

C. Describe the types of persons, businesses and organizations likely to be impacted by this proposal.

Please see Attachment A.

D. Does the action requested in the petition concern a matter currently in litigation? If yes, please explain.

There are no matters in litigation that concern the action requested in this petition.

E. For stream redesignation petitions, the following information must be included for the petition to be considered complete. Attach supporting material as necessary.

1. A clear delineation of the watershed or stream segment to be redesignated, both in narrative form and on a map.
2. The current designated use(s) of the watershed or segment.
3. The requested designated use(s) of the watershed or segment.
4. Available technical data on instream conditions for the following: water chemistry, the aquatic community (benthic macroinvertebrates and/or fishes), or instream habitat. If such data are not included, provide a description of the data sources investigated.
5. A description of existing and proposed point and nonpoint source discharges and their impact on water quality and/or the aquatic community. The names, locations, and permit numbers of point source discharges and a description of the types and locations of nonpoint source discharges should be listed.
6. Information regarding any of the qualifiers for designation as high quality waters (HQ) or exceptional value waters (EV) in §93.4b (relating to qualifying as High Quality or Exceptional Value waters) used as a basis for the requested designation.
7. A general description of land use and development patterns in the watershed. Examples include the amount or percentage of public lands (including ownership) and the amount or percentage of various land use types (such as residential, commercial, industrial, agricultural and the like).
8. The names of all municipalities through which the watershed or segment flows, including an official contact name and address.
9. Locational information relevant to items 4-8 (except for contact names and addresses) displayed on a map or maps, if possible.

**All petitions should be submitted to the
Secretary of the Department of Environmental Protection
P.O. Box 2063
Harrisburg, PA 17105-2063**

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Attachment A

Unconventional Well Bonding Petition

BEFORE THE PENNSYLVANIA ENVIRONMENTAL QUALITY BOARD

**PETITION PURSUANT TO 25 PA. CODE §§ 23.1-23.5, 58 CONS. STAT. § 3225(a)(1),
AND ARTICLE I, § 27 OF THE PENNSYLVANIA CONSTITUTION TO ADOPT FULL-
COST BONDING FOR UNCONVENTIONAL OIL AND GAS WELLS TO CONSERVE
AND MAINTAIN PUBLIC RESOURCES FOR WHICH THE COMMONWEALTH IS A
TRUSTEE**

Submitted on behalf of the Sierra Club, Clean Air Council, Earthworks, Mountain Watershed
Association, PennFuture, and Protect Penn-Trafford

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Dated: September 14, 2021

SUMMARY

Abandoned oil and gas wells are a menace to Pennsylvanians across the Commonwealth. They pollute the air and water, exacerbate climate change, mar the neighborhoods they are in, reduce property values, and eventually have to be plugged using taxpayer money. They have caused, and will continue to cause, acute health consequences for Pennsylvanians, including members of the organizations filing this petition (“Petitioners”), and have increased their risk for serious long-term consequences, like cancer. Requiring full-cost bonding would address the risk of well abandonment by providing operators with a financial reason to plug their wells, and providing the Commonwealth with the money to do so itself if an operator will not or cannot plug its wells. The current bond amount of \$10,000 per unconventional well, with a complicated blanket bonding system that greatly lowers the actual per-well amount, does not come close to full-cost bonding.

This petition asks the Environmental Quality Board (“EQB”) to adopt full-cost bonding for unconventional oil and gas wells. Specifically, the EQB should issue a rule that:

1. Increases bond amounts to \$83,000 per unconventional well;
2. Makes blanket bonds equal to the sum of the individual bond amounts an operator would otherwise have to post;
3. Applies these new bond amounts to existing wells; and
4. Requires the Department of Environmental Protection (“DEP”) to issue a report to the EQB every two years that recommends whether the EQB should further adjust bond amounts.

The bond amounts requested in this petition are based on an expert report the Sierra Club commissioned from Dr. Jeremy Weber, a professor at the University of Pittsburgh, the Chief Energy Economist for President Trump’s Council of Economic Advisers, and an established expert in the economics of oil and gas production. Dr. Weber’s report uses historical plugging data within Pennsylvania to estimate the cost of plugging the average unconventional well in 2021. The report finds that under the assumption that the average well will be plugged in a fourteen-well plugging contract, as has been the case over the past decade, the cost of plugging the average unconventional well will be \$83,000.

This petition requests that the EQB set blanket bond amounts equal to the sum of these per-well bond amounts, rather than a set amount as exists under the current system. The current

system does not work. It is based on an assumption that large operators have minimal risk of defaulting, which evidence indicates is not the case. It also ignores the fact that large operators—to the extent they actually are more financially secure—already get a discount on bonding fees if they use a surety to make their bond payments.

The petition further requests that the updated bond amounts apply to both existing wells and new wells. If the increased bond amounts were only applied to new wells, there would be no reduction in the massive financial and environmental risk the Commonwealth already faces from existing wells that are severely under-bonded. One estimate finds that for existing wells, the deficit between the amount that operators have paid in bonds and the amount it will actually cost to plug these wells is \$12.15 billion.

Finally, this petition asks that DEP be required to examine every two years whether bond amounts should be updated because, as the Weber Report explains, plugging costs have risen every year, even adjusting for inflation, and DEP and the EQB have an obligation under the law to make sure bond amounts reflect these changes. If the agencies determine rulemaking will take longer than two years, this petition suggests that DEP undertake this analysis every four years as a secondary option.

Data from the impact of the unconventional well impact fee indicates that adopting the proposed regulations in this petition will have a minimal impact on unconventional well operators. Other studies indicate that the proposed regulations will create thousands of jobs in well plugging for Pennsylvania workers.

The EQB has the statutory authority to adopt these proposed rules. Indeed, failing to act on this petition would constitute a capricious disregard of material evidence indicating that bond amounts must be increased. The EQB also must act on this petition to meet its obligations under the Environmental Rights Amendment (“Section 27” or “the ERA”), which requires the Commonwealth to act as a trustee and manage the state’s environment for the benefit of all Pennsylvanians. Failing to set bond amounts equal to the cost of plugging wells results in the state allowing the environment to be degraded without ensuring that wells are plugged and land is remediated after drilling ceases. This the Commonwealth cannot do under the ERA.

The Environmental Rights Amendment was passed to prevent future fossil fuel booms from ending in the same way the coal boom did—with thousands of acres scarred by acid mine

drainage and abandoned mines pockmarking the state. The EQB was given authority to adjust bond amounts to ensure the same. The EQB must use its delegated power to prevent this looming environmental and financial catastrophe.

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DISCUSSION

Pennsylvania's current bond amounts for unconventional oil and gas wells are much too low to cover "the projected costs to the Commonwealth of plugging the well." 58 Cons. Stat. § 3225(a)(1). This encourages the abandonment and orphaning of wells. The Pennsylvania Department of Environmental Protection lists 5,415 wells in the state as "active" that have not produced any oil or gas for more than four years, and 8,848 wells as abandoned or orphaned but unplugged. *See infra* Section II.A.2. These abandoned wells pollute surrounding communities and put the state on the hook to cover hundreds of millions to billions of dollars in cleanup costs.¹ To avert this catastrophe, and to fulfill the Commonwealth's obligations under the Environmental Rights Amendment, this petition asks the EQB to increase well bond amounts to \$83,000 for unconventional wells, to make blanket bonds equal to the sum of individual bond amounts, to apply these changes to existing wells, and to revisit bond amounts every two years.

I. Failure to Plug Abandoned Wells Has Serious Public Health, Environmental, and Financial Consequences

Failing to require full-cost bonding results in the abandonment and orphaning of large numbers of oil and gas wells, which pose significant public health, safety, and environmental risks. Orphaned wells leak methane and other pollutants into the air and water, harming public health and exacerbating climate change. They mar communities, reducing property values and depressing the local tax base. Under the current system, orphaned wells ultimately must be plugged and remediated by the state, costing taxpayers hundreds of millions of dollars.

