

December 9, 2014

Brett Loflin  
Northeast Natural Energy  
707 Virginia Street, East; Suite 1200  
Charleston, WV 25301

**Re: Drilling Operations, Morgantown Industrial Park**

Dear Mr. Loflin:

I write in response to your letter of November 12, which you sent in response to our prior correspondence, dated October 3.

In your recent letter, you describe several ways in which the proposed drilling will differ from that for the previous two wells. Alarming, you also summarily reject each of our newest requests for additional safeguards. These changes and rejections cause us great concern.

First, and most simply, this is a reversal of the explicit promise that you recently made to me on the telephone. You will recall that your unsolicited oral guarantee was that NNE would deploy the same safeguards as were deployed in the prior drilling operation at this location. To now offer anything less is highly objectionable.

Of course, we do not object to improvements or changes that you may suggest that we find will adequately or better protect our watershed from harm and promote confidence in our safe and abundant water supply.

With that pragmatic approach, please review and comment upon our general and specific concerns listed below:

**General Concerns**

From MUB's perspective, this was and is an ill-advised location for a drilling project. We continue to demand the previous safeguards, and some additional ones, because of the extremely close proximity of the drilling site to our water intake. The proposed wells are within the Watershed Delineation Area for MUB's intake and are immediately adjacent to, and uphill from, the Zone of Critical Concern. Because these extraordinary conditions were not contemplated by the Legislature in enacting the Horizontal Well Act, we have both the right and duty to demand these additional safeguards to fully protect our community's water supply.

Because this drilling project is now part of a research project focused on discovering and investigating the impact of drilling operations, it is self-evident that the project presents both unknown and known risks to our water supply. NNE must not compound these risks by refusing our proposed safeguards.

Likewise, we will not report to our citizens that they are adequately protected because of the “best industry practices” you plan to employ at this site. Our duty is to take every possible measure to protect the public health. We reject your suggestion that we should not and/or need not take additional measures to protect our community water supply from contamination that might result from your proposed operations.

**Specific Concerns – Previous Safeguards** (using your numbering from November 12):

1a. You describe that a drilling pit will not be utilized because you have adopted closed loop drilling, thus eliminating the necessity for an open pit. We, of course, welcome this change.

1b. You describe that “the 2011 earthen berm surrounding the pad is intact, and the pertinent sections of the pad will be lined and bermed for containment purposes.” We are concerned that you might intend to provide a liner for only some portion of the area within the existing berm. If that is the case, we take strong exception to that plan. We believe that it is imperative to provide liner for the full area within the berm, and to extend the liner above and over to the exterior face of the berm. If you do not plan to line the entire pad within the existing berm, then we believe that additional berm must be provided (to connect to the existing one) to define and contain the “pertinent sections of the pad”, so that the entirety of the proposed work area is both contained by a berm and lined, to the same standard as was provided for the larger work area in 2011.

2. You describe that industry best practices already provide sufficient redundancy for valving of the frac valve assemblies, and that adding unnecessary valves can create a safety hazard. I believe we referred to this subject apparatus in 2011 correspondence as the blow out preventer; if this is the apparatus to which you refer today, we agree with your assessment (having closely observed the 2011 work) and we accept that a single assembly can be adequately redundant. Your description refers to an attached design, but that attachment was not included. We respectfully ask that you provide the intended attachment for our review.

3. You describe that the production casing string will be cemented only back into the intermediate string, and not to the surface as was done in 2011. You persuasively described the conservative risk management benefits of cementing the production casing to the surface in 2011, and we believe those benefits continue to remain true today. We respectfully request that you cement the proposed casing(s) to the same standard as was provided in 2011.

4. You describe your intent to use synthetic based drilling mud (SBM), rather than the water based mud that was used in 2011. You describe various benefits of SBM that purportedly lead to less overall risk. While we will agree that operational efficiencies that reduce drilling time may result in a shorter time duration of risk exposure, we are concerned that increasing the number / nature of synthetic fluids in use on site actually may increase risk to the water environment. You offered water based mud as the more environmentally safe alternative in 2011, and we believe those benefits continue to remain true today. We respectfully request that you prepare water based drilling mud to the same standard as was provided in 2011.

**Additional discussion regarding previous safeguards:**

Your letter of May 18, 2011 outlined the safeguards that would be provided for the first two wells at this site. On November 12, you outlined certain portions of the 2011 safeguards that you do not intend to provide for the proposed wells. For the sake of clarity, I attach a copy of the May 18, 2011 letter, marked to indicate the recent changes that you have proposed. MUB concludes that any of the 2011 safeguards that have not been recently refused or commented upon are neither controversial nor problematic, and will therefore be included in the third well operation.

