
BILLMAN GEOLOGIC CONSULTANTS, INC.

TO: MR. MICHAEL HOOVER, WINDFALL OIL & GAS, INC.
FROM: DAN A. BILLMAN, PG, CPG, PRESIDENT, BILLMAN GEOLOGIC CONSULTANTS, INC.
SUBJECT: DISCUSSION OF THE GEOLOGIC MAPPING AND CROSS-SECTIONS IN THE AREA OF THE ZELMAN INJECTION WELL PROJECT
DATE: 12/18/2016
CC:

Mr. Michael Hoover of Windfall Oil & Gas, Inc., requested that Billman Geologic Consultants, Inc. (BGC) review the geology in and around the Zelman injection well project.

BGC has not verified ownership or completed a site visit as part of the geologic and economic review of these wells or properties and one is not deemed necessary to evaluate the subsurface of the Zelman injection well project.

The Zelman injection well has been permitted by the EPA, however the PA DEP had questions of Windfall Oil and Gas and BGC was contracted to answer some of these questions.

Data Considerations

Minimal "deep wells" exist in the previously mapped area and a list of those wells are included as Table 1. Of those wells, few nuclear logs/electric logs were publicly available and BGC does not have access to those well logs. So, mapping and cross-section construction, in the area, had to be completed by use of the completion reports available from the PA Geologic Survey.

Structural Mapping

Within the mapped area of the Zelman injection site, geologic mapping from published sources was included in the original EPA permit. That previously published mapping included faults mapped north and southeast of the Zelman injection well site.

Billman Geologic completed structure map was completed on the top of the Onondaga Formation. That map is included in the attachments to this report. The Onondaga Formation was chosen as it is a consistent top, typically agreed upon by most operators and "easily" determined by drillers. Also, in one well, the Oriskany formation was not

drilled to/through and, therefore using that top would have limited the data available by one well (1 sixth of the data). Mapping of the Onondaga Limestone by BGC, only showed evidence of the fault southeast of the Zelman injection site. The previously mapped fault north of the Zelman injection site is not evident using the well records of the wells drilled in the area. Also, a "spur" fault, previously mapped, off the southeastern fault, is not evident based on the well record data.

The structure map depicts a gentle syncline roughly trending northeast to southwest and a fault, based on the "down drop" of the 033-20325 well. The fault is trending roughly parallel to the syncline.

Structural Cross-sections

As discussed previously few electric logs were available for the wells in the area of the Zelman injection site. Therefore, cross-sections needed to be constructed, for the most part, using reported formations tops from the completion report. Where available an electric log and a sample log (similar to a modern-day mud log) were utilized.

A west to east, dip section was created with four wells and is included with the attachments to this report. The four wells are located north of the proposed Zelman injection well. The wells depict a fairly flat surface on the Onondaga Limestone, as well as the Tully Limestone and the Oriskany Sandstone, gently dipping to the southeast.

A second cross-section was built running roughly north to south. The cross-section depicts the gentle nature of the formations, in the wells, north of the fault (also seen in the mapping). The southernmost well is obviously lower in elevation and a fault is interpreted between 033-20327 and 003-20325. It is interpreted as a back thrust, based on the orientation of the thrust and the apparent movement along the thrust.

