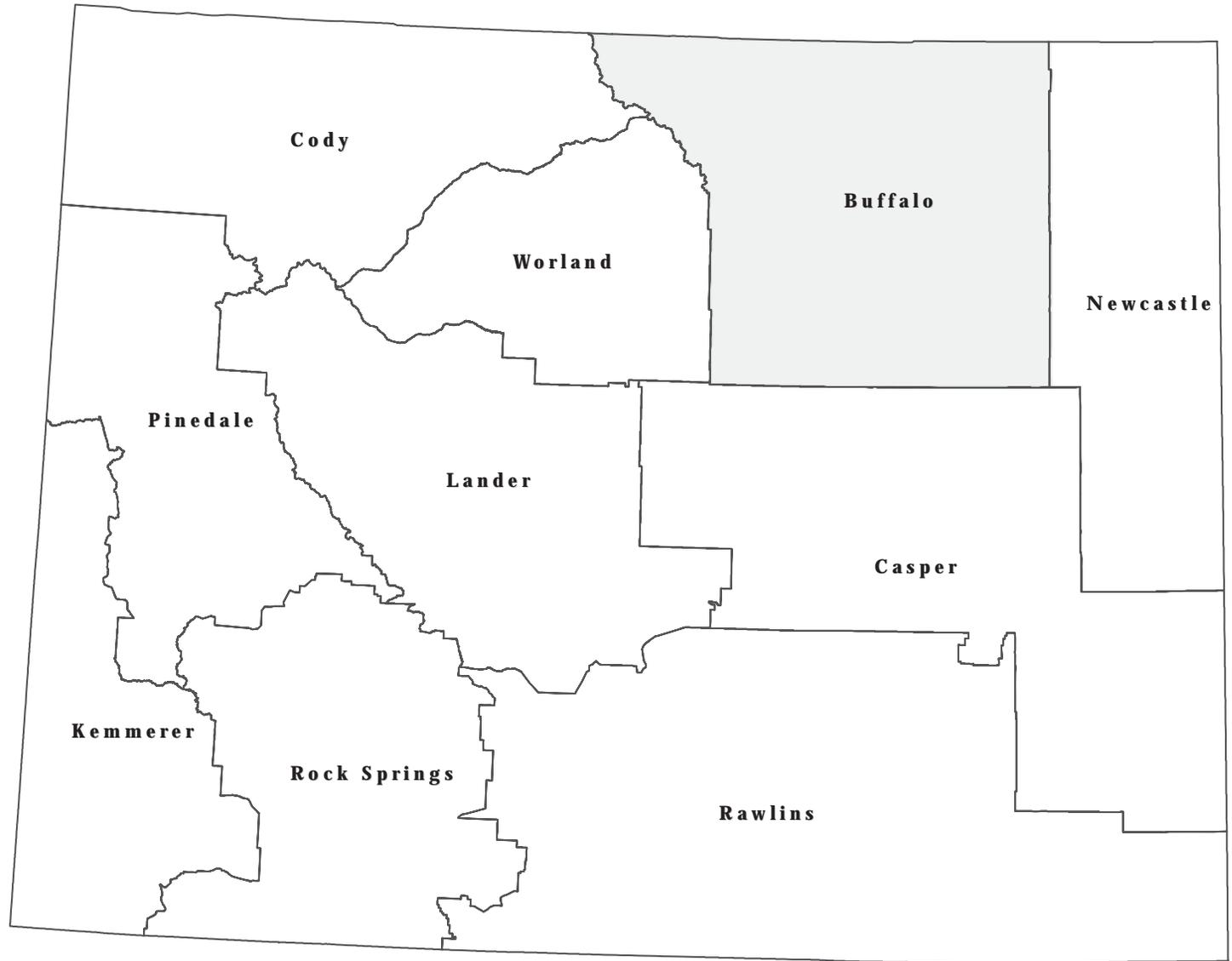


Figure 1.
The Buffalo Planning Area and its location within Wyoming.



Wyoming State Office
Reservoir Management Group

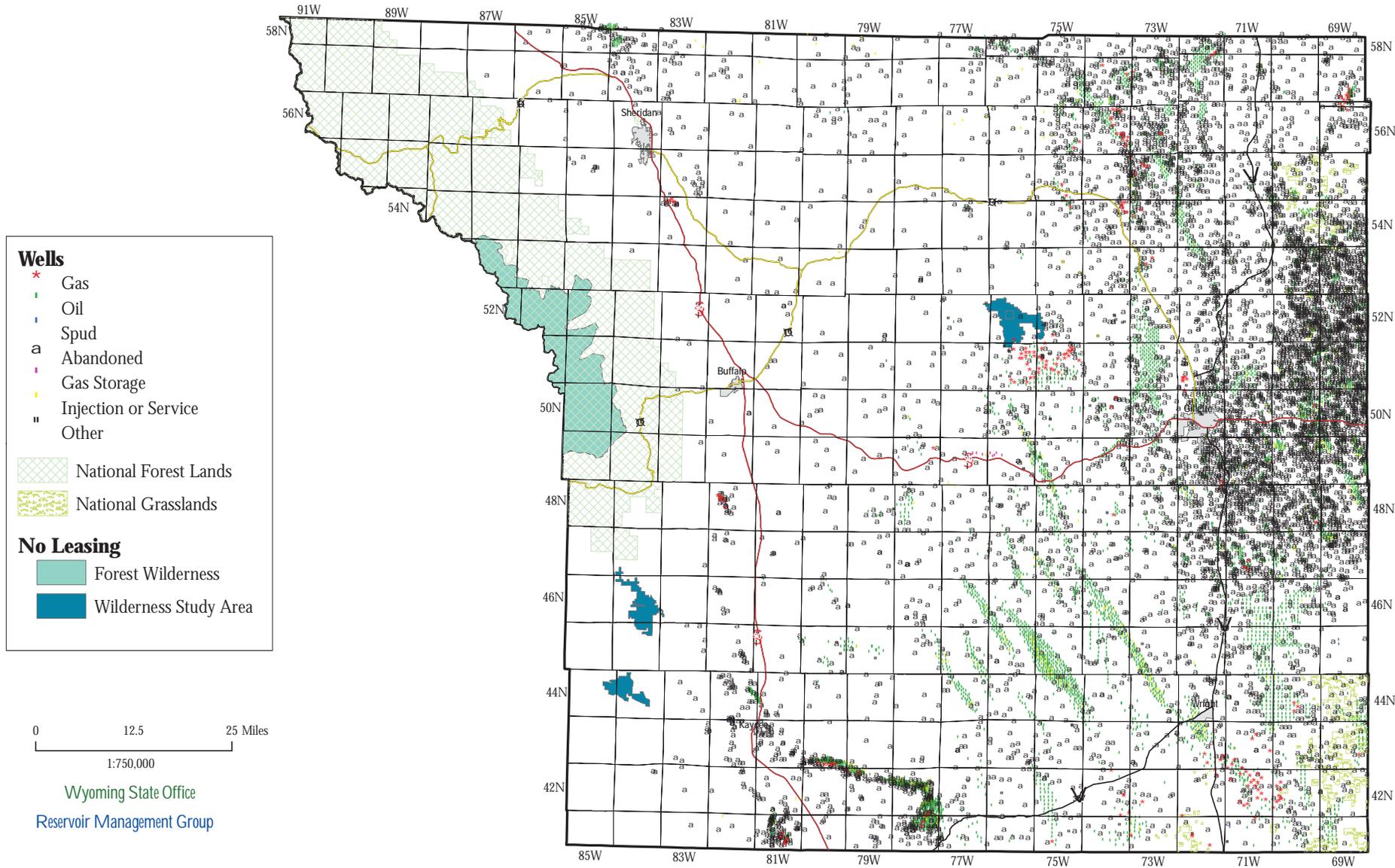
May, 2009

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 2a. Location and initial status of all conventional oil and gas wells drilled within the Buffalo Planning Area. Data from IHS Energy Group (2009).



Wells

- * Gas
- Oil
- Spud
- a Abandoned
- Gas Storage
- Injection or Service
- Other

No Leasing

- Forest Wilderness
- Wilderness Study Area

0 12.5 25 Miles
1:750,000

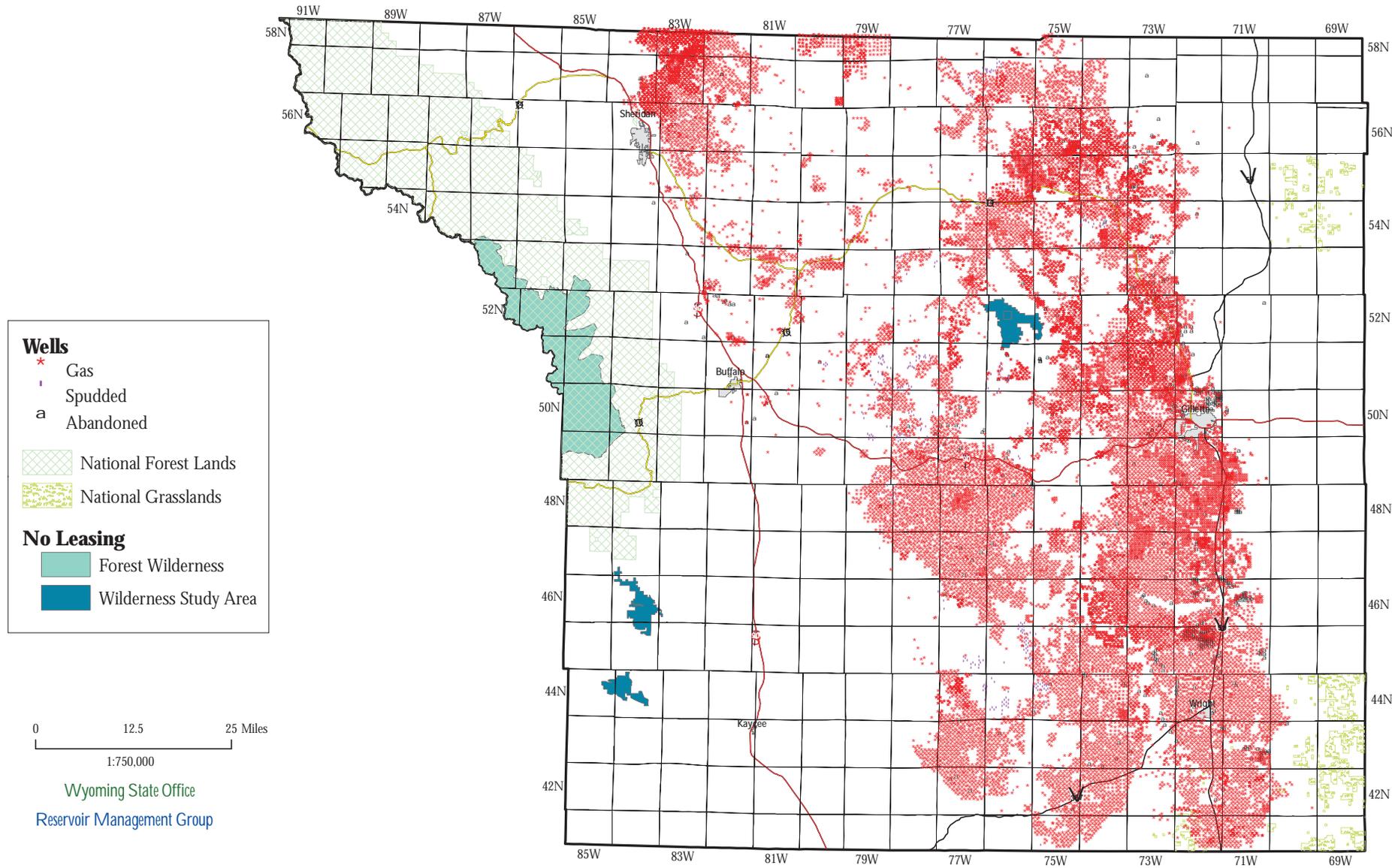
Wyoming State Office
Reservoir Management Group

May, 2009
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 2b. Location and initial status of all coalbed natural gas wells drilled within the Buffalo Planning Area. Data from IHS Energy Group (2009).



