HACKNEY FIELD FEASIBILITY STUDY

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Section **Pages**

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Resumes and references furnished upon request.

INTRODUCTION

HACKNEY STORAGE PROJECT

The **Hackney Storage Project** is a high deliverability oriskany field ideal field for the storage of natural gas, encompassing approximately 4,385 acres in rural southeastern Ohio in a strategically located area between several interstate and intrastate natural gas transmission lines. The **Hackney Storage Field** can be developed utilizing 26 existing productive wells and with the addition of five new vertical wells reach design capacity and deliverability. The **Hackney Hub** is designed to consist of oversized interconnecting pipelines and compressors combined with electronic gas measurement-control facilities to permit hourly balancing, no-notice deliveries and simultaneous multi-directional transactions necessary for the hub to perform "peaking", "parking" and "trading" functions, the hallmarks of a gas storage marketing hub.

Significant income can be realized from each possible transaction from storage fees to transmission fees taking advantage of multiple cycle capabilities. However, income potentials could be maximized by using a portion of the capacity for arbitrage. The proximity of the storage field to numerous interstate and intrastate transmission lines and natural gas fired electric generating plants will allow the operator to realize increased revenues from peaking service that is a necessity as winter and summer loads increase.

Pipelines in close proximity to the Hackney Storage Field are Texas Eastern Transmission Corp., Tennessee Gas Transmission, The Dominion-East Ohio Gas Company Columbia Gas Transmission Corp. and Columbia Gas of Ohio.

HACKNEY PARTNERS

Hackney Partners is a joint venture between Sabre Energy Corporation of 175 Main Street, Lore City, Ohio 43755 and Pelican Producing, Inc. 48647 Sarahsville Road, Caldwell, Ohio 43724. The Joint Venture's principal place of business is 175 Main Street, Lore City, Ohio 43755. The Joint Venture was formed to acquire certain wells and pipelines in the Hackney Field necessary for the development of this natural gas storage project.

HACKNEY HUB PROJECT OVERVIEW

Hackney Partners has acquired and continues to operate eighteen (18) wells in the field and a natural gas pipeline that runs from the field to a point adjacent to Texas Eastern Transmission Corporation (Duke Energy) and is connected to The Dominion- East Ohio Gas Company (Dominion). In conjunction with the acquisition of these properties, Hackney Partners has also commissioned geological, engineering and land studies. These studies have been conducted by geologists, landmen and an engineer cooperatively to gather, assimilate and analyze all available data in preparation for the conversion of the Hackney Field to storage. A summary of these studies is included in this report.

Based on the information gathered and studies made to date, the following conclusions can be made:

1) The Hackney area is rural, and the land is primarily used for agricultural purposes. The population is scarce.

2) Land is relatively inexpensive and surface rights can be acquired at nominal costs.

3) The majority of the storage rights, (75%) are owned by Hackney Partners. The balance could be obtained through lease acquisition or condemnations, if necessary.

4) The field is accessible to three interstate and two intrastate pipelines.

5) The field is strategically located to service market area needs from supply, transportation and storage service perspectives.

6) There are only 26 wells in the defined storage area.

7) The existing wells can be converted to injection/withdrawal and observation wells (26) and only five new vertical well will need to be drilled to reach design capacity and deliverability of 90,000 Mcf per day.

8) The integrity of the storage reservoir is preserved by geological features.

9) The field is in close proximity to a major electric grid and two natural gas fired electric power generating plants.

HISTORY

The Hackney Field was developed by Texaco in the early 1970's when the company drilled five wells to the Clinton-Medina Formation. These five wells were dual completed in the Clinton-Medina and Oriskany reservoirs, and continue to produce gas to this day. The following table includes well and production data from these wells:

Well	Permit #	Sec.	Township	Cumulative Production thru 2004 (MMcf)	
Murray-Gannon #1	1184	32	Manchester	3, 524	Cl/Me & Or W/83% from Or
Phillis #1	1193	5	Center	485	Cl only
Stout #1	1173	6	Center	1, 340	Or only *
Moretz #1	1186	7	Center	935	Or only *
Sherlock #1	1196	18	Center	225	Cl/Me W/10-20% from Or
				6, 509	

- Clinton completed, but never retrieved frac plug.

In 1983, Texaco drilled six additional wells to take advantage of high natural gas prices. These wells were drilled to the Clinton-Medina and completed for production in this formation only. The following table indicates well and production data:

Well	Permit #	Sec.	Township	Cumulative Production thru 2004 (MMcf)
Murray-Gannon #2	3009	32	Manchester	477
Murray-Gannon #3	3242	32	Manchester	79
Phillis #2	3004	5	Center	159
Stout #2	3241	6	Center	81
Moretz #2	3005	7	Center	303
Sherlock #2	3243	18	Center	117
				1216

The field is still in production and producing at a rate of 42 MMcf annually.

In conjunction with the drilling of these wells in 1983, Texaco and Enterprise Energy Corporation constructed a twenty-two thousand foot 4 ½ inch pipeline (MAOP 1400 psi) from the field to Texas Eastern Transmission Corporation. The pipeline was constructed to utility specifications and operated at 1000 psi. The pipeline is still in use but not connected to Texas Eastern.

HACKNEY HUB STATISTICS

Location: Ohio	Center & Manchester Townships, Morgan County,
Type:	Depleted Oriskany Gas Field
Design Total Capacity:	6.5 Bcf
Working Gas:	75%
Geology:	Oriskany Sandstone
Depth of Formation:	3,870 feet
Thickness of Formation:	Up to 16 feet
Areal Extent of Formation:	1,600 acres
Design Delivery Rate:	90,000 Mcfgd
Design Injection Rate:	50,000 Mcfgd
Design Gas Pressure (Full):	1400 psig
Primary Use:	Peaking, Gas Supply Management, and Transportation Services

PIPELINE SUMMARY

Pipeline	Line No.	Size (inches)	Location	Distance from field (miles)	Approx. Capacity (MMcfgd)
Texas Eastern Transmission Corp.	10	30	659.81 mile post	5.7	75+
Texas Eastern Transmission Corp.	3	26	4.5 mile post	12.0	75 +
Tennessee Gas Transmission	1	26	MLV. #206	12.0	75 +
The East Ohio Gas Company	NA	10	Morgan County	2.3	20
Columbia Gas Transmission Corp.	H	10	Muskingum County	20.1	40
Columbia Gas Transmission Corp.	C-106	10	Athens County	15.0	15

Summary of Proximate
Oriskany Storage Fields

The following information was obtained from published reports prepared by Columbia Gas Transmission and through direct conversations with Columbia storage operating personnel.

