Marianne Atkinson
221 Deer Lane
DuBois, PA 15801
814-583-7926
Marianne5@windstream.net

RE: Windfall Oil & Gas, Inc.
Permit # PAS2D020BCLE
PERMITTED FACILITY: Class II-D injection well, Zelman #1

Clerk of the Board
U.S. Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, NW
Mail Code 1103M
Washington, DC 20460-0001

November 24, 2014

Dear Clerk Durr,

I am submitting this petition for review of UIC Permit # PAS2D020BCLE for Windfall Oil & Gas to construct and operate the Zelman #1 Class II Disposal Injection well.

This petition for review of UIC Permit # PAS2D020BCLE complies with word limitations. I did participate in the public hearing and the two public comment periods regarding this matter.

Sincerely,

Marianne Atkinson

Marianne Atkinson

BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	)
Windfall Oil and Gas	)
UIC Permit No. PAS2D020BCLE	)
Zelman #1 Class II-D injection well	)

PETITION FOR REVIEW

PETITIONER
Marianne Atkinson
221 Deer Lane
DuBois, PA 15801
814-583-7926
Marianne5@windstream.net

Table of Contents

Brine Intrusion

From the Response to Comments #8, page 9:

"A significant volume of gas and brine has already been removed from the proposed injection reservoir, during previous gas production operations, making the Huntersville Chert/Oriskany formation receptive for the disposal of fluid."

After the gas and brine was removed, more brine has moved into the pore space from the vast reservoir of brine that fills the Oriskany Sandstone.

Brine intrusion is a big problem for gas storage fields. They have to retain a residual volume of gas at all times prevent brine intrusion. This residual gas is called cushion gas.

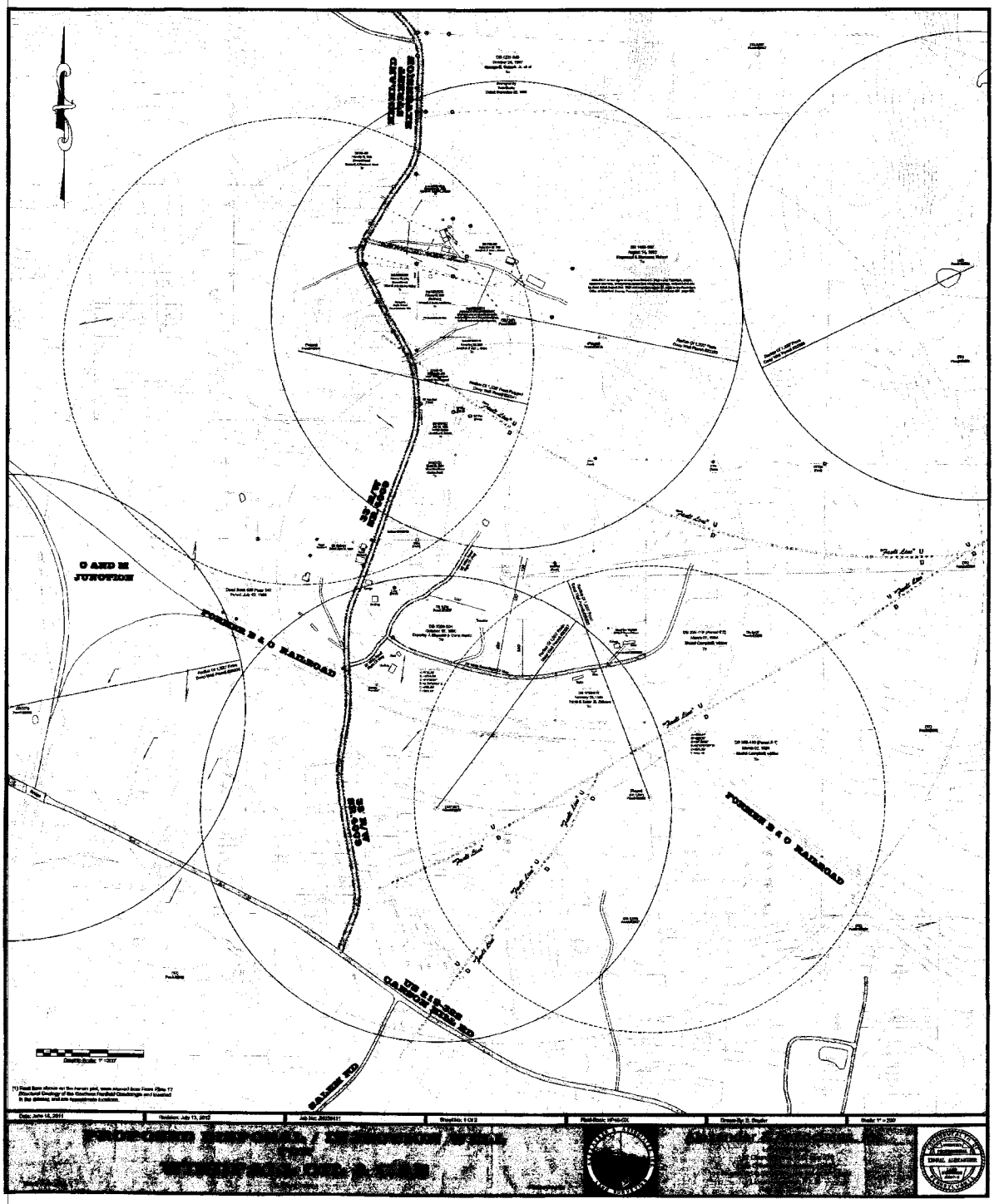
So much brine has migrated into the area of gas well #33-20333 that a pump jack was installed to pump it out. See photos on page 3.

The Huntersville Chert/Oriskany formation is receptive for the disposal fluid, not because it is empty, but because it allows for relatively easy movement of brine. The permeability of the formation, and not the amount of supposedly "empty" pore space is what makes the Huntersville Chert/Oriskany formation a candidate for wastewater disposal.

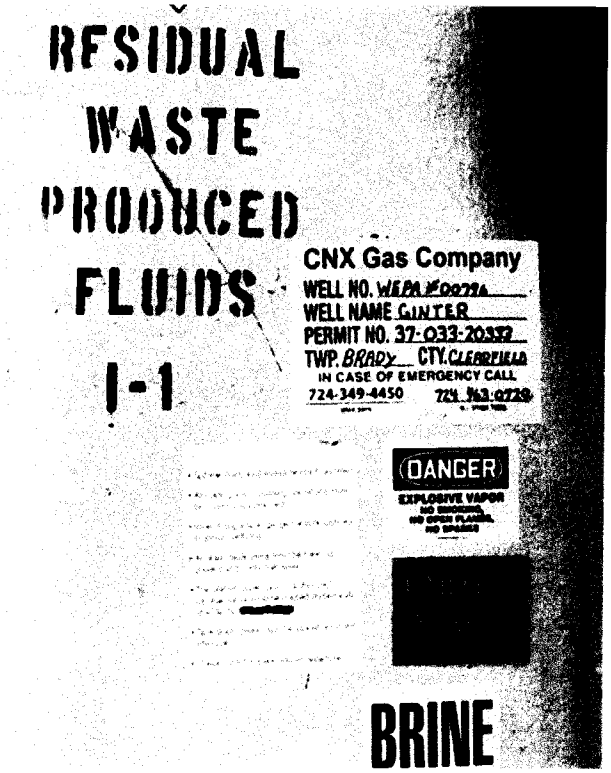
From the Response to Comments #8, page 9:

formation. Evidence from gas production records from the PA DEP Office of Oil and Gas Management, Oil and Gas Reporting Website, which is a public website located at www.paoilandgasreporting.state.pa.us, indicates that gas production wells located within the fault structure where the injection well has been proposed, have produced significantly greater volumes of natural gas and produced water than gas production wells located outside of this fault structure. For example, gas production well #20333, located between the faults based on drilling records, produced approximately 612,992,000 million cubic feet (Mmcf) of natural gas and 67,115 barrels of brine during a period from 1980 through 2011. This well was drilled in 1960,

There is probably no more pore space available now than there ever was available for the disposal of natural gas production waste fluids. Disposal is possible only by forcing native brine out of the way.


O AND M
JUNCTION
FORDNEY S & D RAILROAD
FORDNEY S & D RAILROAD
SALMON RD

Gas well #37-033-20333



Injection Fluid Additives

The UIC permit needs to specify the CAS numbers, the proprietary names, and the quantity, of any chemicals that will be added to the wastewater produced from oil and gas production operations, before the wastewater mixture is injected.

The Oct. 31, 2014 Final Permit, page 12, B. Operating requirements states that:

> *"The permittee shall not inject any hazardous substances, as defined by 40 CFR 216, or any other fluid, other than the fluids produced solely in association with oil and gas production operations."*

If the operator is to abide strictly by the wording of the permit, it can be argued that nothing at all is permitted to be added to the wastewater before it is injected.

Windfall, in their permit application, states that they intend to add additional fluids to treat the injected fluids. Some of these additional fluids are FE Ox Clear, Alpha 2278W and CLA STA XP Additive. Windfall says that one is an oxygen scavenging agent and another is for corrosion control. (**See Attachment K below**)

Windfall will also add Alpha 3207 after the waste fluids are filtered, which is a corrosion inhibitor, before injecting.

The Oct. 31, 2014 Response to Comments #16, page 19, states:

> Commenters also questioned whether the addition of corrosion inhibitors and biocides meant that injection would not be limited to fluids produced in connection with oil and gas operations. The additives are not added to the fluid for the purpose of disposal but rather to prevent corrosion in the injection well, and are often also used in production wells. The proper operation and maintenance of a Class II well can require use of such additives.

The FracFocus website lists 4 different biocides that are used most often in hydraulic fracturing. It is not known what biocide(s) will be added to the wastewater to be injected into the Windfall disposal well.

None of the chemical compounds classified as biocides that are included on the FracFocus list have an MCL specified in the EPA National Drinking Water Regulations.

Maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are enforceable standards.

As stated in the Response to Comments #16, page 19: if " ...The proper operation and maintenance of a Class II well can require use of such additives", then the permit should regulate that process, since it deviates from the exact wording of the permit.

Since some organic compounds can have very low or zero MCLs, **it would be useful to the 17 private drinking water well/spring owners in the Area of Review to know what contaminants to test their water for.**

Attachment "K" from permit application

Attachment "K"
Injection Procedures
Zelman#1 Injection Well

The Following injection procedures will be utilized during the operation of the Zelman#1 Injection Facility:

The produced fluids will be unloaded from vacuum trucks through a discharge manifold into a epoxy lined steel tanks. It will be treated at this point with an oxygen scavenging agent and corrosion control additives; FE Ox Clear and Alpha 2278W.

Then, the fluid will be pulled from these tanks and filtered to 10 microns nominal particle size and discharged into additional epoxy lined steel tanks.

Next the produced fluids will be pulled from the filtered tanks through the high pressure pump, equipped with shut down switches set at 6500 psi bottom-hole pressure being calculated in real time and low side at 200 psi. Corrosion Inhibitor, Alpha 3207, will be added. Specific gravity, rate and volume will be monitored with a dens-o-meter, flowmeter, and totalizer. Bottom-hole pressure will be calculated and monitored in real time Utilizing Meyers Mwell software package.

The produced fluids will be discharged from the pump through a checkvalve at the wellhead down the tubing and into the Chert/ oriskany formation. Surface tubing and tubing annulus pressures will also be recorded with a 2 pen recorder as a back up to the digital data.

