



April 30, 2015

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Attn: Justin Nottingham

*Re: Comments on Draft Underground Injection Control Permits  
UIC2D0190460 & UIC2D0190508, Danny E. Webb Construction, Inc. North  
Hills #1 & #1-A Wells*

Dear Mr. Nottingham:

We, the undersigned organizations and individuals, write to provide comments on the above-referenced draft Underground Injection Control (UIC) permits proposed in Fayette County. Issuance of these permits raises serious concerns that have not been adequately addressed by the Department of Environmental Protection (DEP).

We urge DEP to deny the permits unless it can assure the public that the site will no longer pose a hazard to human health or the environment. If the DEP does decide to go forward with permit issuance, no permits may be legally issued until and unless DEP can (1) identify and address current contamination at the site, (2) include permit conditions to ensure that continued operations do not pose a risk to human health or state water resources, (3) modify the permits to bring them into compliance with other requirements of state and federal law and the DEP permit application package, and (4) institute measures to assure the public that the site will be actually managed in accordance with all applicable requirements.

There is evidence that operations at the site have led to the release of contaminants into the environment. DEP cannot authorize continued activity at the site until the source of the contamination has been identified, any further discharge into the environment is prevented, and remediation is properly completed. Additionally, the current draft permits are not sufficient to prevent the movement of contaminants into USDWs or surface waters. DEP must require

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additional information from the permittee and mandate safeguards that will ensure the protection of these water sources and prevent risks to human health. The draft permits also fail to meet other basic requirements of state and federal law and the DEP permit application package. If the permits are granted, they must be altered to adhere to the law and meet the minimum standard DEP's own permit application package requires. Moreover, the DEP must ensure that these requirements are met before the permits are issued – not afterwards, as the DEP proposes in certain instances. Finally, the applicant, Danny E. Webb Construction, Inc. (DEWCI) has a demonstrated history of non-compliance with legal requirements and DEP orders. DEP must not finalize the draft permits until it has developed a credible plan to ensure that all legal requirements are met, that compliance continues until the wells are properly plugged and abandoned, and that enforcement action is taken if violations occur.

**I. The DEP must identify the source of contamination at the site and ensure that it is remediated before finalizing these permits**

DEP has a duty under state and federal law to prevent contamination of state waters including both surface waters and underground sources of drinking water by unpermitted discharges.<sup>1</sup> A stream, which is a tributary of Wolf Creek runs adjacent to the DEWCI site. No discharge to the stream has been permitted. However, evidence indicates that oil and gas wastewater originating at the site is contaminating the creek. Therefore, DEP has a duty to identify the source of this contamination and ensure that it ceases before permitting further activities at the site.

Dr. Avner Vengosh, Professor of Geochemistry and Water Quality at Duke University's Nicholas School of the Environment collected two water samples from the stream, "approximately 200 feet directly downstream of the eastern discharge pit at Danny Webb injection site" on September 14, 2013.<sup>2</sup> Dr. Vengosh's analysis found that the sample "exceeded typical surface water quality parameters observed in streams in West Virginia (WV) with elevated levels of several dissolved constituents in water such as chloride, bromide, sodium,

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<sup>1</sup> See West Virginia Water Pollution Control Act, W. Va. Code § 22-11-1 *et seq.*; West Virginia Groundwater Protection Act, W. Va. Code § 22-12-1 *et seq.*; Clean Water Act 33 U.S.C. §1251 *et seq.*; Safe Drinking Water Act, 42 U.S.C. § 300f *et seq.*.

<sup>2</sup> See Declaration of Dr. Avner Vengosh (hereinafter *Vengosh Declaration*), ¶ 2, attached as Appendix 1.

manganese, strontium, and barium.”<sup>3</sup> Dr. Vengosh concluded that the “chemical profile of the water samples downstream of Danny Webb UIC leads me to the conclusion that the stream is impacted by contamination of oil and gas wastewater.”<sup>4</sup>

In its response to comments on permit UIC 2D0190460 from February 2014, the DEP asserts that “[i]t is a fact that the watershed is impacted.”<sup>5</sup> DEP notes that the Plateau Action Network (PAN) is managing the Wolf Creek Environmental Trust, (WCET) which was established to address “impacts from past activities within the watershed.” The primary impact to the Wolf Creek Watershed which spurred the creation of the WCET is acid mine drainage, especially from the Summerlee Gob Pile.<sup>6</sup> However, these pre-existing impacts do not appear to be the cause of the elevated levels of contaminants observed by Dr. Vengosh. Dr. Vengosh’s statement notes that:

*The elevated water quality parameters observed in the stream samples downstream of the Danny Webb UIC site are not consistent with the concept that the elevated contaminant levels of chloride, bromides and others originate from an acid mine drainage (AMD) source. Acid mine drainage originating from bituminous coal is typically characterized by high levels of iron and sulfate while the water samples have low contents of these elements. Instead, oil and gas wastewater is characterized by high content of chloride, bromide, strontium, and barium. This composition was observed in the two water samples, which suggest that surface water at wolf creek, downstream of the eastern discharge pit of the Danny Webb injection site originated from migration of oil and gas wastewater discharged into the environment.*<sup>7</sup>

There do not appear to be any unplugged oil and gas wells or other oil and gas facilities upstream of the DEWCI site on the DEP GIS Oil and Gas Dataviewer that might be causing oil and gas wastewater contamination in the stream. Therefore, it is likely that the source of contamination is the DEWCI site. DEP has a responsibility to determine the source of the contamination before permitting further activity.

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<sup>3</sup> *Id.* ¶ 4.

<sup>4</sup> *Id.* ¶ 9.

<sup>5</sup> Comment and Response to Comment, page 4, WV Dept. of Env'tl. Protection, February 6, 2014, attached as Appendix 2.

<sup>6</sup> See The Story of the Wolf Creek Environmental Trust, <http://plateauactionnetwork.org/wolf-creek-environmental-trust/> (noting that “The trust was created to invest and administer the Summerlee site; including helping pay/defray the long-term costs of treating the AMD.”) (last visited February 12, 2015).

<sup>7</sup> Vengosh Declaration, *supra* note 2, ¶ 4.