	Guernsey	Rockport
Storage Reservoir	Oriskany-Structural/ Stratigraphic Trap	Oriskany/Stratigraphic Trap
On-Line	1954	1953
Depth	3,304 Ft.	5,138 Ft.
Original Reservoir Pressure	1350 p.s.i.	1875 p.s.i.
Maximum Storage Pressure	1150 p.s.i.	1800 p.s.i.
Areal Extent	17,881 acres	14,460 acres
Injection/Withdrawal Wells	46	21
Observation Wells	2	9
Maximum Storage Capacity	5.4 Bcf	7.6 Bcf
Design Day Deliverability	35,600 Mcf	136,100 Mcf
Compression	1-880 HP	1-3000 HP
Produced Water	0	0

LAND/WELL SUMMARY

HACKNEY FIELD
LAND/WELL SUMMARY

The Hackney Hub Storage Project, encompassing approximately 4,385 acres, more or less, is located in Center and Manchester Townships, Morgan County, Ohio. The proposed storage field is located in a rural area that lies ten (10) miles northeast of McConnelsville, Ohio at the intersection of State Route 78 and State Route 83. The close proximity of the Ohio Power Company Beverly Power Plant, Duke Energy Beverly Power Plant and PSEG Waterford Power Plant and a number of pipelines, including both intrastate and interstate systems, make this location extremely attractive in formulating a complete transportation, storage and marketing strategy.

This area of Morgan County has been actively drilled and oil and gas produced for many years. The storage field area is almost entirely leased for oil and gas purposes and contains 26 wells that hold the majority of the leases by production. Approximately 75% of the leases contain provisions allowing the storage of natural gas. In addition, many leases allow for pooling and unitization with other leases to form units up to 640 acres in size. The leases and wells drilled thereon are owned by three independent oil and gas companies (Tables I, II and III).

Within the proposed storage field, Hackney Partners own 90.40% of all the oil and gas leases and more importantly 75.32% of the oil and gas leases that allow the storage of natural gas
(Table IV and Figure I). Hackney Partners also owns 76.5% of the proposed Observation/Storage and Storage wells and 55.6% percent of the proposed Observation wells for a combined total of 69.1% of all the wells located within the storage area (see Table V). The remaining leases, wells and unleased properties will be converted to storage use by lease acquisition, purchase of properties, ratification of existing leases or by condemnation in accordance with the Ohio Revised Code.

Hackney Partners has conducted due diligence on properties purchased from Texaco Inc. and Belden & Blake Corporation. In addition, Hackney Partners is very familiar with the history of the properties for sale. The majority of the leases and wells drilled thereon have been producing for over twenty years. Title opinions, curative documents, maps, engineering and geological well files and/or any other information related to the properties that Hackney Partners own will be made available for review upon request.

LEASE INFORMATION: HACKNEY HUB PROJECT
MORGAN COUNTY, OHIO

TABLE I

TOWNSHIP	SECTION	LESSOR	LESSEE (CURRENT)	ACREAGE	EXP. DATE	REC.INFO. (VOL./PAGE)	STORAGE RIGHTS
Manchester	28,29	Floyd Hill	Hackney Partners	56.0	HBP	58/651	No
Manchester	29,32	Alice Wilson	Hackney Partners	28.0	HBP	34/589	Yes
Manchester	29,32,33	Wayne Blackburn	Hackney Partners	127.0	HBP	34/397	Yes
Manchester	29,30,32	Franklin Real Est.	Mission Gas Co.	84.5	2/1/2002	62/362	Unknown
Manchester	30,31	Margaret Dye	Hackney Partners	207.0	HBP	62/52	Yes
Manchester	31	Franklin Real Est.	Mission Gas Co.	56.9	2/1/2002	62/362	Unknown
Manchester	31	Franklin Real Est.	Mission Gas Co.	34.5	2/1/2002	62/362	Unknown
Manchester	31	Franklin Real Est.	Mission Gas Co.	81.0	2/1/2002	62/362	Unknown
Manchester	31	Herbert Ferguson	Hackney Partners	117.5	HBP	62/242	No
Man./Center	31/5	Russell Allen	Hackney Partners	115.0	HBP	34/525	Yes
Manchester	31,32	Russell Allen	Hackney Partners	139.0	HBP	34/393	Yes
Manchester	31	Franklin Real Est.	Mission Gas Co.	66.0	2/1/2002	62/362	Unknown
Manchester	32	Mary Gannon	Hackney Partners	79.4	HBP	34/387	Yes
Manchester	32	Claude Murray	Hackney Partners	153.5	HBP	34/391	Yes
Manchester	32	Franklin Real Est.	Hackney Partners	19.0	HBP	35/31	No
Manchester	32	Paul Rohrbaugh	Hackney Partners	198.0	HBP	34/403	Yes
Manchester	32,33	Robert Daniel(1/2)	Hackney Partners	80.0	HBP	35/49	Yes
Manchester	32,33	B. Hammond (1/2)	Hackney Partners	80.0	HBP	35/51	Yes
Center	5	Clarence Phillis	Hackney Partners	99.5	HBP	34/535	Yes
Center	5	Keith Pernell	Hackney Partners	24.8	HBP	35/29	Yes
Center	5,6	Franklin Real Est.	Hackney Partners	389.5	HBP	35/31	No
Center	5	Rollin Allen	Hackney Partners	144.0	HBP	34/399	Yes
Center	5	Franklin Real Est.	Hackney Partners	60.1	HBP	58/17	No
Center	6	Clyde Dickson	Hackney Partners	15.0	HBP	38/597	No
Center	6	Delmer Ray	Hackney Partners	81.0	HBP	34/439	Yes
Center	6	Paul Allen	Hackney Partners	9.5	HBP	34/485	Yes
Center	6	Orena Ashton	Hackney Partners	40.8	HBP	34/487	Yes

TABLE I (CONT'D.)