Monitoring Wells

From the Response to Comments #14, page 17:

To ensure that the injected fluid remains in the receiving formation, the permit requires continuous monitoring of pressure conditions within the injection well. In addition, the annual pressure fall-off testing will establish reservoir pressure conditions and help analyze fluid movement within the reservoir. The permit does not require monitoring wells because the regulations do not require the drilling of monitoring wells and Windfall does not have access to a deep well that penetrates the injection zone such that is could be used for monitoring.

The following quote is from the book, Subsurface Liquid Waste Disposal and Its Feasibility in Pennsylvania by Neilson Rudd, PA DEP Bureau of Topographic and Geologic Survey:

"The concentration of subsurface brines is so great, up to the order of 300,000 parts per million, that the intermixing of even one gallon will render several thousands of gallons of fresh water unfit for human use."

The Windfall permit allows the injection of 30,000 barrels of wastewater per month, which is about 1000 barrels per day, which equals about 42,000 gallons per day. If even 1% (420 gallons) of the injected wastewater migrates into a freshwater aquifer, a significant amount of drinking water will become contaminated. The pressure monitoring system might not be able to detect 10% leakage, let alone a 1% leakage rate.

The annual pressure fall-off testing might detect leakage into the freshwater aquifers, but by that time, it may be too late to prevent USDW contamination.

Recently, a UIC permit was issued for a Class II Disposal Injection well in Highland Township, Elk County, PA to be operated by Seneca Resources, UIC PERMIT NUMBER PAS2D025BELK . This permit requires the freshwater aquifers to be protected by the use of monitoring wells. There are no residences within the Area of Review of this disposal injection well, whereas there are 17 residences with water wells/springs within the Windfall injection well Area of Review, with many more just outside the Area of Review. Hence, the Windfall injection well should have monitoring wells before the Seneca injection well does.

From the Seneca UIC PERMIT NUMBER PAS2D025BELK permit, Part 2 C, page 7. Monitoring Requirements:

"The permittee shall monitor and record, quarterly, the fluid level from monitoring wells #38281 and #01144 located within the SRC Kane Field. Each of these monitoring wells shall completely isolate the Elk 3 Sand formation from the rest of the wellbore by placement of a monitoring string on a packer set immediately above the Elk 3 Sand formation."

The above permit requirement is made possible by using 40 CFR 144.52 Establishing permit conditions(a)(9):

"Additional conditions. The Director shall impose on a case-by-case basis such additional conditions as are necessary to prevent the migration of fluids into underground sources of drinking water."

Even though the regulations do not directly require every Class II Disposal Injection well to have monitoring wells, it is legal for the EPA to make them a permit requirement on a case-by-case basis.

The EPA has set a precedent by requiring monitoring wells for the Seneca disposal injection well.

From the Seneca EAB order denying review:

The EPA noted that:
"... two monitoring wells will be installed to measure upward fluid movement due to pressurization of the injection formation;"

Not only did the EPA put the requirement for monitoring wells in the Seneca permit, but they used the monitoring wells requirement in the permit to defend the permit against petitions for review with the EAB.

The EPA has the authority to require a Class II Disposal Injection well to have monitoring wells for protection of the USDWs. They have already done so for the Seneca disposal injection well in Highland Township, Elk County, PA.

The Windfall UIC permit should be denied because it does not require monitoring wells to protect the 17 drinking water wells/springs in the Area of Review.

Fractures of Confining Zone in Area of Review

There are 2 deep conventional gas wells that are JUST outside the Area of Review, which go into the Oriskany formation, which is **also** the injection formation. Both of these deep gas wells have been fracked. They can be seen on the DEP Well Plat map on page 7.

The Final UIC Permit for the Windfall injection well states the following in Part III A. 1:

" ...the injection well shall inject only into formations which are separated from any underground source of drinking water by a confining zone that is free of known open faults and fractures within the Area of Review."

How can we know that the fractures from fracking these gas wells do not compromise the confining zone and thereby violate the disposal injection well construction requirements? These fractures could provide a conduit for toxic injected fluid to migrate into USDWs. (Underground Sources of Drinking Water)

The following is an **NETL Gas Migration Study.**

An Evaluation of Fracture Growth and Gas/Fluid Migration as Horizontal Marcellus Shale Gas Wells are Hydraulically Fractured in Greene County, Pennsylvania

15 September 2014

U.S. DEPARTMENT OF ENERGY

Office of Fossil Energy

NETL-TRS-3-2014

The following is from the above study:

1.1.2.2 Upper Devonian/Lower Mississippian Gas Wells

Vertical gas wells in the monitored zone were completed in the Squaw Sand of the Mississippian age Shenango Formation and multiple sands within the Upper Devonian age Venango and Bradford Formations (5th, Bayard, Speechley, Balltown, 1st Bradford, and 2nd Bradford sands) (Figures 2 and 6). Within the study area, there are seven vertical wells that were drilled and hydraulically fractured by the operator to produce natural gas from this zone. The vertical wells were drilled on 1,500-ft spacing based on the expectation of at least 750-ft radial fracture growth away from the vertical wells during hydraulic fracturing. Three wells completed in the monitored

The Potter #2, #033-20327 gas well goes into the Oriskany Sandstone and was fracked on Sept 27, 1960 and is 60 feet outside Area of Review to the **south.** See gas well records on pages 12-15.

Gas well depth:

Top of Oriskany = 7288 feet

Bottom of Oriskany = 7317 feet

The Ginter/DuBois Deposit Bank #033-20333 gas well goes into the Oriskany Sandstone and was fracked on December 22, 1960 and is 161 feet outside Area of Review to the **north.** See gas well records on pages 16-19.

Gas well depth:

Top of Oriskany = 7314 feet

Bottom of Oriskany = 7343 feet

These fractures could extend significantly more than 60 feet or even 161 feet to extend into the Area of Review. If the fractures extend 750+ feet as the NETL study indicates, they would extend well into the Area of Review. The fractures could then provide a conduit for toxic injected fluids to migrate upwards into a USDW.

These fractures could also result in the actual Zone of Endangering Influence (ZEI) being extended beyond the ¼ mile radius Area of Review.

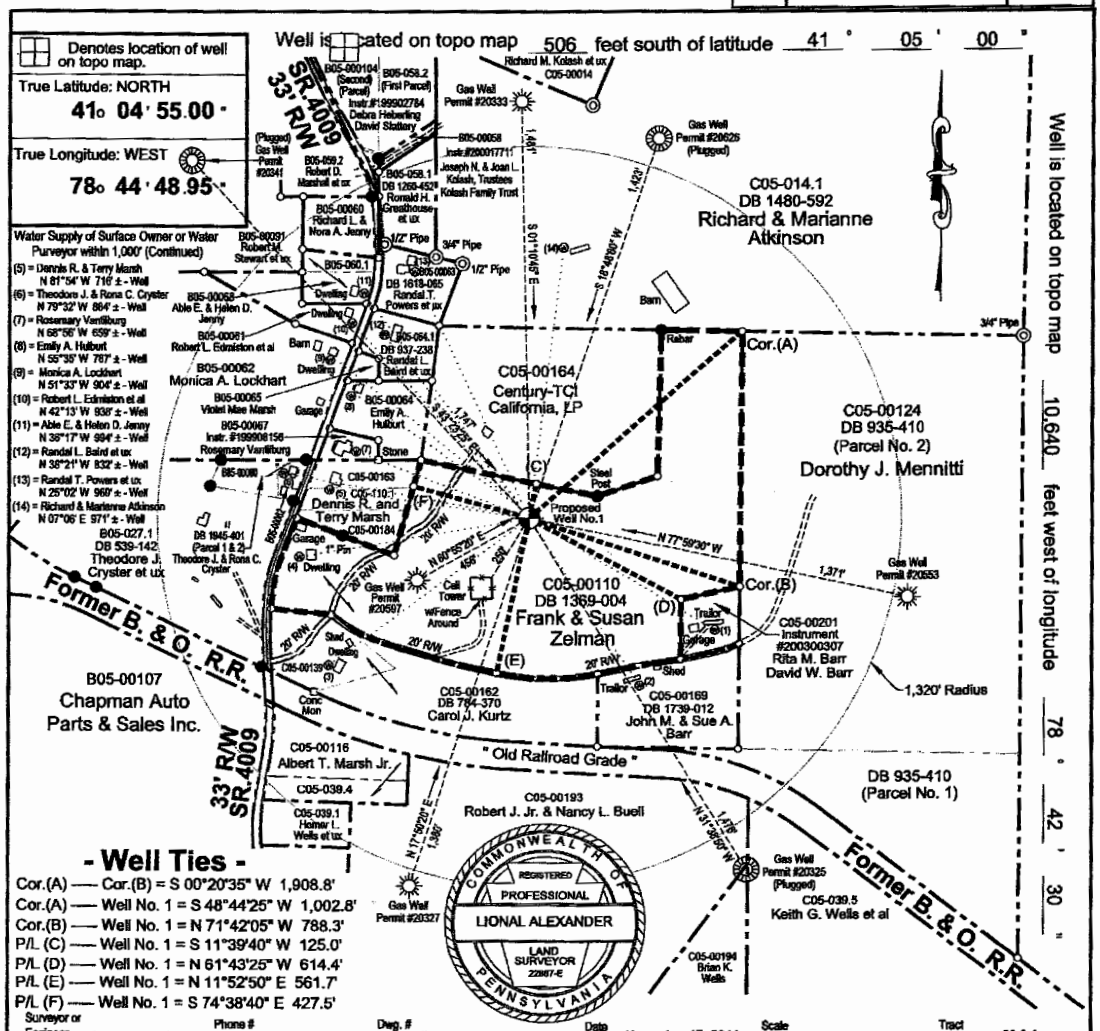
DEP Well Plat

5500-PM-OG0002-DWG Rev. 09/2008

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT

DEP USE ONLY	DEP Application Tracking #	G:
	Permit #	C:
	Project #	



Surveyor or Engineer	Phone #	Dwg. #	Date	Scale	Tract Acreage
Lional Alexander	(814) 371-5578	JN336411 Well 1 Plat	November 17, 2011	1" = 500'	23.8 Acres

Lat. & Long Metadata Method GPS	Accuracy Submeter	ft. Datum NAD 83	Elevation Metadata Method Topo	Accuracy 10' ±	ft. Datum NVGD 88	Survey Date June 15, 2011
Applicant / Well Operator Name: Windfall Oil & Gas	DEP ID# 244615		Well(Farm) Name: Frank & Susan Zelman	Well # 1	Serial #
Address: 63 Hill Street, Falls Creek, Pa. 15840			County - Code: Clearfield - 17	Municipality: Brady Township	Well Type: Gas
Surface Landowner / Lessor: Frank & Susan Zelman			USGS 7½ Quadrangle Map Name: Luthersburg	Map Section: 4	Surface Elevation: 1697 ft.
Target Formation(s): Chert / Oriskany			Angle & Course of Deviation (Drilling): Vertical	Anticipated Total Depth TVD 7,500' TMD 7,500'	

Surface Owner or Water Purveyor with a Water Supply within 1,000 ft.	Approximate Course and Distance to Water Supply	Owner, Lessee, or Operator of Workable Coal Seam	Name of Coal Seam Owned, Leased, or Operated
(1) = Rita M. & David W. Barr	S 56°54' E 772' ± - Well		
(2) = John M. & Sue A. Barr	S 33°39' E 715' ± - Well		
(3) = Carol J. Kurtz	S 53°38' W 881' ± - Well		
(4) = Frank & Susan Zelman	S 80°21' W 826' ± - Well		

