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## Brady Township Supervisors

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Sheryl DeBoer, Secretary  
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May 5, 2015

DEP Policy Office  
400 Market Street  
P.O. Box 2063  
Harrisburg, PA 17105-2063



Dear DEP Policy Office,

The Brady Township Supervisors are concerned about regulations overseeing disposal injection wells. We request the DEP review current regulations and take into consideration our input and experiences. Attached you will find a letter we submitted to the Environmental Appeals Board and also a letter our engineer submitted that we feel provides a broad overview of the situation needing addressed by the DEP.

Residents in our township that live in a village designation with residential development have learned through firsthand experience about the EPA and DEP regulations for disposal injection wells. A proposed disposal injection well has been sited on a hill above numerous homes with springs and private water wells. Residents have worked to be educated and also to fully understand the process of disposal injection wells. Residents have educated our community, since 2010 once learning of this poor siting. We have found no regulations actually protecting our residents from the surface location; their water supplies; or the detrimental affects of the site location, since the EPA only focuses on underground sources of water.

This letter is our formal request to the DEP for further research on regulations that oversee disposal injection well sites, especially surface conditions.. The comments we present cover the specific regulations found in sections 78.51; 78.52; 78.56; 78.57; 78.58; 78.59; 78.60; 78.61; and 78.62.

We request the DEP thoroughly review a binder submitted by area residents. It was provided at the DEP & Environmental Quality Board (EQB) Public Hearing on January 23, 2014 with all the information locally collected, which is extremely relevant to protecting Pennsylvania's water sources.

Our township realizes that the DEP depends on the permitting of disposal injection wells by the EPA. Unfortunately, the EPA only deals with underground sources of drinking water and residents found no way to protect above ground water sources. Many concerns were presented by residents that were unable to be addressed by the EPA, especially the concern of our area coal mines and six old deep gas wells in the same formation along with plugging concerns. Residents also know of two private water wells being affected by an old deep gas well that is operational and the closest to the proposed disposal injection well site.

Some of the concerns include: abandoned gas wells with deteriorated casings, proximity to our watershed and other area watersheds with faults known in the area, protection of private water supplies, cost to check water sources regularly, roads, air quality, soil, loss of property values and much more. The DEP needs to review the information collected by private citizens on potential hazards to Pennsylvania water supplies from waste disposal. What happens underground really is an unknown and loss of water to homes is one of the most important items to home owners and to protecting the home owners property values and our tax revenues.

Ensuring the DEP identifies future regulations for disposal injection wells is felt to be a priority to protect our state. Our state is founded on a history of oil and gas that had drilling done throughout our Commonwealth and especially our area. The DEP needs to look at regulations to plug and seal old abandoned and orphaned wells appropriately prior to new well construction to prevent pollution from accidents. To avoid repeating history in Erie, the DEP should prohibit disposal injection wells in Pennsylvania near residential areas or water supplies, because we know waste has traveled over five miles underground and been found resurfacing.

We also believe operators should be required to do pre-drill water quality testing and make the data publicly available. If contamination of a water source should happen the operator should be required to restore the supply to pre-drilling quality. The driller should also be required to provide a sufficient bond that will provide water for residents if contaminated and not just plugging costs. A comprehensive monitoring plan is also necessary with all the old gas wells and coal mines in Pennsylvania. The pressure from injection activity has the potential to displace brine and other fluids along the area fault lines into abandoned gas wells with the potential to contaminate underground sources of drinking water. The area has known faults and studies should be done due to all the problems in our nation with disposal injection wells and increased risk of earthquakes. New standards or casings will not protect where the fluids travel over time below the surface once they reach the injection zone especially when known fractures, faults, and old gas wells already exist.

Thank you for the opportunity to comment on the updating of our Oil and Gas Regulations. We agree there is a need to better protect our water resources and environment.

Sincerely,

A handwritten signature in black ink that reads "Charles Muth". The signature is written in a cursive, slightly slanted style.

