

Darlene Marshall, 1070 Highland Street Extension, DuBois, PA 15801

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RE: Petition to Review (Appeal) Permit for Windfall Oil & Gas, Inc.

PERMIT #: PAS2D020BCLE

PERMITTED FACILITY: Class II-D injection well, Zelman #1

November 22, 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

ENVIR. APPEALS BOARD

2014 NOV 25 PM 12:37

RECEIVED  
U.S. E.P.A.

Dear Environmental Appeals Board (EAB),

This is a 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. The permit decision and the permit's conditions are being appealed based on objections because of: 1) factual error and 2) the EAB should review a policy consideration. Please note that I have already participated numerous times in public comment periods and at the public hearing.

This EAB appeal request is to "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 residents' water supplies. Residents have already demonstrated that conduits exist from old gas well casings in the area to their water sources. Additional evidence has also been presented concerning faults in the review area. 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 (USDW) so as to create a significant risk to the health of persons.

This letter is in compliance with your word limitations by utilizing your guideline that meets less than 30 pages. It stated in e-CFR (3/6/2014) that, "in lieu of a word limitation, filers may comply with a 30-page limit for petitions & response briefs." This document is lengthy due to my choice to fully summarize all my comments and other public comments in the last 20 pages of this document that I believe still need addressed. No table is included because I utilized numbers and many items referred to have already been submitted to the EPA in binder format previously by me. Due to all the comments submitted previously it seemed easier to summarize them in this document than refer to them with the EPA citing receipt of 2,600 comments. Additionally, this letter would be briefer if so many inaccurate statements had been addressed.

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A one page attachment is provided to show what would actually be included in a one mile radius map from the proposed disposal injection. This doesn't include figures that would show a one mile map away from property boundary lines.

Residents researched and learned much more so I presented a binder for the Highland Street Extension Development residents of all findings. This binder included my testimony and attachments, which provided supporting documentation covering various items. Please see the binder cover sheet & index because the information was extensive. All my concerns were related to the potential contamination of USDWs.

The testimony provided in the binder by myself at the public hearing needs to be entered into evidence so it can be reviewed by the EAB. If you are unable to get a copy from the EPA, please contact me for a copy of the entire binder.

After all the work residents did to review this permit application we felt the EPA Response Summary (EPA R. S.) was inadequate in responding to our questions. We found many additional inaccuracies. The more I reread the EPA R. S. & Permit the more inaccuracies I find or additional questions come to light from just citing each item, which caused me to see other items that appeared inaccurate requiring additional research since my background in this area has been learning from residents & research.

The EAB common pitfalls state things to avoid & we tried to review everything with the time available but found this impossible. After reviewing numerous EAB cases, I tried to see what the EAB looks at when reviewing a case. It seems that the EAB takes into consideration that residents are unfamiliar with the EAB process & cases, so the EAB seems to give consideration to concerns raised. Citing EAB cases I'm not fully familiar with concerns me because I don't have time to also fully review the prior cases cited in the cases I reviewed.

My recommendation would be that the EAB fully review our public comments & the EPA R. S. because I believe you will find even more inaccurate information, which concerns me because the EAB will only review what residents question. Therefore, I state the whole permit application, EPA Response Summary (EPA R. S.) & EPA documentation be fully reviewed & be questioned. Below is just a brief summary list of the inaccurate items residents found. More information is probably a concern although this is what I have found so far:

1. The February 2014 EPA R.S. stated, "no drinking water wells in the ¼ mile area of review." The new EPA R.S. revised this statement, which residents shouldn't have needed to point out as ~ 17 water wells are in ¼ mile area of review. Residents state 17 water sources were identified in the ¼ mile radius of review & the permit applicant included a well location plat map with the EPA permit showing 14 private drinking water sources. The applicant should be required to provide accurate details. Our binder provided information & a map showing 16 additional water

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sources located near a deep gas well that was mentioned should be checked for proper plugging. Residents, Lawson and Slattery, have demonstrated conduits exist from old Oriskany gas well casings to their water supplies.

2. Monitoring of gas wells, we note that the EPA doesn't state as much on this issue in the Windfall permit in Clearfield County as they do for the Seneca permit in Elk County yet I requested a comprehensive monitoring plan. It seems strange a comprehensive monitoring plan wasn't implemented since so many old gas wells surround the ¼ mile area of review. A plan was requested & 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 & 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. This is vital because we provided testimony that old gas wells affect water wells of surrounding properties because of casing issues. 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. Even though the regulations do not directly require every Class-II D 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.

3. The cited map 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 R. S. (page 3, #5) is inaccurate in stating that the one mile topographic map was included & is on file at the library. In response to the new EPA R. S. #5 p. 3 in November 2014, I again went to the library and reviewed the two large maps with the library director. They have two large maps with the permit mentioned in the EPA R. S. Both of these maps go from around the Gelnett property line to around the Route 322 highway and if you drive our road that is about a mile although it makes the map only cover about ½ mile or so from the injection site in any direction. Assuming the C attachment is "Resource Management Services, Inc. Map" and another large map as cited must be the O attachment "Proposed Disposal Well for Windfall Oil & Gas" plus a small "Well Location Plat Map" was also included, which none of these maps have any markings showing they provide details one mile from the boundary lines of the proposed injection site. If they think the very small location map on the top right corner of attachment C of the "Resource Management Services, Inc. Map" is what the EPA refers to by the one mile it still doesn't cover the requirements and is lacking in any details that would show the

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area and it is so small we are unable to see anything on it. So residents request a one mile map with all the EPA permit application requirements addressed covering a one mile area from the boundary lines of the site. This map needs to show the subsurface mining that is not shown on any of the applications' large maps.

4. The 6 gas wells in the Oriskany formation close to this disposal injection permit are right on the edge of the  $\frac{1}{4}$  mile area of review yet the EPA cited they were  $\frac{1}{2}$  a mile away or 1 mile (EPA R. S. #12 p. 13). The small "Well Location Plat Map" shows accuracy at 10' +/- making the locations of each gas well off by feet that may put them in the  $\frac{1}{4}$  mile area of review.

5. The plugged wells in the Oriskany formation may need to be checked & maybe replugged, especially the Carlson well behind my home.

6. The permit states it is for a five year period yet it can be extended & what appeal process will happen at that time, residents need protected now from what could happen when the fluid migrates further & closer to the 6 Oriskany wells especially when we believe one is not properly plugged & one gas well affects area residents water 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 are very concerned about the actual implementation of a disposal injection well that the company seems to have no experience operating and is self-monitored.

7. Inaccurate information has been found on the maps versus the permit application so if these inaccurate details exist what else has been missed. 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 on the edge of the  $\frac{1}{4}$  mile yet the EPA R. S. mentions they are located  $\frac{1}{2}$  mile away, 4) the information on a fault block is questionable, & 5) an Oriskany formation gas well may be listed incorrectly in the permit application in relation to the faults & we will mention other numerous questionable statements. It seems that many items are inaccurate or questionable & the lack of geological information available during the permit review period should have been addressed already. Residents requested a comprehensive monitoring plan & with all the old gas wells in the area you would think this would have been addressed. Taking any risk with 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, faults & coal mines under the entire area. So how many inaccuracies must be found before the permit is denied.

8. 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 & we know this area has been fractured before so residents deserve protection (more than guesses). My review of the permit application would show the confining layer may range from 11 feet to 18 feet thick. Plus

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no one knows if all the fracturing affected the proposed layer that is the confining zone. A U. S. Department of Energy March 16, 1981 report of a study showed fractures could go 250 to 500 feet out and be 74 feet in height & a newer September 15, 2014 report shows a study with fractures going out 1,800 feet depending on the geology. That study puts fractures in our ¼ mile review area and also through our confining layer. So fractures exist & should be considered that may have affected this confining zone, which is not as thick as originally mentioned in the EPA permit. Fracturing of seven gas wells with six gas wells into the same formation as where the fluid will be disposed takes chances when no one knows how far the fractures went. 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 a risk that shouldn't be taken in our area. Residents identified many other gas wells in a one mile radius. This also means the application for a permit has an inaccurate definition of the confining zone. Fractures would extend well into the ¼ mile 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.

9. The EPA ignored comments on the fractures into the ¼ mile area of review. EPA mentions other confining zones would be above the proposed confining layer yet these layers would also have fractures from all the shallow gas drilling in the area. Residents are also aware that a Marcellus gas well has been planned for the same area based on a recent survey. The EPA permit has no plans addressing this issue.

10. It states a fault block exists yet provides no proof & is inaccurate because no fault is shown that would block the fluid from migrating towards the Carlson well or coal mines. The two faults on the permit map would actually block the fluid towards two gas wells that are of most concern to residents plus also the coal mines in our area. Even though the EPA R. S. mentions fault blocks it isn't shown on the permit application map. A fault block would show faults surrounding the entire injection zone & would confine the injection fluid. Another inaccurate statement seems to exist based on the map information showing faults in relation to the old gas wells (EPA R. S., page 7, #2), which mentions plugged wells not producing outside the fault block. This is an inaccurate statement because Atkinson's property well was never plugged & has been used till more recently (maybe currently listed as inactive) & 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. Plus if they are using the basement fault at 18,000 feet how does that confine the fluid, which doesn't seem to make sense even to a layperson.