There is also other evidence that contamination is originating from the site. In a summary of its findings related to the site, the US Environmental Protection Agency noted that “EPA has reviewed results for chloride analysis from the required monitoring of Wolf Creek. These results indicate that the level of chloride in the creek has been elevated on at least one occasion and that higher levels of chloride have been observed in Wolf Creek downstream of the facility than in upstream tributaries.”<sup>8</sup> When combined with evidence that water contamination is likely from oil and gas wastewater and unlikely to have derived from an AMD source, this raises a strong inference that contamination is originating from oil and gas waste disposal operations at the site.

On February 6, 2014, DEP issued a permit for underground injection at the North Hills #1 well (UIC2D0190460). That permit contained a requirement that DEWCI close and reclaim the open pits at the site. As discussed in the comments submitted by NRDC and WVSORO on that permit application, the open pits were a hazard and had generated multiple complaints, including generating objectionable odors which gave rise to concerns of potential inhalation of hydrogen sulfide. We thank the DEP for requiring closure of the open pits.

However, closure of the pits does not allay concerns about water contamination that may be present. DEP appears to have taken the position that, to the extent that there was any contamination of the stream, it would be remedied by the closure of the pits. The 2014 DEP Response to Comments about water contamination focuses exclusively on the open pits which were formerly used at the site, indicating that DEP had determined that “there is no substantial evidence that the pits [are] leaking.” Yet, there are a number pathways by which water contamination could occur.

Unfortunately, there is evidence that contamination of the stream is ongoing. Sampling of the stream subsequent to pit closure indicates that the water contamination in the stream is still present. Samples were collected by the Plateau Action Network on January 6, 2015.<sup>9</sup> PAN collected one sample at approximately the same coordinates as the Duke samples were taken and

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<sup>8</sup> See Letter from Environmental Protection Agency Region III to Senator John D. Rockefeller IV, July 24, 2014, Enclosure A, attached as Appendix 3.

<sup>9</sup> See Statement of Levi Rose, attached as Appendix 4.

one at the Summerlee site (coordinates 38.003519" N, 81.157864" W) for comparison to an AMD source.<sup>10</sup>

The results of the water sampling collected by PAN (and analyzed by REI Consultants, Inc.) were reviewed by Lance Larson, Ph.D., a Science Fellow at NRDC. Dr. Larson concluded that the results of the sampling downstream of the DEWCI site on January 6, 2015, subsequent to pit closure, “continued to exhibit elevated contaminant levels and remained similar to the composition previously observed by researchers from Duke University.”<sup>11</sup> Dr. Larson also concluded that the data was “not consistent with elevated contaminant concentrations from AMD.” This evidence indicates that water contamination did not cease with the closure of the pits.

Dr. Larson also reviewed soil samples collected from the DEWCI site during the pit closure process on May 22, 2014.<sup>12</sup> According to the pit closure plan submitted by DEWCI, these samples were taken after the removal of all wastewater, the pit liner, and all soil that was being disposed of off-site.<sup>13</sup> One of these samples was designated “1-Pit Composite.” This composite sample was required by a Letter of Gene Smith dated April 4, 2014, and involved a representative sample of soil remaining on-site after the removal and disposal of “[a]ny visually impacted soil.”<sup>14</sup> This soil sample should thus provide a reasonably representative sample of soil remaining at the site after pit closure.

Dr. Larson compared the soil samples to EPA Ecological Screening Values. These values were developed by EPA “to determine if there is a need to conduct further investigations at the site” and exceedances of the values “may indicate the need for further evaluation of the potential ecological risks posed by the site.”<sup>15</sup> Dr. Larson noted that, when compared to the ecological screen values, the concentration of iron and manganese in all three samples exceeded EPA’s screen values. Additionally, the composite sample demonstrated “evidence of BTEX contamination,” showing elevated levels of ethylbenzene, toluene, and xylene (total). Sample

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<sup>10</sup> See *Id.* See also REI Consultants, Inc., Sampling Results (Jan. 13, 2015), attached to Larson Statement, Appendix 5 at Exhibit 2.

<sup>11</sup> See Statement of Lance Larson, Ph.D. (April 14, 2015) attached as Appendix 5.

<sup>12</sup> *Id.*

<sup>13</sup> See Waste Pit Closure and Reclamation Plan as Required by Compliance -13 Order No. 2014-UIC Section Eighteen (18) attached to Larson Statement, Appendix 5 at Exhibit 4.

<sup>14</sup> Letter of Gene Smith, Assistant Chief, Permitting (April 4, 2014), attached to Larson Statement, Appendix 5 at Exhibit 4.

<sup>15</sup> Larson Statement, *supra* note 11 at 4.

“2-Upper Pit” also showed elevated xylene (total). These values indicate that elevated contaminant levels in the soil remained after pit closure and that “further sampling and investigation into the contamination source, other reasonably expected contaminants not previously measured, and risk pathways” should be undertaken.

Additionally allegations have been made by Peter Halverson that, as a former employee of DEWCI, he was ordered to bury waste sludge from the facility.<sup>16</sup> DEP should follow up on the evidence of soil and water contamination and these allegations (including conducting soil tests at the location the sludge was allegedly buried) in order to determine whether one or more existing sources of contamination exist.

DEP appears to simply be assuming that any water contamination that was occurring previously has ceased because of the closure of these pits. Unfortunately, the testing conducted by PAN indicates that the stream contamination was present on January 6, 2015, a significant time after the pits were closed. As discussed above, the contamination of the stream is consistent with contaminant levels in the Duke samples and indicates that oil and gas wastewater was still entering the stream in January 2015. Moreover, there is evidence that elevated levels of contaminants were present in soil that was left at the site after the pits were filled. Unfortunately, the DEP has not investigated the source of any of these contaminants to determine what activities may have led to their presence in soil or water or to ensure that contamination is not ongoing. Nor has the DEP determined whether groundwater may also be impacted.

Unless DEP has clear evidence that the underground injection activities at the site are in no way linked to the contamination of the stream, it is irresponsible and contrary to DEP’s legal duties to issue a permit to continue the underground injection of oil and gas wastewater at this site. Rather, it is DEP’s duty to identify the cause of this contamination and ensure that it is remediated and causes no further damage to state resources before any further permits are issued. DEP should take soil and groundwater samples in the area to determine the extent of the contamination and its potential source(s). DEP has not determined what aspect of the operations at the DEWCI site led to water contamination nor acted to prevent any ongoing discharge. DEP cannot legally permit further activities where there is evidence that some aspect of those

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<sup>16</sup> See video at <http://player.vimeo.com/video/105513941>. Mr. Halverson appears from the 10:05 until the 11:56 minute marks in the video. The allegation concerning burying sludge appears at approximately the 11:10 mark.

activities is causing harm to state surface waters and could also be impacting groundwater at the site.