Wells

- * Gas
- Spudded
- a Abandoned

No Leasing

- Forest Wilderness
- Wilderness Study Area

0 12.5 25 Miles
1:750,000

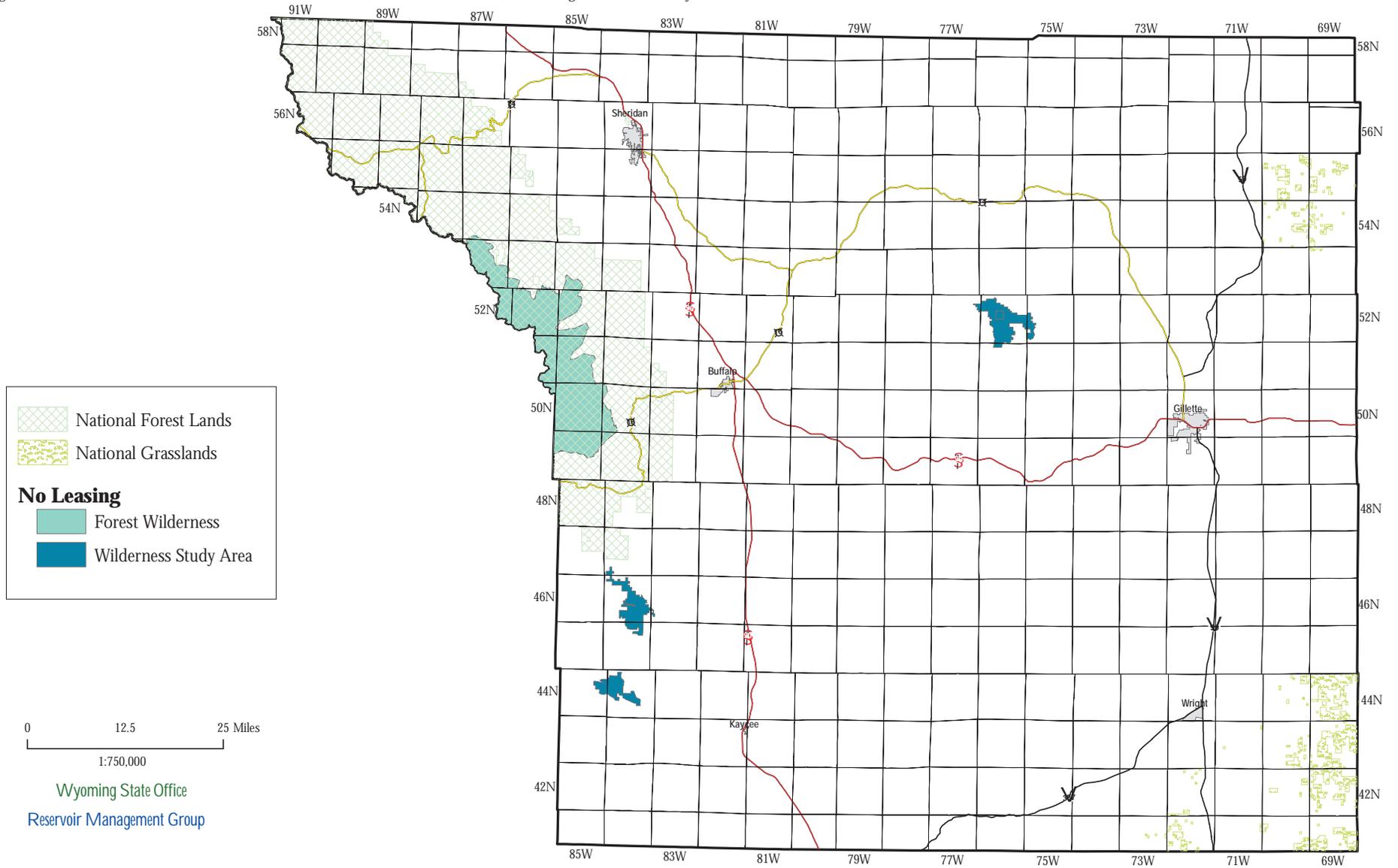
Wyoming State Office
Reservoir Management Group

May, 2009
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 3.
Buffalo Planning Area with National Forest, National Grasslands, National Forest wilderness and Bureau managed wilderness study areas.



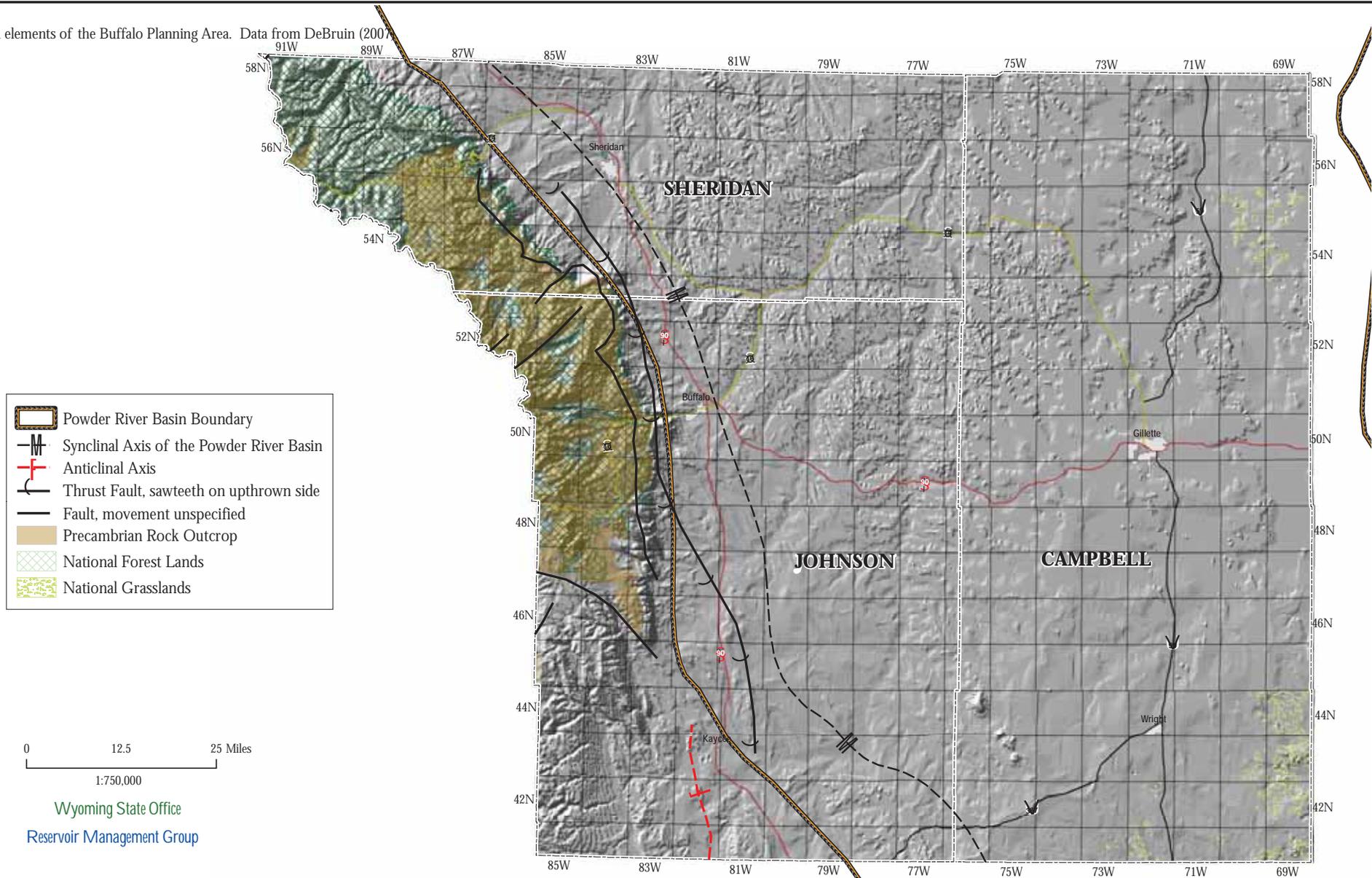
May, 2009

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 4. Major structural elements of the Buffalo Planning Area. Data from DeBruin (2007)



- Powder River Basin Boundary
- Synclinal Axis of the Powder River Basin
- Anticlinal Axis
- Thrust Fault, sawteeth on upthrown side
- Fault, movement unspecified
- Precambrian Rock Outcrop
- National Forest Lands
- National Grasslands

0 12.5 25 Miles
1:750,000

Wyoming State Office
Reservoir Management Group

May, 2009
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.

