

Regulatory Analysis Form (Completed by Promulgating Agency) (All Comments submitted on this regulation will appear on IRRC's website)		INDEPENDENT REGULATORY REVIEW COMMISSION	
(1) Agency Department of Environmental Protection			
(2) Agency Number: Identification Number: #7-484		IRRC Number:	
(3) PA Code Cite: 25 <i>Pa. Code</i> Chapter 78 Subchapter C			
(4) Short Title: Environmental Protection Performance Standards at Oil & Gas Sites			
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(6) Type of Rulemaking (check applicable box): ☒ Proposed Regulation ☐ Final Regulation ☐ Final Omitted Regulation		☐ Emergency Certification Regulation; ☐ Certification by the Governor ☐ Certification by the Attorney General	
(7) Briefly explain the regulation in clear and nontechnical language. (100 words or less) This regulation relates to surface activities at oil and gas well sites. The goal of this regulation is to set performance standards for surface activities at oil and gas well sites and to prevent and minimize spills and releases to the environment. These proposed regulations seek to update existing requirements related to surface activities associated with the development of oil and gas wells, including containment of regulated substances; waste disposal, site restoration; and reporting releases. These proposed regulations also establish new provisions for borrow pits; oil and gas gathering pipelines; identification of abandoned wells and the road-spreading of brine. Additionally, these proposed regulations add new requirements associated with the identification of the impacts to public resources from the construction of oil and gas well sites; standards for freshwater and wastewater impoundments; wastewater processing and water management plans.			
(8) State the statutory authority for the regulation. Include <u>specific</u> statutory citation. This proposed rulemaking is being made under the authority of Sections 3215(e), 3218(a), 3218.2(a)(4), 3218.4(c), and 3274 of the 2012 Oil and Act (58 Pa.C.S. §§ 3215(e), 3218(a), 3218.2(a)(4), 3218.4(c), 3274), Section 5 of the Clean Streams Law (35 P. S. § 691.5), Section 105 of the Solid Waste			

Management Act (35 P. S. § 6018.105), Section 5 of the Dam Safety and Encroachments Act (32 P.S. § 693.5), Section 104 of the Pennsylvania Land Recycling and Environmental Remediation Standards Act (35 P.S. § 6062.104); and Sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17, 510-20)

(9) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as, any deadlines for action.

A number of the proposed provisions in the rulemaking are mandated by the 2012 Oil and Gas Act (58 Pa.C.S. §§ 3201—3274) including the following:

- Establish a streamlined process for addressing potential impacts to public resources (§3215 (c) & §3215 (e)).
- Require the landowner to be notified of the implications of refusing to let operators take a pre-drill water supply sample (§3211 (b.1)).
- Require well site tanks to meet the applicable corrosion control requirements of the Department's storage tank regulations (§3218.4 (b)).
- Require all buried metallic gathering lines to be installed and placed in operation in accordance with 49 CFR Pt. 192 or 195 (relating to the requirements for corrosion control) (§3218.4 (a)).
- Establish secondary containment requirements for regulated substances at unconventional well sites (§3218.2).
- Codify water management plan requirements (§3211 (m)).
- Require well construction reports to include the country of origin of the well casing (§3222 (b.1)(2)(ii)).

(10) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

The proposed regulations will amend the current oil and gas well regulations and add additional controls to the surface activities on a well site. Over the last several years, there has been a dramatic increase in the total number of unconventional wells drilled throughout the Commonwealth. To release the gas imbedded in an unconventional shale formation, operators use heavy machinery and millions of gallons of water. This process is commonly referred to as “hydraulic fracturing” or “fracking”. As a result, the area of earth disturbance at an unconventional well site during the drilling and hydraulic fracturing stages is at least 10 times the size of earth impacted at a conventional well site. Additionally, industrial waste is produced while drilling and hydraulically fracturing an unconventional well. These proposed regulations were also developed to address the surface impacts related to earth disturbance and the management of regulated substances including chemicals and residual waste.

When 25 *Pa. Code* Chapter 78 Subchapter C was last updated in 2001, the technology and potential impacts to the environment from extracting natural gas from unconventional shale formations were not contemplated. Historically Pennsylvania has been a very large oil and natural gas producer, but not since

the turn of the 20th century has the current magnitude of well development occurred. On February 14, 2012, Governor Corbett signed Act 13 of 2012 into law. The 2012 Oil and Gas Act contains new environmental protections and directs the Environmental Quality Board to promulgate specific regulations. As part of this effort, DEP evaluated all surface activity regulations and based on its analysis decided to initiate this comprehensive rulemaking.

Since oil and gas well drilling occurs in over 60% of the Commonwealth and oil and gas pipeline activities occur throughout the entire Commonwealth, all of its citizens will benefit from more robust and comprehensive regulations. The regulated community will benefit from this rulemaking since it streamlines authorization approval processes and establishes performance based requirements that will avoid or minimize environmental impacts that are costly to remediate. Many of the environmental performance standards contained in this proposed rulemaking are either a codification of current statutory or permit requirements or are already standard industry practices. As a whole, these proposed regulations will strengthen measures aimed at reducing the potential impacts that oil and gas activities may have on the environment.

These proposed measures protect the environment, in the interest of the public and the regulated community through the various updated provisions, including the following:

Addressing Potential Impacts to Public Resources

Under Section 78.15 the Department proposes the establishment of a streamlined process for addressing potential impacts to public resources during the well permitting process, as required by Act 13 of 2012. If a well site is within a specified distance to a public resource (such as a park, scenic river, national natural landmark, a historical site, water supply used by a water purveyor, or special concern species) the operator will be required to notify the appropriate Federal or State resource agency. The operator's notification should address the functions and uses of the resource and the measures the operator proposes to avoid or minimize probable harmful impacts to the resource. The resource agency which will have 15 days to provide written comments to DEP. DEP will then make a determination on the permit and include conditions (if any) it deems necessary to prevent the probable harmful impact. It is these public resources that are a major economic contributor to Pennsylvania through tourism, outdoor fish and game sports and recreation. The bounty of public resources Pennsylvania possesses improves the quality of life for its residents and all those who visit. This provision will ensure the continued uses and benefits of those public resources throughout the Commonwealth.

Notifications

Landowner notification

To ensure that landowners make the best decisions for their property and understand the implications of refusing a pre-drill water supply survey, operators will be required to notify landowners that if their water supply becomes impacted and they have refused to allow the operator to perform a pre-drilling survey of their water supply, the presumption of liability provided by Act 13 will not apply. The presumption of liability (from Act 13 §3218 (c)) states that an operator is responsible for pollution of a water supply within 1,000 feet and within 6 months of drilling or completion of a conventional well or 2,500 feet and within 12 months of drilling, completion, stimulation, or alteration of an unconventional well. One of the defenses to this presumption is if the landowner refused a pre-drill survey of their water supply.

Department notifications

In order to enhance DEP's field staff inspection efficiency, this proposed regulation would require operators to notify DEP prior to oil and gas construction activities, such as building a well pad or installing a pit liner. This will allow the Department to effectively manage its resources and ensure timely inspections.

In the event that a water supply has been impacted from site construction or horizontal directional drilling for pipelines, this proposed regulation will require operators to notify the Department within 24 hours of an incident to ensure that rapid environmental response and mitigation occurs.

Identification of Abandoned or Orphaned Wells

DEP estimates that there are approximately 300,000 orphaned and abandoned wells across Pennsylvania. Abandoned and orphan wells could pose a serious issue to the commonwealth if an operator inadvertently alters one during the drilling or hydraulic fracturing process. Altering an abandoned well can lead to a number of issues including methane migration and water supply impacts.