11. Provides no real proof that the faults are non-transmissive although the information we have may show it is transmissive. Residents requested the area of review be extended due to the 6 gas wells in the Oriskany outside the ¼ mile area of review & all the private drinking water sources throughout the area. At the public hearing, Rick Atkinson, provided a zone of endangering

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influence calculation that demonstrated at the December 2013 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. The Carlson gas well should be considered as it is in the same formation as the injection zone & the Carlson gas well is a source of concern for neighbors as mentioned in comments 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 & the coal mines if they do confine the disposed fluid based on the permit application map. The EPA admits that the Windfall injection zone did not meet the conditions required for a modified Theis equation to calculate the ZEI. It is possible that a more accurately calculated ZEI would extend beyond the boundary of the ¼ mile radius Area of Review (EPA R. S. #13 p. 15).

12. Need a 3D seismic testing of the area to know what is really below the ground although with the coal mines this type of testing shouldn't probably be done in our area plus our residents would definitely protest this type of testing. The entire area surrounding this site has had seismic graphic testing completed yet we would assess they didn't do testing here because of the faults or coal mines. Plans are underway for Marcellus Drilling on the proposed site property or on neighboring property & this would involve fracturing near the injection well zone, which wouldn't be good for our area if disposal fluid would migrate into our water sources due to the operations. Neighbors know that rattlesnakes have moved in our surrounding area due to Marcellus activity so the fracturing does affect the ground & could transmit fluid through the confining zone.

13. Mentions McKean County water wells were contaminated by an enhanced recovery well, which is very similar to an injection well. This is why we are concerned with all our old gas wells in the area & we don't want this happening here like it did there (EPA R. S. #22 p. 22).

14. The Irvin well violations continue to concern our residents due to water wells so close to this proposed disposal well. The Irvin well wasn't in a residential area near so many water wells yet it violated the EPA regulations & was over-pressurized for three months "(EPA R. S. #22 p. 23).

15. The latitude & longitude coordinates are incorrect on the plat map provided in the permit application although the EPA states it correctly in the EPA R. S. If we go by the information the applicant provided this wouldn't even be located in our country. Maybe a minor typographical error to some but a huge error when considered with all the other items we found. Just being a little off on the latitude & longitude would potentially put my home in the ¼ mile area of review. This was not on rounding it was because a "--" was added so the EPA R. S. #4 p. 3 is inaccurate.

16. Depth of well is stated differently on DEP & EPA applications we are unsure of the final depth.

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17. Land use seems to vary between information sent to residents previously on DEP permit information from a year ago till now.

18. 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 & 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 15-18 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); & 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 & they all reside right on the edge of the ¼ mile area of review, which they may be inside the ¼ 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 R. S. #11 p. 12 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. Proving fractures into this confining zone in the ¼ mile area of review should be sufficient data to provide basis to deny this permit. Due to the regulations cited previously.

19. Request the area of review be extended to a ½ mile radius to consider all gas wells in the area, especially since 6 gas wells exist on the edge of the ¼ mile. The EPA R. S. #12 p. 13 mentioned Oriskany wells were further away locating them at least ½ 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 ¼ mile); 2) Permit #20325 located feet from injection site 1,476 (156 feet outside ¼ mile); 3) Permit #20553 located feet from injection site 1,371 (51 feet outside ¼ mile); 4) Permit #20626 located feet from injection site 1,423 (103 feet outside ¼ mile); 5) Permit #20333 located feet from injection site 1,481 (161 feet outside ¼ mile); 6) Permit #20341 located feet from injection site 1,747 (427 feet outside ¼ mile); & 7) Permit #20597 located feet from injection site 456 feet from injection site. The EPA R. S. is inaccurate with the ½ mile statement when the gas wells are right on the edge of the ¼ mile area of review just feet from the ¼ mile line as shown on the maps provided with the permit application. This map also shows it may be off by 10' +/- so all wells could be inaccurately placed.

20. Local residents found permit details to be inaccurate as presented. Five governing bodies have demonstrated concern at the public hearing & most plan to submit comments although the 30 day period makes it hard with planned meeting schedules to actually file appeal letters (participated in public comment period: Clearfield County Commissioners, Brady Township, Sandy Township, City of DuBois, DuBois School Board along with local State & Federal

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Representatives). Residents request this permit be denied based on inaccuracies along with fractures & faults into the ¼ mile area of review. This means that this permit would violate the previously cited regulations: 40 C.F.R. §146.22 & 40 C.F.R. §146.22.

21. The residents identified 9 faults based on information in the permit application map. That alone should make the permit be denied. The EPA mentions a basement fault with an earthquake in 1938. Plus it is know that we have 3 places measuring our seismic activities in Clearfield County. The fault in Clearfield County mentioned in the EPA R. S. on #8 p.7 seems like it may go directly through the area of review. Residents request further study of this fault & 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, especially 9 where 9 faults 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 residents homes aren't built to meet earthquake standards as mentioned before in public comments by the City of DuBois. As all the seismic activity from injection wells continue to be reported it basically shows calculations are unable to protect residents by making any assumptions, so our area with faults already existing should not even be considered because any fault can slip or shift especially if the disposed waste lubricates the fault.

22. 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. Another example that would make us question the confining zone is that the Carlson well shows fracturing only 15-18 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 (1981 study previously mentioned cites fractures can go out at least 500 feet and 74 feet high) or what it affects. Samples show the confining zone was maybe only 15 feet at this gas well. Yet residents wonder if samples were correctly taken. Additionally well log data is insufficient to know what was done through the area near the coal mines although it looks like the old gas wells have no extra special casing for the coal mines based on the permit application well logs. So when old gas well casings fail it will be easier for a leak to migrate into an aquifer or coal mine, since they will be conduits for fluid migration.

23. Above ground water sources are a concern with so many springs providing water to surrounding neighbors. The local fire company is concerned about the safety of the trucks coming down off the site onto our roads, since they aren't built to handle this truck traffic. Spills have potential to contaminate water supplies with the recharging zone on this site. The coal mines are closely located along the road. Spills would be detrimental to water supplies and might even flow into Underground Sources of Drinking Water (USDWs).

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24. This area has been designated a village in our Comprehensive Plan and additional development is planned for this area soon along with sewage although water expansion wasn't recommended of the current Brady Township water supply. This is a huge concern for residents if disposal fluid migrates along conduits into private water sources. When you have excellent water sources it is scary to think what happens if something would happen & how will we get equally excellent water. It is known that the Township Water Authority has problems providing for current users.
25. Documents state property value isn't allowed to be affected yet we already question this statement. Just knowing this is going into our area & knowing it is equivalent to a landfill below our homes that is going into a residential area. Recent property development in the area probably raised values yet this is already affecting decisions to improve property, sale of property & probably affected health of residents due to fear & worry of their property. They worked to have the American dream here & they see it going away yet they don't have the funds to move since many retired to live here on a very fixed income.
26. The filing deadline for this EAB appeal isn't considerate of the concerned residents. By the time you learn the permit is issued, research and must file by the deadline you have very little time. Fortunately during this permit process, the residents did extensive review for the public comments yet still we found numerous additional items just by reading the EPA R. S. & permit.
27. Residents need assurances of future protection like insurance & a \$1 million+ bond. In the back of our minds we feel this disposal injection well may fail due to concerns we see from those from the industry, so we ask the EAB to give us more protection & ensure water will be provided. Spending \$1 million+ to put this disposal injection well into operation means that a \$1 million+ bond is insignificant to the operator & it should stay in place until the plugging has been completed.
28. The recharging zone for this area is located right where the disposal injection well is proposed. The recharging zone flows towards my home & the Carlson deep gas well along with the Atkinson deep gas well. That isn't a good thing when we talk about disposal fluid flowing the same direction because it would migrate to the two wells we have mentioned previously that residents have concerns with the old gas well casings.
29. A neighbor cites the first knowledge of this disposal injection well being people arriving to take water samples. They mentioned that the samples were for a disposal injection well and if the water supply would become contaminated no problem (worries) you can get water brought to your home through other means. That statement shows why residents have been concerned all along with water sources becoming contaminated along with additional research completed since the statement was made.

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We understood the EPA process to review & permit a disposal injection well and the primacy of the EPA to protect USDWs. This petition of review is to prove that many local government officials & residents believe this permit needs denied based on facts of the area that deal with the confining zone being affected by prior fractures due to drilling activities & coal mine processes that would allow USDWs to be contaminated. Your own regulations state a new well isn't to be permitted & drilled if a confining layer is compromised. This information is based on known activity by local drillers who worked here, live here & want our water sources & homes protected, too. These aren't activists against drilling. They may even still have not went on record with the EPA because they have jobs in the industry. They know from experience & want this EPA permit denied & some may even be the biggest losers if the permit isn't denied. Many we know helped drill & frack these wells or had family who did these wells while they grew up, so they heard the real life stories.

