Office of the People's Counsel
District of Columbia
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July 24, 2009

Elizabeth A. Noël
People's Counsel

VIA ELECTRONIC FILING

Dorothy Wideman
Commission Secretary
Public Service Commission
of the District of Columbia
1333 H Street, N.W.
Second Floor West
Washington, D.C. 20005

Re: **Formal Case No. 1027, In The Matter of The Emergency Petition of the Office of the People's Counsel for An Expedited Investigation of the Distribution System of Washington Gas Light Company, et al.**

Dear Ms. Wideman:

Enclosed you will find the Office of the People's Counsel's Rebuttal Testimony and Exhibits in the above-referenced matters.

If you have any questions, please call me at (202) 727-3071.

Sincerely yours,

Jennifer L. Weberski
Assistant People's Counsel

Enclosure

cc: Parties of record

BEFORE THE
PUBLIC SERVICE COMMISSION
OF THE DISTRICT OF COLUMBIA

In the Matter of	)	
	)	
The Emergency Petition of	)	**Formal Case No. 1027**
The Office of the People's Counsel	)	
For An Expedited Investigation of the	)	
Distribution System of Washington Gas	)	
Light Company	)	

REBUTTAL TESTIMONY AND EXHIBITS OF THE OFFICE OF THE PEOPLE'S COUNSEL

VOLUME 1 of 1

HUDSON RIVER ENERGY GROUP **EXHIBIT OPC (2A)**

OFFICE OF THE PEOPLE'S COUNSEL
OF THE DISTRICT OF COLUMBIA
1133 Fifteenth Street, N.W.
Suite 500
Washington, DC 20005
(202) 727-3071

JULY 24, 2009

BEFORE THE
PUBLIC SERVICE COMMISSION
OF THE DISTRICT OF COLUMBIA

In the Matter of	)	
	)	
The Emergency Petition of	)	**Formal Case No. 1027**
The Office of the People's Counsel	)	
For An Expedited Investigation of the	)	
Distribution System of Washington Gas	)	
Light Company	)	

REBUTTAL TESTIMONY AND EXHIBITS OF HUDSON RIVER ENERGY GROUP EXHIBIT OPC (2A)

ON BEHALF OF
THE OFFICE OF THE PEOPLE'S COUNSEL

JULY 24, 2009

REBUTTAL TESTIMONY OF HUDSON RIVER ENERGY GROUP

I. INTRODUCTION

Q. PLEASE STATE YOUR INDIVIDUAL NAMES AND BUSINESS ADDRESSES.

A. (Radigan)

My name is Frank W. Radigan. My business address is 237 Schoolhouse Road, Albany NY 12223.

(Gawronski)

My name is John E. Gawronski. My business address is 2079 County Route 47, Salem NY 12865.

(Teumim)

My name is Phillip S. Teumim. My business address is 37 Ruxton Road, Delmar NY 12054.

Q. ARE YOU PRESENTING TESTIMONY INDIVIDUALLY OR COLLECTIVELY?

A. Collectively, under the heading Hudson River Energy Group ("HREG").

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PROCEEDING?

A. Yes. HREG submitted direct testimony on behalf of the Office of People's Counsel on May 29, 2009.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF THIS REBUTTAL TESTIMONY?

A. HREG will rebut certain statements and comments made by Washington Gas Light Company's ("WGL") witnesses Staebler and Buckley in their direct testimony filed in this proceeding on May 29, 2009. The Rebuttal Testimony will also address certain statements made by WGL in public documents since the filing of the Direct Testimony.

Q. WAS THIS TESTIMONY PREPARED BY HREG?

A. Yes, it was.

Q. HAS HREG PREPARED ANY EXHIBITS TO SUPPORT THIS TESTIMONY?

A. Yes. Attached is one exhibit, Exhibit OPC (2A)-1.

III. ISSUES

Q. PLEASE SUMMARIZE THE ISSUES THAT WILL BE ADDRESSED IN THIS REBUTTAL TESTIMONY.

A. HREG will address the following issues:

1. WGL's long-term goal of eliminating the Gardiner Road hexane plant.
2. The experience of the Long Island Lighting Company ("LILCO") with leaking compression couplings.
3. The safety threat posed by WGL's compromised couplings and the code requirements related thereto.
4. The acknowledged vulnerability of certain vintages of couplings.

5. WGL's strategy before the Federal Energy Regulatory Commission ("FERC").

6. The cost of replacing the compromised couplings.

Q. WHAT ARE WGL'S PLANS FOR THE GARDINER ROAD HEXANE PLANT?

A. For the first time, WGL has indicated that hexane injection is not a permanent solution to the leaking coupling problem. Witness Staebler states that the Company's goal is to replace and encapsulate enough mechanically coupled pipe in the area served by the Gardiner Road Gate State to retire the hexane facilities at that station within approximately 10 to 15 years. (See, Staebler Direct, p. 18:2 – 11).

Q. DOES HREG AGREE WITH THOSE PLANS?

A. HREG agrees with the ultimate goal and are encouraged by WGL's acknowledgement that hexane is not a permanent solution. We are unable to comment further, as the Company's plan has not been fully developed and submitted for review. In response to OPC Data Request No. 6-12(a), which asked for the full project description, cost estimate and schedule, WGL provided a one-paragraph, high level summary of a "proposed" plan.

Q. DOES WGL PLAN TO ELIMINATE THE HEXANE INJCETION FACILITIES AT THE OTHER TWO STATIONS FEEDING THE DISTRICT OF COLUMBIA?

A. No. The Company's response to OPC Data Request No. 6-12(b) states that it has no such plans at this time.

Q. DOES HREG AGREE WITH THAT APPROACH?

A. No. In the same way that hexane is not a permanent solution to the leaking coupling problem in the piping served by the Gardiner Road Station, it is not a permanent solution to the leaking coupling problem in the piping served by the other two gate stations. WGL should develop plans to replace and encapsulate compromised couplings behind those gate stations, with a goal of eliminating the hexane facilities at those stations as well.

Q. IS HREG FAMILIAR WITH LILCO'S EXPERIENCE WITH LEAKING MECHANICAL COUPLINGS ON SERVICE LINES IN THE EARLY 1990's, AS REFERRED TO IN WGL'S DATA REQUEST NO. 1-10 TO OPC ?

A. (Teumim and Gawronski) Yes, we are.

Q. IS LILCO'S EXPERIENCE RELEVANT TO THIS PROCEEDING?

A. Yes, the LILCO experience is instructive in the proper way for a utility to respond to a safety issue such as this. When LILCO identified a safety problem associated with widespread leaking in mechanical couplings, it investigated the problems and brought them to the attention of the regulator, the New York Public Service Commission ("NY PSC"). Rather than spend years in denial of the problem, LILCO consulted extensively with NY PSC staff and implemented a program to replace all the mechanical couplings on its system, some 45,000, within a short period of time (approximately 2 years). In contrast, it has been 6 years since leaks associated with WGL's mechanical couplings were reported, and the Company still has not put forth a permanent solution.

Q. IS HREG FAMILIAR WITH WGL'S STRATEGY AND APPROACH BEFORE FERC?

A. Yes, we are.

Q. WHAT IS HREG's OPINION OF THAT STRATEGY?

A. HREG is not opposed to WGL's specific actions before FERC, but there is a concern that it has been pursuing a "long shot" strategy. In the most basic terms, FERC has been telling WGL to fix its system, and WGL has been telling FERC "It's not our fault, make them stop vaporizing LNG," while facing a future which, by WGL's own admission, is potentially unmanageable. While HREG is not addressing the proper strategy before FERC, we agree that WGL needs to fix its system.

Q. HAS WGL SOLVED ITS LEAKING COUPLING PROBLEM?

A. WGL has managed some success in reducing coupling leak rates, but coupling leaks persist and continue to pose a higher threat than normal. This higher threat of coupling leak rates will continue and can be expected to do so until WGL identifies precisely as possible the set of couplings more prone to higher leak rates, establishes priorities for their replacement, and implements a program to eliminate these couplings from its system.

Q. HAS WGL ACKNOWLEDGED VULNERABILITY AMONG CERTAIN VINTAGES OF COUPLINGS?

A. WGL has recently provided some information, in its testimony and responses to data requests, concerning vintages of coupled main and services that are more susceptible to leaks. (Staebler Direct, p. 16; Responses to OPC Data Request

Nos. 6-3, 6-4, 6-7) While we may argue over the cause and responsibility of coupling leaks, the vulnerability to coupling leaks is certain, and the number of leaks is highest in the Northeast and Southeast parts of the District. WGL indicated its leak rates are highest for its 1962-65 and 1952-56 vintage coupled mains and service lines. Further, WGL admits to having 25.86 miles of such highly vulnerable coupled main and 3,455 vintage mechanically coupled services in the District. The data WGL supplied indicated it had experienced 135 vintage-coupled pipe leaks over the 2003-2008 timeframe, a period less than six years. This is .87 leaks per mile, and is more than twice as high as WGL's historic leak rate of .41 leaks per mile. The leakage rate of .87 leaks per mile is obtained from the following: 135 leaks per 6 years yields a leak rate of 22.5 vintage pipe coupled leaks per year, divided by 25.86 miles of vintage pipe, yielding a leak rate of .87 vintage pipe-coupling leaks per mile.

Q. HAS WGL DETERMINED WHY THESE VINTAGES OF COUPLED MAIN AND SERVICE LINES HAVE EXPERIENCED THE HIGHEST LEVELS OF LEAKS?

A. WGL states that it is ... *not aware of any information, test results, or data that would explain why the leak rates are higher with these vintages.* (See, Response to OPC Data Request No. 6-3) If WGL has been unable to determine the root cause of why certain vintages of coupled pipe are more susceptible to leaks, we can prudently be concerned that other vintages may begin to experience similar leakage problems.

Q. HAVE WGL'S ACTIONS BEEN SUFFICIENT TO ADDRESS ITS LEAKING COUPLING THREAT?

A. Federal Code 49 CFR 192.613 (a) requires that, **WGL have a procedure for continuing surveillance of its facilities to determine and take appropriate action concerning changes in** class location, **failures, leakage history**, corrosion, substantial changes in cathodic protection requirements, **and other unusual operating and maintenance conditions.** Further, 49 CFR 192.613 (b) requires: **If a segment of pipeline is determined to be in unsatisfactory condition but no immediate hazard exists, WGL shall initiate a program to recondition or phase out the segment involved, or....reduce the maximum allowable operating pressure.** (Emphasis added)

WGL knows and has known it has couplings vulnerable to leaks. The safety code requirements detailed above requires WGL to recondition or phase out segments vulnerable to leaks. It has not done so to date. WGL has identified leaks of pipe segments (in this case coupling leaks), and in fact identified pipe vintages with the highest susceptibility to additional leaks. WGL's consultant studies have indicated hexane injections will not stop leaks, but merely slow down the leakage rates. WGL should be required to implement a pipe replacement program beginning with its known pipe vintages susceptible to leaks and replace these as soon as possible. It is long overdue for WGL to address the safety threat from its couplings, and implement a replacement program.

Additionally, the safety code requires WGL to have in place a written emergency response plan that addresses specific actions WGL will take to address its leaking coupling problem that it acknowledges is "potentially unmanageable."

Q. HAS WGL ACKNOWLEDGED THAT ITS CONTINUING LEAKING COUPLING PROBLEM MAY BECOME POTENTIALLY UNMANAGEABLE?

A. Yes. WGL witness Douglas Staebler's testimony states that if the leakage rate experienced in the Reintroduction Area "... were to be extended to those areas of the Washington Gas system expected to receive Cove Point gas through the Rockville and Dranesville gate stations, Washington Gas calculates that there would be an additional 5,000 leaks system wide per year. The Company would likely find this level of additional leakage to be potentially unmanageable." (Staebler Direct, pp. 12:23 – 13:3). WGL further indicated that it has approximately 3500 miles of coupled pipe in the areas of Virginia and Maryland, and that it would expect to experience an increase in its leaks per mile of coupled pipe to 1.83 leaks per mile in its coupled pipe from .41 leaks per mile. (See, Response to OPC Data Request No. 6-1a). That is approximately a 450 percent increase.

Q. IS WGL REQUIRED TO DEVELOP PLANS TO ADDRESS THE POTENTIALLY UNMANAGEABLE THREAT THAT IT ACKNOWLEDGES?

A. Yes. The Federal Code, 49 CFR 192.615(a) requires that they establish written procedures to minimize the hazard from a gas pipeline emergency including requirements under subsections (4) through (7) as follows:

(4) The availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency.

(5) Actions directed toward protecting people first and then property.

(6) Emergency shutdown and pressure reduction in any section of the operator's pipeline system necessary to minimize hazards to life or property.

(7) Making safe any actual or potential hazard to life or property.

Further specific required actions that WGL needs to address are contained within 49 CFR 192.615(c):

(c) Each operator shall establish and maintain liaison with appropriate fire, police, and other public officials to:

(1) Learn the responsibility and resources of each government organization that may respond to a gas pipeline emergency;

(2) Acquaint the officials with the operator's ability in responding to a gas pipeline emergency;

(3) Identify the types of gas pipeline emergencies of which the operator notifies the officials; and,

(4) Plan how the operator and officials can engage in mutual assistance to minimize hazards to life or property.

Q. HAS WGL COMPLIED WITH THESE EMERGENCY RESPONSE PLAN REQUIREMENTS?

A. To the best of our knowledge, it has not. WGL has not provided any of the details or shown how it has complied with these safety code requirements.

WGL's past actions have involved delays in threat identification, establishment of priorities, and implementation of a coupling replacement program. It is natural for us to be additionally concerned that WGL will not address these requirements, and that we can expect a similar delay in WGL's establishment of written plans and actual coordination actions that deal with this unmanageable leaking coupling problem. WGL should be required to demonstrate it has fully complied with these safety code requirements in planning for an unmanageable leaking coupling problem, and coordinating their emergency responses with governmental agencies and emergency first responders.