## **II. The draft permits are not adequate to ensure the safety of the public or to prevent damage to state water resources**

The draft permits, as currently written, are inadequate to prevent damage to state water resources and risks to human health. The DEP has a duty under the West Virginia Water Pollution Control Act and the federal Clean Water Act to prevent discharges to surface waters except in compliance with a permit. *See* W. Va. Code §§ 22-11-2, 22-11-4, 22-11-8; 33 U.S.C. § 1342; *see also* 35 CSR 4-7.2. No permit for a discharge to surface water has been issued for this site. State and federal laws also prohibit underground injection which endangers drinking water sources. *See* W. Va. Code § 22-12-1 *et seq.*; 47 CSR 13-13.1; 42 U.S.C. §§ 300h, 300h-4.

State rules also require that no underground injection activity cause or allow the movement of fluid containing any contaminant into underground sources of drinking water such that drinking water standards are not met or any adverse health effects occur. 47 CSR 13-13.1.b. The burden of showing that these requirements are met falls on the permit applicant. *Id.* The DEP cannot issue these permits unless this showing is made. Here, DEWCI has provided no evidence to show that underground sources of drinking water are not being contaminated. Moreover there is evidence that oil and gas contaminants are entering surface water adjacent to the site. This raises the strong possibility that these contaminants are present in hydrologically-connected groundwater at the site. However, even if the DEP were to determine that underground injection activities are not currently contaminating underground sources of drinking water, the permit provisions are inadequate to ensure protection of these resources.

### ***Failure to identify all underground sources of drinking water***

As part of every permit, the Director must identify and protect all aquifers or parts of aquifers which meet the definition of an “underground source of drinking water.” 47 CSR 13-13.22.a. An aquifer or portion of an aquifer is an underground source of drinking water (USDW) if it supplies any public water system, or if it contains a sufficient quantity of water to supply such a system and either currently supplies drinking water or contains fewer than 10,000 mg/L

total dissolved solids (TDS). If an aquifer qualifies as a USDW and is not exempted under procedures in the federal Safe Drinking Water Act, it must be protected by DEP.

Identification of USDWs is the first step in ensuring their protection. This is one reason why the DEP's UIC Permit Application Package for Class 2 & 3 Wells ("UIC Application") requires a detailed well schematic listing the depths of all known USDWs.<sup>17</sup> Unfortunately, this basic requirement was not fulfilled and the permits fail to list all sources of drinking water, in violation of 47 CSR 13-13.22.a.

The well schematic provided in the 2D0190460 permit application lists USDWs at 20, 50, 60, and 206 feet. No information is provided concerning whether the depths reported are the top or bottom of the interval at which water is present. Notably, the well schematic in the 2D0190508 permit application lists USDWs at precisely the same depths. This is an indication that DEWCI has not taken care in its duty to identify all USDWs and has not provided well-specific information with each permit application.

Additionally, other available information indicates that additional USDWs were not included on the application. The completion report for the North Hills #1 well (2D0190460) lists water at 1022 feet.<sup>18</sup> No information is included to indicate why this aquifer was not included as a USDW. Appendix A in the application lists water at this depth as "Salt" with no reason to believe that this is the case, given that nothing in the completion report or other records is provided to substantiate this claim. The North Hills #1-A (2D0190508) completion report lists water at a depth of 500 feet.<sup>19</sup> While this water is listed as "salt" in the completion report, no indication is given to indicate its salt content. Excluding this stratum from a list of USDWs would only be acceptable based on evidence showing that the TDS content exceeds 10,000 mg/L. None has been provided.

The North Hills #1 completion report notes that the drillers "Hit aband coal mine" between 600 and 650 feet. Likewise, the completion report for the #1-A well notes "open mines" from 635-637 feet. These open coal mines almost certainly correspond with the Sewell coal seam, part of the New River Formation. Using the WV Geological & Economic Survey's online tool, "Coal Bed Mapping Project" (CBMP), the overburden above the Sewell Coal seam

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<sup>17</sup> See West Virginia Department of Environmental Protection, Underground Injection Control (UIC) Permit Application Package Class 2 & 3 at sections 6.2 & 7.3 available at <http://www.dep.wv.gov/oil-and-gas/GI/Forms/Documents/UIC%20APPLICATION%20PACKAGE%2006-25-2014.pdf>.

<sup>18</sup> See Well Operator's Report, 47-019-460 (Jan. 26, 1982) at page 2, attached as Appendix 6.

<sup>19</sup> See Well Operator's Report, 47-019-508 (Mar. 21, 1986) at page 1, attached as Appendix 7.



is listed as 634.9 feet with a 3.9 foot thickness at the approximate location of the North Hills #1 well (2D0190460) and 644.7 feet with a 3.5 foot thickness at the approximate location of the North Hills #1-A well (2D0190508).<sup>20</sup> Using the CBMP's mapping of coal mines in the area, it is also clear that the North Hills #1-A well passes through the Summerlee underground mine, which targeted the Sewell seam.<sup>21</sup> While the CBMP shows the North Hills #1 well as being just outside the boundaries of the Summerlee mine, it is likely that this is either due to imprecisions in the mapping of the mine or to the well shaft not being perfectly vertical or a combination of these factors, given that a mine was noted on the completion report at this depth.<sup>22</sup>

There is strong evidence that these coal mines qualify as USDWs. The West Virginia Mine Pool Atlas, developed by the West Virginia Geological and Economic Survey, was the result of "a two-year study funded by the West Virginia Department of Environmental Protection (WVDEP) to evaluate abandoned coal mines as potential groundwater sources."<sup>23</sup> The Atlas "addressed the potential for large volumes of groundwater storage based on mine void volume, was designed to facilitate prospecting for large volumes of water by identifying underground coal mines that have the potential to store large quantities of groundwater, especially those mines that are located below or near drainage."<sup>24</sup>

In regards to the Sewell coal seam, the Mine Pool Atlas notes: "This seam has been mined by underground methods in McDowell, Wyoming, Raleigh, Fayette, Nicholas, Greenbrier, and Webster counties. The large mines in the Sewell, especially the ones below drainage, offer high potential for supplying water resources."<sup>25</sup> The Mine Pool Atlas lists the Summerlee mine

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<sup>20</sup> See screenshots from CBMP site, attached as Appendix 8. Note that latitude and longitude were referenced from permit applications, but the accuracy of the coordinates cited in the permit applications appeared to be different than actual well head locations. Instead pg. 12 of the permit application for UIC2D01900460 was used to identify the location for well #1, and pg. 19 of the permit application for UIC2D01900508 was used to identify the location for well # 1A. Well head locations were selected using the imagery basemap in CMBP as reference.

