



# Abandonment as Impact: Industry Disappearance after Coalbed Methane Development in the Powder River Basin, Wyoming

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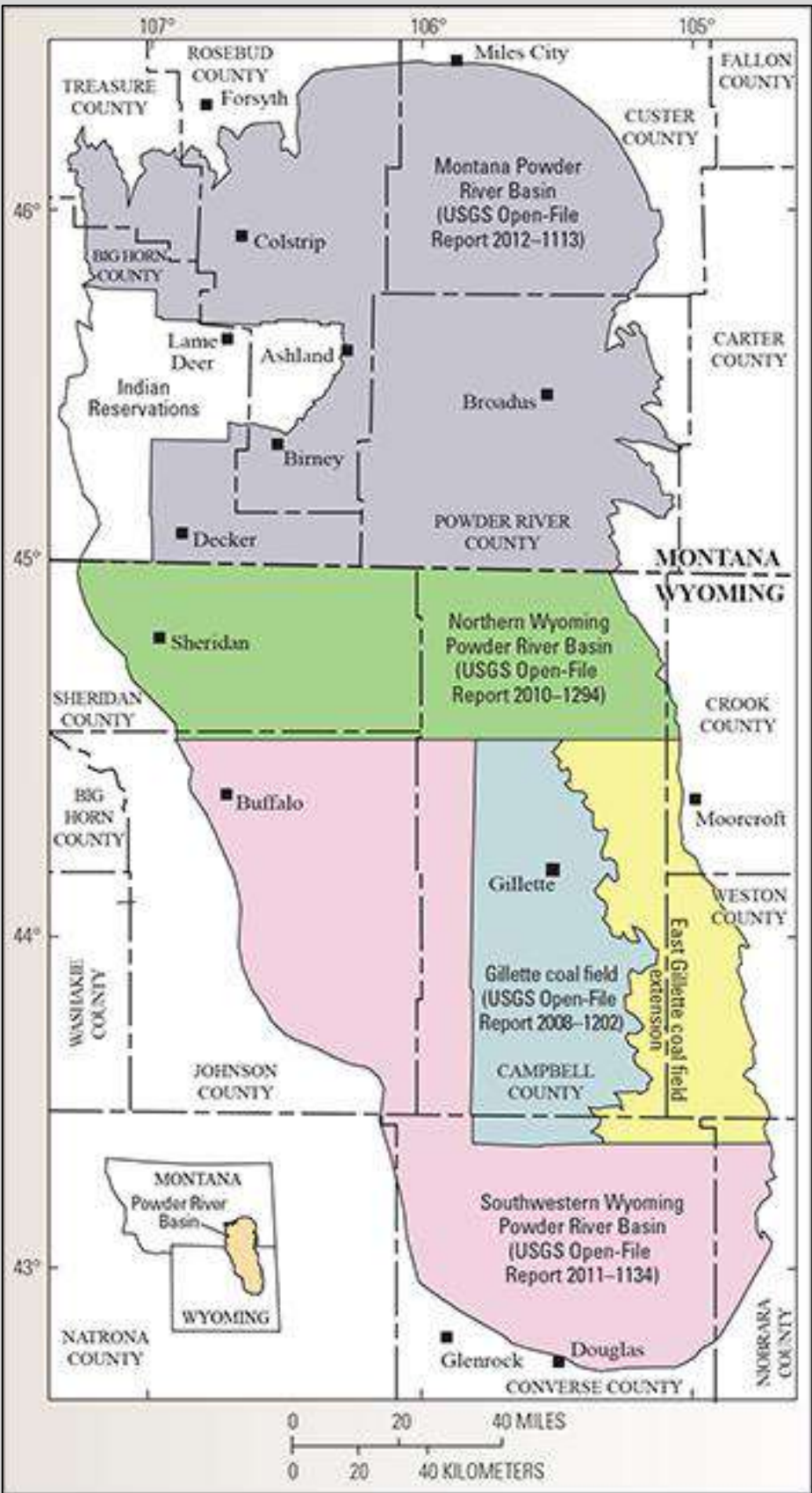


## Introduction

The impacts of fast-paced natural resource extraction mount quickly during the development and production phases of a play. However, legacy impacts that remain following extraction, at the end of the lifecycle, are often neglected in policy and practice. If mitigating legacy impacts is not made a priority, the result can be widespread industry abandonment of wells, infrastructure and all environmental liabilities. Such is the case after a coalbed methane boom occurred in the Powder River Basin of Wyoming from 1998-2008. After the bust, some 4,500 orphaned wells remain on farms and ranches in Wyoming, along with considerable uncertainty about who will take responsibility for well and land reclamation that will cost at least \$125 million to complete. Therefore, it is germane to ask:

1. How does Wyoming’s reclamation policy influence and/or enable bond forfeiture and company disappearance?
2. What strategies had landowners implemented to try to locate an industry company or personally facilitate the reclamation on their lands? Were these strategies successful?