Q. PLEASE COMMENT ON WGL'S CRITICISMS OF HREG's COST ESTIMATE FOR REPLACING MAINS.

A. WGL criticizes the revenue requirement numbers used by HREG report for replacing mains. (Staebler Direct, pp 20 - 21). However, the cost figures that WGL now reports are misleading and only serve to confuse the issue. When analyzed, they refine the calculation but have no impact on the final result or HREG's recommendation.

First, WGL states that HREG excluded certain costs in that we considered the cost of replacing mains, but not services. (Id.) That is incorrect. HREG used a weighted average value of replacing pipe at a cost of $221,012 per mile, based on

a WGL presentation in which it reported a cost of $91 million for remediating 412 miles of pipe in Prince George County, Maryland. This information was taken from a presentation that WGL made at a FERC Technical Conference on August 14, 2008 (Exhibit OPC (2A)-1, p. 35 of 39). In that same presentation WGL reported that the $91 million was spent on remediating 175 miles of mains and 25,000 services. (Id., p. 17 of 39). Thus, the cost of actual replacement is a weighted average cost of replacing 175 miles of main pipe and 237 miles of services pipe.

Knowing that the WGL reported cost is a weighted average, HREG can refine the calculation presented in our Direct Testimony. With 60 miles of mains and 7,200 coupled services in the District (See, Staebler Direct, p. 20) these figures are approximately one-third of the work that WGL performed in Prince George's County at a cost of $91 million. Using this refined figure, one-third of the $91 million equates to approximately $30 million. This is a far cry from the $71 million cost figure that WGL reports in its testimony. Using the same 20 percent carrying charge figure we used in our initial testimony, the revenue requirement would be $6.0 million per year, still less than the revenue requirement associated with hexane injection ($6.2 million per year[1]).

[1] Exhibit OPC (A)-4 reported a figure of $6.4 million. That is a typographical error; the correct figure is $6.2 million.

Q. WHAT WOULD THE EQUIVALENT FIGURES BE FOR THE VINTAGES WITH THE HIGHEST LEAK RATES ALONE?

A. In its Direct Testimony, WGL also reported that if one concentrated on only the coupled mains and services from the vintage years with the highest leak rates (1952-1956 and 1962-1965), there would be 26 miles of main and 3,500 services. This is approximately 15 percent of the work that WGL actually did in Price George's County at a cost of $91 million. Using that figure and applying it to the District's pipe mileage, one gets a replacement cost of $14 million with an associated revenue requirement of $2.7 million per year. This is significantly less than the cost of hexane injection.

Q. DOES HREG HAVE ANY COMMENTS ON WGL'S CONTENTION THAT IT IS MORE EXPENSIVE TO REPLACE PIPE IN THE DISTRICT AS COMPARED TO PRINCE GEORGE'S COUNTY?

A. WGL reports that it costs almost 4 times as much to replace pipe in the District as it does to replace work in Maryland ($815,000 per mile in the District versus $211,012 per mile in Prince George's County). (See, Staebler Direct, p. 20) WGL does not explain why or provide any back-up for its assertion. It also does not provide an explanation of why it used the average cost of work in Prince George's County to extrapolate its estimated cost of replacing all mains on its system (Exhibit OPC A, p. 35 of 39).

Q. PLEASE COMMENT ON MR. STAEBLER'S CRITICISM OF THE DISTRICT'S SHARE OF THE COST OF HEXANE INJECTION.

A. In HREG's Direct Testimony, HREG estimated that the cost of hexane injection for the District would be $6.4 million per year. (OPC Exhibit (A) – 4, p. 25)[2] Mr. Staebler states that HREG failed to reflect the jurisdictional allocation of the hexane costs. (Staebler Direct, p. 21) Using the normal weather factor from F.C. No. 1054 would allocate $1.0 million of hexane costs to the District. Mr. Staebler is confused. The estimated cost of hexane injection presented in HREG's Direct Testimony already reflects the allocation to the District of its share of the total cost for hexane inject.

As HREG noted in Direct Testimony in this case, the cost of hexane injection is comprised of two parts; the cost of the facilities to inject hexane and the cost of the hexane itself. The total cost of the hexane facilities was developed by taking the construction cost of the facilities, $12 million, applying a carrying charge to develop a revenue requirement, 20 percent, and multiplying it by 16 percent which is the value reported to us as the District's jurisdictional allocation factor to arrive at a revenue requirement of $0.4 million (Id). As to the cost of hexane itself, this was developed by multiplying WGL's estimate of total hexane costs, $36 million, and applying the same 16 percent jurisdictional allocation factor to arrive at a revenue requirement of $5.8 million. (Id.) The sum of these two

[2] Corrected to $6.2 million, as noted previously.

figures is the corrected $6.2 million in total revenue requirement and it already reflects the jurisdictional allocation of costs.

Q. DOES THIS CONCLUDE THE PREFILED REBUTTAL TESTIMONY OF HREG?

A. Yes, it does.

AFFIDAVIT

County of Albany

State of New York SS

Phillip S. Teumim, being first duly sworn, deposes and states that he is the Phillip S. Teumim whose Testimony accompanies this Affidavit; that such testimony was prepared by him or under his supervision; that he is familiar with the contents thereof; that the facts set forth therein are true and correct to the best of his knowledge, information and belief; and that he does adopt the same as true as his sworn testimony in this proceeding.

Phillip S. Teumim

Subscribed and sworn before me this

22nd day of July, 2009.

LAURA A. KENNEDY
No. 01KE6037876
Notary Public, State of New York
Qualified in Albany County
My Commission Expires 02/28/ April 30, 2010

Notary Public

My Commission Expires: April 30, 2010

AFFIDAVIT

County of Albany)

State of New York) SS:

Frank Radigan, being first duly sworn, deposes and states that he is the Frank Radigan whose Testimony accompanies this Affidavit; that such testimony was prepared by him or under his supervision; that he is familiar with the contents thereof; that the facts set forth therein are true and correct to the best of his knowledge, information and belief; and that he does adopt the same as true as his sworn testimony in this proceeding.

Frank Radigan

Subscribed and sworn before me this

22 day of July, 2009.

Jennette Saladino
Notary Public, State of New York
No.01SA6180621
Qualified In Albany County
Commission Expires 1/14/12

Notary Public

My Commission Expires: 1/14/12

AFFIDAVIT

County of Washington

State of New York SS:

John Gawronski being first duly sworn, deposes and states that he is the John Gawronski whose Testimony accompanies this Affidavit; that such testimony was prepared by him or under his supervision; that he is familiar with the contents thereof; that the facts set forth therein are true and correct to the best of his knowledge, information and belief; and that he does adopt the same as true as his sworn testimony in this proceeding.

John Gawronski

Subscribed and sworn before me this

22ND day of July, 2009.

Dawn Kraeling Adams

Notary Public

DAWN KRAELING
Notary Public, State of New York
Washington County-No. 01KR6074067
My Commission Expires 5-6-10

My Commission Expires: 5-6-10

Exhibit of

OPC Witness

Hudson River Energy Group

Exhibit OPC (2A)-1

Anticipated Post-Expansion Dominion Cove Point Gas Flows

FERC Technical Conference

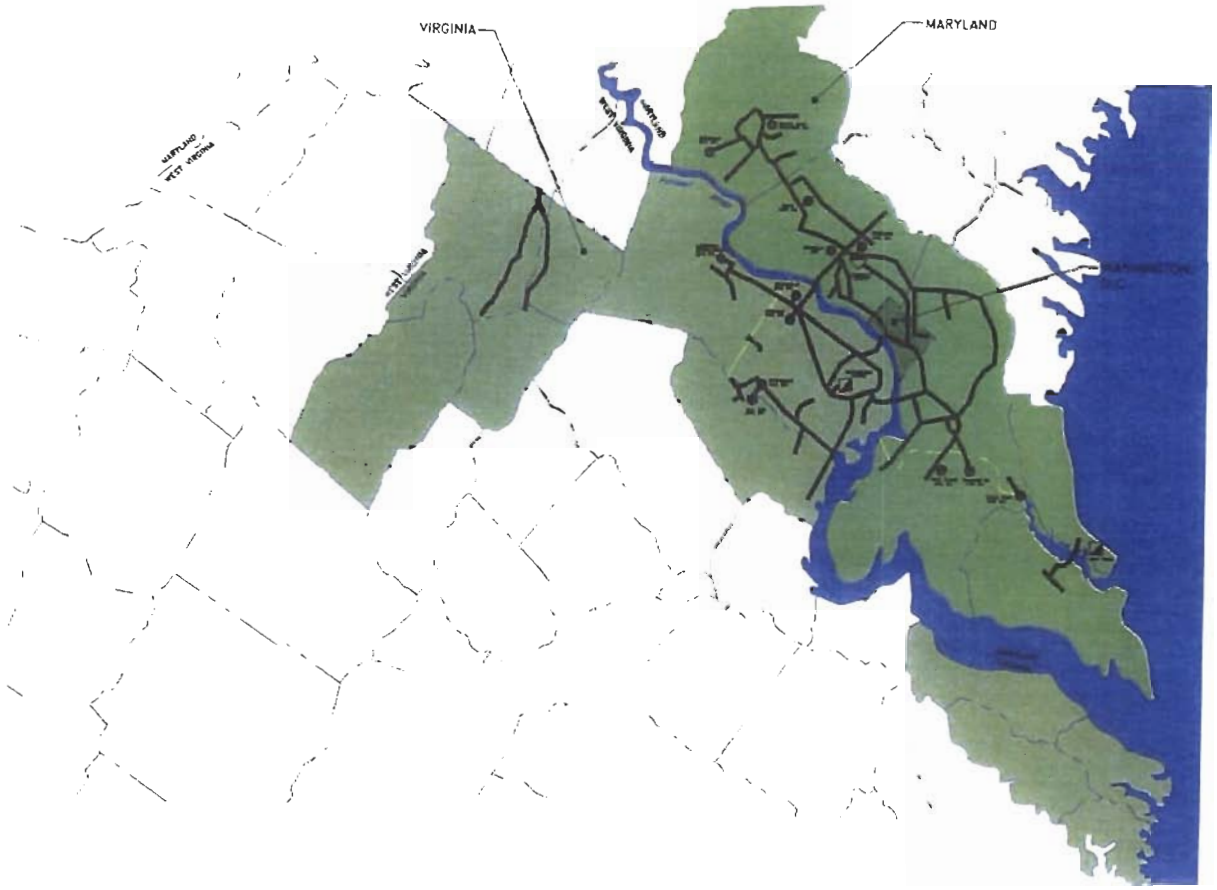
Adrian P. Chapman
Vice President
Operations, Regulatory Affairs,
and Energy Acquisition

