



Oil and Gas Management

Online Mechanical Integrity Assessment Training Home-Use Wells

PADEP: Bureau of Oil and Gas Planning and Program
Management

Division of Well Plugging and Subsurface Activities



Oil and Gas Management

Introduction and Learning Objectives

MIA Program: Home-Use Wells

Introduction

- ❑ As an owner/operator of a home-use well in Pennsylvania, you received a letter from DEP making you aware of the Mechanical Integrity Assessment (MIA) Program.



MIA Program: Home-Use Wells

Introduction

- ☐ The MIA Program is based on a regulatory requirement in Pennsylvania that applies to all operating oil and gas wells in the state.
- ☐ The current regulations require quarterly inspections (4 times per year) at every operating oil and gas well in the state.
- ☐ The results of these inspections must be submitted to DEP by February 15th of the year following the inspections. For example, reports for inspections completed in 2017 must be submitted to DEP by February 15, 2018.

MIA Program: Home-Use Wells

Introduction

- ❑ Well inspections are important for ensuring that wells are being operated safely and in a manner that is protective of human health and the environment.
- ❑ By complying with Pennsylvania's regulations, you continue to ensure abundant, clean water resources and safe use of the state's oil and gas supplies.



MIA Program: Home-Use Wells

Learning Objectives – After completing this training program, you will:

- ☐ Be able to locate resources on the web and by telephone to assist you with MIA Program compliance.
- ☐ Understand the basic components of your well and what potential problems to look for during quarterly inspections.
- ☐ Be able to properly complete either the electronic or paper inspection form – ONLY ONE OF THESE IS REQUIRED.



Oil and Gas Management

Resources and Materials

MIA Program: Home-Use Wells

Resources and Materials

- ☐ Along with the letter you received from the DEP, you also were given a paper MIA inspection form.
- ☐ You have the option of either submitting the paper MIA inspection form or submitting the digital form.
- ☐ Both forms can be downloaded online.