Powder River Basin



Source: USGS (2004)

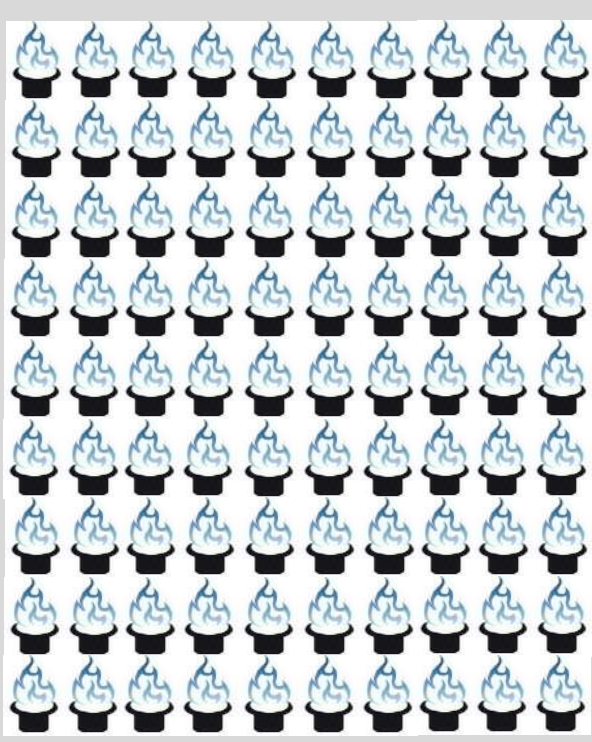
## Mixed-Methods Approach

1. **Policy analysis** of federal, state and local statutes that concern oil and gas development and reclamation have been meticulously reviewed. Theoretically, the efforts and success of CBM reclamation projects are a product of the regulatory environment. However, this relationship cannot be assumed. The desire to decipher between the intentions of policymakers and what is truly taking place is a pervasive theme that applies directly to the research. In this study, the term “ground-truthing” is used to describe this policy-focused research aim.
2. **Qualitative interviews** with 30+ Powder River Basin landowners, oil & gas attorneys, and agency officials from the Bureau of Land Management and Wyoming’s Department of Environmental Quality, State Engineer’s Office, and the Wyoming Oil and Gas Conservation Commission.



## Characterizing the Policy Environment

About 100 orphaned wells exist on BLM-managed land



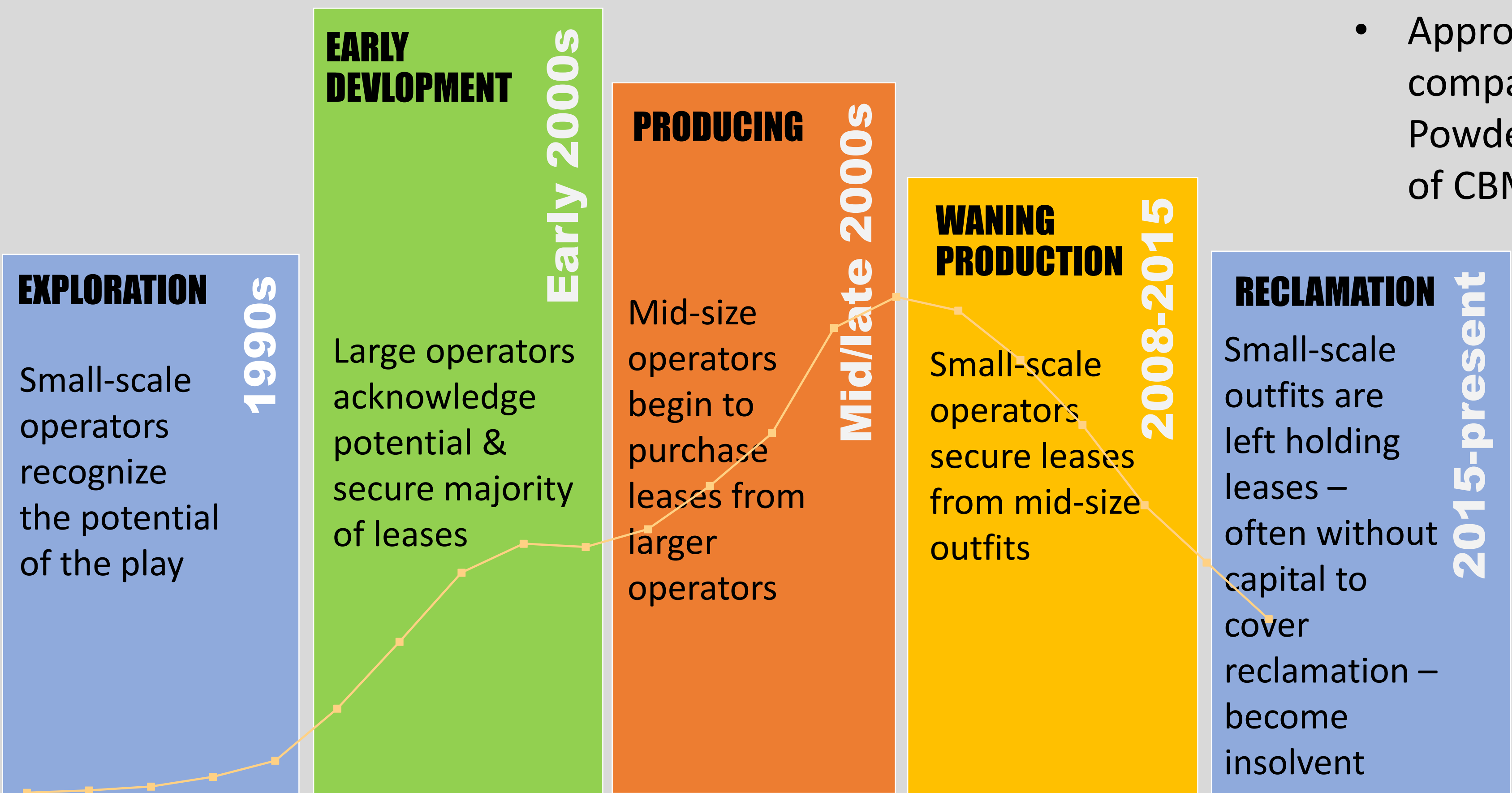
About 4,500 orphaned wells exist on state-managed land