August 14, 2008

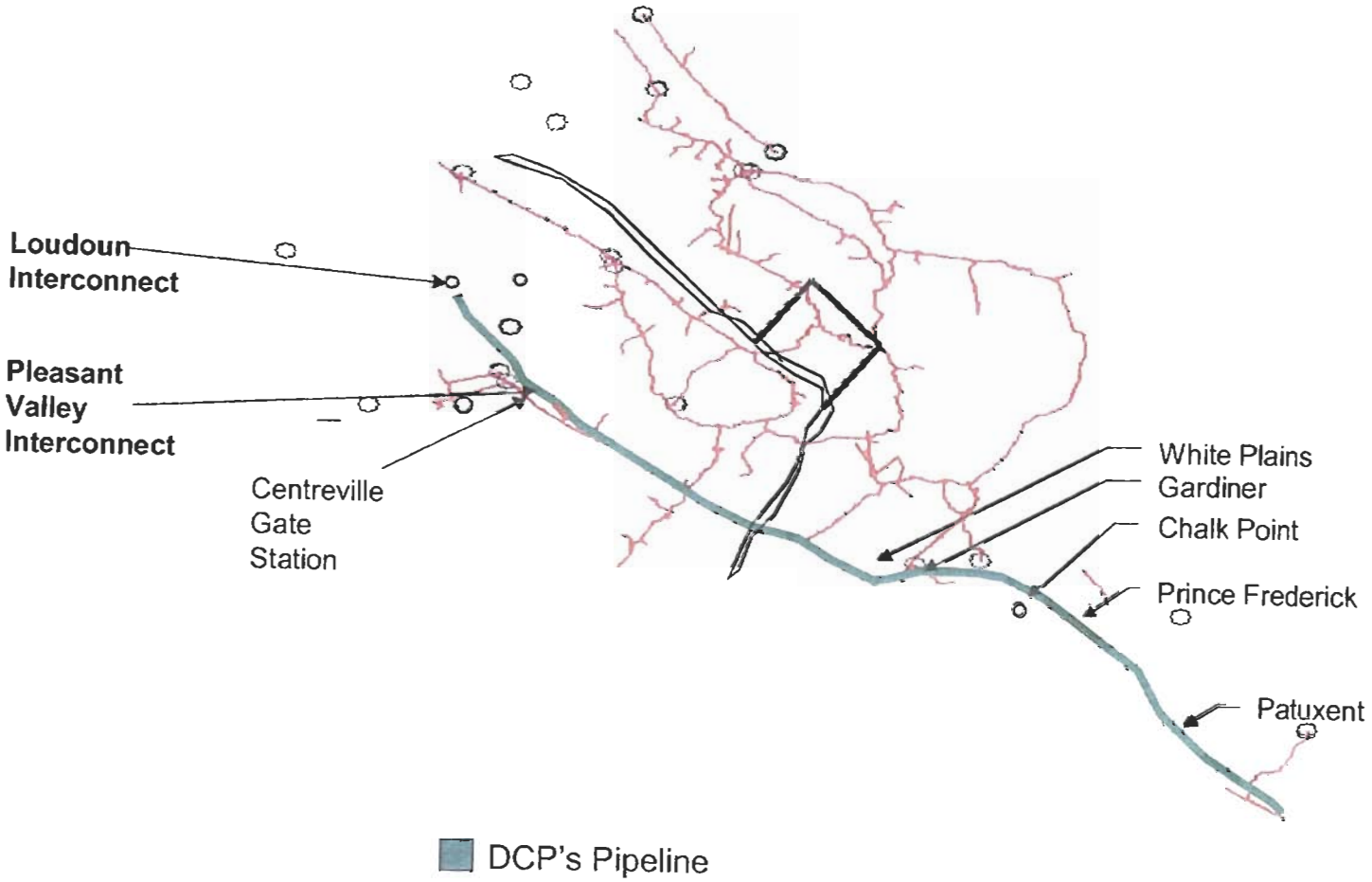
Washington Gas

Washington Gas – System Map

WASHINGTON GAS LIGHT COMPANY

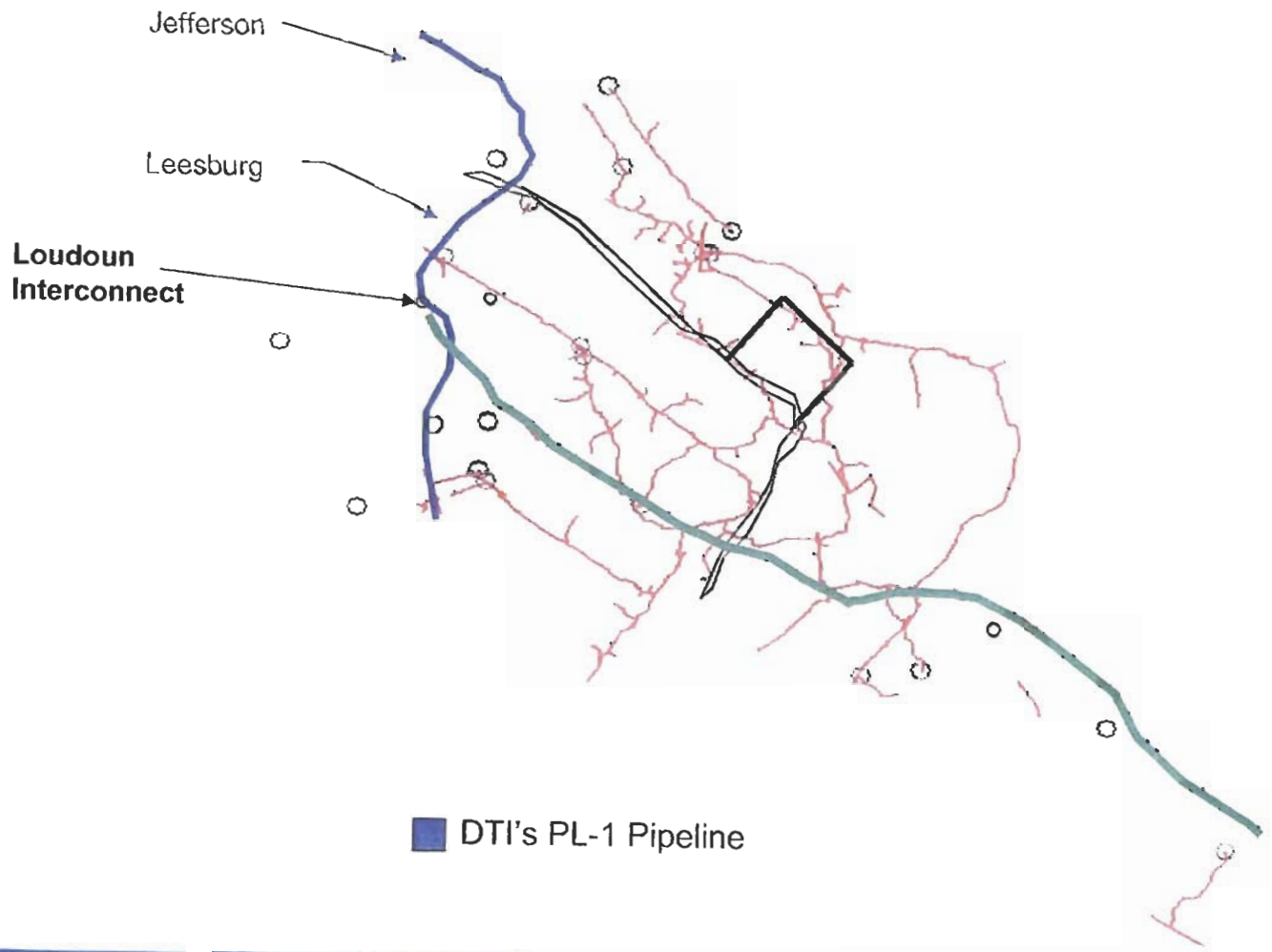


Dominion Cove Point LNG LP ("DCP")



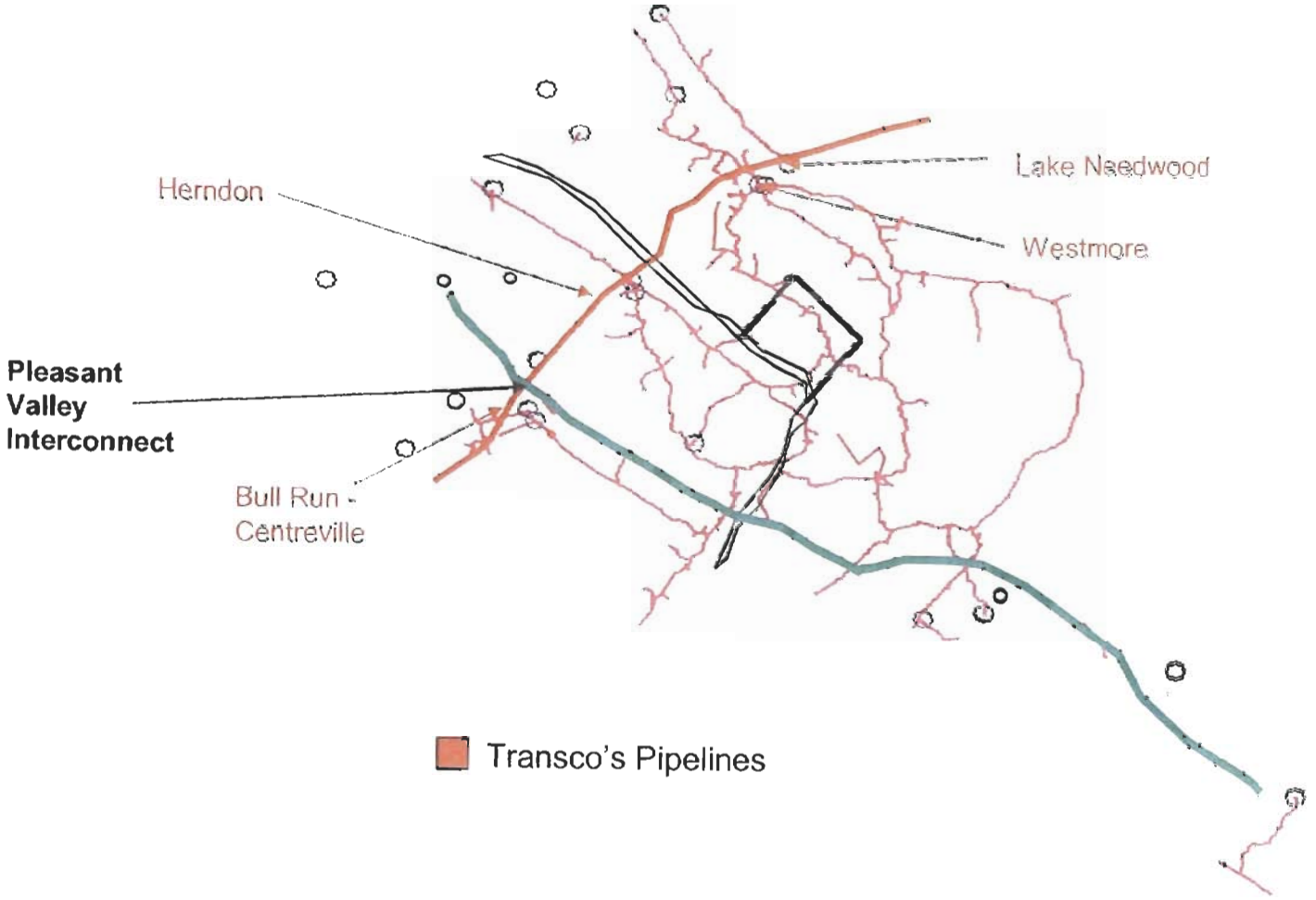
Dominion Transmission, Inc. ("DTI")

Washington Gas

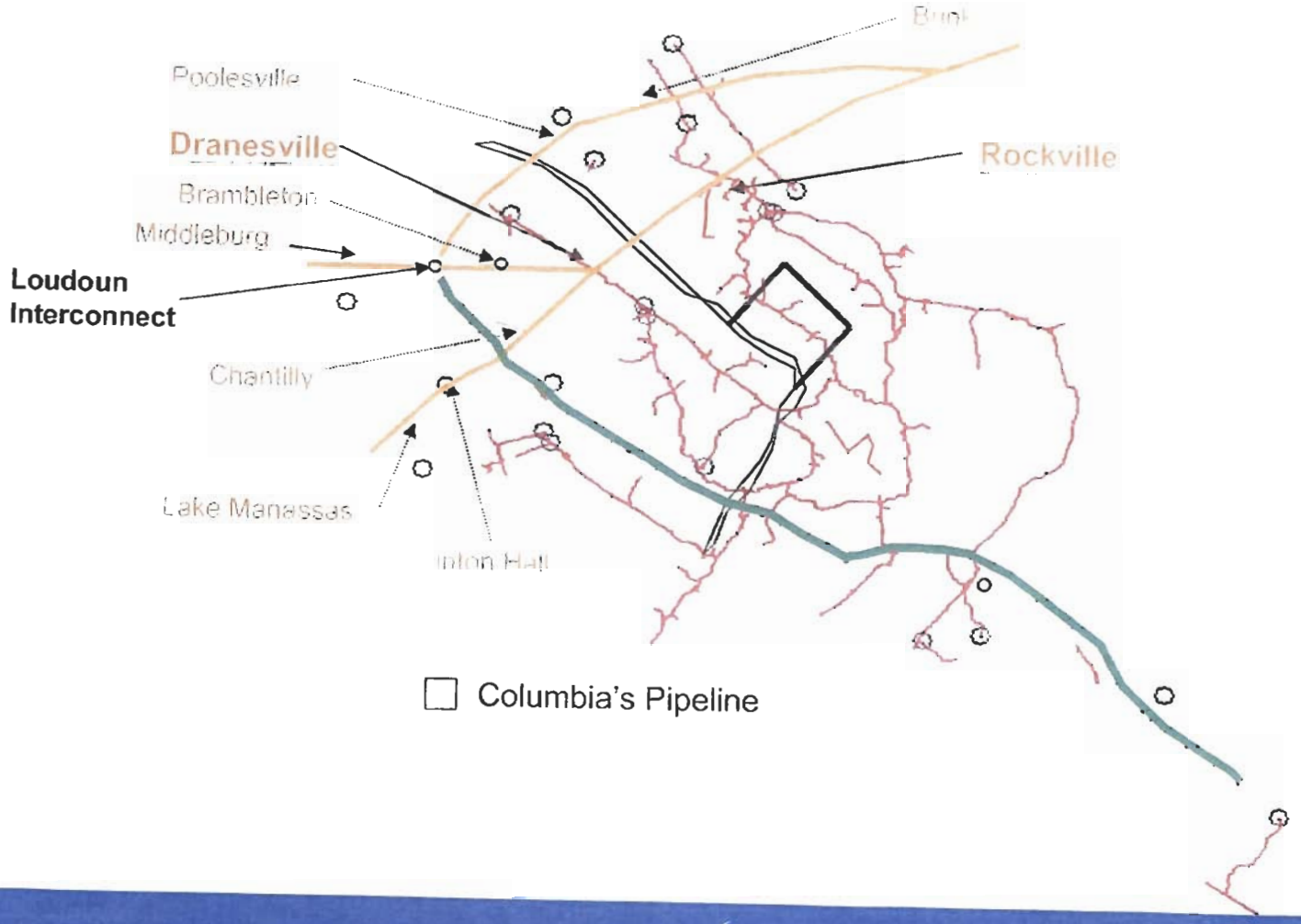


Transcontinental Gas Pipe Line Corporation ("Transco")