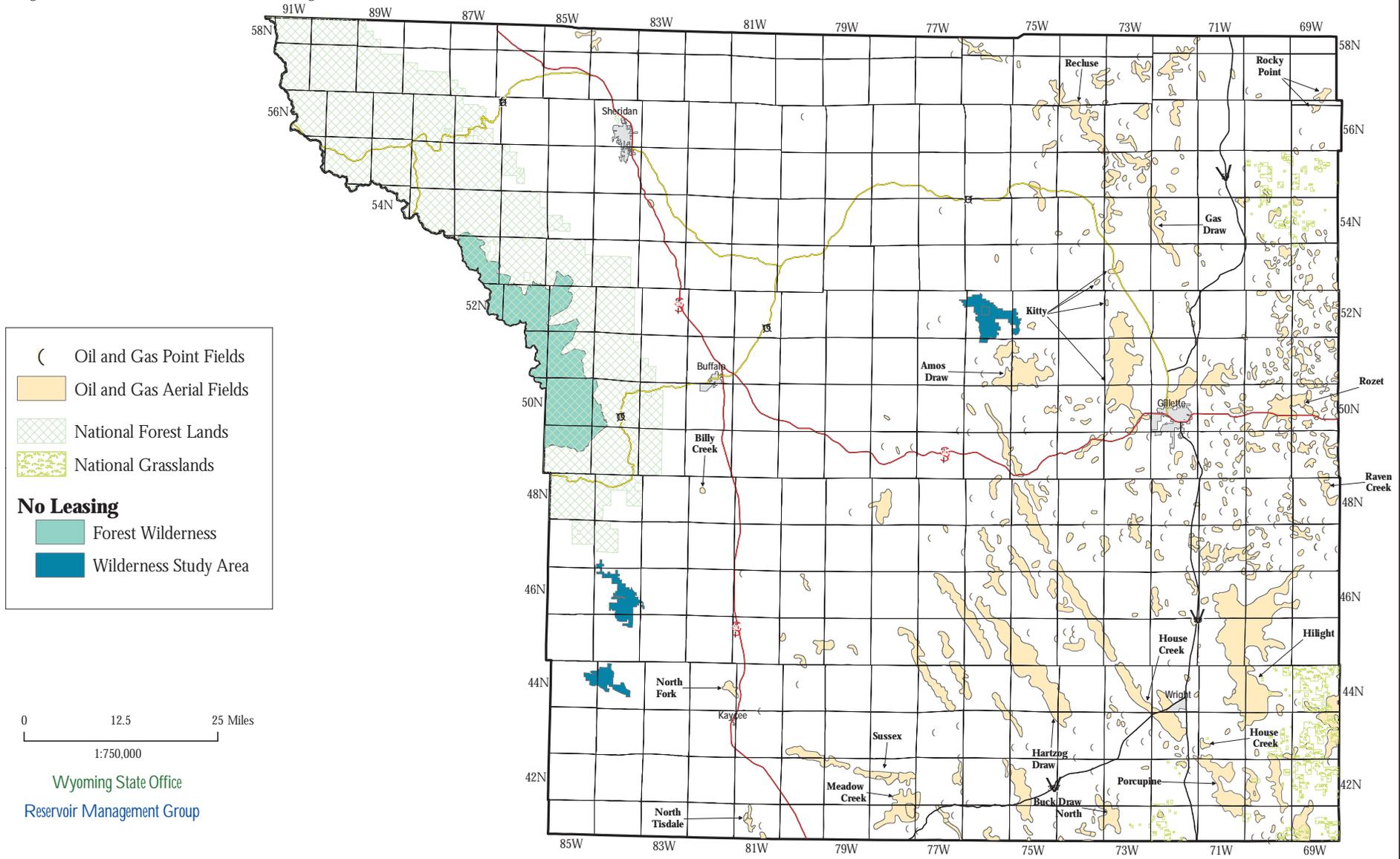


Figure 5.

Generalized stratigraphic chart of the Powder River Basin and Buffalo Planning Area [modified from Dolton and Fox (1996) and Love and Christiansen (1993)].

Era	Age		Rock Unit				
			Western		Eastern		
Cenozoic	Tertiary	Oligocene	White River Formation				
		Eocene	Wasatch Formation				
		Paleocene	Fort Union Formation	Tongue River member		Fort Union Formation	
				Lebo Shale member			
Tulloch member							
Mesozoic	Cretaceous	Upper	Lance Formation		Hell Creek Formation		
			Fox Hills Sandstone				
			Bearpaw Shale	Lewis Shale (<i>Tekla Sandstone member</i>)	Pierre Shale		
			Mesaverde Formation (<i>Teapot Sandstone and Parkman Sandstone members</i>)	Pierre Shale			
			Cody Shale (<i>Sussex and Shannon sandstones, Steele Shale, Niobrara and Sage Breaks members</i>)	Niobrara Formation			
			Frontier Formation (<i>Wall Creek, 2nd Wall Creek, and Belle Fourche members</i>)	Carlile Shale (<i>Sage Breaks, Turner Sandy, and Pool Creek members</i>)			
			Greenhorn Formation				
			Belle Fourche Shale				
			Mowry Shale				
			Lower	Muddy Sandstone		Newcastle	
				Thermopolis Shale		Skull Creek Shale	
				Cloverly Formation	Fall River Formation		Inyan Kara Group
					Lakota Formation		
			Jurassic	Upper	Morrison Formation		
	Middle	Sundance Formation (<i>"Upper" and "Lower" Sundance</i>)		Sundance Formation (<i>Redwater Shale, Pine Butte, Lak, Hullet Sandstone, Stockade Beaver, and Canyon Springs members</i>)			
		Gypsum Spring Formation					
	Triassic	Upper	Popo Agie Formation	Spearfish Formation (<i>Pine Salt, Forelle Limestone, and Glendo Shale members</i>)			
			Crow Mountain Sandstone				
			Alcova Limestone				
		Lower	Red Peak Formation				
Goose Egg Formation (<i>Little Medicine Limestone, Freezeout Shale, Ervay, Difficulty Shale, Forelle Limestone, Glendo Shale, Minnekahta Limestone, and Opeche Shale members</i>)		Minnekahta Limestone					
Permian	Opeche Shale						
	Minnelusa Formation						
Pennsylvanian	Upper	Tensleep Sandstone		Minnelusa Formation			
	Lower	Amsden Formation					
Mississippian	Upper	Madison Limestone					
	Lower						
Devonian	Upper	Englewood Limestone					
Ordovician	Upper	Whitewood Dolomite					
	Middle	Winnipeg Formation					
Cambrian	Upper	Gallatin Limestone					
	Middle	Gros Ventre Formation					
		Flathead Sandstone					
Deadwood Formation							

Figure 6a.
Conventional oil and gas field boundaries within the Buffalo Planning Area. Data from DeBruin (2007).



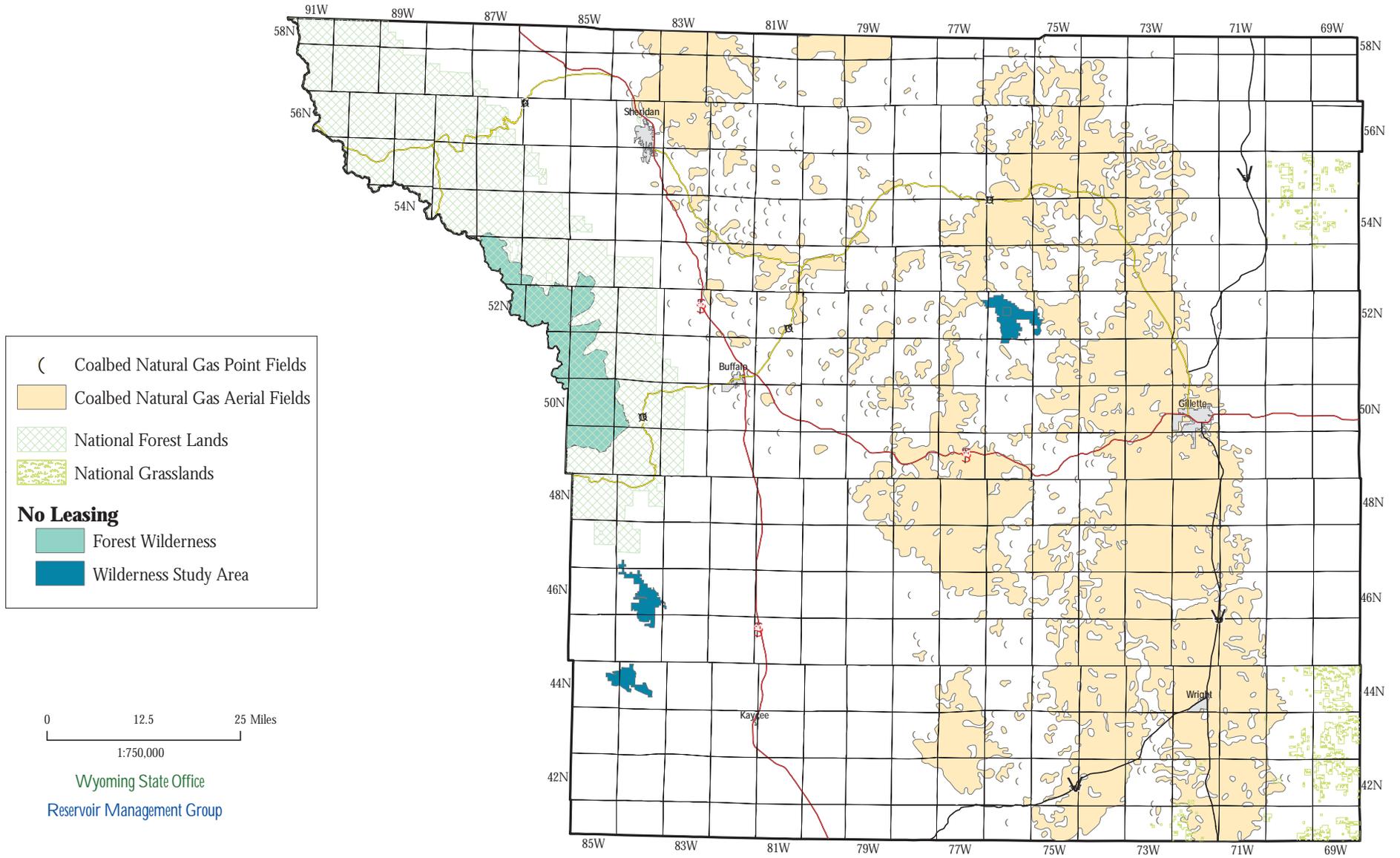
May, 2009

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 6b.
Coalbed natural gas field boundaries within the Buffalo Planning Area. Data from DeBruin (2007).