Section 78.52a will require operators to identify any abandoned and orphaned wells within 1,000 feet of the vertical and horizontal wellbore prior to hydraulic fracturing. This identification process will require operators to review DEP's orphaned and abandoned well database, review farm line maps, and submit a questionnaire to landowners whose property lies within 1,000 feet of the wellbore. The operator will then be required to monitor the orphaned or abandoned well throughout the extraction process if left unplugged.

Containment

Every well site in Pennsylvania has temporary and permanent containment structures, such as pits, tanks, and impoundments, to store wastes that are generated on the site. One of the biggest risks of contamination to soil or water sources is the result of inadequate containment structures. Because of this, Act 13 of 2012 requires unconventional well sites to be designed and constructed to prevent spills to the ground or off the well site. The department is proposing standards for temporary containment at well sites, including security measures that will prevent the tampering of containment structures from acts of vandalism. These standards include secondary containment of all waste storage structures, permitting and construction standards for centralized wastewater impoundments, and construction standards and registration of freshwater impoundments. For more permanent types of containment, such as for storing brine and other production fluids, the Department is proposing through these regulations to include secondary containment, corrosion control measures, and security requirements to ensure the long term integrity of the storage structure. Similarly, these proposed regulations would prohibit the use of underground storage tanks because these storage structures are more susceptible to corrosion and are not able to be inspected by the department or the operator properly.

Spill Response

Spills or releases from containment of regulated substances at oil and gas well sites pose a substantial risk to the environment and public health, including impacts to water resources. These proposed regulations would require that operators report releases to the department within 2 hours of discovery and take corrective actions to ensure that no additional harm to the environment or to potential downstream water users occurs. The spill or release area must then be remediated appropriately, either through Act 2 (of 1995) standards and processes or through the proposed alternative process that meets the Act 2 remediation standards.

Borrow Pits

This proposed regulation will ensure that borrow pits used for the construction of oil and gas access roads and well site construction meet the same environmental standards as permitted non-coal surface mines, but will not be subject to the permitting requirements. Section 3273(c) of Act 13 of 2012 provided a permitting exemption for borrow pits used by the oil and gas industry. These borrow pits share the same environmental risks as other borrow pits that are not used by the oil and gas industry.

Water Management Plans

Water Management Plans are a requirement of Act 13 of 2012. This proposed regulation codifies existing requirements to protect freshwater resources from adverse impacts from excessive withdrawals of water. This proposed regulations mirrors the requirements of the Susquehanna River Basin Commission and the Delaware River Basin Commission to ensure that requirements are consistent statewide, regardless of which river basin an operator withdrawals freshwater from. This statewide consistency also eliminates uncertainty and inconsistency for the regulated community.

Road Spreading of Brine

In Pennsylvania geology, brine (saltwater) is present in most oil and gas producing formations. When oil or gas is produced from a well, brine is also brought to the surface and is typically separated into a holding tank. Throughout the history of conventional oil and gas development, brine has been beneficially used in dust suppression and road stabilization activities on dirt roads and also for de-icing in the winter months. For about the last 12 years, the Waste Management Program within DEP has issued a general permit (WMGR 065) for de-icing activities, which allows brine from conventional wells to be spread as a means for winter weather road treatment. In 1998, DEP's Oil and Gas Management Program issued a Technical Guidance Document *Approval of Brine Roadspreading Plans* (Doc. No.550-2100-007) to describe to operators and other users how DEP will review all plans for the beneficial use of brine for dust control and road stabilization to ensure compliance with applicable statutes and regulations and protecting water resources.

The proposed regulations will incorporate all relevant DEP requirements into Chapter 78 and under the Oil and Gas Program's oversight for the road-spreading of brine from conventional wells for dust suppression, road stabilization, anti-icing and de-icing for beneficial use on roadways to ensure these activities do not impact waters of the commonwealth. The road-spreading of brine from unconventional wells is not approved as a beneficial use in the Commonwealth.

(11) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

These regulations do not impose any requirements that are more stringent than federal standards, because there are none. Pennsylvania has a compelling public interest in regulating the unconventional gas industry due to the unique risks posed to the environment.

(12) How does this regulation compare with those of the other states? How will this affect Pennsylvania's ability to compete with other states?

With this regulation, Pennsylvania will join a growing list of states to comprehensively address the regulation of surface activities and industry practices at oil and gas well sites. Therefore, this proposed

regulation should not affect Pennsylvania's ability to compete with other states. Because of Pennsylvania's proximity to high natural gas consumptive markets in the Northeast, the Marcellus and other dry gas formations remain more attractive than other dry gas in the south and west such as the Barnett, Fayetteville and Haynesville Shales. The Department evaluated the regulatory requirements of all states with oil and gas drilling activity, but focused the majority of this comparison on the regulatory requirements of Ohio and West Virginia. Because New York maintains a moratorium on high volume hydraulic fracturing and no unconventional well drilling is occurring, Pennsylvania enjoys a clear competitive advantage and the proposed rules of this state will not be evaluated.

Several sections of this proposed regulation will codify existing requirements of oil and gas operations and therefore should not alone affect Pennsylvania's ability to compete with other states. Provisions related to centralized impoundments are unchanged from existing permit standards for those facilities. By codifying these requirements, Pennsylvania's ability to compete with other states will not be affected. Similarly, Water Management Plans (WMPs) have been a permit requirement for oil and gas operators since April 2009 and the proposed regulations are consistent with the requirements of the Susquehanna River Basin Commission. By making WMP requirements consistent statewide, operators will have more certainty regarding the requirements versus other states with river basin commissions that do not have the same level of consistency. Beneficial use of brine for road spreading and de-icing activities is another section that this regulation proposes to codify existing permitting and planning requirements and therefore will not affect Pennsylvania's ability to compete.

Identification and Monitoring of Abandoned or Orphaned Wells

This rulemaking will require operators to identify any abandoned and orphaned wells within 1,000 feet of the vertical and horizontal wellbore prior to hydraulic fracturing. Additionally, this rulemaking would require operators to monitor such wells during hydraulic fracturing activities and plug any wells altered by such activities.

In December 2012, Alaska proposed a regulation related to hydraulic fracturing, that required applicants for hydraulic fracturing to identify any well penetrations (all well types) within one-quarter mile of the proposed wellbore trajectory and fracturing interval and the sources of information used in identifying such wells. Additionally, Alaska's proposed rule requires operators to submit the location, orientation and geological data of known or suspected faults and fractures that may transect the confirming zone and information sufficient to support a determination that any such faults and fractures will not interfere with containment of the hydraulic fracturing fluid.

While Pennsylvania's proposed rulemaking is limited to orphaned and abandoned wells, the regulatory proposal specifies how operators must identify orphaned and abandoned wells, including consulting with the Department's database, farm line maps, and submitting a questionnaire to surface landowners. Additionally, this rulemaking would clarify that operators that alter such wells during hydraulic fracturing activities must plug those wells. While other states, including Ohio and West Virginia, do not have similar requirements, the Department has determined that these requirements are critical to ensure protection of waters of the Commonwealth.

Containment

Tanks

The Pennsylvania proposed regulation would require one time approval of modular storage structures, require secondary containment around new, refurbished or replaced produced water tanks,

require tanks to be protected against vandalism and require brine tanks to be protected against corrosion.

Ohio requires that tanks be protected from vandalism through the use of such devices as bull plugs, locks or retractable ladders. (Ohio regulation at 1501:9-9-05). However the Ohio rule allows the division chief to waive the requirement.

Ohio rules ban the use of buried tanks and are therefore more stringent than the proposed rule which allows buried tanks to be used if they are approved by DEP.