Washington Gas

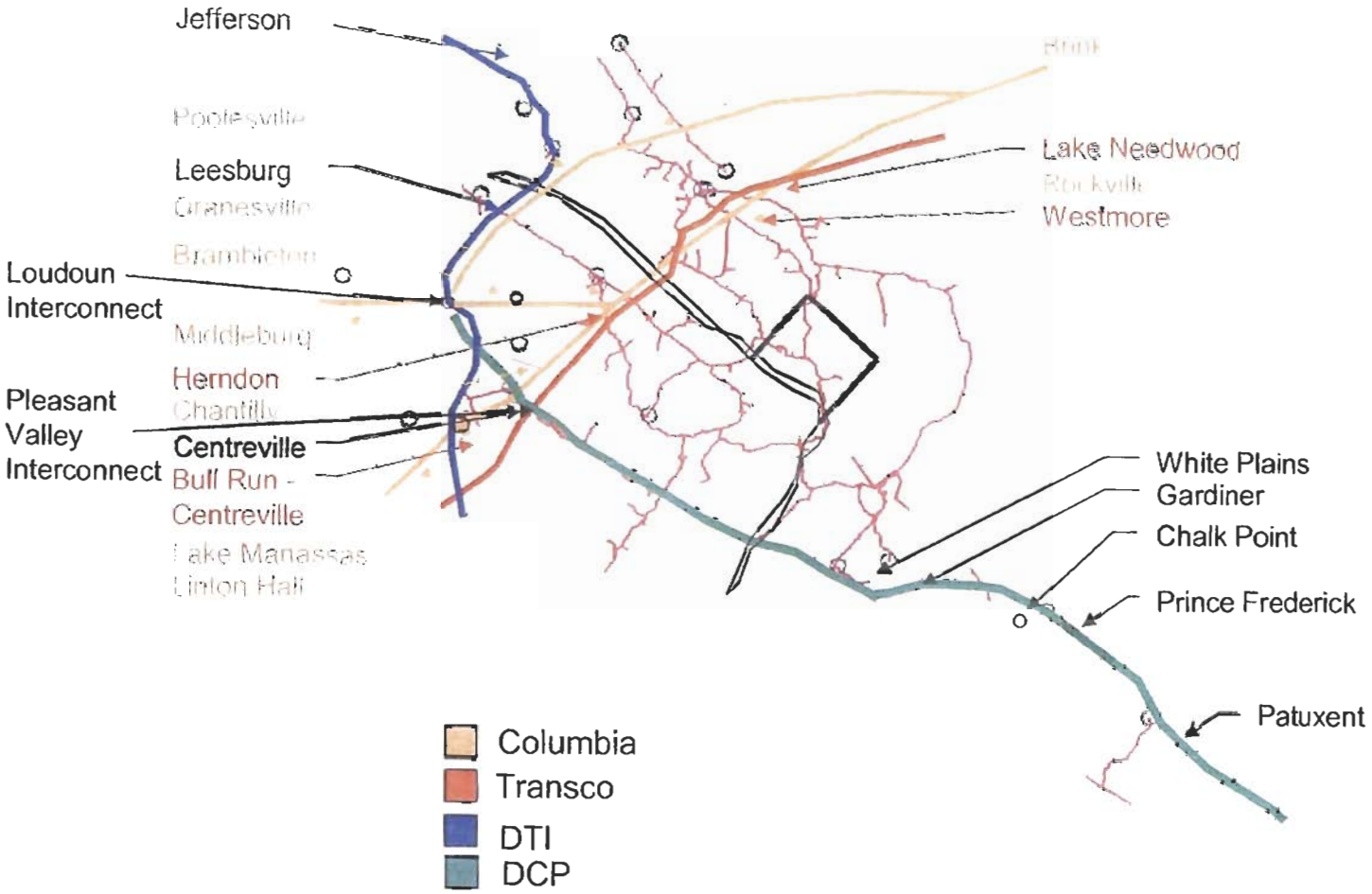


Columbia Gas Transmission Corporation ("Columbia")



"ZOOM-IN" MAP – Opportunity to Isolate Certain Gates

Upstream Pipeline Connections



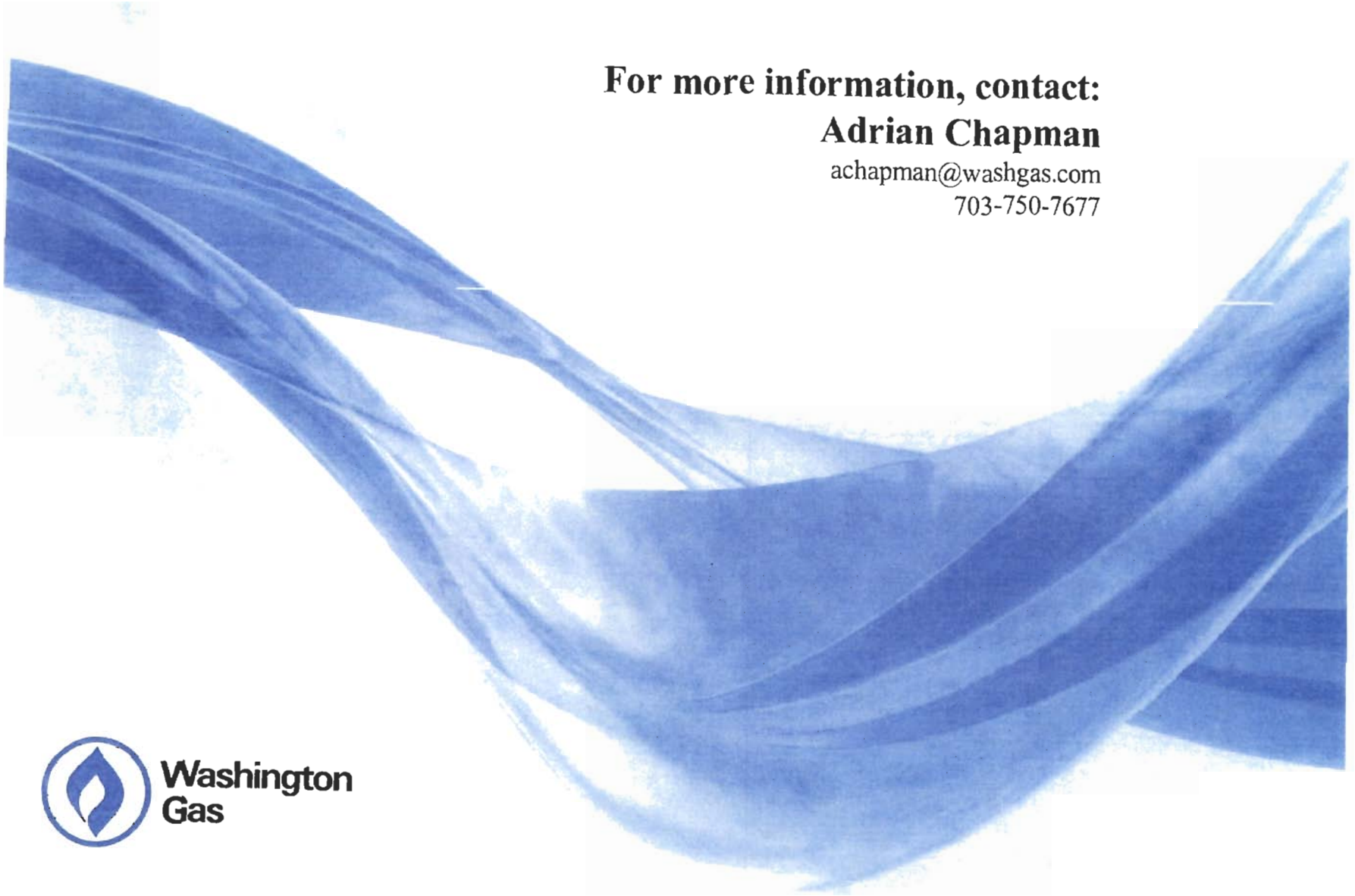
Anticipated Post-Expansion Cove Point Gas Flows

Washington Gas

	Filing Max Capability* (Mcf)	Design/Peak Day (Dth) (coincident?)	Average Winter Day (Dth)	Average Summer Day (Dth)
COVE POINT TERMINAL Post-Expansion Maximum Delivery		1,800,000*	1,800,000*	1,800,000*
COVE POINT PIPELINE Total for WGL Gate Stations		377,000***	135,000***	102,000***
Net Available for All Interconnecting Pipelines		1,423,000	1,665,000	1,698,000
TRANSCO - Pleasant Valley 3-year Historical Flows		620,031**	140,729**	219,944**
TRANSCO - Pleasant Valley Expansion		100,000*	100,000*	100,000*
DTI PL-1 – Loudoun 3-year Historical Flows		445,263**	74,519**	147,595**
DTI PL-1 - Loudoun Expansion		700,000*	700,000*	700,000*
COLUMBIA – Loudoun 3-year Historical Flows		289,712**	30,276**	32,209**
Net Cove Point Deliveries at COLUMBIA – Loudoun		0	619,476	498,252

This Columbia volume will likely flow past Dranesville and Rockville Gate Stations on the WGL system

Sources: * Certificate Application; ** Data Responses; *** WGL Data



For more information, contact:
Adrian Chapman
achapman@washgas.com
703-750-7677

Washington Gas

FERC Technical Conference

Washington Gas' Response to Cove Point Gas

Doug Staebler

Vice President of Construction & Engineering

Washington Gas

Presentation Outline

Washington Gas

1) Key Points
2) Update- WGL actions to address Cove Point LNG
3) Planned remediation and hexane injection for Cove Point LNG beyond the PGAA
4) Recent results from the "Reintroduction Area"
5) Anticipated Leaks Due to Cove Point Expansion
6) Pipeline remediation program

Key Points -

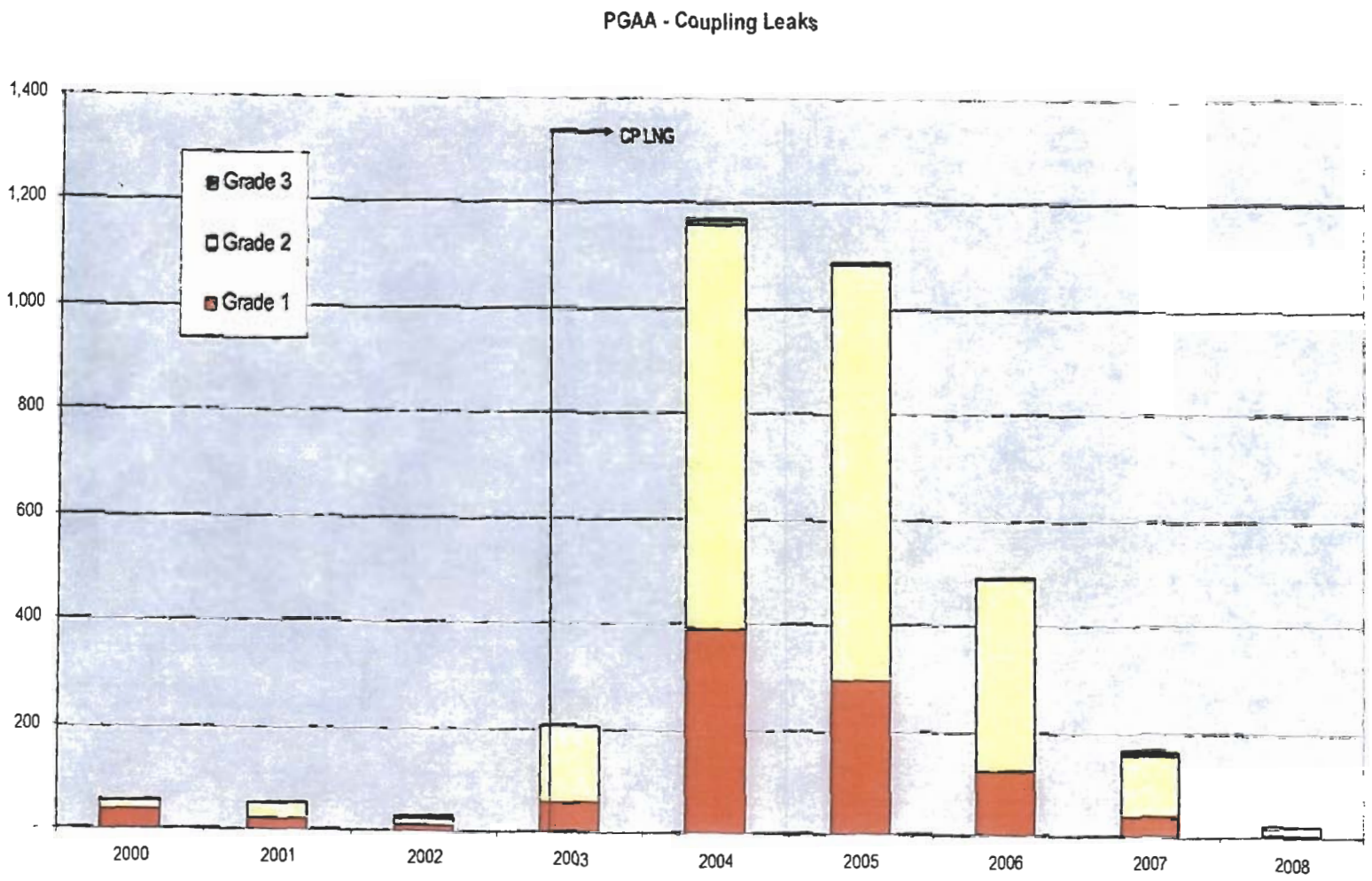
Washington Gas

- Coupling Leaks result in Grade 1, 2 and 3 leaks
- Unblended LNG introduced into Prince George's County increased coupling leaks an additional 1,692%
- WGL has taken extraordinary measures to address the effects of Cove Point LNG on mechanically coupled piping.
- CP LNG blended with Hexane introduced into a control area within Virginia increased coupling leaks an additional 247%

The expansion of the Cove Point Terminal will result in unsafe leaks on the WGL system