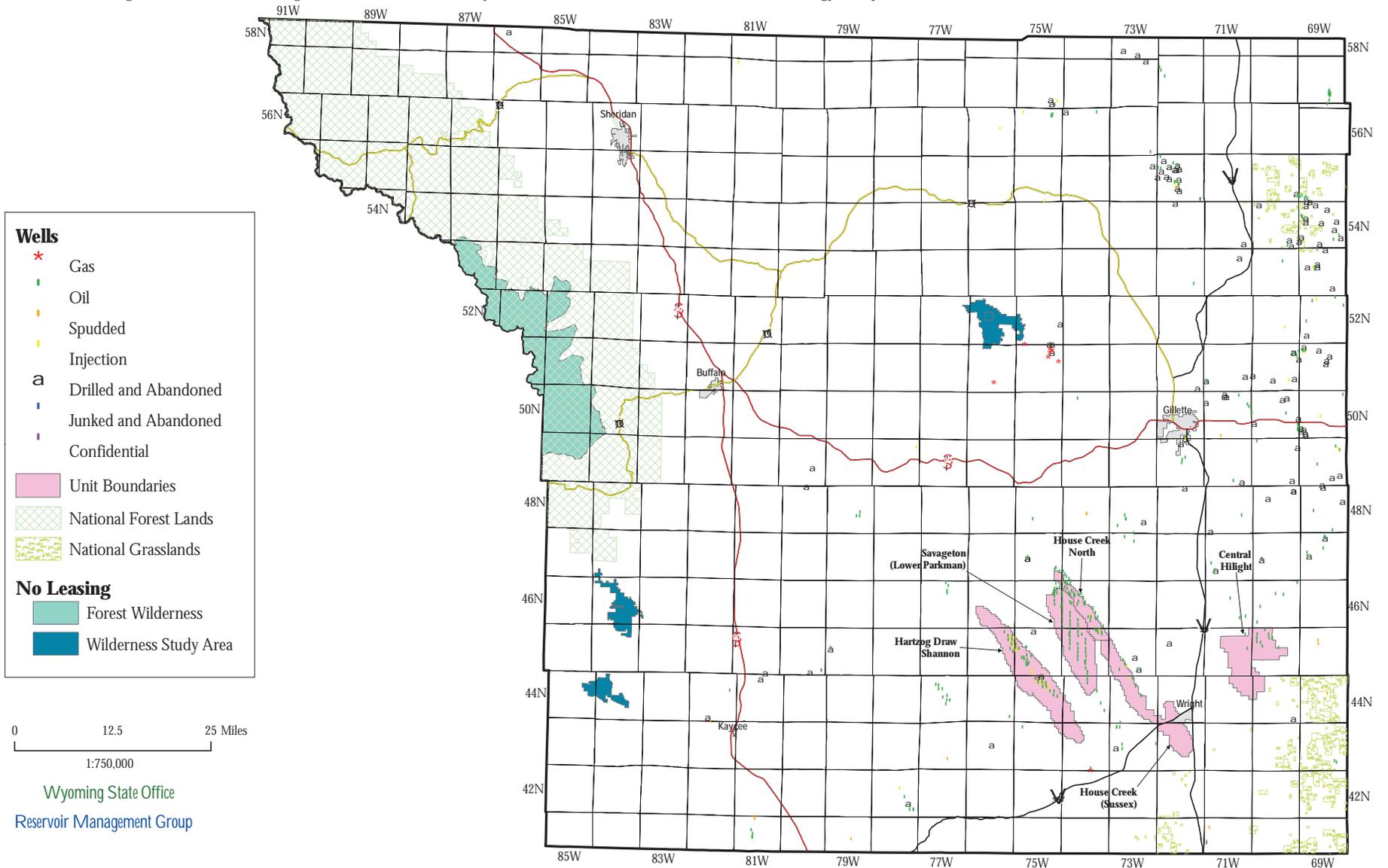
May, 2009

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 7. Location and status of Buffalo Planning Area conventional oil and gas wells drilled between January 1, 1999 and December 31, 2008. Data from IHS Energy Group (2009).



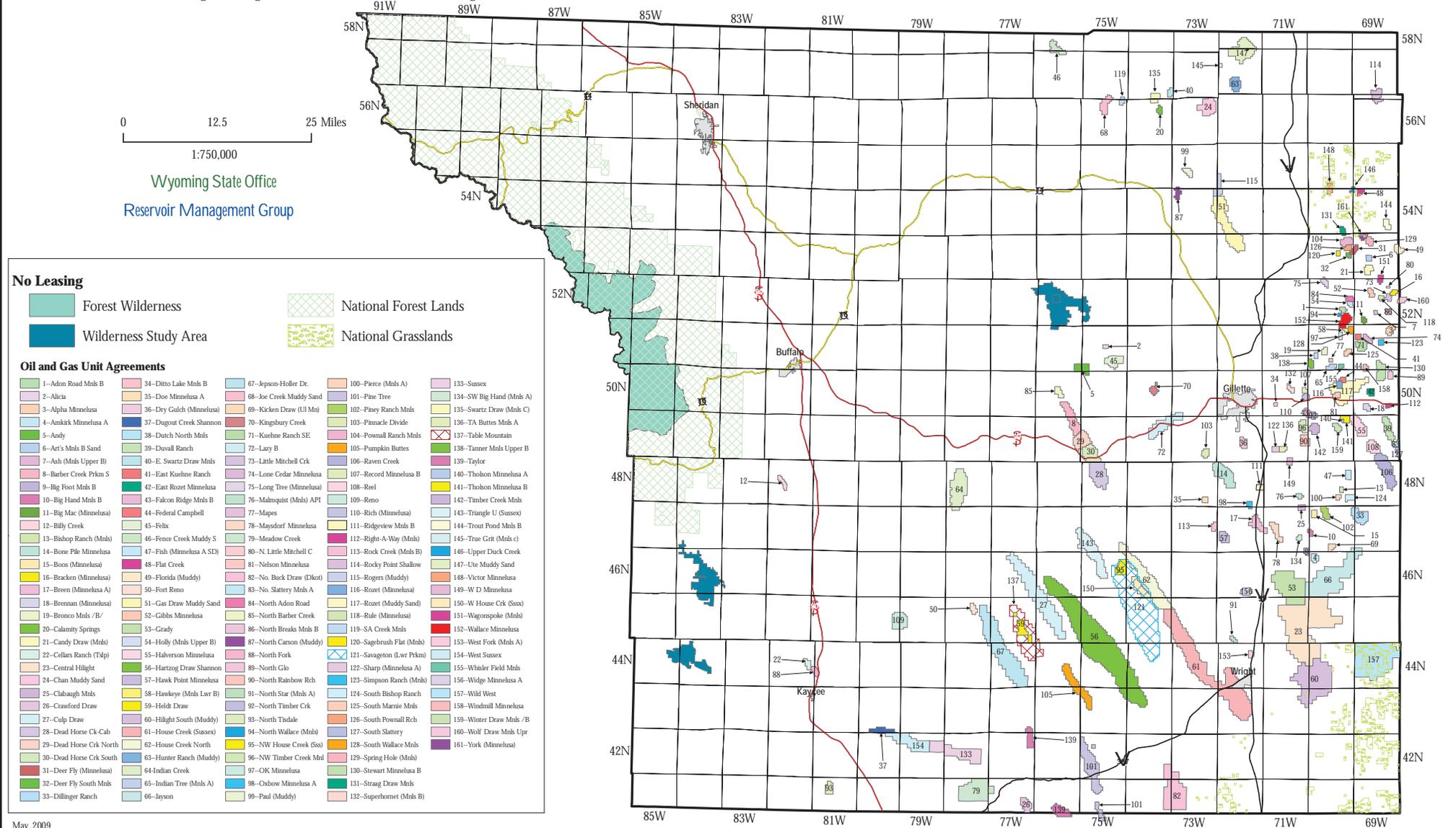
May, 2009

Dean Stilwell, Geologist
 Al Elser, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 8a.
 Location of conventional oil and gas unit agreements within the Buffalo Planning Area. Data from Bureau files.



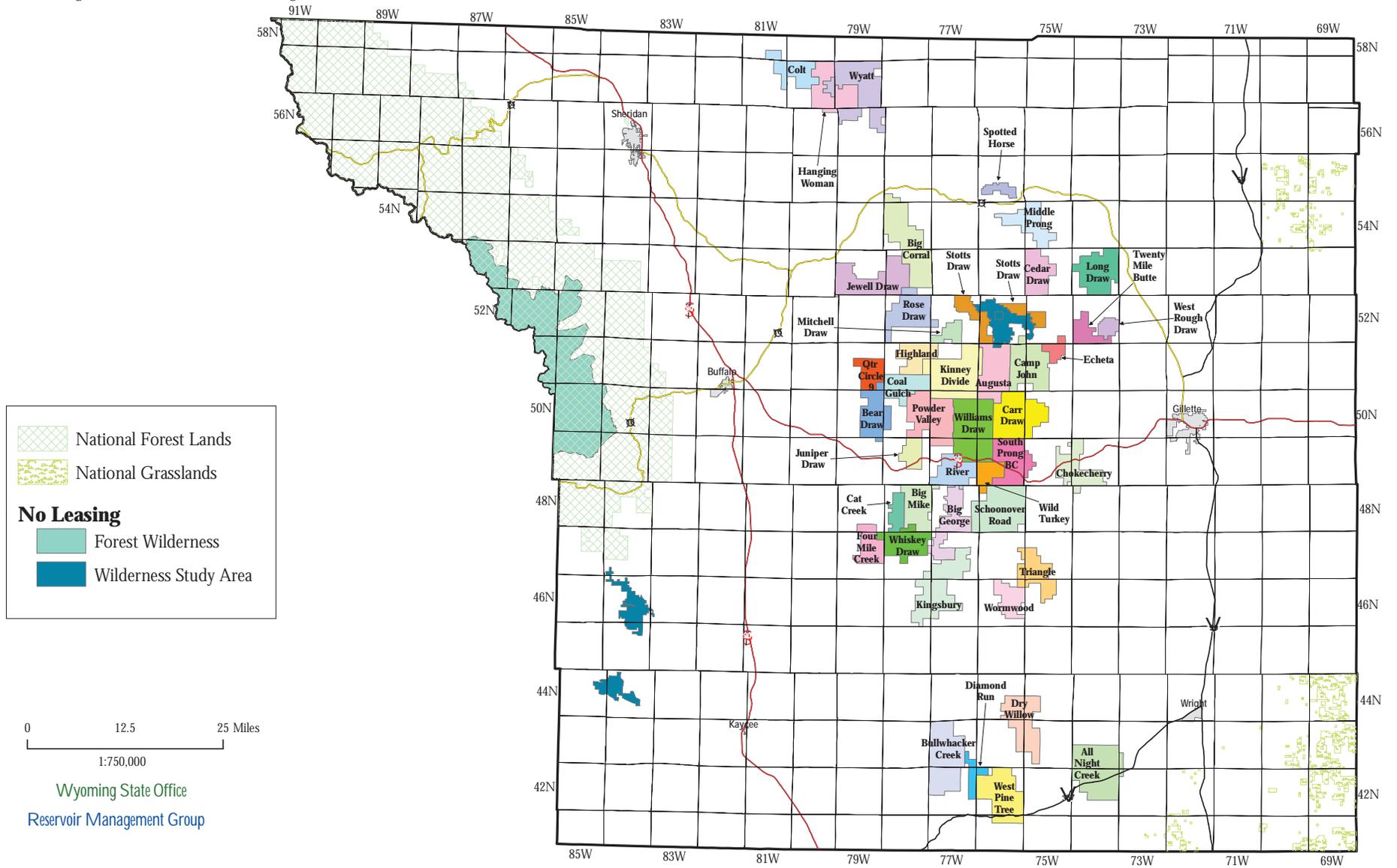
May, 2009

Dean Stilwell, Geologist
 Al Elser, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 8b.
Location of coalbed natural gas units within the Buffalo Planning Area. Data from Bureau files.