MEDICAL CENTER

NAME _____ AGE _____

ADDRESS _____ DATE _____

Rx

SIGNATURE _____

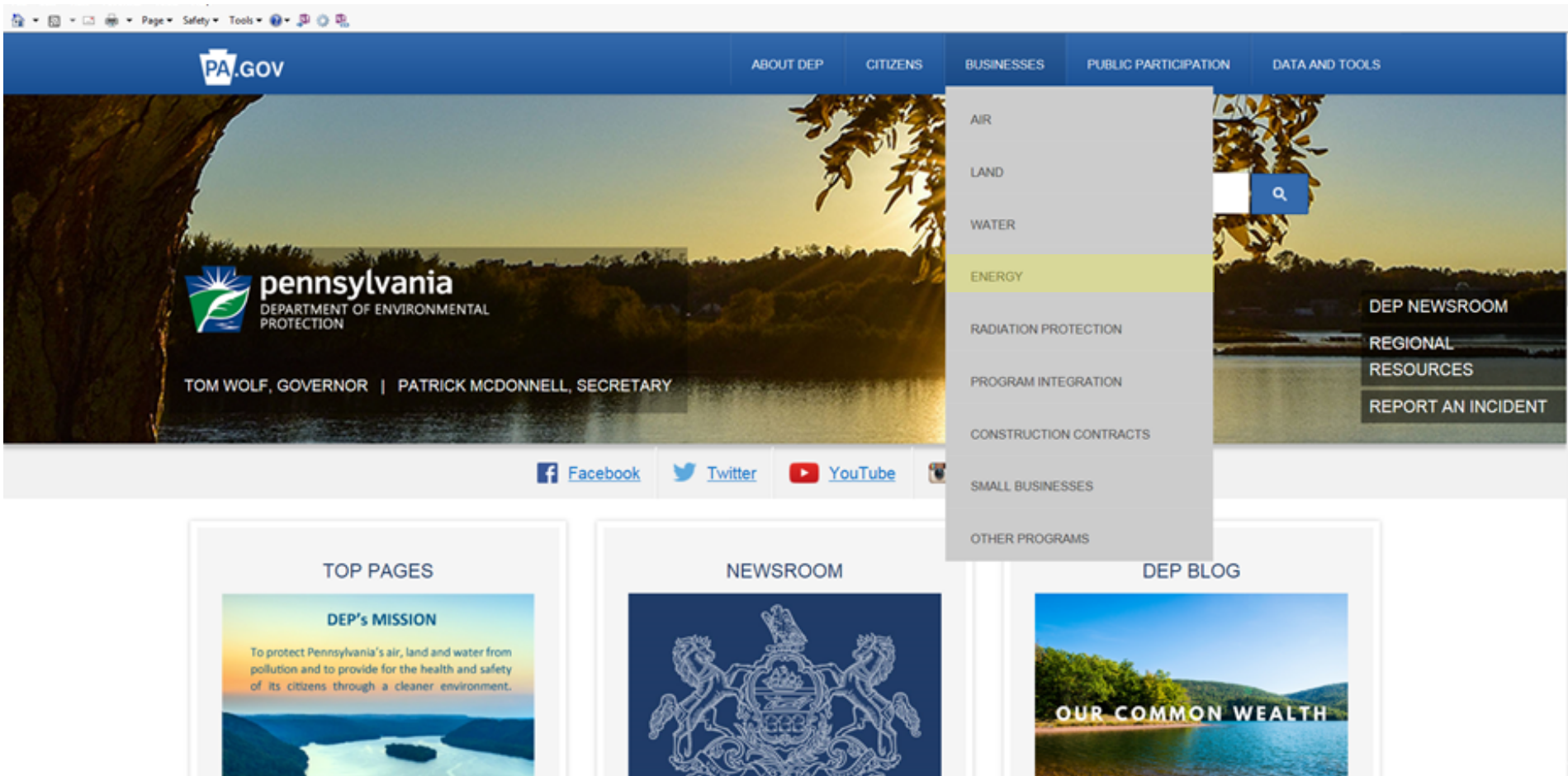
☐ LABEL

REFILL 0 1 2 3 4 5 PRN NR

MIA Program: Home-Use Wells

Resources and Materials

- ☐ For this training we will provide examples of how to complete both the electronic and paper forms.



☐ Select "Energy" from the Businesses Dropdown Option on the PA DEP Website

DEP > Businesses > Energy > Oil and Gas Programs

OIL AND GAS PROGRAMS

DEP's Office of Oil and Gas Management is responsible for the statewide oil and gas conservation and environmental programs to facilitate the safe exploration, development, recovery of Pennsylvania's oil and gas reservoirs in a manner that will protect the commonwealth's natural resources and the environment. The office develops policy and programs for the regulation of oil and gas development and production pursuant to the Oil and Gas Act, the Coal and Gas Resource Coordination Act, and the Oil and Gas Conservation Law; oversees the oil and gas permitting and inspection programs; develops statewide regulation and standards; conducts training programs for industry; and works with the Interstate Oil and Gas Compact Commission and the Technical Advisory Board.

For more information contact: [DEP Oil and Gas](#)

The Office of Oil and Gas Management only regulates aboveground and underground storage tanks at oil and gas well sites. All questions regarding aboveground and underground storage tanks that are not located on oil and gas well sites should be directed to the Storage Tank Program at ra-EPEnvirCleanandBr@pa.gov.

Citizens with oil and gas related complaints can call the state wide toll free number 1-866-255-5158.

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WHAT'S NEW

- [Geological Society of America \(GSA\) Legacy Well Integrity and Emissions Study 2017](#)

CONSERVATION LAW PUBLIC HEARING

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INDUSTRY RESOURCES

Industry Resources creates a centralized location for all pertinent information for the Industry to operate successfully and safely in Pennsylvania.

Information on well construction standards, guidance and manuals on industry best practices, training and workshop opportunities, applications and authorizations are provided on this site to promote industry awareness of Pennsylvania's laws and regulations. To simplify the process of gathering information, resources for other organizations and agencies involved in oil and gas operations are also provided.

Notices will be posted on the [Informational Resources](#) page to inform industry of new standards, practices and regulatory changes.

