672	8,053	67,267	672	(2,030)	(33,149)	-
Consolidated Edison Company of New York Inc	ESS	1038388	52,424	527,459	3,494	41,872	353,338	3,494	(10,552)	(174,121)	-
Consolidated Edison Company of New York Inc	ESS	9050776	90,050	896,827	6,002	71,924	600,773	6,002	(18,126)	(296,054)	-
Delmarva Power & Light	ESS-ENH.	1018469	26,440	264,466	5,754	21,118	177,162	5,754	(5,322)	(87,304)	-
Enmark Gas Corporation	ESS	9050449	2,136	21,270	143	1,706	14,249	143	(430)	(7,021)	-

Transcontinental Gas Pipe Line Company, LLC  
Impact of Abandonment of Eminence Caverns 1-4 on Customer Contract Entitlements  
All Quantities in Dth

Customer Name	Rate Schedule	Contract Number	Current Demand	Current Capacity	Current Injection	Revised Demand	Revised Capacity	Revised Injection	Demand Difference	Capacity Difference	Injection Difference
Fort Hill Natural Gas Authority	ESS	9050450	3,271	32,578	218	2,613	21,824	218	(658)	(10,754)	-
Greenville Utilities Commission	ESS	9051552	2,116	21,073	141	1,690	14,117	141	(426)	(6,956)	-
Hess Corporation	ESS	9050523	926	9,219	61	740	6,176	61	(186)	(3,043)	-
Hess Corporation	ESS	9053497	395	3,936	26	315	2,637	26	(80)	(1,299)	-
Hess Corporation	ESS	9051553	6,083	60,585	405	4,859	40,585	405	(1,224)	(20,000)	-
Keyspan Gas East Corporation D/B/A National Grid	ESS	1010412	44,990	452,662	2,998	35,934	303,233	2,998	(9,056)	(149,429)	-
Keyspan Gas East Corporation D/B/A National Grid	ESS	9050778	41,409	412,390	2,761	33,074	276,255	2,761	(8,335)	(136,135)	-
Municipal Electric Authority of Georgia	ESS	9070888	3,174	31,609	212	2,535	21,174	212	(639)	(10,435)	-
Municipal Gas Authority of Georgia	ESS	9050390	23,336	233,430	1,559	18,639	156,372	1,559	(4,697)	(77,058)	-
Noble Energy, Inc.	ESS	9050546	1,703	16,964	114	1,360	11,364	114	(343)	(5,600)	-
Owens Corning Sales, LLC	ESS	9074369	1,642	16,358	109	1,311	10,958	109	(331)	(5,400)	-
Owens Corning Sales, LLC	ESS	1029502	1,748	17,592	117	1,396	11,785	117	(352)	(5,807)	-
Patriots Energy Group	ESS	9050404	13,687	136,732	912	10,932	91,595	912	(2,755)	(45,137)	-
Peco Energy Company	ESS	1018473	75,755	757,984	5,050	60,507	507,764	5,050	(15,248)	(250,220)	-
Philadelphia Gas Works	ESS	1039085	65,201	656,013	4,346	52,077	439,455	4,346	(13,124)	(216,558)	-
Philadelphia Gas Works	ESS	1010416	47,986	482,792	3,198	38,327	323,416	3,198	(9,659)	(159,376)	-
Piedmont Natural Gas Company Inc	ESS	1018471	188,340	1,883,334	12,555	150,430	1,261,622	12,555	(37,910)	(621,712)	-
Pivotal Utility Holdings, Inc.	ESS-ENH.	1013463	14,397	144,855	3,146	11,499	97,037	3,146	(2,898)	(47,818)	-
Pivotal Utility Holdings, Inc.	ESS-ENH.	9050547	22,940	228,454	4,978	18,323	153,038	4,978	(4,617)	(75,416)	-
Pseg Energy Resources & Trade LLC	ESS	1008564	177,215	1,771,245	11,814	141,544	1,186,535	11,814	(35,671)	(584,710)	-
Public Service Company of North Carolina	ESS-ENH.	9011146	47,222	475,111	10,320	37,717	318,271	10,320	(9,505)	(156,840)	-
Public Service Company of North Carolina	ESS-ENH.	9050453	48,259	480,603	10,473	38,545	321,950	10,473	(9,714)	(158,653)	-
Sequent Energy Management LP	ESS	9050405	2,737	27,263	182	2,186	18,263	182	(551)	(9,000)	-
South Carolina Electric & Gas Company	ESS-ENH.	9046128	1,877	18,886	410	1,499	12,651	410	(378)	(6,235)	-
South Carolina Electric & Gas Company	ESS-ENH.	9050454	15,468	154,049	3,357	12,355	103,195	3,357	(3,113)	(50,854)	-
South Jersey Gas Company	ESS	9050779	34,823	346,796	2,321	27,814	232,314	2,321	(7,009)	(114,482)	-
Southwestern Virginia Gas Company	ESS	9014756	3,409	34,305	228	2,723	22,980	228	(686)	(11,325)	-
Sunoco Inc (R&M)	ESS	9050644	10,950	109,053	730	8,746	73,053	730	(2,204)	(36,000)	-
Tenaska Gas Storage, LLC	ESS	9018828	13,935	140,211	928	11,130	93,926	928	(2,805)	(46,285)	-
The Brooklyn Union Gas Company D/B/A National Grid NY	ESS	9050775	68,679	683,972	4,578	54,855	458,184	4,578	(13,824)	(225,788)	-
The Brooklyn Union Gas Company D/B/A National Grid NY	ESS	9006231	41,171	414,230	2,745	32,884	277,487	2,745	(8,287)	(136,743)	-
Town of Liberty Mississippi	ESS	1006603	58	581	4	46	389	4	(12)	(192)	-
Tyson Foods Inc.	ESS	9050455	529	5,268	35	423	3,529	35	(106)	(1,739)	-
Ugi Penn Natural Gas, Inc.	ESS	1006655	31,262	312,526	2,084	24,969	209,357	2,084	(6,293)	(103,169)	-
Ugi Utilities Inc	ESS	9072829	1,980	19,716	132	1,581	13,207	132	(399)	(6,509)	-
Vega Energy Partners, Ltd.	ESS	9104948	8,885	88,488	593	7,097	59,277	593	(1,788)	(29,211)	-
Virginia Natural Gas Inc	ESS-ENH.	9014759	8,970	90,254	1,960	7,164	60,460	1,960	(1,806)	(29,794)	-
Virginia Natural Gas Inc	ESS-ENH.	9050406	9,650	96,109	2,094	7,708	64,382	2,094	(1,942)	(31,727)	-
Virginia Power Energy Marketing Inc	ESS-ENH.	9050773	5,564	55,414	1,208	4,444	37,121	1,208	(1,120)	(18,293)	-
Washington Gas Light Company	ESS-ENH.	9050456	19,120	190,415	4,150	15,271	127,557	4,150	(3,849)	(62,858)	-
<b>Total ESS</b>			<b>1,443,977</b>	<b>14,444,229</b>	<b>142,416</b>	<b>1,153,326</b>	<b>9,676,006</b>	<b>142,416</b>	<b>(290,651)</b>	<b>(4,768,223)</b>	<b>-</b>
<b>Total System Flex</b>			<b>91,288</b>	<b>909,169</b>	<b>6,086</b>	<b>72,913</b>	<b>609,041</b>	<b>6,086</b>	<b>(18,375)</b>	<b>(300,128)</b>	<b>-</b>
<b>Total Eminence Storage Field</b>			<b>1,552,494</b>	<b>15,524,999</b>	<b>149,651</b>	<b>1,240,000</b>	<b>10,400,000</b>	<b>149,651</b>	<b>(312,494)</b>	<b>(5,124,999)</b>	<b>-</b>

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit Y

ACCOUNTING TREATMENT OF ABANDONMENT

**TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
SUMMARY OF ANTICIPATED JOURNAL ENTRIES RECORDING THE  
RETIREMENT AND ABANDONMENT OF EMINENCE CAVERNS 1, 2, 3 AND 4**

FERC ACCOUNT NUMBER	FERC ACCOUNT TITLE	AMOUNT	
		DEBIT	CREDIT
(1) 101.0	Gas Plant in Service		101,219,602
	352.0 Wells	8,361,397	
	352.2 Reservoirs	21,210,063	
	354.0 Compressor Station Equipment	504,235	
	358.0 Asset Retirement Obligations	71,143,907	
108.0	Accumulated Provision for Depreciation Of Gas Utility Plant (Original Cost of Property Retired)	101,219,602	
(2) 108.0	Accumulated Provision for Depreciation Of Gas Utility Plant (Estimated Cost of Removal)	75,974,753	
131.0	Cash		75,974,753
(3) 230.0	ARO Liability (Estimated Liability Balance)	48,383,830	
108.0	Accumulated Provision for Depreciation Of Gas Utility Plant (Estimated Cost of Removal)		75,974,753
182.3	Other Regulatory Asset	27,590,923	
(4) 131.0	Cash	11,010,625	
806.0	Exchange Gas	11,010,625	
421.1	Gain on Disposition of Property		10,339,047
117.1	Gas Stored - Base Gas		671,578
483.0	Sales for Resale		11,010,625
(5) 236.0	Accrued Income Tax	26,608,768	
409.1	Current Income Tax Expense		26,608,768
(6) 282.0	Accumulated Deferred Income Taxes-Other Property		1,503,110
190.0	Accumulated Deferred Income Taxes		18,506,815
283.0	Accumulated Deferred Income Taxes-Other		10,553,528
410.1	Deferred Income Tax Expense	30,563,453	

(1) To record the removal of original cost of the gas plant facilities to be retired from Gas Plant in Service. (Includes ARO Asset in the amount of \$71,143,907).

The Eminence ARO assets for caverns 1 through 7 for the Eminence Storage Field are being depreciated over the useful life ( 48 years) of the related assets that gave rise to the obligation, in accordance with the Uniform System of Accounts Prescribed for Natural Gas Companies, General Instructions No. 24, Accounting for Asset Retirement Obligations. Due to the abandonment of Caverns 1, 2, 3, and 4, Transco proposes to accelerate the depreciation of the ARO assets for Caverns 1, 2, 3, and 4 over the remaining life for those specific caverns, which currently are anticipated to be abandoned by April 2013.

(2) To record the estimated removal cost. Transco plans to seek insurance recovery for the abandonment costs. Any abandonment cost proceeds received will be credited against such costs in the work order.

(3) To record the settlement of the ARO Liability. The gain/loss is recorded to Account 254-Other Regulatory Liability/Account 182.3-Other Regulatory Asset, based on a provision in Transco's Stipulation and Agreement in Docket No. RP06-569. All gains and losses on settlements of AROs are to be deferred into a regulatory asset or regulatory liability account.

(4) To record the sale of injected base gas withdrawn. For illustrative purposes, the proposed entries assume the following:

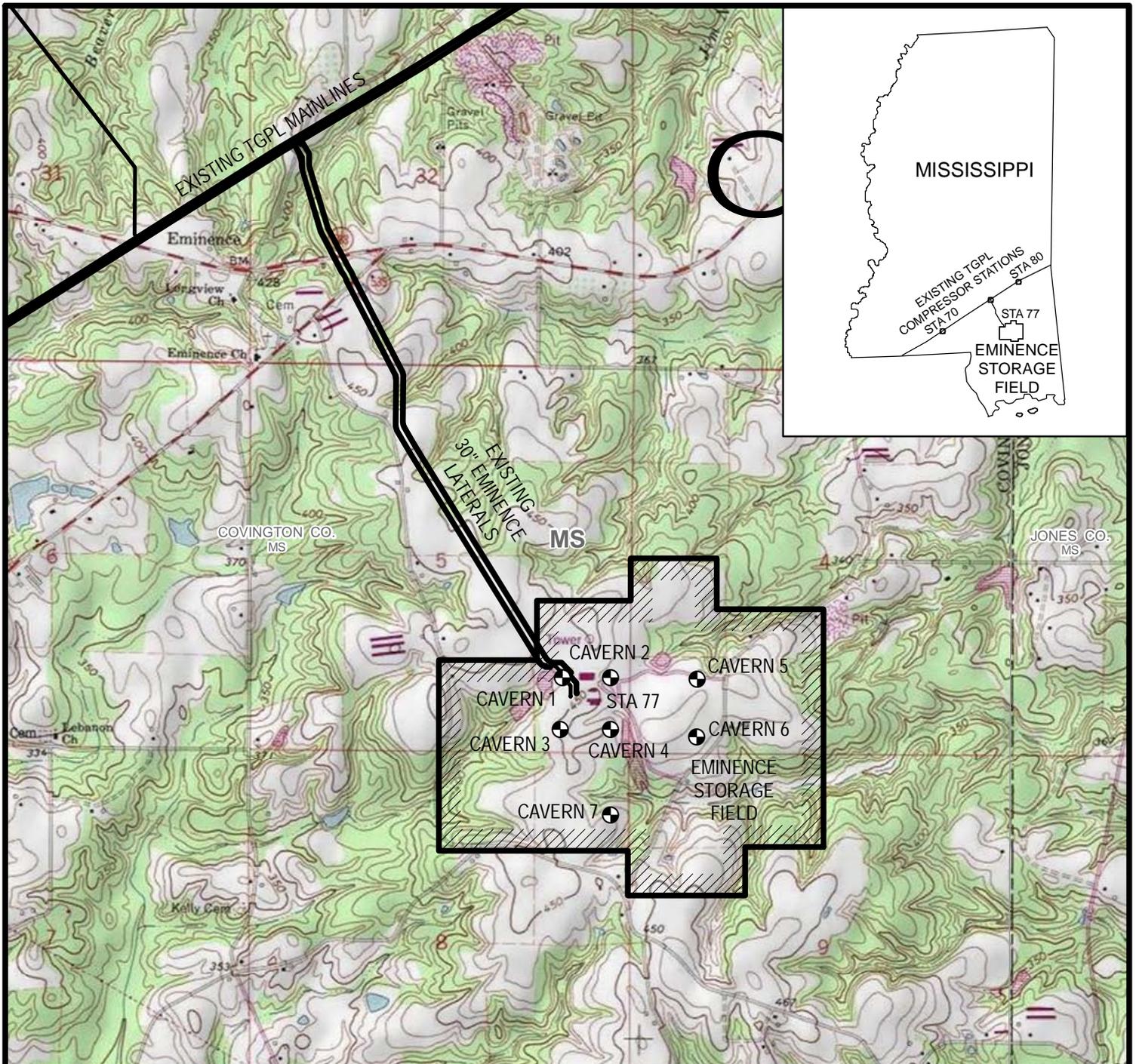
Total Injected Base Gas	2,202,125	dt
Book Cost of Injected Base Gas	\$671,578	
Total Injected Base Gas Withdrawn and Sold	2,202,125	dt
Unit Sales Rate	\$5.00	/dt

(5) To record current federal and state income taxes on abandoned assets.

(6) To record deferred federal and state income taxes associated with the abandoned assets.

Transcontinental Gas Pipe Line  
Company, LLC  
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Exhibit Z

LOCATION OF FACILITIES



NOTE:  
 BASE FROM 7.5 MIN. U.S.G.S. QUADRANGLE MAP  
 SEMINARY, MS., DATED 1980, NAD83 DATUM



LEGEND:

-  EXISTING CAVERN WELL SITES
-  FEE PROPERTY

DRAWING NO.		REFERENCE TITLE		TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC CAVERN LOCATION MAP LOCATION OF FACILITIES EMINENCE STORAGE FIELD COVINGTON COUNTY, MISSISSIPPI						
NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: RMD	DATE: 06-07-2011	ISSUED FOR BID:	SCALE: 1"=2000'
							CHECKED BY: TAG	DATE: 07-29-2011	ISSUED FOR CONSTRUCTION:	
							APPROVED BY: MJK	DATE: 07-29-2011	NUMBER: 24-4166-30/008450	SHEET 1
							WO: 1093657	UNIV. ID:	K:\2011 Misc Drawings\Atlanta Division\Eminence Location Map\	OF 1

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit Z-1

JANUARY 31, 2011 ADVANCE REPORT OF EMERGENCY BLANKET  
CERTIFICATE ACTIVITIES



**Transcontinental Gas Pipe Line Company, LLC**  
2800 Post Oak Boulevard (77056)  
P.O. Box 1396  
Houston, Texas 77251-1396  
713/215-2000

January 31, 2011

Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Attention: Kimberly D. Bose, Secretary

Reference: Transcontinental Gas Pipe Line Company, LLC  
Advance Report of Emergency Blanket Certificate Activities  
Docket No. CP82-426-000

Ladies and Gentlemen:

In accordance with Section 157.207 of the Federal Energy Regulatory Commission's ("Commission") regulations, Transcontinental Gas Pipe Line Company, LLC ("Transco") hereby submits an Advance Report of Emergency Blanket Certificate Activities to be undertaken for the remediation of Cavern 3 of Transco's Eminence Storage Field in Covington County, Mississippi (Cavern 3). Cavern 3, one of seven salt dome caverns that make up the Eminence storage field, has a capacity of approximately 3 billion cubic feet (working and cushion gas). On December 26, 2010, Cavern 3 experienced a large pressure drop and subsequently Transco determined that natural gas was leaking from the cavern.