This area is known for gas activities & our residents would all agree we need gas to heat our homes. Yet this isn't a gas activity to heat homes it is a process to dispose of waste or byproducts from the oil & gas industry. We realize injection wells may be the best way of disposing of the fluids because it still can't be fully processed & cleaned plus the solid waste left over isn't good above ground either. We do have our share of disposal injection wells in Clearfield County already with 2 Class-II-D wells and 1 has already been cited for violations, which include over-pressurizing. That doesn't mean this area is the site where another injection well should be permitted due to known issues of fracturing & faults that make the confinement zone questionable. We realize this might be different in each location.

A question I have come to ask myself, "is this company capable to do this work especially with all the filing errors will they be competent to install & operate an injection well without incident?" Larger companies have history & more availability of public records on safety & responsibility showing a track record. So when do we ask the question of reputation & how? To me reputation is everything & it is important to maintain a good reputation. When industry people who have seen your work seem to me to have concerns, that include more than one individual, it leaves a lot of doubt in my mind about the future operations of this injection well. Residents have fears of water contamination. I feel we need to ask these questions of the EAB, since it seems you have the job to protect citizens.

Family & friends of mine from the industry have demonstrated great concern. That same concern hasn't seemed to be demonstrated by this company. Yet other families in this neighborhood with background in the industry have been totally against this injection well. Those same people worked together & have demonstrated knowledge of working with individuals in this company on the old gas wells in this area. Honestly, this is a small world when working in a specific field you know the others or work with them. My conclusion would be one of three: 1) they believe this area isn't a good location for an injection well; 2) their concern must be on reputation; or 3) disposal injection wells aren't the way to dispose of this

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waste. Whatever one of these three reasons is behind their concerns it has been why I believe this injection well shouldn't be permitted. So from the beginning this has been my biggest reason for actively working to stop this injection well. When the people with knowledge & expertise in the field demonstrate concerns we all should be concerned. This again may not be a reputation question, it may be an inside knowledge of the field experience. Since I have family in the industry with no ties to this company & they wouldn't want it near our home either. My decision is that the EAB needs to decide on all three of these questions to eliminate concerns & any information on these three would equal deny the permit. My conclusion is that residents have found facts that give me reason to doubt the permit addresses all three of these questions. The EPA needed to already answer these questions & ensure the company had the capabilities & experience to perform this work.

Below this is the summary of the comments that weren't addressed by the EPA adequately and residents expect the EAB to address these concerns and deny the permit or remand it back to the EPA for further review and protections for area residents. We found so many inaccuracies in the EPA Response Summary (EPA R. S.) and the permit application that we are **"even more concerned now."**

Please consider all these items as statements to be reviewed for remanding or denying the permit & these statements are to provide a case to **deny** the permit based on all the information already provided by residents, who shouldn't be doing the research to figure this out yet residents have spent countless hours looking at the documentation.

As a librarian with a Master's Degree the first things I did once learning about this proposed disposal injection well after attending a neighborhood meeting was attend a session at a library conference with Richard Alley, a Penn State geology professor. He explained to me the pumping of waste into the ground has an effect and will cause the subsurface to move. His specific example demonstrated pushing on a desk showing it would eventually move and he related this to the pumping waste underground. His book "Earth" states we have known since the 1960s that pumping waste underground can cause earthquakes. This statement refutes the EPA R. S. statements in #8 (see binder submitted for testimony).

Residents researched and learned much more so I presented a binder for the Highland Street Extension Development residents of all findings. All concerns were related to the potential contamination of USDWs. Please realize this is a highly developed residential neighborhood with valuable properties utilizing water wells and springs close to the proposed disposal injection well. The environmental impact on USDWs could be affected by numerous things based on the "hydrology report."

Highland Street Extension has over 69 properties that will be affected. These properties have 57 water wells, 5 springs, and 1 cistern. In a one mile radius, we have over 370 properties with over

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107 water wells being utilized regularly along with the springs in the area. Property values in a one mile radius total \$17,545,120 based on a final review of all properties and assessed value listings in the deed books.

Public comments submitted that we feel still need addressed before the permit is issued:

1 – The water source for my home and my drinking well are from a private water well located directly outside the ¼ mile area of review. This disposal injection well has the potential to contaminate my water well through the disposal of waste underground near my home due to already existing conduits for fluid migration. **Many neighbor's water wells are affected when work is done on the deep well on Atkinson's property that is still not plugged, which is over 7000 feet into the Oriskany.** For further proof see Loretta Slattery along with Terry & Carole Lawson's EAB letters to deny permit.

**2 - My other main concern continues to be the Carlson Stewart deep well into the Oriskany behind my home that gives off gas smells constantly. This makes many believe it isn't plugged properly and its depth is drilled into the Oriskany. All these deep gas wells in the area need reviewed and properly plugged. These two deep wells are on the edge of the ¼ mile area of review. These old deep well casings may also allow leakage of waste up into underground sources of water (USDWs) or coal mines. *We can find six deep gas wells very close to the ¼ mile area of review.***

3 - Please explain how the EPA plans to protect all the water wells in the area from contamination. For example, the Irvin Well (Clearfield County) was over-pressurized and fined. How will residents feel safe? How will residents be notified of a violation? How was the waste cleaned up? It appears this Irvin well had prior violations before. Violations happened in 1987, 1997 & 2010. This last violation took a significant amount of time to be fined. It was in violation for three months and in this residential neighborhood we can't wait three months for violations to be found, corrected and fined (two years later). This is not acceptable to water well owners in our area. Any violation of the Zelman #1 Injection Well would endanger homes and lives and is an unacceptable risk.

4 – The water well tests done for the Windfall Oil & Gas permit application showed neighbors had really *excellent* water. Bill Sabatose told the neighbors this when he tested the water. We are concerned that this will not be the case if you allow this disposal injection well to be placed in our neighborhood. The permit application states the general water quality is *excellent* in the hydrology report. This report stressed the imperative need to protect these water supplies. This report shows the flow towards many other homes and water supplies making their source of water important to protect, also. **We request you extend your area of review outside the ¼ mile because many additional residents have private water wells just feet outside the area of review near old deep gas wells. At least fourteen residents with at least sixteen water wells plus springs are closely located (just feet) directly outside the ¼ mile area of review and close to the Atkinson (Ginter) and Carlson Stewart deep gas wells. We rely on private water wells along with all the residents inside the ¼ mile area of review.**

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5 - *It is not acceptable that the water well owners in the area be forced to pay to test their water and feel unsafe to drink it on a daily basis.* Residents don't want to use alternative water supplies if contamination happens to the USDWs. When they purchased their homes it came with clean water and they want it to stay that way. For example, in the violation case of the Irvin Well (Clearfield County) it was stated that, "if a well owner had their water tested regularly and now, finds an issue with the water, the EPA wants to know and EXCO could be forced to provide an alternative water supply. EPA suggests well owners have their water tested regularly to protect their rights." Disposal injection wells should be required to monitor quarterly or more regularly water sources in the area. This waste will be pumped underground continuously and will stay for many years with the potential to come up any "naturally occurring pathway" or any old gas well casing already in the same formation, especially with known conduits for fluid migration. This is not a risk that should be taken, especially near our water wells, springs, sources of public water and coal mines that lie under many homes in this neighborhood, city and area.

6 - The permit application mentioned water purveyors denied access to water samples yet they didn't deny access. They were all originally tested. After the original tests, Windfall Oil & Gas sent at least four residents letters requesting signatures yet no one wanted to sign them and show support for the disposal injection well. **These water purveyors need to be approached again appropriately with more information about what they are signing specifically.** A letter in the mail just stating they want to test water a couple times a year is not acceptable. Not signing the letter didn't mean these people denied access. For example, the Powers family didn't sign the agreement but it showed up on the permit as if they were allowing access, so this is a discrepancy. Because two other families show up as denying access and they never signed the agreement either. We all figured they should drill monitoring water wells for the permit application not use a signed form for the EPA application granting access to our wells for monitoring.

7 - Monitoring wells semi-annually still might not find contamination in underground sources of water (USDWs) in time to protect residents since undocumented boreholes or natural transmissive conduits (faults or fractures) would endanger water sources (USDWs) before testing results are conducted and injection processes are halted. Additionally, the company states in the permit application they have no experience in pollution control. This is scary when we have so many homes depending on water sources that are recharged from their proposed site.

8 - Ground faults are located in the area close to the proposed disposal injection site. The proposed injection well may be located in an earthquake prone area. Taking the chance to lubricate these faults could additionally jeopardize our underground sources of water. An earthquake is the last thing you need near a disposal injection well to crack the casing and leak this into our private water wells or the deep coal mines within the ¼ mile area of review. Any small fracture or leak has the potential to seep into these mines and carry waste under the City of DuBois and into surrounding areas like Sykesville and Reynoldsville. These mines are full of water and are all over our area, so these deep mines would transmit toxic fluid into USDWs or water sources.