LEASE INFORMATION: HACKNEY HUB PROJECT
MORGAN COUNTY, OHIO

TOWNSHIP	SECTION	LESSOR	LESSEE (CURRENT)	ACREAGE	EXP. DATE	REC.INFO. (VOL./PAGE)	STORAGE RIGHTS
Center	6	Edgar Martin	Hackney Partners	39.6	HBP	34/477	Yes
Center	6	Russell Fitzgerald	Hackney Partners	40.3	HBP	34/435	Yes
Center	6	Ora Stout	Hackney Partners	91.4	HBP	34/433	Yes
Center	6,7	John Sherlock	Hackney Partners	161.5	HBP	34/587	Yes
Center	7	Celia McFerron	Hackney Partners	84.6	HBP	34/467	Yes
Center	6,7	Ruth Linscott	Hackney Partners	65.4	HBP	34/405	Yes
Center	7	Donald Young	Hackney Partners	18.8	HBP	34/583	Yes
Center	7,8	Dean Reed	Hackney Partners	75.0	HBP	34/537	Yes
Center	7,8	Richard Mason	Hackney Partners	96.7	HBP	34/441	Yes
Center	7	Ralph Moretz	Hackney Partners	60.3	HBP	34/553	Yes
Center	7	Eugene Pierce	Hackney Partners	135.0	HBP	34/545	Yes
Center	7,18	John Sherlock	Hackney Partners	160.0	HBP	34/585	Yes
Center	7,8	Harry Silvus	Hackney Partners	87.0	HBP	34/415	Yes
Center	8	Gerald DePuy	Eagle Mountain	25.2	HBP	62/209	No
Center	8	Loretta Nardini	Eagle Mountain	6.8	HBP	62/212	No
Center	17	Cooley Silvus Est.	Eagle Mountain	28.0	HBP	61/290	No
Center	18	Curtis Clark	Hackney Partners	119.6	HBP	34/407	Yes
Center	18	John Forkin	Hackney Partners	80.0	HBP	34/459	Yes
Center	18	Leone Rex	Hackney Partners	440.0	HBP	34/409	Yes
Man./Center	Various	Unknown		63.2			
Total				**4,384.9**			

WELL INFORMATION: HACKNEY HUB PROJECT **TABLE II**
MORGAN COUNTY, OHIO

TOWNSHIP	SECTION	PERMIT NUMBER	WELL NAME & NUMBER	PROPOSED. STORAGE USE	LESSOR	ACREAGE	REC. INFO (VOL./PAGE)
			HACKNEY PARTNERS				
Manchester	32	1184	M. Gannon #1	Storage	M. Gannon Unit*	634.55	41/308
Manchester	32	3009	M. Gannon #2	Observation	M. Gannon Unit*		41/308
Manchester	32	2368	Murray et al #1	Storage	M. Gannon Unit*		41/308
Manchester	28	2621	F.Hill #1	Observation	F. Hill	56.00	58/651
Manchester	31	2844	Dye #1	Ob./Storage	M. Dye	207.00	62/52
Manchester	30	2845	Dye #2	Ob./Storage	M. Dye		62/52
Manchester	31	2940	Ferguson #2	Ob./Storage	H. Ferguson	117.50	62/242
Manchester	31	2710	Allen #6	Ob./Storage	R. Allen	139.00	34/393
Center	5	1193	C.R. Phillis #1	Observation	C.R. Phillis Unit*	598.24	58/410
Center	5	3004	C.R. Phillis #2	Observation	C.R. Phillis Unit*		58/410
Center	7	1186	R. Moretz #1	Storage	R. Moretz Unit*	638.99	41/306
Center	7	3005	R. Moretz #2	Storage	R. Moretz Unit*		41/306
Center	18	1196	O. Sherlock #1	Ob./Storage	O. Sherlock Unit*	639.52	41/298
Center	18	3243	O. Sherlock #2	Observation	O. Sherlock Unit*		41/298
Center	6	1173	O. Stout #1	Storage	O. Stout Unit*	577.90	41/300
Center	6	3241	O. Stout #2	Ob./Storage	O. Stout Unit*		41/300
Center	5	2557	Frank. Real Est.#2	Storage	C.R. Phillis Unit*	598.24	58/410
Center	5	2673	Allen #4	Storage	C.R. Phillis Unit*		58/410

*See schedule for description of leases within the units.

WELL INFORMATION: HACKNEY HUB PROJECT
MORGAN COUNTY, OHIO

TOWNSHIP	SECTION	PERMIT NUMBER	WELL NAME & NUMBER	PROPO STORAGE USE	LESSOR	ACREAGE	REC. INFO. (VOL./PAGE)
			ARTEX OIL COMPANY				
Manchester	31	3134	W.C. Brothers #1	Ob./Storage	Frank.Real Est.	56.87	62/362
Manchester	31	3339	Stotts-Kirby #1	Ob./Storage	Frank.Real Est.	66.00	62/362
Manchester	31	4499	O.P. Bell/Morris	Ob./Storage			
			CGAS/ENERVEST				
Center	8	2976	DePuy #1	Observation	G. DePuy	25.20	62/209
					L. Nardini	6.80	62/212
					C. Silvus Est.	14.93	61/290
			ALLIANCE PETROLEUM CORPORATION				
Center	7	4454	Moretz #4	Observation			
Center	7	4457	Moretz #5	Ob./Storage			
Center	18	4455	Sherlock #3	Observation			
Center	6	4456	Stout #3	Observation			

TABLE III

WELL UNIT INFORMATION: HACKNEY HUB PROJECT
MORGAN COUNTY, OHIO

TOWNSHIP	SECTION	LESSOR	LESSEE (CURRENT)	ACREAGE	EXP. DATE	RECORDING VOL./PAGE	STORAGE RIGHTS
			MURRAY-GANNON UNIT (41/308)				
Manchester	29,32,33	W. Blackburn	Hackney Partners	62.3	HBP	34/397	Yes
Manchester	32	B. Hammond(1/2)	Hackney Partners	40.0	HBP	35/51	Yes
Manchester	32	R. Daniel(1/2)	Hackney Partners	40.0	HBP	35/49	Yes
Manchester	32	A. Wilson	Hackney Partners	5.0	HBP	34/589	Yes
Manchester	32	P. Rohrbaugh	Hackney Partners	198.0	HBP	34/403	Yes
Manchester	32	Frank. Real Est.	Hackney Partners	19.0	HBP	35/31	No
Manchester	32	M. Gannon	Hackney Partners	79.4	HBP	34/387	Yes
Manchester	32	C. Murray	Hackney Partners	153.5	HBP	34/391	Yes
Manchester	32	R. Allen	Hackney Partners	79.0	HBP	34/393	Yes
			C.R. PHILLIS UNIT (58/410)				
Center	5	C. Phillis	Hackney Partners	99.5	HBP	34/535	Yes
Center	5	K. Pernell	Hackney Partners	24.8	HBP	35/29	Yes
Center	5	Frank. Real Est.	Hackney Partners	201.1	HBP	35/31	No
Center	5	R. Allen	Hackney Partners	144.0	HBP	34/399	Yes
Center	5	Frank. Real Est.	Hackney Partners	60.1	HBP	58/17	No
Center	5	R. Allen	Hackney Partners	78.97	HBP	34/525	Yes

TABLE III (CONT'D.)

