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Via Electronic Mail

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Re: Comments of the Environmental Integrity Project, Sierra Club, and Earthjustice on FirstEnergy's application for a minor modification of Permit No. 300370 for the Hatfield's Ferry Power Station Coal Combustion By-Product Landfill to dispose of coal combustion waste generated at the Bruce Mansfield Power Station

Dear Mr. Forbeck and Ms. McDaniel:

The Environmental Integrity Project, Sierra Club, and Earthjustice ("Commenters") respectfully submit these comments regarding FirstEnergy Generation LLC's ("FirstEnergy") application for modification of Permit No. 300370 to allow the formerly-titled Hatfield's Ferry Power Station Coal Combustion By-Product Landfill ("Hatfield CCB Landfill," or "the landfill") to dispose of coal combustion waste ("CCW," "CCB," or "coal ash") from the Bruce Mansfield Power Station. The Pennsylvania Department of Environmental Protection ("DEP") must deny this permit application. In the alternative, this application must only be granted subject to the conditions set forth herein.

As detailed below, DEP must disapprove this modification application as proposed to allow disposal of the Bruce Mansfield coal ash at the Hatfield CCB Landfill for a variety of reasons, including the following:

- The switch to disposal of Bruce Mansfield ash will more than double the proportion of flue gas desulfurization ("FGD") waste to be disposed of at the landfill, which constitutes a change in the daily waste volume that requiress a major modification of the permit;
- The Bruce Mansfield coal ash constitutes hazardous waste based on leachable arsenic levels and therefore cannot be disposed of at the current Hatfield CCB Landfill;
- Existing contamination at the Hatfield CCB landfill is extensive yet FirstEnergy has failed to timely advance a plan to assess or abate the pollution, in violation of Pennsylvania law;
- The proposed disposal plan fails to meet the regulatory requirement that operations must not cause air or water pollution because DEP approved waivers of environmental controls that allowed, for example, coal ash to form the lowermost layer of the landfill structure;

- FirstEnergy's proposed disposal plan cannot ensure there will be no air or water pollution because the permit does not require any chemical treatment of leachate;
- FirstEnergy cannot ensure its disposal plan will not cause air or water pollution because the background monitoring wells at the site are impacted by existing pollution;
- Monitoring requirements are not sufficient to capture the extent of existing or future contamination at the site;
- DEP and FirstEnergy have not provided sufficient information to ensure that releases from the Phase 3 Disposal Area can be distinguished from current and ongoing releases from the unlined Phase 1 and Phase 2 portions of the landfill;
- The permit is incomplete because it includes statements that the Landfill is both Class I and Class II;
- The Landfill's location above mines increases the risks of groundwater contamination; and
- FirstEnergy's proposal to transport by barge more than 17 million tons of coal ash 113 miles fails to include required information needed to determine whether the barging operations will endanger health or the environment.

For these and other reasons, DEP must deny this application---or make significant changes to the permit in keeping with these comments--to protect health and the environment and ensure compliance with Pennsylvania regulations.

I. Background

FirstEnergy has applied for a modification of its residual waste landfill permit No. 300370 to allow for 2.5–2.7 million tons per year of coal ash from the Bruce Mansfield Plant in Shippingport, Beaver County, Pennsylvania to be transported 113 miles by barge over the Monongahela and Ohio Rivers to be disposed of at the Hatfield CCB Landfill near Masontown in Greene County, Pennsylvania. FirstEnergy, Application for Minor Permit Modification of Solid Waste Permit No. 300370 for the Hatfield CCB Landfill, at Form 12R (Apr. 1, 2015) [hereinafter "2015 Application"]. The landfill was formerly one of the disposal sites permitted for disposal of coal ash from the former Hatfield's Ferry Power Station, which was decommissioned in 2013.

The disposal cell into which the Bruce Mansfield coal ash would be placed, the Phase 3 Disposal Area, is a lined landfill, but it partially overlays Phases 1 and 2 of the landfill, which are unlined and have been releasing arsenic and other harmful pollutants into ground and surface waters according to documentation submitted by FirstEnergy itself. *See id.;* FirstEnergy, Application for Renewal of Solid Waste Permit No. 300370 for Expansion of the Hatfield's Ferry Power Station CCB Landfill Facility (submitted Feb. 21, 2006 and revised numerous times subsequently) [hereinafter "2006 Application (as revised 2009)"].[1]

The proposed permit modification presents risks of environmental releases that could pose potentially significant threats to public health and the environment that include contamination of downstream water supplies and fugitive dust problems. At the May 21, 2015 public meeting,

[1] The version of the 2006 permit application Commenters received incorporated revisions that had been made to the application through 2009, hence the qualification.

many community members presented impassioned statements concerning their health, safety, and welfare that DEP should seriously consider and address.

Commenters are public interest organizations that have worked for many years on coal issues in Pennsylvania and who have a significant interest in ensuring the safe and proper disposal of toxic coal combustion waste in Pennsylvania generally and at the Hatfield CCB Landfill at the former Hatfield's Ferry Plant in Greene County in particular. The Environmental Integrity Project is a non-profit, non-partisan organization that works for more effective enforcement of environmental laws and has worked for years to reduce and prevent coal ash pollution in Pennsylvania. The Sierra Club is the oldest and largest grassroots environmental group in the United States, with approximately 620,000 members nationally, including over 24,000 members in Pennsylvania. These members enjoy and are entitled to the benefits of natural resources including clean air, water and soil, which are negatively impacted when pollutants from coal ash escape into the environment. Earthjustice is a non-profit public interest law firm dedicated to protecting the magnificent places, natural resources, and wildlife of this earth, and to defending the right of all people to a healthy environment.

Particularly noteworthy is that all three organizations collaborated on a report in 2010 that presented evidence from data contained in DEP's files of environmental releases occurring at the coal ash disposal cells at both the Hatfield's Ferry site and the Bruce Mansfield Plant's current coal ash disposal site, the Little Blue Run Impoundment. *See* Environmental Integrity Project, Earthjustice, and Sierra Club, *In Harm's Way: Lack of Federal Coal Ash Regulations Endangers Americans and Their Environment* (Aug. 26, 2010), http://www.environmentalintegrity.org/news_reports/documents/INHARMSWAY_FINAL3.pdf [hereinafter In Harm's Way]. The U.S. Environmental Protection Agency ("EPA") recently confirmed that both the Hatfield's Ferry Site and Little Blue Run are among the 40 sites EPA confirmed as "proven" coal ash damage cases, meaning there is documented evidence of damage to health or the environment either off-site or as confirmed by independent sources.[2]

Pursuant to the Special Notice posted in the Pennsylvania Bulletin on April 25, 2015, 45 Pa. Bull. 2052 (Apr. 25, 2015) and DEP's May 12, 2015 news release, DEP held a public meeting on May 21, 2015 and comments will be accepted until June 2, 2015. Accordingly, these comments are timely.[3] In addition, DEP just published notice of its issuance of the recently submitted renewal and reissuance application for Permit 300370 on enotices on Saturday, May 30, 2015 stating that the permit had been reissued and renewed on May 22, 2015. Because DEP's decision

[2] Alexander Livnat, U.S. Environmental Protection Agency, CCR Damage Case Database, Technical Support Document on Damage Cases, Docket #EPA-HQ-RCRA-2009-0640 (Dec. 18, 2014) (Document No. EPA-HQ-RCRA-2009-0640-12123). "*Proven damage case* means those cases with (i) Documented exceedances of primary maximum contaminant levels (MCLs) or other health-based standards measured in ground water at sufficient distance from the waste management unit to indicate that hazardous constituents have migrated to the extent that they could cause human health concerns, and/or (ii) where a scientific study provides documented evidence of another type of damage to human health or the environment (*e.g.*, ecological damage), and/or (iii) where there has been an administrative ruling or court decision with an explicit finding of specific damage to human health or the environment." EPA, Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule, 75 Fed. Reg. 35,128, 35,132 (proposed June 21, 2010) (to be codified at 40 CFR Parts 257, 261, 264 et al.).

[3] In addition, the public notice published in the Herald-Standard for FirstEnergy's application for renewal and reissuance of Permit No. 300370 states that the public can submit comments within 60 days of receipt of the application. *See* Public Notice, *Herald-Standard* at A-7 (Feb. 20, 2015).

to accept coal ash from the Bruce Mansfield Plant is inextricably related to the underlying renewal of this permit, Commenters, who did not receive the renewal application from DEP until April 20, 2015, also reference issues in the renewal permit application.

II. FirstEnergy's Application to Dispose of Bruce Mansfield Coal Ash Qualifies As a Major Modification and Should be Withdrawn and Resubmitted As Such.