In response to the emergency, Transco began reducing pressure in Cavern 3 by safely flaring gas into the atmosphere.<sup>1</sup> Transco must now undertake certain activities, as outlined in the attached report, pursuant to its Blanket Certificate authority in order to stabilize Cavern 3 and investigate the cause of the leak. These remediation activities alone are anticipated to take approximately 11 months and cost between \$12 - \$25 million. Because a delay in Transco's remediation activities might possibly cause further degradation of the integrity of the storage field, Transco hereby informs the Commission of its intent to rely on Emergency Blanket

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<sup>1</sup> Transco has been working closely with the Mississippi Oil & Gas Board in order to comply with state regulation and ensure public safety.

Federal Energy Regulatory Commission

January 31, 2011

Page 2

Authority to undertake the necessary activities to remediate Cavern 3 and ensure the safety of the field.

Any technical questions regarding this attached report should be directed to John Zygo at 713-215-2507; any procedural questions should be directed to the undersigned.

Respectfully submitted,

TRANSCONTINENTAL GAS PIPE  
LINE COMPANY, LLC

By:                     /s/ Marg Camardello                    

Marg Camardello  
Manager, Certificates and Tariffs  
713-215-3380  
713-215-3483 (fax)

STATE OF TEXAS       §  
                                  §  
COUNTY OF HARRIS   §

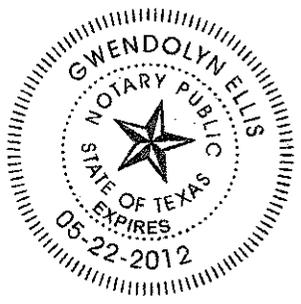
Before me, a notary public in and for said county and state, on this day personally appeared Marg R. Camardello, who being by me duly sworn upon oath says:

That she is a Manager, Certificates & Tariffs for Transcontinental Gas Pipe Line Corporation ("Transco"); and that the information in the attached report filed in Transco Docket No. CP82-426-000 is true and correct to the best of her knowledge and belief.

  
Marg R. Camardello

Subscribed and sworn to before me this 31st day of January, 2010.





Transcontinental Gas Pipe Line Company, LLC  
Notice/Report of Intent to Use Emergency Procedures

1. **Project Number/** FP151034  
**Location ID** ST077-SEMINARY MS STORAGE

2. **Project**  
**Description** **Eminence Cavern 3 Remediation**

On December 26, 2010, Cavern 3 of Transco's Eminence Storage Field in Covington County, Mississippi experienced a large pressure drop and on December 28, 2010, Transco determined that natural gas was leaking from the cavern. Cavern 3, which has a capacity of approximately 3 billion cubic feet (working and cushion gas), is one of seven salt dome caverns that make up the Eminence storage field. Transco began reducing the pressure of the affected cavern and safely flaring gas into the atmosphere.

In order to further stabilize the cavern, ensure the safety of the field, and investigate the cause of the leak, at this time Transco plans the following:

- A. Pilot/Test Well
  - a. Begin drilling a pilot/test well on 2/1/2011 (approximate 4 weeks drilling time) to determine the casing strings needed for the relief well to reach the cavern.
  - b. If needed, a second test well will be drilled (additional 4 weeks drilling time).
  - c. If gas is discovered at test well(s), flaring will be necessary.
  - d. Refine drilling plan into Cavern 3 based upon experience learned with the test wells.
- B. Relief Well
  - a. Begin drilling a new relief well into Cavern 3 on approximately 4/1/2011 (approximate 3 months drilling time) to fill the cavern with water and remove remaining gas.
  - b. If needed, a second well will be driven into Cavern 3 to facilitate filling cavern with water and removing gas.
- C. Water Fill
  - a. Begin filling cavern with water on 7/1/2011. It will take approximately 3 months to fill Cavern 3 with water.
- D. Investigation
  - a. Begin investigation of well bore for Cavern 3 on 10/1/2011.

3. **Purpose** Emergency Remediation

4. **Location** Covington County, MS

Transcontinental Gas Pipe Line Company, LLC  
Notice/Report of Intent to Use Emergency Procedures  
Page 2

**5. Project Dates:**

<b>Construction Commenced</b>	02/01/2011 (Estimated)
<b>Construction Completed</b>	12/31/2011 (Estimated)

**6. Estimated Cost of Construction** \$12 - \$25 million

**7. Environmental Compliance**

**Earth Disturbance** Yes      **Soil Plan** Generic

**ESA** – USFWS, Jackson, MS, Specific, 1/29/2011

**NHPA** – MDAH, Jackson, MS, Categorical Exemption, 2/17/2010

**CZMA** – N/A

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit Z-2

JULY 15, 2011 SUPPLEMENT TO ADVANCE REPORT OF EMERGENCY  
BLANKET CERTIFICATE ACTIVITIES



**Transcontinental Gas Pipe Line Company, LLC**  
2800 Post Oak Boulevard (77056)  
P.O. Box 1396  
Houston, Texas 77251-1396  
713/215-2000

July 15, 2011

Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Attention: Kimberly D. Bose, Secretary

Reference: Transcontinental Gas Pipe Line Company, LLC  
Supplement to Advance Report of Emergency Blanket Certificate Activities  
Docket No. CP11-73-000

Ladies and Gentlemen:

On January 31, 2011, Transcontinental Gas Pipe Line Company, LLC ("Transco") submitted in the referenced docket, in accordance with Section 157.207 of the Federal Energy Regulatory Commission's ("Commission") regulations, an Advance Report of Emergency Blanket Certificate Activities ("Advance Report") to be undertaken for the remediation of Cavern 3, one of seven salt dome storage caverns comprising Transco's Eminence Storage Field in Covington County, Mississippi. Cavern 3 experienced a large pressure drop on December 26, 2010, and Transco subsequently determined that natural gas was leaking from the cavern. Transco outlined in the Advance Report activities necessary to stabilize Cavern 3 and investigate the cause of the leak. Subsequent to Transco's submittal of the Advance Report, further emergency reconstruction activities have been required to stabilize Cavern 3 and other caverns at the Eminence Storage Field. Transco submits this supplement to the Advance Report to update the Commission on those additional activities and other activities expected to be undertaken in response to the emergency.

At the time the Advance Report was filed, Transco expected to drill only a few pilot wells prior to drilling the larger diameter relief well which would enter Cavern 3 and be used to remove any remaining gas and fill the cavern with water. Because the pilot wells drilled at Cavern 3 have encountered more stranded gas than anticipated, additional pilot wells are needed in order to safely drill the relief well. To date, Transco has drilled 12 pilot wells and an additional 3 pilot wells are anticipated. At this time, Transco does not know when the relief well



Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit Z-3

SUBSURFACE TECHNOLOGY, INC. – EVALUATION OF CAVERN NOS. 1,  
2, 3 AND 4 AT EMINENCE

**EVALUATION OF CAVERN NO'S. 1, 2, 3, AND 4**  
**WILLIAMS EMINENCE FACILITY**  
**SUBSURFACE TECHNOLOGY, INC. PROJECT NO. 60W6611**  
**MAY 12, 2011**

This document is an overall evaluation of the four subject caverns located at the Williams Eminence Facility near Seminary Mississippi. The document was based on a preliminary evaluation prepared and submitted February 10, 2011, and additional historical information that has been discovered and new information learned since.

Each of the four caverns are discussed in the following sections. A summary of findings and conclusions and a recommendation is included at the end of this report. Input has been obtained from Dr. Bob Thoms and from Norbert Heitmann.

Standard industry construction practices have developed as industry experience was gained in the 40 plus years since Cavern Nos. 1 and 2 were installed. Consequently, the regulations that govern cavern construction have evolved to their present state. At the time of installation, the caverns were constructed with the best knowledge and practices available at the time. Therefore, obviously, these four caverns were not constructed to the currently (2011) accepted industry standards.

**Cavern No. 1:**

This cavern is the first domal storage cavern drilled in the continental United States and it is over 40 years old. The 30-inch diameter conductor casing was set approximately 50 feet below ground level. A 26-inch hole was drilled through the fresh water sands, the caprock, and into the salt. The first casing string was 20 inches outside diameter, set into the salt at 2688 feet. There are no records that indicate how the casing was cemented, nor the composition of the cement, but the 20-inch casing is the only protection provided for the caprock and sands (including water supply zones) above the caprock.

Records do not provide the casing weight and grade. Indications are that the casing may be 94 lb/ft, which has a burst rating of 2110 psi (new), or 106.5 lb/ft with a burst rating of 2410 psi/ft (new). If there is any 133 lb/ft casing (rated at 3060 psi burst new) in the well it is likely to be only in the salt section below the caprock.



Records indicate that 13-3/8-inch (102 lb/ft) threaded and coupled casing was originally installed at 4552 feet. In 2003, a string of 9-5/8-inch 53.50 lb/ft threaded and coupled casing was installed inside the 13-3/8-inch casing to a depth of 4523 feet which is 29 feet above the 13-3/8-inch casing shoe. Records do not state the reason for installing the casing, however, it must be assumed that it was due to casing damage and/or failures in the 13-3/8-inch casing.

Subsequent logs and video surveys in 2008 show that the 9-5/8-inch casing is parted at 4509 feet, and that the 13-3/8-inch casing is split below the base of the 9-5/8-inch casing. This is indicative of vertical salt movement downward, resulting from salt creep or cavern roof deformation.

None of the casing strings were welded. All connections were threaded, which is not common in current practice for gas storage.

Cavern No. 1 did not give any indication of leakage from inside, based on the pressure monitoring after the failure of Cavern No. 3.

Gas and liquid began bubbling up around the wellhead slab January 1, 2011, seven days after the failure of Cavern No. 3.

The gas was flowing around the outside of the conductor casing, the base of which is approximately 50 feet below ground. It was not possible to measure the gas flow around the well.

The gas pressure in the cavern was reduced to approximately 800 psi in advance of re-watering the cavern. Beginning February 11, 2011, the cavern was filled with fresh water in stages by alternately injecting water and producing gas. There was no apparent effect on the gas flow around the outside of the casing after the pressure was reduced, nor after the cavern was filled, March 22, 2011.

Gas flow around the outside of the casing stopped March 10, 2011, when subsidence of the ground around the wellhead began and while the cavern still contained gas under pressure.

The wellhead was oscillating laterally as bubbles of gas emerged from below the concrete slab that surrounds the wellhead until it was stabilized by cables and anchors. The movement appeared to be fairly deep, but there was no way to tell how far below ground level the casing is secured, nor the condition of the annular cement. Approximately 1200 tons of gravel, crushed concrete, and soil have been moved in and dumped into the crater.

Shallow vent wells were installed at depths of 60 feet to 150 feet as near to the well as safely possible, but they did not appear to have any effect on the gas flow around the casing.

The presence of live gas flow around the wellhead precluded any possibility of safely entering the well for any diagnostic logging because of spark danger while removing flanges, installing lubricators, and running tools. After the cavern and wellbore was filled with water and gas flow around the well stopped, a pressure/temperature log, a video survey, and a sonar survey were run on the cavern on April 19, 2011. The sonar survey displayed significant salt fall in the cavern wall and above the shoe of the 13-3/8-inch casing. It is not possible to determine if the cavern damage occurred prior to the failure of Cavern No. 3, simultaneously with the failure, or during the process of re-watering the cavern. The video survey shows several areas of casing failure as previously discussed.

#### Recommendation:

The tensile strength rating of new 9-5/8-inch casing (assumed to be 80,000 psi yield strength or greater) with buttress threads and couplings is 1,329,000 lbs (Halliburton tables). The tensile strength of new 13-3/8-inch 102 lb/ft buttress thread casing (assumed to be at least 80,000 psi yield strength) is calculated to be approximately 2,500,000 lbs.

For tensile failure to occur in the 13-3/8-inch casing, the required downward force could only be generated by the weight of salt creeping downward, transmitting the force across the cement sheath to the casing couplings. For tensile failure to occur in the 9-5/8-inch casing, the downward force would be transmitted from continued movement of the outer casing through the cement sheath between the casings, and to the couplings of the 9-5/8-inch casing.

The multiple tensional casing failures and the unsupported 20-inch casing, strongly indicate that this cavern would likely fail catastrophically, similar to Cavern No. 3, if left in gas storage service.

There is very little that can be done to further evaluate the condition of casing strings. Cement bond logs cannot define cement quality in multiple casing strings, and 20-inch casing is beyond the technical limits of cement quality evaluation, even without additional casing strings inside.

The temperature survey of the cavern on April 17, 2011, provide some speculative information about where the exterior gas flow originated, but without comparative temperature data, any conclusion drawn is purely speculative and open for multiple interpretations.

A sonar survey was run on April 19, 2011. The survey indicated significant salt spalling in the upper lobe of the cavern and partial roof collapse above the base of the 13-3/8-inch casing.

A mechanical integrity test, using the nitrogen-brine interface method, may confirm that the cavern has mechanical integrity to gas, at the time of the test, but a mechanical integrity test will not guarantee that failure of the cavern is not imminent.

It is possible that a string of 7-inch welded, heavy wall, high tensile strength casing could be installed inside the 9-5/8-inch casing, but it will not resist the tensile loads that have been, and will continue to be, placed on the existing casing strings. Installation of another casing string does nothing to address the uncertainty of the cement quality around the 20-inch casing from the caprock to the surface.

Based on what we do know about this cavern, Subsurface does not recommend Cavern No. 1 for future gas storage.

### **Cavern No. 2:**

#### Information we have to date:

Cavern No. 2 is also over 40 years old. It is constructed similar to Cavern No. 1 with only 95 feet of conductor casing set. The 20-inch casing is set into the salt at 2688 feet with no other casing across the caprock to the surface. The 13-3/8-inch casing was set at 5370 feet initially, then, 9-5/8-inch casing was set at 5204 feet in 1995. The 13-3/8-inch casing is parted in 6 places below 5257 feet indicating vertical salt movement.

The last sonar was run in 2008 showing a volume of 860,000 bbls.

There was no indication of damage or leakage, by surface pressure measurements, after Cavern No. 3 failed.

The pressure was lowered to approximately 850 psi as a precautionary measure after lowering the pressure in Cavern No. 1. After filling Cavern No. 1, Cavern No. 2 was returned to storage operations with the pressure range limited to 2100 psi minimum and 2700 psi maximum. These pressure ranges came from a memorandum created by Dr. Robert Thoms on February 11, 2011, wherein he stated "if the casings above the salt can safely contain gas, I believe Cavern No. 2 can be operated at reduced service. I recommend minimum and maximum surface pressures of 2100 psig and 2700 psig, respectively, with the possibility of increasing the max value at a later date".

A video survey and temperature log was run on the cavern on January 21-22, 2011. The video shows a casing part with approximately  $\frac{1}{4}$  of the diameter offset at 5327 feet and the temperature log shows only one anomaly also at 5327 feet. Another video survey was run on April 19, 2011, confirming the casing damage. After seeing the condition of the offset of the casing at 5327 feet, neither EXPRO nor Sonarwire would risk their tools in the cavern.

#### Recommendation:

Based on rock mechanics, and with no current sonar information on Cavern No. 2, Dr. Thoms was comfortable with the reduced pressure ranges for operating the cavern. After conveying the above information regarding Caverns No. 1 and No. 2 to him, he now believes it would be best to retire Cavern No. 2 from service.

Because of the required tool configuration to run the sonar tools under high gas pressure (extra weight bars and centralizers sufficient to pull the tools downward through the lubricator), there is no way to tell whether the cavern has suffered any damage similar to Cavern No. 1. If the cavern were to be filled with brine, it is possible that sonar tools may be run because the tool configuration would be shorter at the lower pressure. That can only be determined by making a simulated logging run, but without the expensive tools. If successful, run a sonar survey if the restriction at 5327 feet will allow the less complicated tool configuration to pass through it.