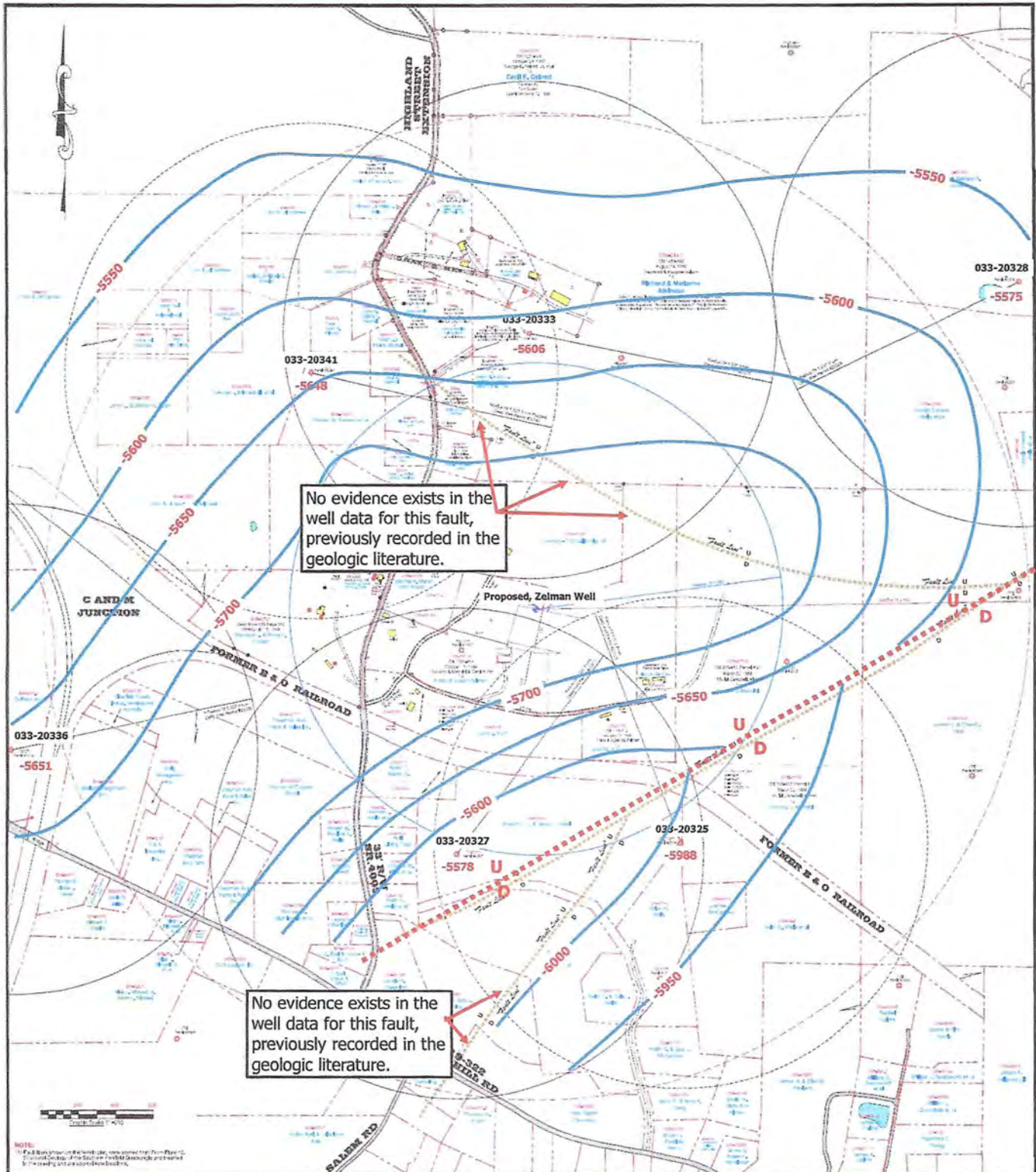
Respectfully submitted by:

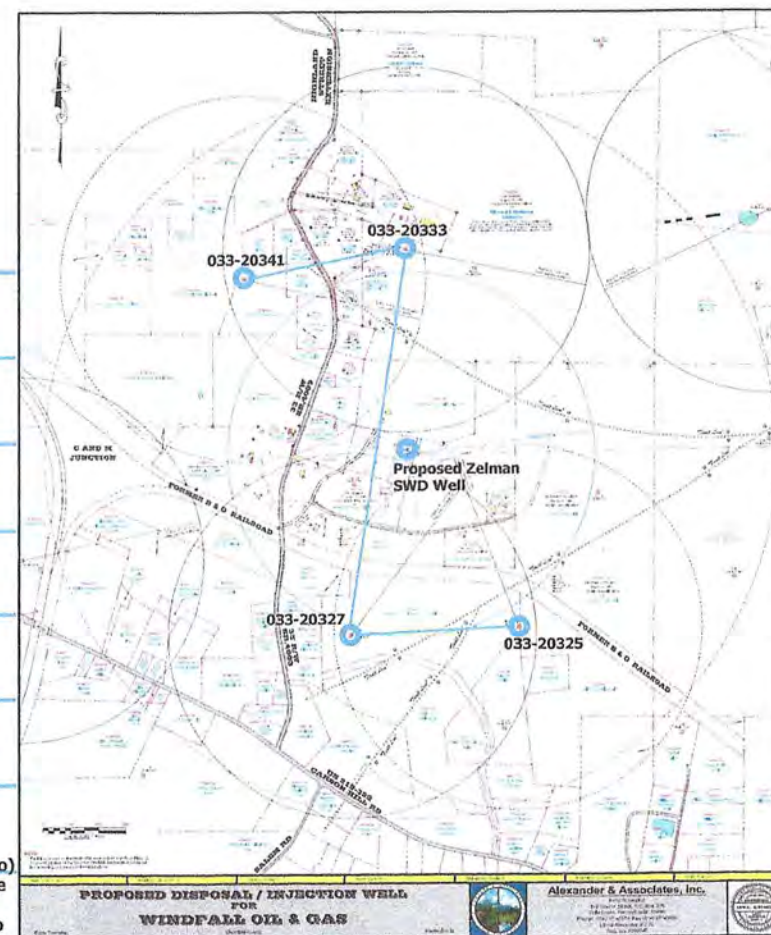
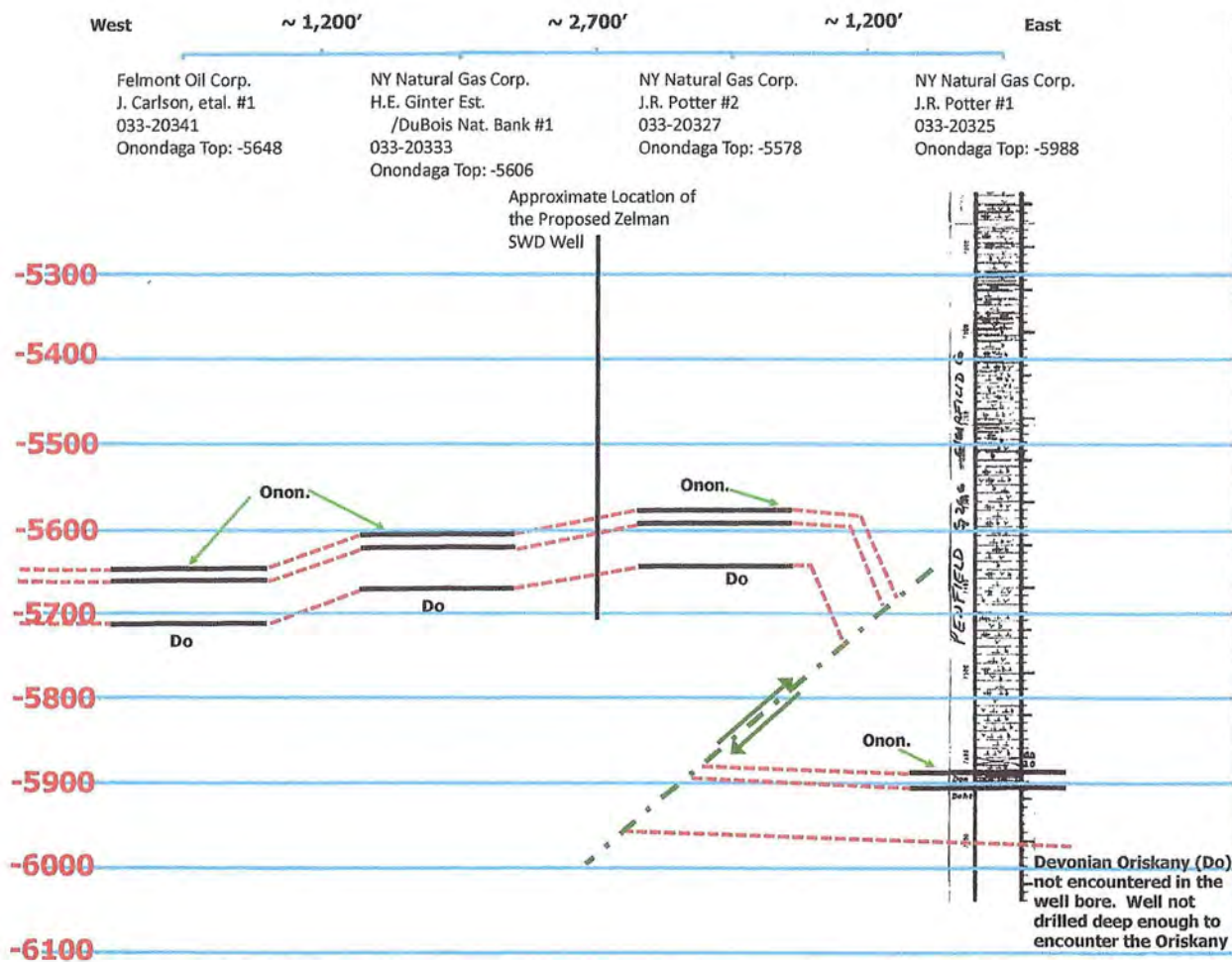