FirstEnergy's proposal to dispose of coal ash from the Bruce Mansfield Plant warrants a major modification application instead of a minor modification application because the proportions of each type of coal ash proposed to be disposed differ significantly from the proportions previously vetted and approved by DEP for disposal at this site. When an application involves "[a] change in the average or maximum daily waste volume," the application must be considered as a major modification application instead of a minor modification application. 25 Pa. Code § 287.154(a)(2). While flue gas desulfurization ("FGD") wastes were approved for disposal at the Phase 3 expansion area of the landfill by the 2009 permit modification, FGD wastes were approved at a maximum generation rate of 1,335,500 tons per year. 2006 Application (as revised 2009), Form 1R, Narrative, at 4. In contrast, the 2015 modification application proposes to dispose of FGD at a rate of 2.5 to 2.7 million tons per year—potentially more than doubling the FGD materials to be disposed of at the landfill. 2015 Application, Form 1R, Narrative, at 2.

The enormous change the proportions of which types of coal ash will be disposed of at the site is a change that warrant reevaluation as a major permit modification. As the toxic characteristics of FGD vary significantly from fly ash and bottom ash, the impacts of the acceptance of a greater proportion of FGD materials impact many aspects of the calculations that were undertaken in previous renewals and revisions to Permit 300370 that resulted in DEP approving a variety of waivers from regulatory requirements for this landfill (*see* discussion *infra).* Because of the doubling in the disposal rate, the application must be submitted as a major modification, and must be denied in its current form.

III. Arsenic Leachability Levels of the Bruce Mansfield Coal Ash Exceed Pennsylvania's Maximum Allowable Limits and Render the Ash Hazardous Waste, So DEP Cannot Approve this Ash for Disposal in Even this Class I Residual Waste Landfill Because the Requirements for Hazardous Waste Disposal are Not Satisfied.

DEP must deny this permit application outright or require significant changes because the Bruce Mansfield coal ash constitutes hazardous waste that is not allowed to be disposed of at the Hatfield CCB Landfill according to Pennsylvania regulations. FirstEnergy's 2015 modification application reveals that TCLP and SPLP leach tests for the Bruce Mansfield FGD material have exceeded Pennsylvania's high TCLP thresholds, meaning the Bruce Mansfield ash should be classified as hazardous waste and must not be approved for disposal at the Hatfield CCB Landfill.

The chemical analysis of waste submitted by FirstEnergy in its modification application reveals that this waste should be disposed of at a hazardous waste landfill instead of a residual waste landfill. FirstEnergy, as a generator and operator of a landfill facility is required to undertake a

chemical analysis of waste and determine whether leachability of toxic pollutants from the waste would render the waste hazardous waste under Pennsylvania law. *See* 25 Pa. Code §§ 287.54, 288.423(c), 290.201.

FirstEnergy's 2015 application for a permit modification included leach test data from FGD materials at the Bruce Mansfield Plant, and these data confirm that the Mansfield FGD has very high leachable levels of pollutants. *See* 2015 application, Form U, Request to Process or Dispose of Residual Waste, TCLP and SPLP Data. For example, TCLP results show that the arsenic TCLP test results exceeded the Chapter 290 standard of 250 ug/L at least four times as recently as April 2014—readings were as high as 283, 252, 266, 384 ug/L. *See* 25 Pa. Code § 290.201; *see also* DEP, Coal Ash Monitoring Parameters and Certification Standards, http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-107080/5600-FS-DEP4305.pdf (for a list of current maximum acceptable leaching limits for coal ash pollutants).

Exceeding the maximum acceptable leaching limits means this coal ash warrants classification as a hazardous waste and may not be disposed of at even a Class I residual waste facility unless the facility both meets the requirements for hazardous waste facilities and is approved by DEP. *See* 25 Pa. Code § 288.423(c). This landfill does not comply with Article VII of Chapter 25 of the Pennsylvania Regulations (requirements for hazardous waste facilities), and therefore the Bruce Mansfield ash cannot be placed at this landfill unless a variety of revisions are required by DEP to ensure conformance to the hazardous waste facility requirements.

Because maximum acceptable leaching limits for toxic coal ash metals are typically 25 times higher than waste classification standards, the latter of which are identical to MCLs for most pollutants, if released into nearby waterways, these extremely high concentrations of arsenic could potentially exceed both the groundwater maximum contaminant level ("MCL") of 10 ug/L and surface water criteria, depending on stream size.

These exceedances of DEP's leaching limits are particularly troubling because EPA has recently called into question whether employing the TCLP test is even appropriate for coal ash due to the test's recognized potential to underestimate leachability. EPA now supports an alternate test known as the Leachate Environmental Assessment Framework ("LEAF") test instead of the TCLP or SPLP tests. The LEAF test is the only EPA-approved leach test capable of accurately characterizing the leaching potential of coal ash. Reliance on a single-point extraction test, such as TCLP, has been found to be inadequate for coal ash leachability, as confirmed by the National Academy of Science, the EPA Science Advisory Board, and EPA's Office of Research and Development.[4] In fact, the four test methods that comprise the LEAF test all =received EPA

[4] *See* Nat'l Research Council, Nat'l Academies, Managing Coal Combustion Residues in Mines (2006), *available at* http://books.nap.edu/catalog.php?record_id=11592#toc at 123–29; Letter from EPA, Science Advisory Board, to Carol Browner, Administrator, EPA, Re: "Waste Leachability: The Need for Review of Current Agency Procedures" (Feb. 26, 1999) (emphasis in original), *available at* www.yosemite.epa.gov/sab/sabproduct.nsf/.../$File/eecm9902.pdf.; EPA, Office of Research and Development, *Characterization of Coal Combustion Residues from Electric Utilities—Leaching and Characterization Data* (EPA/600/R-09/151) at ii (Dec. 2009), *available at* http://www.epa.gov/nrmrl/pubs/ 600r09151/600r09151.html (citing EPA, *Characterization of Mercury- Enriched Coal Combustion Residuals from Electric Utilities Using Enhanced Sorbents for Mercury Control* (EPA–600/ R–06/008) (Feb. 2006), *available at* http://www.epa.gov/ORD/NRMRL/pubs/600r06008/600r06008.pdf; *and* EPA, *Characterization of Coal*

approval in October 2012 (Methods 1313 and 1316) and January 2013 (Methods 1314 and 1315). *See* http://www.epa.gov/osw/hazard/testmethods/sw846/new_meth.htm.

While the files reviewed by Commenters did not display correctly and only allowed us access to partial monitoring results, the additional leaching bench scale lab results for the Bruce Mansfield coal ash showed many additional values that far exceeded MCLs—sometimes by orders of magnitude—even if Pennsylvania's hazardous waste standards were not exceeded. Some of these sampling results are presented in Table 1.

Table 1. Bruce Mansfield Coal Ash Leach Test Result MCL Exceedances, 2012–2014

Pollutant	Test	Result (ug/L)	MCL (ug/L)
Arsenic	TCLP	**119**	10
Selenium	TCLP	**66.9**	50
Arsenic	SPLP	**39.5**	10
Thallium	SPLP	**8.9**	2
Arsenic	TCLP	**109**	10
Selenium	TCLP	**69**	50
Arsenic	SPLP	**15.6**	10
Arsenic	TCLP	**30.8**	10
Arsenic	SPLP	**20.8**	10
Arsenic	TCLP	**80.1**	10
Arsenic	SPLP	**13.9**	10
Arsenic	TCLP	**128**	10
Selenium	TCLP	**81.8**	50
Arsenic	SPLP	**25.8**	10
Arsenic	TCLP	**77.9**	10
Selenium	TCLP	**116**	50
Arsenic	SPLP	**41.8**	10
Arsenic	TCLP	**123**	10
Selenium	TCLP	**64.3**	50
Arsenic	SPLP	**33.6**	10
Arsenic	TCLP	**220**	10
Selenium	TCLP	**123**	50
Mercury	TCLP	**2.64**	2

See 2015 application, Form U, Request to Process or Dispose of Residual Waste, TCLP and SPLP Data, at 14–45.

IV. DEP Must Not Approve This Modification Application Because Pollution at the Hatfield CCB Landfill is Pervasive, Severe, and Ongoing, Yet FirstEnergy and DEP Have Failed to Establish a Plan to Clean Up Toxic Releases Already Occurring at the Site, in Violation of Pennsylvania Regulations.

Combustion Residuals from Electric Utilities Using Wet Scrubbers for Multi-Pollutant Control (EPA–600/ R–08/077) (July 2008), *available at* http://www.epa.gov/nrmrl/pubs/600r08077/600r08077.pdf.

The Hatfield CCB Landfill is already a source of extensive environmental contamination resulting from previous coal ash disposal activities at the site, yet FirstEnergy and DEP have failed to even establish a plan to abate this severe pollution, in violation of Pennsylvania regulations. Adding an enormous amount of additional coal ash to the landfill will only compound and exacerbate the toxic loadings to the surrounding ground and surface waters, significantly complicate the process of cleaning up pollution at the site, and further threaten public health.