Downhole pressure gages were run on April 23, 2011, but could not be run into the centroid. The data is inconclusive without accurate temperature information in the cavern itself, but there did not appear to be any pressure loss in two days.

Cavern No. 2 is constructed the same as Cavern No. 1 and has been repaired for casing failures just as Cavern No. 1. Continued salt creep will likely cause the casing to fail again with potential results similar to Cavern No. 3. Unless it can be confirmed that the cavern has not suffered any significant damage, Subsurface recommends that Cavern 2 be filled with water and retired from service.

#### **Cavern No. 3:**

##### Information we have to date:

Cavern No. 3 was installed after Cavern Nos. 1 and 2. Conductor casing was set at 593 feet and 20-inch casing was set into the salt at 2707 feet. The 20-inch casing is

assumed to be of similar design as Cavern No. 1 with either 94 lb/ft or 106.5 lb/ft, and burst pressures of 2110 psi and 2410 psi, respectively. No other protection casing was set above the caprock.

The 13-3/8-inch casing was set at 5096 feet, and then 9-5/8-inch casing was set inside the 13-3/8-inch casing at 4686 feet.

A 5-1/2-inch hanging string was cut at 65 feet and dropped into the well to run a sonar log in 2009. The hanging stub was left in the well.

Temperature surveys were run in 2008 and 2009 that indicated a cooling anomaly at 1987 feet. Pressure tests were run and the cavern did not indicate any detectable loss of gas to explain the temperature anomaly.

A video survey did detect a casing coupling at 1987 feet that appeared to be pulled exposing 18-20 threads, but not indicating that the collar was entirely parted. No loss of gas was ever detected by spinner surveys nor basket flow meter tools.

Plans had been made to snub a hanging string into the well, through the hanging string stub, and re-water the cavern in early 2011. A workover was planned to install a liner and repair the well for service.

The cavern failed December 26, 2010. The details of the events after the failure are well documented. The present condition of the cavern cannot be defined except that clay, similar to that found at depths of 300 feet and deeper, was found inside the casing at a depth of 79 feet.

We still do not know how much gas may be trapped in the cavern.

Considering the fact that the blue clay from shallow deposition was found at 79 feet below ground, it appears that all three casing strings are separated, which allowed gas to escape the sand layers above the caprock.

The downhole condition of the cavern cannot be determined until a relief well is drilled.

#### Recommendation:

Once a relief well is drilled into the remaining cavern it should be filled with brine, secured and monitored for pressure buildup.

Cavern No. 3 should not be considered for future gas storage.

## **Cavern No. 4:**

### Information we have to date:

Cavern No. 4 is constructed similar to Cavern No. 3. The conductor casing is 30 inches, but the setting depth is not confirmed. The 20-inch casing is set into the salt approximately 2600 feet BGL. The 13-3/8-inch casing was set at 5408 feet. A string of 9-5/8-inch casing was set inside the 13-3/8-inch at 4690 feet which is 718 feet above the shoe of the 13-3/8-inch casing.

The condition of the 13-3/8-inch casing above 4690 feet is not documented.

The cavern is currently filled with brine and is bled down annually to relieve the pressure created by salt creep in the cavern. Approximately 5000 bbls of brine was bled off of the cavern in January 2011.

A video survey was run on May 24, 2004, and showed severe damage to the casing beginning at 4514 feet which is in the 9-5/8-inch casing. There is a coiled tubing fish from 4574 feet to 4581 feet and the casing is parted at 4581 feet. Below the 9-5/8-inch casing shoe, the video shows parted casing at 5265 feet, 5274 feet, 5295 feet, 5305 feet, 5316 feet, 5325 feet, 5336 feet, 5346 feet, 5358 feet, and 5379 feet, where it is parted, collapsed, and contains rubble that appears to be metal, cement, and salt.

A workover attempt was planned for 2011 to mill out the junk and attempt to re-enter the cavern. Procedures have been tentatively drafted for this attempt.

The damage to the casing strings indicate vertical salt movement before and after the installation of the 9-5/8-inch casing.

### Recommendation

Given what we know about the cavern, it has suffered shrinkage and roof collapse or slump over the years. The cavern is static at this time and did not flow any gas when bled down in January.

This cavern could be re-entered with a workstring and the coiled tubing fish recovered. The remaining casing could be milled out. There is some risk of sticking or losing the work string while milling and the extent of the rubble at the base of the 13-3/8-inch casing is not known. There is likely 30 feet of rubble at the shoe of the casing at 5408 feet, if the last joint still exists. The probability of successfully completing the cleanout is likely less than 50 percent.

If a sonar survey can be run after cleaning out the casing debris, it could be determined whether the cavern has suffered further damage. The evidence of salt subsidence and creep, and the resulting damage to the tubular goods preclude any recommendation for further storage of gas.

In the short term, if the wellbore can be milled out and a hanging string installed, it could be a source of brine to fill Cavern No. 3 after the relief well is drilled into the cavern. Under the circumstances, it would be better to fill Cavern No. 3 with brine than to fill it with fresh water and solution mining the damaged cavern even further.

Given the overall history of the dome, which includes the failure of Cavern 3, abnormal pressures in zones above the salt, casing separations in multiple cavern wells, and the proximity to Cavern 3, it is concluded that the integrity of Cavern 4 is highly compromised. Therefore, it should no longer be considered safe for any gas storage application.

### **Summary:**

Based on the age of these four caverns, the documented history and condition of Cavern Nos. 1 through 4, and the documented salt creep conditions at Eminence, it is unlikely that any demonstration of long-term integrity and reliability can be made.

There is no evidence that a failure, similar to Cavern No. 3, would not occur in any of the remaining Cavern Nos. 1, 2, and/or 4 if used for gas storage. It is Subsurface Technology's recommendation that expenditure of capital to restore any of these caverns would be better made on the installation of new replacement caverns, built to current industry standards, to provide long-term reliability and integrity for safe gas storage, than on restoration of any these four caverns.

Cavern Nos. 1 and 4 are currently filled with brine. Cavern No. 2 is small and the storage capacity is limited, especially at the reduced maximum operating pressure, and should be filled with brine as soon as practical.

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit Z-4

COPIES OF COMMUNICATIONS WITH ESS CUSTOMERS

1. February 17, 2011 Notice of Force Majeure Event
2. March 4, 2011 Questions and Answers Relating to February 17 Notice
3. May 19, 2011 Response to Eminence Customer Questions
4. July 12, 2011 Response to Eminence Customer Questions

February 17, 2011 Notice of Force Majeure Event



Transcontinental Gas Pipe Line  
Company, LLC  
2800 Post Oak Blvd. (77056)  
P.O. Box 1396  
Houston, Texas 77251-1396  
(713) 215-2000

February 17, 2011

[Contract Party Address]

Attention:

Re: Notice of Force Majeure Event  
Service Agreement under Rate Schedule [ESS – Eminence][EESWS – Emergency  
Eminence Storage Withdrawal Service], Dated [Month, Day, Year], as amended (Seller's  
Contract No. xxxxxxxxxx)(the "Service Agreement")

Ladies and Gentlemen:

Transcontinental Gas Pipe Line Company, LLC ("Transco") hereby gives notice, pursuant to Section 11.1 of the General Terms and Conditions of Transco's FERC Gas Tariff, of a force majeure event that may affect the ability of Transco to carry out its obligations under the referenced Service Agreement. This notice sets forth the particulars of the force majeure event.

On December 26, 2010, Transco detected a large, unexpected pressure drop in Cavern 3, one of the seven underground natural gas storage caverns at Transco's Eminence Storage Field in Covington County, Mississippi. The Eminence Storage Field is the facility that supports the service provided to you by Transco pursuant to the referenced Service Agreement. On December 28, 2010, Transco determined that natural gas was leaking from Cavern 3. Since that time, Transco has reduced the pressure of Cavern 3 by safely venting and flaring gas.

On January 4, 2011, based on a determination that the reduced pressure in Cavern 3 created a risk to the salt pillars separating Cavern 3 from the adjacent Caverns 1 and 2, Transco began to reduce the pressures of Caverns 1 and 2 by withdrawing gas from those caverns. During those operations, on January 15, 2011, Transco discovered gas escaping from the ground around the wellhead for Cavern 1. Transco continued to safely withdraw gas from Caverns 1 and 2, and by January 24, 2011, the pressure in those caverns was reduced to a level sufficient to avoid potential effects on Cavern 3. However, due to the leak at Cavern 3 and the damage to the well at Cavern 1, both Caverns 1 and 3 are out of service.

The leak at Cavern 3 and the damage to the well at Cavern 1 are the result of causes that are not within the reasonable control of Transco and are causes that Transco has been unable,

notwithstanding the exercise of due diligence, to prevent or overcome. As a result of these occurrences, Transco has determined that Caverns 1 and 3 cannot be returned to service. Therefore, Transco intends to file an application seeking authorization from the Federal Energy Regulatory Commission to abandon those caverns.

Transco currently estimates that, due to this force majeure event, the Eminence Storage Field is capable of providing approximately seventy percent (70%) of contracted capacity and ninety-two percent (92%) of contracted deliverability. The daily injection capability of the Eminence Storage Field has not been affected by this event.

To date, the event has not affected Transco's performance of its obligations under the Service Agreement and Transco has not ordered a reduction in Rate Schedule ESS or EESWS entitlements pursuant to Section 11.3 of the General Terms and Conditions of its FERC Gas Tariff. Transco will continue to update you on this force majeure event and its effect on service under the Service Agreement as relevant information becomes available.

In addition, Transco intends to develop options regarding the longer term future of this service, including the potential construction of additional cavern(s) to restore service capabilities at the Eminence Storage Field, and will then contact its Rate Schedule ESS and EESWS customers to discuss those options.

In the meantime, if you have any questions concerning this notice or your service under the Service Agreement, please contact your Customer Service Representative at Transco.

Very truly yours,

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

James C. Moore  
Vice President – Commercial Operations

## March 4, 2011 Questions and Answers Relating to February 17 Notice



TRANSCO  
2800 Post Oak Boulevard (77056)  
P.O. Box 1396  
Houston, TX 77251-1396  
713/215-2000  
713/215-4608 fax

March 4, 2011

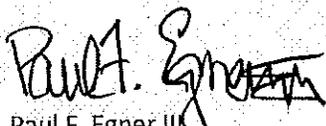
Re: Follow Up to Notice of Force Majeure Event Letter – Frequently Asked Questions

Dear ESS/EESWS Customers:

On February 17, 2011, Transcontinental Gas Pipe Line Company, LLC ("Transco") sent all ESS and EESWS customers a "Notice of Force Majeure Event" relating to your Service Agreement(s) under Rate Schedule ESS or EESWS. Since that time, Transco has received a number of questions relating to the Eminence facilities, existing and expected future service at Eminence, future communication with customers, and the regulatory process going forward. In order to keep all ESS and EESWS customers informed, Transco is providing the attached compilation of questions and answers relating to our February 17<sup>th</sup> letter.

If you have any further questions, please contact your customer service representative.

Sincerely,

  
Paul F. Egner III  
Director, Customer Services

Eminence (Rate Schedule ESS and EESWS) Force Majeure – FAQ

1. What are the physical facilities that support the ESS and EESWS service?

*The Eminence Storage Facility, located in Covington County, MS, is comprised of 7 caverns leached from a salt dome. Caverns #1 – 4 were constructed from 1970 to 1973. Caverns #5 – 7 were constructed from 1993 to 1995 pursuant to a FERC approved expansion (CP90-2230).*

*The services supported by the Eminence Storage Facility are shown on Table A ("Eminence Storage Contract Breakout at 2/04/2011").*

2. What caused the pressure drop in Cavern #3?

*Transco is in the process of ensuring that Caverns #1 and #3 are safely stabilized before beginning the investigation. However, we are focusing our investigation initially on whether there was a failure in the Cavern #3 well casing that allowed gas to escape.*

3. Has the source of the leak in Cavern #3 been identified?

*Transco is in the process of ensuring that Caverns #1 and #3 are safely stabilized before beginning the investigation. A thorough investigation will take place once it is safe to do so.*

4. What caused the gas escaping around the wellhead in Cavern #1?

*The investigation is not complete; however, we are focusing our investigation initially on whether gas escaping from Cavern #3 migrated towards Cavern #1 and rose to the surface around Cavern #1's casing and wellhead.*

5. How much gas was flared/vented and whose gas was it?

*We do not know at this point how much gas was flared/vented. Transco is responsible for all gas flared/vented.*

6. So, my inventory balance as shown in 1Line is correct?

*Yes.*

7. Have all of the other caverns been checked for similar leakage/damage?

*Transco is in the process of ensuring that Caverns #1 and #3 are safely stabilized before beginning the investigation of those caverns. Cavern #4 is not currently active and is filled with water. We have temporarily lowered the pressure in Cavern #2 due to issues experienced at Caverns #1 and #3. Transco has reviewed the maintenance records and well logs of Caverns #2, #5, #6 and #7 and we have no indications that these caverns are leaking at this time. Additionally, Caverns #5, #6 and #7*

*are newer than the other caverns and do not have the same well casing characteristics that may have contributed to the issue at Cavern #3.*

8. How does Transco know at this point that Caverns #1 and #3 will not be able to be returned to service?

*Transco has been advised by both internal technical staff and outside salt dome storage experts that, based on the information available to us at this time, these two caverns cannot be safely returned to service.*

9. Will Transco replace the capacity/withdrawal/injection impairments with new caverns?

*The Eminence injection capability has not been affected. Transco is evaluating options, including the possibility of new caverns to replace the lost capacity. Once that evaluation is complete we will be meeting with all ESS and EESWS shippers to discuss future plans for the ESS and EESWS services.*

10. If Transco is still able to perform under its service agreements, why was this "Notice of Force Majeure Event" letter sent to the ESS and EESWS shippers? Why was the notice not sent earlier?

*It is a requirement under our tariff to notify shippers of force majeure events within a reasonable time of their occurrence. Transco in consultation with its outside experts only recently determined that Caverns #1 and #3 could not be safely returned to service.*

11. How can Transco continue to provide the full level of contracted service with this much capacity out of service? If Transco is unable to continue to perform how will customers be notified?

*Transco operates its system on an integrated basis, including pipeline throughput capabilities, production area and market area storage and pipeline line pack.*

*Based on the historical utilization of Rate Schedules ESS and EESWS and the integrated nature of Transco's system, Transco's current expectation is that we will be able to provide contracted levels of ESS and EESWS service. If our expectations change, Transco will endeavor to provide as much advance notice to shippers as possible. Under Section 11.3(c) of the General Terms and Conditions of Transco's tariff, notice of any reduction will be available on 1Line, and Transco will make reasonable efforts to provide notice by facsimile, e-mail, and/or telephone, as requested by Buyer.*

12. What is the impact to Transco's 91,288 dts/d of Eminence deliverability and 909,169 dts of Eminence capacity dedicated to system flexibility?

*The portion of the Eminence deliverability and capacity dedicated to system flexibility currently is being used to support the ESS and EESWS services.*

13. When will Transco make its filing to abandon Caverns #1 and #3? How long does Transco expect it will take to receive the abandonment approval?

*Transco's target for filing the abandonment application is by the end of April, 2011. A reasonable estimate for FERC approval is 6 to 9 months.*

14. Will Transco be amending the ESS and EESWS service agreements to amend the operating capability of the services?

*Transco will be amending all ESS and EESWS service agreements once it has the authority to do so as provided for in any FERC Order on the abandonment application.*

15. What are the aggregate service levels expected to be subsequent to the abandonment?

*We expect the current operating capability to be approximately 70% of contract capacity and 92% of contract deliverability. The Eminence injection capability has not been affected.*

16. Does Transco intend to order a reduction in Rate Schedule ESS or EESWS entitlements pursuant to Section 11.3 of the General Terms and Conditions of its FERC Gas Tariff?

*Please see response to question #11.*

17. Will my capacity/withdrawal/injection entitlements be reduced prior to Transco receiving approval to abandon caverns #1 and #3?

*Transco operates its system on an integrated basis, including pipeline throughput capabilities, production area and market area storage and pipeline line pack.*

*Based on the historical utilization of Rate Schedules ESS and EESWS and the integrated nature of Transco's system, Transco's current expectation is that we will be able to provide contracted levels of ESS and EESWS service. If our expectations change, Transco will endeavor to provide as much advance notice to shippers as possible. Under Section 11.3(c) of the General Terms and Conditions of Transco's tariff, notice of any reduction will be available on 1Line, and Transco will make reasonable efforts to provide notice by facsimile, e-mail, and/or telephone, as requested by Buyer.*

18. Will we get our full entitlements this summer?

*Please see response to question #11.*

19. Why we are not getting demand credits for our capacity and demand entitlements given that Transco does not have assets to support the entire services at Eminence?