Charles Muth  
Board Chairman

Township Office  
814-583-7660

**Brady Township**  
3906 Shamokin Trail  
P.O. Box 125  
Luthersburg, PA 15848

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U.S. E.P.A.  
Municipal Garage  
814-583-5324

2014 NOV 25 PM 12: 07

ENVIR. APPEALS BOARD

RE: Petition to Review (Appeal) Permit for Windfall Oil & Gas, Inc.  
PERMIT #: PAS2D020BCLE  
PERMITTED FACILITY: Class II-D injection well, Zelman #1

November 13, 2014

Dear Environmental Appeals Board,

The Brady Township Supervisors submit this petition for review (appeal) of the EPA permit for Windfall Oil & Gas for a disposal injection well in Brady Township. This petition for review will provide sufficient evidence that the permit be denied for this proposed location. We have already participated numerous times in your public comment periods and at your public hearing. This letter is in compliance with your word limitations.

The Brady Township Supervisors request the Environmental Appeals Board (EAB) "deny this permit" based on the following two regulations since sufficient evidence is available that the confining zone may be fractured and unable to protect resident's water supplies. The two regulations: 40 C.F.R. §146.22 (a) All new Class II wells shall be sited in such a fashion that they inject into a formation which is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review. 40 C.F.R. §146.22 (c) (2) & (d) (2) Well injection will not result in the movement of fluids into an underground source of drinking water so as to create a significant risk to the health of persons. As the Supervisors of this township we are responsible for the safety and well being of our residents and we work hard to protect their rights and privileges to reside in our township. Additionally, this area has been designated a village in our Comprehensive Plan and additional development is planned for this area soon.

After review of the EPA permit on file at the library we still find the maps available only show slightly over the ¼ mile area of review. The cited map was found and reviewed again, which still isn't sufficient for residents to verify all the geological data locally. The EPA Form 7520-6 Underground Injection Control Permit Application specifically states in the instructions for Attachment B to, "submit a topographic map, extending one mile beyond the property boundaries." The EPA Response Summary (page 3, #5) is inaccurate in stating that the one mile topographic map was included and is on file at the library. The library still has the maps and none of them meet the EPA permit application criteria.

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Additionally, the gas well logs found at the library in the permit application stated:

- 1) 033-20336 -- hydrofac on 2/2/61 (on Chapman farm);
- 2) 033-20333 -- 12-22-60 fractured w/ 20,000 gals., 200 lb. gel, 1,000 gal acid and 20,000 lb. sand (Ginter);
- 3) 033-20341-P -- 11/25/60 Halliburton hydrafrac from 7,299 to 7,365 with 11,900 gal. frac. fluid (Carlson & it was fracked only 18 feet below the confining layer, which is the only known information we have about the depth of the fracking from the well logs in the permit application);
- 4) 033-20325-P -- dry hole, plug & abandon (Potter #1); and
- 5) 033-20327 -- 9/27/60 fractured w/ 20,500 gals. water.

The table with these well logs shows another deep gas well into the same formation as the permit application request although we didn't see a well log. The well logs with the permit application show they have been fractured and they all reside right on the edge of the 1/4 mile area of review. Yet Windfall stated on the permit application attachment "I" that, "no fracture data is available in the area on the confining zones." We find this statement inaccurate along with the EPA response summary (page 13, #11) is only 14 feet thick. The original permit misstated that the confining zone was fifty feet thick. When we reviewed the table on the gas well data we find that the confining zone may even only be as thick as 11 feet. Although, it may only be 6 feet thick because no one really knows. Proving fractures into the 1/4 mile area of review should be sufficient data to provide basis to deny this permit. Due to the regulation stating, "40 C.F.R. §146.22 (a) All new Class II wells shall be sited in such a fashion that they inject into a formation which is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review."

We request the area of review be extended to a 1/2 mile radius to consider all gas wells in the area, especially since 6 gas wells exist a few feet outside the 1/4 mile. The EPA Response Summary (page 13, #12) stated Oriskany wells were further away locating them at least 1/2 mile to one mile from the proposed disposal injection well. The well location plat map in the permit shows the wells at:

- 1) Permit #20327 located feet from injection site 1,380 (60 feet outside 1/4 mile)
- 2) Permit #20325 located feet from injection site 1,476 (156 feet outside 1/4 mile)
- 3) Permit #20553 located feet from injection site 1,371 (51 feet outside 1/4 mile)
- 4) Permit #20626 located feet from injection site 1,423 (103 feet outside 1/4 mile)
- 5) Permit #20333 located feet from injection site 1,481 (161 feet outside 1/4 mile)
- 6) Permit #20341 located feet from injection site 1,747 (427 feet outside 1/4 mile)
- 7) Permit #20597 located feet from injection site 456 feet from injection site

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The EPA Response Summary is inaccurate with the 1/2 mile statement when the gas wells are right outside the 1/4 mile area of review just feet from the 1/4 mile line as shown on the maps provided with the permit application. This map also shows it may be off by 10 feet give or take (accuracy 10 +/-). The map accuracy being off by this much could put these inside the 1/4 mile area of review, so they must be taken into consideration.