Pits and Impoundments

The proposed regulation eliminates the use of pits to store produced fluids (brine), eliminates the storage of condensate in pits (or other open top structures), requires notification prior to the installation of a pit liner at unconventional well sites, strengthens the permeability and testing requirements of the liner, imposes pit inspection requirements, and requires pits used at unconventional well sites to be guarded or fenced in.

The proposed rule also establishes embankment construction standards for centralized freshwater and wastewater impoundments as well as comprehensive permitting standards for centralized impoundments.

In comparison, Ohio does not allow centralized wastewater impoundments to be utilized. The Ohio regulations at 1501:9-9-05 do not contain any prescriptive standards for pit construction or utilization – only that oil and gas wastes may not cause pollution. In communication with Ohio Department of Natural Resources staff, DEP staff was informed that Ohio has prohibited the use of pits. The proposed rule is less strict in this regard. However, the use of centralized impoundments in Pennsylvania promotes recycling, reduces the need for freshwater, and reduces disposal requirements. This is a significant advantage to Pennsylvania both competitively and environmentally.

West Virginia code § 22-6A established authorization and construction standards for centralized wastewater pits and freshwater impoundments that store more than 220,000 gallons of fluids. The West Virginia centralized wastewater impoundment standards are not more stringent than the proposed rule and were actually copied from the DEP's current permit requirements. The permitting of freshwater impoundments is a process that the Pennsylvania rule does not employ. The proposed rule's construction standards are similar to provisions in West Virginia; therefore the proposed rule is less burdensome and equally as protective.

West Virginia's rules at §35-4-16 as they relate to temporary pits employed at well sites, provide similar protective provisions as those contained in the Commonwealth's proposal, but do not contain any of the prescriptive measures of Pennsylvania's regulation.

Restoration for freshwater impoundments, centralized impoundments and borrow pits

The proposed rule would require these support facilities to be restored within 9 months of completion of drilling the last well serviced by the facility. These facilities can service multiple well sites. An operator may apply for a two-year extension to comply with the restoration requirements proposed in the rulemaking. In the case of freshwater impoundments, the surface landowner can

waive the restoration requirement so long as the liner is removed.

West Virginia and Ohio regulations both require the restoration of impoundments. Similar to the proposed rule, both states calculate the restoration period as commencing upon the completion of drilling the last well serviced by the impoundment. Neither state has regulations governing borrow pit reclamation, which in comparison to Pennsylvania's proposal, places the Commonwealth in a position that is more attuned to landowner concerns.

Pipelines

This rulemaking contains three new sections addressing pipelines associated with oil and gas activities. The first section pertains to gathering pipelines that transport oil, liquid hydrocarbons or natural gas to intrastate or interstate transmission pipelines. The second section concerns temporary pipelines that transport materials or waste associated with the drilling or hydraulic fracturing of a well. The last section addresses horizontal directional drilling activities associated with the construction of oil and gas pipelines.

Both Ohio and West Virginia have regulations that address the construction of oil and gas pipelines. These regulations, however, are limited. In addition, Ohio's regulations require operators to (1) identify the route of pipelines used in the production of oil or natural gas wells and maintain records showing the location, identification, type and size of pipelines at the pipeline owner or operator's office; and (2) design pipelines for at least the greatest anticipated pressure in accordance with the current recognized design practices of the industry; and (3) bury any buried pipelines at least 24 inches below the ground surface.

West Virginia's regulations prescribe minimum requirements related to the installation of oil and gas gathering and production pipelines, including when a line must be buried, how deep lines must be buried and marking requirements where pipelines cross pre-existing public or private roadways.

Texas' requirements do not specifically address installation, operation and inspection standards for oil and gas pipelines. Instead, Texas' requirements generally pertain solely to safety and rate regulations.

In contrast, Pennsylvania's pipeline requirements are more stringent than requirements in Ohio, West Virginia and Texas, as well as the requirements for other pipelines in the Commonwealth. The proposed requirements are tailored specifically for the unique nature of oil and gas pipeline construction in Pennsylvania. For example, Pennsylvania has more water resources than other states and oil and gas pipelines have the potential to impact these waters. For that reason, the pipeline requirements include construction and installation requirements for gathering pipelines; planning, notification, construction and monitoring requirements for horizontal directional drilling; and installation, flagging, pressure testing, inspection and removal requirements for temporary pipelines.

Most of these proposed regulations are performance based in lieu of prescriptive standards to allow operators the flexibility of choosing the best option to meet compliance. It is through this approach to the newly proposed regulations that Pennsylvania will remain competitive with other oil and gas producing states while updating measures minimizing the potential for impacts to the environment from oil and gas well operations.

(13) Will the regulation affect any other regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

The proposed regulations will not affect any other Department regulations or those of other state agencies. Many of these proposed regulations either use similar language or cross reference existing regulations of other Department programs to be consistent with them. The language was either derived from or cross referenced to the following applicable Department regulations:

- *25 Pa. Code Chapter 77 (Noncoal Mining)* - cross referenced in Section 78.67 Borrow pits;
- *25 Pa. Code Chapter 91 (General Provisions)* – cross referenced in 78.55 Control and disposal planning; emergency response for unconventional wells;
- *25 Pa. Code Chapter 102 (Erosion and Sediment Control)* – cross referenced in 78.15 Application requirements, 78.53 Erosion and sediment control, 78.55 Control and disposal planning, 78.59a (9)(i) relating to impoundment embankments, 78.60 Discharge requirements, 78.63 Disposal of residual waste – land application; 78.65 Site restoration, 78.67 Borrow pits, 78.68 Oil and gas gathering lines, 78.68a Horizontal directional drilling for oil and gas pipelines, and 78.68b Temporary pipelines for oil and gas operations;
- *25 Pa. Code Chapter 105 (Dam Safety and Waterway Management)* – cross referenced in Definitions, 78.59c Centralized Impoundments, 78.60 Discharge requirements, 78.68a Horizontal directional drilling for oil and gas pipelines, and 78.68b Temporary pipelines for oil and gas activities;
- *25 Pa. Code Chapter 109 (Safe Drinking Water)* - cross referenced in 78.62 (16)(b)(2) Disposal of residual waste – pits;
- *25 Pa. Code Chapter 245 (Storage Tanks)* – cross referenced in 78.57 Control, storage, and disposal of production fluids and 78.66 Reporting and remediating releases;
- *25 Pa. Code Chapter 287 (Residual Waste)* – cross referenced in 78.58 Onsite processing, and
- *25 Pa. Code Chapter 299 (Storage and Transportation of Residual Waste)* – cross referenced in 78.70 Road-spreading of brine for dust control and road stabilization.
- *25 Pa. Code Chapter 250 (Administration of Land Recycling Program)* – cross referenced in 78.66 Reporting and remediating releases.

(14) Describe the communications with and solicitation of input from the public, any advisory council/group, small businesses and groups representing small businesses in the development and drafting of the regulation. List the specific persons and/or groups who were involved. (“Small business” is defined in Section 3 of the Regulatory Review Act, Act 76 of 2012.)

Representatives from the Department met with the following groups to specifically discuss the proposed regulations and solicit feedback:

- Oil and Gas Technical Advisory Board (TAB) – the Department discussed the regulatory concepts as well as the actual proposed regulatory language at the April 12, 2011, October 21, 2011, August 15, 2012, February 20, 2013 and April 23, 2013 TAB meetings. At the latter two

meetings, public input was received from several groups including the Pennsylvania League of Women Voters, the Department of Conservation and Natural Resources, and others representing containment specialists and the general public. On April 23, 2013 the Board voted unanimously, with one member absent, for the Department to present the proposed rulemaking to the Environmental Quality Board.