Numerous studies have shown that abandoned wells leak methane and other pollutants into groundwater and surface water. The Sierra Club commissioned an expert report from Dr. Jeremy Weber, a professor at the University of Pittsburgh's Graduate School of Public and International Affairs and the Chief Energy Economist for the Trump Administration's Council of Economic Advisors, and an established expert in the economics of oil and gas production to examine the negative consequences of abandoned wells and determine an appropriate bond amount to ensure abandoned wells are plugged.² The expert report ("Weber Report")

¹ *See* Off. of Oil and Gas Mgmt., Pa. Dep't of Env'tl. Protection, *Legacy Well Issues* 13 (2019) (DEP presentation stating that the Commonwealth has a potential cleanup liability of \$6.6 billion), included as Attachment G.

² The Weber Report is included as Attachment C.

summarized several of the studies on methane leakage. *See* Weber Report 5-6. Potential pollutants from abandoned wells that can infiltrate water supplies include barium, chloride, arsenic, and methane. As the report explains, “[a]rsenic is a carcinogen and even short-term exposure can harm health. Further, methane leaking into groundwater can create foul-smelling and toxic hydrogen sulfide when it oxidizes.” *Id.* at 5. Abandoned wells also leak methane and other chemicals into the atmosphere, further harming the health of nearby communities. Specifically, the methane leaked into the atmosphere can turn into ozone, which is extremely harmful to human health. Inhaling ozone can cause “damage to the heart and lungs and worsen[] chronic conditions such as asthma.” *Id.* Methane can also explode if leaked in enclosed spaces. *Id.* All of these studies examine the impacts of abandoned conventional wells. Unconventional wells have large amounts of dangerous chemicals pumped through them. Therefore, the negative health impacts of abandoned unconventional wells may be even greater than those of abandoned conventional wells.

This pollution has real consequences for the people of Pennsylvania. Gillian Graber lives or works within two miles of at least six abandoned conventional wells and within five miles of at least 51 abandoned conventional wells. *See* Gillian Graber Aff. ¶¶ 6-7.³ There are likely scores of additional abandoned wells near her that were never permitted and thus have not been identified by DEP. *Id.* Ms. Graber also lives near several active conventional wells. When she participated in a medical study on the effects of oil and gas development, she and her family were found to have levels of mandelic acid in their body that exceeded the 95th percentile for the general U.S. population. *Id.* ¶ 10. Mandelic acid is a metabolite of ethylbenzene and styrene, which can cause liver, kidney, and circulatory system problems and increase cancer risk. Ms. Graber’s family exceeded the U.S. median, and often the 95th percentile, for numerous other biomarkers of dangerous pollutants, such as 2-methylhippuric acid (a metabolite of xylene) and trans-muconic acid (a metabolite of benzene). *Id.* They also wore portable air monitors that indicated that they were exposed to levels of benzene, ethylbenzene, and naphthalene above the risk limit set by the California Office of Environmental Health Hazard Assessment, which indicates an increased cancer risk. *Id.* ¶ 11. Ms. Graber is extremely worried about the increased

³ Included as Attachment E.

risk of cancer and other diseases from being exposed to this pollution from both abandoned and active wells:

It is hard to overstate the fear you are forced to live with when you and your family are exposed to these kinds of chemicals every day that you know are incredibly dangerous, and that you see are already sickening your friends and neighbors No mother should have to go through this, but so many are and no one is doing anything about it.

Id. ¶ 17. While Ms. Graber and her family have been harmed by abandoned and active conventional wells, she believes many of the worst impacts came from the fracking of those conventional wells. *Id.* ¶ 13. Thus, the negative impacts Ms. Graber has experienced may be magnified for abandoned unconventional wells, which are likely to use more fracking fluid and pose greater contamination risks until they are plugged.

Ann Lecuyer lives in the same neighborhood as Ms. Graber. There are 14 abandoned wells within a three-mile radius of Ms. Lecuyer's home and 38 abandoned wells within five miles. *Ann Lecuyer Aff.* ¶ 7.⁴ There are likely dozens to hundreds more abandoned wells near her home that have not been identified by DEP, and she lives near numerous active conventional wells as well. *Id.* Ms. Lecuyer's asthma has gotten worse since moving to the area five years ago. In November 2018, for the first time in her life she had to be taken to the emergency room via ambulance due to an asthma attack, and she has since been prescribed additional medication for her asthma. *Id.* ¶ 11. "Having to go to the emergency room because of difficulty breathing was very scary, and it is frustrating to have to deal with additional difficulties with my asthma on a regular basis," she says. *Id.*

Ms. Lecuyer believes her worsened asthma is at least partially caused by the large number of abandoned and active wells in her neighborhood: "We live in a valley between two hills, and I believe that this traps air pollution in and makes it worse. I am concerned that whatever pollutants are coming up from these wells are sitting in the air and we are breathing it in" *Id.* ¶ 12. Ms. Lecuyer and her family participated in the same medical study as Ms. Graber, and the study showed that she and her family also had much higher levels of dangerous, cancer-causing pollutants in their bodies than the vast majority of Americans. *Id.* ¶ 8.

⁴ Included as Attachment F.

While the pollution affecting Ms. Lecuyer comes from conventional wells, there is no reason to believe that abandoned unconventional wells would have a less serious impact.

There are numerous Pennsylvanians who are dealing with similar negative consequences as Ms. Graber and Ms. Lecuyer because they live near abandoned wells. If these wells were plugged, much of the pollution these communities are exposed to would dissipate. As Ms. Lecuyer says, “It is known that unplugged abandoned wells leak, and plugging them would stop this leakage. This should lower the health risks my family and I face living next to these abandoned wells.” *Id.* ¶ 15.

In addition to causing serious health impacts, the large amounts of methane emitted by abandoned wells also exacerbate climate change. Methane leaks from abandoned wells “account for as much as seven percent of the annual anthropogenic methane emissions in the Commonwealth.” Weber Report 5. This is “equivalent to the annual greenhouse gas emissions from 200,000 to 250,000 passenger cars.” *Id.* Thus, simply by ensuring that abandoned wells are plugged, as is already required under the law, the Commonwealth could eliminate a substantial portion of its greenhouse gas (“GHG”) emissions.⁵ There are few other policies that could have such a significant impact on reducing GHG emissions simply by ensuring existing law is followed.

Abandoned wells also have significant quality-of-life consequences for the communities they are scattered throughout. Abandoned wells are an eyesore, “appearing as uncultivated or unmowed islands in fields or backyards. Wellheads, which are made up of pipes and valves, often extend about six feet into the air and can be accompanied by metal tanks, pipes, and pumps, all of which are removed as part of plugging.” Weber Report 5. These wells take away the peace of mind that comes from spending time in the beautiful environments in which they are often located. Ms. Graber explains: “I cannot walk in the woods near my home without seeing a

⁵ See Pa. Dep’t of Env’tl. Prot., *Pennsylvania Climate Action Plan 2018* 80 (2019) (listing the plugging of abandoned wells as a cost-effective mitigation strategy that the state could take to meet its climate goals), available at <http://www.depgreenport.state.pa.us/elibrary/PDFProvider.ashx?action=PDFStream&docID=1454161&chksum=&revision=0&docName=2018+PA+CLIMATE+ACTION+PLAN&nativeExt=pdf&PromptToSave=False&Size=4617270&ViewerMode=2&overlay=0>.

gas well. I often wonder, ‘Am I being exposed just by walking along this path?’ I get out in nature to avoid pollution, but that’s where many of these wells are.” Graber Aff. ¶ 18.

These quality-of-life concerns have real economic consequences. Abandoned wells depress nearby property values. A recent study concluded that from 1970 to 2017, the two acres surrounding plugged wells had an approximately 50 percent increase in building activity as compared to the two acres surrounding unplugged wells, resulting in an average reduction in the market value of property surrounding an unplugged well of 12 percent, or \$22,000.⁶ This harms the local economy and suppresses the local tax base. The Weber Report examined the impact of depressed property values on the region of Pennsylvania with the most unplugged wells—McGuffey School District in Washington County—and found that abandoned wells caused the district to lose \$112 per student every year, and cost Washington County as a whole over \$500,000 annually. Weber Report 5-6.