<sup>21</sup> See screenshot from CBMP site with coal mines and well locations marked, attached as Appendix 9. See previous footnote regarding placement of wells.

<sup>22</sup> The West Virginia Mine Pool Atlas, developed by the West Virginia Geological & Economic Survey, specifically notes that "mine locations should be considered approximate" and lists a number of reasons why CBMP mine locations may differ from the actual extent of mining, including variable mine map quality, photographic reduction of dimensionally unstable paper copies, distortion of maps during the photographic reduction process, and the fact that not all mining has been documented on maps. See *infra*, footnote 23 at page iv.

<sup>23</sup> See W. Va. Geological & Economic Survey, West Virginia Mine Pool Atlas, page ii (May 2012) available at <http://www.dep.wv.gov/WWE/wateruse/Documents/MinePoolAtlas.pdf> and attached as Appendix 10.

<sup>24</sup> *Id.*

<sup>25</sup> *Id.* at 13.

as potentially storing 3.79 billion gallons of groundwater and the connected Lochgelly mine as potentially storing another 3.69 billion gallons.<sup>26</sup> Both mines are listed as being below drainage.<sup>27</sup> However, these probable USDWs are not listed on either application nor in the permits.

### ***Coal Mine Voids***

In addition to the likelihood that they constitute USDWs which were not included in the application or permit, the coal mine voids raise larger questions. The well schematic for the North Hills #1 well (2D0190460) indicates that the bottom of the 9 5/8" casing is set at 648 feet. The end of the casing is therefore very close to, or even potentially in, a coal mine void and could compromise well integrity. This matter should be investigated to determine if the casing is protective of groundwater. Coal mine voids also provide potential pathways to shallower groundwater strata and the surface that could potentially provide a route for contamination of other USDWs or surface water.

The mine voids also raise questions about whether the cementing of the well was adequate. The completion reports provide no indication whether returns to surface were actually observed or if they were assumed based on volume of cement used. It is possible that significant volumes of cement could have been lost in the mine voids during the cementing process and that the cement may not be present at higher strata to protect groundwater.

### **III. The draft permits are not in accordance with other requirements of state and federal law and the DEP's permit application package**

Numerous aspects of the permit fail to comply with legal requirements and the DEP's application package. First, West Virginia regulations state that "The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and the State Act and is grounds for enforcement action; for permit suspension or revocation, revocation and reissuance, or modification; or for denial of a permit renewal application." 47 CSR 13-13.12.a (emphasis added). Notably, the permits' conditions read almost identically, but appear to indicate that permit noncompliance does not necessarily constitute a violation and that

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<sup>26</sup> *Id.* at Appendix B, page B-2.

<sup>27</sup> *Id.*

enforcement action may be optional. The permit provisions state that “[a]ny permit noncompliance may constitute a violation and be grounds for enforcement action.” See Draft Permits at Part I, section H.1. This is in direct contradiction to state regulations. DEP must recognize that it has a duty to take enforcement action for all noncompliance and should not indicate otherwise to the permittee.

The draft permits incorrectly indicate to the operator that all records must only be maintained for three years “from the date of the sample, measurement, report or application.” Draft Permits Part II, section A.1. The permits further direct the permittee to retain records in accordance with 47 CSR 13-13.12.j.2. Draft Permits Part II, section A.2. However, the sections on records are missing multiple important requirements of state law. First, state law requires that “the permittee shall retain all records concerning the nature and composition of injected fluids until three (3) years after completion of any plugging and abandonment procedures.” 47 CSR 13-13.6.b (emphasis added). This requirement does not appear in the permits and in its absence, the permittee is given the impression that records regarding the nature and composition of injected fluids may be disposed of prior to plugging and abandonment. Additionally, state law requires that “[r]ecords of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The individual(s) who performed the sampling or measurements;
- The date(s) analysis(es) were performed;
- The individual(s) who performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses.

These requirements should be included in all permits in order to ensure that the operator is aware of the requirements, but especially here where the operator has failed to include listed information in the water sampling results provided for many years. For instance, locations where samples were taken are often inexact (e.g. upstream, downstream, midstream), and the time of sampling and individual who performed the sampling are rarely included. The DEP should take action to require all of this information for all sampling results provided in the future starting by including the requirement in any permits.

The draft permits also allow the operator thirty days *after* the permits are granted to complete the most basic site security measure – fencing the facility. WV DEP has a

responsibility to ensure that the requirements of the law and its application package are met *before* granting a permit, rather than allowing continued operation without adequate security measures in place. Moreover, given the operator's history of non-compliance and the DEP's failure to pursue permit violations in the past, requiring compliance before permit approval is certainly appropriate in this case and would provide assurance to the community that site security will actually be achieved on a timely basis.

West Virginia regulations require “evidence of financial responsibility []by submission of a surety bond, or other adequate assurance, such as a financial statement.” 47 CSR 13-13.7.g (emphasis added). Neither application provides evidence of a surety bond nor that DEWCI maintains financial resources to properly plug and abandon the wells according to the plan set forth in the application. DEWCI has simply provided a declaration, by its representative, that sufficient financial resources will be maintained. However, the rules require actual evidence of the financial responsibility of the operating company, which is not provided. The rules call for evidence rather than a declaration or affidavit (which are required by the rules in other circumstances, for example 47 CSR 13-13.23.b and c). The DEP cannot and should not accept a simple declaration that financial responsibility is in place and will be so in the future. The rules are motivated, in part, by the significant problem represented by abandoned wells. In 2012, the West Virginia Legislative Auditor found that there were approximately 13,000 abandoned oil and gas wells in the state and that the number was increasing, noting that “the potential health risk to the public increases as does the State's potential financial liability to plug abandoned and potentially hazardous wells.”<sup>28</sup> This serious problem can only be exacerbated by a policy which skirts the intention of the rules to require actual evidence of financial responsibility. DEP must require the applicant to provide adequate evidence of financial responsibility before a permit is issued.