PGAA Coupling Leaks by Grade

Washington Gas



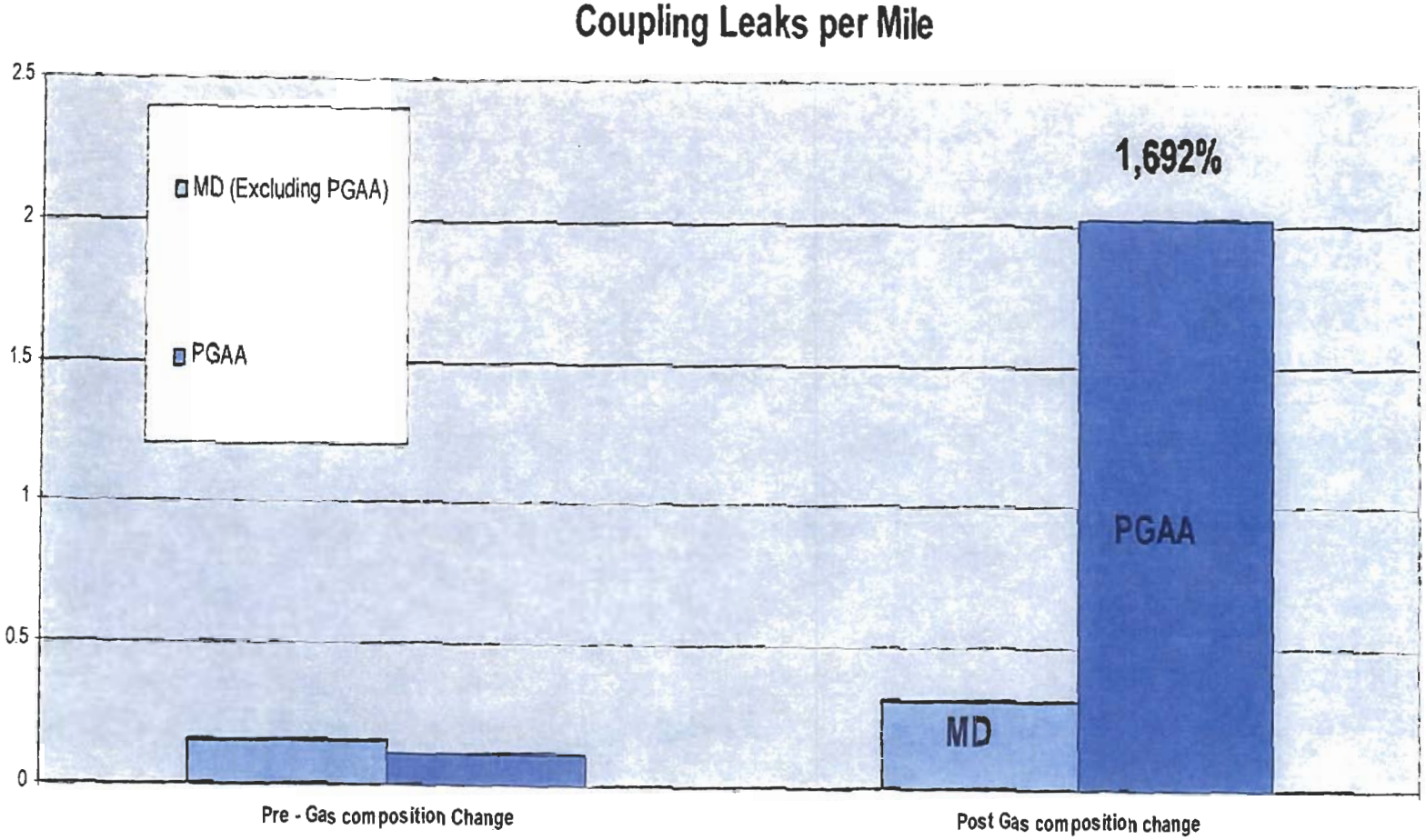
Update - WGL Actions to Address the LNG Supplied from Cove Point - 2004 to present

Washington Gas

- Exposure to CP LNG was limited by:
  - Closed valve to Virginia (2/05)
  - Transfer Herndon tap to Transco non-LNG leg
- Prince George's County Remediation Project (5/05 – 10/07)
- Laboratory Testing:
  - GTI (2/05)
  - Environ (7/05, 4/06, 1/07)
  - NYSEARCH Elastomer / Gas Composition study
- Hexane Conditioning Facilities
- Pipe Remediation – non hexane areas
- The Reintroduction Area – LNG with 0.15% mole Hexane

Unblended CP LNG Effect on Prince George's Co.

Washington Gas

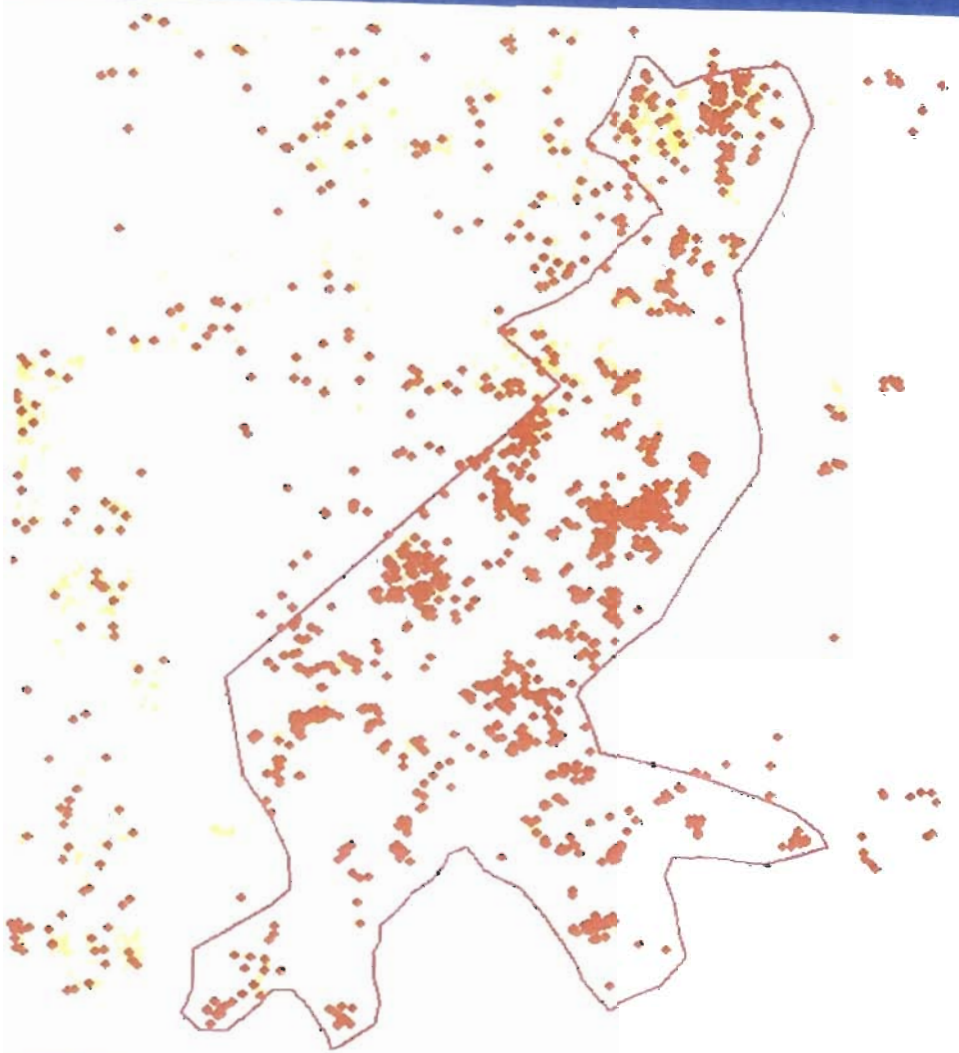


The Affected Area of Prince George's Co. Pipe Remediation Program

Washington Gas

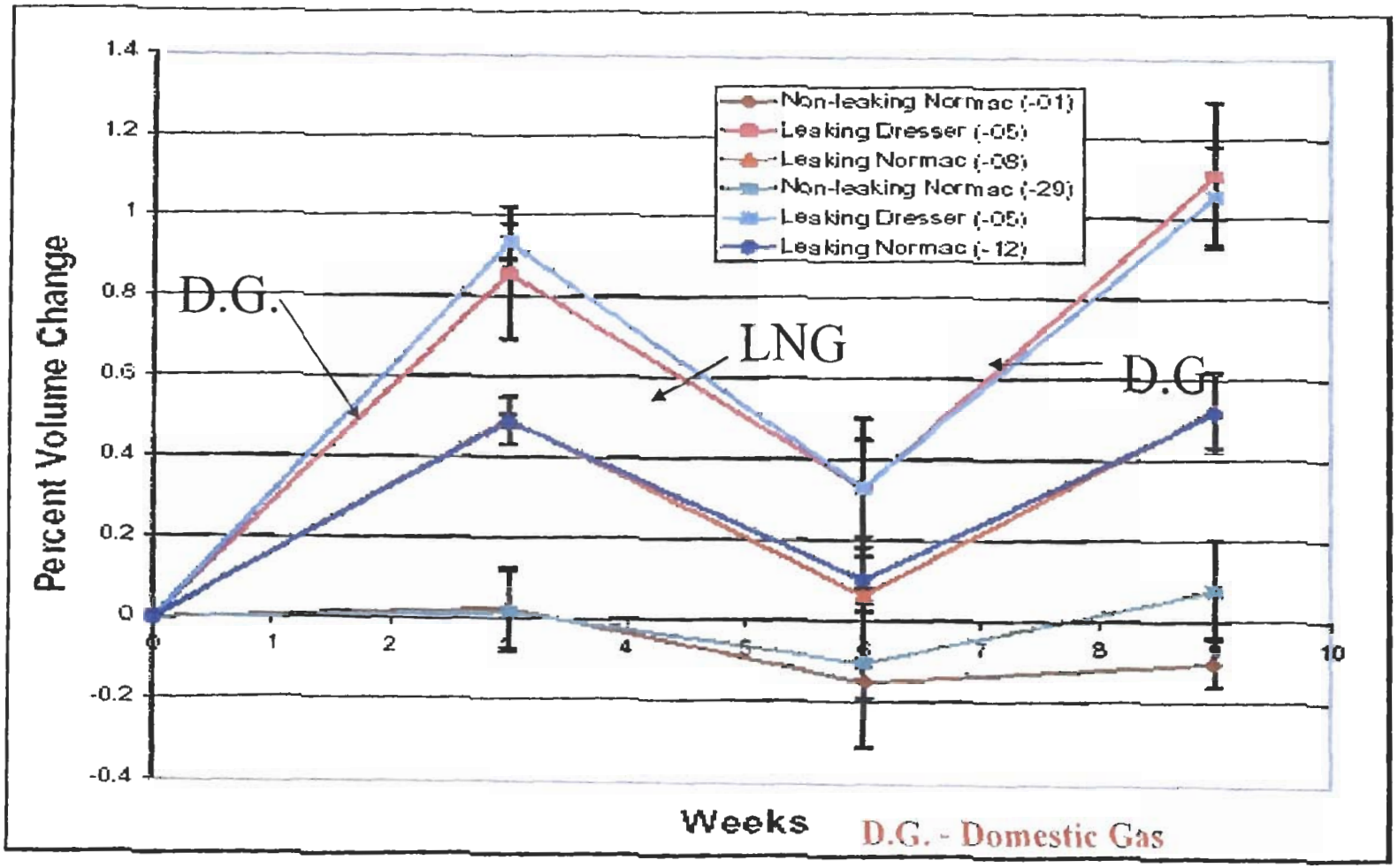
Remediated mechanically coupled steel pipe

- **175 miles of main**
- **25,000 services**
- **$91 million**
- **Represents approximately 11% of coupled pipe in the WGL system**