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9 - As we have seen in Ohio, earthquakes were linked to injection wells. The National Research Council reported in June that underground injection of wastewater produced by hydraulic fracturing and other energy technologies has a higher risk of causing such earthquakes. It states, "injection wells used only for the purpose of waste water disposal normally do not have a detailed geologic review performed prior to injection and the data are often not available to make such a detailed review. Thus, the location of possible nearby faults is not a standard part of siting and drilling these disposal wells." So it makes it harder to evaluate this area for the possibility of induced seismic activity and the potential to create an earthquake with the faults in our area. A new study is being released by the United States Geological Survey (USGS) that summarizes additional concerns.

10 - Has this area been identified as an earthquake prone area? Do transmissive faults intersect the proposed injection zone (potential to over-pressurize or underpressurize or fracture)? What is the probability of an earthquake from the disposal injection well activity? ***In the fluid injection target for this permit we have faults in the Onondaga Formation, which lies over top of the Oriskany Sandstone. The Onondaga Formation is the confining formation above the Oriskany/Huntersville Chert and we have evidence of faults in this confining layer, which would allow waste to escape into other formations and into our aquifers. We also know at least six other deep gas wells were drilled into the Oriskany near here and they used hydro fracking a good reason to deny this permit.*** "We have long known that injecting fluids into Earth, for whatever reason, can trigger earthquakes. One famous series of quakes in the early to mid 1960s near Denver, Colorado, with many having magnitudes of between 3 and 4, was triggered when people tried to dispose of waste fluids by injecting them under pressure into deep rocks (Richard B. Alley in "Earth: the operator's manual" originally from "The Denver Earthquakes" in "Science")." Richard Alley also states, "If the old cracks are oriented such that today's stresses are trying to reopen them, then the 'fracking' from gas extraction or waste disposal or geothermal-power generation will just help reopen the old cracks." We already know that deep gas wells used the "fracking" process in our area with two deep gas wells that would have affects into the ¼ mile area of review. Even though the permit application states no "fracture data" is available in the area on the confining zones. An excellent statement about our situation is found in Richard Alley's book "Earth: the operator's manual" stating, "hydrogeologists have lent their weight to efforts to keep pollutants out of the ground, because keeping them out is often a lot easier than getting them back out."

11 - **How will the depths of mines and potential for fluid migration be addressed? Six acres of coal mines are located in the ¼ mile radius of review and any small fracture or leak has the potential to seep into these mines and carry waste under the City of DuBois. These mines are full of water and are all over our area, so these deep mines would transmit toxic fluid into water sources.** These mines go under the City of DuBois to the DuBois mall and honey comb into the Sykesville and Reynoldsville areas, too. These coal mines actually have water coming out by the DuBois Mall into the Sandy Lick Creek. This seems to be a major concern for area residents. The water in the coal mines is able to be cleaned up and used if needed. If toxic waste seeps into the coal mines through a "natural pathway" or a "fracture in the

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ground” the mine water will not be treatable for consumption. Instead our area will have a hazardous mess all under our neighborhood, city and area. Additionally, the Onondaga faults or other faults (permit application map) where the waste is being disposed could cause this waste to push up and go directly towards the coal mines and the old deep gas wells following a path of least resistance. [See EPA public comments provided by Supervisor Brady LaBorde]

12 - The possibility of a surface spill that would go directly into the aquifer is a concern. Due to all the springs feeding off the hill near the proposed disposal injection well site along with area headwaters (Reasinger Run & LaBorde Branch) having their source of water coming from proposed site is a major concern for our area. The permit application mentions the Sandy Lick Creek and this is important to area residents, also. Underground sources of water (USDWs) have the potential to be contaminated.

13 - Many homes in the area depend on their springs and water wells for their water supplies and drinking waters. The permit application “hydrology report” showed the water flow towards many homes, springs and streams due to the configuration of the hill (location of the proposed disposal injection well). Additionally, the proposed site is listed as a recharge area for these homes. The homes are listed as being down grade from the proposed site and their water sources will be replenished from surface waters infiltrating the proposed disposal injection well site.

14 - Just on the edge of the ¼ mile area of review at least 6 deep gas wells are located in the same Oriskany formation that are able to transmit toxic fluid into water wells if casings are old, perforated, non-existent or the gas well isn't plugged properly. **We request all these old gas wells be reviewed before any permit is issued to Windfall Oil and Gas for a disposal injection well.** Abandoned wells could provide a pathway for methane migration into drinking water wells into the aquifer. Some of these abandoned wells may not be plugged properly. The fractures from these old gas wells are an important concern because they may have affected the proposed confining layers and made pathways to allow waste migration into aquifers. The EPA R. S. #20 p. 21 states the old wells were inferior and this is the problem with the old Oriskany wells in our area.

15 - On the edge of the ¼ area of review we have 6 deep gas wells located in the same formation (Oriskany) that are able to transmit toxic fluid into water wells, since the penetrate the injection zone. Has the EPA required research on other deep abandoned gas wells in a two mile radius? Residents are aware of deep abandoned gas wells in close proximity to the proposed site. A recent study of the DuBois watershed showed many abandoned gas wells in the area. If fluid migrates even 2 ½ miles away it could affect public water sources due to all these abandoned wells that need plugged. We know past history shows this waste can travel at least five miles away. For the safety of so many residents, we request this application for an injection well be denied due to all the abandoned gas wells in the area. We know of 26 existing gas wells inside a one mile radius.

16 - **The Carlson Stewart deep well (7,250) is not plugged properly and the smell coming off this well currently isn't coming from a few feet down since natural gas is not found near the surface.** Actually, the Carlson Stewart well has an air pocket from the surface to 1,160 feet below the surface based on the Windfall Oil & Gas permit application well logs. For 33 years

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this deep well has supposedly been plugged. The plugging below 1,160 feet was a mixture of salt and water to cement along with the metal casing. The well log stated it had 10% salt. This casing after 52 years is non-existent or it is perforated. Below the air pocket is 15 feet of gravel and then they layered cement and gelled water. This deep well is taking a chance of the waste coming back up and one accident with the pressures being used would push the waste into our underground sources of water (USDWs) or our well. The smell may be methane or natural gas so the disposal injection well could push waste down and make this gas or methane move to the surface since it will be in the same depth of the Oriskany. This example is just one of many concerns with reliability and potential for accidents.

17 - The discrepancies between the well logs that are plugged aren't sufficient to believe they are plugged correctly. The Carlson Stewart well had 145 bags of cement used and the Ginter well had 375 bags of cement used. This demonstrates that twice as much cement was actually used in the Ginter well, which was half the depth of the Carlson Stewart well. We can't take this for granted with the deep wells in our area and having waste being injected near these wells.

18 - The necessary bond or resources to abandon or plug the disposal injection well are insufficient. The cost to plug the disposal injection well should be much higher than \$30,000, since residents feel this is insufficient. Local newspapers have been explaining about the Pennsylvania abandoned wells and the cost has been cited extremely higher than \$100,000. A Carnegie Mellon University study stated, "the cost of decommissioning 3,000 foot deep wells in southwestern Pennsylvania has averaged approximately \$60,000 each. Since the cost increases with the depth of the well, Marcellus Shale wells, which can be 5,000 to 8,000 feet deep, are expected to cost much more to plug (Courier Express, November 14, 2011)." **The company should also have this amount of money in the bank and it shouldn't be a line of credit. The EPA R. S. #19 p. 21 implies we cited costs to plug a Marcellus well and this is not correct, since we cited examples of abandoned gas wells (see binder news article).**

19 - **It is also important to residents to ensure funds are available for any potential costs incurred if water becomes contaminated in the area.** Especially, taking the chance so near a residential area full of private water wells. We know it would cost around one million dollars plus all the connection fees to bring water to our area from the City of DuBois through Sandy Township based on their projected figures. This may not be a feasible solution and it would be really hard right now for Brady Township to bring water to their residents due to the expansion of their lines being limited. Brady Township would need to cross a rail road property and this in the past has cost a \$5 million dollar liability policy to drill. Costs to run public water along a state highway will be higher due to the regulations. Residents don't want to plan to replace their *excellent* water sources with public water sources (that may not be as *excellent*). They would have connection fees of at least \$2,500 to \$3,000 within 100 feet of the line, so those living further away would have much higher connection fees. Additionally, we find the Brady water is currently having problems serving all the needs for their current customers with water issues that would make it impossible to add new customers till new water wells are drilled & old lines are replaced or upgraded.

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**20 - Windfall Oil & Gas providing only a line of credit for \$30,000 is not demonstrating financial resources to bring city water to all residences with water wells. We want to know the entire cost up front and have a bond for it in place. Bonding or performance guarantees by the company demonstrates their ability to abate a situation should something go wrong.** What assurances will EAB provide in regard to our Highland Street Extension Development?

21 - Why is a toxic waste dump & industrial activity being put into a residential area? This toxic waste dump & industrial activity should not be placed in an area designated residential. The chance being taken is dangerous if our water is contaminated because of any emergency in our area it would have the potential to need water brought to the emergency site. Our area has no fire hydrants and tanker trucks must be used. Discussion with emergency personnel brings up major concerns if USDWs are contaminated and a plan should be in place in case of any emergencies.