Pennsylvania regulations require that the operator of a residual waste landfill must "prepare and submit to the Department a groundwater assessment plan within 60 days after . . . [d]ata obtained from monitoring by the Department or the operator indicates groundwater degradation at any monitoring point." 25 Pa. Code 256(a)(1). Once approved by the Department, the assessment plan is required to be implemented and "completed in a reasonable time not to exceed 6 months" unless DEP provides for an alternative time frame. 25 Pa. Code § 256(d). If the assessment shows the need for abatement of pollution, the operator must complete and submit an abatement plan with details for abatement and a schedule for implementation to the DEP for approval within 90 days from the time at which the assessment plan shows degradation of groundwater. 25 Pa. Code § 257(e). The submittal of an abatement plan would trigger a major modification of the waste disposal permit, which would trigger a new public notice and comment period. *See* 25 Pa. Code § 287.151(d).

For years, the Hatfield CCB Landfill has been releasing toxic pollutants such as arsenic into groundwater at levels high enough to endanger human health. Evidence of this pollution has been presented in the application materials previously submitted for renewals and modifications of this permit, has been presented to DEP and EPA by Commenters in public reports based upon monitoring data submitted by FirstEnergy's predecessor-in-interest to the DEP, has recently been confirmed by EPA, who recently confirmed the Hatfield CCB Landfill site as a "proven" coal ash damage case, and is corroborated by the most recent monitoring data available and by statements of DEP staff members at the recent public hearing. Despite this pervasive and ubiquitous confirmation of contamination at dangerously high levels, DEP's files and Commenters' conversations with DEP have revealed DEP's failure to establish a plan to abate this pollution.

FirstEnergy's failure to propose an assessment plan constitutes a violation of DEP regulations that has been ongoing since at least January, which was two months after DEP notified FirstEnergy of arsenic exceedances in groundwater. DEP informed the community at the public meeting that it did alert FirstEnergy of arsenic exceedances in November, but even that late notice of onsite degradation should have resulted at least in the establishment of an assessment plan by January, meaning that FirstEnergy has been in violation of this regulatory requirement for six months. If First Energy had met its obligation, DEP could already have approved of not only the assessment plan but also an abatement plan.

The evidence of pollution at the Hatfield's CCB Landfill is extensive, has been occurring for years, and is still ongoing, and FirstEnergy's failure to propose a plan to assess the pollution violates Pennsylvania law. Consequently, DEP must not approve this permit modification request without the completion of an assessment plan and likely an abatement plan, which would

trigger a major modification to the permit, and DEP should not approve this permit modification until the pollution at the site has been abated.

A. FirstEnergy's own monitoring data submitted to DEP have plainly established that the Hatfield CCB Landfill has been releasing high levels of toxic pollutants above Maximum Contaminant Levels ("MCL") for many years.

As evidenced by FirstEnergy's own monitoring data, the Hatfield CCB Landfill has been leaking toxic pollutants into ground and surface water both onsite and off-site for years, yet DEP and FirstEnergy have failed to establish a plan to cleanup or prevent pollution, let alone execute such a plan. Years of monitoring data submitted to DEP by FirstEnergy's predecessor-in-interest show pervasive evidence of pollution in excess of health-based regulatory standards. Commenters presented extensive evidence of this pollution in a 2010 report that summarized data from DEP's own files, and our findings are summarized as follows:

> An unlined CCW landfill located off-property from the Hatfield's Ferry Power Plant has contaminated groundwater, polluted surface water, and damaged aquatic ecosystems since at least 2001. Federal groundwater Maximum Contaminant Levels (MCLs) standards for arsenic, aluminum, boron, chromium, manganese, molybdenum, sulfate, and total dissolved solids (TDS) have been exceeded since at least 2001. Concentrations of groundwater contaminants mirror those in CCW leachate samples from the landfill collected at the same time. The horizontal extent of contamination has not yet been defined.
>
> For example, since at least 2005, arsenic has repeatedly exceeded the MCL in three wells hundreds of yards south and east of the landfill, with total concentrations as much as 342 times the MCL and dissolved concentrations more than 11 times the MCL. Allegheny Energy's wetland treatment system for CCW leachate is ineffective at treating several parameters indicative of CCW leachate – notably aluminum, boron, manganese, molybdenum, sulfate, thallium, and TDS – resulting violations of permit limits and continued harmful discharges to the receiving stream in violation of Pennsylvania Water Quality Criteria (WQC) for boron. In addition, a stream habitat and macroinvertebrate survey of four streams emanating from the landfill property shows that two streams closest to the CCW landfill are impaired by CCW leachate from the landfill.

In Harm's Way, at 174–75. The data show both groundwater pollution that is moving beyond the waste boundary toward off-site receptors as well as surface water pollution that has already degraded streams off-site.

B. The most recently available groundwater monitoring data confirm this contamination is still occurring.

In addition to the findings presented in Commenters' 2010 damage case report, a review of recent groundwater monitoring data confirms that the pollution evidenced in the report is

ongoing. See Table 2 for a summary table of some recent exceedances of maximum contaminant levels.

Table 2: Hatfield's Ferry Recent Exceedances of Maximum Contaminant Levels

Well	Quarter	Contaminant	Result (ug/L)	MCL (ug/L)
MW-217 A	2014Q4	Arsenic (dissolved)	**29.0**	10
MW-218 A	2014Q4	Arsenic (dissolved)	**40.9**	10
MW-202 B	2014Q2	Antimony (dissolved)	**15.2**	6
MW-203 B	2014Q2	Antimony (dissolved)	**9.5**	6
MW-204 B	2014Q2	Arsenic (dissolved)	**40.0**	10
MW-204 B	2014Q2	Antimony (dissolved)	**10.4**	6
MW-212 A	2014Q2	Arsenic (dissolved)	**16.3**	10
MW-213 A	2014Q2	Arsenic (dissolved)	**36.2**	10
MW-215 A	2014Q2	Arsenic (dissolved)	**41.8**	10
MW-215 A	2014Q2	Antimony (dissolved)	**9.2**	6
MW-215 B	2014Q2	Arsenic (dissolved)	**15.8**	10
MW-216 A	2014Q2	Arsenic (dissolved)	**50.4**	10
MW-217 A	2014Q2	Arsenic (dissolved)	**22.6**	10
MW-217 A	2014Q2	Antimony (dissolved)	**8.6**	6
MW-218 A	2014Q2	Arsenic (dissolved)	**29.8**	10
MW-213 B	2013Q4	Nitrate	**14.5**	10
MW-202 B	2013Q2	Antimony (dissolved)	**7.3**	6
MW-203 B	2013Q2	Arsenic	**29.0**	10
MW-213 B	2013Q2	Nitrate-Nitrogen	**19.7**	10
MW-213 B	2013Q2	Arsenic (dissolved)	**98.2**	10
MW-213 B	2013Q2	Antimony (dissolved)	**10.3**	6
MW-213 B	2013Q2	Arsenic	**29.0**	10
MW-215 B	2013Q2	Arsenic	**19.8**	10
MW-217 A	2013Q2	Arsenic	**48.4**	10
MW-217 A	2013Q2	Selenium (dissolved)	**68.1**	50
MW-218 A	2013Q2	Arsenic (dissolved)	**60.2**	10

C. Releases of toxic pollutants from the existing Hatfield CCB Landfill at levels that are both numerous and that significantly exceed MCLs violate federal law prohibiting the operation of open dumps.

The ongoing, severe, and numerous exceedances of MCLs for toxic pollutants in groundwater downgradient that has moved beyond the solid waste boundary of the Hatfield CCB landfill (see discussion *supra)* violate current federal law prohibiting open dumping. RCRA prohibits open dumping, requiring that "[a] facility or practice shall not contaminate an underground drinking water source beyond the solid waste boundary." *See* 42 U.S.C. § 6944(a), 40 C.F.R. § 257.3-4.

Open dumps are prohibited under federal law, so the Hatfield CCB Landfill must not be allowed to continue operating and must take immediate steps to stop the contamination of groundwater. In addition, DEP must not approve the addition of new waste at this open dump.

D. Releases of toxic pollutants from the existing Hatfield CCB Landfill may present an imminent and substantial endangerment to health and the environment, in violation of section 7003 of RCRA.

RCRA also prohibits disposal operations that "may present an imminent and substantial endangerment to health or the environment." *See* 42 U.S.C. § 6972(a)(1)(B). Given the threat to human health and the environment posed by the release of toxic pollutants like arsenic from the Hatfield CCB Landfill, the site may present an imminent and substantial endangerment to health or the environment, in violation of the federal RCRA law. DEP must not allow continued operation of this landfill without remediation and must not approve this application to add an additional 17 million tons of coal ash to this landfill until the application can demonstrate that its operations do not violate federal law.

E. EPA has confirmed that pollution is migrating from the Hatfield CCB Landfill, and levels of toxic pollutants including arsenic, antimony, and selenium regularly and continuously exceed health-based "maximum contaminant levels" in groundwater, yet neither FirstEnergy nor DEP has addressed this contamination.