Environ Test – Effect is Reversible
April 2006

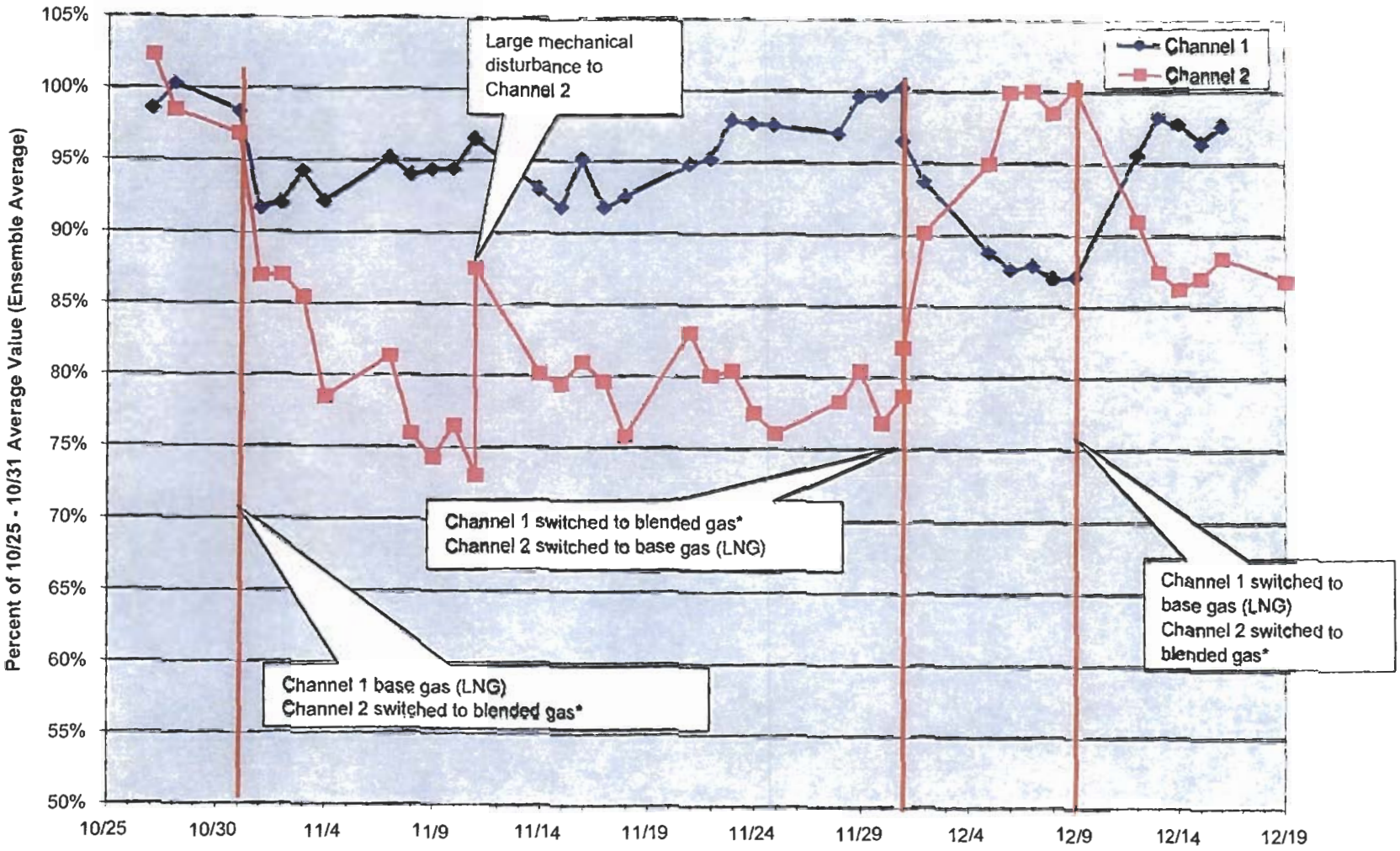
Washington Gas



Environ Test (NGTC) – Reversibility Demonstrated in Actual Couplings

April 2006

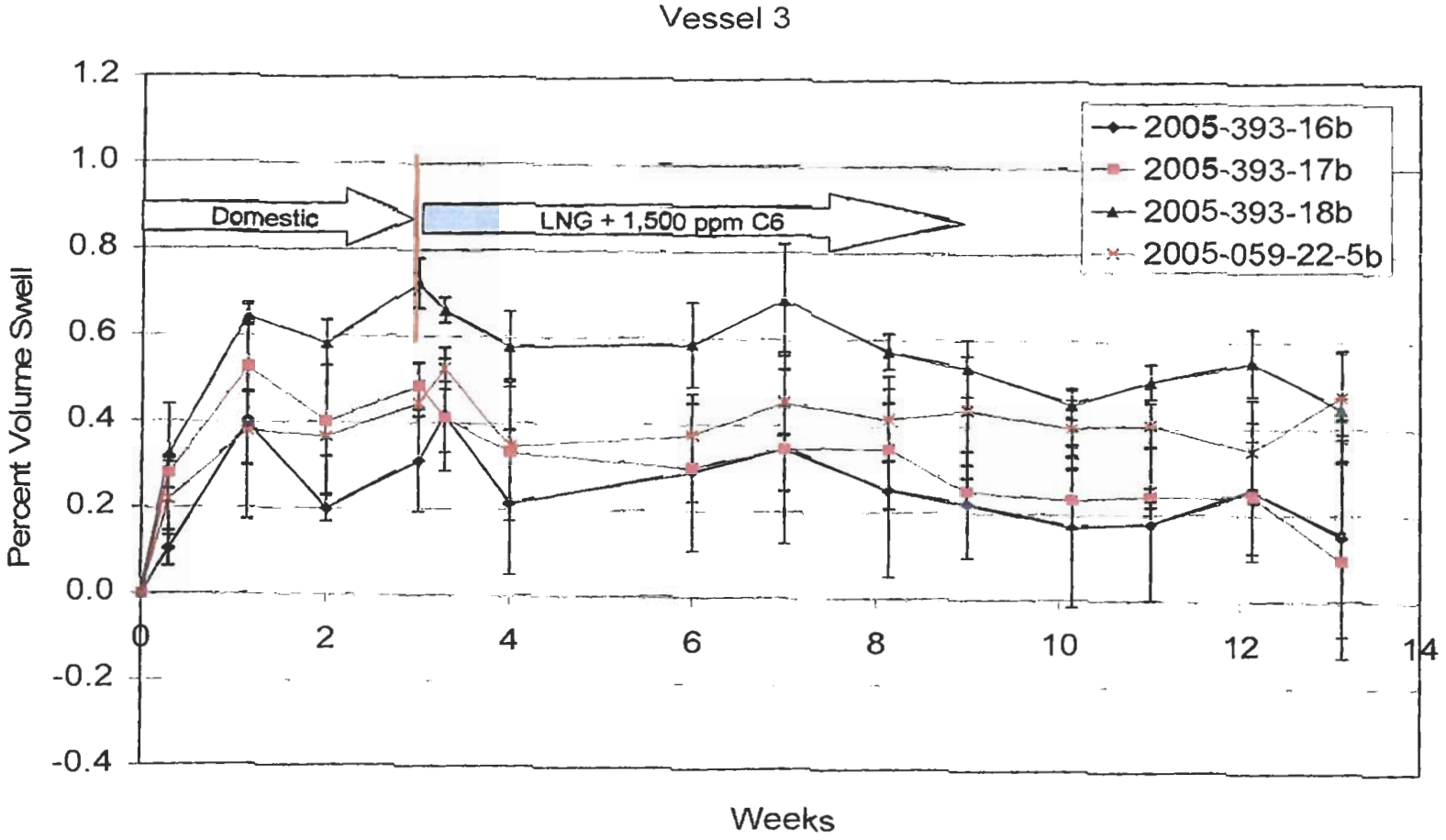
Washington Gas



Environ – LNG Blended with Varying Levels of Hexane

January 2007

Washington Gas



Gardiner Rd Hexane Treatment Facility – Charles Co. MD.

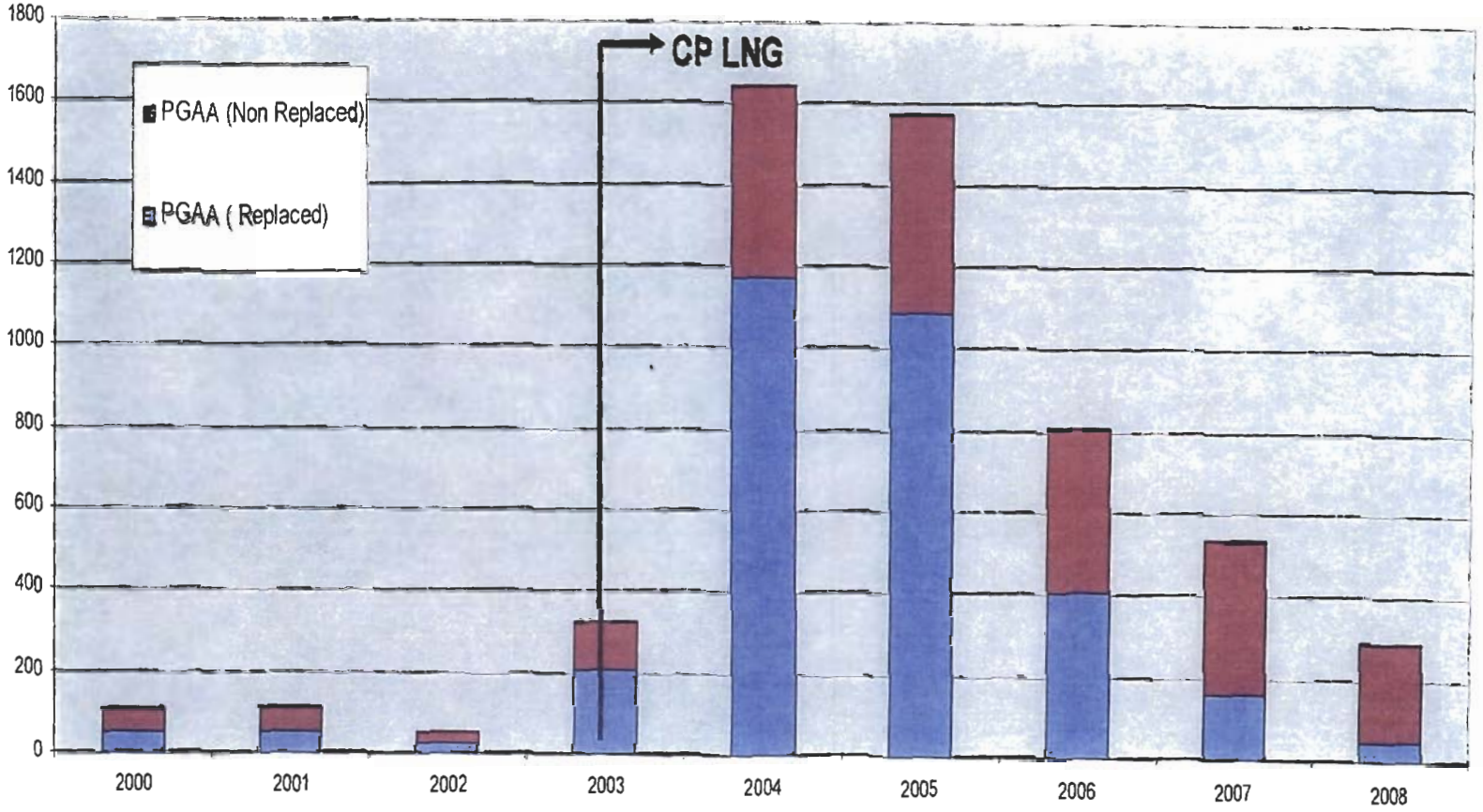
Washington Gas

- $4 million cost
- 100,000 gallons storage
- 800 gallons / hr capability
- Target HHC level in gas stream: 0.15% mole of C6
- Activated February 2006

Coupling Leaks – Prince George's County Affected Area (PGAA)

Washington Gas

Coupling Leaks - PGAA



Mechanically coupled pipe in WG Distribution System (as of June 2008)

Washington Gas

DC

- **60 miles of 2" main**
- **8,000 services**
- **23,760 couplings**

MD

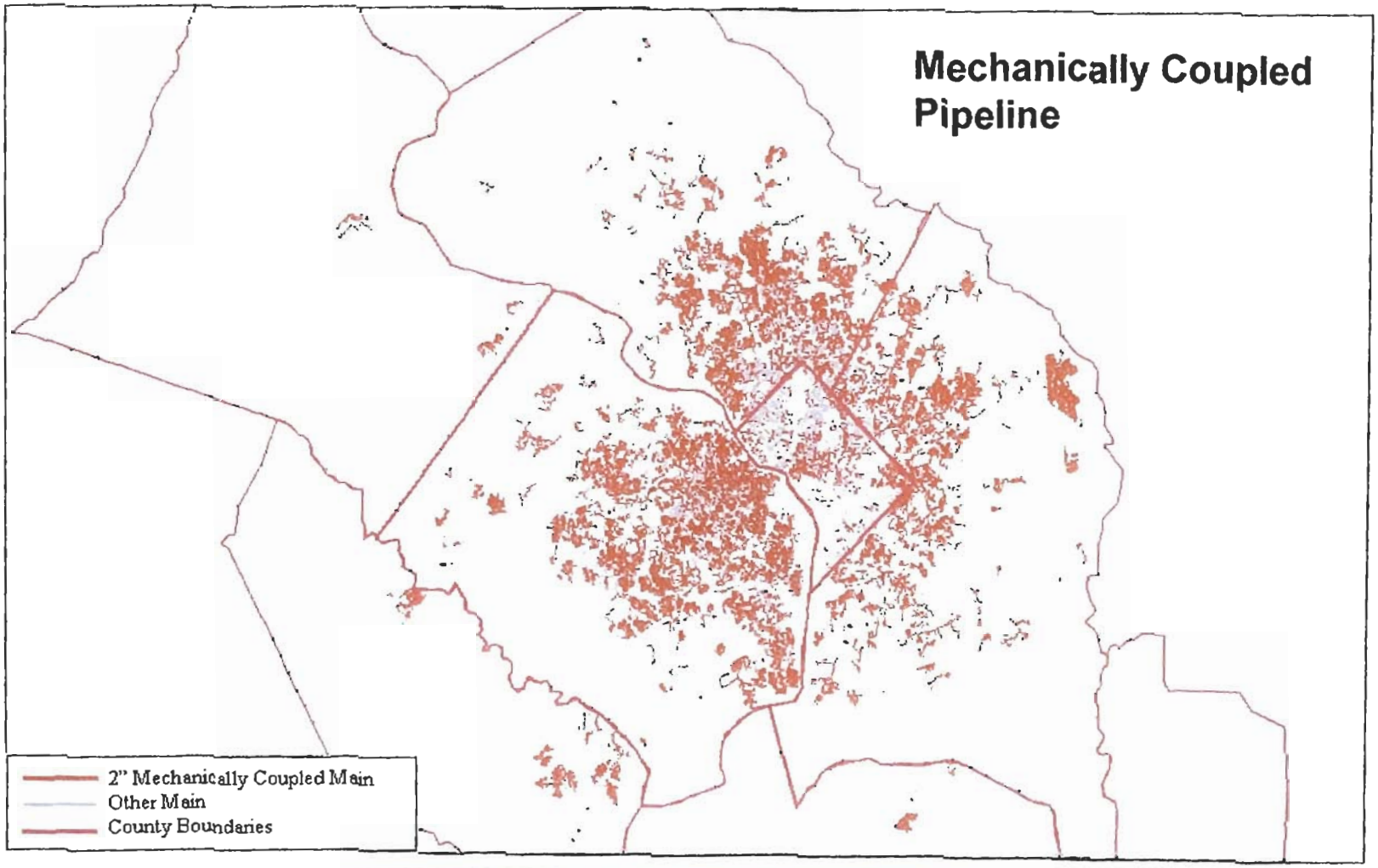
- **950 miles of 2" main**
- **72,000 services**
- **441,790 couplings**
- **(Does not include the pipe replaced during the Affected Area remediation project)**