Further, wells that are abandoned by an operator that goes bankrupt or refuses to plug the wells must eventually be plugged by the Commonwealth. Because current bond amounts are much too low and do not cover the actual cost of plugging, the Commonwealth must use significant taxpayer funding to close these wells. Indeed, taxpayers could be forced to pay as much as \$12.15 billion just to plug the existing wells that have been drilled to date. *See infra* Section II.A.1. If bond amounts are increased, operators will be properly incentivized to close abandoned wells themselves. Even if an operator goes bankrupt, the state will have enough money via bonds to plug the wells without having to use taxpayer money. Thus, taxpayers will not be forced to pay for plugging costs that should be borne by the private operators that drilled and profited from the wells. In sum, the harmful consequences of abandoned wells are numerous and severe, while plugging those wells would yield significant environmental, public health and safety, and financial benefits.

⁶ Max Harleman, Jeremy Weber, & Daniel Berkowitz, *Environmental Hazards and Local Investment: A Half-Century of Evidence from Abandoned Oil and Gas Wells* 3, 21 (2020), available at https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID3692098_code920036.pdf?abstractid=3692098&mirid=1.

II. The EQB Should Increase Bond Amounts to \$83,000 for Unconventional Wells and Set Blanket Bonds to the Sum of an Operator's Individual Bond Liability

To prevent these serious public health, environmental, and fiscal consequences from orphaned wells, the EQB must set bond amounts at a level that reflects the actual cost of plugging wells (*i.e.*, full-cost bonding). Unfortunately, the current bond amounts are much too low—covering as little as 0.4 percent of the actual cost of plugging. *See infra* Section II.A.1. To determine an appropriate amount, the Sierra Club commissioned the aforementioned expert report from Dr. Weber. Based on the data in that report, Petitioners request that the EQB raise the bond amounts to \$83,000 for each unconventional well and to reconsider bond amounts every two years (or every four years if the agencies determine rulemaking will take longer than two years). Petitioners also request that the EQB set blanket bonds equal to the sum of the individual bonds that an operator would otherwise have to pay. Failing to act on this petition and to raise the currently inadequate bond amounts would constitute a capricious disregard of material, competent evidence.

A. Full-cost bonding is necessary to ensure operators plug abandoned wells

Requiring full-cost bonding is necessary to ensure that abandoned wells are plugged and to prevent the serious negative consequences described in Section I. The current system, in which the state fines operators that do not plug abandoned wells in an attempt to force compliance with well closure requirements, has failed to prevent thousands of wells from being abandoned by operators. Further, this system, as well as other alternatives to full-cost bonding, puts the state at risk of seeing a massive surge of orphaned wells if, or when, oil and gas prices no longer support the operations of both large- and small-scale operators and operators are forced into bankruptcy.

1. Pennsylvania currently does not have full-cost bonding

The current bond amounts do not come close to reflecting the actual cost of well plugging. For unconventional wells with a total well bore length of more than 6,000 feet, the Commonwealth currently requires bond amounts of \$10,000 per well. 58 Pa. Cons. Stat. § 3225(a)(1). Different blanket bonds then apply based on the number of wells the operator owns. Consequently, the actual bond amount is lower than \$10,000 per unconventional well for

any operator that owns more than fourteen wells, with a maximum bond amount of \$600,000 per company no matter how many wells the company owns. *Id.*

An analysis by Carbon Tracker shows just how woefully inadequate the state’s current bond amounts are. Carbon Tracker has a portal that tracks every identified unplugged oil and gas well in the state, the bond amounts posted by the operators, and the total cost of actually plugging all of the identified unplugged wells in the state.⁷ Carbon Tracker almost certainly undercounted the number of unplugged oil and gas wells in the state—it is impossible to track all of the orphaned wells since so many were drilled before a full permitting scheme was in place and thus are not on any lists.⁸ The portal uses a formula for calculating the cost of plugging each well based on a dataset of wells plugged in Australia.⁹ Under that formula, the plugging cost per well changes as the “true vertical depth” of a well increases. *Id.* This formula likely overestimates the cost of plugging wells in Pennsylvania because it relies on data from operators that plugged wells as they stopped producing, such that wells were plugged one at a time or in batches of just a few wells. *Id.* When the Commonwealth plugs wells, it usually plugs multiple wells at one time per contract, which reduces the cost of plugging each individual well. *Id.*; *see also infra* Section II.B.

Even with these uncertainties in mind, Carbon Tracker’s estimates demonstrate the extreme financial liability that orphaned wells pose for taxpayers. The portal estimates that it would cost \$12.2 billion to plug all identified wells in Pennsylvania, and that the state has \$47.2 million in bonding available to plug these wells.¹⁰ That is a bonding ratio of *0.4 percent*. In other words, 99.6 percent of the total cost of plugging these wells, or \$12.15 billion, is unaccounted for. Even if the plugging costs estimated by Carbon Tracker are ten times higher than the actual costs—which is unlikely—Pennsylvania’s currently available bond amounts would still cover only 3.8 percent of the total cost to plug all existing unplugged wells in the state identified by Carbon Tracker, and there would be a bonding shortfall of \$1.22 billion. Further, as mentioned

⁷ *Asset Retirement Obligations (ARO) Portal*, Carbon Tracker, <https://carbontracker.org/tools-and-insights/aro-portal/> (last visited Sept. 8, 2021).

⁸ Off. of Oil and Gas Mgmt., *supra* note 1, at 13 (presentation by DEP stating that “between 100,000 to 560,000 legacy wells . . . have not yet been accounted for”).

⁹ *ARO Portal User Manual*, Carbon Tracker, <https://carbontracker.org/aro-portal-user-manual/> (last visited Sept. 8, 2021).

¹⁰ Carbon Tracker, *supra* note 7.

earlier, it is likely that Carbon Tracker’s estimate does not account for a large number of unidentified wells, meaning that the actual cost to plug all unplugged wells in the state may even be higher than Carbon Tracker’s estimate. This analysis makes it clear that the state does not currently have a full-cost bonding system in place.

2. Lack of full-cost bonding has resulted in the abandonment of thousands of wells

In the absence of full-cost bonding, operators are not incentivized to plug abandoned wells. DEP lacks the resources to force operators to comply with plugging requirements through enforcement actions. Further, if an operator has been allowed to drill wells that it does not have the money to plug, no enforcement action can make the operator plug the well.

The failure of the current non-full-cost bonding system is evidenced by the enormous number of wells across Pennsylvania that have been abandoned for years, but which DEP has not ensured are plugged (under Pennsylvania law, any well that has not produced oil or gas for at least a year is legally abandoned, 58 Pa. Cons. Stat. § 3203). DEP lists 8,848 conventional wells as abandoned or orphaned but not plugged.¹¹ DEP has acknowledged that there are up to an additional 560,000 orphaned wells that have not been accounted for and thus are not on any list.¹² In addition, there are 5,415 conventional wells that did not produce oil or gas in any year between 2017 and 2020 (inclusive), but that were still listed as “active” by DEP, comprising more than seven percent of all “active” conventional oil and gas wells in the Commonwealth.¹³ Finally, there were over 2,000 wells listed as active in every year from 2013 to 2020 that failed to produce over that eight-year period, comprising nearly three percent of all active conventional wells in the state. In other words, approximately one of every 14 conventional wells listed as

¹¹ *Orphan & Abandoned Wells*, Pa. Dep’t of Env’tl. Protection Off. of Oil and Gas Mgmt., http://cedatareporting.pa.gov/Reportserver/Pages/ReportViewer.aspx?/Public/DEP/OG/SSRS/Abandoned_Orphan_Web (last visited Sept. 10, 2021).

¹² Off. of Oil and Gas Mgmt., *supra* note 1, at 13.