WELL UNIT INFORMATION: HACKNEY HUB PROJECT
MORGAN COUNTY, OHIO

TOWNSHIP	SECTION	LESSOR	LESSEE (CURRENT)	ACREAGE	EXP. DATE	RECORDING VOL./PAGE	STORAGE RIGHTS
			R. MORETZ UNIT (41/306)				
Center	7	R. Moretz	Hackney Partners	60.3	HBP	34/553	Yes
Center	7	J. Sherlock	Hackney Partners	80.0	HBP	34/585	Yes
Center	7	J. Sherlock	Hackney Partners	80.0	HBP	34/587	Yes
Center	7	D. Young	Hackney Partners	18.8	HBP	34/583	Yes
Center	7	E. Pierce	Hackney Partners	135.0	HBP	34/545	Yes
Center	7	D. Reed	Hackney Partners	32.3	HBP	34/537	Yes
Center	7	R. Mason	Hackney Partners	80.0	HBP	34/441	Yes
Center	7	C. McFerren	Hackney Partners	84.6	HBP	34/467	Yes
Center	7	H. Silvus	Hackney Partners	8.0	HBP	34/415	Yes
Center	7	R. Linscott	Hackney Partners	61.6	HBP	34/405	Yes
			O. SHERLOCK UNIT (41/298)				
Center	18	J. Sherlock	Hackney Partners	80.0	HBP	34/585	Yes
Center	18	L. Rex	Hackney Partners	366.3	HBP	34/409	Yes
Center	18	C. Clark	Hackney Partners	119.6	HBP	34/407	Yes
Center	18	J. Forkin	Hackney Partners	80.0	HBP	34/459	Yes

TABLE III (CONT'D.)

WELL UNIT INFORMATION: HACKNEY PROJECT
MORGAN COUNTY, OHIO

TOWNSHIP	SECTION	LESSOR	LESSEE (CURRENT)	ACREAGE	EXP. DATE	RECORDING VOL./PAGE	STORAGE RIGHTS
			O. STOUT UNIT (41/300)				
Center	6	O. Stout	Hackney Partners	91.4	HBP	34/433	Yes
Center	6	R. Linscott	Hackney Partners	3.8	HBP	34/405	Yes
Center	6	Frank. Real Est.	Hackney Partners	188.4	HBP	35/031	Yes
Center	6	O. Ashton	Hackney Partners	40.8	HBP	34/487	Yes
Center	6	R. Fitzgerald	Hackney Partners	40.3	HBP	34/435	Yes
Center	6	E. Martin	Hackney Partners	39.6	HBP	34/477	Yes
Center	6	P. Allen	Hackney Partners	9.5	HBP	34/485	Yes
Center	6	D. Ray	Hackney Partners	81.0	HBP	34/439	Yes
Center	6	O. Sherlock	Hackney Partners	81.5	HBP	34/587	Yes
Center	6	C. Dickson	Hackney Partners	15.0	HBP	38/597	No

TABLE IV

LEASE SUMMARY: HACKNEY HUB PROJECT
MORGAN COUNTY, OHIO

LESSEE	STORAGE LEASES (ACRES)	NON-STORAGE LEASES (ACRES)		TOTAL LEASES (ACRES)	STORAGE LEASES (% OF FIELD)	NON-STORAGE LEASES (% OF FIELD)	TOTAL LEASES (%OF FIELD)
Hackney Partners	3,281.7	657.1		3,938.8	74.8	15.0	89.8
Artex Oil Company	0.0	322.9	*	322.9	0.0	7.4	7.4
CGAS/Enervest	0.0	60.0		60.0	0.0	1.4	1.4
Undetermined	0.0	63.2	*	63.2	0.0	1.4	1.4
	3,281.7	1,103.2		4,384.9	74.8%	25.2%	100.0%

*The storage rights have not been determined.
For purposes of calculations, we have assumed
that storage leases are not in effect.

TABLE V

WELL SUMMARY: HACKNEY HUB PROJECT
MORGAN COUNTY, OHIO

OWNER/ OPERATOR OF RECORD	OB./STORAGE & STORAGE WELLS (# IN FIELD)	OBSERVATION WELLS (# IN FIELD)	TOTAL WELLS (# IN FIELD)	OB./STORAGE STORAGE WELLS (% OF FIELD)	OBSERVATION WELLS (% OF FIELD)	TOTAL WELLS (% OF FIELD)
Hackney Partners	13	5	18	76.5	55.6	69.3
Artex Oil Company	3	0	3	17.6	0.0	11.5
CGAS/Enervest	0	1	1	0.0	11.1	3.8
Alliance	1	3	4	5.9	33.3	15.4
Total	17	9	26	100.0	100.0	100.0

GEOLOGY

HACKNEY FIELD
GEOLOGY SUMMARY

INTRODUCTION

Hackney Partners proposes to convert the gas producing reservoir of the Hackney Field into an underground gas storage service facility.

This gas reservoir is the Oriskany Sandstone of Devonian Age, located in Morgan County, Ohio and shown in Attachment **1**, which is approaching the economic limit of its productive life. The reservoir is a porous, permeable marine sandstone overlain and underlain by thick, impermeable limestones. Westward, up dip, the sandstone grades into impermeable limestone, and eastward, down dip, the sandstone is filled with water. The reservoir represents one of at least ten known gas fields along the western pinchout of the Oriskany in Ohio and West Virginia. Gas is being stored in the Oriskany in the Guernsey Field, situated approximately 30 miles north of the Hackney Field.

It is estimated that this reservoir has a working storage capacity of 6.208 billion standard cubic feet at a shut-in wellhead pressure of 1400 psig (1390 psia shut-in reservoir pressure), when operated to a base gas pressure of 300 psig shut-in wellhead pressure. The maximum design injection wellhead pressure is 1400 psig to assure that the maximum inventory can be achieved in the injection time available.

GEOLOGY

To study the feasibility of converting the Hackney Field from a nearly depleted gas producing reservoir into a gas storage reservoir, data was compiled from records on file at the following locations:

1. Ohio Department of Natural Resources
   Division of Oil and Gas
   Building A, Fountain Square
   Columbus, Ohio
2. Ohio Department of Natural Resources
   Division of Geological Survey, Subsurface Section
   Building B, Fountain Square
   Columbus, Ohio
3. Morgan County Auditor
   Morgan County Courthouse
   McConnelsville, Ohio
4. Texaco, Inc.
   Salem, Illinois
5. Texaco, Inc.
   Denver, Colorado

Copies of this data are on file for review at the offices of Sabre Energy Corporation, 175 Main Street, Lore City, Ohio 43755.