Residents requested the area of review be extended due to the gas wells in the Oriskany outside the 1/4 mile area of review and all the private drinking water sources throughout the area. We know Darlene Marshall provided the EPA a list of water sources in a one mile area along with comments on both these concerns. Also at the public hearing, Rick Atkinson, provided a zone of endangering influence calculation that demonstrated at the December 2012 public hearing that assumed non-transmissive faults would change the zone of endangering influence making it larger so that the area of review should be extended. Both residents stated, "the Carlson gas well should be considered as it is in the same formation as the injection zone and the Carlson gas well is a source of concern for neighbors as mentioned in testimony because the casing is suspect due to fumes it emits." It was also mentioned that the faults might push the disposed fluid right towards two of the old deep gas wells and the coal mines if they do confine the disposed fluid.

It is also questionable that a fault block exists even though the EPA Response Summary mentions fault blocks, since it isn't shown on the permit application map. A fault block would show faults surrounding the entire injection zone and confining the injection fluid. Another inaccurate statement seems to exist based on the map information showing faults in relation to the old gas wells (EPA Response summary page 10, #8), which mentions plugged wells not producing outside the fault block. This is an inaccurate statement because Atkinson's property well was never plugged and has been used till more recently (may be currently listed as inactive) and is located on the permit applicant maps on the other side of a fault. Since they didn't prove a fault block exists the faults may or may not be transmissive. With no way to prove if the faults are non-transmissive or transmissive we request the permit be denied.

It seems that many items are inaccurate or questionable and the lack of geological information available during the permit review period should have been addressed already. Residents requested a comprehensive monitoring plan and with all the old gas wells in the area you would think this would have been addressed. Taking any risk with

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so many old deep gas wells in the same formation, so near the injection zone is a risk not worth taking especially with so many inaccurate details, unknowns, private water

supplies, and coal mines under the entire area. So how many inaccuracies must we find before the permit is denied. Based on just these facts presented the permit should be denied.

Residents state 17 water sources were identified in the 1/4 mile radius of review and the permit applicant included a well location plat map with the EPA permit showing 14 private drinking water sources. Darlene Marshall also provided information and a map showing 16 additional water sources located near a deep gas well that was mentioned should be checked for proper plugging.

Many individuals attended and presented information at the public hearing where we setup 300 chairs and most of them were filled with standing room only. The EPA has stated over 2,600 comments were received. Local residents found permit details to be inaccurate as presented to residents and local governing bodies, which five governing bodies were represented at the meeting (Clearfield County Commissioners, Brady Township, Sandy Township, City of DuBois, DuBois School Board along with local State & Federal Representatives). We currently haven't received a transcript of the comments although we would appreciate a copy, so we are writing this from comments we provided, heard at the hearing or know residents submitted. For ease of filing this appeal we mostly cite the binder submitted by Darlene Marshall on behalf of all concerned citizens. This binder needs to be entered into the EAB evidence and fully reviewed before any decisions are made because many concerns still need to be addressed. Please note all residents worked to gather the information in this binder and Darlene Marshall as a librarian compiled the information for the residents making it an excellent resource on the known concerns.

Residents request this permit be denied on these inaccuracies because of the proximity of so many other Oriskany wells, so close to the 1/4 mile. These wells would have been fractured and these fractures would have went into the 1/4 mile area of review. This means that this permit would violate the following regulations : 40 C.F.R. §146.22 (a) All new Class II wells shall be sited in such a fashion that they inject into a formation which is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review. 40 C.F.R. §146.22 (c) (2) & (d) (2) Well injection will not result in the movement of fluids into an underground source of drinking water so as to create a significant risk to the health of persons.

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A fault in Clearfield County mentioned in the EPA Response Summary #8, page 7, seems like it may go directly through the area of review. Residents request further study of this

fault and all the faults in the area. Making general statements about the county isn't sufficient when faults can be a main concern where disposal injection wells exist. Many comments were submitted by residents in September 2013 with concerns because some areas with "no known" existing faults have proven to cause seismic activity. See example cited of Timpson, Texas that sits on top of a tectonic plate that should be geologically stable but it still has experienced seismic activity from injection wells. Our resident's homes aren't built to meet earthquake standards. Additionally, the regulation 40 C.F.R. §146.22 stated, "this area should be free of faults," so this should be sufficient to deny the permit.