22 - Emergency response guides for our area explain that our local responders are not always trained to handle these situations. Various types of incidents can happen: fires, blowouts, release of gas or chemicals on site, injuries to employees or other incidents involving the equipment. Specially trained responders must be brought in from far distances. This site is located close to neighbors and any major emergency would be disastrous to our neighborhood and underground sources of water (USDWs), since this is where a major source of our water comes from for the Highland Street Extension Development. The chemicals in the waste water are not classed as toxic even though they are really toxic because of the Halliburton Loophole. If they were classed properly they would go in a Class I disposal well for toxic chemicals and have a two mile radius of review of the area before the permit application was approved. **Due to the high development of the area we request the area of review be extended beyond a ¼ mile.**

23 - The Windfall Oil & Gas permit application attachment G mentions definitive boundaries in the Oriskany. These boundaries will confine the waste so that the waste will follow the path of least resistance. That path will be upwards towards the surface, towards ground water (USDWs) or towards coal mines. Any "naturally occurring pathways" and "cracks or crevices from prior fracturing" listed on the permit application well logs could give the waste a place to migrate. The well logs state hydro fracturing was used on these old gas wells. The potential for USDWs becoming contaminated due to the waste following a path of least resistance is a reality. This waste has the potential to travel into the deep coal mines and into the old deep gas wells or around the old gas well casings that are perforated or non-existent.

24 - **The faults shown on the permit application maps would mean the definitive boundaries would contain the waste and it would only have a path towards the coal mines or follow the faults towards deep gas wells located at the ends of these faults, which one deep gas well is behind my home. For this reason this permit application should be denied.** We know that the Carlson Stewart deep well has an air pocket from the surface to 1,160 feet deep causing great concern. **The casing protection is not sufficient with all the prior drilling done in the area since a pipe leak or over-pressurizing could cause waste to go into the**

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**ground near USDWs, coal mines and many gas wells (over 26 gas wells in the area have been located).**

25 - The permit application notice of deficiencies demonstrated concerns about the lower most underground source of water (USDWs) and the best depth for the second string casing that makes me feel very uncomfortable. Residents concerns about the actual protection of our USDWs are really explained in these deficiency notes and the decision to case to 850 feet, 1,000 feet or 1,200 feet, which raises many questions. How can we trust that our water might not be affected if something like the Irvin injection well violation in Clearfield County occurs if this well is permitted? The Irvin well is in a remote location away from a residential area, which is not the case in this permit application.

26 - We request that the EPA extend the area of review and look beyond the original ¼ mile area of review. A better understanding of the area should be researched due to all the deep gas wells in the Oriskany already near our homes and private water wells. The City of DuBois being located so closely is another major consideration. Water supplies are only 2 ½ miles for many city and township residents. This is very close to this proposed site along with many private water wells and a Class 1 well would be reviewed for 2 miles, which Class 1 is for hazardous waste and we all know the waste being disposed of in this proposed Class 2 will be hazardous. Class-II disposal wells accept materials that are from the Oil & Gas Act that are exempt from being hazardous even though it is actually hazardous. **Due to the problems we have already seen in Clearfield County with the Irvin Well and due to the residential location proposed in Brady Township we request a two mile radius of review.** It is not far to sources of water for Brady Township wells and the City of DuBois water sources that serve many surrounding areas. The Highland Street Extension Development has many residents with water wells along with the surrounding area in a two mile radius. Old deep gas wells have been drilled in the area, abandoned gas wells are very close to the proposed site, abandoned mines that spread throughout the area are significantly close to the proposed site, springs, water wells and headwaters are located in close proximity to this proposed disposal injection well. The area of review can be a fixed radius of no less than one-quarter mile around an injection well or may be calculated "zone of endangering influence" based on geological parameters found in the injection zone, such as permeability, porosity, etc and proposed operational conditions, such as injection volumes, rates, length of injection, etc. With other deep gas wells drilled into the same depth we believe the area of review must be two miles and many residents are very concerned about their water wells due to all these previously drilled deep gas wells.

27 - Some residents also believe the current zone of endangering influence hasn't been accurately figured due to the faults being confining boundaries. They believe the zone is more of an egg shape that would take into account deep gas wells in the area.

28 - It has been stated that Pennsylvania's geology is not conducive to disposal injection wells, so why are we discussing utilizing them more often in Pennsylvania? Representative Bud George submitted testimony that further explains this statement. He states, "my comments on the Brady Twp. Injection well proposal focus on the threat to public and private water supplies. Simply put, geologic and hydrological conditions in the area make the proposed site an egregiously poor one

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for such a well. As the state representative from the adjacent district and longtime chair of the Pa. House of Representatives' Environmental Resources & Energy Committee, I have great familiarity with the area's incredibly complex geology. As a state geologist said of Clearfield County, "the geology was not as difficult as you thought it... It was worse!" It is infamous for its high pyrite and sulfur concentrations, which have had local ramifications. An environmental assessment omitted for an Interstate 99 construction project in adjacent Centre County has cost taxpayers tens of millions of dollars for remediation as the disturbed pyrite ruined water resources. In the 1972 Pa. Department of Environmental Resources report, "Subsurface Liquid Waste Disposal and Its Feasibility in Pennsylvania," it was noted, "It cannot be overstressed that the introduction of waste liquids into the subsurface is a permanent alteration of the subsurface environment... The magnitude of these changes may be small, but they are cumulative."

29 - This permit application is trying to state the ideal conditions and unfortunately Pennsylvania studies show we don't have ideal conditions due to our history of drilling and fracturing the ground. The Environmental Geology Report titled "Subsurface Liquid Waste Disposal and Its Feasibility in Pennsylvania" by Neilson Rudd states extended effects of waste disposal, "The area of effect of an injection operation is considered to be defined by the extent of the effluent in its reservoir. While this area may be difficult to define, the area of pressure effect is even greater and more difficult to predict." It also states, "Oil field and ground-water experience shows too many examples of far-ranging and unpredictable displacement and pressure responses to justify confidence in simplistic calculations based upon idealized conditions." In summary the report states, "It cannot be overstressed that the introduction of waste liquids into the subsurface is a permanent alteration of the subsurface environment. The magnitude of these changes may be small, but they are cumulative." The accumulation of waste under our ground being confined into a small area with deep gas wells into the Oriskany already is an unacceptable risk with all the water wells, coal mines and fractures in our subsurface. Another finding in the report states, "The long-term injection of large volumes of waste must eventually result in the upward displacement of the brine intraformationally or through fractures into the fresh-water zone. 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." This is what our Highland Street Extension Development finds unacceptable because our underground sources of water (USDWs) would be contaminated with worse things than brines, since we all know toxic chemicals are in waste water. We can't compare waste disposal to storage of gas for a temporary time, since waste is continuously disposed of for an indefinite time frame. The final summary statement of the report mentions, "It is, however, an endeavor requiring careful planning and foresight, together with careful operation and observation, to prevent the ultimate environmental damage which outweighs the immediate benefit. The planners of subsurface disposal projects must think in terms of the whole rock-fluid system, in terms of tectonism, regional stratigraphic relationships, structural discontinuities and stresses, hydrodynamics, and interactive chemistry between all components of the systems, not

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just in terms of the immediate problems of fluid flow and storage in the vicinity of the injection site.”

30 - This leads to a major question our group has asked, **“the study of the waste and its reaction to the limestone confining layer wasn’t addressed in the permit application.” This needs more study. Another question that seemed to be a concern in the deficiencies is the actual permeability and still needs to be addressed further.** The application indicated .0061, which is extremely low. The EPA response was normal ranges between 10 - 100 millidarcies. The final response from Windfall Oil & Gas is 6.1 millidarcies, which is still very low. The report conclusion of the “Subsurface Liquid Waste Disposal and Its Feasibility in Pennsylvania” states, “Within Pennsylvania, there are no known reservoirs of truly good disposal quality.” “The well-known reservoirs of Pennsylvania are exceedingly restricted both vertically and laterally, their thickness measured in tens of feet and their lateral extent in tens of hundreds of square miles. Porosities are generally lower by half and permeabilities, even to gas, are characteristically a tenth as great.” “There are severe geological and man-made limitations on the use of the subsurface for disposal of liquid wastes in Pennsylvania. It is unlikely that subsurface liquid waste disposal will be widely employed in the near future due to the very high costs of adequate evaluation, operation, and observation which must be required if such injections is to be done efficiently and safely.”

31 – Don’t repeat history. The Pennsylvania history shows these disposal injection wells haven’t worked. The first Pennsylvania disposal injection well that failed because fluid was found to be coming back to the surface five miles away? Hammermill Paper Co, Erie, Pa. 1968 leaked five miles away and gas came up five miles away in an abandoned gas well. Consol's Blacksville No. 2 "Dunkard Creek" failed. McKean County 1990’s residents’ water wells were contaminated near Custer City south of Bradford Co, petroleum products showed up in private residential water wells down- gradient from the disposal well (Don Hopey, *Pittsburgh Post Gazette*, *Wastewater disposal wells under scrutiny following Irvin leak*). Irvin A-19, Clearfield Co., over-pressurized for 3 months and leaked -- Violations for EXCO Resources fined \$159,000 for brine disposal well issues, failed mechanical integrity, exceeded knowingly permitted maximum pressure for 3 months in 2010, ordered to pay \$159,624 penalty & repair well while private water well owners must prove contamination. Now many of us wonder why the disposal injection well in Erie, Pennsylvania was abandoned. It shows no records of violations yet questions have been raised about problems that might have existed. This concerns us since a disposal injection well is proposed for our area now.