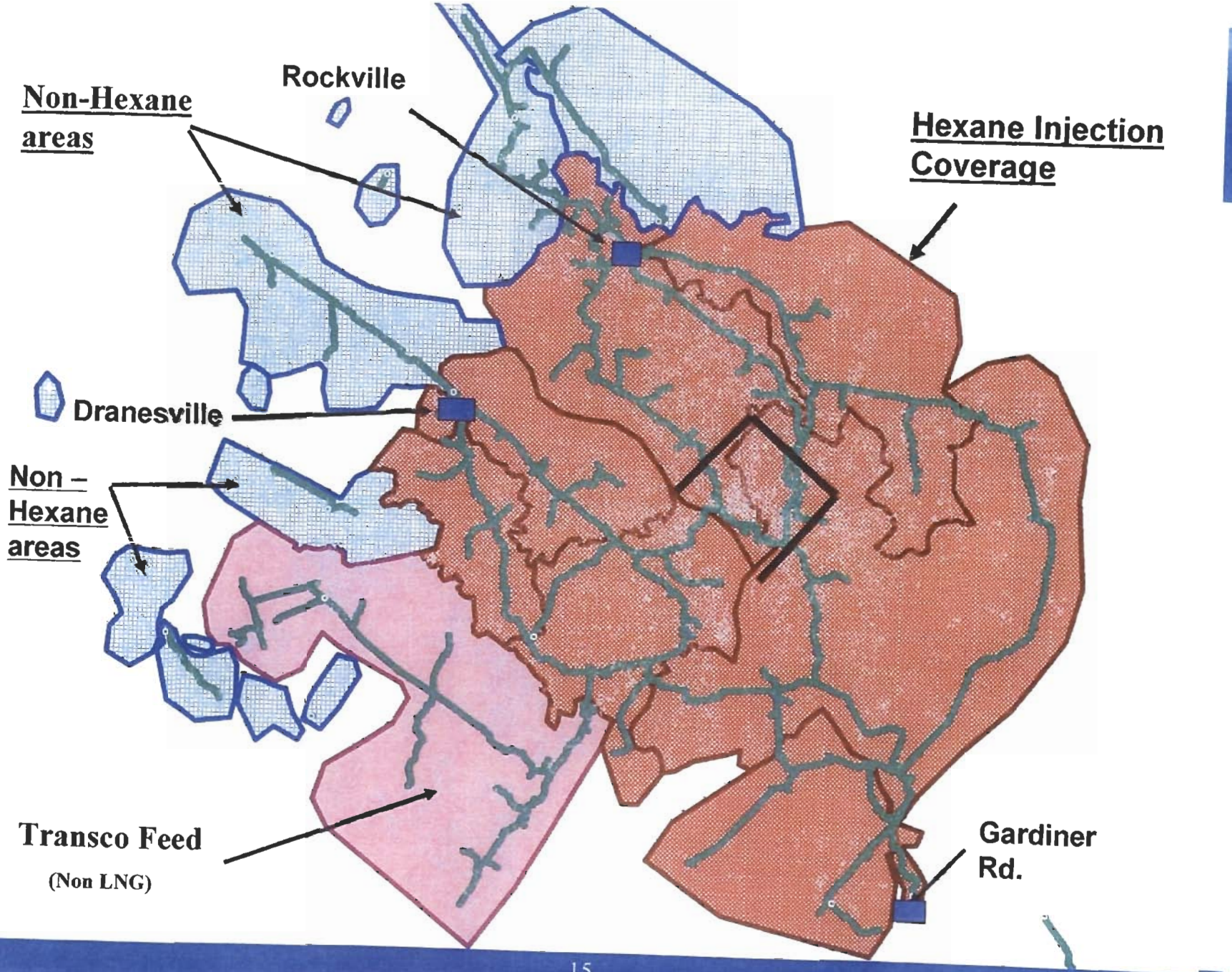
VA

- **895 miles of 2" main**
- **78,000 services**
- **355,340 couplings**

Mechanically Coupled Main in the Washington Gas System

Washington Gas




Non-Hexane areas
Rockville
Hexane Injection Coverage
Dranesville
Non – Hexane areas
Transco Feed
(Non LNG)
Gardiner Rd.

Rockville Hexane Treatment Facility
Rockville, MD.

Washington Gas

- Project Cost - $ 4 million
- 4 - 30,000 gal storage tanks
- 800 gal/hr
- Target for C5+ mole % of 0.15
- Activated November 2007

Dranesville Hexane Treatment Facility
Fairfax, VA.

Washington Gas

- Project Cost - $4.5 million
- 4 - 30,000 gal storage tanks
- 690 gal/hr
- Target concentration of C5+ mole % of 0.15
- Completion Scheduled for Nov 08

The Virginia Reintroduction Area

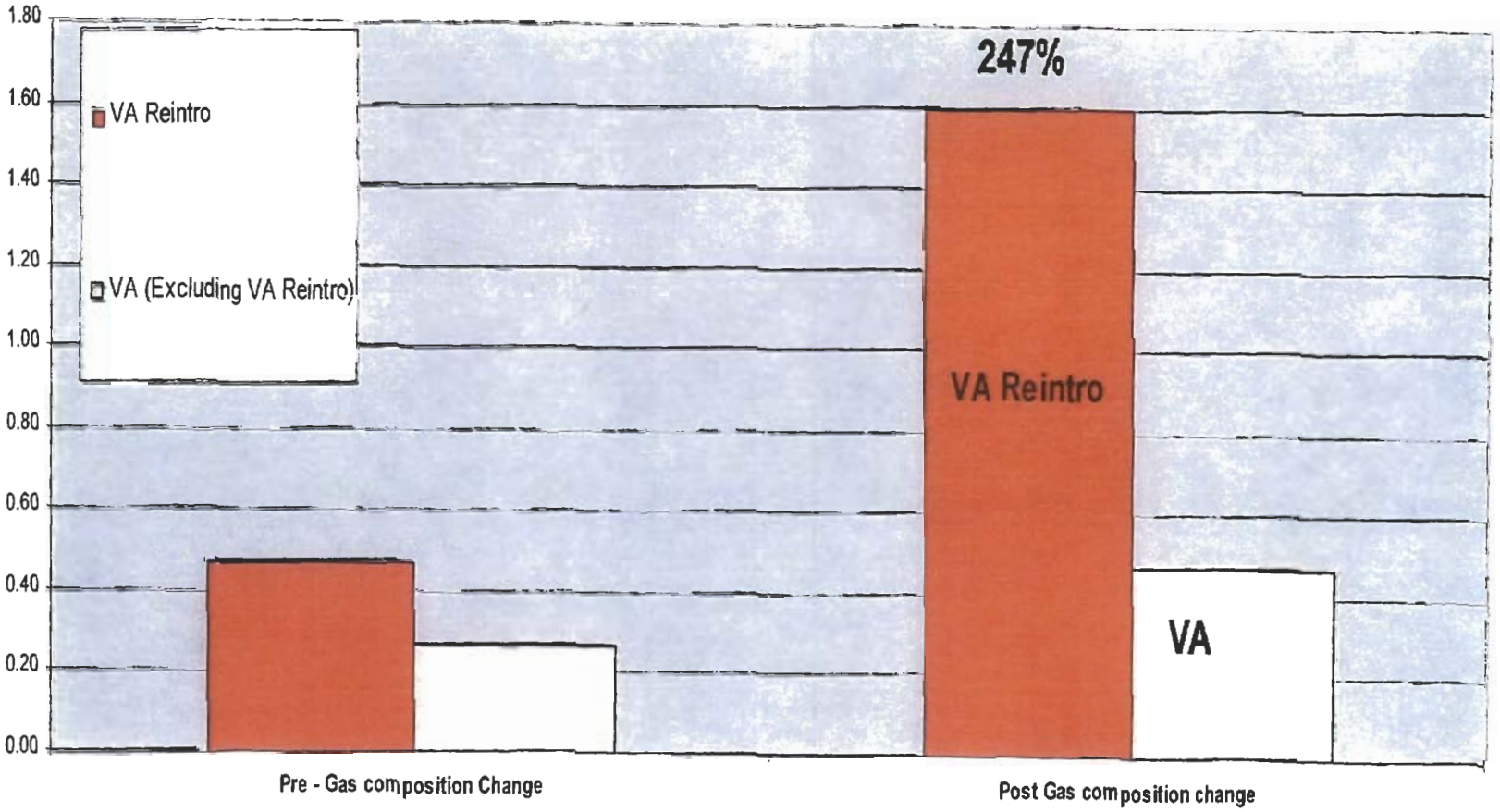
Washington Gas

- Isolated portion of the distribution system in Virginia
- Represent approx 5% of coupled pipe in the system
  - 91 miles of 2" steel coupled main
  - 10,400 coupled steel services
- Baseline leak survey in Nov 06 to Mar 07
- CP LNG blended with hexane introduced in March 07
- Leak survey Feb 08 to Jun 08
- Coupling leak rates increased 247% since the LNG blended with hexane was introduced in March 07