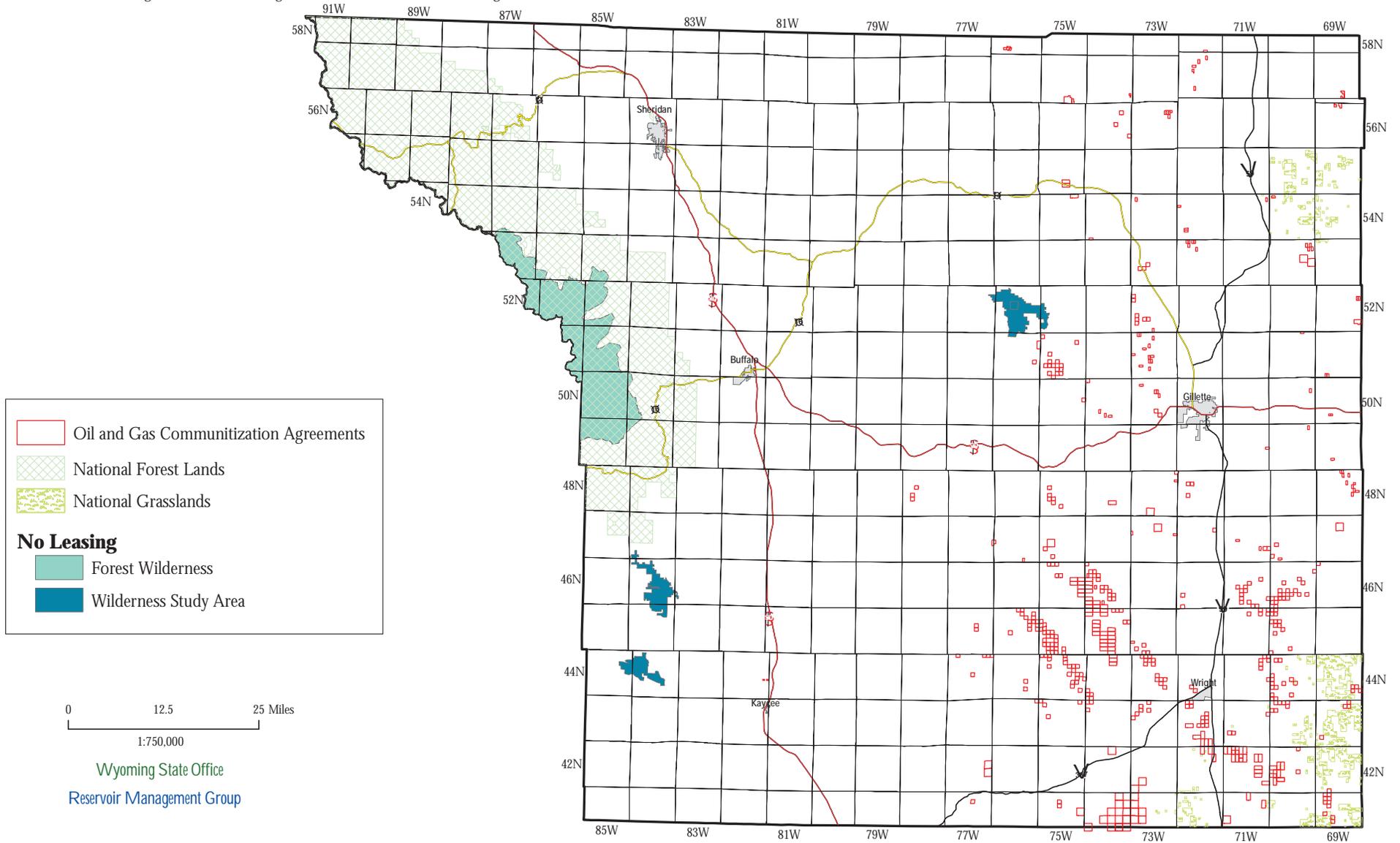
May, 2009

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 9a.
Location of conventional oil and gas communitization agreements within the Buffalo Planning Area. Data from Bureau files.



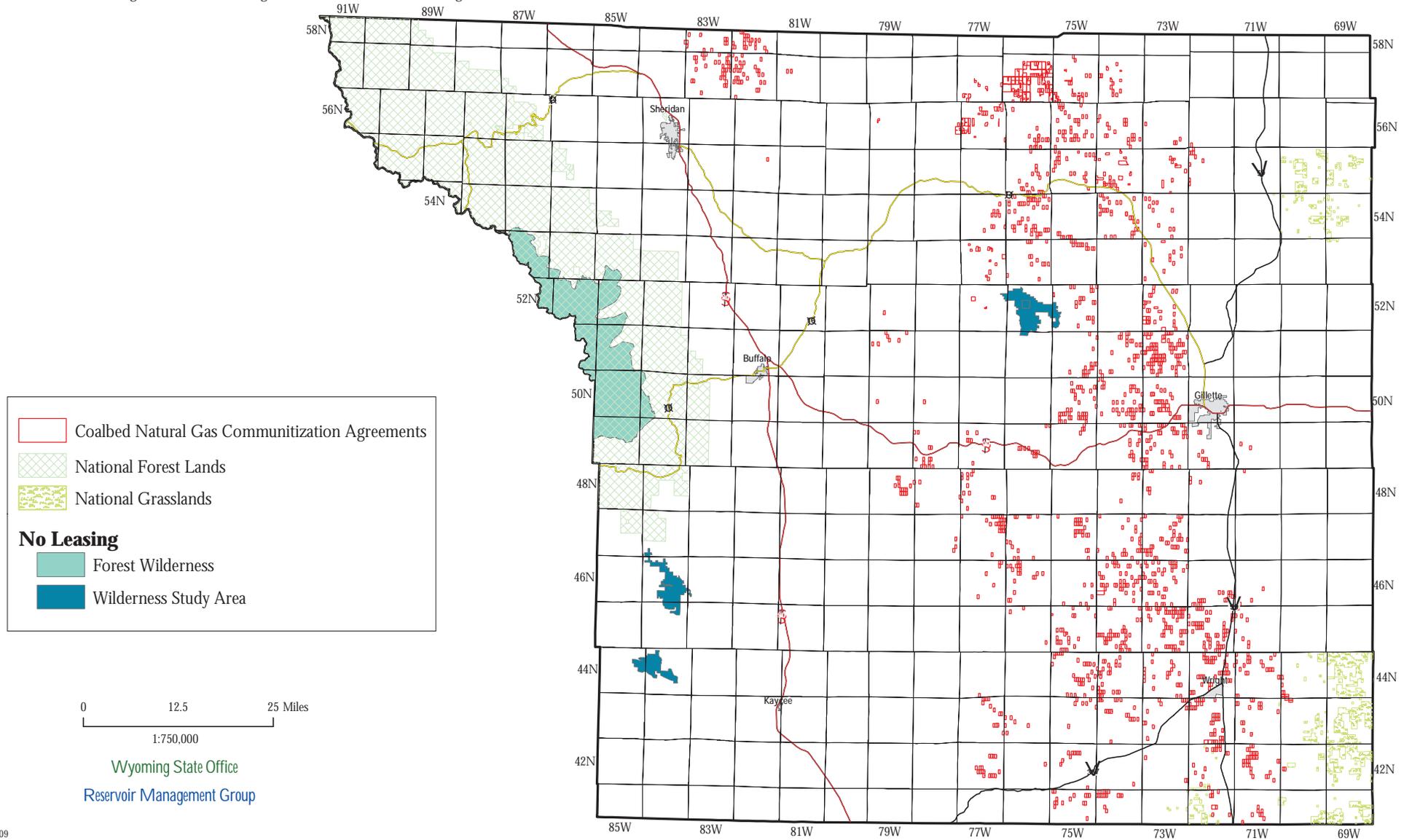
May, 2009

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 9b.
Location of coalbed natural gas communitization agreements within Buffalo Planning Area. Data from Bureau files.



May, 2009

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Wyoming State Office
Reservoir Management Group

Figure 10. Historical conventional oil, gas, and water production from the Minnelusa Formation within the Buffalo Planning Area. Data from IHS Energy Group (2009).

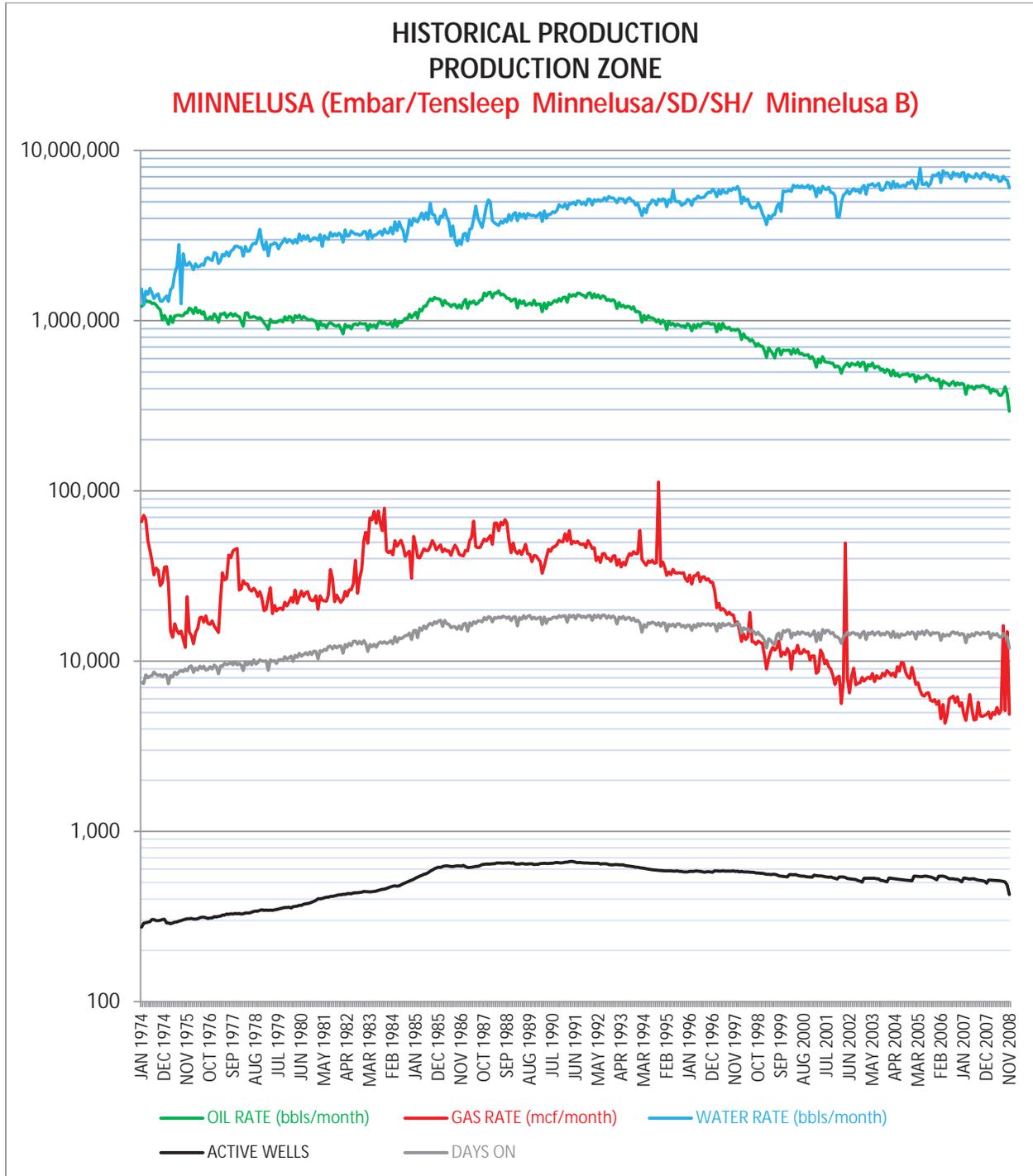


Figure 11. Historical conventional oil, gas, and water production from the Muddy Sandstone within the Buffalo Planning Area. Data from IHS Energy Group (2009).