32 – Our Township (Brady) is located near two watersheds (the Susquehanna and Ohio River Basins). The DuBois Reservoir is a few miles away and the new water wells that will be the secondary source of water are as close as 2 ½ miles away. These are the main water sources for the City of DuBois. Brady Township and Borough of Troutville have their water wells within 2 ½ miles. Many private water wells are located within two miles of the proposed injection well site. Many deep gas wells have been drilled in the area since we know of 6 right on the edge of the ¼ area of review. Abandoned gas wells are very close to the proposed site. Abandoned mines are within the ¼ area of review for the proposed site. Our springs, water wells and a

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couple headwaters feed directly from the proposed disposal injection well site since it is a hill with many springs below. Clearfield County is actually on known faults. Clearfield County didn't receive high marks for storage of carbon dioxide and this would infer it is not a good place to store wastewater. Let us learn from history and not repeat the mistakes that occurred in Erie, Pennsylvania; at the Irvin well in Clearfield County; and in McKean County. Pennsylvania seems to have more issues with disposal injection wells than it actually has disposal injection wells. In May 2012, Duke University presented that we are at greater risk of USDWs being contaminated due to all the shale gas development. Wastewater treatment facilities are being built and becoming operational reducing the need for disposal injection wells. The residential site of this proposed well and the geology should be considered and no risk should be taken with our USDWs in this area near the City of DuBois so close to public water supplies. ProChem Tech International has a local chemist, Tim Keister, that has two patents pending to recycle wastewater using total resource recovery to make chemical products for sale. The company is currently talking with Shell Oil, which states the significance of this accomplishment. This is an option that would protect our area and our underground sources of water (USDWs).

34 - The EPA safely protects the underground sources of drinking water (USDWs defined as an aquifer system containing less than 10,000 milligrams per liter total dissolved solids). So the aquifer below this proposed disposal injection well site needs to be found and we need to know where it actually goes so these water sources can be monitored, especially if it flows toward Brady Township or the City of Dubois since they serve many residents. The permit application and the notice from the EPA had some discrepancies on the lowest USDWs.

35 - The invasion of other owner's property rights & having homes lose value and loss of revenue for property taxes due to USDWs becoming contaminated is an invasion of our rights. What can be done to protect the resident's real estate interests, their right to quiet enjoyment of their property, and to ensure the value of their property investments? Loss of private water wells and good water (USDWs) would ruin home values in the area. Right now 272 property owners actually own the property in a one mile radius even though the deed parcels are well over 369 plots of individual ground. Sandy Township and Brady Township have a Property Value Total of \$17,545,120 in the one mile radius. The breakdown is: Assessed Sandy Township is \$1,527,417 so Total Sandy Township Property Value is \$6,109,668; Assessed Brady Township is \$2,858,863 so Total Brady Township Property Value is \$11,435,452.

36 - This waste may be radioactive. EPA has Class-II Injection rules that aren't as strict as Class 1 Injection rules but they need to be for this site due to all the water wells and springs in the area along with abandoned gas wells or other potential conduits that exist within the area of review or zone of endangering influence that penetrate the proposed injection zone. No chances should be taken with the USDWs in the area. Residents are aware the use of monitoring fluid levels in the injection zone during injection operations is done to ensure pressure created by the injection operation will not cause migration of fluid up abandoned wells that could exist. Due to the example of the Irvin Well in Clearfield County being over-pressurized they feel this monitoring process isn't sufficient to ensure their water or USDWs remain uncontaminated. **Residents request constant monitoring even after the disposal injection well is plugged and want a**

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**comprehensive monitoring plan. Some residents request that the injection pump system should have a restriction on net horse power below 45.**

37 – The residents request EPA have a **full survey of water wells in a two mile radius before this permit is issued.**

38 – Residents request a way to **prevent the over-pressurizing** of this injection well and not knowing about it for months. They want drinking water protections in place that protect against what happened in the Irvin A-19 Well (Clearfield County).

39 - Please **characterize the wastewater being disposed.** Residents want to know the density and corrosiveness of injection fluids. This will have affect on new & old casings.

40 - Please provide residents a **list of all producing gas wells, abandoned gas wells, dry holes, surface bodies of water, springs, mines, other pertinent surface features, faults, roads, public sources of water, residences and water wells in a two mile radius.** Residents feel all these are factors that contribute to protect USDWs. Especially expect this now, that we have went so long without a one mile map from the boundary lines as required by the EPA. Residents have went through three years of aggravation over this injection well already.

41 - Please **provide a description of all known gas wells that penetrate formations affected by the increase in pressure.** Residents know this information is important to protect our USDWs.

42 - Please explain further all vertical limits and lateral limits of all underground sources of drinking water and their position in relation to the proposed disposal injection well and the direction of water movement (every USDWs that may be affected with name and depth). We want to ensure that the public water sources will not be affected since we know water travels and many wells are in the area even ones not being used currently, since public water sources were brought to homes (since 1972). Brady Township serves over 800 customers and they use the same source of water from the Anderson Creek that the City of DuBois uses. Brady Township serves the Troutville area and they have two wells over 430 feet deep. These wells are 2,000 feet apart yet they are connected.

43 - **Further research needs done on the geological structure of the area.** The information provided in the permit application wasn't thorough enough with the factors we see needing addressed. Plus residents found numerous inaccurate statements just based on the information provided in the permit application and EPA Response Summary (EPA R. S.).

44 - Further research needs done and a **complete plan for well failure along with a disaster preparedness plan for emergency personnel and a plan to prevent migration of fluids into any USDWs.**

45 - Explain a full plan for plugging and abandonment that demonstrates adequate protection of USDWs and covers costs of any failure over time after plugging. What we see in the permit application doesn't seem to be realistic to current studies.

46 - DEP states "disposal injection wells are unsafe due to abandoned, old, unplugged or uncharted wells." This proposed area (Highland Street Extension) should be deemed unsafe for disposal.

47 – Please present a comprehensive erosion and sedimentation plan since many springs are

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closely located to this proposed site. **The plan presented didn't seem to address the road appropriately.**

48 – Further information needs to be provided in **a plan that demonstrates no significant fluid movement into USDWs**, oil or gas zone, underground gas storage horizon through vertical channels adjacent to the injection well bore.

49 – Please identify the closest public source of water allowed to be located to a disposal injection well. **Explain how the public sources of water will be monitored.**

50 – **Please explain how the EPA will track disposal injection well failures, issues impacting USDWs, permit denials or revocations, fines.** Residents need to understand who is ultimately responsible for risk assessment in local communities. The Irvin well example is unacceptable.

51 – Please **explain the plan of who will be fully responsible for any costs if an accident or leak occurs or if Windfall Oil & Gas would go bankrupt. Residents want a bond to protect them.**

52 - In 2009, an EPA report showed eight (8) disposal injection wells in Pennsylvania and yet in 2010 another EPA report showed only six (6) disposal injection wells. What was the discrepancy in reports? In 2006, EPA completed 12 inspections for disposal injection wells; 20 in 2007 and 6 in 2008. This decline in inspections concerns residents and we believe more inspections should be done regularly (at least quarterly). In July 2012, at our meeting it was stated five disposal injection wells were operational.

53 – It seems that only one layer of protection has been proposed for this proposed disposal injection well being limestone. This concerns residents and the actual disposal injection well casing information also seems insufficient. Will the proposed casings meet the new DEP regulations?

54 - A **Mechanical Integrity Test (MIT) needs to be performed more often than every two years.** We don't believe a two year period is sufficient with the high number of water wells in the area.

55 - Range Resources Cross #2 disposal injection well north of Waterford, PA in Erie County has recently been plugged. It had five layers of steel casing, three layers of cement and was 8000' deep. Many residents would like to know why this disposal injection well has been taken off line and plugged. If an issue occurred it should be considered before moving forward with the Windfall Oil & Gas permit since we have a high number of private water wells in our residential neighborhood.

56 - Due to the significant number of swamps in our area consideration should be given to it being a wetlands. All the springs around this area need to be taken into consideration and the affect on USDWs if anything contaminates these water sources.

57 - Due to population density, the residential nature, and village zoning of the area, we request at least a two mile radius be considered for review defined as an "area of concern." The "Northwest Clearfield Comprehensive Plan" for Brady Township, City of DuBois, Falls Creek Borough, Huston Township, and Sandy Township designates Brady Township as a village and also states that no significant expansion of water services should be done.

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58 - If this disposal injection well is planned for fracking wastewater (production waste) some of it will be radioactive. **A plan should address the types of radioactive isotopes found in this water and what actions would be taken in the event of a spill, leak or violation of over-pressurizing since this could affect our USDWs.** The Penn State Extension office report states, "Untreated flowback water is toxic to aquatic life, particularly trout and other sensitive species." In this neighborhood, we have elderly people and people with other disorders that make them more susceptible to toxins, who are closely located to the proposed disposal injection well site.