EPA itself recently confirmed—citing Commenters' 2010 report—that the coal ash disposal operations at the former Hatfield's Ferry Plant are one among 40 "proven" damage cases throughout the United States. Alexander Livnat, U.S. Environmental Protection Agency, CCR Damage Case Database, Technical Support Document on Damage Cases, Docket #EPA-HQ-RCRA-2009-0640 (Dec. 18, 2014) (Document No. EPA-HQ-RCRA-2009-0640-12123). Notably, EPA classified an additional 113 sites as "potential" damage cases – sites where the pollution was confirmed but either had not traveled as far off-site, had not been codified in an administrative order, or had not otherwise reached a higher threshold of "proven" damage case, meaning the releases from the Hatfield's site reached the highest threshold of damage acknowledged by EPA. *Id.*

F. The addition of 17 million tons of coal ash from the Bruce Mansfield Plant at a site with such extensive pollution will frustrate and encumber critically needed efforts to clean up of the pollution.

Given the extensive pollution already occurring at the Hatfield CCB Landfill, abatement efforts are needed to protect public health and the environment from the extremely high levels of toxic pollutants being released from the site. Adding an additional 17 million tons of coal ash to this site over the course of seven years will significantly complicate clean up protocols and operations. The physical operations of coordinating personnel and equipment for the both abatement and the ash placement simultaneously will be cumbersome, but, more importantly engaging in clean up at the same time as this large-scale disposal operation is going on on the same site will make distinguishing pollution from the existing site and the new disposal

operations difficult. This will thwart efforts to determine whether abatement goals have been satisfied. DEP must not approve the disposal of new coal ash until the pervasive, severe pollution problems already ongoing have been satisfactorily abated.

G. The dust control plan in the 2015 Application is insufficient to ensure the minimization of air pollution into the community.

Pennsylvania regulations require FirstEnergy to implement fugitive dust control measures sufficient to reduce air pollution and minimize the generation of fugitive dust from site operations. 25 Pa. Code § 288.217. FirstEnergy's dust control plan only provides for dust suppression measures on facility roadways and within the active area of the landfill but was not revised to include dust suppression or control measures at the barge unloading areas. *See* 2015 Application, Form 12R, Narrative, at 11.[5] In fact, the application states that the barge unloading operations have yet to be finalized, but that once they are finalized, FirstEnergy will prepare a Preparedness, Prevention, and Control ("PPC") Plan "describing appropriate air pollution control devices." *Id.* Failure to include this information in the permit renders the permit incomplete and inaccurate, in violation of Pennsylvania regulations, and fails to ensure the protection of public health and the environment. DEP must not approve this application without this important information.

H. People are in harm's way due to pollution that is currently leaking and pollution that may leak as a result of future placement of CCBs at the Hatfield CCB Landfill.

FirstEnergy (and its predecessors-in-interest) and the DEP have consistently turned a blind eye toward the voluminous data revealing heavy metal contamination at this site and its potential impacts to downstream users in harm's way. Both failed to properly account for potential health impacts when the application for expansion of the landfill was originally submitted in 2006, and then DEP vehemently denied pollution problems brought to light in Commenters' 2010 damage case report as well. *See, e.g.,* Commonwealth of Pennsylvania, DEP, Southwest Region, Review of the Environmental Integrity Project, Earthjustice and Sierra Club Report (Jan. 3, 2011). All of this was at the expense of the surrounding community and others downstream from the landfill.

In fact, the Masontown Borough has a public surface water intake along the Monongahela River, downstream of the Hatfield CCB Landfill located only one-quarter mile away from the permit boundary. 2006 Application (as revised 2009), Form 11R, Alternative Water Supply, Narrative, at 1. The introduction of Bruce Mansfield coal ash just a quarter mile upstream places a burden on this public water supply system to potentially adapt to and pay for any changes in treatment required to address the new associated waste streams, which will contain a greater proportion of FGD waste and its pollutants than previous coal ash placed in the landfill. In addition to the impacts to the public drinking water supply, according to the 2006 application, an analysis conducted in 2005 based on a survey of nearby residents showed that of the residents who responded, there were three within a quarter mile of the landfill that utilized private drinking wells, and one of these landowners also utilized a spring to provide water for her livestock. *Id.*

[5] In addition, no background air monitoring has been conducted at this facility. *Id.*

Yet, despite the clear risks to the community, FirstEnergy's predecessor-in-interest, later in the same 2006 application, ignored evidence of high levels of arsenic and other pollution that it had submitted as part of its application materials, claiming that "There are currently no known degradation, or diminution problems related to activities at the existing facility," even while admitting in the very next sentence that there were groundwater impacts in the uppermost aquifers. *See* 2006 Application, Form 11R, Alternative Water Supply, Phase 1, Attachment 11R, Narrative, at 7. The applicant attributed those impacts to "mining" that had occurred in the area without providing analysis or support for such a conclusion. *Id.*

In addition to water-related impacts from the proposed action, there are also nearby residences and structures where potential airborne pollution associated with the proposed activities could impact nearby populations. FirstEnergy admits that the closest dwellings and businesses are just 900 feet from the haul road and landfill, with the closest structure being St. George's church. 2015 Application, Form 12R, at 18. At the recent public meeting, many community members spoke out to discuss air pollution problems that they have sustained that have been caused by the Hatfield CCB Landfill and noted that these problems significantly diminished once plant operations ceased with the closure of the associated power plant in 2013. Resuming coal ash disposal operations could once again increase dangerous and unwanted fugitive air emissions in the surrounding community.

I. <u>Despite pervasive evidence of contamination above health-based thresholds, DEP and FirstEnergy have continually failed to acknowledge or clean up this pollution, in violation of Pennsylvania regulations that require assessment and abatement of groundwater degradation within specified timeframes.</u>

As stated above, Pennsylvania law requires an operator, upon finding evidence of groundwater degradation, to take swift action to create an assessment plan and, if warranted, an abatement plant. *See* 25 Pa. Code §§ 256(a)(1), 256(d), 257(1). Rather than acknowledge and address years of evidence of pollution, as required by Pennsylvania regulations that impose deadlines for assessment and abatement plans when groundwater degradation is identified, DEP issued a rebuttal document in 2011 attempting to discredit Commenters' evidence (which, again was from DEP file rooms). *See* Commonwealth of Pennsylvania, DEP, Southwest Region, Review of the Environmental Integrity Project, Earthjustice and Sierra Club Report (Jan. 3, 2011). Furthermore, while DEP and FirstEnergy did sign a Consent Decree in 2008 to address exceedances of NPDES permit thresholds, DEP has not provided Commenters with any evidence of an abatement plan to address groundwater pollution problems.

FirstEnergy's predecessor-in-interest and DEP had similarly failed to acknowledge that degradation was already occurring at this site when expansion of this landfill was applied for in 2006 and approved in 2009 even though such a determination was required when considering potential impacts to nearby users. Despite evidence of many quarters of data showing high levels of arsenic and other pollutants being submitted as part of the 2006 application in the monitoring wells at the Hatfield CCB Landfill, *see* 2006 Application, Form 8R and Appendix 7R-D, FirstEnergy's predecessor-in-interest stated in a latter portion of its application that "[t]here are currently no known degradation, or diminution problems related to activities at the existing facility." 2006 Application, Form 11R, Alternative Water Supply, Phase 1, Attachment 11R,

Narrative, at 7. The applicant acknowledged in the very next sentence that there were groundwater impacts in the uppermost aquifers, but attributed those to "mining" that had occurred in the area without providing analysis or support for such a conclusion. *Id.* Despite this denial of problems in the section addressing alternative water supply needs, FirstEnergy's predecessor did, in the section regarding Financial Assurance in the 2006 application, discuss that there is a need to "resolve the Water Quality concerns with leachate management," and that if further changes are needed to resolve them then the bond amount would need to be increased. 2006 Application (as revised 2009), Correspondence, at 9.

A further troubling statement in the 2006 expansion application is that the permittee stated that there were "no anticipated impacts to public water supplies should all the protective safeguards fail," and that, should impacts occur, groundwater monitoring would be conducted and FirstEnergy's predecessor would "take the appropriate actions to prevent degradation from reaching public or private water supplies." *Id.*

However, despite the accumulation of data indicating that groundwater degradation is actually occurring, DEP has failed to take appropriate actions. In fact, DEP, while failing to provide the public with a plan to clean up groundwater contamination, spent taxpayer dollars to defend Hatfield's pollution and attempt to refute contamination data from its own files. *See* Commonwealth of Pennsylvania, DEP, Southwest Region, Review of the Environmental Integrity Project, Earthjustice and Sierra Club Report (Jan. 3, 2011).

At the public meeting for this permit modification application, DEP did readily admit that the unlined phases of the landfill have ongoing problems. DEP staff said that there has been an uptick in recent arsenic readings, and that as soon as staff saw those readings (in November 2014), DEP sent a letter to FirstEnergy, who is doing an investigation to determine the source of the arsenic. However, as noted above, arsenic readings have been elevated for many years, and are not a recent trend. The arsenic investigation had not been completed, let alone an abatement put in plan in place or even proposed, at the time of the meeting, and no assessment plan had been proposed by DEP according to our review of the files, meaning FirstEnergy is in violation of Pennsylvania regulatory requirements and must not be granted this permit modification unless it complies with these regulations and, if warranted, implements a plan to abate the extensive pollution occurring at the site.