*To date, Transco has not ordered a reduction to the contracted levels of service. If Transco does order a reduction to the contracted levels of service, Transco's ESS and EESWS Rate Schedules do not provide for demand credits. If Transco orders such a reduction, Transco will address the issue of demand credits at that time.*

20. Does Transco have an estimate of the cost to abandon? How will those costs be recovered?

*Based on what we know today, the current estimated cost to abandon Caverns #1 and #3 is approximately \$32 million. The cost to abandon Eminence will be recovered as an Asset Retirement Obligation (ARO).*

21. If capacity is reduced by approximately 30%, why is deliverability only affected by 8%?

*Each cavern's contribution toward the total capacity, injection and withdrawal capabilities of the Eminence Storage Field are different. An assessment of the capabilities of the remaining caverns results in the levels of service discussed in the force majeure letter.*

22. What if I've released my ESS and EESWS capacity to another shipper – how does this impact the replacement shipper?

*The expected impact to those shippers holding released capacity is no different than the impact on other ESS and EESWS shippers. See response to question 11.*

23. Will customers have the option to reduce or terminate their ESS or EESWS entitlements prior to the expiration of the remaining term of their service agreement?

*Transco does not contemplate an opportunity for existing ESS and EESWS shippers to reduce or terminate their service outside of the termination rights contained in their respective service agreements.*

24. What will be the impact to future rates?

*At this time, Transco cannot determine the Eminence cost of service and associated service levels that will underlie the calculation of the Eminence rates to be filed in Transco's next general section 4 rate case.*

**TABLE A**  
**Eminence Storage Contract Breakout at**  
**02/04/2011**

<u>Rate Schedule</u>	<u>Capacity (Dt)</u>	<u>Deliverability (Dt/day)</u>	<u>Injection (Dt/day)</u>
ESS	11,386,486	1,138,131	75,867
ESS Enhanced	3,057,743	305,846	66,549
Total ESS	14,444,229	1,443,977	142,416
EESWS	170,735	17,142	1,143
Unsubscribed EESWS	866	87	6
Total EESWS	171,601	17,229	1,149
Total Contracts	14,615,830	1,461,206	143,565
System Flex	909,169	91,288	6,086
Total Eminence Field	15,524,999	1,552,494	149,651
Current Operating Capability	10,649,000	1,428,000	149,651

## May 19, 2011 Response to Eminence Customer Group Questions



TRANSCO  
2800 Post Oak Boulevard (77056)  
P.O. Box 1396  
Houston, Texas 77251-1396  
713/215-2000  
713/215-4608 fax

May 19, 2011

Subject: Eminence Customer Meeting – May 24, 2011

Dear ESS/EESWS Customers:

On March 18, 2011 a group of ESS customers submitted written questions to Transco pertaining to the December 2010 event at the Eminence Storage field. Attached for your information are Transco's responses to those questions. As a reminder, Transco will meet with its ESS and EESWS customers on May 24<sup>th</sup> in Baltimore to discuss the December 2010 event and its impact on services provided from the Eminence Storage field.

If you have any further questions, please contact your customer service representative.

Sincerely,

A handwritten signature in black ink that reads "Paul F. Egner III". The signature is written in a cursive, somewhat stylized font. The name "Paul F. Egner" is clearly legible, and "III" is written at the end. There are some additional scribbles and lines at the end of the signature.

Paul F. Egner III  
Director, Customer Services

## Response to Eminence Customer Group Questions Dated March 18, 2011

1. The FAQ states that Transco will continue to provide contracted service. How is that possible, given the loss of storage capacity and deliverability?

Transco operates its system on an integrated basis, including pipeline throughput capabilities, production area and market area storage and pipeline line pack. Based on the historical utilization of Rate Schedules ESS and EESWS and the integrated nature of Transco's system, Transco's current expectation is that we will be able to provide contracted levels of ESS and EESWS service pending receipt of abandonment authorization. If our expectations change, Transco will endeavor to provide as much advance notice to shippers as possible. Under Section 11.3(c) of the General Terms and Conditions of Transco's tariff, notice of any reduction will be available on 1Line, and Transco will make reasonable efforts to provide notice by facsimile, e-mail, and/or telephone.

2. What level of contractual service reductions do you expect, if any? When will those service reductions take effect?

The current estimated Storage Demand and Storage Capacity quantities for the Eminence Storage field (caverns 5, 6 and 7) subsequent to FERC's approval of the requested abandonment of caverns 1 – 4 are detailed on Schedule 1. Transco expects to file the abandonment application in June, 2011 and FERC authorization is anticipated approximately 9 months after the filing date.

3. Will any other substantive changes to ESS and EESWS service agreements be required, if any?

The only changes to the ESS and EESWS service agreements will be to revise the Storage Demand Quantity and Storage Capacity Quantity stated in each service agreement.

4. When does Transco expect to make the abandonment filing?

Transco expects to make the abandonment filing in June, 2011.

5. To what extent, will the number of OFOs increase?

Although system flexibility will be reduced by the loss of Eminence storage deliverability and capacity, Transco does not expect that the December 2010 event will cause an increase in the number of OFO's.

6. To what extent will other services, such as firm transportation, be affected?

Transco does not expect that its other firm services will be affected by this event.

7. What base gas losses has Transco experienced or does it expect to experience? What are the approximate costs of those losses? Who will bear the cost?

To date, Transco has not experienced any base gas losses.

8. What top gas losses has Transco experienced or does it expect to experience? What are the approximate costs of those losses? Who will bear the cost?

Thus far, Transco has experienced the loss of 1,868,382 dts of top gas valued at \$7,680,121. Insurance recovery on these losses is estimated to be \$5,163,256. The difference in these amounts - \$2,516,865 - was expensed in December 2010. A determination of total gas losses will be made after final removal of gas from cavern 3. Transco will not seek to recover amounts expensed due to top gas losses.

9. Transco is investigating the cause(s) of the failure and potential remedies. When are the results of the investigation expected? Will customers be provided with copies of the results, and, if so, when?

Results of the investigation are expected in the second quarter of 2012. Transco will communicate the results, when available.

10. Please explain why the facility's withdrawal capability is reduced, but not its injection capability.

The withdrawal capability was reduced for the reasons stated in the February 17, 2011 notice of force majeure. The injection of gas into Eminence relies on installed compression. The December 2010 event did not impact the installed compression.

11. Why does Transco conclude that the caverns must be abandoned? Why is the cost of abandonment so high? What are the approximate rate impacts of those costs based on the estimated abandonment cost and historical billing determinants?

In light of the event at cavern 3, and based on the age of caverns 1 - 4, and the documented history and condition of those caverns, it is unlikely that any demonstration of long-term integrity and reliability of those caverns can be made. There is no evidence that a failure, similar to the one at cavern 3, would not occur in caverns 1, 2 and/or 4 if used for gas storage.

Transco is currently refining its cost estimate. An update will be provided at the May 24<sup>th</sup> meeting. The costs of the abandonment largely reflect the inaccessibility of the existing cavern 3 well bore. In order to reach the cavern, multiple pilot wells must be drilled in advance of a relief well. The relief well will allow the remaining gas in cavern 3 to be withdrawn and the cavern to be filled with water.

The current uncertainties associated with the total costs to abandon caverns 1 – 4 and the final amount of any insurance reimbursements makes it difficult to predict with a reasonable degree of accuracy how this event will impact Eminence storage service rates. In any event, revised rates under Rate Schedules ESS and EESWS will be determined in Transco's next rate case.

12. With Washington storage, this is the second major storage service problem Transco has experienced in recent years. Is this an indication of an on-going and perhaps escalating problem, such as the deterioration of wells of a particular vintage? If so, what action(s) is Transco taking to address the problem?

The Washington Storage field and the Eminence Storage field are distinctly different storage fields. Washington is a depleted production reservoir, whereas Eminence is comprised of 7 caverns in a salt dome. Although the vintage of a well may directly correlate to well performance, other factors such as the geological characteristics of the storage field, the frequency of storage cycling and differences in well construction also affect well performance.

Washington originally had 44 wells - 13 were drilled in the 1950's and the remainder in the 1970's. Deliverability from the Washington Storage field began to decline over time due to damage in the reservoir rock caused by fluid invasions, organic residues, loose sand and salt precipitations. Transco evaluated drilling several wells to restore the lost deliverability, but after discussing this option with its Washington Storage customers, the customers informed Transco that they did not want Transco to spend the necessary capital to restore the deliverability.

Eminence began operating in the early 1970's as a high deliverability storage facility with 2 caverns. Two additional caverns were added in the mid-1970's and the final 3 caverns were added in 1993, 1994 and 1995. Unlike Washington, each Eminence cavern has a single well that is used to inject and withdraw gas. Over time, factors affecting the deliverability and capacity of the Eminence caverns include vertical salt movement, salt creep and cavern depth.

13. Transco recently completed enhancements at Eminence. What is the connection, if any, between project(s) and the recent Force Majeure event?

The Eminence Enhancement project consisted of the addition of one 4,735 horsepower compressor and tie-in piping. The project was placed in-service October 1, 2009 and increased the injection capability of the Eminence storage field by 46,161 dts/day from 103,490 dts/day to 149,651 dts/day. Transco has no indication that there is a connection between the Eminence Enhancement project and the recent force majeure event.

14. What general options is Transco considering to replace the lost capacity and deliverability? What is the expected range of costs, relative to abandonment? How long would necessary projects take to complete?

Transco has estimated the cost to replace the lost Eminence capacity and deliverability by leaching two new caverns. The estimate assumes 8.5 Bcf (8.8 MMdt) of total cavern capacity, of which 5.8 Bcf (6.0 MMdt) is top gas capacity. A rough estimate of the capital cost is in the range of \$70 – \$80 million yielding an estimated monthly capacity rate of approximately \$0.23. Transco estimates that two new caverns could be placed in-service in approximately 3 – 3.5 years.

15. FERC policy requires pipelines to provide demand charge credits for outages related to Force Majeure and non-Force Majeure outages. Will Transco work with its customers to establish such a requirement prospectively?

Yes.

Transcontinental Gas Pipe Line Company, LLC  
 Impact of Abandonment of Eminence Caverns 1-4 on Service Entitlements  
 All Quantities in Dth

Eminence Service	Current Demand	Current Capacity	Current Injection	Revised Demand	Revised Capacity	Revised Injection	Demand Difference	Capacity Difference	Injection Difference
EESWS	17,229	171,601	1,149	13,761	114,953	1,149	(3,468)	(56,648)	-
ESS	1,443,977	14,444,229	142,416	1,153,326	9,876,006	142,416	(290,651)	(4,768,223)	-
System Flex	91,288	909,169	6,086	72,913	609,041	6,086	(18,375)	(300,128)	-
<b>Total Eminence Storage Field</b>	<b>1,552,494</b>	<b>15,524,999</b>	<b>149,651</b>	<b>1,240,000</b>	<b>10,400,000</b>	<b>149,651</b>	<b>(312,494)</b>	<b>(5,124,999)</b>	<b>-</b>

Transcontinental Gas Pipe Line Company, LLC  
Impact of Abandonment of Eminence Caverns 1-4 on Customer Contact Entitlements  
All Quantities in Dth

Customer Name	Rate Schedule	Contract Number	Current Demand	Current Capacity	Current Injection	Revised Demand	Revised Capacity	Revised Injection	Demand Difference	Capacity Difference	Injection Difference
Cargill Inc	EESWS	9050780	198	1,976	13	158	1,924	13	(40)	(52)	-
City of Bessemer City North Carolina	EESWS	9050827	285	2,845	19	228	1,806	19	(57)	(86)	-
City of Bessemer City North Carolina	EESWS	9050826	103	1,028	7	82	689	7	(21)	(39)	-
City of Lexington North Carolina	EESWS	9050829	2,705	26,946	180	2,161	18,051	180	(544)	(8,895)	-
City of Monroe, North Carolina	EESWS	9052284	2,407	23,959	161	1,923	16,208	161	(484)	(7,752)	-
City of Shelby North Carolina	EESWS	9050635	2,429	24,195	163	1,940	16,208	163	(489)	(7,987)	-
Formosa Plastics Corporation USA	EESWS	9050905	348	3,445	23	276	2,308	23	(70)	(1,137)	-
J. P. Morgan Ventures Energy Corporation	EESWS	9068938	6,682	66,546	445	5,357	44,578	445	(1,345)	(21,968)	-
Smurfit-Stone Container Enterprises, Inc.	EESWS	9050940	167	1,662	11	133	1,113	11	(34)	(549)	-
Williams Gas Marketing Inc	EESWS	9050782	1,820	18,123	121	1,454	12,140	121	(366)	(5,983)	-
Unsubscribed EESWS	EESWS	9050782	87	866	6	69	560	6	(18)	(286)	-
<b>Total EESWS</b>			<b>17,229</b>	<b>171,501</b>	<b>1,149</b>	<b>13,751</b>	<b>114,952</b>	<b>1,149</b>	<b>(3,468)</b>	<b>(56,548)</b>	

Customer Name	Rate Schedule	Contract Number	Current Demand	Current Capacity	Current Injection	Revised Demand	Revised Capacity	Revised Injection	Demand Difference	Capacity Difference	Injection Difference
Alabama Gas Corporation	ESS-ENH	9074752	693	6,962	150	554	4,664	150	(139)	(2,298)	-
Alabama Gas Corporation	ESS-ENH	9050383	21,010	209,230	4,560	16,781	140,161	4,560	(4,229)	(69,069)	-
Atlanta Gas Light Company	ESS-ENH	1018467	31,357	315,490	6,854	25,045	211,343	6,854	(6,312)	(104,147)	-
Atlanta Gas Light Company	ESS-ENH	9050385	32,879	327,445	7,135	26,261	219,351	7,135	(6,618)	(108,094)	-
Atmos Energy Corporation	ESS	1006659	3,305	33,249	220	2,640	22,273	220	(665)	(10,976)	-
Atmos Energy Marketing, Llc	ESS	9067203	3,023	30,120	202	2,415	20,177	202	(608)	(9,945)	-
Chesapeake Utilities Corp-Deleware Division	ESS	9037863	4,727	47,262	314	3,776	31,660	314	(951)	(15,602)	-
Chesapeake Utilities Corp-Maryland Division	ESS	9037884	2,621	26,162	175	2,093	17,526	175	(528)	(8,636)	-
City of Alexander City, Alabama	ESS	9003272	1,424	14,326	95	1,137	9,597	95	(287)	(4,729)	-
City of Bessemer City North Carolina	ESS	9050387	1,506	14,996	100	1,203	10,046	100	(303)	(4,950)	-
City of Buford Georgia	ESS	9091832	350	3,518	23	280	2,357	23	(70)	(1,161)	-
City of Buford Georgia	ESS	1041772	594	5,975	39	474	4,003	39	(120)	(1,972)	-
City of Buford Georgia	ESS	9050392	1,108	11,037	74	885	7,394	74	(223)	(3,645)	-
City of Danville Virginia	ESS	9050388	7,117	70,684	474	5,694	47,484	474	(1,433)	(23,400)	-
City of Danville Virginia	ESS	1006615	8,160	82,097	544	6,516	54,996	544	(1,642)	(27,101)	-
City of Fountain Inn South Carolina	ESS	1006619	1,007	10,080	67	804	6,782	67	(203)	(3,328)	-
City of Greenwood South Carolina	ESS	1041757	2,634	26,505	176	2,104	17,785	176	(530)	(8,750)	-
City of Greenwood South Carolina	ESS	9050445	3,842	38,260	266	3,069	25,690	266	(773)	(12,630)	-
City of Kings Mountain North Carolina	ESS	9003275	1,338	13,464	89	1,069	9,019	89	(269)	(4,445)	-
City of Kings Mountain North Carolina	ESS	9050446	1,013	10,093	68	809	6,761	68	(204)	(3,332)	-
City of Laurens South Carolina	ESS	9003276	2,743	27,581	183	2,191	18,463	183	(552)	(9,108)	-
City of Lexington North Carolina	ESS	9003277	2,915	29,321	195	2,328	19,642	195	(587)	(9,679)	-
City of Monroe, North Carolina	ESS	9051646	265	2,634	18	212	1,764	18	(53)	(670)	-
City of Shelby North Carolina	ESS	9003278	3,497	35,185	233	2,793	23,570	233	(704)	(11,615)	-
City of Union South Carolina	ESS	9003279	1,254	12,626	84	1,002	8,468	84	(252)	(4,168)	-
City of Union South Carolina	ESS	9071868	2,291	22,827	151	1,830	15,292	151	(461)	(7,535)	-
Clinton-Newberry Natural Gas Authority	ESS	1041755	3,727	37,465	248	2,977	25,117	248	(750)	(12,378)	-
Columbia Gas of Virginia Inc	ESS	1008966	1,399	14,074	93	1,117	9,428	93	(282)	(4,646)	-
Commission of Public Works, City of Great South Carolina	ESS	9050447	1,512	15,057	101	1,208	10,086	101	(304)	(4,971)	-
Commission of Public Works, City of Great South Carolina	ESS	9003274	1,632	16,419	109	1,304	10,999	109	(328)	(5,420)	-
ConocoPhillips Company	ESS	9050448	1,039	10,352	69	830	6,935	69	(209)	(3,417)	-
ConocoPhillips Company	ESS	9094928	10,083	100,416	672	8,053	67,287	672	(2,030)	(33,149)	-
Consolidated Edison Company of New York Inc	ESS	1008968	52,424	527,459	3,484	41,872	359,338	3,484	(10,552)	(174,121)	-
Consolidated Edison Company of New York Inc	ESS	9050776	6,002	60,773	6,002	71,924	600,773	6,002	(18,126)	(296,054)	-
Delmarva Power & Light	ESS-ENH	1018469	26,440	264,466	5,754	21,178	177,162	5,754	(5,322)	(87,304)	-
Enmark Gas Corporation	ESS	9050449	2,136	21,270	143	1,706	14,249	143	(430)	(7,021)	-
Fort Hill Natural Gas Authority	ESS	9050450	3,271	32,578	218	2,613	21,824	218	(658)	(10,754)	-
Greenville Utilities Commission	ESS	9051652	2,116	21,073	141	1,690	14,117	141	(426)	(6,956)	-