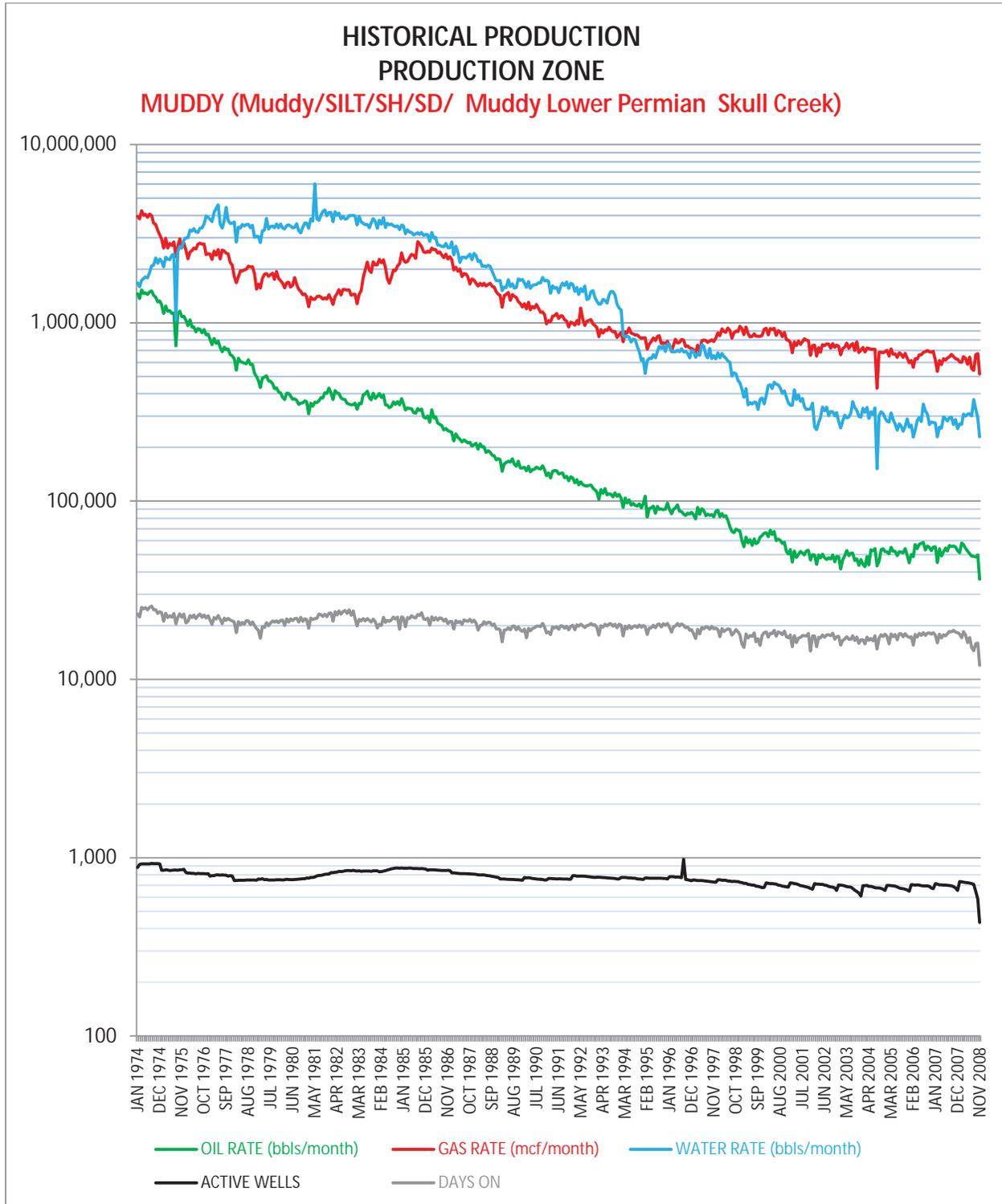


Figure 12. Historical conventional oil, gas, and water production from the Shannon Sandstone within the Buffalo Planning Area. Data from IHS Energy Group (2009).

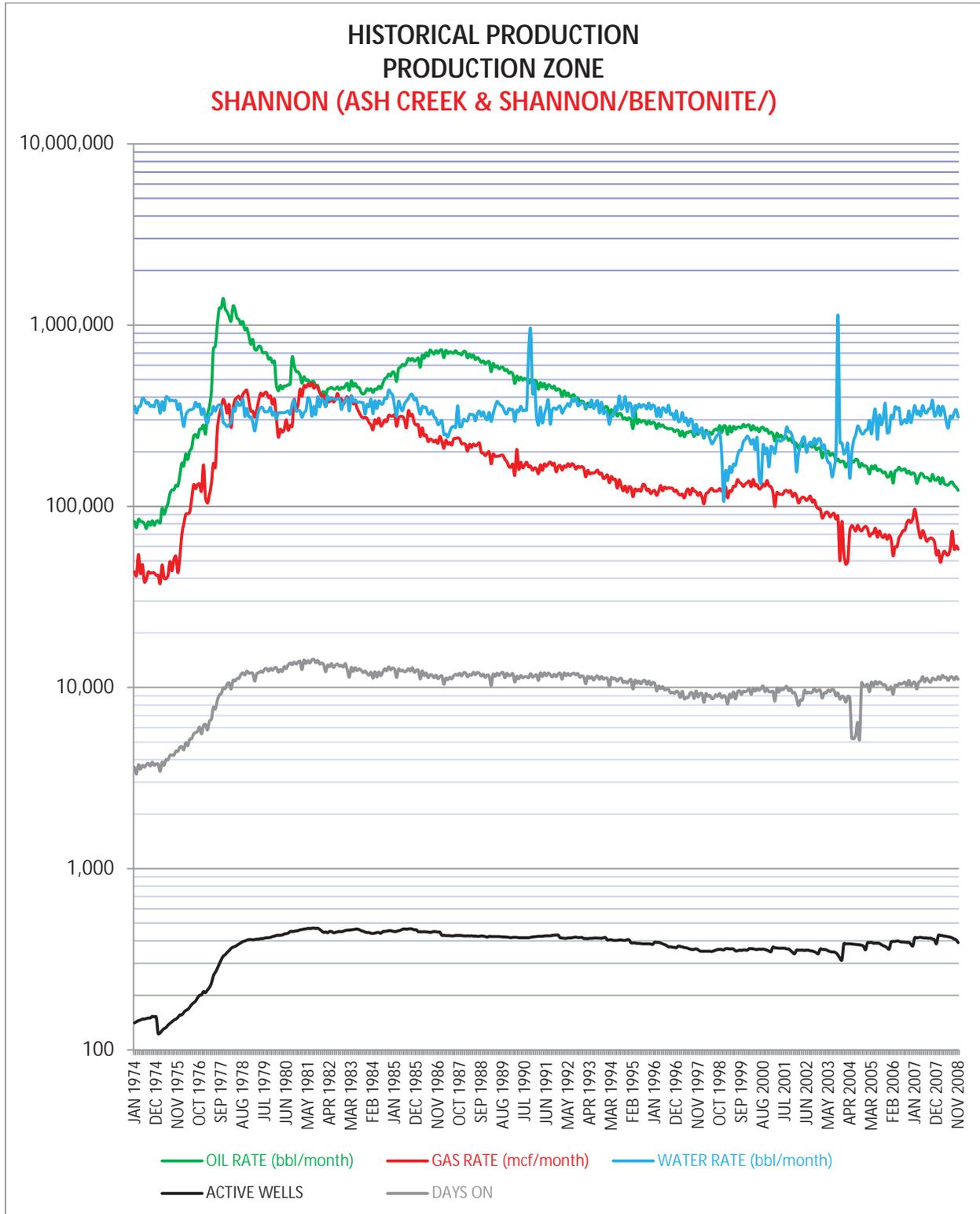


Figure 13. Historical conventional oil, gas, and water production from the Sussex Sandstone within the Buffalo Planning Area. Data from IHS Energy Group (2009).