Please be advised, the "Operator Electronic Registration – Oil and Gas Reporting" application has been migrated to the DEP GreenPort. Operators must be registered to use GreenPort and approved by the

RELATED INFORMATION

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Select Mechanical Integrity Assessment



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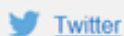
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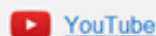
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MECHANICAL INTEGRITY ASSESSMENT

The Mechanical Integrity Assessment (MIA) is a regulatory-based process used to inspect, assess and record quarterly well integrity data for operating oil and gas wells. This quarterly inspection is required by regulation under 25 Pa. Code § 78.88, Mechanical Integrity of Operating Wells. Please note that only one quarterly inspection result must be reported annually for conventional well sites, whereas all four quarterly inspection results must be reported annually for unconventional well sites to demonstrate compliance with 25 Pa. Code Chapter 78, Section 78.88(e). Also note that this requirement does not apply to underground gas storage wells, wells that have been granted inactive status, and those regulated under the EPA's Underground Injection Control Program; monitoring and assessment of those wells is addressed under other sections of Chapter 78. Annual reports for wells included under the MIA requirement must be submitted to the Department by no later than Feb. 15 of the year following the inspections. MIA annual reporting forms, instructions, a streamlined user guide and other helpful information may be accessed by clicking on the appropriate link below.

Submitting Well Integrity Data

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MIA Program: Home-Use Wells

Resources and Materials

- ☐ You should now have either a copy of the electronic form or the paper form.
- ☐ Next, we are going to take a look at some basic well components and potential problems to look for during your inspection.
- ☐ Following this, we will review how to complete the paper and electronic MIA inspection forms.



Oil and Gas Management

The Basic Components of Your Well and Potential Well Problems

MIA Program: Home-Use Wells

The Basic Components of Your Well

- ☐ Home-use wells may look very different depending on when and how deep they were drilled.
- ☐ The majority of the well is below the surface, but the required inspection under the MIA Program focuses on the well components visible at the surface.

MIA Program: Home-Use Wells

The Basic Components of Your Well

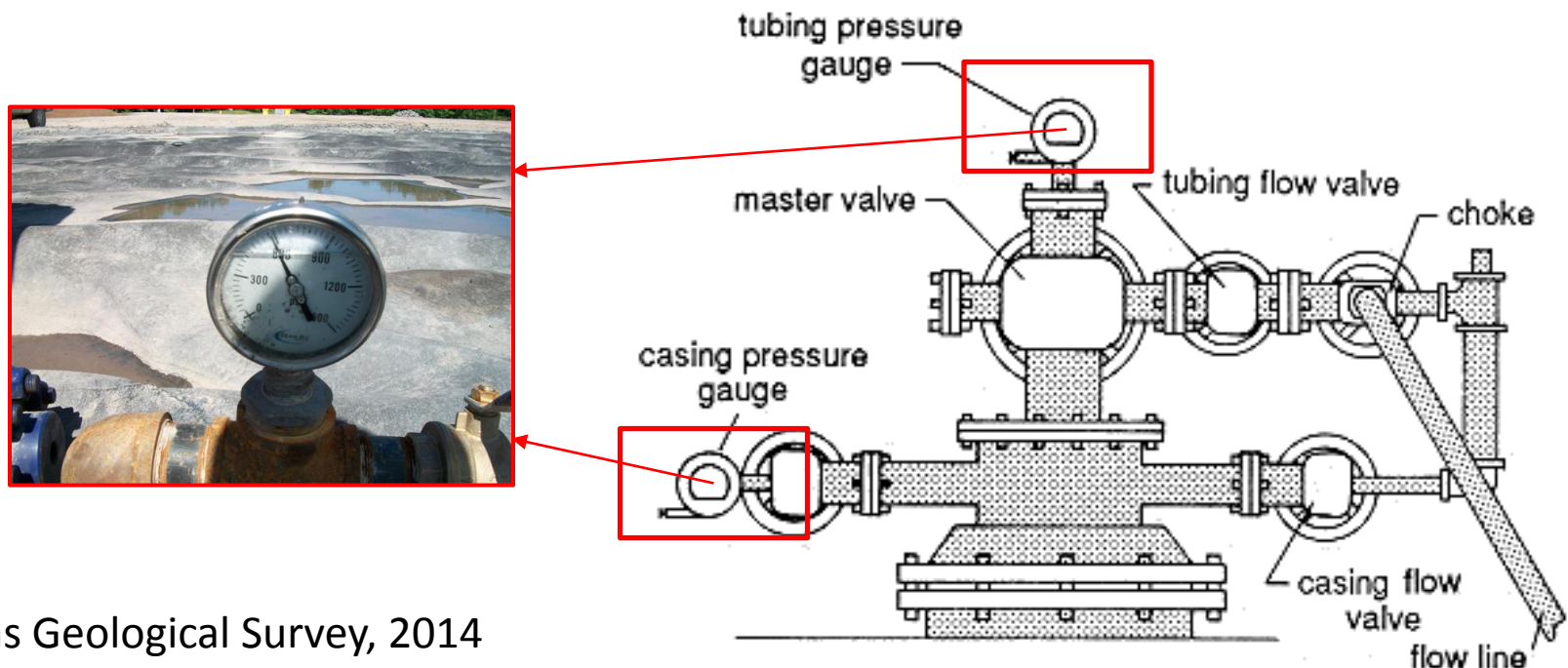
- ❑ Two examples of gas wells in Pennsylvania producing gas for on-site use, i.e., no gas going to a sales line.