Transcontinental Gas Pipe Line Company, LLC  
 Impact of Abandonment of Eminent Caveans 1-4 on Customer Contact Entitlements  
 All Quantities in Dth

Customer Name	Rate Schedule	Contract Number	Current Demand	Current Capacity	Current Injection	Revised Demand	Revised Capacity	Revised Injection	Demand Difference	Capacity Difference	Injection Difference
Hess Corporation	ESS	9050523	926	9,219	61	740	6,176	61	(186)	(3,043)	-
Hess Corporation	ESS	9053497	395	3,936	26	315	2,677	26	(1,299)	(3,000)	-
Hess Corporation	ESS	9051553	6,093	60,585	405	4,859	40,585	405	(1,224)	(20,000)	-
Keyspan Gas East Corporation D/B/A National Grid	ESS	1010412	44,980	452,662	2,988	35,984	303,233	2,988	(9,056)	(149,429)	-
Keyspan Gas East Corporation D/B/A National Grid	ESS	9050778	41,409	412,990	2,761	33,074	276,265	2,761	(8,335)	(136,135)	-
Municipal Electric Authority of Georgia	ESS	9070888	3,174	31,809	212	2,635	21,174	212	(639)	(10,435)	-
Municipal Electric Authority of Georgia	ESS	9050390	23,336	233,430	1,589	18,639	156,372	1,589	(4,697)	(77,058)	-
Noble Energy, Inc.	ESS	9050546	1,703	16,964	114	1,360	11,364	114	(343)	(5,600)	-
Owens Corning Sales, LLC	ESS	9074369	1,642	16,358	109	1,311	10,958	109	(331)	(5,400)	-
Owens Corning Sales, LLC	ESS	1029502	1,748	17,592	117	1,396	11,785	117	(352)	(5,807)	-
Patrons Energy Group	ESS	9050404	13,687	136,732	912	10,692	91,995	912	(2,795)	(45,137)	-
Peco Energy Company	ESS	1018473	75,755	757,984	5,050	60,507	507,764	5,050	(15,248)	(250,220)	-
Philadelphia Gas Works	ESS	1039095	65,201	656,013	4,346	52,077	439,455	4,346	(13,124)	(216,558)	-
Philadelphia Gas Works	ESS	1010416	47,966	482,792	3,198	38,327	329,416	3,198	(9,639)	(159,376)	-
Piedmont Natural Gas Company Inc	ESS	1018471	188,340	1,883,834	12,555	150,430	1,261,622	12,555	(37,910)	(621,712)	-
Pivotal Utility Holdings, Inc.	ESS-ENH	1013463	14,397	144,855	3,146	11,499	97,037	3,146	(2,898)	(47,816)	-
Pivotal Utility Holdings, Inc.	ESS-ENH	9050547	22,940	228,454	4,978	18,323	153,038	4,978	(4,617)	(75,416)	-
Pseg Energy Resources & Trade LLC	ESS	1006564	177,215	1,771,245	11,814	141,544	1,188,535	11,814	(35,671)	(584,710)	-
Public Service Company of North Carolina	ESS-ENH	9011146	47,222	475,111	10,320	37,717	318,271	10,320	(9,505)	(156,840)	-
Public Service Company of North Carolina	ESS-ENH	9050453	43,259	480,603	10,473	38,545	321,950	10,473	(9,714)	(158,653)	-
Sequent Energy Management LP	ESS	9050405	2,737	27,263	182	2,188	19,263	182	(551)	(9,000)	-
South Carolina Electric & Gas Company	ESS-ENH	9046128	1,877	18,888	410	1,499	12,367	410	(378)	(6,235)	-
South Carolina Electric & Gas Company	ESS-ENH	9050454	15,488	154,049	3,357	12,355	103,195	3,357	(3,113)	(50,854)	-
South Jersey Gas Company	ESS	9050779	34,823	346,796	2,321	27,814	232,314	2,321	(7,009)	(114,482)	-
Southwestern Virginia Gas Company	ESS	9014756	3,409	34,305	228	2,723	22,980	228	(686)	(11,325)	-
Sunoco Inc (R&M)	ESS	9050644	10,950	109,053	730	8,746	73,053	730	(2,204)	(36,000)	-
Tenaska Gas Storage, LLC	ESS	9018828	13,995	140,211	928	11,130	93,923	928	(2,865)	(46,285)	-
The Brooklyn Union Gas Company D/B/A National Grid NY	ESS	9050775	68,679	683,972	4,578	54,855	458,184	4,578	(13,824)	(225,788)	-
The Brooklyn Union Gas Company D/B/A National Grid NY	ESS	9006231	41,171	414,230	2,745	32,884	277,443	2,745	(8,287)	(136,743)	-
Town of Liberty Mississippi	ESS	1006503	58	581	4	46	389	4	(12)	(192)	-
Tyson Foods Inc.	ESS	9050455	529	5,268	35	423	3,529	35	(106)	(1,739)	-
Ugi Penn Natural Gas, Inc.	ESS	1006655	31,262	312,526	2,084	24,969	209,957	2,084	(6,293)	(103,169)	-
Ugi Utilities Inc	ESS	9072828	1,980	19,716	132	1,581	13,207	132	(389)	(6,509)	-
Vega Energy Partners, Ltd.	ESS	9104948	8,885	88,488	593	7,097	59,277	593	(1,788)	(29,211)	-
Virginia Natural Gas Inc	ESS-ENH	9014759	6,970	60,254	1,960	7,164	60,460	1,960	(1,806)	(29,794)	-
Virginia Natural Gas Inc	ESS-ENH	9050406	9,650	96,109	2,094	7,708	64,382	2,094	(1,942)	(31,727)	-
Virginia Power Energy Marketing Inc	ESS-ENH	9050773	5,564	55,414	1,208	4,444	37,121	1,208	(1,120)	(18,293)	-
Washington Gas Light Company	ESS-ENH	9050456	19,120	190,415	4,150	15,271	127,557	4,150	(3,849)	(62,858)	-
<b>Total ESS</b>			<b>1,443,977</b>	<b>14,444,229</b>	<b>142,416</b>	<b>1,153,326</b>	<b>9,876,005</b>	<b>142,416</b>	<b>(290,651)</b>	<b>(4,768,223)</b>	<b>-</b>
<b>Total System Flex</b>			<b>91,283</b>	<b>909,169</b>	<b>6,086</b>	<b>72,913</b>	<b>609,041</b>	<b>6,086</b>	<b>(18,375)</b>	<b>(300,128)</b>	<b>-</b>
<b>Total Eminent Storage Field</b>			<b>1,552,494</b>	<b>15,524,999</b>	<b>149,551</b>	<b>1,240,000</b>	<b>10,400,000</b>	<b>149,551</b>	<b>(312,494)</b>	<b>(5,124,999)</b>	<b>-</b>

## July 12, 2011 Response to Eminence Customer Group Questions

**Eminence Storage Field  
Responses to Customer Questions Resulting From the  
May 24, 2011 Meeting in Baltimore, Maryland**

1. When you installed 9 5/8" casing in Cavern 3 in 1991, did you use threaded casing?
  - Yes, threaded casing was utilized. We have found no internal records related to the decision to use threaded casing.
  
2. Does salt damage the cement used to stabilize the well casing?
  - In this application, exposure to salt is not detrimental to cement. To keep from washing out the salt during a cement job, salt saturated slurries are typically used. There is no reason to believe that interface with cavern salt and the cement between the casing leads to any significant structural problems.
  
3. Did Transco test the cathodic protection and if so, were there any pits in the casing?
  - The well casings are not under cathodic protection (CP). Transco has discussed the addition of cathodic protection to the casings at various times throughout the history of the Eminence field and each time the negatives of inducing CP on the casings have, in our opinion, outweighed the positives. The negatives of adding CP to the well casings include:
    - Potential interference currents introduced by addition of CP to the well casings. There is great concern that adding CP to the well casings could cause CP current to migrate from one well casing to another in low resistance strata. This could happen at Eminence more so than on typical production wells due to the relative close proximity of the cavern well casings. Impressed current that migrates from one well casing to another would rapidly corrode the first well casing.
    - There is the potential for CP current to migrate from the outer casings to the inner casings at the shallower depths. While that CP current would protect the inner string, there may be a tendency to corrode the inside of the outer string as current passes through it.
    - The inner casing strings are encased in cement. The alkalinity of cement tends to inhibit corrosion of the steel casings without addition of CP.
  
4. What is the physical size of the caverns?
  - Most of the caverns are approximately 1,000 ft in height and 150 to 300' in diameter.
  
5. How do you make sure welded casing will hold up over time?
  - Welded casing is subject to stress just like threaded casing, but with a higher tolerance. Of the parted casings in Cavern 2, some are at threaded collars and some are in the body of the pipe. Cavern 7 has one part in the body of the pipe. We have not seen

failures at the welds. Therefore, we have no reason to believe that the welds are any more susceptible to stress than the body of the pipe.

6. Was the parted casing found in the casing in Cavern 7 at a weld?

- No. The part was found in the pipe body about 44' above the casing shoe. This location is within the salt.

Transcontinental Gas Pipe Line  
Company, LLC  
Docket No. CP11-  
Exhibit Z-5

ENVIRONMENTAL REPORT



**Transcontinental Gas Pipe Line Company, LLC**  
**Abandonment of Eminence Caverns 1, 2, 3, and 4**  
**Environmental Resource Report**

**September 2011**

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ATTACHMENT 1.2	-	AERIAL PHOTO BASE SITE LOCATION MAP
ATTACHMENT 2	-	USFWS CORRESPONDENCE
ATTACHMENT 3	-	MDAH CORRESPONDENCE
ATTACHMENT 4	-	SOILS MAP

## 1. GENERAL PROJECT DESCRIPTION

### 1.1 PROPOSED ACTION

---

Transcontinental Gas Pipe Line Company, LLC (Transco) is proposing to retire and abandon Caverns 1, 2, 3, and 4 at the Eminence Storage Facility in Covington, County Mississippi due to loss of long term integrity and reliability of these caverns (Eminence Abandonment Project).

#### 1.1.1 Purpose and Need

On December 26, 2010, Transco detected a large, unexpected pressure drop in Cavern 3, one of the seven underground natural gas storage caverns at the Eminence Storage Field. On December 28, 2010, Transco determined that natural gas was leaking from Cavern 3. In response, Transco reduced the pressure of Cavern 3 by venting and flaring gas into the atmosphere. On January 4, 2011, based on a determination that the reduced pressure in Cavern 3 created a risk to the salt pillars separating Cavern 3 from adjacent Caverns 1 and 2, Transco began to reduce the pressures of Caverns 1 and 2 by withdrawing gas from those caverns.

On January 31, 2011, Transco submitted to the Federal Energy Regulatory Commission (“Commission” or “FERC”) an “Advance Report of Emergency Blanket Certificate Activities” notifying the Commission of the activities that Transco would undertake in response to the emergency. Specifically, Transco outlined its plans to drill pilot wells and a relief well and to fill Cavern 3 with water in order to stabilize the cavern and ensure the safety of the field. Transco filed on July 15, 2011 to supplement the report to include further emergency reconstruction activities required to stabilize Cavern 3 and other caverns at the Eminence Storage Field. All actions to stabilize the field have been overseen by the Mississippi State Oil and Gas Board (MOGB), which has jurisdiction over well activities in the state. Transco has also been in contact with the Mississippi Department of Environmental Quality (MDEQ) documenting environmental compliance activities at the facility.

Transco retained a consulting company, Subsurface Technology, Inc. (Subsurface), to conduct an overall evaluation of Caverns 1, 2, 3, and 4. Upon completion of its evaluation, the consulting company concluded that, given the age of the four caverns and the documented history and condition of Caverns 1, 2, 3, and 4, including damage caused by salt creep, none of the four caverns could be recommended for long term gas storage service. Based on the findings and recommendations provided by Subsurface, Transco made the decision to permanently remove Caverns 1 through 4 from service.

This Environmental Report represents Transco’s analysis of impacts to the environment associated with removing Caverns 1 through 4 from service. It does not address environmental impacts associated with the emergency reconstruction activities including those undertaken pursuant to blanket authorization as set forth in the Advance Report of Emergency Blanket Certificate Activities.

### 1.1.2 Location and Description of Facilities

The Eminence Storage Facility is located at 421 Salt Dome Road, approximately 5.2 miles northeast of the town of Seminary, in Covington County, Mississippi. The facility provides natural gas storage service on Transco's pipeline system. The storage facility is located within a fenced area that encompasses approximately 450 acres.

Storage field facilities include underground and elevated pipelines, compressor facilities, aboveground storage tanks, a welding shop, collection sheds, and other auxiliary buildings.

An existing compressor station (Station 77) is located in a smaller fenced area to facilitate the injection of natural gas into the caverns for storage (i.e., gas injection mode). Station 77 includes four engine-driven reciprocating compressor units that are used during gas injection operations. Three of the compressor units are enclosed inside a single building; unit 4 is a stand-alone unit.

In addition, gas can be withdrawn under high pressure (free flow conditions) and sent into the pipeline system (i.e., gas withdrawal mode). During gas withdrawal, the high-pressure gas flows through dehydration units, and the cavern gas pressure that flows into the piping system is regulated via a gas flow-control system (the pressure reduction station) consisting of pressure regulator valves that are located in the area of each respective dehydration unit.

Transco will utilize the existing Transco-owned storage field for workspace and existing roads for equipment and personnel ingress and egress. No new access roads to Station 77 will be required. New access roads will be constructed within the existing storage field depicted on the quadrangle map in Attachment 1.1.

The activities that would be undertaken to abandon Caverns 1, 2, 3, and 4 include: removal of 12", 14", and 16" piping and pipe supports; installation of pressure gauges at each cavern; installation of 210 barrel (bbl) tank and foundation and piping at each cavern to collect water that flows due to salt creep; and installation of a flow meter.

### 1.1.3 Maps, Drawings, and Photographs

The project location is illustrated on an U.S. Geological Survey (USGS) quadrangle map in Attachment 1.1 to this report and on an aerial photograph in Attachment 1.2.

## 1.2 RELATED NON-JURISDICTIONAL FACILITIES

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No facilities other than those constructed by Transco will be associated with this project.

## 1.3 LAND REQUIREMENTS

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All proposed activities associated with this project will occur within the boundaries of the existing Eminence Storage Facility. No additional land will be affected as a result of the proposed project.