- Small Business Compliance Assistance Advisory Committee – The Department provided an overview of the proposed regulations to the committee on October 24, 2012. This advisory committee is represented by small business owners who provide assistance and advice to DEP about how to assist small businesses with regulatory compliance and to ensure that small businesses are considered when new regulations are developed.
- DEP met with other industry representative groups including: the Marcellus Shale Coalition (MSC), which is mostly comprised of businesses representing unconventional drillers; the Pennsylvania Independent Oil and Gas Association (PIOGA), which represents conventional drillers; and the American Petroleum Institute (API).
- Local government organizations were also involved in discussions of the proposed regulation, including Lycoming County Commissioner, Jeff C. Wheeland, the Pennsylvania State Association of Township Supervisors (PSATS), and the Pennsylvania State Association of Boroughs (PSAB).
- DEP also involved several environmental organizations in the development of these proposed regulations including the Chesapeake Bay Foundation (CBF), the Western Pennsylvania Conservancy (WPC), The Nature Conservancy, and the Pennsylvania Environmental Council (PEC).

(15) Identify the types and number of persons, businesses, small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012) and organizations which will be affected by the regulation. How are they affected?

Regulated Community

Unconventional Operators

According to the U.S. Small Business Administration, oil and gas well operators with less than 500 employees qualify as small businesses. There are currently 73 operators of unconventional well sites in Pennsylvania. The Marcellus Shale Coalition has estimated that less than half of these operators affected may be classified as a small business. Unconventional operators with applicable business operations will be required to comply with the provisions of this proposed regulation. For example, not all operators utilize pits or impoundments, therefore those sections would not apply to those specific operators. However, all unconventional operators are required to obtain a well permit; therefore, they would be required to comply with sections of the proposal relating to orphaned and abandoned well identification and impacts to public resources.

Conventional Operators

There are currently 7,280 operators of conventional oil and gas well sites in Pennsylvania and most of them classify as a small business based on the US Small Business Administration's employee threshold. The sections of the proposed regulations that conventional operators will be required to comply with are: Identification of Public Resources (§78.15), Identification and Monitoring of Abandoned and Orphan Wells (§78.52a and §78.73c), Tank Valves and Access Lids Equipped to prevent unauthorized access

by third parties (§78.56a6), Secondary Containment for all aboveground structures holding brine or other fluids (§78.57c), and Removal of Underground Storage Tanks (§78.57(e)).

Although the provisions of §78.56 (as they related to modular storage structures), §78.58 (onsite processing) and §78.59a-c (freshwater and centralized impoundments) would apply to conventional operators, these operators do not employ the practices regulated by the proposed provisions.

Pipeline Companies

Companies that build and install pipelines will be affected by proposed §78.68 relating to oil and gas gathering lines, §78.68a relating to horizontal directional drilling, and §78.68b relating to temporary pipelines for oil and gas operations. Each of these sections incorporates the requirements of Chapter 102 (relating to erosion and sediment control) and 105 (relating to dam safety and waterway management) into Chapter 78. This cross-reference does not add any new regulatory requirements, as pipeline companies are already required to comply with these existing regulations. There are approximately 42 pipeline or midstream companies operating within the Commonwealth. The U.S. Small Business Administration defines a small business with NAICS code 237120 - Oil and Gas Pipeline and Related Structures Construction as having gross annual receipts of less than \$33.5 million and NAICS code 486210 – Pipeline Transportation of Natural Gas as having gross annual receipts of less than \$25.5 million. Because the small business determination is based on gross annual receipts, the Department is unable to determine the number of pipeline companies that would qualify as small businesses.

Other Affected Entities

Land owners

Through this regulation, landowners will be notified and given an explanation of the consequences if they refuse an operator's request to access their land to conduct a pre drill survey. Under Act 13 of 2012, if a water supply is impacted from oil and gas extraction activities, and the landowner refused a pre-drill water survey, the presumption of liability of the operator is void. The proposed rulemaking codifies these statutory provisions in order to clarify landowners rights and responsibilities.

Municipalities

A few municipalities would be affected by this proposal if they utilize brine for dust suppression or de-icing activities. Overall, the affect would be minimal as this rulemaking simply codifies existing requirements of the Department for plan approval of these activities.

General Public

The general public, including those who appreciate and benefit from Pennsylvania's natural resources, will be affected through the additional considerations included in this rulemaking to mitigate the impacts of the oil and gas industry. Local small businesses that depend on visitors to state parks and forests will also benefit. An analysis done by Penn State shows visitors to Pennsylvania's state parks generate more than \$1 billion in economic activity in nearby communities and support almost 13,000 related jobs. Out-of-state users of Pennsylvania's natural resources account for \$274 million of that total economic activity.

Additionally, all Pennsylvanians will benefit from the additional protective measures included in this rulemaking to prevent impacts of the oil and gas industry on the Commonwealth's water resources.

(16) List the persons, groups or entities, including small businesses, that will be required to comply with the regulation. Approximate the number that will be required to comply.

Unconventional Operators

According to the U.S. Small Business Administration, oil and gas well operators with less than 500 employees qualify as small businesses. There are currently 73 operators of unconventional well sites in Pennsylvania which will be required to follow all of these proposed regulations. The Marcellus Shale Coalition, an industry trade group in Pennsylvania, has estimated that less than half of the operators affected may be classified as a small business.

Conventional Operators

Most conventional well operators can be classified as a small business using the U.S. Small Business Administration's employee threshold of 500 employees or less. There are currently 7,280 operators of conventional well sites in Pennsylvania.

Pipeline Companies

There are approximately 42 pipeline or midstream companies operating within the Commonwealth. Because the small business determination for pipeline companies is based on gross annual receipts of less than \$33.5 million for oil and gas pipeline and related structures construction companies and less than \$25.5 million for pipeline transportation of natural gas companies, the Department is unable to determine the number of pipeline companies operating in Pennsylvania that would qualify as small businesses.

(17) Identify the financial, economic and social impact of the regulation on individuals, small businesses, businesses and labor communities and other public and private organizations. Evaluate the benefits expected as a result of the regulation.

Impacts

The department anticipates that the provisions of the proposed regulation will increase costs on oil and gas operators in the Commonwealth. The majority of the proposed regulations have been designed as performance based standards, allowing each individual operator to determine which practices they will employ for their extraction activities.

Many large unconventional operators employ contractors to perform various activities related to well pad siting, site construction, containment, and waste disposal. These contractors and those involved in the supply chain will receive a positive economic impact of these regulations through increased requirements for their specialized services.

Benefits

The provisions requiring operators to identify and consider the impacts of their operations on the Commonwealth's public resources will ensure that any probable harmful impacts to public resources will be avoided or mitigated while providing for the optimal development of oil and gas resources. The proposed provisions that require operators to identify orphaned and abandoned wells and monitor such wells during hydraulic fracturing activities will minimize potential impacts to waters of the Commonwealth. The proposed containment systems and practice requirements for unconventional well sites will minimize spills and releases of regulated substances at well sites and ensure that any spills or

releases are properly contained. The proposed amendments to the reporting releases requirements ensure statewide consistency for reporting and remediating spills and releases. Most of these practices are already being utilized by industry through best management practices.

The proposed amendments contain several new notification requirements which will enable Department staff to effectively and efficiently coordinate inspections at critical stages of pit construction, modular above ground storage facility installation, drill cutting and residual waste disposal on well sites, horizontal directional drilling, and road-spreading activities. The notifications will allow Department inspectors to better utilize their time by visiting sites where there are active operations to inspect. Additionally, proposed electronic submission requirements for well permits, notifications and predrill surveys will enhance efficiency for both the industry and the Department.