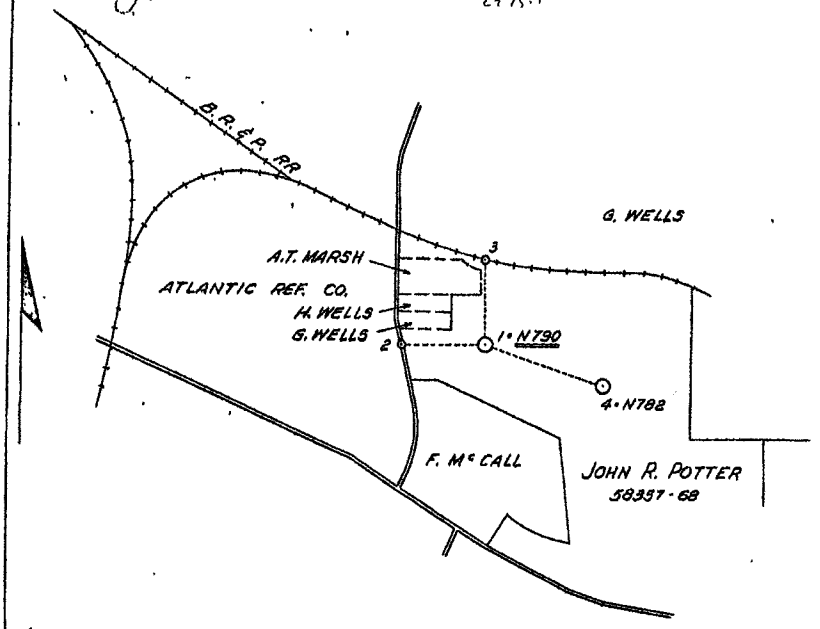
Gas Well #033-20327 Potter #2 - Page 1

DM-03-2-56

District Central Map 9S-17W NS 63 EW 17
Loc. Made 8/24/60 Bk. 1916 Pg. 19 El. Bk. 1916 Pg. 19
Approved [signature] Date August 25, 1960

Latitude 41°05'

Longitude 78°40



STA.	BRG.	DIST.
1-2	N83°00'W	500'
1-3	N7°00'E	500'
1-4	S64°06'E	745'

New Location ☒
Drill Deeper ☐
Abandonment ☐
Re-drill ☐

Company NEW YORK STATE NATURAL GAS CORPORATION
Address #2 Gateway Center, Pittsburgh 22, Pa.
Farm John R. Potter
Tract ____ Acres 68 Lease No. 58357
Well(Farm)No. 2 Co. Serial No. N-790
Angle of Deviation, if any ____
Elevation 1640.60 Quadrangle ~~Penfield~~ Luthersburg
County Clearfield Township ~~Brady~~
Engineer R. A. Doman
Engineer's Registration No. 14016
File No. ____ Drawing No. ____
Date 8/25/60 Scale 1"=660'

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

WELL LOCATION MAP
Dept. File No. ~~018-307~~ 033-20327

⊕ Denotes Values of Well on United States Topographic Maps.
Scale 15' ☒ 7½' ☐

WORKABLE COAL SEAMS TO BE PENETRATED

Name of Seam	Owner of Seam
John Potter	Lower Kittanning

AUG 31 1960

DM-CC-4-56

Pennsylvanian – Driftwood Field
Halvetian Pool

4850'S 41°05'00"
11,050'W 78°42'30" (4)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

033-20327

QUADRANGLE: ~~Penfield~~ LUTHERSBURG ☑ 7½' ☒ 15' PERMIT NO. ~~013-327~~

MAP REFERENCE: 9S 17W S63 W117 KIND OF WELL: Gas (Oil, Gas, Other)

WELL RECORD

COMPANY: New York State Natural Gas Corporation
ADDRESS: #2 Gateway Center, Pittsburgh 22, Pa.
FARM John R. Potter ACRES 68
WELL(FARM)NO. 2 CO. SERIAL NO. N-790
ELEVATION: 1640.60 LEASE: 58357
TOWNSHIP: Brady COUNTY: Clearfield
DRILLING COMMENCED: 8/31/60 DRILLING COMPLETED: 9/29/60
PRODUCTION: 30,370,000 cubic feet
ROCK PRESSURE: 3293 psig 4 days.
WELL TREATMENT: (Shooting, Acidising, Fracturing Etc.)
9/27/60 - Fractured w/20,500 gals. water, 1,000 gal. MCA, 150 lbs. gel and 20,000 lbs. sand. Breakdown pressure 2400 lbs.; maximum pressure 3800 lbs; minimum pressure, 2350 lbs.; final pressure 3800 lbs. Original open flow of 7,312,000 cubic feet increased to 30,370,000 cu. ft. a/f Rock pressure b/f 3318 lbs. in 11 days
RESULTS AFTER TREATMENT:
ROCK PRESSURE AFTER TREATMENT:

Size of Casing and Tubing	Used in Drilling	Left in Well	Packers: Type, Size and Depth
13-3/8"	59'	59'	
9-5/8"	1251'	1251'	BHS @ 1248'
7"	7305'	7305'	BHS @ 7234'

PERFORATIONS AT:

CEMENTING DATA: (Size Pipe, Depth, No. Bags, Date
8/31/60 - 13-3/8" cem. @ 70' w/50 sacks
9/4/60 - 9-5/8" cem @ 1248' w/50 sacks cem., 15 sacks aquagel, & 25 sacks quadroflos
9/13/60 - 7" cem. @ 7234' w/125 sacks.

REMARKS:

FORMATION	TOP	BOTTOM	GAS AT	OIL AT	WATER AT (Fresh or Salt Water)	REMARKS
Surface	0	15				
Sand & shale	15	143			FW 75	
Red shale	143	146				
Sand & shale	146	205				
Coal	205	209				
Sand & shale	209	217				
Shale & sand	217	303				
Coal or black shale	303	306				
Shale & sand	306	320				
Shale	320	340				
Sand	340	550				
Shale & sand	550	580				
Sand	580	650				
Shale & sand	650	692				
Sand	692	733				
Red shale	733	735				

(Over)

Well N 790

FORMATION	TOP	BOTTOM	GAS AT	OIL AT	WATER AT (Fresh or Salt Water)	REMARKS
Sand & shale	735	1010				
Black shale	1010	1020				
Sand & shale	1020	2293				
Shale	2293	2295				
Shale & sand	2295	2601				
Sand & shale	2601	3415				
Shale & sand	3415	4015				
Sand & shale	4015	5025				
Shale & sand	5025	5475				
Sand & shale	5475	5680				
Shale & sand	5680	5857				
Sand & shale	5857	6030				
Lime & shale	6030	6137				
Lime	6137	6195				
Shale & shells	6195	6642				
Lime	6642	6750				
Shale & shells	6750	7219				
Onondaga lime	7219	7233				
Chert	7233	7288				
Sand	7288	7317	7291-7303			
Lime	7317					
Total Depth		7318				
Sample Study						
Tully	6642					
Onondaga	7219					
Chert	7233					
Oriskany	7288	7317	7291-7303			

RECEIVED
DEPT. OF MINES
& MINERAL IND.
1960 NOV 29 AM 8 : 44

DATE October 28, 1960

APPROVED New York State Natural Gas Corporation OWNER

BY D L Bangert
TITLE KEY

Superintendent of Operations

Gas Well #033-20327 Potter #2 – Page 4

LUTHERSBURG (7½) **WELL RECORD** 033-20327

Name John R. Potter #2 Co. Clearfield Twp. Brady No. 3293 — 2000' from N 2300 fr E

Owner NYSNG Corp A-790 Contr. OUTSTEP

Date ____ Elev. 1640.6 Product ____ Drill ____

Obtained by ____ Authority ____ Quad. Luthersburg Quad. Locate by Sketch

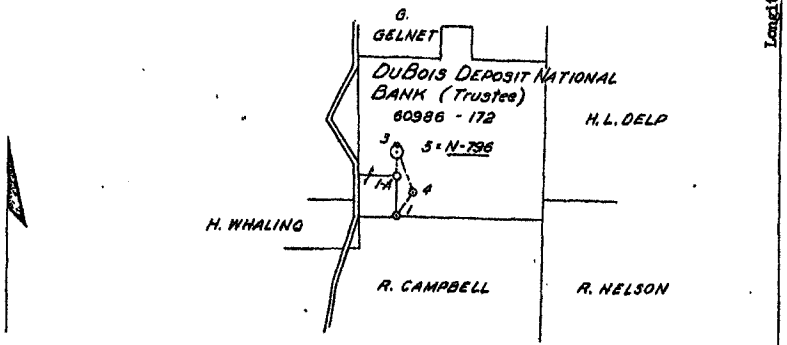
Geol. Name	Sept 2, 1960	Thickness	From	To	Geol. Name	2000 ft E 78°45'	Thickness	From	To
Sept 16									
	Tully		6662			9 5/8" casing at 1250'			
	Onondaga		7219			7" casing at 7234 ft			
	chert		7232						
	Oriskany		7288	7317	Sept 23	SD to fine			
	7300 Mcf gas BF								
	SI TD			7319					
	RP 3342 # 56 hrs								
SEP 30	1960 30,370 Mcf gas								
	RP 3800 #								
	Completed 9-29-60								

Gas Well # 033-20333 DuBois Deposit National Bank/Ginter Page 1

DM-OG-2-56

District Central Map 9S 17W M S 63 M W 117 & 118 Latitude 41°10'
Loc. Made 10/24/60 Bk. 1916 Pg. 30 El. Bk. 1916 Pg. 31
Approved J. J. VanDuesen Date October 25, 1960

Longitude 70° 40'



STA.	BRG.	DIST.
1 - 1A	N 7° 00' E	500'
1 - 3	N 7° 00' E	848'
3 - 4	S 43° 49' E	591'
4 - 1	S 42° 06' W	363'
3 - 5	S 7° 00' W	75'

New Location ☒
Drill Deeper ☐
Abandonment ☐
Re-drill ☐

Company NEW YORK STATE NATURAL GAS CORPORATION
Address #2 Gateway Center, Pittsburgh 22, Pa.
Farm DuBois Deposit National Bank Trustee et al H.E. Ginter
Tract ____ Acres 172 Lease No. 60986
Well (Farm) No. #1 Co. Serial No. N-796
Angle of Deviation, if any ____
Elevation 1642.3ft Quadrangle Penfield (Luthersburg?)
County Clearfield Township Brady
Engineer H. A. Doman
Engineer's Registration No. 10086
File No. ____ Drawing No. ____
Date 10/25/60 Scale 1"=1320'

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

WELL LOCATION MAP
Dept. File No. 033-20333

⊕ Denotes Values of Well on United States Topographic Maps.
Scale 15' ☒ 7½' ☐

WORKABLE COAL SEAMS TO BE PENETRATED

Name of Seam	Owner of Seam
Lower Kittanning	DuBois Dep. Nat. Bank Trustee, The Union Banking and Trust Co. of DuBois Penna.

Gas Well # 033-20333 DuBois Deposit National Bank/Ginter Page 2

PENFIELD D 272

DM-OG-4-56

File under DuBois Nat'l Bank

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

033-20333

QUADRANGLE: Lumberburg Penfield [X] 7½' [ ] 15'

PERMIT NO. CLE-999

MAP REFERENCE: 9S 17W S63 W117 & 118

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

WELL RECORD

COMPANY: New York State Natural Gas Corporation

ADDRESS: 2 Gateway Center, Pgh. 22, Penna.