## 1.4 ENVIRONMENTAL COMPLIANCE, TRAINING, AND INSPECTION

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To ensure that the proposed activities will comply with mitigation measures identified in this Environmental Report, the analysis by the Commission of this project, and the requirements of other Federal and state permitting agencies, all construction personnel will be trained on site specific environmental issues prior to commencing work on this project.

## 1.5 AFFECTED LANDOWNERS

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This project will take place on property owned by Transco. Although no landowners will be directly affected by abandonment activities a total of 14 landowners have been identified as abutting the project area. The landowner list is provided under separate cover as Privileged information. Transco will contact all parties in compliance with Commission requirements to notify them of the proposed abandonment activities.

## 2. WATER-USE AND QUALITY

The existing Eminence Storage Facility is located within the Upper Leaf watershed (Hydrologic Unit Code [HUC] 03170004), the headwaters of the Gulf of Mexico drainage area. Transco confirmed during previous activities in 2008 and again during the April 2011 site visits that no wetlands or other waters of the United States will be impacted by the proposed activities; no wetland indicators were observed and the vegetation consisted solely of upland species. Species observed included St. Augustine grass (*Stenotaphrum secundatum*), yellow buttons (*Balduina angustifolia*), and sweet everlasting (*Gnaphalium obtusifolium*). There are no natural surface waterbodies on-site.

Shallow aquifers are not expected to be affected by the proposed abandonment activities. Water well records at the U.S. Geological Survey (USGS) and the Mississippi Department of Environmental Quality, Office of Land and Water Resources (MDEQ-OLWR) indicate water for domestic and farm use in the area comes from shallow water wells. Well depths range from less than 100 feet to about 400 feet below ground level. Two rural water associations serve the community and most homes and farms are served by the rural provider. However, there are several homes providing their own water supply and poultry farms are required to maintain a back-up supply, usually from the water association. Two aquifer systems, the shallow Citronelle Formation and the Miocene Sands provide all the potable water. The Miocene sands, about 1,000 feet below ground level, is the base of freshwater (<1,000 mg/l) dissolved solids. The quality of water is good, although generally acidic and often containing excessive iron. The potentiometric surface (water level) in a tightly cased well is about 325 feet above sea level in the Citronelle Formation (water table) conditions and about 200 feet above sea level in the Miocene Sands (artesian).

There are four retention basins in the vicinity of the proposed project, all of which are located on land controlled by Transco. The basins were originally constructed at the facility as retention basins to capture brine overflow from cavern activities, if necessary. Recently, one of the basins has been used for temporary storage of drilling fluid returns associated with the pilot wells. The liquids from that basin have been injected into a salt water disposal well with the approval of the MOGB, and the solids from that basin will be disposed in Caverns 1, 2 and/or 4 as part of the abandonment pursuant to approval by the MOGB. Presently, newly generated drilling fluids are being stored in a MOGB-permitted consolidated reserve pit, and ultimately these fluids will be disposed in Caverns 1, 2 and/or 4 as part of the abandonment. The drilling fluids are considered to be exploration and production waste, and the temporary storage and subsequent injection into Caverns 1, 2 and/or 4 are approved by the MOGB.

Transco has developed a Spill Prevention, Containment, and Countermeasures (SPCC) Plan that describes measures to be implemented by personnel and contractors to prevent, and if necessary, control any inadvertent spill of hazardous materials such as fuels, lubricants and solvents that could affect water quality. All hazardous materials will be handled in accordance with the SPCC Plan.

### **3. VEGETATION AND WILDLIFE**

The proposed activities would be confined to the improved areas of the existing fenced and maintained Eminence Storage Facility property. All of the proposed work will occur on maintained mowed grass areas within the approximately 450-acre facility; thus, no impacts on fish, wildlife, or natural vegetation are expected to occur as a result of this project. No forested wetland or riparian areas are located at the proposed abandonment site; terrestrial habitats consist of mowed lawn.

Transco maintains a blanket clearance with the United States Fish and Wildlife Service (USFWS) for activities that occur within Transco's right-of-way or within existing facilities. Therefore, portions of the Eminence Abandonment Project occurring inside Station 77 are covered by the existing clearance (Attachment 2). However, as part of the recent emergency response action surveys were conducted for presence/absence of gopher tortoise burrows. A total of six burrows were identified in January 2011. The nearest burrows to the cavern locations are three burrows on the western station boundary approximately 1,500 feet southwest of Cavern 3 and one burrow near the eastern station boundary approximately 800 feet southeast of Cavern 4. Transco consulted with Mr. David Felder from the USFWS and implemented the recommendation to install exclusion fence to provide a buffer of 25 feet to protect the burrows from emergency response activities and to provide training on gopher tortoise best management practices to all personnel. The USFWS stated in correspondence dated January 29, 2011 that with the measures in place the proposed activities would be considered "may affect, but not likely to adversely affect" the gopher tortoise. Transco would continue the measures implemented during corrective action throughout abandonment activities. Copies of correspondence between Transco and the USFWS are included in Attachment 2.

#### **4. CULTURAL RESOURCES**

Transco's categorical exemption with the Mississippi Department of Archives and History (MDAH) was updated on February 16, 2005 (Holmes 2005). This exemption applies to the proposed project area because it is located within the existing station site. A copy of the MDAH concurrence with the list of categorical exemptions is included as Attachment 3 to this Environmental Report. Additionally, Mr. Jim Bloemker, Transco's cultural resources representative, conducted a pedestrian survey of the facility in February 2011. No new issues were identified. Because the proposed abandonment project is confined within the fenced and maintained Eminence Storage Facility property, no consultation with Native Americans was initiated.

#### **5. SOCIO-ECONOMICS**

The proposed action does not include the addition of significant above ground facilities or pipeline construction; therefore this section does not apply.

#### **6. GEOLOGICAL RESOURCES**

The proposed abandonment activities involve facilities within the boundaries of the existing Eminence Storage Facility property. No planned or active surface mines have been identified within the project area. As a result, the project will not affect any surface mining activities or further restrict the development of geologic resources.

The subject site is located within the Atlantic Plain Geologic Province, which stretches more than 2,200 miles from Cape Cod, Massachusetts to the Mexican border. This province slopes gently seaward from inland highlands and extends into the Atlantic Ocean, forming the continental shelf. Sediments that eroded from the inland highlands were transported southward by streams and rivers, covering the continental margin under thousands of feet of sedimentary material. More locally, the site lies within Covington County, Mississippi, which is located in the East Gulf Coastal Plain sub-province. This sub-province extends westward from the Florida Panhandle and includes most of Mississippi.

Surface geology in the East Gulf Coastal Plain consists of clay, sand and gravel units. The site is locally underlain by the Citronelle Formation sediments of Pliocene age, chiefly nonmarine. The Citronelle is composed mostly of quartz sand, chert gravel and lenses and layers of clay. The Citronelle is generally about 200 feet thick on site. The base of the Citronelle rest unconformably upon the Miocene age Hattiesburg Formation. The Catahoula Sandstone completes the Miocene System to a depth of about 1000 feet below ground level.

Regional earthquake hazards in the project area are relatively low. The subject site is located approximately 320 miles south of an area of known seismic activity, the New Madrid Seismic Zone, near the borders of Missouri, Tennessee, and Illinois. According to the USGS earthquakes hazard program (2009) there is a 10% probability of an earthquake with a Peak Ground Acceleration (PGA) greater than 20% g (gravity) over a 50-year period in this area. At the site location in southern Mississippi, the earthquake potential decreases by a factor of 10. At the site, there is a 10% probability of an earthquake with a PGA greater than 2% g over the same 50-year period (Appendix 6B). PGA is the maximum acceleration experienced by a single "particle" during the course of the earthquake motion. (Acceleration is a measure of ground acceleration, i.e., shaking, and its relative impact on structures.) The 2% value at the project location translates to an area of weak shaking. The nearest mapped faults to the project location are approximately 60 miles to the north and northeast. Abandonment of Caverns 1 through 4 will not expose the facility to a greater risk of impact from geologic hazards.

No blasting will be required for abandonment of the facilities. No further impacts are anticipated because all proposed work will be contained within the boundaries of the existing facility.

All wells within the facility's buffer zone are known by Transco and the buffer zone for the existing facility is sufficient for Transco to monitor all drilling activities of others in the vicinity of the caverns to be abandoned.

The proposed activities are being conducted in coordination with and within the regulatory framework established by the MOGB.

## 7. SOILS

All earth-disturbing activities associated with the proposed project will be confined to the existing, previously disturbed Eminence Storage Facility property. No new significant impacts on soils are expected to occur as a result of the proposed abandonment. Soils at the location consist of RsB (2 to 5 percent slopes), RsB2 (2 to 5 percent slopes, eroded), RsC (5 to 8 percent slopes), and RsE2 (12 to 17 percent slopes)-Ruston fine sandy loams (U.S. Department of Agriculture 2008). Please refer to the Soils Map, Attachment 4.

The Ruston fine sandy loam series is well drained with depth to available water to 60 inches moderate, shrink/swell potential low, and there is no zone of water saturation within a depth of 72 inches. The RsB, RSB2, and RsC components of the series are considered prime farmland soils. Approximately 2 percent of the RsC and RsE2 components are considered hydric in drainageways.

To minimize impacts on soils as well as to prevent sediment transport from the project site during storm events, Transco will implement a soil erosion and sedimentation control plan that complies with applicable provisions of the Commission Plan and MDEQ storm water requirements.

## 8. LAND USE, RECREATION, AND AESTHETICS

All land disturbances for the proposed abandonment, will be confined to the existing, previously disturbed 450-acre property. No new rights-of-way will be required for the proposed project.

Transco is not aware of any sugar maple stands, orchards or nurseries, landfills, operating mines, hazardous waste sites, state wild and scenic rivers, state or local designated trails, nature preserves, game management areas, remnant prairie, old-growth forest, national or state forests, parks, golf courses, designated natural, recreational or scenic areas, registered natural landmarks, Native American religious sites and traditional cultural properties to the extent they are known to the public at large, reservations, lands identified under the Special Area Management Plan of the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, and lands owned or controlled by federal or state agencies or private preservation groups within 0.25 miles of the facility.

There are no residences and non-facility related buildings within 50 feet of the site. The project is not located within the coastal zone. There are no planned developments at the facility location.

## 9. AIR AND NOISE QUALITY

The Eminence Storage Facility is located in Covington County, Mississippi, near the town of Seminary, Mississippi. The proposed action does not require the addition or modifications to any existing, previously permitted and/or certificated emission facilities.

Certificate conditions set forth by the Office of Energy Projects (OPC) for the FERC are expected to require that the sound level attributable to the station, after a proposed action, not exceed a day-night average sound level (i.e.,  $L_{dn}$ ) of 55 dBA at the nearby noise sensitive areas (NSAs) since, currently, the station sound contribution is below 55 dBA ( $L_{dn}$ ) at nearby NSAs during gas injection operations. The proposed abandonment does not include facilities at Station 77 or any other facilities that would result in changes to current sound levels.

## 10. ALTERNATIVES

As noted in Section 1, due to loss of cavern integrity it is necessary to abandon Caverns 1 through 4 at the existing Eminence Storage Facility. Under the No Action Alternative, Transco would not abandon these caverns and the temporary disturbances described in this report would not be incurred. However, the No Action Alternative is not a viable option because the caverns cannot be reliably returned to operating condition. Therefore, the only option is to permanently abandon the

caverns. As proposed, the Eminence Abandonment Project would not impact any additional areas not already committed to natural gas storage. There are no other system alternatives that would allow for effective response to the cavern failures.

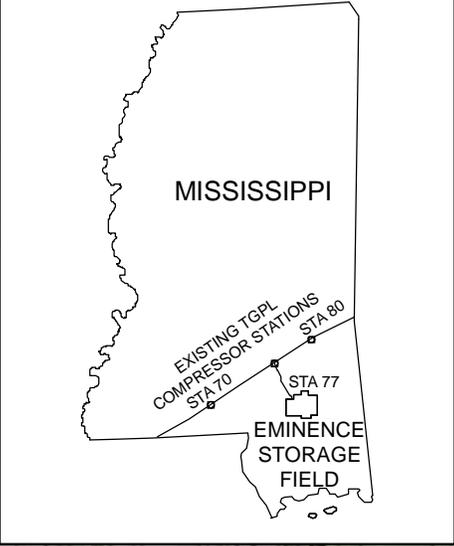
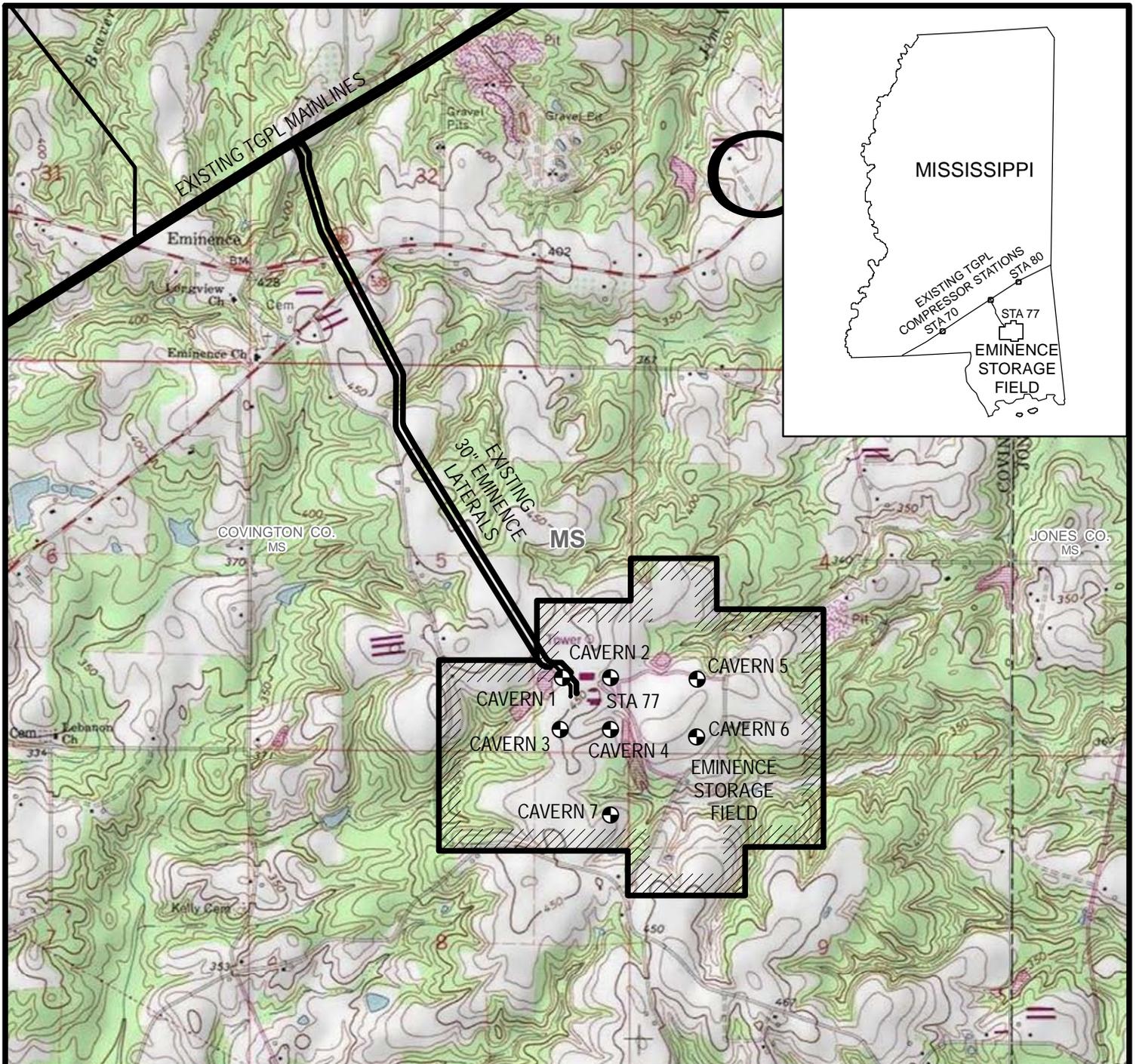
## **12. PCB CONTAMINATION**

The proposed action will not involve abandonment in place of facilities determined to have exposure to polychlorinated biphenyls (PCB) contamination in excess of 50 ppm in pipeline liquids.