(18) Explain how the benefits of the regulation outweigh any cost and adverse effects.

While there are additional costs associated with some of the proposed provisions in the rulemaking, the overall benefits to the environment are numerous. The costs of reasonable environmental protective measures are relatively small compared to the costs associated with cleaning up a release of a polluttional substance into the environment and restoring the impacted area.

These proposed regulations require operators to identify public resources and critical habitats of threatened and endangered species that may be adversely impacted by well operations. Costs associated with the data base query and field site visit are minimal compared to the permanent loss of a public resource or critical habitats of threatened and endangered species.

The majority of these proposed regulations focus on the proper handling, storage and disposal of materials needed for oil and gas operations and the wastes generated by those processes. The goal of these regulations is to prevent the release of these polluttional substances into the environment, including water resources, through reasonable means that are already standard industry practices.

In general, costs associated with pollution prevention measures are a small fraction of the costs associated with the cleanup and remediation of an area impacted with pollution. Therefore, a company's long term operational costs associated with employing pollution prevention measures costs far less than the long term operational costs of periodically having to cleanup and remediate pollution cause by the release.

(19) Provide a specific estimate of the costs and/or savings to the **regulated community** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

Unconventional Operators Costs

Assumptions

It is estimated that there will be approximately 2,600 unconventional wells permitted each year for the next 3 years.

Based on DEP data, approximately 1 out of every 2 permitted wells gets drilled, or approximately 1,300 wells per year.

DEP assumes there is an average of 3 unconventional wells per well site. In the future, it is estimated that less well sites will be built as there could be as many as 12 unconventional wells per well pad.

The cost analysis for this regulation must be factored on a well site basis, not on a per well basis. Many of the processes proposed for regulation in this rulemaking include activities integral to the operation of several wells and even several well pads.

2,600 wells permitted x 50% of wells drilled = **1,300 wells drilled each year**
1,300 wells drilled each year ÷ 3 wells per well site = **434 well sites built each year**

Cost Estimates

The Department reached out to oil and gas operators, subcontractors, and industry groups to derive the cost estimates of this proposed rulemaking.

Identification of Public Resources (§78.15)

Site specific, DEP estimates this will affect 30% of well sites.

Required in section 3215 of Act 13

- Identification \$2,000
- Consultation - \$0
- Mitigation - \$ unable to determine/depends on situation

$\$2,000 \times (434 \times 30\%) = \$260,400$

The total cost of this provision is \$260,400 (not including mitigation).

Identification and Monitoring of Abandoned and Orphan Wells (§78.52a and §78.73c))

This provision will affect each well drilled and fracked.

\$2,000

$\$2,000 \times 1,300 \text{ wells} = \$2,600,000$

The total cost of this provision is \$2,600,000.

Unconventional well PPC plan for hydraulic fracturing fluid containment systems (§78.56a2)

Unconventional well drillers must prepare a site specific Preparedness, Prevention and Contingency Plan.

\$200-\$300

$\$200 \times 434 \text{ well sites} = \$86,800$

$\$300 \times 434 \text{ well sites} = \$130,200$

The total cost of this provision is between \$86,800 and \$130,200.

Providing copies of the PPC plan when requested (§78.55d)

This calculation assumes that every landowner will request a copy of the PPC plan.

\$25

$$\$25 \times 434 = \$10,850$$

The total cost of this provision is \$10,850.

Fencing Around Unconventional Well Site Pits (§78.56a5)

Not every unconventional well operator uses pits, many use tanks in their operations. DEP estimates that less than 50% of operators use pits in unconventional drilling activities.

An operator will not be required to install fencing around their pits if they have a 24-hour security presence at their site. Operators are not required to have 24-hour security if their pit is fenced.

\$7,000 - \$50,000

$$\$7,000 \times (434 \times 50\%) = \$1,519,000$$

$$\$50,000 \times (434 \times 50\%) = \$10,850,000$$

The total cost of this provision is between \$1,519,000 and \$10,850,000.

Determination of Seasonal High Groundwater Table for Pits & labor to inspect and test the integrity of the liner

Not every unconventional well operator uses pits, many use tanks in their operations. DEP estimates that less than 50% of operators use pits in unconventional drilling activities.

\$3,500

$$\$3,500 \times (434 \times 50\%) = \$759,500$$

The total cost of this provision is \$759,500.

Fencing Around Freshwater Impoundments

Not every operator uses freshwater impoundments for storing freshwater. It is difficult for DEP to determine the number of freshwater impoundments across the state. The cost of the fencing is dependent upon how large the impoundment is. DEP, based on professional experience, estimates there are roughly 100 freshwater impoundments throughout the Commonwealth. The size of the freshwater impoundment and the type of fencing used determines the price of the fencing.

$$\$7,000 \times 100 = \$700,000$$

$$\$50,000 \times 100 = \$5,000,000$$

The total cost of this provision is between \$700,000 and \$5,000,000.

Tank Valves and Access Lids Equipped to prevent unauthorized access by third parties (78.56a6)

If the well site has 24 hour security presence, the operator satisfies the requirements of this section. This calculation assumes that all well sites will not have 24 hour security. This should be a one-time expense

as the protective measures will be affixed to the tanks.

\$7,000

$$\$7,000 \times 434 = \$3,038,000$$

The total cost of this provision is \$3,038,000.

Vapor Controls for Condensate Tanks (§78.56(a)(17))

Vapors must be controlled at all condensate tanks. Based on DEP inspection experience, this calculation assumes that only 40% of well sites will have condensate tanks.

\$12,500

$$\$12,500 \times (434 \times 40\%) = \$2,170,000$$

The total cost of this provision is \$2,170,000.

Signage for pits and tanks (§78.56(a)(7))

Unconventional operators will be required to display a sign on the storage structure identifying the contents and if any warnings exist, such as corrosive or flammable.

The cost of this regulatory requirement depends on the number of tanks/storage structures and the types of signage they use.

\$250 - \$2,000

$$\$250 \times 434 = \$108,500$$

$$\$2,000 \times 434 = \$868,000$$

The total cost of this provision is between \$108,500 and \$868,000.

Secondary Containment (§78.64a)

The proposed rulemaking codifies the statutory requirement of Act 13 of 2012 for secondary containment.

This cost estimate is conservative and assumes that an operator will use brand new secondary containment at every well site. According to industry secondary containment specialists, many of the secondary containment liners will be reused at multiple well sites.

\$140,000

$$\$140,000 \times 434 = \$60,760,000$$

The total cost of this provision is \$60,760,000.

Secondary Containment for all aboveground structures holding brine or other fluids (§78.57c)

The cost of this regulatory proposal depends on the number of aboveground structures on each well site.

\$5,000 - \$10,000

$$\$5,000 \times 434 = \$2,170,000$$

$$\$10,000 \times 434 = \$4,340,000$$

The total cost of this provision is between \$2,170,000 and \$4,340,000.

The estimated annual cost of this regulation on unconventional operators is between \$74,183,050 and \$90,786,950.

Conventional Operators Costs

The Department reached out to oil and gas operators, subcontractors, and industry groups to derive the cost estimates of this proposed rulemaking.

Assumptions

DEP estimates based on past trends that there will be approximately 2,000 conventional wells permitted each year for the next 3 years.

On average, about 2 out of every 3 permitted conventional wells are drilled.

There is typically only 1 conventional well per well site.