This data was then used to construct 17 stratigraphic cross sections through the Hackney Field. Then a structural contour map on top of the Oriskany and a porosity x thickness map of the Oriskany were constructed. Determination of the gas-water contact in the Oriskany was made mostly from open hole Neutron logs and a few open hole resistivity logs, as well as drillers' records.

The areal extent of the Hackney Field is approximately 2,112 acres, as defined by subsurface geological mapping. Attachment **2** is an isopach map of the thickness x porosity of the Oriskany Sandstone with porosities of 6% or greater. Attachment **3** is a structure map on the top of the Oriskany Sandstone. Attachment **4** is an open hole, geophysical log from the Texaco #1 Murray - Gannon well showing the Oriskany Sandstone and bounding limestones. Geological and engineering data for the proposed storage and observation wells in the Hackney Field are presented in Attachment **5**.

Within the Oriskany, porosities range from 0% to 16%, but permeabilities for porosities below 6% are too low to be considered "reservoir quality". Thicknesses of Oriskany containing porosities of 6% or greater range from 0 to 16 feet. Porosity x thickness values for the Oriskany range from 0 to 1.77 above the - 2920 feet sub-sea gas-water contact. Thus the Hackney Field is an up dip stratigraphic trap, bounded on the west by a porosity pinchout, on the east by water, and closed on the north and south where water intersects porosity pinchouts. The water in the Oriskany below the gas-water contact must be fairly tightly bound. The Murray-Gannon #1 (Attachment **3**) has produced from the Oriskany since 1971, and it produces "wet" gas, but no water. Thus, there is no measurable up dip water encroachment from 1971 to present. Impermeable limestones seal the top and base of the Oriskany in the field.

PRODUCTION HISTORY AND DATA

The Hackney Field gas reservoir was discovered in March, 1970 with the completion of the Texaco #1 Ora J. Stout well. Four development wells were drilled during 1971. The #1 Oma Sherlock encountered poor reservoir development and produced very little from the Oriskany. The #1 C.R. Phillis encountered wet Oriskany and was completed as a salt water injection well. The #1 Murray-Gannon, and #1 Ralph Moretz were completed as producers, and through December 1999, along with the #1 Ora Stout, they produced 5.571 Bcf. Production from the #1 Murray - Gannon was from the Clinton and Medina as well as the Oriskany, so total Oriskany production for the Hackney Field through December 1999 was approximately 5.000 Bcf, or 80% of the original gas in place of 6.208 Bcf. The discovery pressure of the reservoir was 1390 psia at a depth of 3,866 feet. Detailed production and reservoir data are shown in Attachment **6**. Presently the Hackney Field is producing gas from the Oriskany, under compression, from the #1 Murray - Gannon well. The #1 Ora J. Stout and #1Ralph Moretz are shut-in. Gas is also being produced from the Clinton and Medina, under compression, from the #1 Murray - Gannon and 25 other wells in the Hackney Field.

STORAGE RESERVOIR DEVELOPMENT

Hackney Partners proposes to develop a total working storage capacity of 6.208 Bcf from the Hackney reservoir when operated between a base gas shut-in wellhead pressure of 300 psig and a maximum shut-in wellhead pressure of 1400 psig (the design maximum flowing wellhead injection pressure is 1400 psig). The base gas pressure was selected to provide adequate reservoir pressure at the end of the withdrawal cycle to maintain design field deliverability. The working storage capacity calculations are based on a specific gravity of injection gas of 0.58 and a heating value of 1030 BTU per cubic foot, the minimum heat content of the gas to be transported to the proposed storage field during the terms of any Agreements.

It will be necessary to complete the following to provide the required storage deliverability service from this field:

1. Convert the #1 Murray-Gannon, #1 Ora J. Stout and #1 Ralph Moretz wells to storage service;

2. Plug back and recomplete 4 Clinton-Medina wells within the field for storage service;

3. Convert the #1 Oma Sherlock well to pressure observation service in the up dip, poor permeability area of the field;

4. Plug back and recomplete 8 Clinton-Medina wells within the up dip, poor permeability areas of the field for pressure observation service;

5. Convert the #1 C.R. Phillis well to pressure observation service in the wet area, down dip of the field;

6. Plug back and recomplete 8 Clinton-Medina wells within the wet area, down dip of the field for pressure observation service;

7. Drill 1 new pressure observation well in a poor permeability area at the north edge of the Field;

8. Drill and complete 2 new vertical wells for storage service south of the Murray-Gannon #1; and

9. Drill 3 vertical wells north and south of the Moretz #2 well location.

Average well deliverability curves were calculated using data obtained from flow tests conducted on the # 1 Murray-Gannon well modified to reflect:

1. Reservoir parameters shown on open hole geophysical logs from the 8 wells to be converted/recompleted for storage service;

2. Storage well completion techniques;

3. Well placement; and

4. Multi-well interference.

The proposed storage and observation wells are shown on Attachments **2, 3,** and **7.**

Hackney Partners has acquired the necessary interests within the reservoir and buffer acreage as contained within the "Proposed Storage Boundary" shown on Attachment **7.**

LIST OF ATTACHMENTS

Attachment 1.	A map showing the location of the Hackney Field.
Attachment 2.	An isopach map of the thickness x porosity of the Oriskany Sandstone.
Attachment 3.	A structure map on the top of the Oriskany Sandstone.
Attachment 4.	An open hole, geophysical log from the #1 Murray-Gannon well showing the Oriskany Sandstone.
Attachment 5.	A table showing geological and engineering data for proposed storage and observation wells.
Attachment 6.	Detailed production and reservoir data for the Hackney Field.
Attachment 7.	A map showing the "Proposed Storage Boundary" for the Hackney Field.

ENGINEERING

HACKNEY GAS FIELD ORISKANY FORMATION
FEASIBILITY STUDY
GAS STORAGE CONVERSION – ARBITRAGE OPERATIONS
FOR
HACKNEY PARTNERS, LORE CITY, OHIO

Introduction:

Gas Market Centers are vitally important to gas owners and producers because they provide flexibility that is essential in matching supply to demand. Such centers are basically gas pipeline hubs with electronic gas measurement facilities that allow gas title tracking from one pipeline to another. In contrast, ***Gas Storage Marketing Hubs*** are distinguished by the presence of an operational gas balancing type storage field near the interconnection of interstate or intrastate gas transmission pipelines. Multi-directional high-rate gas compressors are available to move gas from one pipeline to any other pipeline with or without utilizing the storage field. This scenario allows the gas to be moved at interruptible transportation rates and be "parked" in close proximity to premium markets. The field's maximum storage volume is secondary to the developed injection and withdrawal capabilities that ensure the ability to rapidly replace a draw-down of stored volumes in time to satisfy requested deliverabilities in the next cold snap or sales opportunity.