The DEP Application Package requires a list of wells serviced by the injection well.<sup>29</sup> The application package also requires the applicant to provide information on the “physical and chemical characteristics of the injection fluid,” including information on a range of analytes.<sup>30</sup> The applications both include a list of the same 26 wells that the applicant claims is the full list

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<sup>28</sup> West Va. Legislative Auditor, *Agency Review: Office of Oil and Gas, Dept. of Envntl. Protection* at pages 7-8, 12 (Sept. 2012) (attached as Appendix 11).

<sup>29</sup> See UIC Permit Application Package, *supra* note 17, at Section 9.2 and Appendix G.

<sup>30</sup> See *Id.* at 9.3.

of wells from which fluids originate.<sup>31</sup> While it is impossible to say for sure because many of the lab reports in the applications do not provide a clear, unambiguous indication of what has been sampled, it appears that full laboratory data (including analysis for all required parameters, including NORM) has only been provided in the UIC applications for the brine from a single production well. This is a clear failure to comply with the requirements of the Application Package. Clearly, data on the fluid from one well does not provide representative information about the likely injectate as a whole.

The data that is provided is from the Armstrong-Reynolds 4HM, a well listed in the DEP Office of Oil and Gas public database as having API#: 091-01280 and being operated by PDC Mountaineer, LLC.<sup>32</sup> Tellingly, however, this well does not appear on the list of wells from which fluids originate provided in each permit as Appendix G, indicating that it was likely omitted from the list. The absence from the list of the one well for which full fluid analysis is provided raises serious questions about whether there are many wells from which DEWCI is accepting brine but which are not included in the applications. Alternatively, if DEWCI is not actually accepting fluid from the Armstrong-Reynolds 4HM well, it raises further questions about why the only data on injectate provided for all required parameters is from an unrelated well.

Moreover, the levels of radium present in the fluids from the Armstrong-Reynolds 4HM well are extremely high. The lab report provided by DEWCI indicates that Radium-226 and Radium-228 levels were measured to be  $3,148.2 \pm 546.8$  pCi/L and  $179.3 \pm 44.5$  pCi/L respectively. These levels compare to a maximum contaminant level (MCL) for drinking water of 5 pCi/L for combined Radium-226/-228. Likewise, barium levels in the fluids from the Armstrong-Reynolds 4HM well are very high at 684 mg/L. These fluids clearly pose a risk if handled improperly or if the integrity of either of the injection wells (or other associated equipment, including the pipeline at the site, tanks, etc.) is compromised. The DEP must not issue the permits while questions remain about whether these fluids could contaminate state surface or groundwater resources.

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<sup>31</sup> See UIC2D0190460 permit application at Appendix G; UIC2D0190508 permit application at Appendix G.

<sup>32</sup> See W. Va. DEP Office of Oil & Gas – Search, go to [https://apps.dep.wv.gov/oog/wellsearch\\_new.cfm](https://apps.dep.wv.gov/oog/wellsearch_new.cfm), enter API number 091-01280, press “search” button.

**IV. DEWCI has a history of serious violations. The DEP should not issue the permits unless it develops permit conditions to ensure ongoing compliance**

The Department of Environmental Protection should not issue a UIC permit to DEWCI because of the operator's significant history of non-compliance. These violations are of a very serious nature and a number are classified in EPA guidance as Level I violations with potential for significant environmental contamination.<sup>33</sup>

West Virginia law requires that a permit be denied if the Director determines that that applicant has committed a substantial violation of a previously issued permit and has failed to abate or seek review of the violation in the time prescribed by the Director. W. Va. Code § 22-6-6(h). In this case, the Director of the DEP has failed to make such a determination, despite multiple clear and substantial violations of law by the operator.

While we oppose issuance of the permit because the operator has not shown a commitment to managing the site in ways that are protective of health and the environment, if the DEP does issue such a permit, it must ensure ongoing compliance with the permit and state and federal laws. Because of the operator's history and DEP's apparent inability or unwillingness to take enforcement action even where violations have been readily apparent, if the permit is issued, it should include additional safeguards to require immediate enforcement action and strict penalties for noncompliance. Such additional conditions are mandated by state regulations, which require that "the Director shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of the SDWA and State Act and rules." 47 CSR 13-13.7.

***DEWCI's record of non-compliance***

In 2004, the DEP received multiple complaints of a foul odor emanating from open pits that DEWCI was using to store waste fluids. The sulphurous odors reported by residents raise the concern that the odors were due to hydrogen sulfide, a poisonous and flammable gas. At low concentrations, exposure to hydrogen sulfide gas can cause irritation of the eyes and throat, shortness of breath, and nausea, while at higher concentrations exposure may cause "nearly

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<sup>33</sup> See EPA, *Underground Injection Control Program Guidance #77: Operating, Monitoring and Reporting Guidelines for Class IID Commercial Salt Water Disposal Wells*, (Jun. 22, 1992) available at [http://www.epa.gov/ogwdw/uic/pdfs/guidance/guide-memo\\_guidance-77\\_op\\_mon\\_rept\\_guid\\_class2d\\_1992.pdf](http://www.epa.gov/ogwdw/uic/pdfs/guidance/guide-memo_guidance-77_op_mon_rept_guid_class2d_1992.pdf).

instant death.”<sup>34</sup> The DEP’s investigation did not determine whether the odors had been due to hydrogen sulfide or another toxic substance.