**REFERENCES CITED**

- Felder, David. January 29, 2011. Pers. Comm. (e-mail) from David Felder, United States Fish and Wildlife Service to Frank Cannetto, Transcontinental Gas Pipe Line Corporation.
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- Hoover & Keith, Inc. March 2008. Eminence Gas Storage Facility Compressor Station No. 77 (Covington County, Mississippi) Results of an Acoustical Analysis of a Compressor Addition at the Existing Compressor Station Associated With the Eminence Natural Gas Storage Facility.
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[http://www.deq.state.ms.us/MDEQ.nsf/page/L&W\\_WaterUseProgram?OpenDocument](http://www.deq.state.ms.us/MDEQ.nsf/page/L&W_WaterUseProgram?OpenDocument)
- \_\_\_\_\_. 2009. USGS Earthquake Hazards Program, available online at <http://earthquake.usgs.gov/regional/states/> Accessed June, 2011.
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**Attachments 1.1 and 1.2**  
**USGS 7.5-Minute Topographic Site Location Map**  
**Aerial Photo Base Site Map**



NOTE:  
 BASE FROM 7.5 MIN. U.S.G.S. QUADRANGLE MAP  
 SEMINARY, MS., DATED 1980, NAD83 DATUM



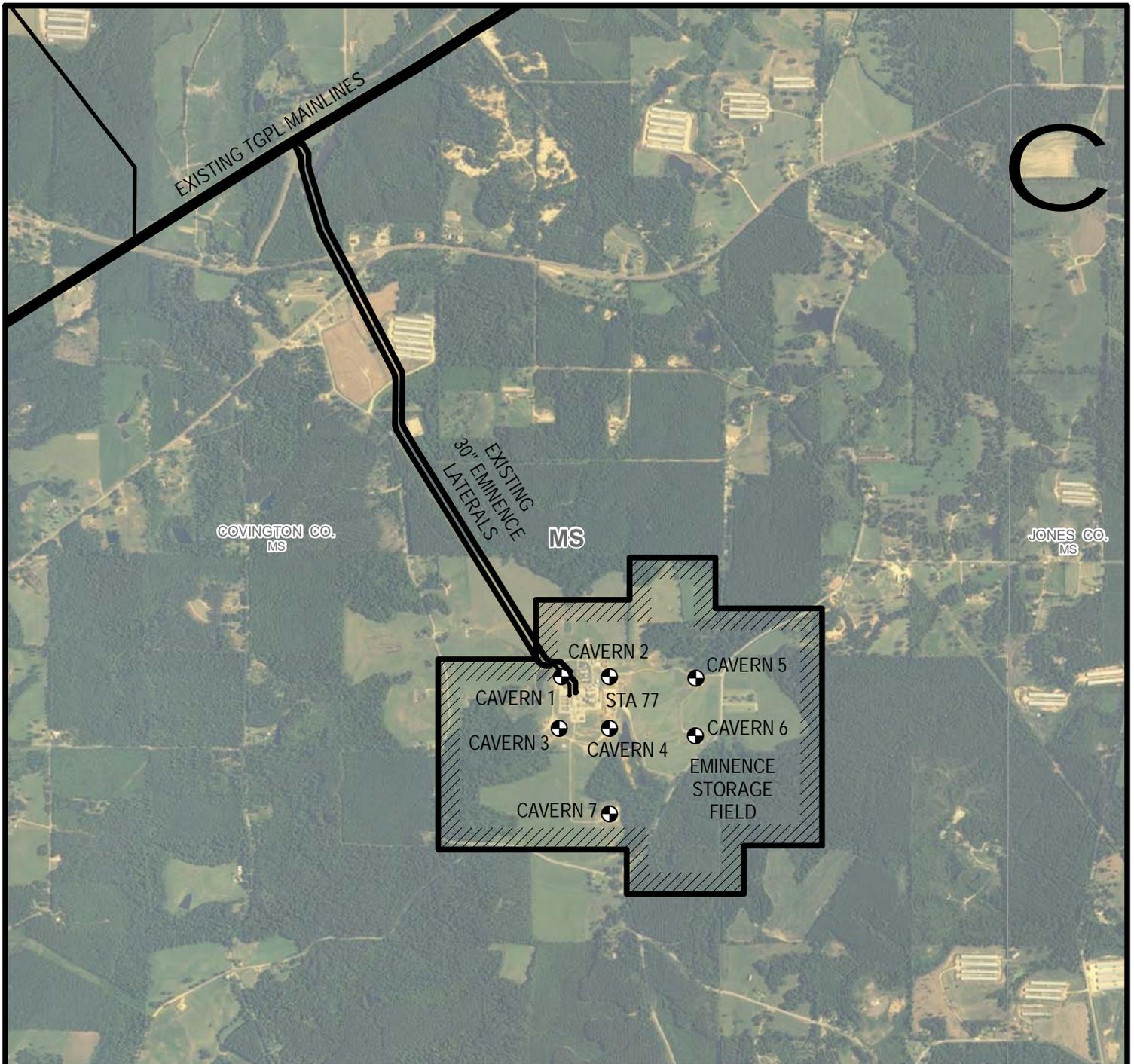
LEGEND:

- EXISTING CAVERN WELL SITES
- FEE PROPERTY

DRAWING NO.	REFERENCE TITLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  
 CAVERN LOCATION MAP  
 LOCATION OF FACILITIES  
 EMINENCE STORAGE FIELD  
 COVINGTON COUNTY, MISSISSIPPI

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: RMD	DATE: 06-07-2011	ISSUED FOR BID:	SCALE: 1"=2000'
							CHECKED BY: TAG	DATE: 07-29-2011	ISSUED FOR CONSTRUCTION:	
							APPROVED BY: MJK	DATE: 07-29-2011	NUMBER: 24-4166-30/008450	SHEET 1
							WO: 1093657	UNIV. ID:	K:\2011 Misc Drawings\Atlanta Division\Eminence Location Map\	OF 1



NOTE:  
 BASE FROM WORLD IMAGERY MAP SERVICE  
 BY ESRI (DEC 12, 2009)



LEGEND:

-  EXISTING CAVERN WELL SITES
-  FEE PROPERTY

DRAWING NO.	REFERENCE TITLE	TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC  AERIAL PHOTOGRAPHY MAP EMINENCE STORAGE FIELD COVINGTON COUNTY, MISSISSIPPI	
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NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY: RMD	DATE: 06-07-2011	ISSUED FOR BID:	SCALE: 1"=2000'
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							APPROVED BY: MJK	DATE: 07-29-2011	NUMBER: 24-4166-30/008450	SHEET 1
							WO: 1093657	UNIV. ID:	K:\2011 Misc Drawings\Atlanta Division\Eminence Location Map\	OF 1

**Attachment 2**  
**USFWS Correspondence**

**From:** Canneto, Frank  
**Sent:** Monday, March 14, 2011 8:55 AM  
**To:** Simmons, Brent  
**Subject:** FW: Eminence Cavern Work

**Importance:** High

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**From:** David\_Felder@fws.gov [mailto:David\_Felder@fws.gov]  
**Sent:** Saturday, January 29, 2011 8:19 AM  
**To:** Canneto, Frank  
**Subject:** Re: Eminence Cavern Work

Frank,

The Fish and Wildlife Service has reviewed your electronic mail dated January 28th, 2011 regarding the Eminence Cavern Work in Covington County, Mississippi. Six gopher tortoise burrows were discovered in the vicinity of the proposed project activities. However, Transco is proposing conservation measures to avoid and minimize impacts to these burrows and the gopher tortoises that may be present. Such measures including keeping a minimum 25 foot buffer between work activities and burrows, installation of excusion fencing (silt screen) between burrows and work activities, as well as educating personnel about the gopher tortoise and it's habitat.

Based on this information, the Service has determined that the proposed Eminence Cavern Project "may affect, but is not likely to adversely affect" the gopher tortoise.

Please contact this office if gopher tortoises are discovered within the work areas of the project or if additional work is needed within the 25 foot tortoise burrow buffer zone.

Thanks  
David Felder

-----"Canneto, Frank" <[Frank.Canneto@Williams.com](mailto:Frank.Canneto@Williams.com)> wrote: -----

To: "[david\\_felder@fws.gov](mailto:david_felder@fws.gov)" <[david\\_felder@fws.gov](mailto:david_felder@fws.gov)>  
From: "Canneto, Frank" <[Frank.Canneto@Williams.com](mailto:Frank.Canneto@Williams.com)>  
Date: 01/28/2011 02:15PM  
Subject: Eminence Cavern Work

Mr. Felder,

As you know from our conversations over the past two weeks, Transco has experienced a leak at the Station 77, Eminence natural gas cavern storage facility in Covington County, Mississippi. The event began shortly after Christmas, as the emergency activities subsided, Transco employed Perennial Environmental Services and Mr. Wendell Neal, ESACS, inc. to perform a survey for Gopher Tortoises across the entire 450 acre property and some surrounding tracts.

Transco has been engaged in a variety of activities including drilling small wells to release gas from the soil that escaped from the formation below across the property as well as working on the caverns located in the main plant area. Transco began training all personnel regarding Gopher Tortoises (GT) on 1/20 and will continue to do so as new workers come to the site. At this time nearly 70 individuals have received the training.

A total of 31 potential GT burrows were found during the initial survey, done from 1/20 to 1/24. A subsequent survey conducted by Mr. Wendell Neal on 1/27, determined that only 6 of these were GT burrows.

These burrows are currently being protected with silt fence (except the ones in forested areas) and Transco will maintain a radius of 25 feet no work exclusion area around them.

At this point Transco does not feel that work will have to take place within 25 feet of these 6 burrows. Please find the attached map showing the locations of these burrows.

Transco requests concurrence from the US Fish and Wildlife Service for the cavern relief activities at the Station 77 Eminence Cavern Storage facility.

Thank You Very Much for all your assistance in this matter, we appreciate your time, effort, and information regarding the gopher tortoise.

Transco will follow up with full survey reports.

Frank Canneto  
Williams-Transco  
2800 Post Oak Boulevard  
Houston, Texas 77056

[attachment "AERIAL.BURROWS.pdf" removed by David Felder/R4/FWS/DOI]



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Mississippi Field Office  
6578 Dogwood View Parkway, Suite A  
Jackson, Mississippi 39213

December 14, 2010

Mr. Frank Canneto  
Williams Gas Pipeline  
Post Office Box 1396  
Houston, Texas 77251-1396

Dear Mr. Canneto:

The Fish and Wildlife Service (Service) has received your letter dated December 1, 2010, requesting a Blanket Clearance Agreement including gas pipeline maintenance and repair activities for several counties in Mississippi. Transcontinental Gas Pipe Line Corporation is requesting an agreement for certain activities that have historically had no direct impact on federally listed species. Our comments are submitted in accordance with the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Although these clearance agreements are limited to those areas that are previously disturbed right-of-way (ROW), occur within an established fenced facility, or include little or no earth disturbing activities, the following counties have federally listed species that could be affected by habitat disturbing activities:

Adams, Amite, Attala, Claiborne, Clarke, Copiah, Covington, Forrest, Franklin, George, Greene, Hancock, Harrison, Hinds, Holmes, Humphreys, Issaquena, Jackson, Jasper, Jefferson, Jefferson Davis, Jones, Lamar, Lauderdale, Lawrence, Leake, Lincoln, Madison, Marion, Neshoba, Newton, Pearl River, Perry, Pike, Rankin, Scott, Sharkey, Simpson, Smith, Stone, Walthall, Warren, Washington, Wayne, Wilkinson, and Yazoo Counties

The threatened Louisiana black bear (*Ursus a. luteolus*) occurs primarily in bottomland hardwood and floodplain forests along the Mississippi River and the southern part of the state. Although the bear is capable of surviving under a range of habitat types, some necessary habitat requirements include hard mast, soft mast, escape cover, denning sites, forested corridors, and limited human access. Forest management practices, agricultural, commercial and industrial development, and highways can cause adverse impacts to bear habitat by increasing human disturbance, fragmenting forests, and removing den trees.

Amite, Copiah, Forrest, Franklin, George, Greene, Harrison, Jackson, Jasper, Jefferson, Jones, Lamar, Lincoln, Newton, Noxubee, Oktibbeha, Pearl River, Perry, Scott, Smith, Stone, Wayne, Wilkinson, Winston, and Yalobusha Counties

The endangered red-cockaded woodpecker (*Picoides borealis*) excavates nesting cavities in mature pine trees (60+ years old). A mated pair of birds and all helper birds forms a clan. A cluster of cavity trees where the clan nests and roosts is called a colony. All cavity trees, active and inactive, are important to the colony and should therefore be avoided. Also, older (30+ years) pine stands within a half-mile of a colony should be considered foraging habitats and should not be disturbed.

Clarke, Covington, Forrest, George, Greene, Hancock, Harrison, Jackson, Jasper, Jefferson Davis, Jones, Lamar, Marion, Pearl River, Perry, Smith, Stone, Walthall, and Wayne Counties

The threatened gopher tortoise (*Gopherus polyphemus*) occupies a wide range of upland habitat types. The general physical and biotic features thought to characterize suitable adult tortoise habitat are a presence of well-drained, sandy soils, which allow easy burrowing; an abundance of herbaceous ground cover; and generally open canopy and sparse shrub cover, which allows sunlight to reach the ground floor. The gopher tortoise digs a burrow used as a shelter and nesting area. Groups of these tortoises dig burrows in the same location forming a colony.

Forrest, George, Greene, Harrison, Jackson, Jones, Lamar, Lauderdale, Marion, Pearl River, Perry, Stone, Walthall, and Wayne Counties

The black pine snake (*Pituophis melanoleucus ssp. lodingi*), a Candidate Species, prefers uplands with well-drained sandy soils in areas of longleaf pine and hardwood tree species. Candidates are those species currently under review for possible addition to the federal listed of threatened or endangered species. All efforts should be made to avoid harm or harassment to this species.

Alcorn, Chickasaw, Clay, Kemper, Lee, Lowndes, Monroe, Noxubee, Oktibbeha, Pontotoc, Prentiss, and Union Counties

The threatened plant Price's potato bean (*Apios priceana*) is an herbaceous, twining vine that belongs to the pea family. It is often found in wooded areas that grade into creek and river bottoms.

Surveys need to be conducted when species is in flower or fruit, typically mid-July into October. It is best to confirm flowering/fruitletting of the species at a nearby known site prior to initiating surveys.

Forrest, George, Greene, Hancock, Harrison, Jackson, Jones, Pearl River, Perry, Stone, and Wayne Counties

The endangered plant Louisiana quillwort (*Isoetes louisianensis*) is a nonflowering grasslike plant that lives in water or in very wet habitats. Mature plants are six to ten inches long, mostly evergreen, with spore-bearing structures below ground.

Surveys need to be conducted during the appropriate field season when the plants are visible, typically November into May. Timing varies depending upon rainfall, as plants completely dieback and are not visible when the intermittent streams, which are habitat for this species, have dried-up.

Bolivar, Coahoma, Holmes, Humphreys, Issaquena, Leflore, Quitman, Sharkey, Sunflower, Tallahatchie, Tunica, Warren, Washington, and Yazoo Counties

The endangered plant pondberry (*Lindera melissifolia*) is a member of the Lauraceae family and is a deciduous aromatic shrub that averages 0.5 to 2 meters tall. It occurs in seasonally flooded wetlands, sandy sinks, pond margins, and swampy depressions.

It is best to conduct surveys for this species during the flowering season, when the species is highly visible (February to March); however surveys are still possible later in the season following leaf-out and into the fruiting season (late summer-fall). Since pondberry is a deciduous shrub, it is necessary that a nearby known site be visited prior to initiating any surveys, to confirm adequate visibility of the species for a determination of its presence or absence at a project site.

Adams, Bolivar, Claiborne, Coahoma, DeSoto, Issaquena, Jefferson, Tunica, Warren, Washington, and Wilkinson Counties

The endangered interior least tern (*Sterna antillarum*) migrates up the Mississippi River and lays its eggs directly on the sandbars associated with the river. Hundreds of these birds may nest together to form a colony. The breeding season for terns is approximately May through July. Avoidance of these areas during the above time would prevent adverse impacts to this species.

The endangered fat pocketbook mussel (*Potamilus capax*) is found in the Mississippi River and associated tributaries. It is a broad, rounded, and slightly angular mussel with a smooth, yellowish exterior color that is frequently clouded with brown. Fat pocketbooks occur primarily in sand and mud substrates, although the species has been found in fine gravel and hard clay occasionally. Water depth ranges from a few inches to several feet. The fish host for this species is primarily freshwater drum.