Current Hexane Blending Results

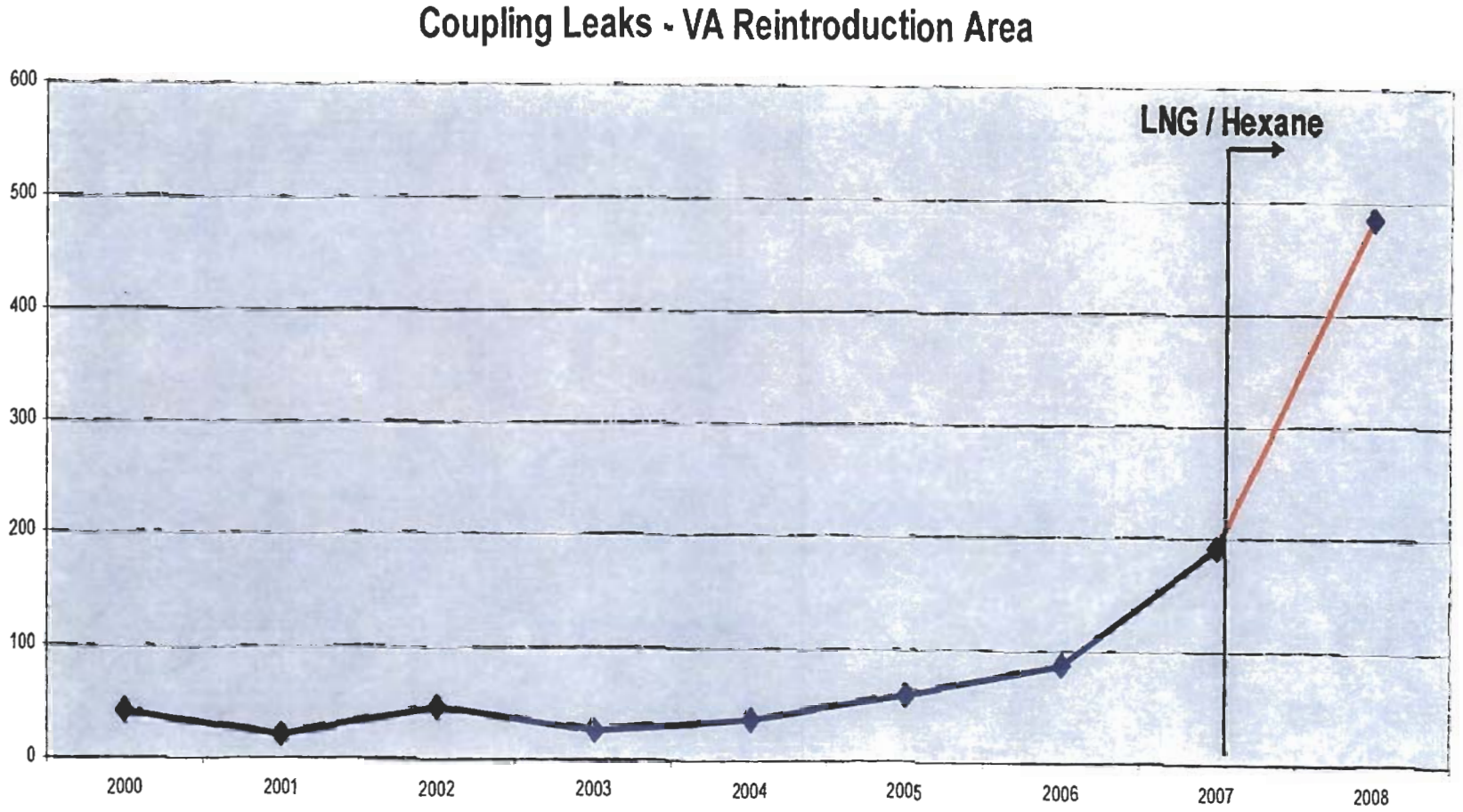
Washington Gas

Coupling Leaks per Mile



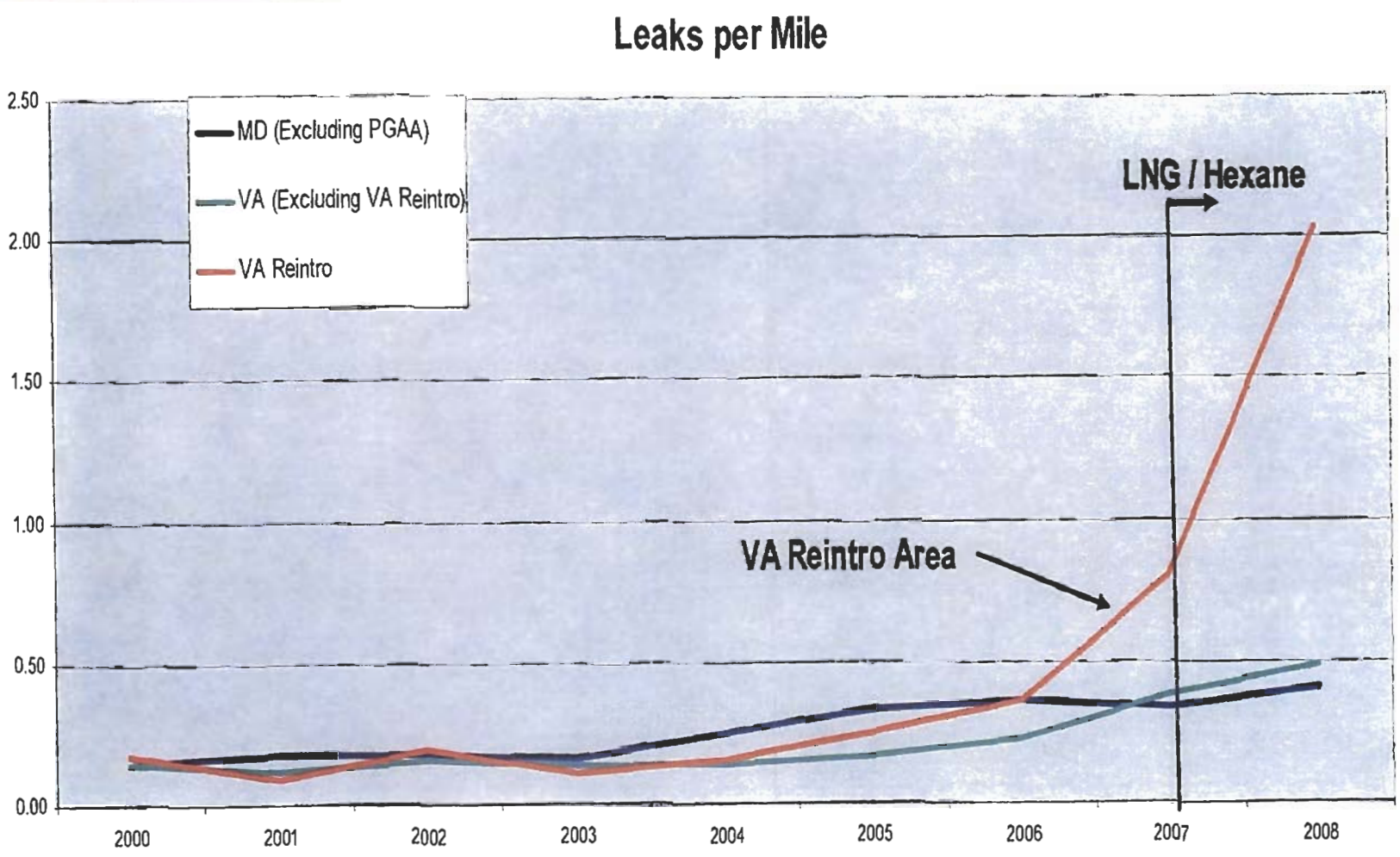
Coupling Leaks
Reintroduction Area - VA

Washington Gas



VA – Reintro
Leaks / Mile vs. VA and MD.

Washington Gas



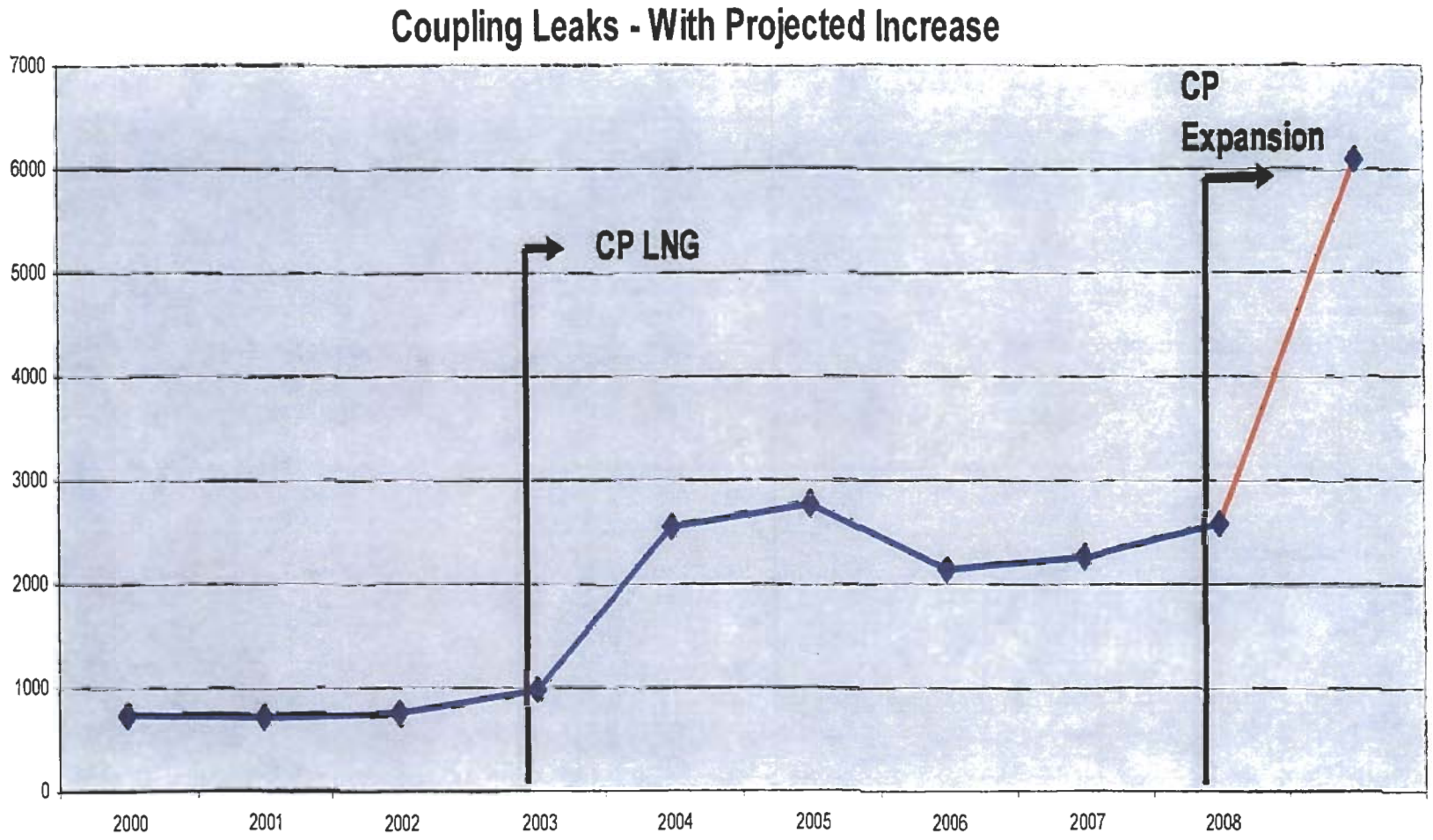
Post Expansion – Projected Coupling Leaks
Future LNG / Hexane gas supply areas

Washington Gas

	Miles of Coupled Pipe	2007 - 08 Leaks per Mile (AVG)	247% Increase	Additional Leaks
MD (Excluding PGAA)	1,716	0.38	0.93	1,591
VA (Excluding VA Reintro)	1,772	0.44	1.09	1,925
				3,516

Projected Leaks post Cove Point Expansion

Washington Gas



CP Expansion - Pipe Remediation Requirements

Washington Gas

Miles of Coupled Pipe in System	4,125
Projected Total Coupling Leaks- post expansion (with 3 hexane facilities)	6,099
Projected Leaks per Mile (6,099 / 4,125)	1.48
Post Expansion- Projected Incremental Leaks	3,516
Miles to remediate to offset Added Leaks (3,516 / 1.48)	**2,378 miles**

Remediation – Projected Years and Cost

Washington Gas

PGAA miles of pipe remediated	412
Duration (Years)	2.5
Miles per year (412 miles / 2.5 yrs)	165
Years Required (2,378 / 165)	**14 years**
PGAA Cost per Mile ($91 million / 412 miles)	$ 221,012
Projected Cost	**$ 525,575,993**

Anticipated Effects- Expansion of Cove Point LNG

Washington Gas

- The PGAA and the VA Reintro area contain only 20% of the coupled pipe in the system
- LNG blended with hexane supplying the "Reintroduction Area" resulted in an additional 247% increase in coupling leaks.
- The balance of the system contains 80% of the coupled pipe in the system
  - **1,170 Miles of main**
  - **137,500 coupled services**
- An increase in coupling leaks rates throughout the balance of the system, as experienced in the Reintroduction Area, would result in an additional 3,500 gas leaks annually, primarily concentrated around the winter season.

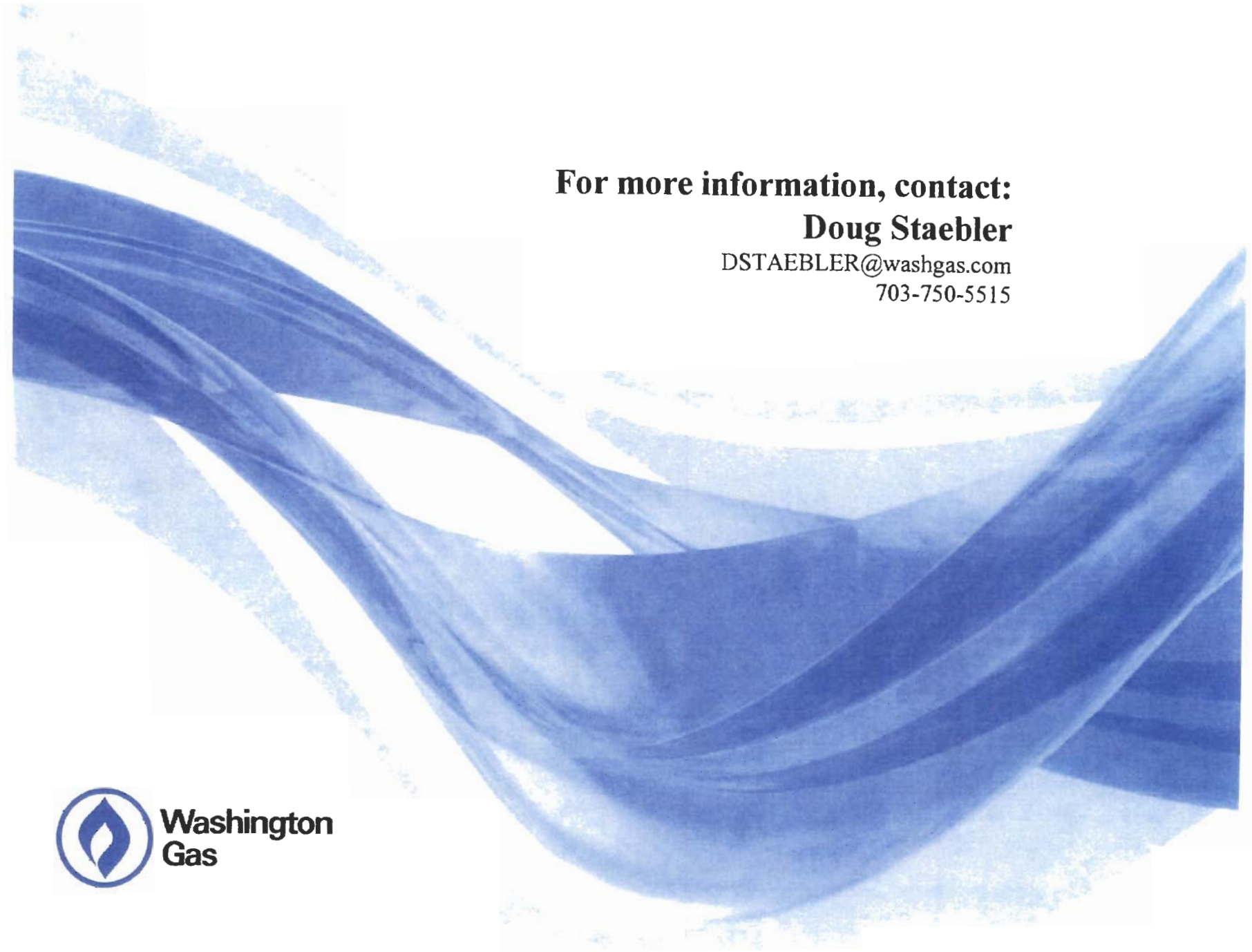
Summary

- Washington Gas experienced a significant level of Grade 1 leaks in the Affected Area
- Results of hexane injection in the Reintroduction Area demonstrated that hexane reduces incremental leaks from unblended LNG, **but** Washington Gas still experienced a 247% increase in leaks. Hexane injection cannot be the sole response.
- Extrapolating this 247% increase to the parts of the balance of the coupled pipe in the system amounts to the Company experiencing an additional 3,500 coupling leaks per year, primarily in the winter.
- The balance of the coupled pipe in the system includes the areas of Rockville, Bethesda, Potomac, Wheaton, Falls Church, Fairfax, Arlington, Alexandria, and portions of DC.
- We estimate that, if Washington Gas takes the extraordinary measures used in the Affected Area, it will take 14 years to complete a coupled pipe remediation program.

Conclusion-
Expansion of Dominion Cove Point LNG

Washington Gas

Although Washington Gas has been diligent in pursuing a solution to mitigate the impact of being the only shipper served directly from the Dominion Cove Point LNG terminal, it is not possible for the Company acting alone to provide a permanent solution to unsafe leakage in time for Dominion's proposed Cove Point expansion in-service date of Fall 2008.



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Washington Gas

CERTIFICATE OF SERVICE

Formal Case No. 1027, In The Matter of The Emergency Petition of the Office of the People's Counsel for An Expedited Investigation of the Distribution System of Washington Gas Light Company

I hereby certify that on this 24th day of July, 2009, a copy of the "Office of the People's Counsel's Rebuttal Testimony and Exhibits" was served by first-class mail, postage prepaid, hand delivery or electronic mail on:

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