A comprehensive monitoring plan was requested and still is expected to be provided to our residents before this permit is issued. This will protect our residents since all the gas wells are near the injection zone into the same formation as the disposal of fluid. Protecting our water supplies should be a priority when they could be jeopardized and it would be costly to provide them water. The permit applicant should be required to provide water before the permit is issued just in case water contamination happens.

The permit states it is for a five year period yet it can be extended. Over time the fluid will migrate further and closer to the other Oriskany wells and residents have already questioned the proper plugging of some old gas wells, so monitoring gas wells must be considered before the permit is issued. Plus it seems that the application has inaccurate information when you compare the data to the maps so if residents find these inaccurate statements on basic details they know what will protect residents and our township in the future. For example, 1) the confining layer thickness was corrected by a resident, 2) no topographic map extending one mile from the property boundaries was provided, 3) gas wells are located right outside the 1/4 mile yet the EPA response statement mentions they are located a 1/2 mile away, 4) the information on a fault block is questionable, and 5) an Oriskany formation gas well may be listed incorrectly in the permit application in relation to the faults.

Correcting the confining layer based on a comment from 50 feet of thickness to 14-15 feet should demonstrate no one knows specifically the geology below ground and we know this area has been fractured before so residents deserve protection (more than guesses). The shallow gas well 456 feet from the injection site is fractured above the

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confining layer. The coal mines are extremely close to the injection site and they would have been technically fractured. The other Oriskany gas wells have fractures that would reach into the area of review that would be below the confining layer. Plus no one knows if all the fracturing affected the proposed layer that is the confining zone. Yet fractures

exist and should be considered that may have affected this confining zone, which is not as thick as originally mentioned in the EPA permit. The migration of fluids below ground hasn't changed since the start of disposal wells even though injection standards have improved for casings and providing automatic shutoffs.

As the supervisor of a 58 well natural gas storage operation our Township Supervisor, Mr. Charles Muth, is familiar with the monitoring process and gas storage. Muth states, "there are not monitoring wells in the area of the injection well. The fluid going into this well should be classified as storage, as per your response, it is the EPA opinion that these fluids will be confined in the Oriskany sandstone formation. When you have other Oriskany wells plugged or still in production the drilling records would have to be reviewed to be sure of what fracking process was used. If all wells were fracked before any plugging operations occurred the possibility of fractures meeting could exist there for allowing this fluid while injected under pressure and the saturation process would let it migrate outside the reservoir area of the injection well.

Our company worked with the DEP not the EPA, as they monitored pressures in this gas storage field. There was a migration of gas in this field from south to the north during the injection process. Pressures on the south would be considerably less than to the north because of the migration of natural gas to the north. You can not control, so you must monitor.

The only way this problem was found was through monitoring using the monitoring wells located around the perimeter of the storage field. As the migration continued northward our Company had to drill additional monitoring wells in the north end of the pool as well as force owners of production wells to start sampling their gas for storage gas. In one case, our Company had to purchase a production well because it's contents was storage gas.

Windfall has no plan in there permit application to do this. With the low to non-producing Oriskany wells just outside the 1/4 mile radius it would make it possible to observe what these fluids are doing as far as movement. It would also let the EPA know whether these fluids are trespassing to another property owner, which was also addressed

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at the EPA's public hearing and in the EPA response statement.

It is also in the EPA application to put up a bond or whatever to cover plugging of this well. This may be enough to plug it but who is to cover the costs of contamination if leakage would occur. As the old saying states, 'can't shut the barn door after the horse

has escaped.' With all the engineering reports, surveys, and etc. let us be realistic, does anyone know for sure what will take place at the bottom of this hole. So if the EPA is to go ahead and issue this permit and with growth potential of this area as mentioned in the Township Comprehensive plan then why not have Windfall spend a little more money to monitor activities as well as put monies in escrow (just in case the horse escapes) because if it does they could file for Chapter 11 or 7 and walk away with a pocket full of change. Then someone else will be stuck with the clean up and only then if cleanup can be completed."