J. <u>DEP has even claimed in the media and at the recent public hearing that this site is "problem-free," completely disregarding this extensive evidence of toxic pollution above levels set to protect human health.</u>

Despite widespread evidence of pollution at this site that was confirmed by EPA and for which neither DEP nor FirstEnergy has required cleanup or even proposed or approved an assessment plan, in violation of Pennsylvania regulations, DEP, incredulously, continues to claim this site is "problem-free." DEP's John Poister said "[w]e consider it a modern facility . . . . We have no reported problems with that site ... It's a problem-free site." Bob Niedbala, "First Energy Plans to Dump Coal Ash At Hatfield's Ferry Landfill," *Observer-Reporter* (Apr. 15, 2015), *available at* http://www.observer-reporter.com/article/20150417/NEWS02/150419505. This is extremely troubling and shows a lack of recognition of the importance of monitoring data at this site or the

risks of allowing additional coal ash to be disposed of here without increasing protections for controlling the pollution. DEP must not approve this permit modification or allow any additional waste to be accepted at this dangerous facility until a plans to assessand abate the serious pollution occurring from the previous coal ash disposal operations, have been proposed, approved, and implemented.

V. DEP Must Deny or, Alternatively, Require Extensive Revisions to This Application Because FirstEnergy Has Failed to Demonstrate That the Operations Proposed Will Not Cause Pollution.

Under PA law, "[a] permit application will not be approved unless the applicant affirmatively demonstrates to the Department's satisfaction that . . . [r]esidual waste management operations under the permit *will not cause air pollution, or water pollution*, except that the Department may approve an application for permit modification to control or abate groundwater degradation under a new or modified groundwater collection or treatment facility." 25 Pa. Code 287.201(a)(5) (emphasis added). FirstEnergy's modification application seeks to place more than 17 million tons of fly ash, FGD, and bottom ash in a landfill that partially overlies two sections of unlined landfill that has been leaking for years (see discussion *supra)*, was approved with a variety of waivers from environmental controls, whose "background" sampling protocol began in 2006, when there were already years of contamination present at the site, and with several inconsistencies that make it difficult for FirstEnergy to ensure it will not cause air or water pollution.

A. Environmental controls at the landfill are not sufficient to ensure the landfill will not degrade air or water—DEP granted waivers of nearly every single environmental control typically required to minimize release of pollutants.

DEP has repeatedly claimed both in the media and at the public hearing that the Hatfield CCB landfill is "state of the art," but DEP's waiver of virtually all of the protective measures typically required at a Class I—or even a Class II—landfill calls into question whether this landfill can handle the toxic Bruce Mansfield ash without causing air or water pollution. Coal ash from the Bruce Mansfield Plant contains levels of pollutants so high that it rendered its former ash disposal site dangerous enough that DEP filed suit in federal court alleging a threat of imminent and substantial endangerment to health or the environment due to environmental releases. DEP and FirstEnergy have not demonstrated that the risks posed by this waste can be neutralized at a disposal site with waivers in place that allow for protective layers typically required to be made of earthen materials to be replaced with coal ash. DEP must require FirstEnergy to revise its application to ensure that Class I standards are satisfied or exceeded without allowing for the use of any type of coal ash in the liner, leachate, or other pollution control systems in order to reduce the likelihood that the toxic constituents of coal ash will be released from the landfill.

DEP's approval of this permit in 2009 and subsequent modification approvals included waivers related to nearly all of the legal requirements that would protect the public from migration of pollutants. The toxic coal ash from the Bruce Mansfield plant, if allowed to be disposed of here, would not receive "state of the art" disposal, but would be place in a site where DEP failed to

impose its very own requirements that it promulgated for the protection of communities from the risks of this type of waste.

The list of protections waived by DEP for this landfill is long. For example, in the permit, DEP waived requirements for daily cover, intermediate cover, the leachate collection system, liner systems of the landfill and leachate surface impoundment, protective cover on the landfill bottom, protective cover on the landfill liner, and permeability of the liner subbase, among other waivers.

1. The approved liner system and leachate collection system cannot ensure the prevention of water pollution because DEP approved waivers allowing liner components to be made with coal ash.

DEP's waivers for the liner system allow for many layers of coal ash materials to be used in place of clean earthen materials, meaning the liner layers themselves can leach toxic coal ash pollutants into groundwater and that the liner system cannot ensure no groundwater degradation. DEP's waivers were unabashedly granted with a purpose of increasing the volume of coal ash that could be placed in the landfill, as the landfill had 14,065,700 cubic yards of waste disposal capacity but FirstEnergy's predecessor-in-interest was able to add additional 288,000 cubic yards of capacity from using coal ash for Step 1 subgrade, for a total of 14,353,700 cubic yards of capacity. 2006 Application (as revised 2009), Form 1R, Attachment 1R-1, at 2.

DEP approved of a liner system that will consist of (from top to bottom) of the following layers, with most of these layers subject to at least one variance granted by DEP:

- a protective cover;
- leachate collection system;
- geotextile;
- primary geomembrane;
- leachate detection system;
- a secondary geomembrane;
- a geosynthetic clay liner ("GCL"); and
- a subbase.

2006 Application (as revised 2009), Form 1R, at 7. Several components of the liner system as approved by DEP are comprised simply of coal ash materials that are likely to leak additional pollutants into, and potentially through, the liner system. Because several phases of the landfill's construction are incomplete, DEP has the opportunity to require more stringent controls prior to placement of any additional coal ash in the landfill. *See* 2015 Application, Form 12R (providing that Step 3-2 requires a liner that has not yet been placed and placement is anticipated in 2016, and that Step 4 requires a liner that has not yet been placed and that placement is anticipated in 2017).

a. *The subbase requirements were waived to allow for the subbase to consist of compacted coal ash, meaning the lowermost layer of the*

landfill is fly ash that has no lower barrier should pollutants in the fly ash leach out.

DEP similarly approved a waiver for compacted subbase or engineered structural fill under 271.231 for equivalency with 288.433(b)(1)(ii) to allow for the Phase III subbase to consist of 6 inches of fly ash instead of other recompacted material and/or engineered fill, even though FirstEnergy admits compacted fly ash does not meet the performance standard of being a "barrier to the transmission of liquids." 2006 Application (as revised 2009), Form Q9, Equivalency Analysis for Substitution of Fly Ash for Subbase, Narrative, at 1.

While the use of the GCL *above* the compacted fly ash subbase would satisfy this performance criterion, using coal ash itself as subbase means there is no layer below this coal ash layer to detect or capture leaching of pollutants from this fly ash into underlying soils or groundwater—the lowermost layer of the landfill is fly ash—the very same material that, when placed in the landfill above, requires multiple underlying layers of liner and leachate collection technologies. DEP and FirstEnergy did not provide information sufficient to justify how placing a 6-inch layer of coal ash along the entire bottom of this site serves as adequate protection from the dangers of coal ash leaching into the underlying landfills—which are already leaking—or underlying groundwater.

b. The protective cover and leachate collection system requirements of the liner were waived to allow for the entire layer to be made of coal ash.

DEP approved using compacted coal ash – including fly ash, FGD, and bottom ash – for the liner's "protective cover," waiving the requirement that this cover be made from "clean earthen material." DEP typically requires a Class I landfill to be "[c]omprised of clean earthen material that contains no aggregate, rocks, debris, plant material or other solid material larger than ½ inch in diameter . . . and that is "[a]s permeable as, or more permeable than1.0×10^{-2} cm/sec. based on laboratory testing." 25 Pa. Code 288.433(b). In fact, DEP requires clean, earthen material for the protective cover of the lining of Class II landfills as well. *See* 25 Pa. Code 288.533(b).

At the Hatfield CCB Landfill, the protective cover of the liner (also considered one of the layers of the leachate collection system) will be made entirely of coal ash, with a minimum 2-foot thick layer of gypsum (or fly ash) and 1-foot of bottom ash and a geocomposite leachate collection system. DEP granted a waiver to allow the cover system of the liner to be made with coal ash under 271.231 for equivalency with 288.437(b) and 288.438(b). 2006 Application (as revised 2009), Form Q8, Equivalency Analysis for Leachate Collection/Protective Cover System, Narrative, at 1; *see also* 2012 Minor Modification (approving waiver to allow protective cover of liner system to be made with bottom ash under 271.231 for equivalency with 288.438(b).

While FirstEnergy's consultants claimed in the equivalency review that this will protect the liner from physical stresses and damage, the calculations for this replacement did not account for the potential of these materials to add a significant amount of heavy metals and other toxics into the liner system that would not be present if the materials were clean, earthen materials, and this influx of additional pollution means there are more pollutants in the liner system that could

potentially infiltrate underlying groundwater supplies. Furthermore, coal ash is unstable as a lining material because it breaks down over time and cannot, therefore, supply the same degree of permeability over time that it initially provides, yet the application materials do not appear to have accounted for this variability or potentially increasing instability. Despite these increased risk, neither FirstEnergy's 2015 or 2006 modification applications detailed the leaching potential of this substitute layer of coal ash.