The ideal storage field in this model is strategically located in an area between several pipelines and is completed in deep reservoirs that have high deliverability potential. Oversized interconnecting pipelines and compressors combined with electronic gas measurement-control facilities permit hourly balancing, no-notice deliveries, and simultaneous multi-directional transactions necessary for these fields to perform the "peaking," "parking," and "trading" functions that are the hallmark of ***Gas Storage Marketing Hubs***.

To maximize the profit potential of the previously described model storage field, the arbitrage mode of operation would have the most potential. If the interconnected transmission lines originate in different producing regions and terminate in different consumer regions, the possibilities are almost unlimited if the capacity and deliverability facilities are adequate.

For entrepreneurs willing to invest in capital assets, gas storage can provide a tool to support long-term marketing objectives. Incremental sales margins can be gained by playing the gas market using commodity (service) charges or value-added (swing) sales.

For Local Distribution Companies (LDCs) or end users, storage assets increase overall flexibility while significantly lowering costs by allowing reductions in firm transportation commitments.

For Electric Utilities, ready access to a high deliverability gas storage field for their natural gas fired electric generating plants, would allow peaking service that is becoming a necessity as their summer and winter loads increase.

The Hackney Gas Field, located in Morgan County, Ohio, is a Clinton/Oriskany gas field strategically located in an area between Texas Eastern, Tennessee Gas, Columbia Gas Transmission, Columbia Gas of Ohio, and East Ohio gas pipelines. The field was originally completed in the Oriskany Formation with later development in the underlying Clinton Formation. Because the field meets the general criteria and appears to have the necessary requirements for conversion to a highly efficient gas storage field, an analysis and feasibility study was undertaken to determine if the Hackney (Oriskany) Gas Field is a suitable candidate for conversion to either a gas storage field or, preferably, a gas storage marketing hub. Once this was determined, a multi-phase program was developed that allows the field capabilities and market obligations to be balanced and to grow in lock step as the development evolves from a gas production field to a gas storage field to a gas storage marketing hub.

Reservoir Engineering Evaluation:

The strategically positioned Hackney Oriskany Gas Field, located in Center and Manchester Townships, Morgan County, Ohio, displays the traditional qualities for which the Oriskany formation is noted. The Murray Gannon #1 was drilled in December 1971 by Texaco, and after a very small hydraulic fracture treatment, the Oriskany tested at 6,515 Mcf/day. Two ensuing wells were successfully completed in the Oriskany, and, after 29 years, these two wells and the Murray Gannon #1 have produced approximately 4,940,000 Mcf of gas. Although the reservoir pressure has been depleted from the original 1390 psia to the present 80.4 psia, the Murray Gannon #1 is still producing approximately 50 Mcf/day.

Since the existing conditions and historical data looked promising, an in-depth feasibility study was undertaken to determine the suitability of the Oriskany formation in the Hackney Field for storage service. Isochronal 4-point gas flow tests were personally conducted on the Oriskany and Clinton completions of the Murray Gannon #1 to help estimate field wide gas deliverability potential. Extrapolation of the Oriskany flow test results of the 65.7 psig current pressure to the 1375 psig anticipated storage pressure – demonstrated well deliverabilities in the range of 5,000 to 12,500 Mcf/day rates at line pressures of 1217 to 609 psig.

Well electric logs were used as the basis for the volumetric calculations of the reservoir which compared favorably with the produced volume. This was the basis for the cushion and working gas calculated volumes that were used in the various schedules of gas storage activity.

The detailed reservoir engineering study, utilizing all available information, contained volumetric calculations that have been used to compute estimates of cushion and working gas volumes. The calculations used to convert the Porosity x Thickness Isopach Map to reservoir dimensions are as follows:

Hackney Oriskany Reservoir Volumetric Calculations as of 11/11/93
(* Adjusted for temperature difference & super-compressibility)

Zone	Acres	Por-Ac-Ft Por-Ft	Por-Ac-Ft Acre-Ft	Pore Vol M Cu Ft	At 75% Sg. M Cu Ft
1.50 to 1.75 Ft.	13.04	1.625	21.18	923	692
1.25 to 1.50 Ft.	68.04	1.375	93.56	4,075	3,057
1.00 to 1.25 Ft.	203.54	1.125	228.99	9,975	7,481
0.75 to 1.00 Ft.	455.94	0.875	398.95	17,378	13,034
0.50 to 0.75 Ft.	820.44	0.625	512.77	22,336	16,752
0.25 to 0.50 Ft.	1,219.36	0.375	457.26	19,918	14,939
0.00 to 0.25 Ft.	1,598.75	0.125	199.84	8,705	6,529
Totals			1,912.56	83,311	62,483

Gas Storage Volume = 62,483 x 1,389.7/14.7 =	6,207,724 Mcf*
Cushion Gas @ 10 MMcf/D minimum (300 psia)	1,230,957 Mcf*
Working Gas Total	4,976,767 Mcf*

Deliverability Investigation:
Initially, estimates of maximum deliverability were input to the computer model of the Hackney Oriskany reservoir to simulate the facilities needed for maximum utilization of the reservoir. This use of these parameters has lead to the conclusion that the Oriskany Reservoir is capable of sustaining a rate of 90,000 Mcf/day for approximately twenty-one days if the wells are located idealistically so as to postpone inter-well drainage interference.

This design criteria, requiring the production of approximately one-half of the working gas inventory in twenty-one days into a 1000 psi pipeline system, necessitates that a majority of the active wells are ultra-high deliverability wells that are located in a manner so as to postpone drainage area interference as long as possible. Inquiries were made of the gas storage operators in the Appalachian Area as to the results of their high capacity hydraulic fracturing and horizontal well drilling programs. Their replies were given considerable weight in making the final design modifications of the physical facilities – concluding that:

A twenty-one day sustained delivery of 90,000 Mcf/day can be achieved with three existing Oriskany wells supplemented with the drilling of five vertical wells, **if the results obtained are equal to those reported by various operators experimenting with high capacity completions of gas storage wells in the Appalachian Area**.

Exhibit II 'Proposed Hackney Gas Storage Field Individual and Total Well Deliverabilities' was developed to demonstrate the various field deliverabilities from the six proposed wells – at different field pressures – with delivery into the Texas Eastern 1000 psig pipeline system. It must be noted that the location of gas turbine electric generators could be near enough to the Hackney Field to justify the installation of a

dedicated high capacity gas pipeline. In this event, anticipated line pressures of approximately 100 psig would allow peak deliveries approaching 200 MMcf/day with the proposed design of well and surface facilities.

