

Township Office
814-583-7660

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

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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 DeBoer
Brady Township Secretary