Increasing landfill slope grades, combined with the slope material consisting of fly ash, may potentially result in greater releases of fugitive dust into the air and the opportunity for greater concentrations of pollutants in the landfill system due to the increase in coal ash materials overall. FirstEnergy's 2006 application (as approved 2009) sought to waive—for the express purpose "to maximum disposal capacity"—final slope limits contained at 25 Pa. Code 288.234(h)(3), which require that "[a]n operator may not leave final slopes that have a grade exceeding 33%, including slopes between benched terraces." 2006 Application (as revised 2009), Form Q4, Equivalency Review for Requirement for Final Slope Grades, "Waiver on Final Slopes Exceeding 33 Percent," Narrative, at 1.

FirstEnergy was approved by DEP to use 2.5 Horizontal to 1 Vertical sideslopes for overall slope of 3H:1V, justifying this change on calculated factors of safety that were 1.559 for the 3H:1V slope versus 1.569 for the 2.5H:1V slope. 2006 Application (as revised 2009), Form Q4, Waiver on Final Slopes Exceeding 33 Percent, Attachment Q4-2, at 1. While FirstEnergy stated it was not aware that this alternative had been approved before, its tests showed that fly ash has a "peak friction angle of 34 degrees" and an "internal angle of friction of 30.7 degrees." 2006 Application (as revised 2009), Form Q4, Waiver on Final Slopes Exceeding 33 Percent., Narrative, at 3, and Attachment Q4-2, at 1. These tests were based on conditions very different from the current facility, however. Indeed, the Company's calculations and supporting drawings state that FirstEnergy did not know what the final cover would be, and for the 3H:1V slope calculations, FirstEnergy assumed final cover would be 2 feet of inorganic clay (0.61m). 2006 Application (as revised 2009), Form Q4, Waiver on Final Slopes Exceeding 33 Percent, Attachment Q4-2, Side Slope Veneer Stability Analysis, at 4. However, the 2015 Application provides that the final cover will be two feet of soil, not clay, meaning, the friction, weight, cohesion, adhesion, permeability, and other factors that went into the calculations in 2006 would need to be updated, and it does not appear DEP or FirstEnergy recalculated the slope variance with the updated numbers. 2015 Application, Form 12R.

2. DEP waived daily cover and intermediate cover requirements at the landfill without providing the supporting information justifying these waivers.

Residents living near the Hatfield CCB Landfill provided detailed and alarming testimony regarding their concerns over the release of airborne fugitive dust as a result of operations at the Hatfield CCB Landfill in the recent public meeting over this permit modification, and the waiver of the cover requirements that could help contain releases of dust must be made publicly available to ensure no air pollution or resulting water pollution would occur based on cover operations at this facility.

Pursuant to 25 Pa. Code 288.232(b) and 288.233(b), respectively, the Department waived the requirements for daily cover and intermediate cover in the 2006 application and resulting 2009 modification. 2006 Application (as revised 2009), Forms Q1, Q2. However, Commenters were unable to view any of the supporting documentation or analysis for these waivers, as both of these forms simply state "[i]n response to PADEP technical comments dated August 25, 2007, this section has been removed." The equivalency review section has been deleted from the application, so Commenters were unable to evaluate the details or sufficiency of the daily cover waiver.

B. The leachate storage impoundment does not chemically treat leachate prior to discharge into the Monongahela River.

Despite extremely high levels of toxic pollutants present in landfill leachate, DEP, incredulously, approved this permit with no treatment of leachate prior to discharge into the Monongahela River. The Monongahela River serves as the drinking water source for millions of people including those in the Borough of Masontown, whose intake is only one-quarter mile downstream. DEP has approved a system whereby leachate collected by the leachate collection system of the landfill will flows from the Phase III portion of the landfill by gravity to the Leachate Storage Impoundment ("LSI"). 2006 Application, Form 12R, Operations Plan, Narrative, at 3. However, no chemical treatment of leachate will be employed at the LSI; the leachate would be treated for solids removal and then discharged through National Pollutant Discharge Elimination System permitted Outfall 014. *Id.* Leachate collected from the leak detection system of the LSI will be pumped back into the impoundment. *Id.* at 9. Given DEP's approval of waivers allowing for a significant volume of additional coal ash at this site to be used as part of the layers meant to detect and collect leaching of pollutants, DEP should revisit whether additional treatment is necessary prior to discharge, especially given that the 2008 Consent Decree regarding illegal surface water NPDES discharges does not appear to have successfully remediated surface water pollution based on any evidence in the DEP files.

C. DEP must reevaluate what wells and samples constitute "background" instead of relying upon 2006 data to establish background when pollution was already clearly occurring onsite and many of the wells labeled upgradient at that time were clearly impacted by pollution from the landfill.

The existing background monitoring system at the landfill fails to comport with regulatory requirements and DEP must not approve this application until FirstEnergy presents a plan to adequately characterize background in order to distinguish areas that are upgradient and downgradient of the existing landfill areas and the lined landfill area. For DEP to approve a residual waste permit application, the application must demonstrate that "[t]he water quality monitoring system shall accurately characterize groundwater flow, groundwater chemistry and flow systems on the site and adjacent area," upgradient and downgradient wells must be "[s]ufficient in number, location and depth to be representative of water quality," and upgradient wells must be "located so that they will not be affected by adverse effects on groundwater from the disposal area." 25 Pa. Code § 288.252(a),(b)(1),(c).

DEP claims that it began background monitoring at the landfill in 2006, but evidence of pollution was already occurring at that time and many of the wells DEP and the permittee labeled as "background" or "upgradient" at that time were clearly demonstrating impacts from coal ash leaching from the impoundment. *See generally* In Harm's Way, at 174–75. DEP must require FirstEnergy to install new wells to establish background and to acknowledge coal ash impacts on wells previously or currently labeled "background" in order to adequately and fairly assess new impacts that could occur as a result of the proposed disposal operations. Unless upgradient wells can be established that are not affected by existing groundwater contamination, DEP cannot approve this application for modification to accept an additional 17 million tons of coal ash.

D. <u>The permit's monitoring requirements must be augmented to properly account for releases from the Bruce Mansfield coal ash placed at the Hatfield CCB landfill.</u>

The groundwater monitoring requirements for the Hatfield CCB facility are insufficient given the extensive surface and groundwater contamination occurring at this site. *See* 25 Pa. Code § 288.254. Monitoring is too infrequent. Pennsylvania residual waste regulations require quarterly testing of groundwater for parameters such as pH, chloride, sulfate, alkalinity, TDS, iron, and manganese, among others, but only require annual sampling for toxic contaminants associated with coal ash, including as arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc. These toxic pollutants—especially all pollutants for which there have been exceedances of MCLs or other health-based standards at this site, must be monitored at least quarterly. Annual testing may fail to detect signs of groundwater quality degradation, particularly if there are seasonal variations in contaminant concentrations or if unusually dry or wet weather has upset steady-state conditions. Annual sampling makes it difficult to detect meaningful trends and is insufficient for the timely detection of water contamination.

Furthermore, while FirstEnergy and DEP claim they are investigating arsenic and other pollution problems at this site, Commenters have not seen any abatement or even additional assessment monitoring requirements imposed at this site. Commenters reserve the right to supplement these comments as appropriate once FirstEnergy releases a proposed groundwater abatement plan.

E. <u>DEP and FirstEnergy have not provided sufficient information to ensure that releases from the Phase 3 Disposal Area can be distinguished from current and ongoing releases from the unlined Phase 1 and Phase 2 portions of the landfill.</u>

While the Bruce Mansfield coal ash is proposed to be disposed of at the Phase 3 Disposal Area of the Hatfield CCB landfill, and while a Class I liner system (albeit with waivers for nearly every environmental protection, see discussion *supra*) will be in placed at the Phase 3 Disposal Area, this area is not distinct but was an expansion of the unlined areas and a significant portion of the Phase 3 area is actually an overfill—lying atop the unlined portion of the landfill. While the 2015 application states that approximately 17 acres of the Phase 3 area overlies the unlined landfills, the 2006 application submitted by FirstEnergy's predecessor-in-interest (as revised in 2009) states that the overlie area is actually 22.8 acres. *See* 2006 Application (as revised 2009), Form 1R, Narrative, at 1. This difference was not accounted for in the more recent documents. In either case, it is not disputed that at least 17 acres of the lined site sits directly atop the unlined

sites, which are actively leaking arsenic and other pollutants into groundwater (see Section II, *supra*).

Furthermore, the waivers granted by DEP allow the entire subbase of the Phase 3 Disposal Area to consist of coal ash, without a lower barrier between the coal ash and the underlying disposal cells or aquifers.