The other two charts are the graphical rendition of the computer gas storage model's creation of the Hackney Field's abilities based on its compilation of the parameters of the current design of well and surface facilities:

- The first chart is a typical 110 day withdrawal cycle, commencing with 90,000 MMcf/day rate, stepping down to 60 MMcf/day then 30 MMcf/day and finally 10 MMcf/day to completely deplete the working gas inventory. (Compression is required to deliver the last 1,000,000 Mcf into the 1000 psi line system.)

- The second model output chart shows another winter of high usage and then two summer peaking delivery periods (simulating a gas fired electric generator's demands). As shown, the 90 MMcf/day design rate was not quite accomplished due to the present compressor design's inability to restore adequate working gas into the reservoir in time to meet the generator's demand – *or overestimating the durations of the peaking periods*.

New Wells:
Five vertical wells should be completed open hole with 7 5/8" casing set through the Oriskany and hydraulically fractured with a high volume of 10-20 mesh sand at a very low injection rate.

A new well should be drilled and completed as an observation well north of Well #1184. Electronic pressure monitoring equipment should be installed to permit continuous monitoring of pressure activity in the area. The new information will be required to determine the extent of permeability restriction that isolates the Hackney Field from porous Oriskany areas northeast of the field.

Well Recompletions:
As a result of the study, a computerized Porosity x Thickness Isopach Map is included and labeled Exhibit I. The map line connecting wells 2345, 3134, 2940, 2958 and 3339 represents the approximate position of a permeability restriction. The determination was based on the complete absence of gas shows in the Oriskany when the wells were drilled, even though the electric log values for porosity were less than the porosity of the prolific wells to the east. Furthermore, since there is a relatively good match between the calculated reservoir volume of the eastern area and the total gas produced from the three Oriskany producing wells, the assumption of permeability reduction appears justified. However, all of the wells previously listed should be recompleted as observation wells in the Oriskany Formation. If pressure changes attributable to gas storage activity are detected in any of these wells, some, or all, should be converted to active withdrawal wells and the next row of wells recompleted as observation wells.

Recompletions of the three Oriskany producing wells will necessitate the removal of all surface equipment, tubing, and packers. As required by state law, cement should then be placed over the Clinton perforations and a metal bridge plug (with cal-seal cap) placed in the 5 ½ inch casing approximately 100 feet below the Oriskany. Depending on the results of flow tests and other information acquired during the process, remedial stimulation treatments may be required for the Stout #1 and Moretz #1. If this is the case, stimulations procedures for the Oriskany Formation should be preceded by re-perforation (by using 15 to 20 capsules) in a hollow case carrier gun in empty casing. Five hundred gallon acid breakdown procedures followed by hydraulic fracture treatments of at least 40,000 gallons of jelled water (with biocides) and 50,000 to 60,000 Lb. of 20-40 mesh sand, pumped at 20 bbl/minute or less, should create the anticipated deliverability.

Temporary installation of 1 ½ inch tubing also may be required if significant amounts of water are recovered in the recompletion process or used in stimulation treatments.

If post fracturing 4-point isochronal flow tests prove disappointing in the first recompleted well, 10-20 mesh sand should be substituted in the treatment for the remaining well(s).

Since the 4 ½ inch casing in the Murray #1 is centralized and cemented above the Oriskany, recompletion should consist of removing the 2 inch tubing, plugging back, perforation, and fracturing the Oriskany Formation as previously described.

Initial Storage Operations:
Once the storage operation is initiated, the pressures acquired from the observation wells located below the present gas-water contact will help determine the movement of gas injected into the reservoir by the six storage wells located nearby.

An attempt should be made initially to balance the injection of all eight designated storage wells. As reservoir pressure increases, the priority may shift to controlling injection rates to the perimeter wells in order to position the gas in the section of the reservoir with best permeability. Once injection/withdrawal activity has been established the potential exists to increase the injection/withdrawal rates by:

1) Drilling additional injection/withdrawal wells or;
2) Converting observation wells to injection/withdrawal.

The positions of these additional storage wells will be determined based on information gathered from the initial phases of the gas storage activity.

The same plug back procedure that was used in the preliminary steps should be utilized for the recompletion of the nineteen designated observation wells before proceeding as follows:

a) The recovered 4 ½ inch casing should be culled and the acceptable pipe rerun with float equipment and centralizers.

b) The wells do not need to be fractured, only perforated and broken down with acid. One and one-half inch tubing should be installed to facilitate cleanup and, if flow tests are unsatisfactory, either stress fracs or mini fracs should be used to assure pressure communication with the reservoir.

Exhibit III is a CAD sketch illustrating a recompletion where the casing is cut off and rerun with centralizers and float equipment.

Surface Facilities:

To minimize friction loss, all API-ASA series 600 surface piping, valves, meter runs, and separators should be 8 inches in diameter for the three new wells and 6 inches for three recompleted storage wells. The Murray #1, equipped with 4 ½ inch casing, should utilize both casing head openings with dual 4 inch valves and 4 inch parallel lines coverging at the 6 inch meter run (Exhibit IV).

Pressure and differential pressure and temperature transducers must be installed on all gas measurement orifice flanges. Buried conduit should be utilized for power and signal cables connecting the transducers and the electronic gas measurement equipment, radio transmitters and antenna, solar generators and batteries; electric and/or electronic gear should be installed on a pole a safe distance from the surface facilities.

The 6 and 8 inch valves between the meter runs and the gathering lines should be equipped with pneumatic computer activated controls that facilitate the computer operation of all storage wells. Automating these valves allow demand actuated rate changes plus the constant monitoring of shut-in pressures and flowing pressures, regardless of each well's operating status. An additional 6 or 8 inch valve will be required at the intersection of each gathering line with 6 or 8 inch trunk lines. The valves should utilize 30 to 45 degree turns to position them above ground for easy access and operation in case of an emergency. Exhibit V is a CAD sketch of the surface equipment recommended for the gas storage wells.

The nineteen observation wells will require 1 ½ inch tubing and new or reconditioned well heads and valves. Additionally, 30 day mechanical dual pen pressure recorders should be connected to the annulus and tubing of every observation well. Tanks also will be required at some locations to store water that occasionally must be produced to ensure that recorded pressures are representative of the true reservoir pressure at each well.

Dehydration units should be installed on the trunk line after the junction of the last group of storage wells. Since efficient moisture removal requires in excess of 90% utilization of the contact tower's capacity, three or four units of various sizes will be utilized, in modular fashion, to assure that gas meets contract specifications.

Although valves and equipment will be installed to automate these units, the glycol dehydration operation still requires considerable attention during the worst weather of the year. Therefore, the location of the field office not only should be in close proximity to these units, but also atop one of the highest hills to facilitate radio communication.