= 50 orphaned wells

	Federal	State
Jurisdiction	BLM surface and/or federally owned minerals	State owned surface and/or minerals and privately owned minerals
Regulatory Mechanisms	Record of Title Bonding	Bonding
Bonding	Inadequate to cover reclamation costs	Inadequate to cover reclamation costs despite 2016 update
Defining Reclamation Success	Native plant community re-established, erosion control, restored habitat, free of noxious weeds, contaminated soil & equipment (BLM Gold Book)	Restoring surface, as close to reasonably practicable, to the condition that existed prior to oil and gas operations (Statute 30-5-401)

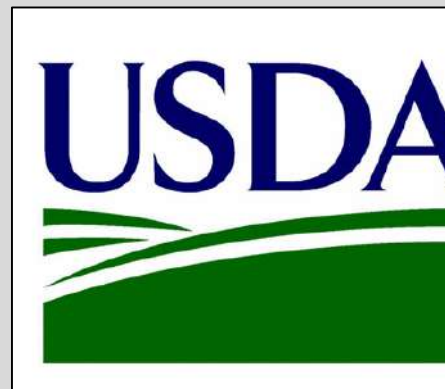
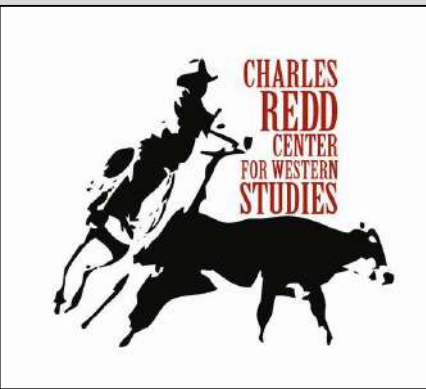
## Landscape of Industry Operators over the Course of CBM Development



- Approximately 130 industry companies operated in the Powder River Basin at the peak of CBM development.
- Industry companies came from at least 10 states to operate in the Powder River Basin
- Mergers, acquisitions & bankruptcies have created an ever-changing assemblage of industry players.

## Surface-Owner Range-of-Choice to Facilitate Reclamation

- **State well-plugging program:** Orphaned wells on state and private land are reclaimed by the Wyoming Oil and Gas Conservation Commission. Landowners can elect to wait for the State to plug orphaned wells on their property. No additional reclamation is conducted by the State aside from plugging the well and removing well-site infrastructure. The state has plugged 1,367 wells since 2014. It’s estimated that the state will be plugging CBM wells in the Powder River Basin until, at least, the year 2021.
- **Litigation:** Surface-owners can litigate against industry companies for not complying with the surface-use contract, failure to pay surface damage and/or royalty payments, and excessive surface disturbance. Examples of litigation against CBM operators show surface-owners finding success through court action. However, the surface-owner must have the time, money and resources to endure such a process.
- **Personal Action:** Instances of a landowner personally conducting the reclamation exist, though rare. The landowner must have the know-how and necessary equipment. When personal action is taken, it is often after the state has plugged the well.



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