2,000 permitted wells x .667 drilled rate = 1,334 wells drilled per year

Cost Estimates

Identification of Public Resources (§78.15)

This section of the rulemaking codifies the statutory requirement of section 3215 of Act 13 of 2012. Conventional operators' completion of the PNDI process as required by statute will likely satisfy this requirement and therefore there will not be any additional cost from this proposed rulemaking.

- Identification - \$2,000
- Consultation - \$0
- Mitigation - \$ unable to determine/depends on situation

Identification of Abandoned and Orphan Wells (§78.52a)

Although conventional operators are required to comply with this section, it is anticipated that costs will be negligible.

Conventional - \$0

Tank Valves and Access Lids Equipped to prevent unauthorized access by third parties (§78.56a6)

Most conventional sites do not have 24 hour security, and therefore would be required to equip their tanks to avoid third party tampering.

The cost of this provision ranges based on buying deadlocks to changing lids.

\$40 - \$5,000

\$40 x 1,334 = \$53,360

$\$5,000 \times 1,334 = \$6,670,000$

The total cost of this provision is between \$53,360 and \$6,670,000.

Secondary Containment for all aboveground structures holding brine or other fluids (§78.57c)

Brine tanks will be required to have secondary containment from this proposed rulemaking.

\$3,000

$\$3,000 \times 1,334 = \$4,002,000$

The total cost of this provision is estimated to be \$4,002,000.

Removal of Underground Storage Tanks (§78.57(e))

This proposed rulemaking will prohibit the use of underground or partially buried storage tanks for storing brine. Operators will have 3 years to remove all existing underground or partially buried tanks. The cost of this section of the proposed rulemaking depends on the number of buried tanks across the Commonwealth. The Department is unable to estimate the number of buried tanks, but the proposed provision will require operators to provide a list of all affected tanks to the Department within 6 months of the rulemaking becoming final.

\$20,000

Labor to inspect and test the integrity of on-site waste storage pits

\$1,000

$\$1,000 \times 1,334 = \$1,334,000$

The total cost of this provision is estimated to be \$1,334,000

The estimated annual cost of this regulation on conventional operators is between \$5,389,360 and \$12,006,000.

The total cost on the entire regulated community is estimated between \$79,572,410 and \$102,792,950.

Unconventional Operators Savings

Assumptions

It is estimated that there will be approximately 2,600 unconventional wells permitted each year for the next 3 years.

Based on DEP data, approximately 1 out of every 2 permitted wells gets drilled, or approximately 1,300 wells per year.

DEP assumes there is an average of 3 unconventional wells per well site. In the future, it is estimated that less well sites will be built as there could be as many as 12 unconventional wells per well pad.

The cost analysis for this regulation must be factored on a well site basis, not on a per well basis. Many of the processes proposed for regulation in this rulemaking include activities integral to the operation of several wells and even several well pads.

2,600 wells permitted x 50% of wells drilled = **1,300 wells drilled each year**
1,300 wells drilled each year ÷ 3 wells per well site = **434 well sites built each year**

Savings Estimates

Electronic Submission of well permits (§78.15(a))

The proposed rulemaking will require applicants to submit well permit applications through the Department's website electronically. This will achieve greater efficiency and time management on the Department's end and will also save operators in postage.

2,600 permits x \$5 postage savings = \$13,000

The total savings of this provision is estimated to be \$13,000.

Electronic Submission of water surveys as one package (§78.52(d))

An operator may submit a copy of all sample results taken as part of a survey to the Department by electronic means. Currently, operators submit each individual's sample by mail as it is completely. This proposed provision will save the operator postage cost and will help the department gain efficiencies by having all samples for one well site area submitted as a whole. The Department estimates that on average, each unconventional well site will fall within the 2,500 foot range (as specified by Act 13 of 2012) of approximately 10 properties.

434 well sites x 10 properties (avg) x \$5 postage savings = \$21,700

The total savings of this provision is estimated to be \$21,700.

Well site restoration extension (§78.65(d)(2))

The Department allows an operator to file for an extension of the restoration period for up to 2 years. This will prevent the operator from having to restore a site and then disturb it again when more wells are added to a well pad.

\$50,000 to restore an unconventional site

\$50,000 x 434 = \$21,700,000

The total savings of this provision is estimated to be \$21,700,000.

The estimated savings of this regulation on unconventional operators is approximately \$21,734,700.

Conventional Operators Savings

Assumptions

DEP estimates based on past trends that there will be around 2,000 conventional wells permitted each year for the next 3 years.

On average, about 2 out of every 3 permitted conventional wells are drilled.

There is typically only 1 conventional well per well site.

$2,000 \text{ permitted wells} \times .667 \text{ drilled rate} = 1,334$

Savings Estimates

Electronic Submission of well permits (§78.15(a))

The proposed rulemaking will require applicants to submit well permit applications through the Department's website electronically. This will achieve greater efficiency and time management on the Department's end and will also save operators in postage.

$2,000 \text{ permits} \times \$5 \text{ savings} = \$10,000$

Electronic Submission of water surveys as one package

An operator may submit a copy of all sample results taken as part of a survey to the Department by electronic means. Currently, operators submit each individual's sample by mail as it is completely. This proposed provision will save the operator postage cost and will help the department gain efficiencies by having all samples for one well site area submitted as a whole. The Department estimates that on average, each unconventional well site will fall within the 1,000 foot range (as specified by Act 13 of 2012) of approximately 4 properties.

$1,334 \text{ well sites} \times 4 \text{ properties (avg)} \times \$5 \text{ postage savings} = \$26,680$

The estimated savings of this regulation on conventional operators is approximately \$36,680 annually.

Pipeline/Midstream Companies Savings

Assumptions

There are approximately 100 Horizontal Directional Drilling (HDD) operations annually. These operations use approximately 25,000 gallons of drilling fluids to conduct HDD operations.

$100 \times 25,000 = 2,500,000 \text{ gallons per year for disposal}$

Disposal costs = \$.12 per gallon

Recycling and on-site application of gathering line HDD fluid discharges and returns (§78.68a(k))

$2,500,000 \text{ gallons} \times .12 = \$300,000$

The estimated savings of this regulation on pipeline operators and midstream companies is \$300,000 annually.

The total savings for the entire regulated community is estimated to be \$22,071,380.

(20) Provide a specific estimate of the costs and/or savings to the **local governments** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

The Department does not anticipate that there will be any costs or saving to local governments.

(21) Provide a specific estimate of the costs and/or savings to the **state government** associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

There are costs to the Department that will be incurred as a result of the implementation of these proposed regulations. Increased field inspections and formal reviews are anticipated. Importantly however, there are provisions in the proposed regulation package that will streamline DEP's operations that are anticipated to balance out any increased workload requirements. The following are proposed measures included in the rulemaking with the goal of increasing Department efficiency:

- Electronic permitting will ensure that permits are submitted in a consistent format that prompts correct and complete permit applications prior to their submittal. Electronic permitting will eliminate incomplete application submittals, eliminate paper communications and increase DEP complement efficiency. It will also allow for improved transparency in DEP's permitting operations.
- Upon request, require operators to directly provide the Pennsylvania Fish and Boat Commission and landowners a copy of the site specific preparedness, prevention and contingency plan, instead of having them go through a Right to Know Law request, will save the Department staff time of obtaining them on their behalf.
- Electronic notification prior to the commencement of pipeline horizontal directional drilling and liner installation so the Department's staff can schedule inspections accordingly.
- Allow for the approval for aboveground modular storage systems, which once approved, will be posted on the Department's website for all users. This will eliminate duplication of work.
- Allow for the one time approval for pipeline horizontal directional drilling additives, which once approved, they will be posted on Department's website as preapproved. This will eliminate duplication of work.
- Allow for the one time approval of onsite waste processing facilities. This will eliminate duplication of work.