DEP may not approve an application unless such application is both complete and accurate. 25 Pa. Code § 287.201(a)(1). Given that the existing landfill sections are already causing water pollution, given that the Phase 3 Disposal Area will overlie these areas, and given that the lowermost layer of the lined landfill will consist of compacted fly ash that could leak pollutants, DEP has not provided enough information to demonstrate adequately that the design of this landfill can accommodate the Bruce Mansfield coal ash without causing air or water pollution as required by the regulations. The lined portion of the landfill is not a distinct disposal cell but an expansion of the previously existing and leaking unlined disposal cells, and DEP has not adequately demonstrated that releases that may occur from the lined landfill will be able to be distinguished from, or characterized and abated separately from, the existing pollution at the site.

F. <u>The permit application repeatedly refers to Phase 3 of the Hatfield CCB Landfill as a Class I Landfill and a Class II landfill, and must be modified to ensure that all requirements meet Class I standards.</u>

Pennsylvania law states that the Department may require that waste be disposed of at a Class I landfill instead of a Class II landfill where "[m]onitoring data indicate that the waste or contaminants of the waste are migrating from the landfill." 25 Pa. Code § 288.523(a)(3)(i). Migration of contaminants has been confirmed by EPA's proven damage case determination, so it is critical that the landfill meets all Class I requirements in this case. However, the application repeatedly refers to the landfill as Class I and Class II. DEP may not approve an inaccurate application. 25 Pa. Code § 287.201(a)(1). The application should be modified to be clear that Class I requirements are being met and imposed. For example, FirstEnergy confusingly asserted in the 2015 modification application, in response to the question asking the applicant to describe the "[t]ype of landfill activity to be conducted at the proposed site," that "The HL is a Class II coal combustion by-product (CCB) residual waste landfill." *See* 2015 Application, Form 12R, Operation Plan, Narrative, at 2. FirstEnergy must correct this error to ensure that the Phase 3 portion of the Hatfield CCB Landfill (which is where the Bruce Mansfield ash would be disposed of) is consistently held to the Class I standards.

G. <u>The Hatfield CCB site and the currently leaking unlined Phase 1 and Phase II disposal cells were constructed over mined lands, which increase the likelihood that any leaks from disposal operations could contaminate groundwater, and would potentially violate EPA's new federal coal ash regulations and trigger immediate closure.</u>

The Hatfield CCB Landfill and the existing, unlined disposal cells at this site were constructed atop "an area that previously had been deep and surface mined." 2006 Application (as revised 2009), at Form 1R, Narrative, at 2. Specifically, the Pittsburgh Coal Seam, located 280 to 500

feet below the ground surface, has been deep mined at the site. 2006 Application (as revised 2009), at Form 2R, Narrative, at 2. While the 2006 application states that this mining did not impact the shallow ground water on-site, this mined area could potentially be impacted by leaching of pollutants from the landfill areas.

The Hatfield CCB Landfill's placement above unstable mined lands violate EPA's new federal coal ash regulations, and, once effective, will prohibit the Landfill from receiving coal ash and will require the Landfill to close. EPA's new coal ash disposal regulations prohibit landfills from being located in unstable areas. 40 C.F.R. § 257.64. Absent a demonstration that certain practices have been incorporated into the design of this landfill to ensure the integrity of the structure of this landfill in an unstable area, the federal regulations will prohibit FirstEnergy from placing any coal ash in the Hatfield CCB Landfill after October 2019. *See* 40 C.F.R.§§ 257.64(d)(1),(d)(4); 40 C.F.R. 257.101(d)(1); 40 C.F.R. § 257.102. DEP must not approve this plan to place coal ash in a landfill that will be in violation of federal law.

VI. DEP Must Deny This Permit Because FirstEnergy Failed to Submit Revised Bonding Calculations to Account for Changes in Bond Liability Amount Triggered by Differences in the Nature of the Waste or Adjusted Costs of Clean Up.

FirstEnergy failed to submit or calculate revised bonding worksheets to account for the potential increase in liability costs incurred by either the change in waste components included in FirstEnergy's 2015 application or simply the increase in costs triggered by inflation. FirstEnergy is required to calculate a bond amount that reflects liability based upon the estimated costs of achieving final closure requirements under Pennsylvania law and "[t]o take measures necessary to prevent adverse effects upon public health and safety, public welfare and the environment, during operation and after closure." 25 Pa. Code § 288.331. These calculations must incorporate likely increases in costs in the future due to inflation. *Id.* FirstEnergy failed to submit revised bonding worksheets, relying on previously submitted bond calculations. *See* 2015 Application, Checklist (noting that Bonding Worksheets were "N/A"). Given the potential for the proposed disposal of Bruce Mansfield ash at the Hatfield CCB landfill to pose a greater risk of adverse effects upon public health and the environment due to the introduction of barging the waste, the differences in toxicity levels given the doubling of FGD materials to be disposed of at this site, and the increase in liability due to inflation as the life of the unit is being extended as a result of FirstEnergy's decision to reopen this landfill to accept this new coal ash waste source, FirstEnergy must be required to recalculate and post bonds. DEP is prohibited from approving this application unless it receives, reviews, and approves an operator's proposed bonding amount, which requirements have not been satisfied here. *See* 25 Pa. Code § 288.331(f).

VII. FirstEnergy Failed to Include Required Information Regarding its Plan to Transport Millions of Tons of Coal Ash by Barge 113 Miles in its Application That is Needed to Determine Whether the Proposed Activities Will Endanger Health or the Environment.

The application underlying FirstEnergy's request for a "minor" permit modification relies on river barges to transport the toxic coal ash waste from Bruce Mansfield Power Station's to

Hatfield's landfill, over 100 miles along two major state waterways—the Monongahela and Ohio Rivers. The barging loading, transport, and unloading component of the request for permit modification and the proposed coal ash transfer from Bruce Mansfield to Hatfield's is, therefore, a principal part of the permittee's operations contemplated by the present request and underlying application. Pennsylvania law requires that a waste permit application is complete and accurate and ensures the adequate control of releases during transport. However, as submitted, the application fails to include sufficient and essential information on this critical element of the proposed process. As such, the application for a minor permit modification fails to comply with Pennsylvania law and must be denied.

In order to comply with waste permit application laws and implementing regulations relating to the processing, storage, and transport of coal ash, the permit application for FirstEnergy's request for a permit modification must ensure that the permittee adequately controls leachate, runoff, discharges and emissions from the coal ash during any and all barging activities—including loading, unloading, and transport of the waste. *See* 35 P. S. §§ 6018.302. Moreover, in order to comply with the law, the application must ensure that the barging operations and equipment are designed, constructed, operated, and maintained in a manner which shall not adversely affect or endanger public health, safety and welfare or the environment or cause a public nuisance. *See id*. The prohibition on endangering the environment and public health, safety, and welfare applies not only to the transport activities associated with the proposed barging process, 35 P. S. §§ 6018.303, but also to the on-barge storage of the coal ash during transport.[6] FirstEnergy is also required to comply with the requirements of 25 Pa. Code § 299—relating to storage and transportation of residual waste.[7] Pennsylvania regulations further provide that DEP may not approve an application unless such application is both complete and accurate. 25 Pa. Code § 287.201(a)(1).

Here, compliance with applicable laws and regulations is essential to prevent harm to human health and the environment from the toxic pollutants in coal ash and to prevent those toxins from entering waterways during any and all barging loading, transport, and unloading activities. Storage and transportation of coal ash material on barges over 113 miles has the potential for the release of toxic pollutants into surface waters, posing a threat to public health, safety, and the environment. Indeed, the numerous barges that will carry coal ash from Bruce Mansfield to the Hatfield's landfill will not only disturb aquatic ecosystems but can also lead to polluted releases from the coal laden surfaces of the barges, as well as dust losses and drop-off of fly ash during loading, unloading, and transport. Yet, despite these required assurances, the permittee has failed to submit relevant and necessary information and plans with regard to the proposed barging operations under the requested permit modification.

FirstEnergy's application for a permit modification fails to provide critical information necessary to ensure that the proposed barging activities will not harm public health, safety, or the environment, or at the very least, will not create a nuisance, in violation of the law. Other than

[6] 25 Pa Code Section § 287.1 defines "storage" as "The containment of waste on a temporary basis in a manner that does not constitute disposal of the waste." Accordingly, the coal ash waste will be stored on the barges during transport.

[7] Again, in light of the fact that coal ash will be stored on the barges during transportation to the Hatfield's landfill, restrictions relating to storage apply, in addition to those applicable to the transport of such waste.

generally stating that FGD waste will be transported by barge from Bruce Mansfield Power Station via the Ohio and Monongahela Rivers to the existing Monongahela River barge harbor and unloading area at the former Hatfield's Ferry Power Station and that unloading process will include existing or retrofitted unloading facilities,[8] the permit application fails to provide adequate information to allow a proper determination as to whether the proposed barge-related activities will endanger the environment or public health, safety and welfare. In addition, the permit application fails to provide sufficient information to ensure that the permittee adequately controls leachate, runoff, discharges, and emissions from the coal ash during any and all barging activities—including loading, unloading, and transport of the waste. This is inadequate and unlawful. In light of the permittee's failure to demonstrate compliance with the transport and storage requirements noted above, neither DEP nor the public can accurately determine at this time whether the proposed project will harm public health, safety, or the environment, in violation of the law. Thus, as compliance with the law and implementing regulations cannot be determined, the request for a permit modification must be denied.