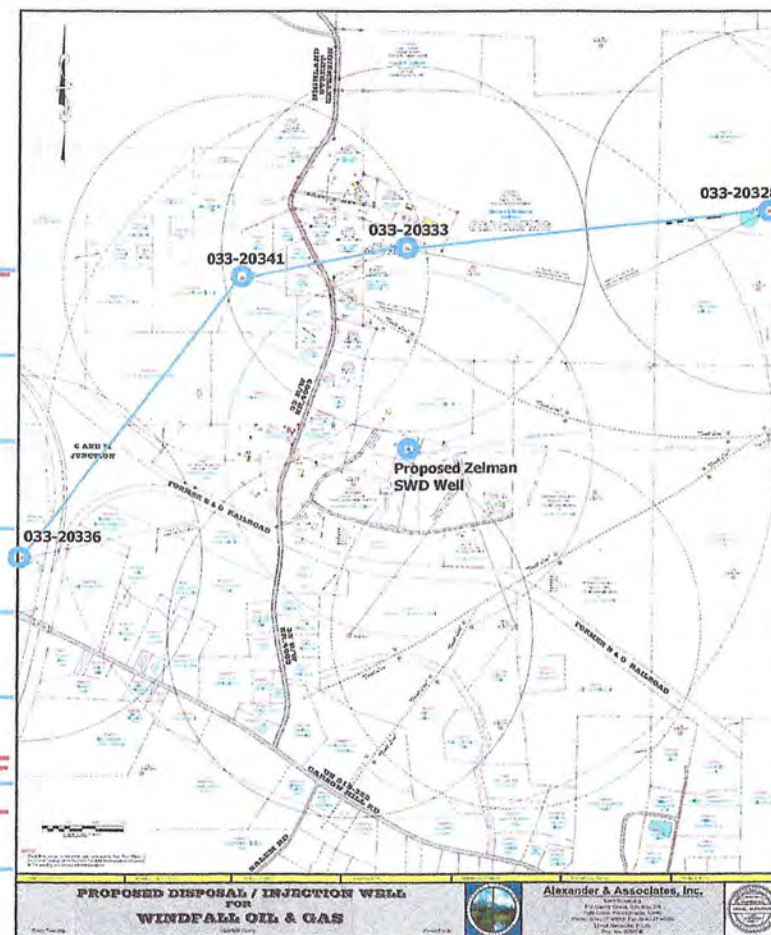
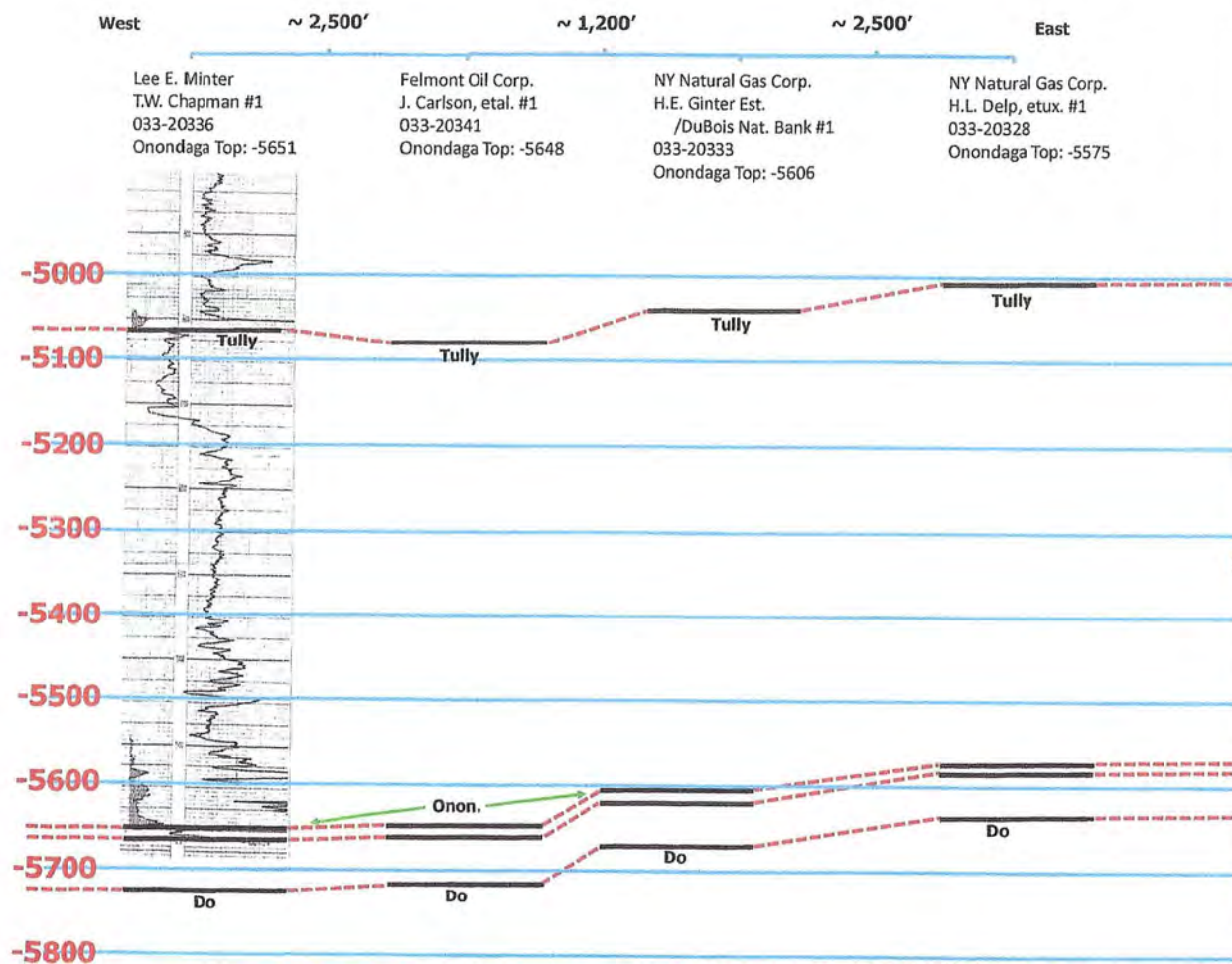
Dan A. Billman, PG, CPG
President, Billman Geologic Consultants, Inc.