Most of the Oriskany wells would have been fracked since one gas well was listed as a dry hole and the other four gas wells found with the permit application show statements of fracturing being done. A shallower gas well is already near the proposed injection site with permit #205977 we call this the Deposit well drilled to a depth of 3,576 and Mr. Muth knows it was fracked from his own experience or it wouldn't produce. This shallow well was fractured above the confining zone and no one knows how far the fracturing process would affect. Additionally the coal mines are all throughout the 1/4 mile area of review with blasting having been done that is fracturing. These are all significant items to deny the EPA permit based on the regulations stating the area should be free of known fractures.

Another example that would make us question the confining zone is that the Carlson well shows fracturing only 18 feet below the confining zone. This would present a question if the confining zone would have been hurt during the fracking process. No one knows how far out the fracturing process goes or what it affects. Samples show that the confining zone was maybe only 11 feet thick, 14 feet or 15 feet yet it could be 6 feet thick. What if samples weren't correctly taken.

Fracturing of gas wells with gas wells into the same formation as where the fluid will be disposed takes chances when no one knows how far the fractures went. Plus the fracturing of a gas well above the confining zone near the injection site along with an unknown variable of the confining zone thickness presents sufficient evidence that this is

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a risk that shouldn't be taken in our area. Residents identified many other gas wells in a one mile radius and raised these same concerns during the public comment period.

Residents have many other concerns and all the information presented should be looked at more closely since so many incorrect items were pointed out already. Our local fire company is concerned about the safety of the trucks coming down off the site onto our roads, which aren't built to handle this type of traffic. Spills have potential to

contaminate our water supplies because this hill is a recharging zone for the area as listed on the map provided with the permit. Some residents depend on springs for their water supply with these homes right below the injection site. The coal mines are located directly along the road next to where the entrance for the site is proposed. Any spill would be detrimental to water supplies and might even flow into Underground Sources of Drinking Water (USDWs).

Based on all these facts presented the permit should be denied.

Signature,

*Sheryl DeBour*  
Brady Township Secretary

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PERMIT#: PAS2D020BCLE  
PERMITTED FACILITY: Class II-D injection well, Zelman #1  
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November 26, 2014

Clerk of the Board  
U.S. Environmental Protection Agency  
Environmental Appeals Board  
1201 Constitution Avenue, NW  
WJC East, Room 3334  
Washington, DC 20004  
PHONE NUMBER - 202-233-0122  
Via FedEx

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U.S.E.P.A.  
2014 NOV 28 AM 11:10  
ENVIR. APPEALS BOARD

Dear Environmental Appeals Board,

On behalf of Brady Township, I hereby submit this petition for review (appeal) of the EPA permit for Windfall Oil & Gas for a disposal injection well in Brady township, Clearfield County, Pennsylvania.

The basis for this appeal is predicated on the position that Windfall has failed to meet its burden to satisfy the provisions of 40 C.F.R. §146.22 (a) All new Class II wells shall be sited in such a fashion that they inject into a formation which is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review, and C.F.R. §146.22(c)(2) & (d)(2) Well injection will not result in the movement of fluids into an underground source of drinking water so as to create a significant risk to the health of persons.

Specifically, proximate old gas wells, i.e., permit #'s: 20325, 20327, 20333, 20341, 20553, 20597 and 20626. These wells are located on the permit maps. They are all potential conduits from the injection zone to the 33 nearby residential private drinking water sources. Supportive of such concerns, a recent ProPublica(A. Lustgarten, "Injection Wells, The Poison Beneath Us", June 21, 2012) review of well records, case histories, and government summaries of more than

220,000 well inspections found that structural failures inside injection wells are routine. From late 2007 to late 2010, one well integrity violation was issued for every six deep injection wells examined - more than 17,000 violations nationally. More than 7,000 wells showed signs that their walls were leaking. Records also show wells are frequently operated in violation of safety regulations and under conditions that greatly increase the risk of fluid leakage and the threat of water contamination.

Additionally, several geologic fault zones as plotted on the permit maps, penetrate the injection zone area and others are close. The representation in the permit is that they create a confining zone. There appears to be no specific data presented to draw that conclusion. Common geologic knowledge of faults is that they are zones of weak fractured rock along slip planes within subsurface rock. Such fractured rock zones are transmissive to water. Additionally, increases in hydrostatic or hydrodynamic pressure and/or stresses due to normal geologic tectonics can cause the faults to move. Such movement is occasionally triggered and lubricated by fluids under pressure in or about the fault.