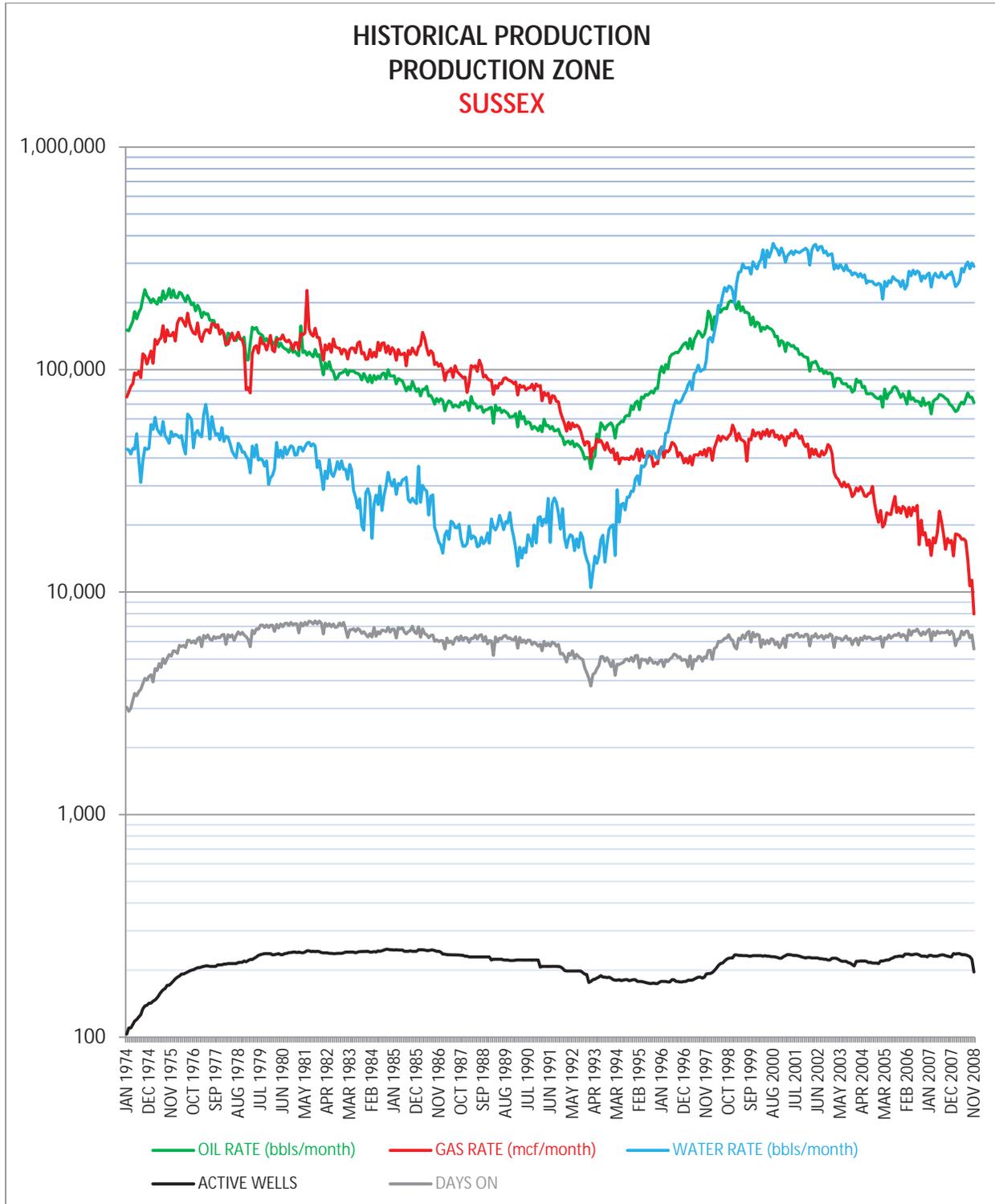


Figure 14. Historical conventional oil, gas, and water production from the Tensleep Sandstone within the Buffalo Planning Area. Data from IHS Energy Group (2009).

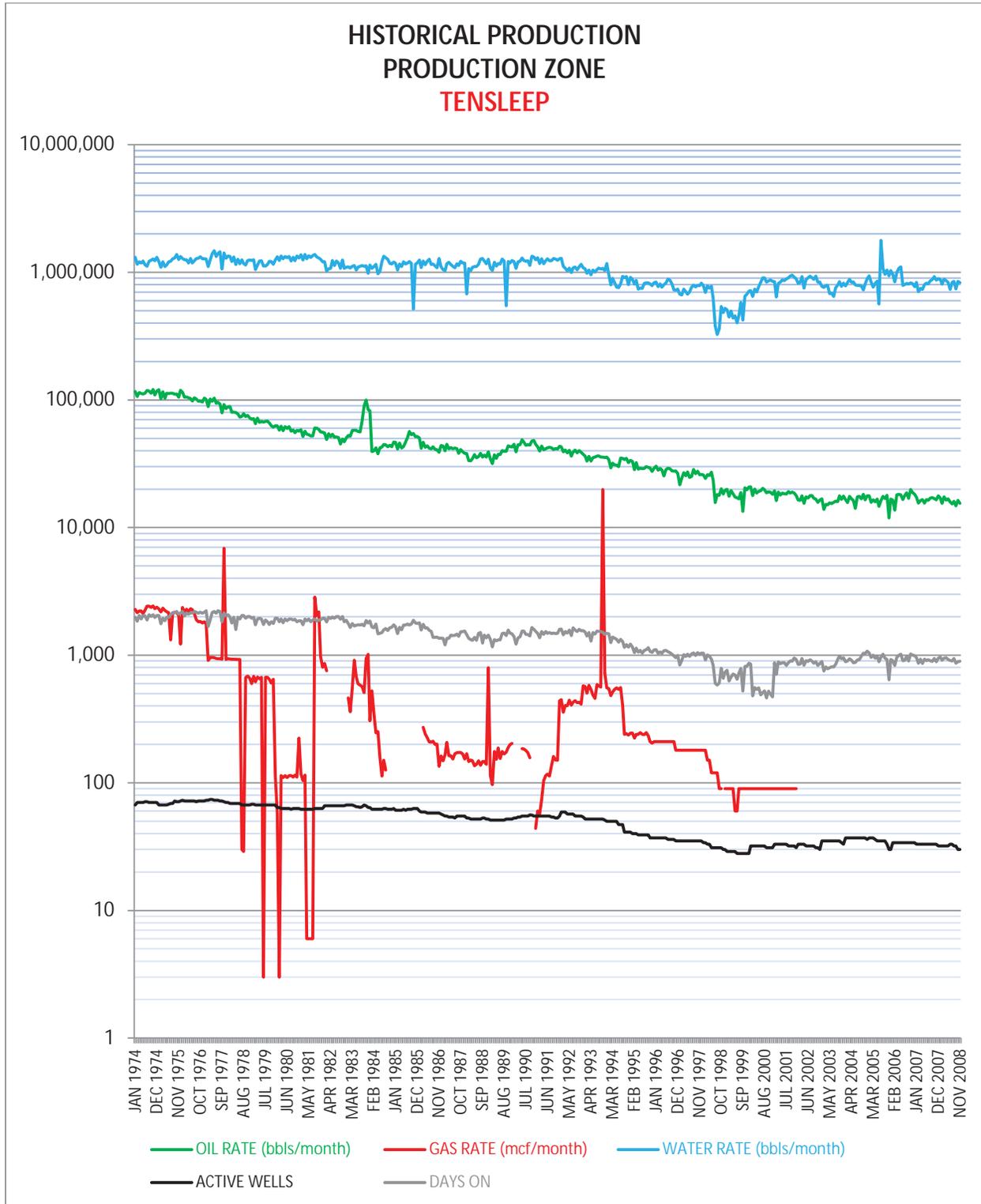


Figure 15. Historical conventional oil, gas, and water production from the Tensleep Sandstone-Amsden Formation within the Buffalo Planning Area. Data from IHS Energy Group (2009).

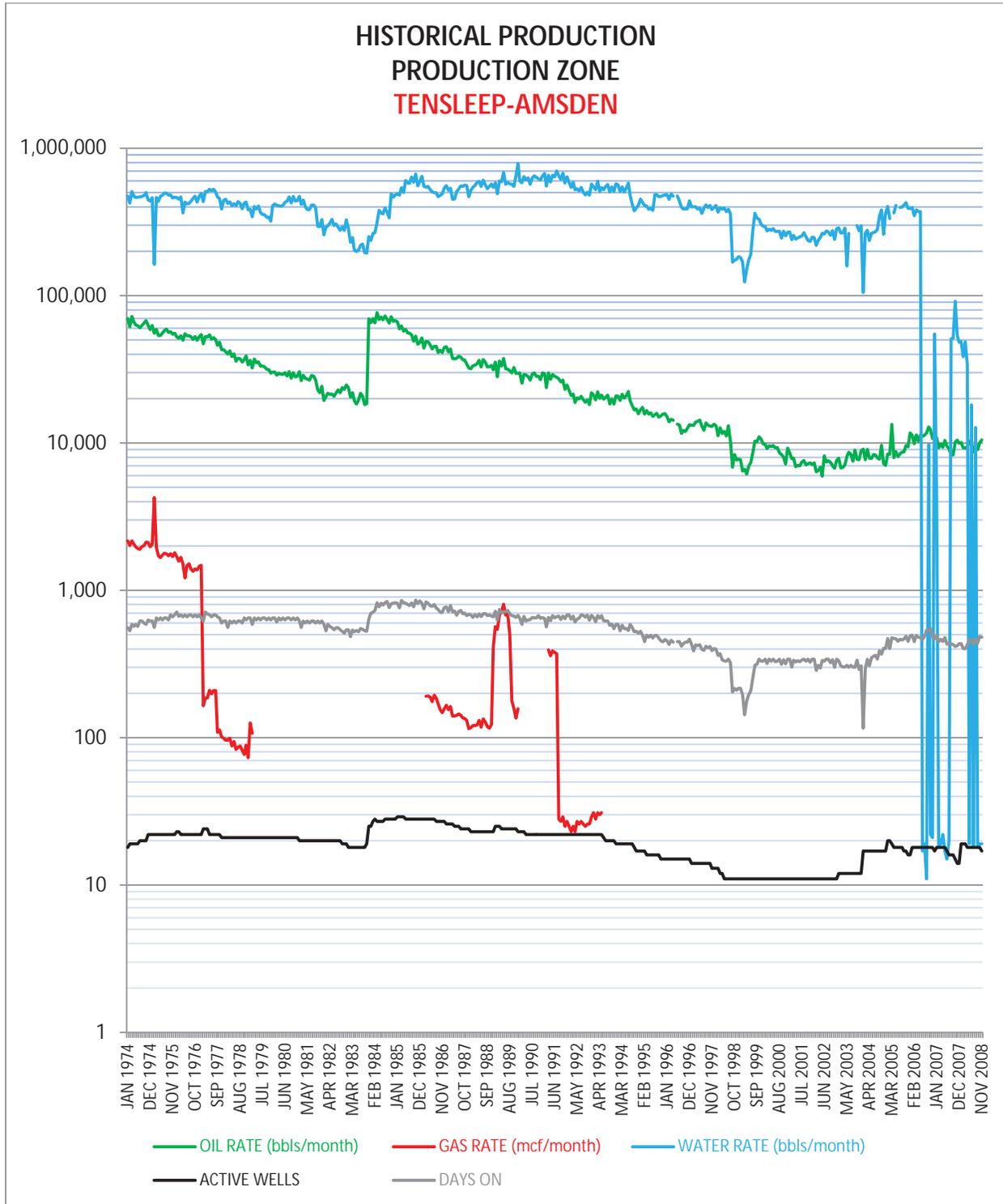


Figure 16. Historical conventional oil, gas, and water production from the Parkman Sandstone within the Buffalo Planning Area. Data from IHS Energy Group (2009).