Please confirm this conclusion, or respond similarly to further amend the 2011 promises so that we may clearly understand your plan.

**Specific Concerns – MUB’s Additional Safeguards**

MUB’s letter of October 3, 2014 requests three additional safeguards that, after reevaluation of the 2011 operation, we believe are necessary and desirable. Discussion below uses the same numbering from our Oct 3 letter:

1. MUB requests that NNE reimburse our cost of water quality monitoring related to the subject work. You have rejected that request, characterizing our proposed testing as unnecessary, and using applicable regulations as the benchmark. It is doubtful that the Legislators ever contemplated a drilling operation so poorly sited in such extreme proximity to a public water intake supplying over 80,000 citizens and upon a legacy pollution site. MUB does not “wish to conduct additional water quality testing”. On the contrary, MUB is obliged by reasonable prudence in the public interest to conduct this testing as a result of your drilling operations. Because NNE is the cost generator, it should pay these costs.
2. MUB requests that NNE provide a bond, drawn to MUB in the amount of \$1 million. You have rejected that request, explaining that NNE is adequately insured and that it has already posted a \$250,000 bond, held by the State. Your rejection of the proposed bonding is both illogical and unfair. None of the bonding or insurance that you hold directly benefits MUB, yet in the event of a mishap, MUB’s exposure will be direct, immediate, and significant. Our ratepayers should not have to pay additional money to protect themselves from injury from this poorly-sited project.
3. Finally, MUB requests that it be listed as an additional insured on NNE’s pollution and general liability insurance policies. You have rejected this request, explaining that the details of your insurance program are a contractual matter between you and your carrier, and that MUB lacks a vested interest in NNE’s operations. We wholly reject your “vested interest” threshold for naming an additional insured. Not only is this a questionable threshold, it is also indifferent to the threats to the public safety and health that your operation brings to our community and watershed. It is impossible to deny the vested interest of 80,000 West Virginians to a safe and uncontaminated water supply.

You close your letter of November 12 by describing the experimental laboratory project to be conducted by WVU, Ohio State, and DOE. We must again state that the conduct of this experimental laboratory is undeniable evidence of the yet evolving nature of technology for such operations, and of the need for better understanding of short and long term environmental impacts and related risk management techniques. We trust that these research partners will contribute actively and substantively to the oversight of the proposed operations to better ensure the protection of our water resources.

Finally, you mention that “with additional personnel onsite, should MUB personnel wish to visit the drill site, they will have to abide by established protocol for entering the premises.” Certainly MUB is agreeable, even committed, to abiding by appropriate safety protocols. Our only concern is that the protocols not be used as a ruse to frustrate our access to observe the operations. Based on our cooperative experience with NNE in 2011, we would not have even entertained such a concern, but the summary reversal of your position and the numerous rejections listed in your November 12 letter suggest that such cooperation might not continue. We hope that we have misinterpreted this potential frustration, and we trust that you will continue to provide our personnel ready and reasonable access to the site. We firmly believe that our frequent and random presence serves to facilitate a higher level of vigilance in environmental protection than would otherwise be normally achieved.

We respectfully request that you reconsider your decisions where we have requested continuation of previous safeguards and for new additional safeguards. We hope that the high level of collegiality and cooperation that was provided in the 2011 operations will continue. But, in any case, MUB will meet its duty to ensure that our community’s health and safety is protected.

Thank you for your timely and detailed attention to this critically important matter. We look forward to your comments.

Respectfully,

**MORGANTOWN UTILITY BOARD**



Timothy L. Ball  
General Manager

CC: MUB Chairman and Directors  
Morgantown City Council  
Randy Huffman, Secretary WV DEP  
Scott Mandirola - Chief, Water and Waste Section WV DEP  
James Martin – Chief, Office of Oil and Gas WV DEP  
Barbara Taylor – Director, Environmental Health Services WV BPH



**northeast**  
NATURAL ENERGY

May 18, 2011

Timothy L. Ball, General Manager  
Morgantown Utility Board  
PO Box 852  
278 Green Bag Road  
Morgantown, WV 26507-0852

Dear Tim,

We appreciate having had the opportunity to meet with you at the Morgantown Industrial Park site where Northeast Natural Energy LLC ("NNE") is preparing to drill two horizontal Marcellus wells. I am sure you gathered from our discussions that NNE is committed to protecting the groundwater and surface waters of the State of West Virginia. The protective measures NNE routinely incorporates in its operations design are best management practices required by state laws and regulations including the West Virginia Department of Environmental Protection. NNE appreciates the input and suggestions of Morgantown Utility Board, and we believe that our agreements have evidenced NNE's dedication to operating in a safe and environmentally sound manner. Toward that end, the following provides details of some of the practices NNE will employ in its drilling of the Morgantown Industrial Park site.