FARM: * H. E. Ginter Est. ACRES 172

WELL(FARM)NO. 1 CO. SERIAL NO. N-796

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

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. Breakdown 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 hrs. dead weight.

RESULTS AFTER TREATMENT:

ROCK PRESSURE AFTER TREATMENT:

Size of Casing and Tubing	Used in Drilling	Left in Well	Packers: Type, Size and Depth
13 3/8"	96'	96'	
9 5/8"	1285'	1285'	BHS @ 1287
7"	7335'	7335'	BHS @ 7267

PERFORATIONS AT:

CEMENTING 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 & 20 sax aquagel
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 Etal". They are in fact Successor Trustee 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			458	
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				
Sample Study						
Tully	6686					
Onondaga	7248					
Chert	7266					
Oriskany	7314	7343				

DATE January 24, 1961

APPROVED New York State Natural Gas Corporation, OWNER

BY [signature] TITLE

Superintendent Operations

Gas Well # 033-20333 DuBois Deposit National Bank/Ginter Page 4

DuBois Nat Bank (1½) **WELL RECORD** 033-20333

Name H.E. Ginter Co. Clearfield Twp. Brady No. 33321

Owner KYSNG Corp N796 Contr. [illegible]

Date ____ Elev. 1642 Product ____ Drill ____

Obtained by ____ Authority ____ Quad. Penfield DT Locate by Sketch

Geol. Name	OCT 21 1960	Thickness	From	To
OCT 28	1960			
Dec 16	Tully		6689	
	Onondaga		7248	
	Chert		7266	
	Oriskany		7329	
	TD			7344
	3875 Mcf B.F.			
	RP 2390 psi 16 hrs.			
Dec 30	10,504 Mcf gas AF			
	RP 2340 psi 70 hrs.			
	Completed 12-23-60			
	Gas: 7267 & 7300			
	7316-25			

Geol. Name	800 ft S 78 E	Thickness	From	To
	9 5/8" Csg @ 1287 ft			
	7" " 7267 ft			
	10			

Gas Well Distances and Numbers Incorrect

Fractures in Area of Review

From the Response to Comments, #12 on page 13:

"Since the Windfall injection well has yet to be drilled, Windfall submitted geologic reservoir information from gas production wells that were drilled into the Huntersville Chert/Oriskany formation in Clearfield County, located about one-half mile to a mile from the proposed well location. (i.e., the Zelman 37-033-30327 and 37-033-20333)..."

From the DEP Well Plat map on page 22, that was submitted to the EPA by Windfall with their UIC permit application, it can be seen that gas well #37-033-30327 is **1380 feet south/southwest away** from the proposed injection well. This is **60 feet outside the ¼ mile (1320 feet) radius Area of Review.**

From the DEP Well Plat map submitted to the EPA by Windfall with their UIC permit application, it can be seen that gas well #37-033-20333 is **1481 feet north away** from the proposed injection well. This is **161 feet outside the ¼ mile (1320 feet) radius Area of Review**.

Neither of these gas wells is one-half mile (**2640 feet**) to a mile (**5280 feet**) from the proposed disposal injection well location, which is an error in the Response to Comments, #12 on page 13.

From the Response to Comments #11 on page 13:

"Another commenter expressed concern that fracturing of the production wells in the area could have introduced fractures in the confining zone within the area of review...These fractures, in the case of vertical wells, do not extend outward for extensive distances like the Marcellus and Utica gas wells."

The fact that gas well #37-033-30327 and gas well #37-033-20333 are such short distances from the boundary of the Area of Review explains why commenters would be concerned that hydraulic fractures from these production wells could possibly compromise the confining zone of the disposal injection well. The confining zone was originally designated to be the Onondaga Limestone, which is immediately above the Huntersville Chert/Oriskany formation, which is the injection zone.

The following is an **NETL Gas Migration Study.**

An Evaluation of Fracture Growth and Gas/Fluid Migration as Horizontal Marcellus Shale Gas Wells are Hydraulically Fractured in Greene County, Pennsylvania

15 September 2014

U.S. DEPARTMENT OF ENERGY

Office of Fossil Energy

NETL-TRS-3-2014

The following is from the above:

1.1.2.2 Upper Devonian/Lower Mississippian Gas Wells

Vertical gas wells in the monitored zone were completed in the Squaw Sand of the Mississippian age Shenango Formation and multiple sands within the Upper Devonian age Venango and Bradford Formations (5th, Bayard, Speechley, Balltown, 1st Bradford, and 2nd Bradford sands) (Figures 2 and 6). Within the study area, there are seven vertical wells that were drilled and hydraulically fractured by the operator to produce natural gas from this zone. The vertical wells were drilled on 1,500-ft spacing based on the expectation of at least 750-ft radial fracture growth away from the vertical wells during hydraulic fracturing. Three wells completed in the monitored

The EPA does not assign a number of feet to the phrase "extensive distances" in the Response to Comments #11 on page 13. These fractures could extend significantly more than 60 feet or even 161 feet, as seen in the report above. If the fractures extend 750+ feet, they would be well into the Area of Review.

These fractures could also result in the actual Zone of Endangering Influence (ZEI) being extended beyond the ¼ mile radius Area of Review.

The EPA made a mistake when they called gas well #37-033-30327 the Zelman well, when it is really named the Potter #2 well. See cover page of well record on page 23 for Potter #2 - #37-033-30327.

5500-PM-OG0002-DWG Rev. 09/2008

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program

WELL LOCATION PLAT

DEP USE ONLY	DEP Application Tracking #	G:
	Permit #	C:
	Project #	

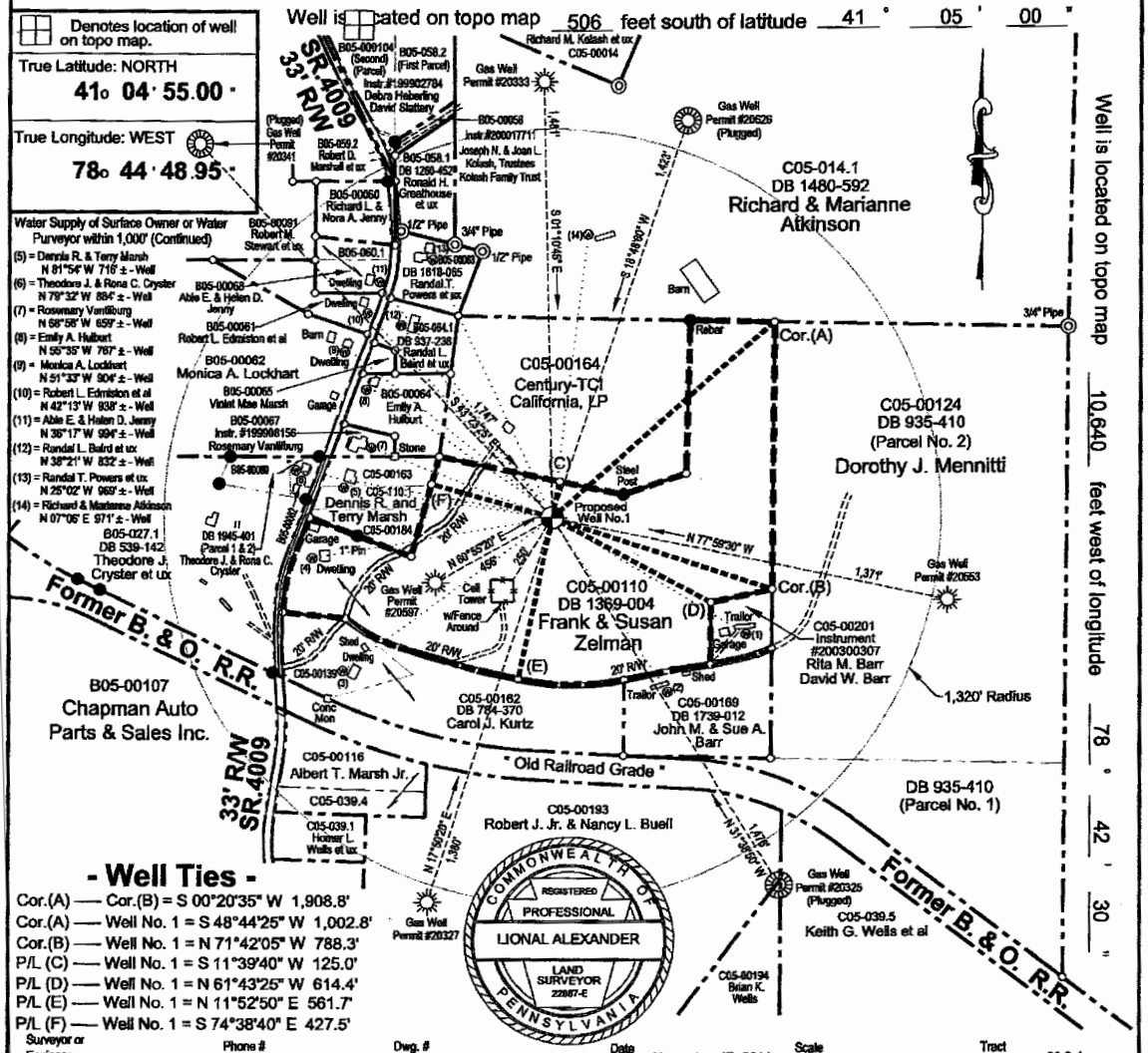
Denotes location of well on topo map.

True Latitude: NORTH
41° 04' 55.00"

True Longitude: WEST
78° 44' 48.95"

Well is located on topo map 506 feet south of latitude 41 ° 05 ' 00 "

Well is located on topo map 10,640 feet west of longitude 78 ° 42 ' 30 "



- Well Ties -

Cor.(A) — Cor.(B) = S 00°20'35" W 1,908.8'
Cor.(A) — Well No. 1 = S 48°44'25" W 1,002.8'
Cor.(B) — Well No. 1 = N 71°42'05" W 788.3'
P/L (C) — Well No. 1 = S 11°39'40" W 125.0'
P/L (D) — Well No. 1 = N 61°43'25" W 614.4'
P/L (E) — Well No. 1 = N 11°52'50" E 561.7'
P/L (F) — Well No. 1 = S 74°38'40" E 427.5'

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL LIONAL ALEXANDER LAND SURVEYOR 22867-E

Water Supply of Surface Owner or Water Purveyor within 1,000' (Continued)

(5) = Dennis R. & Terry Marsh N 81°54' W 716' ± - Well
(6) = Theodore J. & Rona C. Cryster N 79°32' W 884' ± - Well
(7) = Rosemary Vanfilburg N 68°58' W 659' ± - Well
(8) = Emily A. Hulbert N 55°35' W 787' ± - Well
(9) = Monica A. Lockhart N 51°33' W 904' ± - Well
(10) = Robert L. Edmiston et al N 42°13' W 938' ± - Well
(11) = Able E. & Helen D. Jenny N 36°17' W 994' ± - Well
(12) = Randal L. Baird et ux N 38°21' W 832' ± - Well
(13) = Randal T. Powers et ux N 25°02' W 969' ± - Well
(14) = Richard & Marianne Atkinson N 07°06' E 971' ± - Well

Surveyor or Engineer	Phone #	Dwg. #	Date	Scale	Tract Acreage
Lional Alexander	(814) 371-5578	JN336411 Well 1 Plat	November 17, 2011	1" = 500'	23.8 Acres

Lat. & Long Metadata Method	Accuracy	ft. Datum	Elevation Metadata Method	Accuracy	ft. Datum	Survey Date
GPS	Submeter	NAD 83	Topo	10' ±	NVGD 88	June 15, 2011

Applicant / Well Operator Name	DEP ID#	Well(Farm) Name	Well #	Serial #
Windfall Oil & Gas	244615	Frank & Susan Zelman	1	

Address	County - Code	Municipality	Well Type
63 Hill Street, Falls Creek, Pa. 15840	Clearfield - 17	Brady Township	Gas

Surface Landowner / Lessor	USGS 7½ Quadrangle Map Name	Map Section	Surface Elevation
Frank & Susan Zelman	Luthersburg	4	1697 ft.