The DEP found that the problem had been due to an error by a truck driver, who had discharged fluids into one of the pits rather than into a closed container, thus allowing vapors to escape into the atmosphere.<sup>35</sup> Based on ongoing odor complaints, DEP required Danny Webb Construction, Inc. to: (1) cease transporting fluids from the company (Bobcat Oil and Gas) that had produced the waste giving rise to the problems, (2) cease using the open pit at the site until further notice, (3) empty the pit, wash the liner, and dispose of all rinsate and residue in a tank or down the disposal well, (4) complete construction of a fence around the pit at the disposal well site, (5) conduct training and instruction to all truck drivers and operators at the site to ensure proper assessment and handling of fluids.<sup>36</sup>

Of these requirements, there is only evidence in the record to demonstrate that #4 was timely completed. There is some evidence that others were completed only much later, well after the requirements had been imposed. For instance, despite the order to stop accepting waste from Bobcat Oil and Gas in May 2004, there is a letter in the well files from Danny Webb Construction, Inc. to Bobcat Oil and Gas dated March 8, 2007, almost three years later, stating that DEWCI had “elected not to transport” further water from the company. The letter notes that DEWCI had already transported and accepted wastewater from Bobcat twice that year, apparently violating the DEP order. A note from a DEP staffer indicates that a worker training was conducted in 2008, approximately four years after the order was issued, and after a 2007 permit requirement which also insisted that the staff be trained. We have found no evidence that DEWCI complied with the order to clean the pit or cease using it, until the pits were closed last year, eleven years after the order was issued. The failure to remedy problems with the pit would be a serious violation, given the potential toxicity of oil and gas waste fluids. It is also unclear as to whether there was more than one pit in operation at the time of the order and, if so, why the order only addressed one of them.

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<sup>34</sup> See Occupational Health and Safety Administration, Hydrogen Sulfide Hazards, <https://www.osha.gov/SLTC/hydrogensulfide/hazards.html>.

<sup>35</sup> See Michael W. Lewis, UIC Program Director, West Virginia Department of Environmental Protection, *Investigation Report and Findings: Danny Webb Construction (North Hills No. #3 Disposal Well)* (May 20, 2004).

<sup>36</sup> See *Id.*

On January 5, 2007, DEP issued a notice of violation to DEWCI, noting that the company had not “follow[ed] the conditions of the permit” including failures to install culverts, a ditch line, and sediment control measures.

On March 12, 2007, a complaint was filed with the DEP Office of Oil and Gas by local resident Cindy Keenan. The complaint noted that there was a “bad smell all through Lochgelly” and that the odor “happens every year.”<sup>37</sup> There is no evidence in the file that any further action was taken by DEP.

In May of 2007, Danny Webb Construction, Inc. applied for a UIC permit renewal. DEP received numerous comments from local residents expressing opposition to the renewal of the permit, including from the Fayette County Health Officer. Many concerns were raised by the residents, including a significant number which mentioned ongoing problems with noxious odors. In addition, the DEP received a communication from an Underground Storage Tank Inspector noting that Mr. Webb had provided the inspector with conflicting stories about the activities at the site.<sup>38</sup> Despite these problems and concerns, DEP issued a renewed permit on October 25, 2007.<sup>39</sup> Among other requirements, the permit mandated that the permittee: (1) provide for security at the injection facility, including providing a locked gate and instructing all drivers to close and lock it if a Webb employee is not at the facility (2) conduct training and instruction to all truck drivers and operators at the site to ensure proper assessment and handling of fluids, and (3) have pit fluids pumped into the tank battery and have the pits permanently backfilled and their use discontinued. Danny Webb Construction, Inc. did not appeal the imposition of these requirements in the permit.

On May 8, 2008, DEWCI was cited for underground injection without a permit into the UIC2D0190508 well. On May 12, 2008, DEWCI was cited for failure to pump the fluid in the pits into tanks and close the pits within six months of permit issuance. On June 3, 2008, DEP personnel conducted another inspection and found that the UIC2D0190508 well was still being operated without a permit.<sup>40</sup>

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<sup>37</sup> See Complaint Information Form – Complaint of Cindy Keenan (March 12, 2007), attached as Appendix 12.

<sup>38</sup> See Email from Rindy Clayton to Penny Harris (Sept. 11, 2007, 3:40pm) “Danny Webb at former Cook Motor Lines site off Lochgelly Rd.” (noting that Mr. Webb had first indicated that a mixture of saltwater and diesel that had been in the underground storage tank had been pumped into the UIC well but later “changed his tune” saying it had not – the inspector concluded based on this and other interactions with Mr. Webb that he was “NOT TO BE TRUSTED”) (emphasis in original), attached as Appendix 13.

<sup>39</sup> UIC Permit No. UIC2D0190460 (Oct. 25, 2007).

<sup>40</sup> See West Virginia Department of Environmental Protection, Consent Order No. 2008-6 at 1 (June 16, 2008).



Despite a longstanding pattern of noncompliance by DEWCI, on November 6, 2008, the DEP reversed its position and issued an order allowing DEWCI to keep the pits in operation, “so long as they contain only fluids and do not cause objectionable odors off-site.”<sup>41</sup> Unfortunately, local residents continued to report offensive odors from the site in the coming years. For instance, in March 2013, Mr. Brad Keenan, a signatory to these comments and the owner of a neighboring property, sent a comment letter to DEP indicating that there were noxious odors at the site.<sup>42</sup> And at the June 4, 2013 public hearing on permit UIC2D0190460, Mr. Jerry Cook reported that he has experienced a “foul odor” associated with the site which had been strong enough that he was prevented from using the porch outside his house.<sup>43</sup>

The November 6, 2008 order also requires DEWCI to sample (1) the stream adjacent to the pits twice a year, (2) the stream downgrade of the pits twice a year, and (3) the fluid in the pits simultaneously with the stream sampling. The order provides a list of parameters for which each sample must be analyzed. The order provides for a \$2,500 per day stipulated penalty if any action remains incomplete. However, according to evidence in the record, DEWCI has not complied with the sampling requirements of the order in any year since the issuance of the order.

Contrary to statements of DEP staff, these failures are not merely due to variations in the time between sampling which result in the failure to have taken samples twice during each calendar year.<sup>44</sup> For instance, no sampling appears to have taken place in any of the three locations between December 2010 and December 2011. Additionally, sampling in the pits appears not to have occurred in 2010 or 2011. Nor have we found any evidence in the record that DEWCI took any samples in accordance with the order in 2013, and only a single sample appears to have been taken at each location in 2014. Additionally, the sampling that was conducted is frequently missing analysis of one or more parameters that DEP required to be reported under the order. Problems with the sample collection and preservation techniques are also apparent, calling the integrity of the results into question. For instance, multiple samples

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<sup>41</sup> See West Virginia Department of Environmental Protection, Consent Order No. 2008-15 at 1 (November 6, 2008).