MIA Program: Home-Use Wells

The Basic Components of Your Well

- Wellhead schematic of a typical flowing gas well (right) with photograph of pressure gauge (left) – most home-use wells will have only one pressure gauge.



MIA Program: Home-Use Wells

Potential Well Problems

- ☐ **LEAKS** – these may not always pose an environmental or safety threat, but should be monitored carefully.
- ☐ **SEVERE SURFACE CORROSION** – many parts of the well are composed of iron-containing metal and over the years these parts may begin to rust. If the rusting becomes severe enough, it may result in an uncontrolled release of gas or other fluids to the environment.
- ☐ **LARGE CHANGES IN PRESSURE BETWEEN QUARTERS** – the gauges at the well typically will record gradual drops in pressure over time as the gas is produced. A sudden substantial change may indicate a leak or blockage.

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Potential Well Problems

- ❑ **LEAKS** – Leaks can easily be detected using the basic senses of sight, hearing, and sometimes, smell.



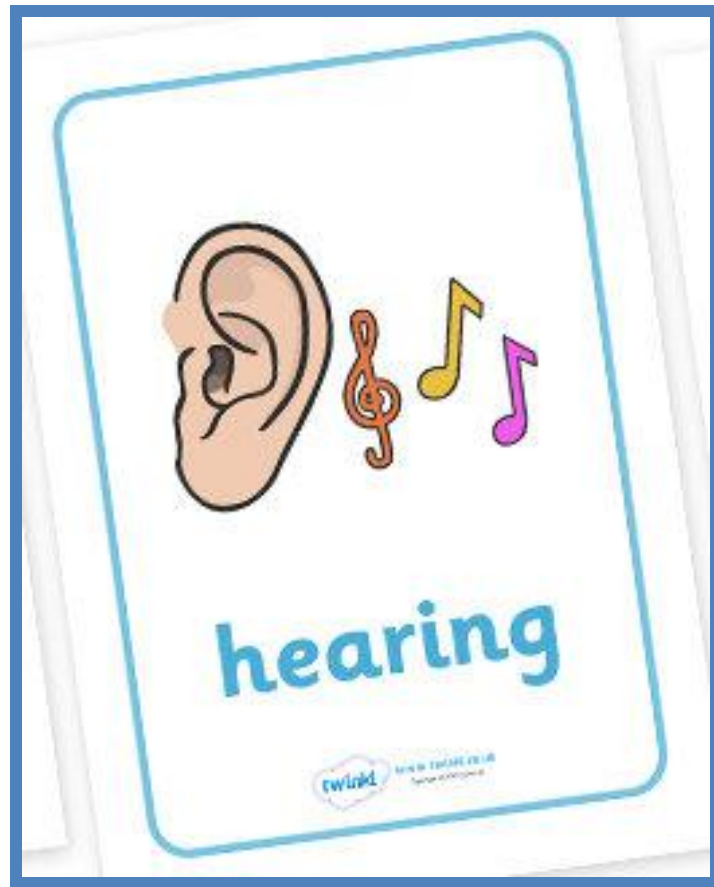
MIA Program: Home-Use Wells

SIGHT: When water collects around the well, leaks cause the pooled water to bubble. A simple mixture of soapy water sprayed on to the surface well equipment will also bubble if a leak is present.



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SOUND: Pay attention for any hissing sounds not normally present near the surface well equipment and try to find the source of the sound. The audio clip embedded in this slide is a recording of methane venting from a well.



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SMELL: Methane gas is odorless, but impurities in the gas may result in noticeable odors. Note any smells that are not normally present when inspecting the well.