Target Formation(s)	Angle & Course of Deviation (Drilling)	Anticipated Total Depth
Chert / Oriskany	Vertical	TVD 7,500' TMD 7,500'

Surface Owner or Water Purveyor with a Water Supply within 1,000 ft.	Approximate Course and Distance to Water Supply
(1) = Rita M. & David W. Barr	S 58°54' E 772' ± - Well
(2) = John M. & Sue A. Barr	S 33°39' E 715' ± - Well
(3) = Carol J. Kurtz	S 53°38' W 881' ± - Well
(4) = Frank & Susan Zelman	S 80°21' W 826' ± - Well

Owner, Lessee, or Operator of Workable Coal Seam	Name of Coal Seam Owned, Leased, or Operated

Marianne Atkinson~221 Deer Lane, DuBois, PA 15801 marianne5@windstream.net Windfall/Zelman #1 DIW~Permit # PAS2D020BCLE

Well Record for Potter #2 - #37-033-30327

DM-00-4-56

Pennsylvanney - Driftwood Field
Helvetia Pool

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

4,850' S 41° 05' 00"
11,050' W 78° 42' 30" (4)

033-20327

QUADRANGLE: ~~Penfield~~ LUTHERSBURG ☑ 7½' ☐ 15' PERMIT NO. ~~SHS-327~~

MAP REFERENCE: 9S 17W S63 W117 KIND OF WELL: Gas (Oil, Gas, Other)

WELL RECORD

COMPANY: New York State Natural Gas Corporation
ADDRESS: #2 Gateway Center, Pittsburgh 22, Pa.
FARM John R. Potter ACRES 68
WELL(FARM)NO. 2 CO. SERIAL NO. N-790
ELEVATION: 1640.60 LEASE: 58357
TOWNSHIP: Brady COUNTY: Clearfield
DRILLING COMMENCED: 8/31/60 DRILLING COMPLETED: 9/29/60
PRODUCTION: 30,370,000 cubic feet
ROCK PRESSURE: 3293 psig 4 days.
WELL TREATMENT: (Shooting, Acidizing, Fracturing Etc.)
9/27/60 - Fractured w/20,500 gals. water, 1,000 gal. HCA, 150 lbs. gel and 20,000 lbs. sand. Breakdown pressure 2400 lbs.; maximum pressure 3800 lbs; minimum pressure, 2350 lbs.; final pressure 3800 lbs. Original open flow of 7,312,000 cubic feet increased to 30,370,000 cu ft. a/f Rock pressure b/f 3318 lbs. in 11 days
RESULTS AFTER TREATMENT:
ROCK PRESSURE AFTER TREATMENT:

Size of Casing and Tubing	Used in Drilling	Left in Well	Packers: Type, Size and Depth
13-3/8"	59'	59'	
9-5/8"	1251'	1251'	BHS @ 1248'
7"	7305'	7305'	BHS @ 7234'

PERFORATIONS AT:

CEMENTING DATA: (Size Pipe, Depth, No. Sags, Date
8/31/60 - 13-3/8" cem. @ 70' w/50 sacks
9/4/60 - 9-5/8" cem @ 1248' w/50 sacks cem., 15 sacks aquagel, & 25 sacks quadroflos
9/13/60 - 7" cem. @ 7234' w/125 sacks.

REMARKS:

ZEI Calculation

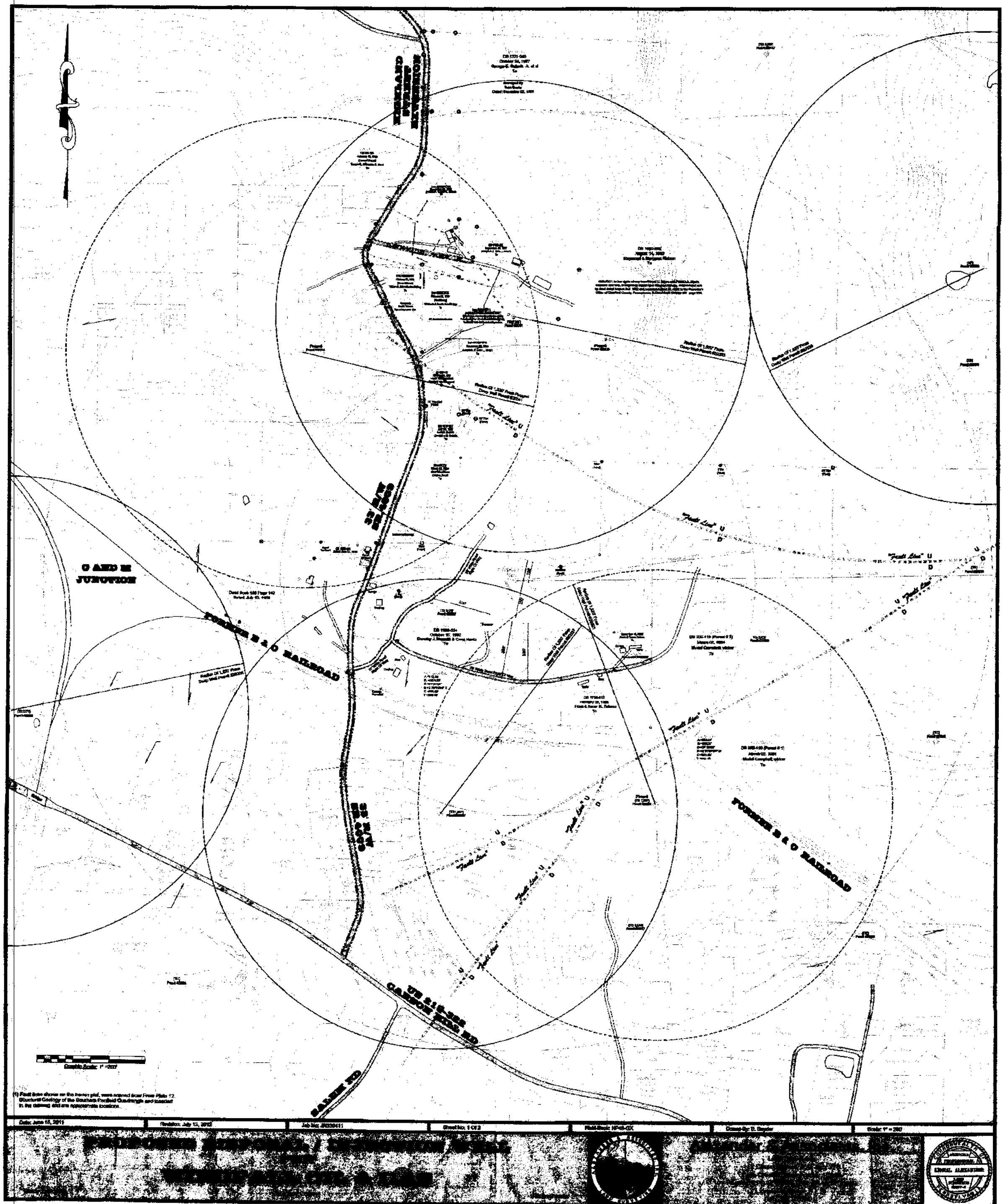
Response to Comments #13, page 15:

Several commenters challenge the use of the ZEI calculation for this site because the model assumes that the injection zone is homogeneous and isotropic, with an infinite areal extent. The modified Theis equation EPA used to calculate the ZEI does assume that the injection zone is homogeneous and isotropic and has infinite areal extent, which may not be the case in an area of review with a nontransmissive fault. However, even though EPA did calculate a ZEI, EPA used an area of review for this well based on a fixed radius of one-quarter mile rather the radius determined by the ZEI calculation. When EPA compared the radius resulting from the ZEI calculation to that of the one-quarter mile fixed radius, the ZEI radius was at least three times smaller than the fixed radius, resulting in a ZEI area.of review about a tenth of the size of the area of review based on a one-quarter mile fixed radius.

First, the EPA admits that the Windfall injection zone did not meet the conditions required for a modified Theis equation to calculate the ZEI. There are actually two non-transmissive faults in the vicinity of the proposed disposal injection well and they join together to form a "V" shape. This can be seen on the map on page 25.

The only place for the injected waste fluid to flow away from the proposed disposal injection well is through the open end of the "V". Therefore, any calculated ZEI would have to be larger than what the EPA calculated using a modified Theis equation. It is possible that a more accurately calculated ZEI would extend beyond the boundary of the ¼ mile radius Area of Review.

A more accurate ZEI calculation would have to be done using a computer model.


C AND M JUNCTION
FORMER B & O RAILROAD
FORMER B & O RAILROAD

Marcellus Wells in Area of Review

It is highly likely that Marcellus wells will be constructed near the Windfall disposal injection well, or within or very near the Area of Review of the Windfall disposal injection well. The hydraulic fractures could compromise the confining zones above the injection zone, thereby allowing brine and/or toxic wastewater to migrate into the USDWs.

In the original Statement of Basis (Feb. 14, 2014 #10, page 9), the EPA named the Onondaga Limestone as the confining zone.

The Onondaga Limestone is above and adjacent to the Huntersville Chert/Oriskany Sandstone injection zone. Above and adjacent to the Onondaga Limestone is the gas-rich Marcellus Shale, followed by the Mahantango shale and then the Tully Limestone. See SUBSURFACE ROCK CORRELATION DIAGRAM on page 27.

The original Statement of Basis claimed that the Onondaga Limestone is 50 feet thick in the Area of Review. The EPA conceded that there was an error in the Response to Comments dated Feb. 14, 2014, saying that the Onondaga Limestone is more likely to be only 14 feet thick in the Area of Review. This reduced thickness number increases the risk of collateral fracturing to the Onondaga Limestone if the Marcellus Shale is horizontally drilled and hydraulically fractured in order to produce gas within the Area of Review. Any collateral fracturing would render the Onondaga Limestone ineffective as a confining zone.

Therefore, a Class II Disposal Injection well and Marcellus wells in close proximity to each other would be very risky to USDWs (Underground Sources of Drinking Water).

I say that it is highly likely that Marcellus wells will be constructed near the Windfall disposal injection well, or within or very near the Area of Review of the Windfall disposal injection well, because on April 25, 2013, two surveyors came onto our property and said that they were surveying the neighborhood for future Marcellus wells to be constructed by CNX/Consol. They told me and my husband, Richard L. Atkinson, that they were preparing all of the information needed for a GIS map, such as property boundaries, home locations, private water wells/springs, and streams etc.