¹³ *Unclosed Conventional Wells, PA*, Sierra Club, <https://www.google.com/maps/d/u/0/viewer?mid=1RbWAXS5TU6IDcQpq6agoHxL31xTk7uOP> (report generated July 23, 2021); *see also Oil and Gas Production Reports*, Pa. Dep’t of Env’tl. Protection Off. of Oil and Gas Mgmt., http://cedatareporting.pa.gov/Reportserver/Pages/ReportViewer.aspx?/Public/DEP/OG/SSRS/OG_Well_Prod_Status. Wells in the survey are restricted to conventional wells listed as active in both 2013 and 2020, and identified as oil, gas, condensate, or coalbed methane wells.

operational in Pennsylvania has been violating the state’s plugging requirements for at least four years. Yet DEP appears not to have taken enforcement action against many of these “active” wells. This level of enforcement is likely why Pennsylvania’s non-full-cost bonding system has led to thousands of wells abandoned over the past two decades remaining unplugged for years—not to mention the hundreds of thousands of wells that were abandoned or orphaned previously that remain unplugged.

Ann Lecuyer experienced the issues with Pennsylvania’s current system for plugging abandoned wells first-hand. After receiving the results of the study showing she had elevated rates of several cancer-causing chemicals in her body, she looked up the records for all oil and gas wells within a few miles of her home. She found numerous wells that had no production reports associated with them for several years but were still listed as active, and alerted DEP to this discrepancy. Lecuyer Aff. ¶ 14. DEP did not take any enforcement action against any of the wells Ms. Lecuyer sent them. *Id.*

Currently, it is almost entirely conventional wells that have been abandoned by operators without being plugged, as unconventional well drilling began relatively recently, and in most cases the oil or gas reserves for these wells have not yet been exhausted. However, the failure of the current non-full-cost bonding system to ensure that abandoned conventional wells are plugged will only repeat itself for unconventional wells as their reserves begin to be exhausted. In sum, if Pennsylvania’s current non-full-cost bonding system worked to plug wells after production ceased, and the Commonwealth could rely on the threat of fines to compel operators to plug their abandoned wells, the system would not have left the state with over 14,000 confirmed unplugged wells (and likely hundreds of thousands of unconfirmed unplugged wells) that have been abandoned for years. 5,415 of these wells have been abandoned within approximately the last decade, under the current bonding system. These wells pollute the Commonwealth and threaten the health and safety of its citizens.

3. Lack of full-cost bonding exposes taxpayers to further liability if the health of the oil and gas industry continues to decline

The gap between the level of financial assurance provided to the Commonwealth by oil and gas operators and the cost of the Commonwealth’s ultimate obligation threatens to transfer

substantial liability to the Commonwealth (and thus taxpayers) if, or when, the oil and gas industry faces additional financial pressure.

The U.S. Government Accountability Office explained in a report on a self-bonding program restricted to the most financially stable coal mine operators that because of the decline of the coal industry, even the largest operators are now financially unstable.¹⁴ That has resulted in more and more bankruptcies by self-bonded coal mine operators, which pushes remediation costs onto the states. The oil and gas industry now faces a similar decline, increasing the likelihood that operators will go bankrupt and making the failure to require full-cost bonding even more problematic.

This wave of bankruptcies will not spare large operators. As evidenced by the bankruptcy of Chesapeake Energy in June 2020, oil and gas financial risk is less dependent on the productivity of any given well, and far more dependent on national or global movements: a sustained downturn in oil or gas prices impacts large operators just as it does small operators. Like the subprime mortgage crisis of 2008, an assumption that the diversity of the underlying assets protects creditors, when in fact the entire underlying asset class is at risk, poses a serious risk to the last entity holding the bag (in this case, the Commonwealth and its taxpayers). When companies do go bankrupt, their closure obligations should be characterized as non-dischargeable administrative obligations, but in many cases bankruptcy proceedings either do not explicitly seek to protect that state interest or to guarantee a cashflow sufficient to meet closure obligations, or simply are not able to generate enough cash to discharge those obligations.

B. Bond amounts should be increased to \$83,000 per unconventional well

The expert report by Dr. Weber analyzes what full-cost bonding would require. The report first estimates plugging costs for the average well plugged by DEP from 1989 to 2020—a dataset that consists entirely of conventional wells. Weber Report 7-8. It then adjusts this average number to reflect a growth in well plugging costs over time, and estimates an average cost for plugging a conventional well in 2021. The report uses this data to estimate the expected cost of plugging unconventional wells in 2021 and 2022. It adjusts the data on conventional

¹⁴ Gov't Accountability Office, *Coal Mine Reclamation: Federal and State Agencies Face Challenges in Managing Billions in Financial Assurances*, 22-23 (2018), available at <https://www.gao.gov/assets/gao-18-305.pdf>.

wells to reflect the increased cost due to increased well depth (which the report estimates at \$1.90 per foot), as well as the increased cost of plugging solely gas wells as compared to a mix of oil and gas wells. *Id.* at 13. The report finds an average cost to plug an unconventional well in 2021 of \$70,000 if the Commonwealth employs larger plugging contracts (an average of 55 wells per contract). *Id.* With plugging contracts akin to those that the Commonwealth has employed since 2011 (an average of 14 wells per contract), the report estimates the cost of closing the average unconventional well would be \$83,000 at the end of 2021. *Id.* at 15.

The report finds that since 2011 the average well that DEP plugged was in a contract with 14 wells, while from 2000 to 2011 the average well that DEP plugged was in a much larger contract. *Id.* at 14-15. The higher contract size for the average well from 2000 to 2011 was likely due to the Growing Greener program, which was established in 1999 and provided \$650 million over five years for environmental conservation.¹⁵ This funding allowed DEP to plug more wells, resulting in larger contract sizes. Weber Report 15. Because larger contract sizes generate economies of scale, the report provides two estimates of average plugging costs for an unconventional well depending on different assumptions regarding the contract size that the average well will be plugged in. The report first estimates an average plugging cost of \$70,000 for an unconventional well, calculated using the contract size in which the average well was plugged from 1989 through 2020 (i.e., 55 wells per contract). *Id.* at 13. The report then estimates a more recent average plugging cost of \$83,000 for an unconventional well, calculated using the average contract size for wells plugged from 2011 through 2020 (i.e., 14 wells per contract). *Id.* at 15.

Petitioners request that the EQB adopt bond amounts of \$83,000 for unconventional wells. While the size of future plugging contracts is unknown, setting the bond rate at a lower value on the assumption that future plugging contracts will be large carries a far higher risk to the Commonwealth than the imposition of marginally higher bonding rates based on recent plugging contracts. As the Weber Report explains, the economies of scale effect is diminished for contracts with more than 15 wells; while plugging costs decline dramatically as contract size increases from one to 15 wells, the rate of decline slows greatly after that. *Id.* at 15-16.

¹⁵*Revenue & Legislative History*, Env'tl. Stewardship Fund, <https://esfund.info/how-growing-greener-works/enabling-legislation/> (last visited Aug. 12, 2021).

Therefore, if the state sets bonding costs at the higher value (i.e., \$83,000) and future plugging contracts are large, the state will have required bonds marginally in excess of plugging costs. But if the state sets bonding costs at the lower value (i.e., \$70,000) and future plugging contracts are smaller than 14 wells, the state will have set bond amounts at a level much lower than the actual cost of plugging, a condition which prevails today. In other words, it is much more likely that a bond amount of \$70,000 will greatly underestimate the actual cost of plugging than it is that a bond amount of \$83,000 will greatly overestimate the cost of plugging.