59 - Future and current Marcellus activity, fracturing and over pressurization may open a natural fracture joint into the disposal injection well zone. So how will this be avoided? We know plans are proceeding in Brady Township for Marcellus Shale gas activity. This could affect our USDWs. What measures will be taken to protect the residents for the future? Will owners of the gas be limited in their potential development of the gas fields knowing that the disposal injection well is in the area?

60 - **Background monitoring should be required of all water wells, springs and public water sources including enough samples over a long period of time to demonstrate natural deviations or cyclic trends.** Not just a single background sample that Windfall Oil & Gas can later say that future samples don't show pollution, just some deviations from the single background sample.

61 - Residents using geothermal energy in the area have concerns about this disposal injection well and these concerns need to be addressed. They are around ½ mile from the proposed site.

62 - Windfall Oil & Gas inc. is proposing the development of the Zelman#1 as a Class-II D injection well that they believe will provide a service to gas producers in Pennsylvania. The disposal of these fluids by injection into deep depleted formations may be an option, yet residents truly believe it isn't an environmentally friendly or proven process that should be utilized in Pennsylvania. The operation of the proposed Windfall Oil & Gas Zelman #1 injection well facility would jeopardize all the residents in the City of DuBois, Brady Township and Sandy Township along with other local towns including Sykesville that purchase water from the City of DuBois. A water well owner in our area during March 2012 had their water well cave in due to drilling activities in Luthersburg. This is a concern for our residents because they felt the ground rumbling miles away. A few years ago, an explosion in Sylvan Heights was felt and heard clear to our home, which was a few miles away. This proposed industrial activity has ramifications for our community that need to be addressed, since it has the potential to affect our water sources.

63 - It seems like enough pressure could be underground already, and no one is sure if a geyser of waste will be created if a crack is anywhere underground in this area. Also, pressures used for the disposal of waste have the potential to fracture the ground more. Not so far away in Big Run a gas well blew the casing back out (a major incident). A storage field leaked during the 1960's and 1970's into Kettle Creek.

64 - Windfall Oil & Gas needs to prove a reaction won't happen between the injection fluid and limestone at the bottom of the well.

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65 – Residents request the use of an electronic log be required before this permit is considered.

66 – The residents future concerns deal with water wells, property values, future mortgages, insurance, radioactive chemicals that are toxic yet exempt due to oil & gas exploration, truck traffic, elementary school, spills, and much more. All these concerns actually stem from possible contamination of USDWs near our private water wells and major public water supplies. Recent articles have cited one well integrity violation was issued for every six deep injection wells examined in the nation (*Propublica, 680,000 wells hold waste across US without unknown risks*).

67 - The permit application is lacking a topographic map for the entire one mile radius. This is a serious deficiency in the permit application. The EPA application states a one mile radius map is required with all gas wells and coal mines (EPA Application Attachment B).

68 - The Statement of Basis concerning the faults seems confusing, since it states well below the injection area 16,500 feet yet it is a confining factor. This is a major deficiency. A fault could have waste run right towards the Carlson Stewart deep gas well.

69 - The permit should be denied since gas well records show hydro fracking of deep gas wells and the confining zone is to be free of open fractures. The area of review has fractures in the confining zone. The 5 of the 6 gas wells were fracked and extend into the ¼ mile of review. They also don't know the permeability of the Oriskany and they may want to stimulate this injection well. Stimulation is equal to fracking and is not a good idea in our area if waste will be injected. It has been stated, "Pennsylvania is rarely what you think it is." This is something we should stop and rethink.

70 - The Caledonia Syncline is close to us and mentioned in the permit application. A syncline brings fluids up to the surface and isn't a good place to inject fluids in the ground.

71 - Over 300 people signed petitions that request the denial of this application. Many residents sent the EPA, DEP, and legislators post cards asking them to stop this permit. Now many residents are writing additional letters of concern to the EPA & EAB.

72 - Residents have 370 plots of property in a one mile radius and 107 water wells are identified in the one mile radius. Some residents have public water and still have water wells, so this is not fully taken into account with the number of water wells on our list. Information was gathered voluntarily from neighbors and the Highland Street Extension Development has an accurate listing on water sources. The Brady Township Water Authority was consulted to figure the rest of the one mile radius water sources unless information was submitted by local residents.

73 - Neighbors living behind us near the Carlson deep gas well, who are outside the ¼ mile Area of Review, have had their water affected by a gas well being drilled less than a mile away. We believe residents on #2 Shaft Road and Route 219 could be directly affected if this deep gas well is improperly plugged and their water could become contaminated. Two water sources behind my house (Plyer & Michael) somehow were affected by this gas well drilled near Kennedy's so we assume that potential water contamination near our homes could have a direct affect on homes at the end of #2 Shaft Road or those on Route 219. It was stated when the gas well was drilled it affected their water for awhile. This well is a really great supply of water and supplies at least two homes endlessly. This gas well on the Kennedy property is probably within a mile

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from the Carlson deep gas well that is plugged and our water wells. So assuming fluid migration will not happen in our area is not acceptable when know issues are already reported.

74 - EAB needs to review the EPA public comments by: 1) Brady Township Supervisor, Mr. Muth, that stated, "we know this area is already saturated in the Oriskany," this is from a person with drilling background. The gas well on Atkinson's property when in operation they had to daily take the brine off. 2) Brady Township Engineer, Wilson Fisher, believes an impact study for NEPA (National Environmental Policy Act) should be completed. 3) Brady Township Engineer, Wilson Fisher, wants further research done on mineral rights in the area. The legal implications on our subsurface rights is a concern.

75 - Driller complacency is a concern as we saw on December 10, 2012. That this is just a "hole in the ground to pump waste" is not an accurate statement. A participant on December 10 talked to Mr. Hoover and asked about how Windfall would know the length of time able to pump waste, which Mr. Hoover responded that, "this is a dice game." Residents don't want anyone gambling with their water sources, homes and lives.

76 - We know drillers and stories that tell us we should be concerned. People with drilling experience spoke at the hearing and have supported us with our research. They have major concerns and some of them live in the affected area.

77 - The Pittsburgh Post Gazette explained recently more studies need to be done on disposal injection wells, which is stated from an EPA hydrologist. Our residents request more studies now before something happens to a residential area, which we would be the first for a Class II.

78 - Residents received information on the PA DEP application from Windfall Oil & Gas that seemed to be different from the EPA permit application. This information raises further questions and needs reviewed more in depth especially on the answers to questions on the coal mines in the area. We believe the coal mines are within 1000 feet. Since the EPA public hearing, Windfall Oil & Gas has sent certified mail to residents in the ¼ mile concerning the DEP application and these documents have been incorrect showing their lack of knowledge and residents have had to contact them concerning incorrect forms & data. Windfall finally decided to stop correcting the forms and sending the revisions by certified mail because they keep learning of errors. This demonstrates their lack of knowledge & understanding, which leaves residents with concerns of their actual capabilities to operate a disposal injection well.

79 - All the above facts will take further time to study the effects on underground sources of water (USDWs). An impact study will take time and should be completed. We should have time to respond to the driller with local information and not be forced into a quick response that doesn't include all the facts.

80 - Residents demonstrated that even if everything is done correctly the waste has potential to migrate up into many residents' water wells or into the coal mines endangering so much of our area. This risk is not worth taking especially since the operators are basically overseeing any problems.

81 - We believe you should review the: Clearfield Comprehensive Plan, information on the PA Wilds Design Guide (see link on Clearfield Comprehensive Plan website), Casselberry Report, Casselberry Recommendations, 1958 study for gas drilling and Geisinger Study. One report

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shows a fault in the Oriskany in our area that travels miles. This is a major concern with the recent earthquakes in relation to disposal of waste using injection wells. Additionally, it is a concern to have a fault in the Oriskany, which is the formation where waste is to be disposed. Many of our neighbors with drilling experience have felt all along that Windfall was hoping to dispose of this waste near a fault so they have potential to dump lots of waste, since they feel the fault will take the waste and carry it away. This hypothesis is a dangerous one with our public water sources so near and with all the abandoned wells found on the watershed. One report states faulting is extensive & talks about the Onondaga formation and the extensive drilling into the Oriskany. With so many old gas wells in the Oriskany we shouldn't be taking the chance to pump waste into this formation near our major water supply for the local region. The syncline lines shown on the map with the studies offer another major reason for concern since waste could be brought back up to the surface if disposed in our area. One report showed no barrier between the Oriskany and Marcellus wells drilled around the DuBois watershed area. Many of the old gas wells are located in the Oriskany formation and the plugging practices used were questionable at the time. This endangers our water supplies for a large area if anything would happen to carry the waste just 2 miles. Please note that the City of DuBois has not allowed seismic testing due to the risk to our public water supply (see report recommendations that assessed the risk).

82 - An Environmental Assessment and an Environmental Impact Study should be required for all disposal injection well sites before the EPA issues a permit. The area residents should always be notified as soon as a company contacts the EPA to start the application process for a disposal injection well. Residents know more about the area than anyone else as has been demonstrated here.