There was no detailed analysis of earthquake potential in the application relative to earthquake sensitivity and earthquake hazard specific to the pressurization of the injection well. This omission is critical. Public awareness and sensitivity has been heightened from injection well operations that have resulted in numerous earthquakes.

Notably, a 5.62 magnitude earthquake in Oklahoma on November 6, 2011, was injection well-related. Geophysicists at the University of Oklahoma, Columbia University and the United States Geologic survey found that an old oil well used for pressure injection of wastewater near a fault line triggered a small quake which in turn triggered the large earthquake plus a third (smaller) aftershock.

The large earthquake was the largest recorded in Oklahoma history. It destroyed 14 homes, injured 2 people, buckled pavement and was felt in 17 states. The injection well was near a fault that was not known for earthquakes.

A University of Oklahoma geophysicist stated that seismicity can be delayed as much as 20 years after injection and perhaps as little as 5 years from substantial increases in injection pressure. It's likely that the fluid injection triggered the earthquake. Existing pent-up tectonic stresses within the earth, especially along faults, will

cause the rock strata on either side of the fault to move (slip) in response to fluid injection under pressure, thereby causing earthquakes.

Increased earthquakes in Oklahoma, Texas, Arkansas, Ohio and Colorado have all been related to injection wells. In fact, in Colorado, by state law, a state seismologist has to review the location and design details of an injection well permit before it is issued. EPA should require this same scrutiny.

The United States Geologic Survey has noted that the frequency of quakes induced by waste fluid disposal wells for oil and gas operations has been increasing (Remarkable Spate of Man-Made Quakes Linked to Drilling, USGS Team, Energy Wire, March 29, 2012, Mike Soraghan). The USGS also expressed concerns that quakes may damage underground gas, oil and waterlines and wells that were not designed to withstand them. (How Fracking Disposal Wells are Causing Earthquakes in Dallas-Fort Worth. State Impact Texas, NPR 06/08/2012, Terrance Henry)

Within the planned location of the injection well, the PA Geologic Survey has mapped (Geology and Mineral Resources of the Southern Half of the Penfield 15-minute Quadrangle, Pennsylvania, William E. Edmunds and Thomas M. Berg, Atlas 74 cd, 1971, also see Plate 12) a number of persistent northeast striking reverse faults with probable splay faults between them.

The presence of the faults is a result of substantial tectonic forces in this area. These forces are unique to the area between the Chestnut Ridge Anticline and the Punxsutawney-Caledonia Syncline - the area of the proposed injection well. The tectonic forces focused on this locale long ago. They were partially relieved by the faulting, but never completely. Typically, the mechanics of the force, i.e., plate movement, continue to build stress. The residual stresses plus additional cumulative stresses create the potential for earthquakes induced by a trigger mechanism such as fluid injection.

This site is close to two mapped geologic faults of the above referenced fault system. The issuance of this permit at this location is inappropriate. It should not be issued as a result of the scientifically established correlation with the earthquake trigger mechanism, i.e., pressurized fluid injections near faults.

Also, the injection permit will allow the disposal of spent fracturing fluids. These fluids consist of 90% water, 9.5% sand and 0.5%

chemical additives. The additives, usually up to 12, are of substantial concern. A report (Chemicals Used in Hydraulic Fracturing, Committee of Energy and Commerce, U.S. House of Representatives, April 18, 2011) prepared for House Democratic members stated that of 2500 hydraulic fracturing products " more than 650 contained chemicals that are known possible human carcinogens, regulated under the Safe Drinking Water Act, or listed as hazardous air pollutants."

Consequently, the disposal of fracturing fluids (containing known carcinogens) in close proximity to a number of domestic USDW's with a high risk factor, due to proximity, conduits (faults, gas wells) plus long term pressurization, is unwise, imprudent and unsafe.

#### Other Permit Deficiencies

1. Testimony at the public hearing on December 10, 2012, indicated that the Oriskany formation is fluid saturated. Gas company operators and drillers stated that water has to be removed from the Oriskany regularly from gas wells in order to sustain gas production at a reasonable level. Since fluids are not compressible, the pressures developed by the injected fluids will displace the existing connate water beyond the zone of influence in short order to be followed by the waste water. The fluids will move along zones of weakness (joints, faults, bedding planes and inhomogeneities in the mineral and physical composition of the rock formations. [Variability in the mineralogy and physical characteristics of rock formations is normal, whereas homogeneity is abnormal.] Due to these variations, fluid movement beyond the zone of influence will be extreme at some locations and less so in other areas. The injected fluids will not spread uniformly about the injection well. Geology and hydrogeology are not sciences of exactitudes.