DISCLAIMER

This document includes forward-looking statements as well as historical information. Forward-looking statements include, but are not limited to statements relating to geological and seismic data interpretations, prospect reserve estimates and prospect risk. Although BGC believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties, and no assurance can be given that actual results will be consistent with these forward-looking statements. Investment in oil and gas exploration is high risk by its very nature. Important factors that could cause actual results to differ from these forward-looking statements include, but are not limited to: erroneous interpretations of the seismic and geological data; the inability to acquire leases on identified prospects; mechanical problems while drilling and producing wells which prevent completion of a well or result in plugging of a well; dry holes; less reserves than originally estimated due to poor sand development or drainage by offsetting wells; non-commercial wells; and the variations in future gas pricing. BGC cannot and has not beyond normal due diligence care standards confirmed the accuracy and completeness of all the information we have reviewed in the course of this consulting engagement. Data for this review has been provided by windfall Oil and Gas, Inc., its clients or is publicly available and BGC, Inc. cannot be held responsible for errors in this provided data. Further, we express no opinion regarding any legal or securities issues. BGC shall assume no liability whatsoever for the use or reliance there upon by Windfall Oil and Gas, Inc., their clients and/or their investors, of information, opinions and interpretations provided by BGC. BGC reserves the right to adjust these findings and interpretations with the discovery of relevant data or future production data.