Petitioners request that in addition to increasing the bond amounts this year, the EQB reconsider bond amounts every two years, as envisioned by the legislature when the current bond amounts were set. *See* 58 Pa. Cons. Stat. § 3225(a) (giving the EQB authority to adjust bond amounts “every two years to reflect the projected costs to the Commonwealth of plugging the well”). The Weber Report calculated projected costs to plug a well in 2021 but explained that “plugging costs rose over the three-decade period even after adjusting for inflation.” Weber Report 10-11. The Weber Report recommends updating bond amounts every two years to account for steadily rising costs. *Id.* at 12. Dr. Weber concludes that this is “especially important in the case of unconventional wells because there is currently no publicly available data on the cost of plugging unconventional wells in Pennsylvania,” and it is possible additional data will come to light that results in a different cost estimate. *Id.* at 13. This petition asks the EQB to act on that proposal by requiring DEP to prepare a report every two years (starting in 2025) that examines plugging costs and recommends to the EQB whether it should adjust bond amounts. However, if DEP and the EQB believe that the agencies cannot issue regulations updating bond amounts within a two-year time period, petitioners suggest that the agencies modify the proposed regulatory language to require DEP to prepare a report every four years. If DEP does recommend a change in bond amounts, the proposed regulatory language requires DEP to draft a proposed rule within six months of filing its report.

C. Blanket bonds should be set to the sum of total per-well bonding amounts

In addition to requesting that the EQB raise bond amounts for individual wells, Petitioners request that the EQB revise the blanket bond amount to make it equal to the sum of per-well bonding amounts that an operator would otherwise have to pay (referred to herein as “full-coverage blanket bonds”). Under a full-coverage blanket bond, an operator that owns ten

unconventional wells could choose to provide a single bond of \$830,000 rather than ten individual bonds of \$83,000 each. This would provide operators the ease of administrability that the legislature intended while ensuring that operators furnish resources sufficient to cover the actual cost of closing all their wells.

Full-coverage blanket bonds are much better supported by the data than blanket bonds of a set value for which the per-well bond amount shrinks as the number of wells covered by the blanket bond increases (referred to herein as “diminishing-coverage blanket bonds”). The main argument in favor of diminishing-coverage blanket bonds appears to be that large operators carry a more diverse array of wells, and thus spread their risk over a wider pool of wells and experience lower volatility. However, large operators that do appear to be financially stable already have the option of obtaining discounted bond premiums. Many operators choose to meet their bonding obligations by paying for surety bonds, where a third-party surety guarantees to the state that it will pay the required bond if it is forfeited to the state, and the operator pays the surety a small percentage of the bond amount every year. Weber Report 16-18. As the Weber Report explains, more stable operators pay less to sureties “because sureties base their rates on an operator’s finances and the risk that it defaults on its plugging obligations.” *Id.* at 16. Therefore, even without blanket bonds, a larger operator that actually is more financially secure can obtain lower rates. Further, as explained in Section II.A.3, large operators are not all financially secure and do in fact go bankrupt; accordingly, a blanket bond system based on the unsupported assumption that they will not is inherently unstable.

This petition and the accompanying Weber Report at attachment C lay out clearly, through a data-based analysis, the average plugging costs for unconventional wells. The current bond amounts fall well below that mark. This failure to require full-cost bonding ensures that wells will be abandoned and orphaned, in violation of the law. *See* 58 Pa. Cons. Stat. § 3220 (describing plugging requirements). 58 Pa. Cons. Stat. § 3225(a)(1) specifically informs the EQB that it should ensure that bonding levels reflect the cost of closure. If the EQB nonetheless fails to act on this petition, it would be capriciously disregarding substantial, material evidence that well bond amounts must be increased. *See Leon E. Wintermyer, Inc. v. Workers’ Comp. Appeal Bd. (Marlowe)*, 812 A.2d 478, 487 (Pa. 2002).

III. The EQB Should Apply the Increased Bond Amounts to Existing Bonded Wells

The EQB should apply the increased bond amounts to both new wells and existing wells. Applying the adjusted amounts to existing wells is necessary to ensure the bonding program serves its intended purpose and is consistent with the language of the statute and Commonwealth precedent.

A. Applying the increased bond amounts to existing wells is necessary to address a major part of the abandoned well problem

As discussed above, an appropriate bonding level removes an operator's incentive to retain, rather than plug, unproductive wells. The EQB must raise bonding amounts for existing wells in addition to new wells in order to incentivize operators to plug not only newly drilled wells, but also the thousands of wells that have already been drilled. There are 12,796 unconventional wells that have been drilled in the state and 10,105 that reported gas production in 2020 according to DEP.¹⁶ If increased bond amounts do not apply to these wells, their operators will continue to lack the incentives to close them when production ceases. Closing these existing wells when they become unproductive, as incentivized through appropriate bonding amounts, will result in avoiding the serious environmental harms described in Section I. It will also result in new well-plugging jobs (discussed *infra* Section IV) becoming available sooner, as existing wells are likely to become unproductive sooner than newly drilled wells, and the operators of these wells will need to hire workers to plug them if the operators are properly incentivized to follow the law.

Further, if the EQB failed to increase bond amounts for existing wells, then taxpayers would still be on the hook for all existing wells that cannot or will not be plugged by their owners. As discussed in Section II.A.1, Carbon Tracker estimates that Pennsylvania currently has a bonding shortfall of \$12.15 billion. If bond amounts are not adjusted for existing wells, taxpayers would still be liable for this enormous closure obligation. Failing to apply adjusted

¹⁶ 2020 Oil and Gas Annual Report, Pa. Dep't of Env'tl. Prot., <https://storymaps.arcgis.com/stories/af368dfb17bd4f219ea0ee22bd4c514a> (last visited Sept. 8, 2021).

bond amounts to existing wells would thus be contrary to the purpose of the bonding program and would constitute a capricious disregard of material evidence.

B. The EQB has the authority to apply increased bond amounts to existing unconventional wells

The plain text of 58 Pa. Cons. Stat. § 3225 (“Section 3225”) authorizes the EQB to apply adjusted bond amounts to existing wells. Section 3225 was passed as a part of Act 13, the main law governing fracking. It requires bonds for both new and existing wells,¹⁷ and states: “The amount of the bond required . . . may be adjusted by the Environmental Quality Board every two years to reflect the projected costs to the Commonwealth of *plugging the well*” 58 Pa. Cons. Stat. § 3225(a)(1) (emphasis added). In other words, the language sets out a required bond amount for new and existing wells, and states that the bond amount for each individual well can be adjusted by the EQB to reflect the projected cost of plugging it. This is made clear by the reference to “the well,” which indicates that each well that requires a bond can have its bond amount changed. The EQB thus has the authority to adjust bond amounts for all existing unconventional wells.

IV. Increasing Well Bond Amounts Will Create Jobs, and Will Not Have an Outsized Effect on the Oil and Gas Industry

As described in Sections I-III, increasing well bond amounts to reflect actual plugging costs will protect the environment, public health, and the taxpayers of Pennsylvania. Pennsylvanians who currently live near abandoned unconventional wells or could in the future live near unconventional wells that have stopped producing, Pennsylvanians who will be affected by climate change, and all Pennsylvania taxpayers are thus likely to be impacted by this proposal. Another type of person, business, or organization likely to be impacted by this proposal are companies that seek to drill and operate gas wells in an unconventional formation, and companies that have existing unconventional wells in those formations. However, as evidenced by comparing projected bond increases to the unconventional well impact fee imposed by Act

¹⁷ See 58 Pa. Cons. Stat. § 3225(a)(1) (“[U]pon filing an application for a well permit *and before continuing to operate an oil or gas well*, the owner or operator of the well shall file with the department a bond covering the well and well site on a form to be prescribed and furnished by the department.”) (emphasis added). 71 Pa. Stat. and Cons. Stat. Ann. § 510-34 (West) exempts wells drilled prior to April 18, 1985 from bonding requirements, but no unconventional wells were drilled in that time period.

13, increasing bond amounts will have only minor impacts on these operators. Finally, because this petition will have positive effects on job creation, Pennsylvanian oil and gas workers who have the skills to plug abandoned wells are also likely to be impacted.