Initially, the location of the four inch supply line junction with the trunk line is not important. However, since the future compressor site should be near the field office, this junction also should be near the field office. Other considerations for field office and facility locations are compressor noise (distance to the nearest resident) and length of access road. Exhibit VI is a CAD sketch of the main facilities of the storage operation.

Summary:

A feasibility study has been completed that has concluded that the Hackney Oriskany Reservoir, located in Morgan County, Ohio, is ideally situated for conversion to a gas storage marketing hub. A working gas volume has been calculated at approximately 5,000,000 Mcf, and if well gas deliverabilities from the five new and three recompleted wells are developed as anticipated, a sustained deliverability of 90,000 Mcf/day will be available for approximately 21 days.

Since the field is located between the gas pipelines of Texas Eastern – Tennessee Gas – Columbia Gas Transmission (transmission companies), and Columbia Gas of Ohio – East Ohio Gas (local distribution companies), and is practically under the high tension electric power grid, the opportunities are limitless for the Hackney Oriskany Field as a gas storage marketing hub.

FACILITY COST ESTIMATES

COST OF FACILITIES

The cost estimates contained in this section were derived from quotes and estimates provided by equipment suppliers and contractors and from general industry experience in similar construction in the same geographic area. Some line item costs were based on estimates made by other storage companies for similar services.

The project cost estimates do not include general and administrative overhead, financing and interest expenses or the value of Hackney Partners' existing wells, leases and pipelines. The following is a brief discussion of each of the cost categories.

Feasibility Study

In the conduct of the Feasibility Study, Hackney Partners coordinated the efforts of landmen, a petroleum engineer, geologists, and an attorney in compiling and reviewing data relative to natural gas storage and the project area.

Although the information included in this study is complete, as the project proceeds, additional land and engineering work will need to be performed.

Legal and Professional

The estimated costs in this section have not been incurred since they relate primarily to the costs associated with making a F.E.R.C. application for a storage certificate.

Acquisitions

There are eight wells within the defined storage area that will need to be acquired. The estimated acquisition cost was established from calculated oil and gas reserves and salvageable equipment values.

Well Construction and Installation

A detailed discussion of the individual well conversions is contained in the engineering section of this report and actual quotes for services and materials are available upon request.

Pipeline and Compression

The injection/withdrawal pipelines within the field are to be constructed of 10", 8" and 6" steel coated pipe of a grade capable of handling a maximum operating pressure of 1600 to 2000 psi. The infield pipelines will connect the individual storage wells to a compressor station and control facility located near the site of the C.R. Phillis #2 well. The configuration of the infield pipelines will be such as to accommodate the various services that could be offered to storage customers.

The compression and control site can be connected to Texas Eastern Transmission (30" system) at a point 30,000 feet southeast of the station; to East Ohio Gas approximately 12,000 feet southeast of the station; or to Texas Eastern, Tennessee Gas and Columbia Gas Transmission at points approximately 106,000 feet northwest of the station. The enclosed cost estimates are for pipeline interconnects with only Texas Eastern and East Ohio Gas.

The cost estimate for compression is for three 1500 horsepower electric compressors with VFD.

Operating Costs

All operating costs are based on projected operating expenses for other storage fields as reported in F.E.R.C. filings, modified for this application and adjusted for local wage variances.

HACKNEY HUB
NATURAL GAS STORAGE PROJECT
ESTIMATED COST OF FACILITIES

TEXAS EASTERN/EAST OHIO MARKETS ONLY

INITIAL PHASE

FEASIBILITY STUDY		ESTIMATED COST	
Regulatory Review		$ 50,000	
NGA, FERC, PUCO Regulations:			
Lease & Title Evaluation		125,000	
Geological Evaluation		70,000	
Engineering Evaluation		70,000	
Reservoir Study			
Pipeline & Well Evaluation			
	Sub-Total	$ 315,000	
LEGAL & PROFESSIONAL			
Environmental Assessment		$ 100,000	
Filing Fees		50,000	
Attorney Fees		250,000	
	Sub-Total		$ 400,000
ACQUISITIONS			
Acquire 8 wells and outstanding storage rights		$ 1,600,000	
	Sub-Total		$ 1,600,000

Initial Phase Cost Total $ 2,315,000

DEVELOPMENT PHASE

WELL CONVERSION

Rework 2 Oriskany wells for observation	$ 88,000	
Rework 3 Oriskany wells for injection/withdrawal	697,290	
Plug back 4 Clinton/Medina wells for storage	1,115,532	
Plug back 17 Clinton/Medina wells for observation	2,398,649	
Drill and complete 5 injection/withdrawal wells	3,500,000	
Sub-Total		$ 7,799,471

PIPELINE AND COMPRESSION

GATHERING SYSTEM

Install 18,000 feet of 10” high pressure pipeline @ $100.35/ft.	$ 1,806,415	
Install 6,000 feet of 8” high pressure pipeline @85.25/ft.	511,558	
Install 8,000 feet of 6” high pressure pipeline @74.97/ft.	599,806	
Install electronic measurement & computer hardware	750,000	
Sub-Total		$ 3,667,779

TRANSMISSION SYSTEM

Install one 30,000 feet 12” high pressure pipeline to Texas Eastern/East Ohio Gas @ $110.55/ft.	$ 3,316,577	
Texas Eastern tap (8”) and electronic gas measurement station	950,000	
Construct Building & install valves, fittings and regulators for pipelines and compressors at compressor station	3,600,000	
Sub-Total		$ 7,866,577

COMPRESSION SYSTEM

Install modular natural gas compression w/separation and dehydration equipment	$ 3,700,000	

Development Costs Total $ 23,033,827

Cost of Facilities Grand Total $ 25,348,827

OPERATING PHASE

FIELD OPERATIONS – LABOR		**ANNUAL COST**
Compressor Mechanic		$ 60,000
Technician		44,500
Laborer		32,000
	Sub-Total	$ 136,500
FIELD OPERATIONS – SUPPLIES & EXPENSES		
Injection/Withdrawal Wells		$ 13,500
Observation Wells		4,000
In-Field Lines		2,000
Transmission Lines		5,000
Compressor Station		75,000
Electrical Power		60,000
Measuring & Regulating		5,000
	Sub-Total	$ 164,500
PROFESSIONAL SERVICES		
Legal		$ 10,000
	Sub-Total	$ 10,000
GENERAL & ADMINSTRATIVE		
Storage Manager		$ 80,000
Accounting		30,000
Office Overhead		41,000
	Sub-Total	$ 151,000

Total Estimated Annual Operating Costs $ 462,000