83 - If the EPA decides to go forward with this application we request a test well drilled to determine the actual depth of USDWs and to determine an appropriate casing plan. Then we request this test well be used as a monitoring well for the disposal injection well. We recommend the EPA deny this permit application although we want on record our requests for protection in any case.

84 - The local residents are also aware of a case in Texas where a company was taken to court for disposing waste and that waste was found to contaminate a local water source. So the plaintiff sued for liability and the Texas court made a decision that the company disposing of waste was liable. Residents are concerned about the same thing happening and the actual trespass laws. The residents feel dumping waste below their homes trespasses on their property and is not acceptable.

85 - The Geisinger report is another reason for residents to be concerned. Many area residents are elderly and more susceptible to health risks. A young man in our area has a nervous disorder and his home is very close to the proposed site. These residential homes so near the site with homes downgrade is a major consideration that should be addressed due to runoff or spills affecting these homes, getting into their underground sources of water or their springs.

86 - Drillers from our local area know and speak with knowledge from years of experience. If drillers are concerned and want this permit denied we should take note and be very concerned. This is not just one person with drilling experience but at least four to my knowledge that have

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actively supported us and offered advice. The EPA needs to develop a way to track this waste underground to find out where it actually goes and ensure no USDW is really getting contaminated. Hiding waste is not a solution.

87 - Ground faults are located in the area close to the proposed disposal injection site. The proposed injection well may be located in an earthquake prone area. Taking the chance to lubricate these faults could additionally jeopardize our underground sources of water. An earthquake is the last thing you need near a disposal injection well to crack the casing and leak this into our private water wells or the deep coal mines within the ¼ mile area of review. Any small fracture or leak has the potential to seep fluid into these mines and carry waste under the City of DuBois and into surrounding areas like Sykesville and Reynoldsville. These mines are full of water and are all over our area, so these deep mines would transmit toxic fluid into water sources.

88 - The company should also have the money in the bank and it shouldn't be a line of credit. Especially, taking the chance so near a residential area full of private water wells. We request residents are ensured funds are available for any potential costs incurred if water becomes contaminated in the area. We know it would cost over one million dollars to bring water to our area from the City of DuBois through Sandy Township based on their projected figures.

89 - This toxic waste dump & industrial activity should not be placed in an area designated residential. We realize the need for waste disposal, but it should be in an isolated area. This well has been designated for Marcellus Wastewater that is hazardous and similar to toxic waste such as hospital waste, etc. Hazardous waste wells have a two mile area of review.

90 - Terry & Carole Lawson stated in EPA public comments, "The area of concern as noted by the EPA is ¼ mile radius of the injection well. Every time the gas company does anything to the one deep well near the injection well our water turns murky for several days. We are outside the ¼ mile radius of review. This radius needs to be expanded to at "least" one mile. We had our water well redrilled in 1984 by R. L. Cryster drilling. He decided upon looking at topographic maps of the area that if we drilled more than 273 feet, our water would be lost into a mine shaft.

There are many mine shafts in the area going in different directions. We are concerned that if fluid or brine migrates or if a leak or malfunction occurs with the injection well it could enter the mine shafts which travel clear to and under the DuBois Mall. This would impact an area greater than the ¼ mile radius and not just Brady Township. The deep gas wells in the area and the injection well will all be in the underground formation of Oriskany sand. The pressure of the injection well could compromise the structure of other wells in the area. There are also 2 fault lines in the area. There have been minor earthquakes here that could possibly crack the fault lines, thereby making a path way for the waste water to travel. My father worked the gas and oil fields his whole life. Many times he commented that when they sealed a well, it wasn't always done to specifications. There have been documentations of other injection wells failing. Why then are they putting this in a populated area? This is like playing Russian roulette. Would you want to take a chance of this injection well being put in your neighborhood?"

91 - An individual trained to be an engineer presented at the public hearing that the faults would flow waste directly to two old, deep, gas wells. Old casings would allow waste to migrate up

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into USDWs. These faults would be affected by the pressure of waste injected underground and it was stated these faults could contain (confine) the waste disposed. The confining layer above the injection zone as defined in the permit application was noted by this engineer at the public hearing as inaccurate and much thinner than stated. Many factors had been researched by residents and stated as concerns including the local faults.

92 - USDWs in the area also were demonstrated to be interconnected through various water sources and flow studies. At a Brady Township Water Authority meeting, we learned of a local water tunnel that flows to our city reservoir, which was cause for concern.

93 - A supervisor from Brady Township presented information about the underground resources potentially being currently full of brine. This is due to the knowledge of the amount of brine that has been removed previously for the old, deep, gas wells. Residents realize how often the brine had to be removed from the deep gas well located on the Atkinson property. Waste, brine and gas below ground under our homes will all work to create pressure on the fault lines in the review area. This will cause things underground to change without anyone knowing the particulars, so we request this permit be denied on the potential of the fault lines being lubricated by waste or pressure causing the faults to shift. We know historically from experience seismic activity has occurred from waste disposal as I stated in my prior public comments.

94 - The location of this proposed disposal injection well is near residents with private water wells, the Brady Township water supplies and the City of DuBois water supplies. These factors combined with a fault in the review area make this site a risky chance on issuing a permit for disposal of waste. If any USDWs or coal mines become contaminated due to migration of fluid (waste) through conduits then it will not be enough to state "we told you to deny the permit" since properties will be ruined and lives would be placed in danger.

95 - Studies have found concerns that disposal injection wells have been tied to seismic activity and the US Geological Survey states more research must be done. Combining all these factors: an already fractured area due to old, deep, gas wells; faults; syncline; the potential of disposal fluids leaking into USDWs or flowing along the identified fault near coal mines; new pressures on this fault potentially causing sympathetic reactions to earthquakes; seismic activity migrating disposed fluids into local coal mines and USDWs with grave affects to our area; local Marcellus Drilling activities planned for area; and different changes in pressures and activities have the potential to contaminate USDWs especially due to seismic activities created by waste disposal.

96 - This area has felt the ground move due to earthquakes and man-made seismic activities: once due to a natural gas home explosion that rocked our area; at least once recently due to an earthquake from another state; and local coal mining in the area. At least four coal companies are operating in our area, which has affected foundations of residents' homes including one of our own family members. Any of these type of seismic factors would compromise the integrity of the well casing and allow USDWs or coal mines to be contaminated. Man-made seismic events are happening in Clearfield County so this permit should be denied since further study should have been done. Local specific studies should be done for an area before it is assumed that "seismic events are extremely rare." Our local area has already experienced seismicity concerns. Risk should be taken into consideration and given to this being an unacceptable risk to

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even allow a permit to be considered. This permit should be denied based on all the facts already presented that question the seismic issues and given that our precious water resources shouldn't be jeopardized or threatened. Just knowing we lack sufficient specific studies on injection wells located in residential areas with proximity to reservoirs, private wells and multiple municipal water wells. The statement has been proven invalid that seismic events are extremely rare in Clearfield County.

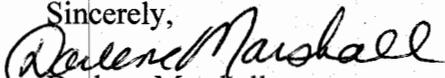
97 - Residents refuse to believe monitoring pressure protects against failure after seeing the results of the Irvin well being over-pressurized for three months. USDW damage must be proven by the residents and this is unfair when residents are unaware that anything is happening or even made aware quickly enough. If they can over-pressurize for three months without anyone knowing at the EPA or locally what does that state about protection for our residents if we allowed this disposal well to be permitted near our USDWs. Residents have stated they'd live in fear of drinking the water daily if an injection well is installed. Monitoring pressure is insufficient to protect residents from an injection well failure since damage to a water source will have happened before shutdown procedures would be taken. This permit should be denied because of what happened at the Irvin injection well, since our area risk is higher.

98 - We request this permit be denied because the EPA, Windfall or residents are all unable to predict the future beneath us (underground). Taking a chance is an unsafe risk with USDWs, coal mines, fractures, faults, properties and water sources.

99 - This permit should be denied due to a study previously submitted that provided information on injection wells and seismic activities that had occurred. Other studies and recent happenings in four states cause grave concerns that reinforce denying this permit.

100 - Residents appreciate the EPA reviewing all the information presented and explaining the EPA process. The residents are counting on the EAB denying this permit and setting an example that residents' research shows substantial risk to USDWs through seismic issues sufficient to deny this permit. Residents shouldn't need to provide this evidence since the original maps for the permit showed faults through the area. All the articles on file for this public comment period are insufficient evidence with all the actual happenings having taken place since residents started researching this issue two years ago. Let us not repeat history like Colorado, Oklahoma, Texas, Ohio or Arkansas has experienced just deny the permit. Articles were submitted in public comment to demonstrate seismic concerns & backup the residents request to deny this permit. We have known faults in our area so this should be cause to deny this permit based on all this recent data. If seismologists have long known a problem exists with injection wells, residents shouldn't need to prove this permit should be denied. This permit should be denied due to the proximity of a known fault. The Guy-Greenbrier fault in Arkansas was an unknown fault until it was affected by an injection well. They now require new wells to be 1 to 5 miles from known faults.

Sincerely,

  
Darlene Marshall

Attachment #1  
What a one mile radius is!