The unconventional well impact fee was a fee that the legislature allowed any county or municipality to impose on unconventional gas wells located within its boundaries.¹⁸ This fee was imposed on all unconventional wells, including those drilled before the law was passed. For purposes of determining the fee amount, the fee schedule treated existing wells as if they had been spud in the calendar year prior to the imposition of the fee. 58 Pa. Cons. Stat. § 2302(b). Imposition of the impact fee had “imperceptible effects” on industry. Weber Report 4. A 2016 study found that well drilling underwent modest, if any, decline in the months after the fee’s enactment.¹⁹ Bond increases would have a similarly negligible effect. The Weber Report determined that increasing unconventional well bonds to \$70,000 would only increase operator costs by one-fifth of the cost of the impact fee. Weber Report 18. A bond amount of \$83,000 rather than \$70,000 will increase operator costs slightly more, but likely not by much. Because well bond increases are projected to have an even smaller effect on unconventional operators than the minimally harmful impact fee, the bond increases will not have a major impact on unconventional operators.

In addition, ensuring that unconventional wells are plugged in a timely manner by increasing bond amounts will create jobs in the Commonwealth. For example, the Ohio River Valley Institute (“ORVI”) found that plugging every known abandoned well in Pennsylvania would create 3,960 jobs over 20 years.²⁰ These would be good-paying jobs, with an average annual salary of \$58,024. *Id.* at 32. Moreover, a report by Resources for the Future and Columbia University’s School of International and Public Affairs found that “there is a clear match

¹⁸ 58 Pa. Cons. Stat. § 2302; *Act 13 Impact Fee*, Pa. Pub. Util. Commission, <https://www.puc.pa.gov/filing-resources/issues-laws-regulations/act-13-impact-fee/> (last visited Aug. 19, 2021).

¹⁹ Katie Jo Black, Shawn J. McCoy, & Jeremy G. Weber, *When Externalities Are Taxed: The Effects and Incidence of Pennsylvania’s Impact Fee on Shale Gas Wells*, 5 *J. Ass’n Env’tl. and Resource Economists* 107 (2018).

²⁰ Ted Boettner, Ohio River Valley Inst., *Repairing the Damage from Hazardous Abandoned Oil & Gas Wells: A Federal Plan to Grow Jobs in the Ohio River Valley and Beyond*, 32-33 (2021), available at <https://ohiorivervalleyinstitute.org/wp-content/uploads/2021/04/Repairing-the-Damage-from-Hazardous-AOG-Wells-Report-1.pdf>.

between the skills of unemployed oil and gas workers and the requirements needed to plug orphaned and other abandoned wells properly.”²¹ ORVI found that the number of jobs created by plugging all abandoned wells in the Ohio River region would be more than the 12,770 oil and gas jobs lost in the region over the past five years.²² As existing unconventional wells begin to stop producing at higher numbers, the number of jobs available in well plugging will only increase if operators are properly incentivized to plug their non-producing wells. Expanding job opportunities in well plugging is exactly the kind of just transition that many communities have been demanding for years. As President Biden stated in describing his proposal for a \$16 billion fund to plug orphaned wells and mines across the country:²³

My American Jobs Plan will put hundreds of thousands of people to work . . . capping hundreds of thousands of, literally, orphan oil and gas wells that need to be cleaned up because they’re abandoned—paying the same exact rate that a union man or woman would get having dug that well in the first place.²⁴

The economic impact of acting on this petition would thus be generally positive.

V. The EQB Has the Authority to Act on This Petition

The EQB has the authority to act on this petition and should use its lawful authority to do so. Sections II and III of this petition set forth a clear description of the action requested, and suggested regulatory language is set forth in Attachment B. 25 Pa. Code § 23.1(a)(2)(i). Sections I-IV of this petition, along with the Weber Report at Attachment C, set forth the facts that mandate the EQB’s action adopting the proposed regulation and describe the impacts of the proposed regulation, including the types of persons, businesses, and organizations likely to be impacted. *Id.* § 23.1(a)(3)-(a)(4). Sections V and VI will now set forth both the legal authority to

²¹ Daniel Raimi et al., Res. for Our Future & Columbia SIPA Ctr. on Glob. Energy Policy, *Green Stimulus for Oil and Gas Workers: Considering a Major Federal Effort to Plug Orphaned and Abandoned Wells*, 16 (2020), available at https://www.energypolicy.columbia.edu/sites/default/files/file-uploads/OrphanWells_CGEP-Report_071620.pdf.

²² Ohio River Valley Inst., *supra* note 20, at 32-33.

²³ *Biden Infrastructure Plan Would Spend \$16 Billion To Clean Up Old Mines, Oil Wells*, PBS NewsHour (Apr. 1, 2021), <https://www.pbs.org/newshour/nation/biden-infrastructure-plan-would-spend-16-billion-to-clean-up-old-mines-oil-wells>.

²⁴ Remarks by President Biden on the American Jobs Plan (Mar. 31, 2021), available at <https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/03/31/remarks-by-president-biden-on-the-american-jobs-plan/>.

adopt the proposed regulation and the constitutional mandate requiring its adoption. *Id.* § 23.1(a)(3). Finally, Attachment D lists well bond amounts in other states and at the federal level for the EQB's use during the Independent Regulatory Review process.

A. The EQB's well bonding statutory authority

Section 3225 governs the EQB's authority to increase bond amounts. The law sets specific bond amounts, but authorizes the EQB to adjust the amounts initially established by statute:

The amount of the bond required shall be in the following amounts and may be adjusted by the Environmental Quality Board every two years to reflect the projected costs to the Commonwealth of plugging the well:

(ii) For wells with a total well bore length of at least 6,000 feet:

(A) For operating up to 25 wells, \$10,000 per well but no bond may be required under this clause in excess of \$140,000.

(B) For operating 26 to 50 wells, \$140,000 plus \$10,000 per well for each well in excess of 25 wells but no bond may be required under this clause in excess of \$290,000.

(C) For operating 51 to 150 wells, \$290,000 plus \$10,000 per well for each well in excess of 50 wells but no bond may be required under this clause in excess of \$430,000.

(D) For operating more than 150 wells, \$430,000 plus \$10,000 per well for each well in excess of 150 wells but no bond may be required under this clause in excess of \$600,000.

58 Pa. Cons. Stat. § 3225(a)(1). The statute also states: "In lieu of individual bonds for each well, an owner or operator may file a blanket bond for the applicable amount under paragraph [3225(a)](1), on a form prepared by the department, covering all of its wells in this Commonwealth, as enumerated on the bond form." 58 Pa. Cons. Stat. § 3225(a)(2). Because only unconventional wells have a well bore length of greater than 6,000 feet, this petition will refer to such wells as unconventional wells. Section 3225 authorizes the EQB to act on this petition and adjust bond amounts.

B. Under the plain language of the statute, the EQB has authority to increase bond amounts

Under the plain language of Section 3225, the EQB has authority to adjust both individual and blanket bond amounts to whatever number reflects the cost of plugging a well. Section 3225(a)(1) authorizes the EQB to adjust bond amounts. The language in sub-sections 3225(a)(1)(ii)(A)-(D) that states “but no bond may be required under this clause in excess of” a certain amount does not set upper limits on what blanket bond amount the EQB may set for unconventional wells. This language is specific to the sub-clauses it is within, (a)(1)(ii)(A)-(D), and states what the initial blanket bond amounts are for well operators governed by each sub-clause. It does not restrict the EQB’s authority to adjust blanket bond amounts, which is laid out in (a)(1). In other words, the “under this clause” language sets rules for what the initial bond amounts shall be, but does not restrict the EQB’s authority when it adjusts bond amounts.

There is no language in the main clause (Section 3225(a)(1)) cabining the EQB’s authority to adjust the blanket bond amounts to reflect the cost of plugging a well. While the main clause states that bonds “shall be in the following amounts,” this sets an initial bond amount that the statute then authorizes the EQB to adjust. 58 Pa. Cons. Stat. § 3225(a)(1). The statute states that the “following amounts” that the bonds “shall be in” can “be adjusted by the Environmental Quality Board.” *Id.* Further, the statute states that the EQB may adjust the bond amounts “to reflect the projected costs to the Commonwealth of plugging the well.” *Id.* A bond amount of \$5,600 per well, which would be the per-well bond amount for an operator who owns 25 unconventional wells if the current blanket bond amount could not be changed, does not “reflect the projected costs to the Commonwealth of plugging the well.”