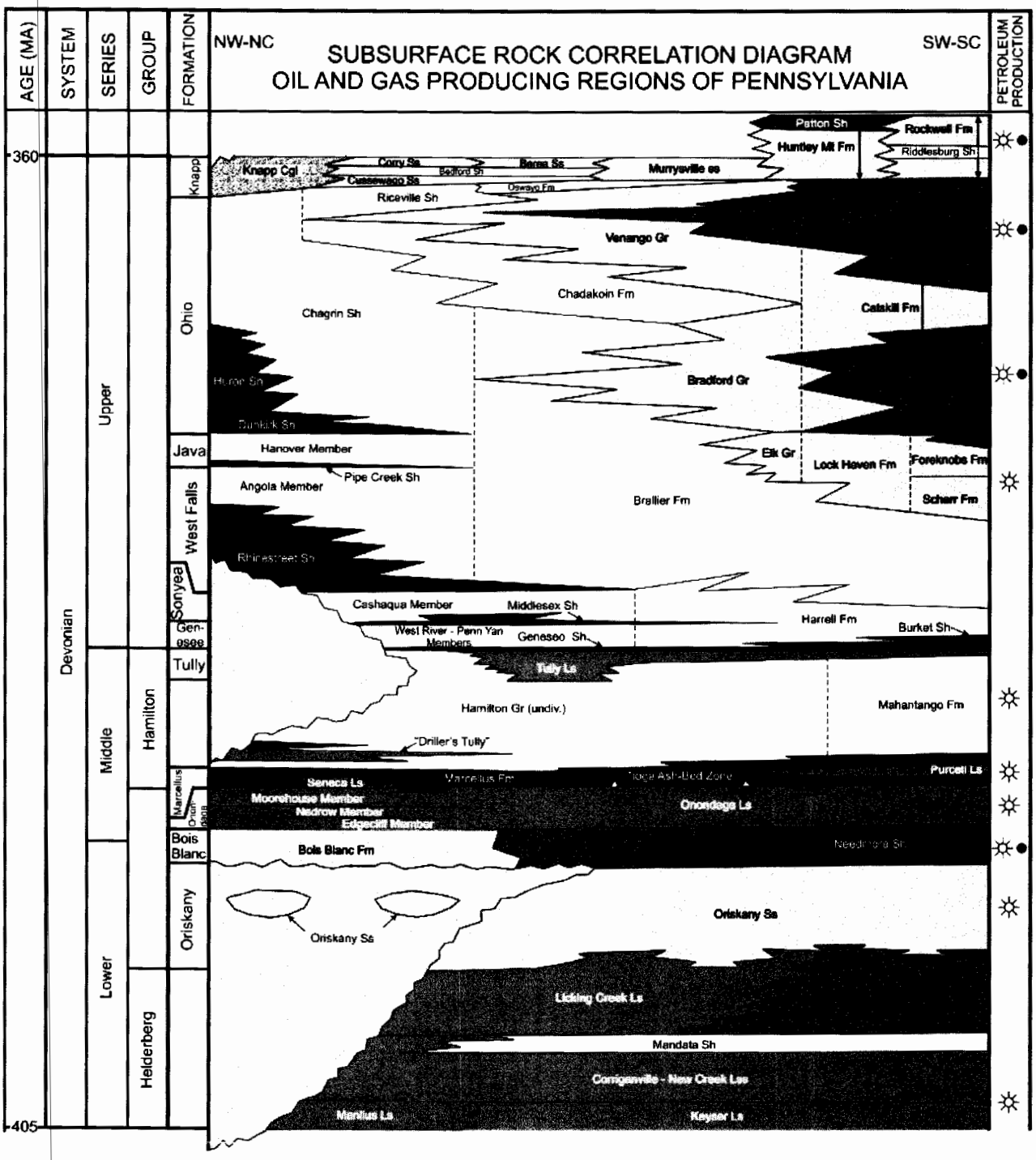
The surveyors also asked us where in our neighborhood would be a good location for the Marcellus well pad.

The surveyors said that after the GIS map was prepared, CNX/Consol would have the information that they would need to apply for a Marcellus well drilling permit. I asked the surveyors what the time frame was for CNX/Consol to construct Marcellus wells here and they said in the next year or two. They told me that over 1 ½ years ago.

I was curious as to exactly which area the surveyors were mapping out, so I asked them if I could see the map that they were working on. They were kind enough to give me a copy of the map, which is on page 28.

SUBSURFACE ROCK CORRELATION DIAGRAM

From PA Geologic Survey



Marianne Atkinson~221 Deer Lane, DuBois, PA 15801 marianne5@windstream.net Windfall/Zelman #1 DIW~Permit # PAS2D020BCLE

2013-04-25 - Marcellus Wells Area Survey Map for CNX/Consol – Highland St. Ext. - DuBois, PA

Marianne Atkinson~221 Deer Lane, DuBois, PA 15801 marianne5@windstream.net Windfall/Zelman #1 DIW~Permit # PAS2D020BCLE

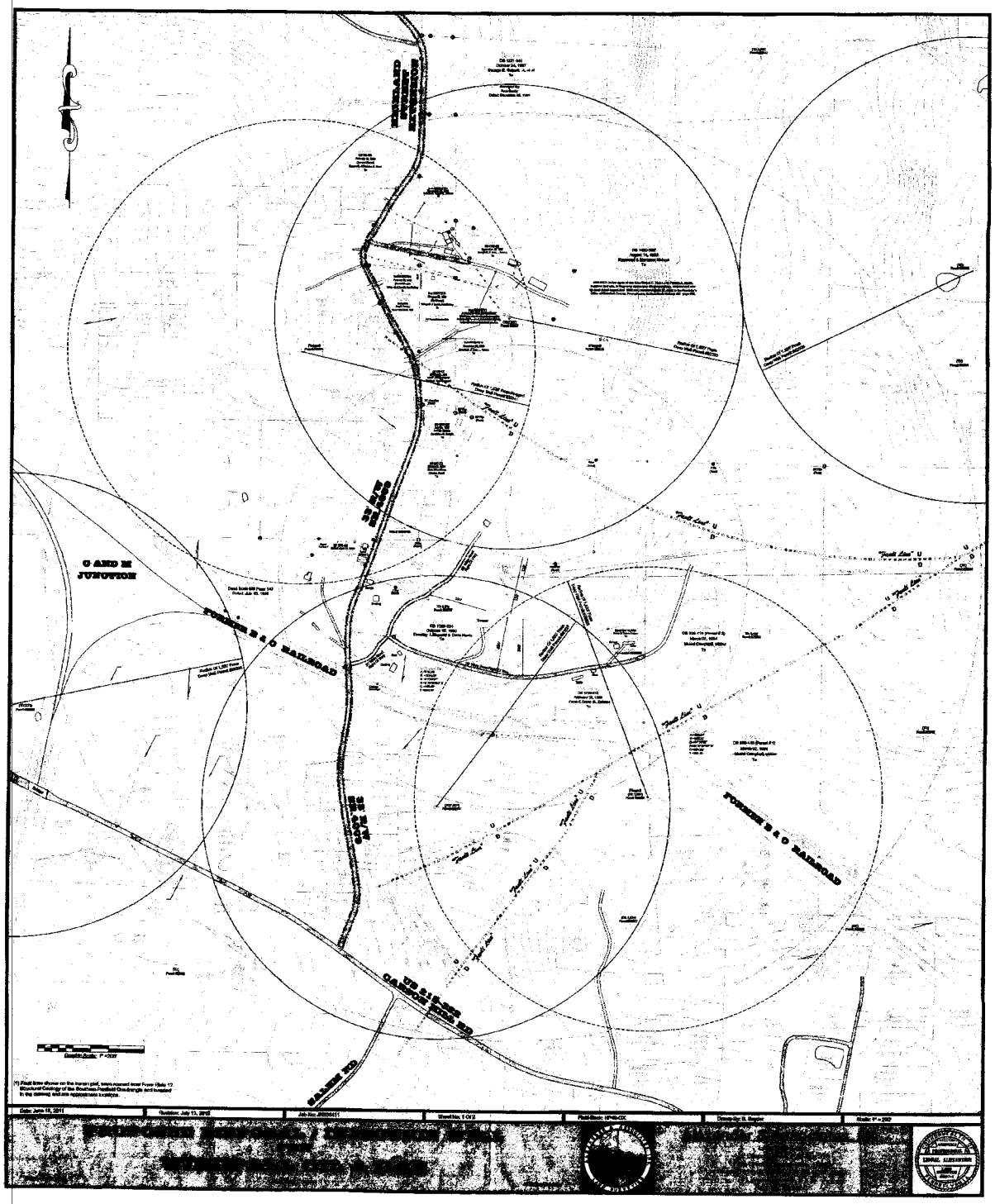
Gas Well Located Outside Faults Incorrect

From the Response to Comments #9, page 8:

"For example, gas well #20333, located between the faults..."

This gas well is actually located outside of the faults. This is an error, as can be seen on the Alexander & Associates map that shows the faults on page 30.

Gas well #20333 is located just outside the Area of Review, 1381 feet to the north of the proposed disposal injection well.


G AND E
JUNCTION
FORMER B & O RAILROAD
FORMER B & O RAILROAD
GARNER RD

Vertical Gas Well Fractures of Injection Zone in Area of Review

There are 2 deep conventional gas wells that are JUST outside the Area of Review, which go into the Oriskany formation, which is the disposal well injection formation. Both of these deep gas wells have been fracked. They can be seen on the DEP Well Plat on page 33.

The following is an **NETL Gas Migration Study.**

An Evaluation of Fracture Growth and Gas/Fluid Migration as Horizontal Marcellus Shale Gas Wells are Hydraulically Fractured in Greene County, Pennsylvania

15 September 2014

U.S. DEPARTMENT OF ENERGY

Office of Fossil Energy

NETL-TRS-3-2014

The following is from the above study:

1.1.2.2 Upper Devonian/Lower Mississippian Gas Wells

Vertical gas wells in the monitored zone were completed in the Squaw Sand of the Mississippian age Shenango Formation and multiple sands within the Upper Devonian age Venango and Bradford Formations (5th, Bayard, Speechley, Balltown, 1st Bradford, and 2nd Bradford sands) (Figures 2 and 6). Within the study area, there are seven vertical wells that were drilled and hydraulically fractured by the operator to produce natural gas from this zone. The vertical wells were drilled on 1,500-ft spacing based on the expectation of at least 750-ft radial fracture growth away from the vertical wells during hydraulic fracturing. Three wells completed in the monitored

The Potter #2, #033-20327 gas well goes into the Oriskany Sandstone and was fracked on Sept 27, 1960 and is 60 feet outside Area of Review to the **south.** See gas well records on pages 34-37.

Gas well depth:

Top of Oriskany = 7288 feet

Bottom of Oriskany = 7317 feet

The Ginter/DuBois Deposit Bank #033-20333 gas well goes into the Oriskany Sandstone and was fracked on December 22, 1960 and is 161 feet outside Area of Review to the **north.** See gas well records on pages 38-41.

Gas well depth:

Top of Oriskany = 7314 feet

Bottom of Oriskany = 7343 feet

If the fractures from these vertical gas wells extend 750+ feet as the NETL study indicates is possible, they would extend well into the Area of Review. The fractures could then provide a conduit for high pressured toxic injected fluids to migrate beyond the boundary of the ¼ mile radius Area of Review. .

Therefore, these fractures could also result in the actual Zone of Endangering Influence (ZEI) being extended beyond the ¼ mile radius Area of Review.