**Spill Containment – Drilling operations:**

1. NNE will utilize a closed loop system during fluid drilling operations for maximum control of drilling fluid / mud.
2. An interior containment structure will surround the drilling equipment to provide primary containment during the drilling operation. The structure will be a silt sock or similar item. A liner will be provided to cover the area defined by the sock, and will wrap from the floor of the confined area over the sock to create an impermeable barrier. The liner will divert any captured liquid to the lined waste pit. All liner will be fused to create a single continuous barrier.
3. The permanent earthen berm around the well pad will provide a third level of containment.
4. The area where the access road meets the containment structures will be designed in a manner that will prevent the flow of any spilled materials from leaving the containment area.
5. The volume of the lined waste pit will exceed the entire combined maximum volume of drilling fluids and tailings/mud present on-site at any time.

**Spill Containment – Fracking operations:**

1. The well pad liner will be expanded to cover the entire area encompassed by the earthen berm at the perimeter of the well pad, including the sumps located at

each corner. The liner will divert any captured liquid to the lined waste pit. All liner will be fused to create a single continuous barrier.

2. The area where the access road meets the containment structures will be designed in a manner that will prevent the flow of any spilled materials from leaving the containment area.
3. The perimeter of the well pad will be protected by a 2.5 ft. berm completely surrounding the 300 ft. X 600 ft. well pad. If the combined volume of all fluids on site at any time exceeds 2.5 million gallons, the containment area defined by the berm will be enlarged proportionally.

#### Spill Prevention – Fracking operations:

1. NNE will utilize a closed loop system for maximum control of fracking fluid.
2. A second automatically activated Blow Out Preventer (BOP) will be provided to maximize control of fracking fluids.
3. One manually operated isolation valve will be installed to provide additional redundancy for control of fluids from the main stem of the wellhead.

#### Well Integrity:

1. NNE corrected MUB regarding the maximum allowable pressure of the three non-production casings, which are not designed to withstand fracking pressure.
2. NNE will encase (with cement/grout) the full length of the production casing
3. NNE will confirm the integrity of the production casing by an attenuation test which will verify proper adherence of the casing cement/grout to the steel casing pipe. The surface casing and intermediate casing strings will be tested utilizing a hydrostatic pressure test to a pressure that is 10% greater than hydrostatic pressure or 10% greater than the anticipated pressure on that casing. The full vertical length of each casing will be so tested. All such testing will be conducted prior to the fracking process, and results thereof recorded. Fracking will not begin unless/until acceptable test results are achieved.
4. Each batch of casing cement/grout will be sampled and tested for appropriate strength. Fracking will not begin until acceptable strength test results are obtained.
5. NNE will ensure that non-production casings are not subjected to fracking pressures by observing pressure in the annular spaces and aborting fracking if pressure increases in the annular spaces are observed. In such cases, the breach of the production casing will be located and repaired before fracking resumes.
6. NNE will hydrostatically test the production casing to a pressure of 10,000 psi which far exceeds the hydraulic fracturing pressure that will be employed. The full vertical length of the casing will be so tested. All such hydrostatic testing will be conducted prior to the fracking process, and results thereof recorded. Fracking will not begin unless/until acceptable test results are achieved.
7. Similarly, NNE will hydrostatically test the production casing after fracking has been completed (prior to placing the well into production). Testing pressure will be at least as high as the expected operating pressure. The full vertical length of the casing will be so tested, and results thereof recorded. Any breach of the

production casing will be located and repaired as quickly as possible, and before production begins. Production will not begin unless/until acceptable test results are achieved.

8. Casing pipe which extends through a void area (such as a mined "room"), will be specially grouted at the points where they enter and exit the voided strata in a manner that meets the requirements of WV Code §22-6-20.

**Waste Disposal:**

1. NNE will dispose of all drilling residuals and fracking fluids off site at appropriate land fill and/or injection well.
2. NNE will utilize manifest procedures to document such off- site disposal. The manifests will record the complete chain of custody from the retrieval at the well site to the ultimate disposal location, for all volumes/units of waste generated and removed from the site.

**Miscellaneous:**

1. Drill cuttings / fluid will NOT be mixed with fracking fluids.
2. Drilling fluids will be water based.

As we discussed, you have an open invitation to make return visits to the site so that you may observe the work, but we ask that you arrange a time with us in advance. NNE will provide any records of a public nature, but may be restricted in providing information of a proprietary nature, but in any event will disclose any relevant test results directly to you as representative of the Morgantown Utility Board.

Sincerely,



Brett Loflin

Vice President, Regulatory Affairs  
Voice: 304.414.7063  
Email: [bloflin@nne-llc.com](mailto:bloflin@nne-llc.com)