<sup>42</sup> Letter of Brad Keenan to Mr. James Martin (March 2013) attached as Appendix 14.

<sup>43</sup> See Hearing Transcript: Danny Webb Construction UIC Permit Renewal, page 51 (June 4, 2013).

<sup>44</sup> See Testimony of Jamie Peterson, Transcript of Environmental Quality Board Hearing, pages 58-60 (June 12, 2014). Mr. Peterson stated that “[The sampling] should be twice a year, but the order doesn’t specifically spell out months to sample. So sometimes the spacing between samples is wider than other times.” However, Mr. Peterson took the position with respect to each of the three sampling requirements that the date issue was the only non-compliance.

failed to meet the arrival temperature range required by the certified lab during the exchange of the samples as verified on the chain of custody.

Unfortunately, there is no evidence that DEP has taken any action to enforce the testing requirements or ensure that the sampling procedures provide valid and reliable data. This runs contrary to the DEP's statement, in its February 2014 response to comments on permit 2D0190460 that "failure to properly monitor or sample would be a violation of the order that would be addressed by the agency."<sup>45</sup>

On September 23, 2010, DEP issued another notice of violation to DEWCI, this time because used oil not associated with produced fluids was observed within the pits. DEWCI was ordered to replace the pit liners. It is not clear if this was ever done.

Almost two and a half years later, on March 29, 2013 staff members from the Office of Oil and Gas conducted an inspection and found that the "primary liner within the pit system has been compromised" noting "small holes" and "some tears" were observed in the liner. In addition, it was noted that DEWCI representatives were improperly loading and unloading fluids at a location next to the pits rather than using the concrete unloading pad which was designed for that purpose. It was also found that a pipe ran to the pits from the catch pans below the injection pumps and other equipment at the site. Thus, oil and grease drippings were being routed to the pit system and eventually to the injection well, indicating that DEWCI had been injecting unauthorized fluids. The inspector also found that secondary containment for the used oil tank at the site was inadequate and that multiple containment structures had holes or cracking in them and needed to be resealed. Each of these issues constitutes a serious violation which could endanger water resources. Yet, despite these numerous issues, there is no evidence that a notice of violation was issued for any of the problems found during the inspection.

On January 13, 2014, a Notice of Violation was issued for failure to demonstrate mechanical integrity of the 2D0190508 well within 5 years.<sup>46</sup> On February 27, 2014, two more violation notices were issued, the first for failure to have "appropriate containment and or diversionary structures or equipment to prevent discharge oil or other pollutants from reaching the waters of the [] state"<sup>47</sup> and the second for failure to adhere to the requirement that "all pit

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<sup>45</sup> Comment and Response to Comment, page 4, WV Dept. of Env'tl. Protection, February 6, 2014, *supra* note 5, attached as Appendix 2.

<sup>46</sup> See DEP Notice of Violation 8956 (January 13, 2014).

<sup>47</sup> See DEP Notice of Violation 8987 (February 27, 2014).

and impoundments shall be constructed and maintained so as to prevent seepage, leakage or overflows and to maintain their integrity.”<sup>48</sup>

There have also been very serious allegations by Peter Halverson, who has stated that when he was an employee of DEWCI, (1) he was ordered to bypass the filters and pump material directly into the well,<sup>49</sup> (2) that rather than properly replacing an old pit liner, the company simply put a new one on top, without removing the sludge contained in the original,<sup>50</sup> and (3) he was ordered to bury waste sludge from the facility onsite, as discussed in Section I of these comments.<sup>51</sup> If these allegations are true, the actions of DEWCI would likely constitute criminal activity and would certainly endanger state surface and groundwater sources. The DEP should properly investigate these allegations and use the full extent of its authority to impose civil and criminal penalties if it finds the allegations to be true.

Finally, DEWCI has been operating the two wells without permits since the expiration of the previous permits. While DEP purported to authorize injection activities at the North Hills #1 well (2D0190460) by rule, the Environmental Quality Board recently ruled that the regulations were “not enacted to allow operations to fluctuate into and out of permit cycles and operate ‘by rule’ during the unpermitted times.” Final Order, EQB Appeal No. 14-04-EQB at 6 (Apr. 8, 2015). Therefore the EQB found that “permitting Danny Webb Construction to operate with a permit under these facts is inconsistent with the law.” *Id.* at 5. However, even before the illegal order and before a permit was issued for the North Hills #1 well on February 6, 2014, injection was occurring without a permit at the well.<sup>52</sup>

Injection without a permit also occurred at the North Hills #1-A well (2D0190508). The permit for that well expired on November 7, 2013. Injection also occurred at this well after the permit’s expiration and before the DEP purported to authorize injection by rule.<sup>53</sup> Such injection is a violation of state and federal law and the DEP should have issued violations for this

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<sup>48</sup> See DEP Notice of Violation 8988 (February 27, 2014).

<sup>49</sup> See video at <http://player.vimeo.com/video/105513941> at 11:30 mark.

<sup>50</sup> See Hearing Transcript: Danny Webb Construction UIC Permit Renewal, page 36 (June 4, 2013). Mr. Halverson’s stated “. . . Danny told me what I was supposed to do. Now if it’s starting to seep close to the creek, they just put in a new liner. New liners in, they want to know where are the old liner is, it’s underneath the new one with all that black sludge.”

<sup>51</sup> See footnote 16 and accompanying text.

<sup>52</sup> See, e.g., WR-40 Injection Record for 2D0190460 well, January 2014 (showing 4,716 barrels of fluid injected during the month and certified as correct by Danny E. Webb) attached as Appendix 15.

<sup>53</sup> See, e.g., WR-40 Injection Record for 2D0190508 well, January 2014 (showing 3,874 barrels of fluid injected during the month and certified as correct by Danny E. Webb) attached as Appendix 16.

activity.<sup>54</sup> These violations are clearly demonstrated by injection records in DEP files and certified by Danny E. Webb as true and correct.