CAUTION
HYDROGEN
SULFIDE GAS
MAY BE PRESENT

MIA Program: Home-Use Wells

**NEVER PLACE AN OPEN FLAME OR ANY OTHER
IGNITION SOURCE ANYWHERE NEAR THE WELL.**



MIA Program: Home-Use Wells

Potential Well Problems

- ❑ **SEVERE SURFACE CORROSION** – Visually inspect the well equipment at the surface.
 - Iron-containing metals typically will rust when exposed to moisture and oxygen over time. However, some rust is acceptable and actually improves the integrity of the well.

MIA Program: Home-Use Wells

Potential Well Problems

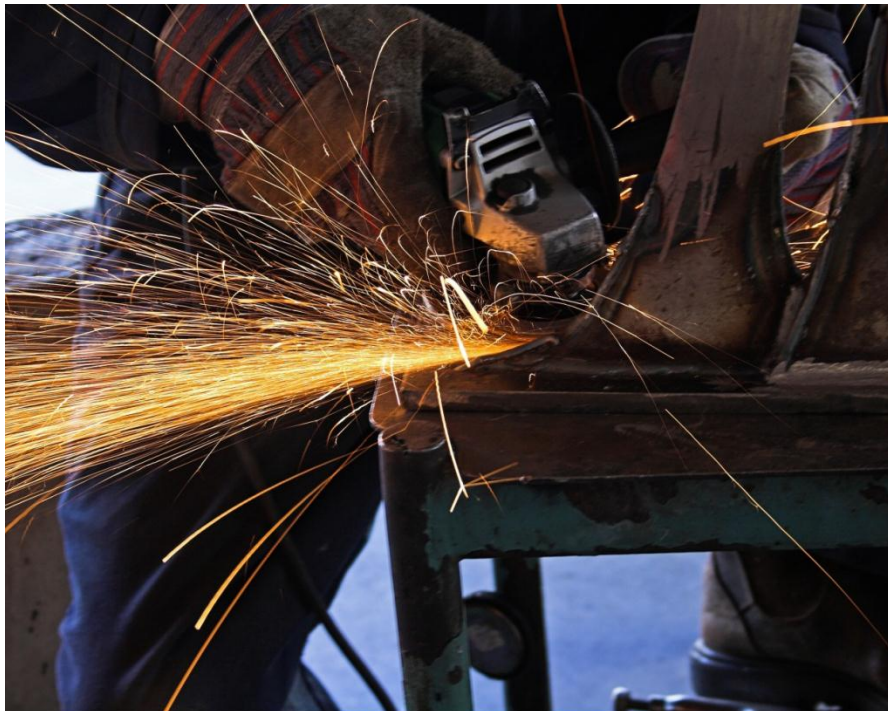
- ❑ **SEVERE SURFACE CORROSION** – Visually inspect the well equipment at the surface.
 - The development of rust to a point where equipment at the well is losing significant strength, developing cavities (pits), or resulting in leaks is a condition that must be addressed.



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Routinely applying surface coating may be one way to prevent progressive corrosion, but this should only be done by someone who has experience tending to gas wells and understands the risks and limitations involved.

NEVER ATTEMPT TO ADDRESS SURFACE CORROSION BY USING GRINDING OR RESURFACING TOOLS THAT COULD PRODUCE SPARKS.



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Potential Well Problems

- ❑ **LARGE CHANGES IN PRESSURE BETWEEN QUARTERS –**
Visually inspect the well pressure gauge, if one is present.
 - Over time, gas pressure in the rock will decrease as gas from underground is used at your home – this change is very gradual.
 - The tubing or production casing pressure gauge records the pressure at which gas is flowing from the well or, if the well is not being used, the shut-in pressure.
 - Large increases in pressure from one quarter to the next may indicate a blockage, whereas large decreases may indicate a leak somewhere in the well.