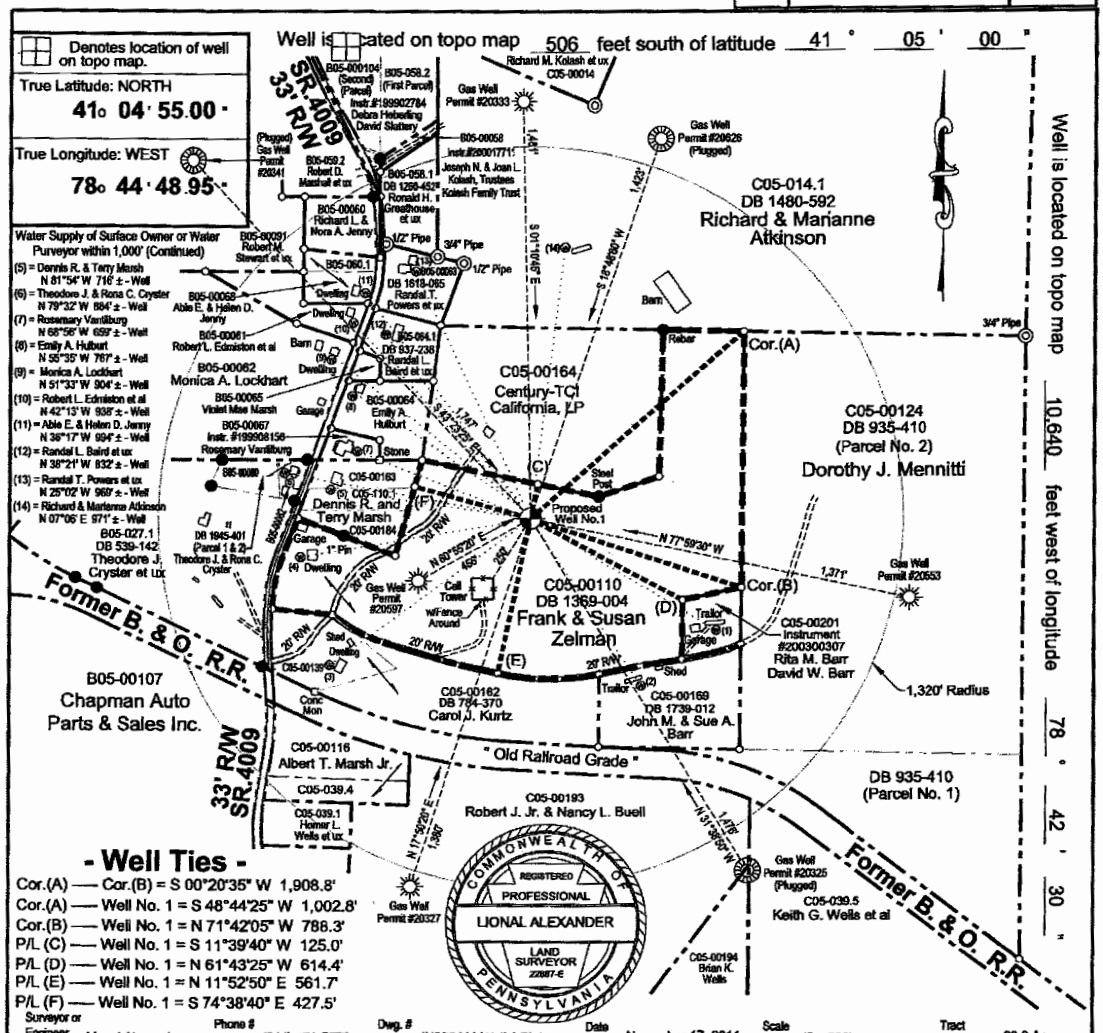
DEP Well Plat

5500-PM-OG0002-DWG Rev. 09/2008

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Oil and Gas Management Program
WELL LOCATION PLAT

DEP USE ONLY	DEP Application Tracking #	G:
	Permit #	C:
	Project #	



Surveyor or Engineer	Phone #	Dwg. #	Date	Scale	Tract Acreage
Lional Alexander	(814) 371-5578	JN336411 Well 1 Plat	November 17, 2011	1" = 500'	23.8 Acres

Lat. & Long Metadata Method	GPS	Accuracy	Submeter	ft. Datum	NAD 83	Elevation Metadata Method	Topo	Accuracy	10' ±	ft. Datum	NVGD 88	Survey Date	June 15, 2011
Applicant / Well Operator Name	Windfall Oil & Gas	DEP ID#	244815	Well(Farm) Name	Frank & Susan Zelman	Well #	1	Serial #	
Address	63 Hill Street, Falls Creek, Pa. 15840	County - Code	Clearfield - 17	Municipality	Brady Township	Well Type	Gas
Surface Landowner / Lessor	Frank & Susan Zelman	USGS 7½ Quadrangle Map Name	Luthersburg	Map Section	4	Surface Elevation	1697 ft.
Target Formation(s)	Chert / Oriskany	Angle & Course of Deviation (Drilling)	Vertical	Anticipated Total Depth TVD	7,500'	TMD	7,500'

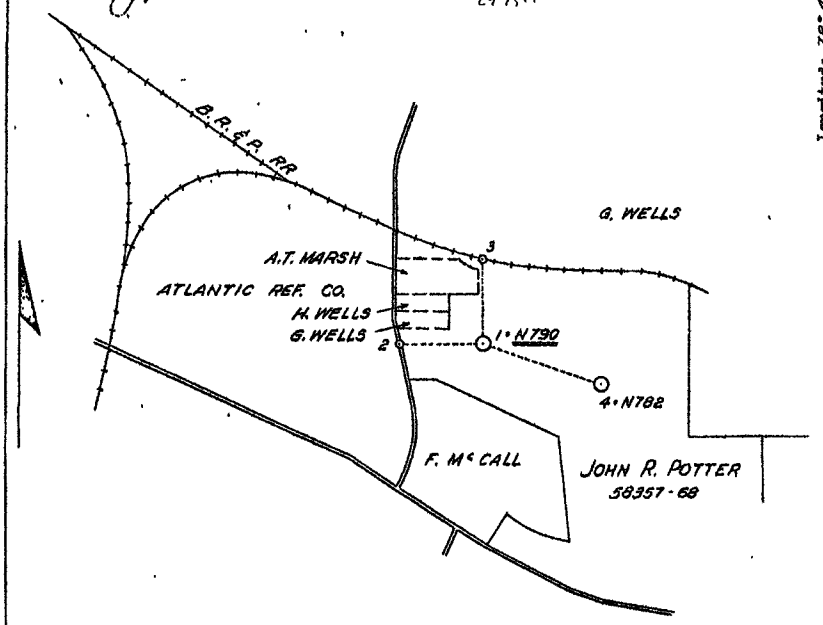
Surface Owner or Water Purveyor with a Water Supply within 1,000 ft.	Approximate Course and Distance to Water Supply	Owner, Lessee, or Operator of Workable Coal Seam	Name of Coal Seam Owned, Leased, or Operated
(1) = Rita M. & David W. Barr	S 58°54' E 772' ± - Well		
(2) = John M. & Sue A. Barr	S 33°39' E 715' ± - Well		
(3) = Carol J. Kurtz	S 53°38' W 881' ± - Well		
(4) = Frank & Susan Zelman	S 80°21' W 826' ± - Well		

DM-00-2-56

District Central Map 9S-17W N S 63 W W 17
Loc. Made 8/24/60 Bk. 1916 Pg. 19 El. Bk. 1916 Pg. 19
Approved [signature] Date August 25, 1960

Latitude 41° 05'

Longitude 78° 40



STA.	BRG.	DIST.
1-2	N83°00'W	500'
1-3	N7°00'E	500'
1-4	S64°06'E	745'

New Location ☒
Drill Deeper ☐
Abandonment ☐
Re-drill ☐

Company NEW YORK STATE NATURAL GAS CORPORATION
Address #2 Gateway Center, Pittsburgh 22, Pa.
Farm John R. Potter
Tract ____ Acres 68 Lease No. 58357
Well(Farm)No. 2 Co. Serial No. N-790
Angle of Deviation, if any ____
Elevation 1640.60 Quadrangle Curwensville, Penfield
County Clearfield Township Bradv
Engineer R. A. Doman
Engineer's Registration No. 14016
File No. ____ Drawing No. ____
Date 8/25/60 Scale 1"=660'

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

WELL LOCATION MAP
Dept. File No. ~~OSB-307~~ OJ7-20727
⊕ Denotes Values of Well on United States Topographic Maps.
Scale 15' ☒ 7½' ☐

WORKABLE COAL SEAMS TO BE PENETRATED

Name of Seam	Owner of Seam
John Potter	Lower Kittanning

AUG 31 1960

DM-CC-4-56

Pennsylvanian - Driftwood Field
Helvetia Pool

1,850' S 41° 05' 00"
11,050' W 78° 42' 30" (4)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES
Oil and Gas Division
HARRISBURG

033-20327

QUADRANGLE: ~~Penfield~~ LUTHERSBURG ☑ 7½' ☒ 15' PERMIT NO. ~~OIL 327~~

MAP REFERENCE: 9S 17W S63 W117 KIND OF WELL: Gas (Oil, Gas, Other)

WELL RECORD

COMPANY: New York State Natural Gas Corporation
ADDRESS: #2 Gateway Center, Pittsburgh 22, Pa.
FARM John R. Potter ACRES 68
WELL(FARM)NO. 2 CO. SERIAL NO. N-790
ELEVATION: 1640.60 LEASE: 58357
TOWNSHIP: Brady COUNTY: Clearfield
DRILLING COMMENCED: 8/31/60 DRILLING COMPLETED: 9/29/60
PRODUCTION: 30,370,000 cubic feet
ROCK PRESSURE: 3293 psig 4 days.
WELL TREATMENT: (Shooting, Acidizing, Fracturing Etc.)
9/27/60 - Fractured w/20,500 gals. water, 1,000 gal. MCA, 150 lbs. gel and 20,000 lbs. sand. Breakdown pressure 2400 lbs.; maximum pressure 3800 lbs; minimum pressure. 2350 lbs.; final pressure 3800 lbs. Original open flow of 7,312,000 cubic feet increased to 30,370,000 cu ft. a/f Rock pressure b/f 3318 lbs. in 11 days
RESULTS AFTER TREATMENT:
ROCK PRESSURE AFTER TREATMENT:

Size of Casing and Tubing	Used in Drilling	Left in Well	Packers: Type, Size and Depth
13-3/8"	59'	59'	
9-5/8"	1251'	1251'	BHS @ 1248'
7"	7305'	7305'	BHS @ 7234'

PERFORATIONS AT:

CEMENTING DATA: (Size Pipe, Depth, No. Bags, Date
8/31/60 - 13-3/8" cem. @ 70' w/50 sacks
9/4/60 - 9-5/8" cem @ 1248' w/50 sacks cem., 15 sacks aquagel, & 25 sacks quadroflos
9/13/60 - 7" cem. @ 7234' w/125 sacks.

REMARKS:

FORMATION	TOP	BOTTOM	GAS AT	OIL AT	WATER AT (Fresh or Salt Water)	REMARKS
Surface	0	15				
Sand & shale	15	143			FW 75	
Red shale	143	146				
Sand & shale	146	205				
Coal	205	209				
Sand & shale	209	217				
Shale & sand	217	303				
Coal or black shale	303	306				
Shale & sand	306	320				
Shale	320	340				
Sand	340	550				
Shale & sand	550	580				
Sand	580	650				
Shale & sand	650	692				
Sand	692	733				
Red shale	733	735				

(Over)

Well N 790

FORMATION	TOP	BOTTOM	GAS AT	OIL AT	WATER AT (Fresh or Salt Water)	REMARKS
Sand & shale	735	1010				
Black shale	1010	1020				
Sand & shale	1020	2293				
Shale	2293	2295				
Shale & sand	2295	2601				
Sand & shale	2601	3415				
Shale & sand	3415	4015				
Sand & shale	4015	5025				
Shale & sand	5025	5475				
Sand & shale	5475	5680				
Shale & sand	5680	5857				
Sand & shale	5857	6030				
Lime & shale	6030	6137				
Lime	6137	6195				
Shale & shells	6195	6642				
Lime	6642	6750				
Shale & shells	6750	7219				
Onondaga lime	7219	7233				
Chert	7233	7288				
Sand	7288	7317	7291-7303			
Lime	7317					
Total Depth		7318				
Sample Study						
Tully	6642					
Onondaga	7219					
Chert	7233					
Oriskany	7288	7317	7291-7303			

RECEIVED
DEPT. OF MINES
& MINERAL IND.