PROPOSED DISPOSAL / INJECTION WELL
 FOR
 WINDFALL OIL & GAS



Alexander & Associates, Inc.
 1000 ROUTE 28
 FORT MONROE, PA 19034
 PHONE: (610) 261-1111
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Permit #	Elevation	TD	Tully	Onondoga	Chert	Oriskany	Onon. Sub sea
20325	1628	7637	6638	7616	7635	-	-5988
20341	1633	7365	6712	7281	7296	7351	-5648
20333	1642	7344	6686	7248	7266	7314	-5606
20327	1640	7318	6642	7219	7233	7288	-5579
20336	1544	7271	6610	7195	7213	7269	-5651
20328	1569	7227	6568	7133	7144	7198	-5564

*File under:
DuBois Nat'l Bank*

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

033-20333

QUADRANGLE:

Whitesburg
Penfield

☒ 7 1/2' ☐ 15'

PERMIT NO. CLE-333

MAP REFERENCE: 9S 17W S63 W17 & 118

KIND OF WELL: GAS
(Oil, Gas, Other)

WELL RECORD

COMPANY:	New York State Natural Gas Corporation	Size of Casing and Tubing	Used in Drilling	Left in Well	Packers: Type, Size and Depth
ADDRESS:	2 Gateway Center, Pgh. 22, Penna.	13 3/8"	96'	96'	
FARM:	H. E. Ginter Est. ACRES 172	9 5/8"	1285'	1285'	BHS @ 1287
WELL (FARM) NO.	1 GO. SERIAL NO. N-796	7"	7335'	7335'	BHS @ 7267
ELEVATION:	1642.34 LEASE: 60986				
TOWNSHIP:	Brady COUNTY: Clearfield				
DRILLING COMMENCED:	12-1-60 DRILLING COMPLETED: 12-23-60				
PRODUCTION:	10,504,000 cubic feet				PERFORATIONS AT:
ROCK PRESSURE:	2340 psig 70 hrs.				
WELL TREATMENT:	(Shooting, Acidizing, Fracturing Etc.)				
12-22-60-Fractured w/20,000 gals. water, 200 lb. gel, 1,000 gal acid and 20,000 lb sand. Break-down pressure 3000 lbs; maximum pressure 3750 lbs					
Original open flow of 48,000 cubic ft. in chert and 3825,000 cubic ft. in Oriskany increased to 10,405,000 cubic ft. A/F. R.P. b/f 2450 lbs 24 1/2 hrs. dead weight.					
SEGMENTING DATA: (Size Pipe, Depth, No. Bags, Date)					
12-3-60 - 13 3/8" cem. w/90 sax					
12-7-60 - 9 5/8" cem. @ 1287 w/50 sax cem &					
RESULTS AFTER TREATMENT: 20 sax aquagel					
ROCK PRESSURE AFTER TREATMENT: 12-16-60 - 7" cem @ 7267 w/125 sax					

REMARKS: * Well Permit Request and all initial Records Referred to this Well as "DuBois Deposit National Bank Trustee Etc.". They are in fact Successor Trustees Under the Henry E. Ginter Deed of Trust. In the Interest of Brevity, We have Established and are Using the Farm Name as Recorded Above.

FORMATION	TOP	BOTTOM	GAS AT	OIL AT	WATER AT (Fresh or Salt Water)	REMARKS
Surface	0	5				
Sand & shale	5	105				
Shale & Sand	105	150				
Sand & Shale	150	340				
Coal	340	345				
Sand & Shale	345	375				
Shale & Sand	375	468				
Coal	468	474				
Shale & Sand	474	532				
Sand & Shale	532	735				
Sand	735	785				
Sand & Shale	785	1720				
Shale & Sand	1770	2165				
Sand & Shale	2165	4310	3385-92 (Show)			
Shale & sand	4310	5170				
Sand & Shale	5170	5405				

(Over)

FORMATION	TOP	BOTTOM	GAS AT	OIL AT	WATER AT (Fresh or Salt Water)	REMARKS
Shale & Shells	5405	6150				
Sand & Shale	6150	6425				
Shale & Shells	6425	6686				
Lime	6686	6784				
Shale & Shells	6784	7248				
Lime	7248	7266				
Chert	7266	7314	7267 & 7300			
Sand	7314	7343	7316-25			
Lime	7343					
Total Depth		7344				
<u>Sample Study</u>						
Tully	6686					
Onondaga	7248					
Chert	7266					
Oriskany	7314	7343				

DATE January 24, 1961

APPROVED New York State Natural Gas Corporation, OWNER

BY H. R. Raper TITLE Superintendent Operations