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Potential Well Problems

☐ LARGE INCREASE IN PRESSURE



PRESSURE 1 (50 psi)



PRESSURE 2 (150 psi)



PRESSURE CHANGE (100 psi
or 50% of gauge range)

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Potential Well Problems

☐ LARGE DECREASE IN PRESSURE



PRESSURE 1 (150 psi)



PRESSURE 2 (50 psi)



PRESSURE CHANGE (100 psi
or 50% of gauge range)



Oil and Gas Management

Completing the Paper Form

MIA Program: Home-Use Wells

Completing the Paper Form

8000-FM-OOGM0124C Rev. 7/2017



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS MANAGEMENT

MECHANICAL INTEGRITY ASSESSMENT REPORT – HOME USE WELLS (Conventional Operations Only)

INSTRUCTIONS:

- (1) Fill out boxes 1-9 below. Each line should contain information for one quarterly inspection. Any comments should be added in the space provided following the table.
- (2) After completing all FOUR quarterly inspections, mail form to address below or scan and upload at DEP MIA website (See instructions on Mechanical Integrity Assessment for Home-Use (Onsite Use) Wells. Note that reports are due by February 15 of each year).
- (3) Call 717.772.2199 for assistance.

MAILING ADDRESS:

Pennsylvania Department of Environmental Protection
Bureau of Oil and Gas Planning and Program Management
P.O. Box 8765
Harrisburg, PA 17105-8765

1. Well Operator/Owner	DEP ID/OGO No.
John Smith	19975

2. U.S. Well No. (API No.)	3. Well Type (Gas or Combo)	Quarter	4. Quarterly Inspection Date	5. Primary Production Gas Pressure (psig)	6. Escaping Gas from Surface/Wellhead Equipment/Outside Conductor (Y/N)	7. Escaping Oil from Surface/Wellhead Equipment/Outside Conductor (Y/N)	8. Escaping Produced Water from Surface /Wellhead Equipment/ Outside Conductor (Y/N)	9. Corrosion Problems (Y/N)
063-56987	Gas	Q1 (Jan-1 to Mar-31)	1/25/17	25	N	N	N	N
063-56987	Gas	Q2 (Apr-1 to Jun-30)	5/10/17	75	N	N	N	N
063-56987	Gas	Q3 (Jul-1 to Sep-30)	8/28/17	105	N	N	N	N
063-56987	Gas	Q4 (Oct-1 to Dec-31)	11/12/17	25	N	N	N	N

10. Comments Well used for household heating and not in use during Q2 and Q3 inspections.



Oil and Gas Management

Completing the Report Online Form

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Completing the Report Online Form

PA.GOV OFFICIAL APP Tom Wolf, Governor Patrick McDonnell, Secretary DEP Home

DEP Oil and Gas Reporting - Electronic

Reporting Period: January 1 - February 15, 2017 (for inspection year 2016)
OGO: 99999 Operator: UNKNOWN OPR

Total well count is 689; Sorted by: Permit # Ascending [Return to Integrity Online Summary page](#) [List non-reporting wells](#) [Attempt final submittal](#)

[Add or Search for Well](#)

Permit #: - [Add Well](#) [Find Well](#) Records per page: 10 [Apply](#)

Page 1 of 69 << First < Previous 1 [Go](#) Next > Last >> 689 record(s)

	Permit #	Farm name	Unconventional	Inspection Date	Wellhead Pressure / Flow				Water Level or Other		Open Flow (cfpd) or Shut-in Pressure on Production Annulus (psig)		Fluids Survey (Gas, Oil, or Brine)					Corrosion Problems (Y/N)	No-inspection comments	Text comments
					Primary Production Pressure (psig)	Primary Production Vent Flow (cfpd)	Annular Production Pressure (psig)	Maximum Allowable Pressure Exceeded per 78.72(c) (Y/N/U)	Water Level or Other Measurement	Water Level or Other Unit	Open Flow or Shut-in Pressure Measurement	Open Flow or Shut-in Pressure Unit	Any Fluids Noted (Y/N)	Gas Outside Freshwater Casing (cfpd)	Gas Outside Intermediate Casing (cfpd)	Surface Wellhead Equipment Gas Emissions (cfpd)	Any Liquids (Oil or Brine) to Surface or Outside Freshwater Casing (Y/N)			
Update Cancel	003-01150	SKLARSKY 1	No	01/29/2016	125								N					N		
Edit	003-01157	EVANS 1 OG WELL	No	1/1/2016																
Edit	003-01158	EVANS 1 OG WELL	No	1/1/2016																

Note for home use gas wells the only required elements are as follows:

"Primary Production Pressure (psig)", "Any Fluids Noted (Y/N)" and "Corrosion Problems (Y/N)".

Also note for the electronic home use gas well submission, only the last of the four quarterly inspections will need to be recorded on the Online Form.



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Thank You

For questions, please contact:

**Subsurface Activities Section
717.772.2199**