(22) For each of the groups and entities identified in items (19)-(21) above, submit a statement of legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork, including copies of forms or reports, which will be required for implementation of the regulation and an explanation of measures which have been taken to minimize these requirements.

These proposed regulations include new planning, reporting and record keeping requirements. However

operators have many different options for their surface operations, therefore not all of the requirements will be applicable all of the time. To minimize these requirements, DEP has requested electronic submission when possible of all planning, reporting, and record keeping requirements.

Many operators choose to utilize consultants for portions of their operations. New consultant work may be required to aid in the identification of public resources that may be impacted by oil and gas well sites during the permitting process. Similarly, DEP expects that many operators will utilize consultants to help in the identification of abandoned and orphaned wells within 1,000 feet from a gas well bore or 500 feet from an oil well prior to hydraulic fracturing the well.

The regulated community will need to meet new reporting requirements in these proposed regulations. The additional reporting requirements are as follows:

- Submission to the Department of proof of written notification by an unconventional well operator to a homeowner explaining that some of their rights may be waived if they refuse to allow the operator to conduct a predrill survey on their water supply.
- If an operator chooses to use an on-site pit, they will be required to submit documentation of the seasonal high groundwater level and the name and qualifications of the individual who performed the evaluation. The operator will also be required to notify the department 3 days prior to installation of the liner.
- If an operator uses underground or partially buried storage tanks, they will be required to submit a list with a schedule for their removal or seek approval from DEP to operate the tank. The proposed regulation allows for 6 months for the submission of the list and 3 years for the removal of these tanks to provide a sufficient amount of time to comply.
- If an operator uses centralized wastewater impoundments, they will be required to submit quarterly water samples from monitoring wells around centralized wastewater impoundments.
- If an unconventional operator chooses to dispose of drill cuttings either by encapsulation or land application on the well site, they will be required to notify the Department 3 days prior and submit test results for the cuttings on the site restoration report.
- If an operator is using a borrow pit that doesn't fall under the permitting requirements of the Noncoal Surface Mining Conservation and Reclamation Act, they will be required to register the location of the borrow pit with the Department.
- If a pipeline company will be performing horizontal directional drilling under a stream, they will be required to provide electronic notification to DEP 24 hours prior.

State and local governments are not expected to incur any additional legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork.

(23) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
SAVINGS:	\$	\$	\$	\$	\$	\$
Regulated Community	\$22,071,380	\$22,071,380	\$22,071,380	\$22,071,380	\$22,071,380	\$22,071,380

Local Government	\$0	\$0	\$0	\$0	\$0	\$0
State Government	\$0	\$0	\$0	\$0	\$0	\$0
Total Savings	\$22,071,380	\$22,071,380	\$22,071,380	\$22,071,380	\$22,071,380	\$22,071,380
COSTS:						
Regulated Community	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950
Local Government	\$0	\$0	\$0	\$0	\$0	\$0
State Government	\$0	\$0	\$0	\$0	\$0	\$0
Total Costs	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950	\$79,572,410 – 102,792,950
REVENUE LOSSES:						
Regulated Community	\$0	\$0	\$0	\$0	\$0	\$0
Local Government	\$0	\$0	\$0	\$0	\$0	\$0
State Government	\$0	\$0	\$0	\$0	\$0	\$0
Total Revenue Losses	\$0	\$0	\$0	\$0	\$0	\$0

(23a) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY -3 2010-2011	FY -2 2011-2012	FY -1 2012-2013	Current FY 2013-2014
Environmental Program Management (#161-10382)	\$28,881,000	\$27,755,000	\$23,663,000	\$26,297,000
Environmental Protection Operations (#160-10381)	\$78,021,000	\$77,359,000	\$74,547,000	\$76,221,000
Well Plugging Account (#693-60083)	\$16,222,000	\$16,332,000	\$16,371,000	\$18,571,000

(24) For any regulation that may have an adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), provide an economic impact statement that includes the following:

a) An identification and estimate of the number of small businesses subject to the regulation.

According to the U.S. Small Business Administration, For NAICS codes 211111 (Crude Petroleum and Natural Gas Extraction) and 213111 (Drilling Oil and Gas Wells), businesses with less than 500 employees are considered by the U.S. Small Business Administration to be small businesses. According to the Department's permitting records, there are currently 75 operators of unconventional well sites in Pennsylvania, and that number is not expected to change significantly in the near term. The Marcellus Shale Coalition, an industry association that represents exploration, production, midstream, and supply chain partners of unconventional natural gas drilling, has estimated that less than half of the operators affected may be classified as a small business.

The Department estimates that almost all of the 7,280 conventional operators that operate within Pennsylvania are small businesses.

Because the small business determination for pipeline companies is based on gross annual receipts of less than \$33.5 million for oil and gas pipeline and related structures construction companies and less than \$25.5 million for pipeline transportation of natural gas companies, the Department is unable to determine the number of pipeline companies operating in Pennsylvania that would qualify as small businesses.

The estimated total is 7,317 small businesses that would be subject to this proposed regulation.

- b) *The projected reporting, recordkeeping and other administrative costs required for compliance with the proposed regulation, including the type of professional skills necessary for preparation of the report or record.*

The following are provisions of the proposed regulation that may or may not apply to an operator based on their chosen business practices and operations. Please also see the response to number 22.

Reporting

- On the permit application, an applicant must provide proof of consultation with the Pennsylvania Natural Heritage Program regarding the presence of a state or federal threatened or endangered species where the proposed well and access road are located.
- If pits are used in extraction activities, the operator must provide documentation of the determination of seasonal high groundwater for the placement of the waste pit, including the name and qualifications of the individual who performed the evaluation. Typically, a Professional Geologist or Professional Engineer can make the determination. However, DEP will provide free training to operators so that they will be able to make this determination themselves.
- Conventional operators that utilize underground or partially buried storage tanks will be required to submit a list of the locations of the tanks with a schedule for their removal or seek approval from DEP to continue their use within 6 months of the effective date of the rulemaking.
- If an operator chooses to use centralized wastewater impoundments, they will be required to submit quarterly water samples from monitoring wells.

- Entities (operators, municipalities, private contractors, PennDOT, etc) that choose to land apply brine for dust suppression, road stabilization, anti-icing, or deicing will be required to submit monthly brine spreading reports to DEP.

Recordkeeping

- An operator is required to keep records of the locations of temporary pipelines, the types of fluids transported through those pipelines, and the period of time in which the pipeline was installed.

Other administrative costs

- Submission of proof of written notification by an unconventional well operator to a homeowner explaining that some of their rights may be waived if they refuse to allow the operator to conduct a predrill survey on their water supply.
- Identification of abandoned and orphaned wells within 1,000 feet from a gas well bore or 500 feet from an oil well prior to hydraulic fracturing the well.
- If an operator is using an onsite pit at an unconventional well site, they must provide an electronic notification 3 days prior to installation of the liner to provide an inspector adequate time to plan for a site visit.
- If an operator will dispose of drill cuttings through pit encapsulation or by land application, they must electronically notify DEP 3 days prior to provide an inspector adequate time to plan for a site visit. Unconventional operators must also submit the test results to DEP of the cuttings that were disposed of on the well site.
- If operators are utilizing a borrow pit for site construction, they will be required to register its location with DEP.

c) A statement of probable effect on impacted small businesses.

Some additional costs to unconventional and conventional operators classified as small businesses will occur as a result of these proposed regulations; however DEP has minimized the costs of this proposed rulemaking to small businesses (primarily conventional well operators), as described in number 25 below.