In addition, the language of Section 3225(a)(2), which allows operators to file “a blanket bond for the applicable amount under paragraph [3225(a)](1)” instead of individual bond amounts, *id.* § (a)(2), does not restrict the EQB’s authority to adjust the initial blanket bond amounts that the legislature wrote into Section 3225(a)(1). This clause refers to the “applicable” blanket bond amount under paragraph (a)(1), and paragraph (a)(1) gives the EQB authority to adjust bond amounts. Accordingly, the EQB can use its authority under section (a)(1) to adjust the blanket bond amounts, and section (a)(2) then allows the operator to post that applicable blanket bond amount rather than individual bonds.

C. Canons of statutory construction support the EQB’s authority to increase bond amounts

A restrictive reading of Section 3225 that severely limits the EQB’s authority to increase blanket bond amounts would go against basic common sense. It would be nonsensical for the legislature to have authorized the EQB to adjust bond amounts to reflect the projected costs of well plugging, but then cabin its authority to adjust these amounts to such a degree that the authority given to the EQB is rendered meaningless in practice.

Three rules of statutory construction support the EQB’s authority to raise blanket bond amounts under Section 3225 to whatever level it concludes reflects the cost of plugging a well. First, whenever possible, a statute should be read not to contradict itself. *See* 1 Pa. Cons. Stat. § 1933 (“Whenever a general provision in a statute shall be in conflict with a special provision in the same or another statute, the two shall be construed, if possible, so that effect may be given to both.”). If a restrictive reading of Section 3225 were correct (i.e., that the EQB is not authorized to adjust the blanket bond amounts), there would be a direct conflict between the language authorizing the EQB to adjust bond amounts “to reflect the projected costs to the Commonwealth of plugging the well,” § 3225(a)(1), and any purported limitation on increasing blanket bonds (which would keep bond amounts dramatically lower than the actual cost to the Commonwealth of well plugging). Because another reading of the statute is not only possible but also more coherent, the understanding of the statute that avoids this glaring conflict should prevail.²⁵

Next are the canons against surplusage and absurdity. Pennsylvania law states:

In ascertaining the intention of the General Assembly in the enactment of a statute the following presumptions, among others, may be used: (1) That the General Assembly does not intend a result that is absurd, impossible of execution or unreasonable. (2) That the General Assembly intends the entire statute to be effective and certain.

1 Pa. Cons. Stat. § 1922. A restrictive reading of Section 3225 that prevents the EQB from adjusting blanket bond amounts would effectively write the language stating that bond amounts may be raised to reflect the cost of plugging out of the statute, and render the EQB’s authority to

²⁵ For this same reason, the section of the statute giving the EQB authority to adjust bond amounts and the section stating what the initial bond amounts shall be are not in irreconcilable conflict.

raise bond amounts essentially meaningless. This interpretation would also lead to an absurd situation where the EQB technically has authority to adjust bond amounts for individual wells, but any attempt to do so would affect a tiny fraction of operators in very random ways. Because the blanket bond cap essentially resets at 0, 26, 51, and 150 unconventional wells, under a restrictive reading of the statute any change in the bond amount for individual wells would affect operators who own that number of wells (or a few more), but no one else. For example, under this petition's request of \$83,000 per unconventional well, any operator who owns 2-24 or 27-49 unconventional wells would see no increase in the amount they had to pay if they sought to drill an additional unconventional well, but an operator who owned one well, 25 wells, or 26 wells would have to pay between \$57,000 and \$83,000 more if they sought to drill an additional well. This would be an absurd result. These canons make it clear that Section 3225 gives the EQB the authority to increase the initial legislatively-determined blanket bond amounts.

VI. The Environmental Rights Amendment Requires the EQB To Act on This Petition and Raise Bond Amounts

The EQB has a constitutional obligation to act on this petition and increase well bond amounts. Article I, Section 27 of the Pennsylvania Constitution states:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.

Pa. Const. art. I, § 27. This amendment creates a right of citizens to a clean environment, *Pa. Env'tl. Def. Found. v. Commonwealth*, 161 A.3d 911, 931 (Pa. 2017) (“*PEDF*”), which the state is violating by not setting bond amounts high enough to ensure operators remediate abandoned wells.

Section 27 also creates an “environmental trust,” with the state’s natural environment as the corpus of the trust, the state as the trustee, and the people of Pennsylvania as the beneficiaries of the trust. *PEDF*, 161 A.3d at 932-33. In interpreting whether the environmental trust aspect of Section 27 has been violated, the Supreme Court has stated that the Commonwealth must act as a fiduciary, with the obligation to conserve and maintain the natural environment of the state for the benefit of the citizens of the state. *Id.* The current bond amounts violate the state’s fiduciary

duties under Section 27. The EQB’s failure to require adequate bond amounts has caused the state to be dotted with unplugged abandoned wells that spew pollution into the air and water. This degrades the state’s natural resources in violation of Section 27.

A. Supreme Court Precedent Interpreting the Environmental Rights Amendment

The Pennsylvania Supreme Court issued its most definitive decision interpreting the environmental trust aspect of Section 27 in *Pennsylvania Environmental Defense Foundation v. Commonwealth*. In that case, the Supreme Court held that the state legislature violated the ERA when it took the royalties that oil and gas operators paid to the state (for permission to drill) from a fund used to pay for environmental restoration and moved much of it to the general fund to pay for priorities unrelated to the environment. The Supreme Court held that “[o]il and gas leases may not be drafted in ways that remove assets from the corpus of the trust or otherwise deprive the trust beneficiaries (the people, including future generations) of the funds necessary to conserve and maintain the public natural resources.” *PEDF*, 161 A.3d at 936. In other words, the state cannot allow for the degradation of the natural environment without ensuring that proper funding is being devoted to rectify this degradation in the future—doing so would violate the state’s trustee duties.

This precedent applies to the extremely low well bond amounts set by the state, which are not sufficient to pay for the actual cost of plugging wells. Here, unlike in *PEDF*, Pennsylvania is not taking the bonds that well operators post and spending them in areas unrelated to the environment. Rather, it is allowing operators to degrade the natural environment by drilling for oil and gas, while not requiring them to post bond amounts at the level necessary to restore the environment and prevent ongoing impacts once that drilling is complete. In other words, Pennsylvania is not requiring drillers to put up the funding “necessary to conserve and maintain the public natural resources.” and thus is degrading the corpus of the trust.

The Supreme Court’s decision in *Robinson Township, Washington County v. Commonwealth* (“*Robinson Township*”) further demonstrates how Pennsylvania’s insufficient bonding amounts violate Section 27. The plurality opinion in that case held that “[t]he explicit terms of the trust require the government to ‘conserve and maintain’ the corpus of the trust. The plain meaning of the terms conserve and maintain implicates a duty to prevent and remedy the

degradation, diminution, or depletion of our public natural resources.” *Robinson Twp., Washington Cty. v. Commonwealth*, 83 A.3d 901, 957 (Pa. 2013) (internal citation omitted).²⁶

The court concluded that the parts of Act 13 that preempted localities from regulating oil and gas activities violated Section 27:

[W]e do not quarrel with the fact that competing constitutional commands may exist, that sustainable development may require some degradation of the corpus of the trust But, Act 13’s blunt approach fails to account for this constitutional command at all and, indeed, exacerbates the problem by offering minimal statewide protections while disabling local government from mitigating the impact of oil and gas development at a local level.

Id. at 980. The court overturned this aspect of Act 13 because it did not allow localities to properly mitigate environmental harm from oil and gas drilling, which had the effect of degrading the corpus of the trust. Similarly, here, the EQB’s failure to increase the current low bond amounts results in thousands of unplugged abandoned and orphaned wells across the state by both incentivizing operators to leave abandoned wells unplugged and by not providing the state with the funding to plug orphaned wells itself. This harms the Commonwealth’s environment and degrades the corpus of the trust in violation of Section 27.