'60 NOV 29 AM 8 : 44

DATE October 28, 19 60

APPROVED New York State Natural Gas Corporation OWNER

BY D E Barger

TITLE Superintendent of Operations

LUTHERSBURG (7½) **WELL RECORD** 033-20327

Name John R. Potter #2 Co. Clearfield Twp. Brady No. 3293 — 2000' from N, 2300 fr E

Owner NYSNG Corp N-790 Contr. OUTSTEP

Date ___ Elev. 1640.6 Product ___ Drill ___

Obtained by ___ Authority ___ Quad. Luthersburg Locate by Sketch

Geol. Name	Sept 2, 1960	Thick-ness	From	To	Geol. Name	2000 ft E 78°45'	Thick-ness	From	To
Sept 16									
	Tully		6642			9⅝" casing at 1256'			
	Onondaga		7219			7" casing at 7234 ft			
	chert		7238						
	Oriskany		7288	7317	Sept 23	SD to frac			
	7300 Mcf gas BF								
	SI TD			7318					
	RP 3342 # 56 hrs								
SEP 30 1960	30,370 Mcf gas								
	RP 3800 #								
	Completed 9-29-60								

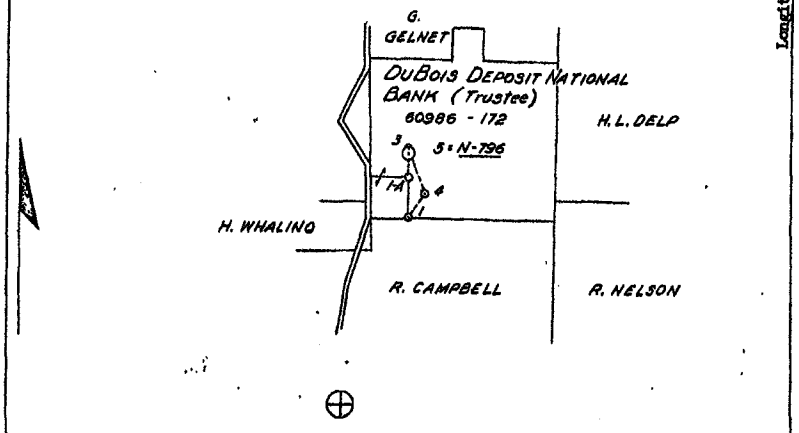
Gas Well # 033-20333 DuBois Deposit National Bank/Ginter Page 1

DM-OG-2-56

District Central Map 9S 17W M S 63 M W 117 & 118
Loc. Made 10/24/60 Bk. 1916 Pg. 30 El. Bk. 1916 Pg. 31
Approved J. M. Henderson Date October 25, 1960

Latitude 41°10'

Longitude 70° 40'



STA.	BRG.	DIST.
1-1A	N 7° 00'E	500'
1-3	N 7° 00'E	848'
3-4	S 13° 49'E	591'
4-1	S 42° 08'W	365'
3-5	S 7° 00'W	75'

New Location ☒
Drill Deeper ☐
Abandonment ☐
Re-drill ☐

Company NEW YORK STATE NATURAL GAS CORPORATION
Address #2 Gateway Center, Pittsburgh 22, Pa.
Farm DuBois Deposit National Bank Trustee et al (H.E. Ginter)
Tract ____ Acres 172 Lease No. 60986
Well (Farm) No. #1 Co. Serial No. N-796
Angle of Deviation, if any ____
Elevation 1642.34 Quadrangle Penfield
County Clearfield Township Brady
Engineer R. A. Doman
Engineer's Registration No. 2h036
File No. ____ Drawing No. ____
Date 10/25/60 Scale 1"-1320'

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

WELL LOCATION MAP
Dept. File No. 033-20333

⊕ Denotes Values of Well on United States Topographic Maps.
Scale 15' ☒ 7½' ☐

WORKABLE COAL SEAMS TO BE PENETRATED

Name of Seam	Owner of Seam
Lower Kittanning	DuBois Dep. Nat. Bank Trustee, The Union Banking and Trust Co. of DuBois Penna.

Gas Well # 033-20333 DuBois Deposit National Bank/Ginter Page 2

PENFIELD D 272

OM-OG-4-56

File under Dubois Nat'l Bank

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF MINES

Oil and Gas Division
HARRISBURG

033-20333

QUADRANGLE: Wheasburg Penfield [X] 7½' [ ] 15' PERMIT NO. CLE 999

MAP REFERENCE: 9S 17W 863 W117 & 118 KIND OF WELL: GAS (Oil, Gas, Other)

WELL RECORD

COMPANY: New York State Natural Gas Corporation

ADDRESS: 2 Gateway Center, Pgh. 22, Penna.

FARM: H. E. Ginter Est. ACRES 172

WELL(FARM)NO. 1 CO. SERIAL NO. N-796

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

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. Breakdown 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 24½ hrs. dead weight.

RESULTS AFTER TREATMENT:

ROCK PRESSURE AFTER TREATMENT:

Size of Casing and Tubing	Used in Drilling	Left in Well	Packers: Type, Size and Depth
13 3/8"	96'	96'	
9 5/8"	1285'	1285'	BHS @ 1287
7"	7335'	7335'	BHS @ 7267

PERFORATIONS AT:

CEMENTING 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 & 20 sax aquagel
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 Etal". They are in fact Successor Trustee 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			458	
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				
Sample Study						
Tully	6686					
Onondaga	7248					
Chert	7266					
Oriskany	7314	7343				

DATE January 24, 1961

APPROVED New York State Natural Gas Corporation, OWNER

BY A R Barnes

TITLE Superintendent Operations

DuBois Nat Bank (1½) **WELL RECORD** 033-20333

Name H.F. Ginter Co. Clearfield Twp. Brady No. 3321

Owner NYSNG Corp N796 Contr. [illegible]

Date ____ Elev. 1642 Product ____ Drill ____

Obtained by ____ Authority ____ Quad. Curwensville Locate by Sketch

Geol. Name	OCT 21 1960	Thickness	From	To
OCT 18	1960			
Dec 16	Tully		6689	
	Onondaga		7248	
	Chert		7266	
	Oriskany		7363	
	TD			7344
	3875 Mcf BF			
	RP 2390 psi 16 hrs.			
Dec 30	10,504 Mcf gas AF			
	RP 2340 psi 70 hrs.			
	Completed 12-23-60			
	Gas - 7267 & 7300			
	7316 - 25			

Geol. Name	800 ft S 600 ft E	Thickness	From	To
	9 5/8" Casing @ 1287 ft			
	7" " 7267 ft			

One Mile Topographic Map

From the Response to Comments #5, pages 3 and 4:

5) A topographic map of one mile around the proposed well location was not provided by the applicant as required by the regulations.

The UIC regulations and the permit application require the submission of a topographic map extending one mile beyond the property boundary, showing the location of the injection well or project area for which the permit is sought. The applicant provided the map described above in Attachment O of the application and provided a more detailed map of higher resolution, of the area of review in Attachment C. This detailed map was titled, "Proposed Disposal/Injection Well for Windfall Oil and Gas" and was developed by Alexander & Associates.

The one-mile map must show all intake and discharge structures; all hazardous waste treatment, storage, or disposal facilities; and all injection wells. Besides the proposed Windfall well, none of these structures or facilities were found in this one-mile area. In addition the map must show all drinking water wells, springs and surface waters within a quarter-mile of the property boundary. These were depicted in the Alexander & Associates map.

See instructions for attachments for the UIC permit application on page 43.

From the Response to Comments, on page 17, #15:

"The deep coal mines mentioned by commenters do exist below a portion of the injection well area of review as well as throughout Brady Township and the DuBois area."

The EPA admits that there are deep coal mines within the area of review in their response above. They implied in the Response to Comments #5, pages 3 and 4, that these deep mines are shown on the one mile map, but they are not.

Another error by the EPA is where they say in Response to Comments #5 that the water wells/springs were shown on the Alexander & Associates map, but they were not. They were shown on the Resource Management Services map.

1. There are NO maps included with the Windfall UIC permit application showing the deep coal mines that are within the Area of Review.

Therefore, the UIC permit application is incorrect and deficient and should be denied.

Instructions for attachments for the UIC permit application

INSTRUCTIONS - Attachments

Attachments to be submitted with permit application for Class I, II, III and other wells.

A. **AREA OF REVIEW METHODS** - Give the methods and, if appropriate, the calculations used to determine the size of the area of review (fixed radius or equation).The area of review shall be a fixed radius of 1/4 mile from the well bore unless the use of an equation is approved in advance by the Director.

B. **MAPS OF WELL/AREA AND AREA OF REVIEW** - Submit a topographic map, extending one mile beyond the property boundaries, showing the injection well(s) or project area for which a permit is sought and the applicable area of review. The map must show all intake and discharge structures and all hazardous waste treatment, storage, or disposal facilities. If the application is for an area permit, the map should show the distribution manifold (if applicable) applying injection fluid to all wells in the area, including all system monitoring points. Within the area of review, the map must show the following:

Class I

The number, or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, and other pertinent surface features, including residences and roads, and faults, if known or suspected. In addition, the map must identify those wells, springs, other surface water bodies, and drinking water wells located within one quarter mile of the facility property boundary. Only information of public record is required to be included in this map;

Class II

In addition to requirements for Class I, include pertinent information known to the applicant. This requirement does not apply to existing Class II wells;

Conclusion

There are deficiencies in the UIC Application that was submitted by the Permittee.

The Statement of Basis has not been corrected and updated and made available to the public as stated in the Response to Comments #11 Page 13.

The Response to Comments contained factual and numerical errors, in addition to theoretical misconceptions.

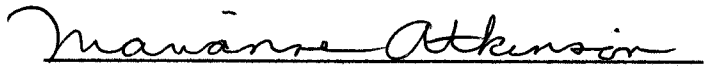
Based on the previous issues, the EPA has granted the UIC Permit based on clearly erroneous findings of fact or conclusions of law.

At the very least, the issues raised above reflect an exercise of discretion or an important policy consideration that the Board should review.

At a minimum, I urge remand; however, I believe that the deficiencies are numerous and serious enough to merit denial of the Windfall UIC Permit.

Date: November 22, 2014

Respectfully submitted by,



Marianne Atkinson

Certificate of Service

I, the undersigned, certify that the foregoing *Petition for Review* of UIC Permit No. PAS2D020BCLE was filed with the Environmental Appeals Board via Certified First Class Mail, return receipt requested and served on the following via Certified First Class U.S. Mail, return receipt requested:

Permitting Authority

United States Environmental Protection Agency
Region III
Attention: Shawn M. Garvin, Regional Administrator
1650 Arch Street
Philadelphia, PA 19103-2029

Applicant-Permittee

Windfall Oil and Gas
63 Hill Street
Falls Creek, PA 15840

November 24, 2014

Marianne Atkinson
221 Deer Lane
DuBois, PA 15801

Marianne5@windstream.net

814-583-7926