In comparison, as concluded by a 2011 Penn State study, many small businesses in Pennsylvania benefit from the \$1.145 billion dollars in annual economic activity and 12,630 jobs provided by tourism to Pennsylvania's state parks. This regulation will ensure that those businesses will continue to benefit as these facilities will be protected through additional avoidance and mitigation measures taken by well operators.

d) A description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation.

The department designed this regulation around performance based standards, allowing each individual operator to choose which practices are best for their operations. There are many options for management

of waste streams, but those practices which have a higher likelihood of impacting the environment and public safety and health will be required to have additional controls to ensure the highest level of protection to the Commonwealth.

Conventional well operations are much smaller in scope and they generate far less waste than unconventional drilling, therefore the potential impact to the environment is significantly less. This has been taken into consideration while these proposed regulations were being developed, which resulted in the exclusion of conventional operations from several sections of this proposed regulation. A list of the regulatory requirements applicable to conventional operations is provided in response to question 15 above.

(25) List any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, the elderly, small businesses, and farmers.

The Department took into consideration some special provisions for land owners, specifically farmers, with regard to potential emergencies and land uses. If a property owner would like to receive a copy of the Preparedness, Prevention, and Contingency Plan, the operator must provide it to them. If a landowner prefers to retain a freshwater impoundment or well pad on their property, the operator may obtain signed landowner consent and will not be required to restore the area. Mostly developed for the need of farmers, a well site must be restored to the approximate original conditions, including the preconstruction contours and be able to support the original land uses within 9 months after plugging a well. Operators will also be required to provide a copy of the site restoration report to the landowner if drill cuttings or residual waste are disposed on the well site. This will ensure that the landowner does not lose property or future crop growing area through oil and gas activities.

As described in response to questions 15 above, DEP also considered and minimized the regulatory burden on conventional well drillers to include only those provisions deemed necessary to protect public health and the environment.

(26) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

Alternative regulatory provisions that were considered by DEP include the elimination of pits and underground storage tanks for the management of wastes. DEP also considered requiring landowner consent prior to the disposal of cuttings or residual waste at the well site. Given the longstanding and successful use of these practices by conventional well operators, DEP determined that such restrictions were not practical.

DEP also considered requiring operators to identify orphaned and abandoned wells prior to well permitting. Because over 40% of all wells permitted are never drilled, DEP determined that such identification prior to hydraulic fracturing was a more efficient and results oriented process. Finally, DEP considered requiring permits prior to the use of various facilities such as freshwater impoundments, modular storage structures and onsite processing. However this regulation is designed around planning, pre-approvals, notifications of certain activities, and specific construction and operation standards including monitoring, inspection, and reporting requirements. This eliminates a traditional permitting process. For pre-approvals of solidifiers, modular storage, and wastewater processing operations, the Department will post online each of the previously approved chemicals,

methods, and systems to further enhance business efficiencies.

Additionally, if a permit applicant obtains an erosion and sediment control permit under Pa Code Chapter 102, proof of consultation with the Pennsylvania Natural Heritage Program as part of the well permit application will be deemed as being met.

(27) In conducting a regulatory flexibility analysis, explain whether regulatory methods were considered that will minimize any adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), including:

Generally, please also see the responses to numbers 15 and 25.

a) The establishment of less stringent compliance or reporting requirements for small businesses;

All operators regardless of size will have the ability to request alternatives practices to the regulation with regard to pits, waste disposal, and impoundments. An operator may request to vary from the regulation if they can show that the practice is equivalent or superior for environmental protection.

b) The establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses;

Many of the required documents and test results demonstrating compliance are proposed to be submitted on a timeframe that will not cause a hindrance to operation timelines. Examples include drill cuttings sample results being submitted with the site restoration report instead of requiring DEP review and approval prior to on-site disposal. Another example is seasonal high groundwater determinations for waste pits certifications being submitted with the site restoration report.

c) The consolidation or simplification of compliance or reporting requirements for small businesses;

For consolidation or simplification of compliance for all operators, one of the major intents of this proposed regulation is for Chapter 78 to be the one source for regulatory requirements on this industry. Other programs and regulations have requirements regarding oil and gas operations, which makes it difficult for operators to know which regulations apply to them. Additionally, if a permit applicant obtains an erosion and sediment control permit under Pa Code Chapter 102, proof of consultation with the Pennsylvania Natural Heritage Program as part of the well permit application shall be deemed as being met. Another measure aimed at simplification is DEP's commitment to listing the pre-approved solidifiers, modular containment systems, and wastewater processing facilities online to eliminate redundancy and increase business efficiencies.

Electronic reporting will consolidate or simplify reporting requirements for all operators. DEP has also designed these proposed regulations to include additional reporting requirements on reports that are already provided to the department. For example, pit testing results can be included on the operators site restoration report.

- d) *The establishment of performing standards for small businesses to replace design or operational standards required in the regulation; and*

Most of the proposed regulations are based upon performance standards with protection of the environment as the goal. The Department believes the performance standards in these proposed regulations will promote cost savings to operators and new innovation for small businesses, especially those in the supply chain. An example of performance based standards is the expanded temporary storage regulations to allow for modular storage structures to be utilized. There are many possible designs of these storage structures for companies to offer to industry. The newly proposed onsite processing regulations use performance based standards, which allows for operators to choose from various wastewater treatment techniques to meet their particular needs. The newly proposed containment systems and practices for unconventional well sites regulations also have performance based standards small businesses are already taking advantage of in promoting their products to aid industry with meeting these standards.

- e) *The exemption of small businesses from all or any part of the requirements contained in the regulation.*

Conventional well operations make up the majority of the small businesses impacted by this regulation. By nature of their processes, they are much smaller in scope and they generate far less waste than unconventional drilling, therefore the potential impact to the environment is significantly less. This has been taken into consideration while these proposed regulations were being developed, which resulted in conventional operator exemptions from several sections of this proposed regulation, including: certain PPC requirements, monitoring or fencing requirements for pits, signage requirements for storage facilities, seasonal high groundwater determinations for temporary pits, notification of installation of pit liners, and containment systems and practices. Many activities that have additional requirements only apply to unconventional operations. Conventional well operators were only included in provisions that were deemed necessary to protect the environment regardless of the type or size of the oil and gas operation.

(28) If data is the basis for this regulation, please provide a description of the data, explain in detail how the data was obtained, and how it meets the acceptability standard for empirical, replicable and testable data that is supported by documentation, statistics, reports, studies or research. Please submit data or supporting materials with the regulatory package. If the material exceeds 50 pages, please provide it in a searchable electronic format or provide a list of citations and internet links that, where possible, can be accessed in a searchable format in lieu of the actual material. If other data was considered but not used, please explain why that data was determined not to be acceptable.

Data is not the basis for this regulation.

(29) Include a schedule for review of the regulation including:

A. The date by which the agency must receive public comments: 4th Quarter 2013

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| B. The date or dates on which public meetings or hearings will be held: | 4 th Quarter 2013 |
| C. The expected date of promulgation of the proposed regulation as a final-form regulation: | 4 th Quarter 2014 |
| D. The expected effective date of the final-form regulation: | 4 th Quarter 2014 |
| E. The date by which compliance with the final-form regulation will be required: | 4 th Quarter 2014 |
| F. The date by which required permits, licenses or other approvals must be obtained: | 4 th Quarter 2014 |

(30) Describe the plan developed for evaluating the continuing effectiveness of the regulations after its implementation.

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended. DEP will have continued interaction with the Oil and Gas Technical Advisory Board and industry roundtables. As issues arise, DEP will have continuous evaluation.