Both *PEDF* and *Robinson Township* indicate that if the Commonwealth allows for the degradation of its natural resources through oil and gas drilling, it must ensure the proper funding and authority to remediate that harm to satisfy its trustee obligations under the Environmental Rights Amendment. But the current bond amounts set by the state are inadequate to ensure preservation of the natural environment. As discussed in Section II.B, *supra*, the current bonding amounts for unconventional wells are more than eight times lower than the actual cost of plugging (\$10,000 versus \$83,000), and that is without accounting for blanket bonds that dramatically reduce the required bond amount per well. As explained in Section II.A.1, *supra*, the state has covered only a small fraction of total well closure costs through its bonding program—one analysis pegs the amount covered at 0.4 percent. And as explained in Section II.A.2, *supra*, allowing non-full cost bonding has and will continue to result in large numbers of abandoned wells remaining unplugged, and the environment around those wells remaining

²⁶ While *Robinson Township* was a plurality opinion that did not have direct precedential effect, the majority in *PEDF* stated that it relied on “the statement of basic principles thoughtfully developed in that [*Robinson Township*] plurality opinion.” *PEDF*, 161 A.3d at 930.

degraded. Thus, the EQB's failure to impose full-cost bonding violates the Environmental Rights Amendment.

B. Legislative History of the Environmental Rights Amendment

In addition to case law, the legislative history of the Environmental Rights Amendment and the context in which it was adopted also show how the state's current actions violate the ERA. Through the nineteenth and much of the twentieth centuries, the Pennsylvania government facilitated a boom in coal mining, originally with no obligation to clean up the mines after production ceased and no bonds required, and later with limited but still weak clean-up obligations and low bond amounts.²⁷ This resulted in a large number of abandoned mines polluting the state's natural resources. *Id.* at 909-10. These abandoned coal mines created massive environmental problems that persist to this day, which the Supreme Court recounted in *PEDF*. 161 A.3d at 917 (explaining that the state had to deal with "over 250,000 acres of abandoned surface mines and about 2,400 miles of streams contaminated with acid mine drainage, which did not meet water quality standards") (quoting *Robinson Twp.*, 83 A.3d at 961).

The Supreme Court explained in *PEDF* that Section 27 was passed in large part to deal with this problem of abandoned coal mines:

The drafters and the citizens of the Commonwealth who ratified the Environmental Rights Amendment, aware of this history, articulated the people's rights and the government's duties to the people in broad and flexible terms that would permit not only reactive but also anticipatory protection of the environment for the benefit of current and future generations.

Id. at 919 (quoting *Robinson Twp.*, 83 A.3d at 963). There is a clear parallel between the historical problem of abandoned mines and the looming problem of abandoned wells. Pollution resulting from overly lax regulation of abandoned wells is exactly the kind of problem the Environmental Rights Amendment is meant to address. Because non-full cost bonding does not prevent the abandonment of oil and gas wells, and because allowing this abandonment to occur

²⁷ John C. Dernbach, *Pennsylvania's Implementation of the Surface Mining Control and Reclamation Act: An Assessment of How "Cooperative Federalism" Can Make State Regulatory Programs More Effective*, 19 U. Mich. J. L. Reform 903, 910 (1986).

violates the ERA, as demonstrated by recent Supreme Court precedent and the intent of the drafters, the EQB must adopt this petition and impose full-cost bonding on operators.

C. If Section 3225 is interpreted to prohibit the EQB from acting on this petition, that law violates the Environmental Rights Amendment

The ERA applies to the legislature in the same manner as it applies to executive bodies. *See, e.g., PEDF*, 161 A.3d at 932 n.23 (“Trustee obligations are not vested exclusively in any single branch of Pennsylvania’s government, and instead all agencies and entities of the Commonwealth government, both statewide and local, have a fiduciary duty to act toward the corpus with prudence, loyalty, and impartiality.”). If Section 3225 were to be interpreted as putting hard caps on the blanket bond amounts that the EQB can set on unconventional wells, it would violate the ERA for the same reasons that a decision by the EQB to refuse to use its authority to raise bond amounts would violate the ERA. In both cases, the Commonwealth would be allowing oil and gas production to degrade the environment without ensuring that the environment could be restored after production ceased, thus violating its trustee duties. This is because the initial blanket bond amounts set by Section 3225 do not come close to covering well plugging costs. For example, an operator that owns 150 unconventional wells has to pay \$2,867 per well under the current blanket bond amounts, which is only 3.5 percent of the \$83,000 that the average unconventional well costs to plug. *See supra* Section II.B. A statute that sets well bond amounts that are drastically lower than the cost of plugging a well, and then fails to give the relevant regulatory agency the authority to increase those bond amounts, would not pass muster under the ERA.

CONCLUSION

Abandoned wells pollute Pennsylvania communities, harm public health, exacerbate climate change, and reduce property values. The current well bonding system, as DEP itself has acknowledged numerous times, does not come anywhere close to requiring full-cost bonding. It thus is inadequate to prevent operators from abandoning wells, and leaves the Commonwealth without adequate funding to plug orphaned wells. Dr. Jeremy Weber thoroughly reviewed the data and concluded that it costs, on average, \$83,000 to plug an unconventional well if it is assumed that plugging contracts will be the same average size that they have been over the past

ten years. The EQB should grant this petition and initiate a rulemaking to adjust bonds for unconventional wells to this amount. It also should make the blanket bond amount an operator can pay equal to the sum of the cost of the individual well bonds that the operator would otherwise have to pay, and the EQB should apply all these changes to both new and existing wells. Data from the imposition of the unconventional well impact fee indicates that doing so would have minimal impacts on unconventional well operators, and other analyses indicate it would create thousands of jobs for Pennsylvanians over the next twenty years. The EQB has full authority under Act 13 to grant this petition. Failure to increase well bond amounts would not only disregard substantial evidence demonstrating the need to increase bond amounts to reflect actual plugging costs, but would also violate the Commonwealth's obligations under the Environmental Rights Amendment. To fulfill its constitutional obligations, to protect the health and well-being of all Pennsylvanians, and to safeguard Pennsylvanians' hard-earned tax dollars, the EQB must grant this petition.

Dated: September 14, 2021

Respectfully submitted,

/s/ Ankit Jain

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CERTIFICATE OF SERVICE

I hereby certify that on the 14th day of September, 2021, I filed the foregoing Petition with the Environmental Quality Board by mail via the United States Postal Service and by e-mail.

/s/ Ankit Jain
Ankit Jain

Attachment B

Proposed Regulatory Language

25 Pa. Code § 78a.302 REQUIREMENT TO FILE A BOND FOR UNCONVENTIONAL
WELLS

- (a) For an unconventional well that has not been plugged, the owner or operator shall file a bond in the amount of \$83,000 per well.
- (b) In lieu of individual bonds for each well, an owner or operator may file a blanket bond covering all of its wells in this Commonwealth. The blanket amount shall be computed as the sum of the applicable individual bond or security amounts required for each well.
- (c) This requirement shall apply to existing wells requiring a bond under 58 Pa. Cons. Stat. § 3225.
- (d) By January 2, 2025, the Department shall submit a report to the Environmental Quality Board evaluating whether the Board should adjust bond amounts further. The Department's report will include a recommendation on whether the Board should adjust the bond amounts. If the recommendation is to adjust bond amounts, the Department will develop a proposed rulemaking for Board consideration within six months after the Department submits its report to the Board.
 - 1) The Department's report shall be made available to the public
 - 2) Within thirty days of the Department submitting the report to the Board, any member of the public may submit to the Department written comments on the report
 - 3) The Department shall undertake this same process, under the same deadlines, every odd-numbered year after 2025.
 - 4) The Department may issue one joint report to fulfill its obligations under this provision and under 25 Pa. Code § 78.302(d)