2. The application is deficient relative to its determination of the strength, porosity, permeability and transmissivity of the geologic materials within which the waste water is being pressurized for disposal. The EPA should not issue a permit without site specific geologic and hydrogeologic characterization so that accurate critical determinations can be made. Hydrogeologic and physical parameter characteristics used from sites that are many miles removed from this location is highly presumptive and devoid of scientific reason. Only the well area can provide the site specific information necessary for calculations of critical elements such as the porosity, permeability, maximum surface injection pressure, injection rate and the injection zone geometry. The applicant should have performed detailed subsurface seismic mapping; additionally, a professional geologist

should be present while drilling a pilot hole, log the lithologies, take samples, perform lab testing, run down hole geophysical tests, measure the porosity and permeability and conduct an injectivity test. The data should be scrutinized by a knowledgeable, experienced geologist in such matters whose well development recommendations are meaningful.

3. The application for the injection well permit presents no proof that the applicant has obtained subsurface fluid migration rights as required by Pennsylvania property law. Without compelling the applicant to obtain such rights from the owners of the subsurface, the EPA, by issuance of the permit, would be authorizing a defacto trespass violation by the applicant.

The draft permit under PART I, A. Effect of Permit, states: "Issuance of this permit does not convey property rights or mineral rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights or any infringement of State or local law or regulations." It is incomprehensible that the Federal EPA would not require the applicant for an underground injection well permit to provide proof of rights to inject wastewater fluids within someone else's subsurface ownership rights as a pre-condition of the issuance of the permit.

Beneath the Zelman and adjoining properties the gas is leased by CNX Gas which is a subsidiary of Consol Energy Corporation. The gas and mineral rights are owned by John and Brandon Fairman, each owning 50%.

Most owners of gas and mineral rights would not agree to have wastewater within their property. Especially wastewater which cannot be discharged unless substantially treated. Its presence compromises the owners' ability to fully develop and use their resources, i.e., a taking without compensation.

The Zelman property (surface rights only) is 19.87 acres. The Zelman's do not own the subsurface rights. The area of review used to evaluate the well is  $\frac{1}{4}$  mile or a 1320 foot radius around the proposed injection well or 125.6 acres. The area of review is substantially larger than the Zelman surface property. The point being: the injected wastewater will be trespassing. No subsurface rights were presented by the applicant; therefore no permit should be granted.

The Supreme court of Texas in an opinion of the court, dated August 26, 2011, found that physical trespass by subsurface migration from an injection well was an appropriate basis for a claim for damages.

4. Given the potential risk to public and private water supplies, township infrastructure and earthquake damage, the township requests that the applicant post a performance bond of \$5,000,000 with them, for:

(1) Potential private water supply impact or loss.

(2) Potential impact or loss of the public water supply wells for the Brady-Troutville Water Association, which derives its water from multiple deep groundwater wells in the township and serves over 1000 residents.

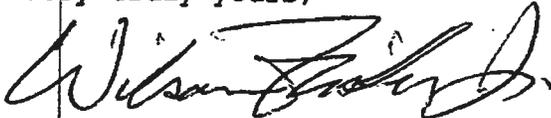
(3) The township roads to be used for access to the injection well will require excess maintenance given the multiple heavy trucks expected to travel on them during the development and service of the well. [PennDot roads also may require maintenance bonding.]

(4) Damages to homes and infrastructure from potential earthquakes.

(5) Insure the maintenance, proper closure and monitoring of the injection well in the eventuality of bankruptcy by the applicant.

Your consideration of these matters is requested.

Very truly yours,



Wilson Fisher, Jr., P.E., P.G.  
Brady Township Engineer

cc: file



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

Certificate of Service

I hereby certify that copies of the above appeal were sent to the following persons in the manner indicated:

**By First Class U.S. mail:**

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

Shawn M. Garvin  
Regional Administrator of EPA Region III  
USA EPA Region 3  
1650 Arch Street  
Philadelphia, PA 19103-2029

**By Electronic Mail (e-mail)**

Shawn M. Garvin, Regional Administrator of EPA Region III  
R3\_RA@epa.gov

On November 26, 2014 by:

Name: Wilson Fisher, Jr.  
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