Indeed, the application lacks relevant information as to essential and vital components of the unloading process—a process which, if not designed, operated, and maintained properly, will result in significant and cumulative environmental impacts which would potentially impact human health, for instance due to unpermitted releases of the toxic ash into surrounding surface waters from coal ash drop-off during the unloading process from barge to truck. As an example, the application is unclear as to whether the permittee plans to upgrade or repair existing unloading equipment or add new equipment to the facilities, and fails entirely to provide a description of the equipment and the process involved in the unloading of toxic coal ash from the barges. The permit modification application simply states "[u]pgrades of existing unloading equipment, or new unloading equipment will directly unload the barges onto trucks." 2015 Application, Form 1R, Narrative, at 1. Without more specific details, the application is incomplete, DEP cannot ensure that the facility will have measures in place to prevent unpermitted discharges of coal ash into the waters of the Commonwealth in during unloading, and DEP must not grant this application request.

The application also lacks the information required to determine compliance with the requirements of 25 Pa. Code § 299. These requirements include, for example, that the residual waste must be completely enclosed or covered during transportation, that transportation equipment must be cleaned as frequently as necessary to prevent odors, vectors and other nuisances, constructed to prevent littering and the ingress or egress of vectors, and equipped with fire extinguishing equipment, and that load compartments in transportation equipment must be constructed to be easily cleaned and in a manner that provides easy access for the application of odor masking agents and for the performance of required maintenance and provided with drain plugs or valves at their lowest points. *Id*. DEP and commenters cannot determine, based on the information submitted in and along with the application, whether these requirements will be met.

In addition to applicable residual waste requirements, the loading, unloading, and transportation of toxic coal ash at the Hatfield's landfill must also comply with all applicable federal hazardous material transportation law, *see* 49 U.S.C. 5105 et seq., as well as relevant hazardous materials regulations. *See* 49 CFR parts 171–80. Again, because no assurance or demonstration of

[8] *See* Permit Application, Form 1R Narrative.

compliance with applicable federal hazardous waste requirements have been presented as part of the application process for the permittee's request, a permit modification is improper.

With regard to ensuring that the public health is protected by any resulting permit modification, FirstEnergy's request contemplates transporting millions of tons of toxic coal ash 113 miles over the Ohio and Monongahela rivers in western Pennsylvania—rivers that are the drinking water sources for millions of people.[9] The permittee has failed to provide information and supporting documentation to ensure that its barging activities will not release any toxic coal ash into these water sources—information that is critical in order for PADEP to accurately determine and address the threats this dangerous activity pose to health, safety, and the environment, and a determination that is critical for approval under applicable state regulations. *See* 35 P. S. § § 6018.302, 6018.303; *see also* 25 Pa. Code § 264a, 287, 288, 299.

In fact, barges loaded with coal ash have a history of not only contaminating these very same rivers during normal transportation operations, but also sinking and releasing vast quantities of the toxic waste. For example, in 2006, a barge carrying similar FGD sludge sank in the Monongahela River, spilling more than 1,060 net tons of FGD sludge into this major drinking water source.[10] In 2007, another barge carrying fly ash spilled 1,254 net tons of fly ash into the Monongahela River.[11] In 2001, a barge carrying coal ash released 500 tons of FGD waste in the Monongahela River.[12] In light of these and other historic failures of transporting coal ash materials by barge, FirstEnergy's proposed plan to transport such a massive volume of coal ash waste material over long distances of the Ohio and Monongahela rivers for disposal at the Hatfield's landfill seriously threatens the environment and public health, safety, and welfare. Therefore, without additional, detailed information as to the specifics of the proposed barging and unloading activities, DEP must not approve FirstEnergy's present request for a "minor" permit modification.

This is especially important given the available and prevalent data demonstrating the actual toxicity and environmental damage caused by Bruce Mansfield's coal ash. *See* Sections III and IV, *supra*. Given the prevalence and concentration of toxic metals known to be present in the coal ash to be transported and disposed of under this "minor" permit modification, DEP must deny FirstEnergy's application in light of its failure to document exactly how it plans to minimize the significant threat to health, safety, and the environment posed by transporting the coal ash via barge, as well as unloading the ash from the barge once it reaches the receiving harbor.

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[9] See The Ohio River Foundation, "Ohio River Facts," http://www.ohioriverfdn.org/education/ohio_river_facts/, ("The Ohio River is the source of drinking water for more than three million people."); "Monongahela River Named Pennsylvania River of the Year for 2013," The Herald Standard, http://www.heraldstandard.com/special_sections/monongahela-river-named-pennsylvania-river-of-the-yearfor/article_74b1bb0c-7f95-5d09-9c86-d1d9908d4440.html?mode=jqm, ("The Mon is a source of drinking water for about one million people.").

[10] PADEP, Consent Assessment of Civil Penalty, In the Matter of Matt Canestrale Contracting, LaBelle River Dock, at 2–3 (June 24, 2008), (May 23, 2006).

[11] *Id*.

[12] Vincent Yantko, PADEP, Inspection Report – Emergency Incident, Responsible Party: Matt Canestrale Contracting (Nov. 2, 2001).

In addition to lacking necessary, essential information as to the design and operations of the transport and unloading equipment and processes, as well as necessary assurances that the environment and public health and welfare will be protected, the request for a permit modification also fails entirely to include the requisite revised pollution prevention and countermeasure ("PPC") plan for the proposed barging and associated unloading operations. Instead of providing the necessary PPC plan along with its application, the permittee has indicated that it will develop such a plan once the final unloading equipment is identified and provided separately. *See* 2015 Application, Form 1R Narrative at 2. This is improper. DEP cannot grant the permittee's request for a "minor" permit modification without receiving and analyzing a relevant revised PPC plan specific to the new or altered operations mentioned in the accompanying application.

A PPC plan is necessary to address prevention and control of accidental discharges of polluting materials to surface water or groundwater, as well as to prevent and control fugitive emissions from polluting the ai. The barging and associated unloading activities contemplated by the present request for a permit modification have the potential to cause water pollution and endanger public health and safety. Residual waste disposal and processing facilities are required to develop and submit a PPC Plan as part of the residual waste permit application. *See* Pennsylvania DEP, Guidelines for the Development and Implementation of Environmental Emergency Response Plans (Aug. 6, 2005), available at http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-48522/400-2200-001.pdf. In light of the serious nature of the request, the PPC should have been submitted for review and approval by the Department in conjunction with the underlying application. *See, e.g.,* 25 Pa. Code § 288.171. Because it was not, the application is incomplete and the request for a "minor" modification may not be approved by DEP at this time

Consequently, for the reasons discussed above, DEP must deny the request for a "minor" permit modification because no permit may issue without adequate information presented to determine whether proposed barge-related transport operations will adequately protect the environment and public health or to determine, at the very least that the proposed activities will not create a nuisance. In addition to requiring additional, detailed information from the permittee prior to any permit modification,, given the high volume of materials under consideration in the proposed minor permit application, the great distance the waste may be transferred between generation and final placement, and concerns over health and environmental risks, particularly risks to public drinking water, consultation with other agencies should be sought prior to approval of any permit modification by DEP.[13]

[13] Examples of other agencies that should be consulted on the matter are: U.S. Army Corp of Engineers; Port of Pittsburgh Commission; all municipal water authorities along the proposed barge route on the Ohio and Monongahela Rivers, so they have all relevant Material Safety Data Sheets ("MSDS") for FirstEnergy's coal ash pollutants and can prepare for potential emergencies; all locks and dams along the barge route(s), so they can prepare Feasibility Studies for dramatic increase in barge traffic that the proposed activities would bring; Three Rivers Regatta Committee; U.S. Coast Guard and all other regulatory officials governing river safety; River Rescue officials and applicable first responders, so they can receive the proper MSDS information on coal ash and potential risks to human health and water sources; State and federal Pennsylvania Senators and members of Congress; U.S. Homeland Security officials, given the potential risks to public drinking water; The National Response Center; The Allegheny County Health Department; Allegheny County officials; City of Pittsburgh officials; Westmoreland

VIII. Conclusion

For the forgoing reasons, Commenters respectfully request that DEP deny, or, alternatively require revisions consistent with these comments, to FirstEnergy's application to modify Permit 300370 in order to account for the increased risks posed by disposal of coal ash from the Bruce Mansfield Plant at the Hatfield CCB Landfill and to ensure the protection of public health and the environment.

Sincerely,

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County officials; Washington County officials; Fayette County officials; and the public through public hearings—the public should have a live forum by which it can comment on FirstEnergy's plans with regard to environmental releases, increased barge traffic, potential drinking water impacts, fugitive dust issues, and interference with river recreation activities