Unfortunately, the DEP has instead downplayed the number and severity of the violations at this site. In its February 2014 response to comments on Permit 2D0190460, the DEP stated that “Over the past eleven years there has only been two violations issued to this operator pursuant to this permit. This in itself does not indicate a chronic offender or skirting of the regulations.”<sup>55</sup> First, at least seven violations have been issued at the site, at least five of which had been issued before this statement was made. And whether the DEP issued particular violations “pursuant to [the UIC2D0190460] permit” is not directly relevant to the operator’s overall record of compliance. More importantly, given the laundry list of problems with the site that is enumerated above, many of which are clear violations of the law and are documented in DEP inspection reports, the fact that the DEP has issued only a small number of violations is only reflective of a failure by the agency to enforce the law.

The failure by DEP to issue violations also runs counter to state regulations, which require the inclusion of a permit condition stating that “[a]ny permit noncompliance constitutes a violation of the SDWA and the State Act and is grounds for enforcement action; for permit suspension or revocation, revocation and reissuance, or modification; or for denial of a permit renewal application.” 47 CSR 13-13.12.a. These rules clearly indicate that DEP can deny a permit renewal for noncompliance. Further, the intent is clearly to ensure compliance with state rules and permit provisions and to indicate DEP’s duty of enforcement. Given DEWCI’s

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<sup>54</sup> West Virginia regulations do not allow continued operation unless the applicant has obtained a new permit prior to the expiration of the previous permit. *See* CSR 47-13-13.12.b (“If the permittee wishes to continue activity regulated by this permit after the expiration date of this permit, the permittee must apply for *and obtain* a new permit.”) (emphasis added). Federal law allows state-issued UIC permits to continue in effect after expiration only if (1) the permittee has submitted a complete and timely application for a new permit, (2) through no fault of the permittee the new permit is not issued with an effective date on or before the previous permit’s expiration, and (3) state law allows for a UIC permit to continue in effect until the effective date of a new permit. None of the three requirements were met here. State law does not allow the continuation, as noted above. And complete permit applications were not received for either permit before the expiration of the previous permit, so neither of the first two requirements are met. *See* W. Va. Dep’t of Env’tl. Prot. UIC Permit Database (listing the date on which permit 2D0190460 expired as October 25, 2012, and the date on which a renewal application was received as January 3, 2013) attached as Appendix 17; *Id.* (listing the date on which state permit 2D0190508 expired as November 7, 2013 and the date on which the permit application was deemed administratively complete as June 5, 2014); *see also* Email of James Peterson to Matthew McFeeley, December 18, 2013 (indicating that the renewal application for permit 2D0190508 was not complete and stating “I can send you what I have on that renewal. Operator still owes me info”) attached as Appendix 18.

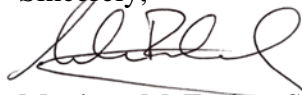
<sup>55</sup> Comment and Response to Comment, page 3, WV Dept. of Env’tl. Protection, February 6, 2014, *supra* note 5, attached as Appendix 2.

repeated failures to comply with state and federal law, rules, and permit conditions, the DEP should not issue the permits, or at minimum, must include additional conditions to ensure future compliance and to mandate strict penalties in the event of any future violations.

**V. Conclusion**

Given the history of problems at the site and indications that activities associated with the site continue to pose environmental and health risks, the DEP should deny the permits unless and until it can assure the public that the site does not pose a hazard. If the DEP does determine that the site can operate in a manner that is protective of health and the environment, it must reissue drafts which address the many issues raised above. In the meantime, the DEP must shut down activities at site rather than allowing unauthorized injection to occur and a hazardous situation to continue. Thank you for your consideration of these comments.

Sincerely,



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## Appendix List

- Appendix 1- Declaration of Dr. Avner Vengosh, August 26, 2014, and attached stream sampling data for samples collected on September 14, 2013.
- Appendix 2- Response to Comment on permit UIC 2D0190460, February 6, 2014, by West Virginia Department of Environmental Protection.
- Appendix 3- Letter from Environmental Protection Agency Region III to Senator John D. Rockefeller IV, July 24, 2014, and enclosures, regarding injection wells in Lochgelly, West Virginia.
- Appendix 4- Statement of Levi Rose, April 14, 2015, and attached exhibits, regarding water sampling conducted January 6, 2015.
- Appendix 5- Statement of Lance Larson, Ph.D., April 14, 2015, and attached exhibits, regarding results of January 6, 2015 water samples taken downstream of the DEWCI site and May 22, 2014 soil samples taken at DEWCI site.
- Appendix 6- Well Operator's Report, 47-019-460 (Jan. 26, 1982) for completion of North Hills #1 well.
- Appendix 7- Well Operator's Report, 47-019-508 (Mar. 21, 1986) for completion of North Hills #1-A well.
- Appendix 8- Coal Bed Mapping Project screenshots of DEWCI well locations providing data on Sewell Coal from West Virginia Geological & Economic Survey, captured on April 23, 2015.
- Appendix 9- Coal Bed Mapping Project with superimposed well locations providing data on location and extent of coal mines in area of DEWCI site, from West Virginia Geological & Economic Survey, captured on April 23, 2015.
- Appendix 10- West Virginia Geological & Economic Survey, West Virginia Mine Pool Atlas (May 2012).
- Appendix 11- West Virginia Legislative Auditor, Agency Review: Office of Oil and Gas, Department of Environmental Protection, PE 12-10-523 (September 2012).
- Appendix 12- Complaint Information Form – Form C1: Complaint of Cindy Keenan to WVDEP Office of Oil & Gas, filed March 12, 2007.
- Appendix 13- Email from Rindy Clayton, UST Inspector, to Penny Harris, subject “Danny Webb at Former Cook Motor Lines site off Lochgelly Rd.,” September 11, 2007.
- Appendix 14- Letter of Brad Keenan to James Martin, WVDEP Office of Oil & Gas, commenting on permit UIC2D0190460, March 2013.
- Appendix 15- WR-40 Injection Record for 2D0190460 well, January 2014.
- Appendix 16- WR-40 Injection Record for 2D0190508 well, January 2014.
- Appendix 17- Printout of West Virginia Department of Environmental Protection, Office of Oil & Gas, UIC Permit Database for DEWCI wells, created April 30, 2015.
- Appendix 18- Email of James A. Peterson, WVDEP Office of Oil & Gas, to Matthew McFeeley, NRDC, December 18, 2013.