Adams, Bolivar, Claiborne, Coahoma, DeSoto, Issaquena, Jefferson, Tunica, Warren, Washington, Wilkinson, and Yazoo Counties

The endangered pallid sturgeon (*Scaphirhynchus albus*) is found in the lower Mississippi River, although it is rare throughout its range. These fish require large, turbid, free-flowing riverine habitats, and feed mainly on aquatic invertebrates and other small fish. They are usually found near the bottom of streams or rivers on sand flats or gravel bars. Little information is known on spawning or migration habits of these fish, although spawning likely occurs in the spring and summer months.

Claiborne, Copiah, and Hinds Counties

The threatened Bayou darter (*Etheostoma rubrum*) is found only in Bayou Pierre and its tributaries: White Oak Creek, Foster Creek, and Turkey Creek. The darter prefers stable gravel riffles or sandstone exposures with large sized gravel or rock. Habitat loss or degradation has

been a major contributor to the reduction in bayou darter numbers.

Clarke, Forrest, George, Greene, Jackson, Jones, Perry, Stone, and Wayne Counties

The threatened yellow-blotched map turtle (*Graptemys flavimaculata*) is found in the Chickasawhay, Leaf, and Pascagoula Rivers. The yellow-blotched map turtle prefers river stretches with moderate currents, abundant basking sites, and sand bars. Stream modification has significantly contributed to the decline of the species.

Copiah, Hinds, Lawrence, Leake, Madison, Marion, Neshoba, Pearl River, Rankin, Scott, and Simpson Counties

The threatened ringed map turtle (*Graptemys oculifera*) is found in the Pearl River. It prefers river stretches with moderate currents, abundant basking sites, and sand bars for nesting. Stream modification in the Pearl River, such as flood control and urban development, has significantly contributed to the decline of the species. Also, water quality degradation has posed a serious problem for the turtle.

Clarke, Copiah, Forrest, George, Greene, Hancock, Harrison, Hinds, Jackson, Jones, Lawrence, Marion, Pearl River, Perry, Pike, Rankin, Simpson, and Wayne Counties

The threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*) is found in the Pearl, Leaf, and Pascagoula Rivers. Gulf sturgeons are primitive, anadromous fish that annually migrate from the Gulf of Mexico into freshwater streams to spawn. Subadults and adults spend eight to nine months each year in rivers. Although Gulf sturgeon activity is not well documented, the species has been found in the upper reaches of the Pearl, Leaf, Strong, Bouie, and Chickasawhay Rivers as far north as the Jackson metropolitan area. Adult and subadult holding areas have been identified in the Pascagoula River. The decline of the Gulf sturgeon is primarily due to limited access to migration routes and historic spawning areas, habitat modification, and water quality degradation.

Itawamba, Lowndes, and Monroe Counties

Seven federally listed mussel species are found within top bank of the Tombigbee, Luxapallila, and Buttahatchie Rivers, and Bull Mountain Creek. The endangered heavy pigtoe mussel (*Pleurobema taitianum*), the endangered southern combshell mussel (*Epioblasma penita*), the endangered southern clubshell mussel (*Pleurobema decisum*), the endangered ovate clubshell mussel (*Pleurobema perovatum*), and the endangered black clubshell mussel (*Pleurobema curtum*), the threatened Alabama moccasinshell (*Medionidus acutissimus*), and the threatened orange-nacre mucket (*Lampsilis perovalis*) require clean, swiftly moving waters with pools and riffles. Work activities that increase sedimentation and water turbidity could have adverse impacts on these species. Also, be advised that in stream activities can affect aquatic habitats up and downstream.

Tishomingo County

Two species of endangered bats, the gray bat (*Myotis grisescens*) and the Indiana bat (*Myotis sodalis*), are historical residents in this county. Activities that impact forested areas or areas with caves could adversely affect these species.

The endangered Cumberlandian combshell mussel (*Epioblasma brevidens*) and the Candidate Species slabside pearlymussel (*Lexingonia dolabelloides*) are found in the Bear Creek watershed. Work activities that increase sedimentation and water turbidity could have adverse impacts on these species.

Claiborne, Hinds, Madison, Tishomingo, Warren and Yazoo Counties

The rabbitsfoot mussel (*Quadrula cylindrica cylindrica*), a Candidate Species, is an historical resident of the Bear Creek, Big Sunflower River, and Big Black River watersheds. Population declines can be attributed to water-quality degradation, loss of stable substrates, sedimentation, channelization, gravel mining, dredging, impoundments, and competition of exotic mussel species.

Clarke, Copiah, Covington, Forrest, George, Hancock, Hinds, Jackson, Jones, Lawrence, Marion, Perry, Scott, Simpson, and Wayne Counties

The pearl darter (*Percina aurora*), a Candidate Species historically found in the Pearl and Pascagoula River systems, is currently found only in the Pascagoula River system. There is potential for re-discovery of the species in certain areas of the Pearl River system. The darter prefers stable gravel riffles or sandstone exposures with large sized gravel or rock. Habitat loss or degradation has been a major contributor to the reduction in pearl darter numbers. Candidates are those species currently under review for possible addition to the federal listed of threatened or endangered species. All efforts should be made to avoid harm or harassment to this species.

Hancock, Harrison, and Jackson Counties

The threatened piping Plover (*Charadrius melodus*) does not nest in Mississippi but winters along the coastal beaches and barrier islands. These feeding areas have been threatened by urban development. Hence, Critical Habitat has been designated along several areas of the Mississippi Gulf Coast.

There are five species of endangered sea turtles that inhabit the Gulf of Mexico waters along the Mississippi coast: the leatherback (*Dermochelys coriacea*), the loggerhead (*Caretta caretta*), the green (*Chelonia mydas*), the hawksbill (*Eretmochelys imbricata*), and the Atlantic ridley (*Lepidochelys kempi*). Although these are predominantly marine animals, they can come ashore to nest on the beaches of the barrier islands. Mortality due to fishing nets and trawls, ingestion of inedible objects, and nest predation has reduced these species numbers.

The endangered West Indian manatee (*Trichechus manatus*) is an aquatic mammal that occurs in rivers, estuaries, and coastal areas of the Gulf of Mexico. The manatee is an occasional/accidental visitor to Mississippi.

Forrest, Harrison, Jackson, and Perry Counties

The endangered Mississippi gopher frog (*Rana capito sevosa*) historically was found along the Mississippi and Louisiana Gulf coast; however, only small populations remain in Harrison and Jackson Counties. Mississippi gopher frog habitat includes both upland sandy sites historically forested with longleaf pine and isolated temporary wetland breeding sites embedded within the

forested landscape. Adult and subadult Mississippi gopher frogs spend the majority of their lives underground. Breeding sites are small, relatively shallow, isolated, depressional ponds (not connected to any other water body) that dry completely on a cyclic basis. Emergent herbaceous vegetation is important for egg attachment. The dominant source of water to the ponds is rainfall within small, localized watersheds.

#### Harrison and Jackson Counties

The endangered Alabama red-bellied turtle (*Pseudemys alabamensis*) is found in the lower Pascagoula River and its tributaries: Bluff Creek and the Escatawpa River. It is also found in Old Fort Bayou, the Tchoutacabouffa River, the Biloxi River, and the Back Bay of Biloxi. Destruction of nesting areas along riverbanks and feeding areas of submerged aquatic vegetation and reduced water quality have impacted this species.

#### Hancock and Pearl River Counties

The threatened inflated heelsplitter mussel (*Potamilus inflatus*) is found in the lower Pearl River basin. It inhabits areas with moderate to swift currents, and prefers riffle or shoal areas with stable bottoms composed of sandy gravel or firm mud gravel and cobble. Work activities that increase sedimentation and water turbidity, or alter stream flows could have adverse impacts on this species.

#### Prentiss and Tishomingo Counties

The endangered Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*) is a medium sized butterfly with an overall rich brown color. A distinctive series of orange-ringed black circular eyespots with silvery centers are located on the lower surfaces of both pairs of wings.

This butterfly is one of the most geographically restricted eastern butterflies. It is restricted to wetlands where low nutrient systems receive carbonate-rich ground water from seeps and springs. In Mississippi, Mitchell's satyr has been found in wetlands created by beaver dams and in wetlands formed by road culverts.

The greatest threat to the Mitchell's satyr is habitat destruction caused by draining and filling of wetlands, invasion from exotic weeds, and contamination of wetlands by pesticides, fertilizer, and nutrient runoff from adjacent agriculture.

#### Jackson County

The endangered Mississippi Sandhill Crane (*Grus canadensis pulla*) is found only in a small area west of the Pascagoula River in Jackson County. Critical Habitat has been established on and adjacent to the Mississippi Sandhill Crane National Wildlife Refuge.

#### Statewide

Although the bald eagle (*Haliaeetus leucocephalus*) was officially removed from the List of Endangered and Threatened Species as of August 8, 2007, it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act (BGEPA).

Bald eagles nest in Mississippi from December through mid-May in mature trees (e.g., bald cypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water. Nest sites typically include at least one perch with a clear view of the water or area where the eagles usually forage. Bald eagles are vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding.

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute “disturbance,” which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at

<http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>.

Please be advised that these certifications will expire in January 2012, and only covers counties in Mississippi. If you have any additional questions, please feel free to contact this office, telephone: (601) 321-1132.

Sincerely,

A handwritten signature in blue ink that reads "Kathryn Luncyford". The signature is written in a cursive style.

*for* Stephen M. Ricks  
Field Supervisor

**Attachment 3**

**Mississippi Department of Archives and History Correspondence**



PO Box 571, Jackson, MS 39205-0571  
601-576-6850 • Fax 601-576-6975  
mdah.state.ms.us  
*H.T. Holmes, Director*

February 17, 2010

Mr. James D. Bloemker  
Senior Archaeologist  
Williams Gas Pipeline  
P.O. Box 1396  
Houston, Texas 77251-1396

RE: Proposed Categorical Exemption Renewal for Williams Gas Pipeline Projects,  
MDAH Project Log #01-141-10, Multiple Counties

Dear Mr. Bloemker:

We have reviewed your request to renew the Categorical Exemption for certain Williams Gas Pipeline projects, received on January 27, 2010, for the above referenced project in accordance with our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800. After reviewing the information provided, we have no objection with the proposed exemptions, with one exception: in item #8, reference is made to bridges that "appear to be historic." It is our recommendation that prior to any work associated with strengthening or otherwise altering bridges, TGPL should provide photo(s) and other relevant information on the affected bridge(s) to the SHPO in order to make an assessment of National Register-eligibility and effect.

If you have any questions, please do not hesitate to contact us at (601) 576-6940.

Sincerely,

  
For: Jim Woodrick

Review and Compliance Officer

FOR: H.T. Holmes  
State Historic Preservation Office



**GAS PIPELINE - Transco**  
2800 Post Oak Boulevard (77056)  
P.O. Box 1396  
Houston, Texas 77251-1396  
713/215-2000

February 23, 2010

Mr. Jim Woodrick  
Review and Compliance Officer  
MS Dept. of Archives and History  
618 East Pearl Street  
Jackson, MS 39201

Re: Williams Gas Pipeline – Transco (Transco)  
Categorical Exemption Renewal  
MDAH Project Log #01-141-10, Multiple Counties

Dear Mr. Woodrick:

I am in receipt of your February 17, 2010 letter in which you acknowledge your concurrence with our proposed categories of exemption except in one case: that being item #8. Item #8 has to do with the use of existing access roads and the potential for having to strengthen bridges on existing access roads. It is the MDAH's recommendation that affected bridges be photographed and submitted to the MDAH for their evaluation to make an assessment on their National Register eligibility. Transco, of course, will comply with the MDAH's recommendation.

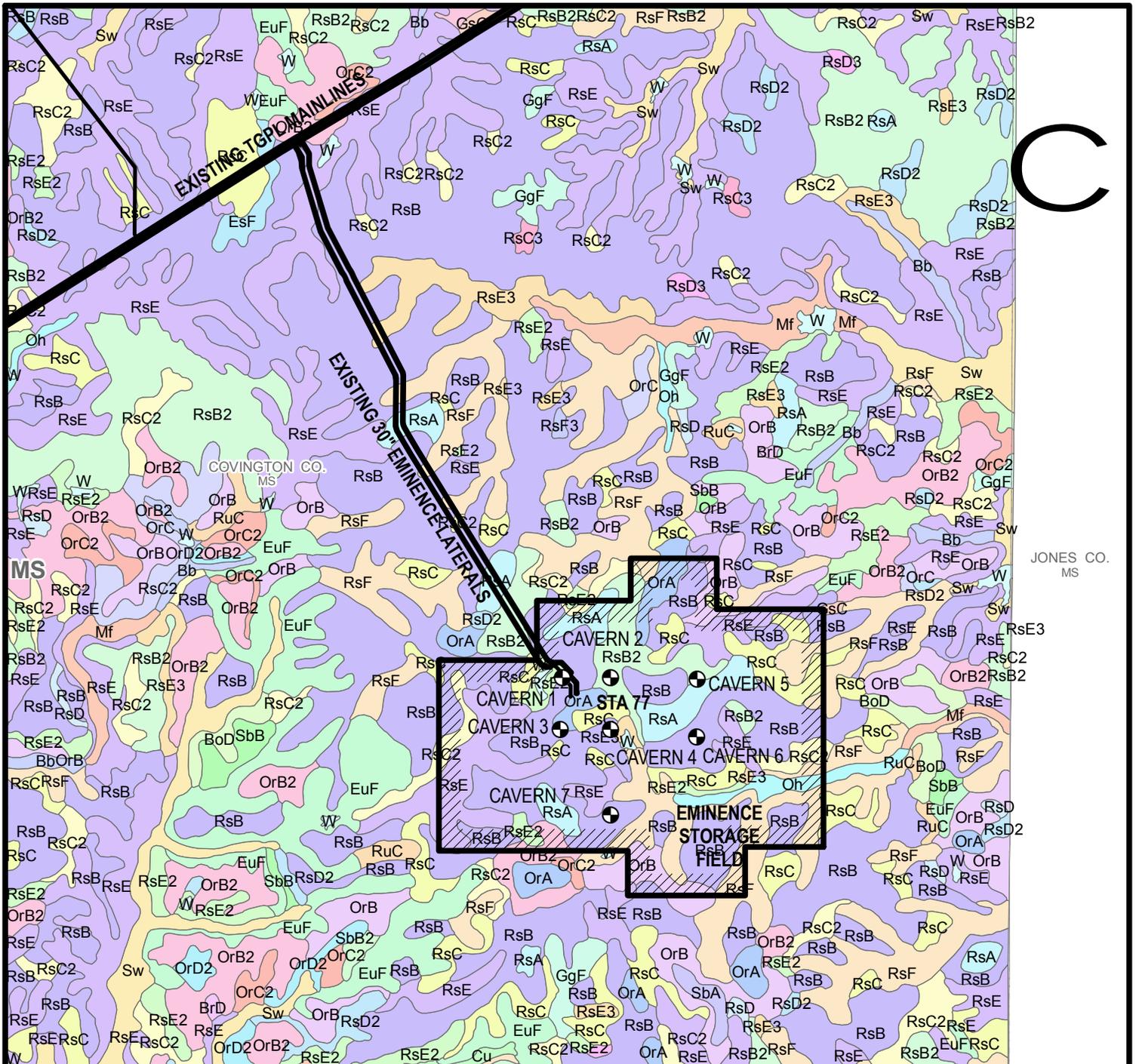
Sincerely,

A handwritten signature in blue ink that reads "James D. Bloemker". The signature is fluid and cursive, with a large loop at the beginning of the first name.

James D. Bloemker, MS, RPA  
Senior Archaeologist

**Attachment 4**

**Soils Map**



C

NOTE:  
 BASE FROM USDA NRCS SSURGO  
 COVINGTON COUNTY, MISSISSIPPI (MS031)



LEGEND:

- EXISTING CAVERN WELL SITES
- FEE PROPERTY

DRAWING NO.	REFERENCE TITLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

SOIL ASSOCIATION MAP  
 EMINENCE STORAGE FIELD  
 COVINGTON COUNTY, MISSISSIPPI

NO.	DATE	BY	REVISION DESCRIPTION	W.O. NO.	CHK.	APP.	DRAWN BY:	DATE:	ISSUED FOR BID:	SCALE:
							RMD	06-07-2011		1"=2000'
							TAG	07-29-2011	ISSUED FOR CONSTRUCTION:	
							MJK	07-29-2011	NUMBER: 24-4166-30/008450	SHEET 1
							1093657	UNIV. ID.	K:\2011 Misc Drawings\Atlanta Division\Eminence Location Map\	OF 1

Document Content(s)

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