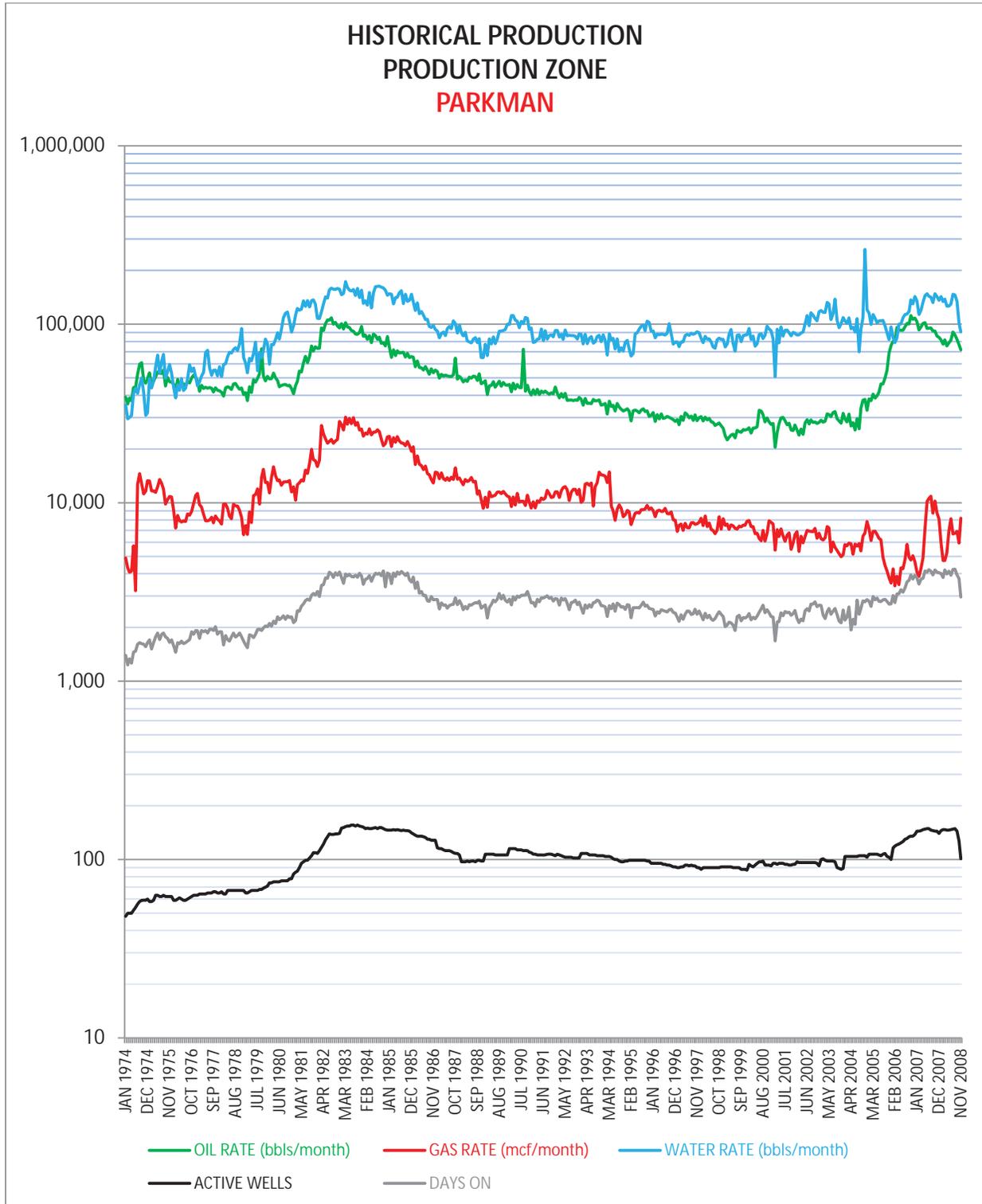


Figure 17. Historical conventional oil, gas, and water production from the Dakota (Cloverly) within the Buffalo Planning Area. Data from IHS Energy Group (2009).

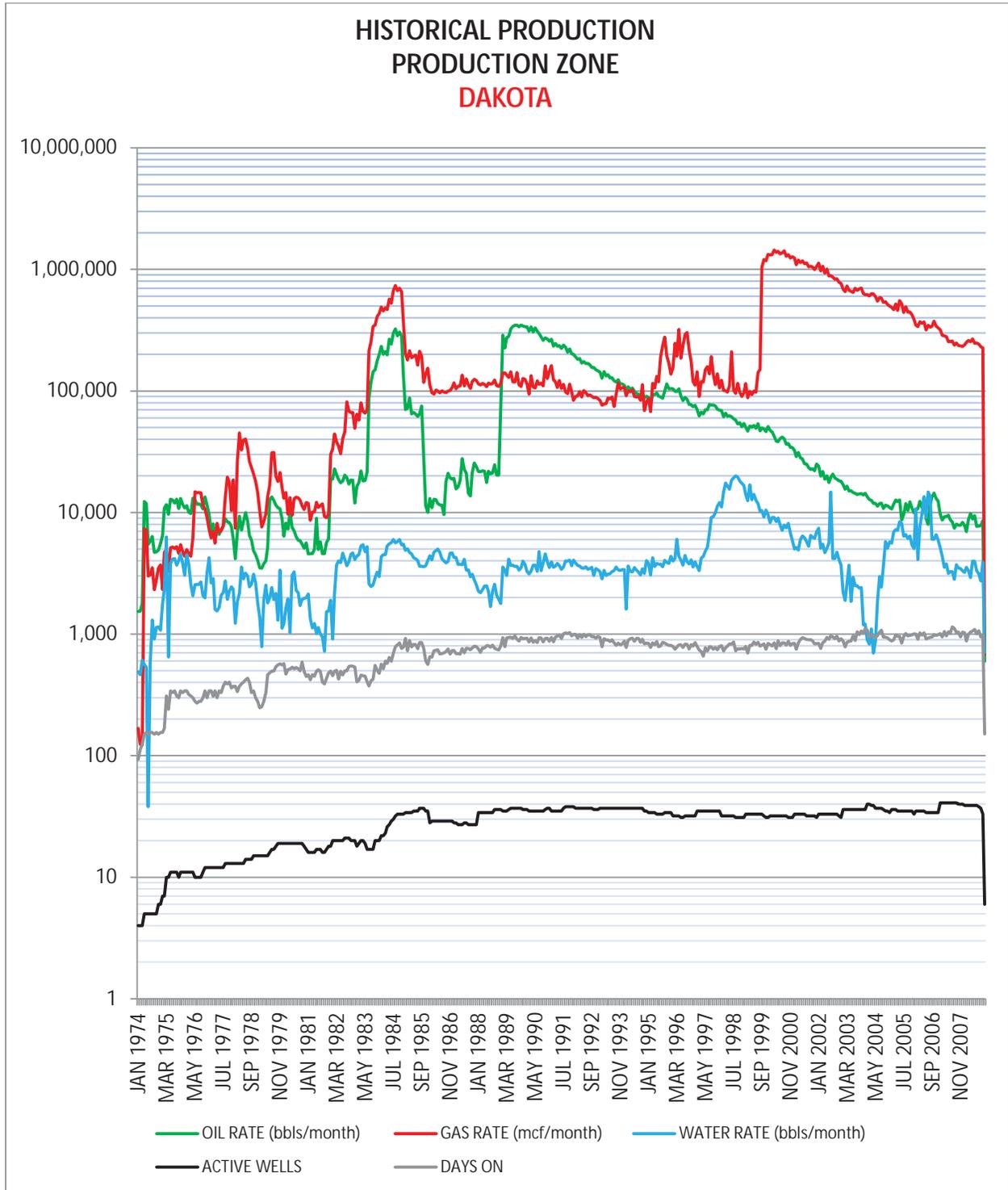


Figure 18. Historical conventional oil, gas, and water production from the Frontier Formation within the Buffalo Planning Area. Data from IHS Energy Group (2009).

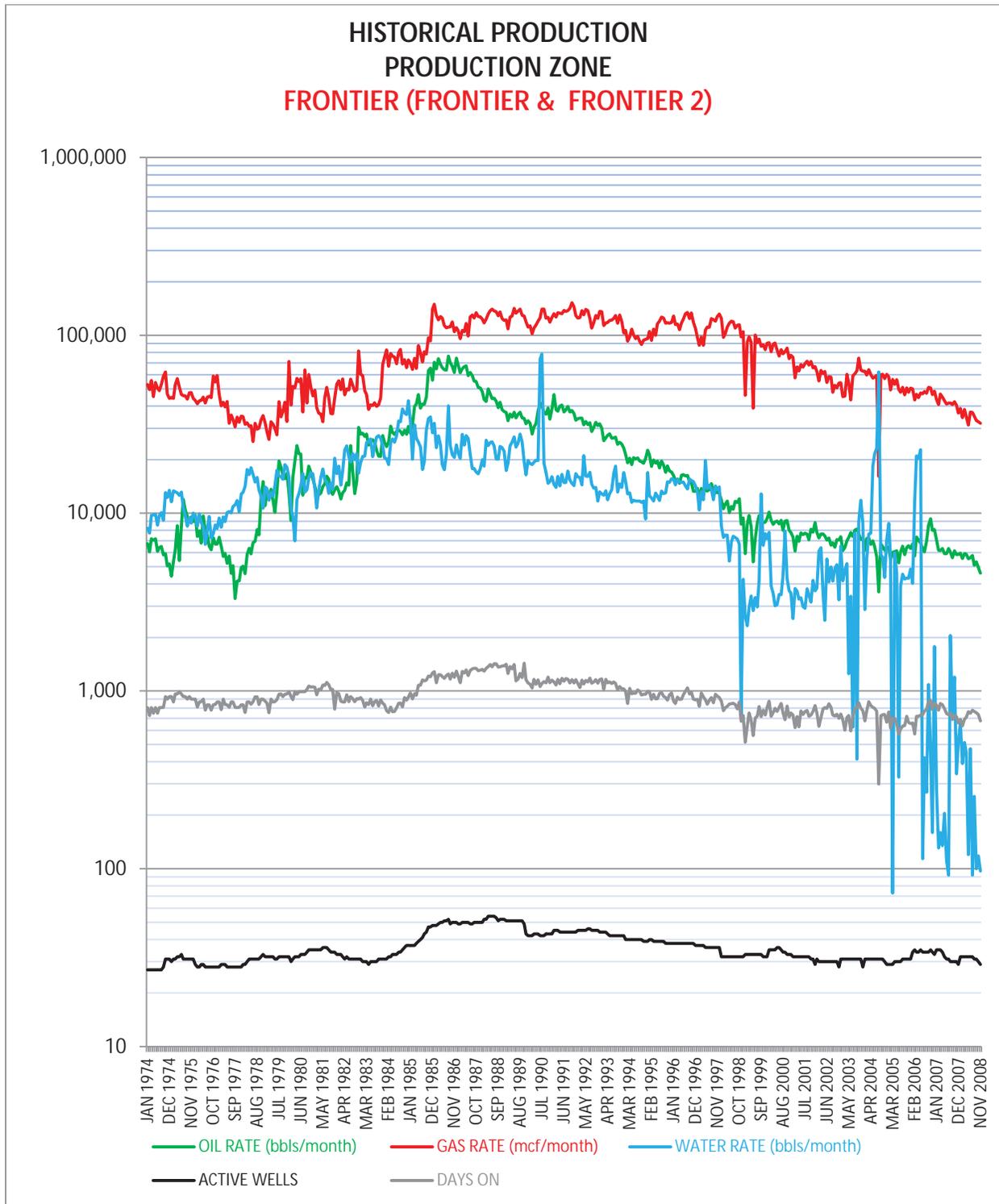


Figure 19. Historical conventional oil, gas, and water production from the Lakota Formation within the Buffalo Planning Area. Data from IHS Energy Group (2009).

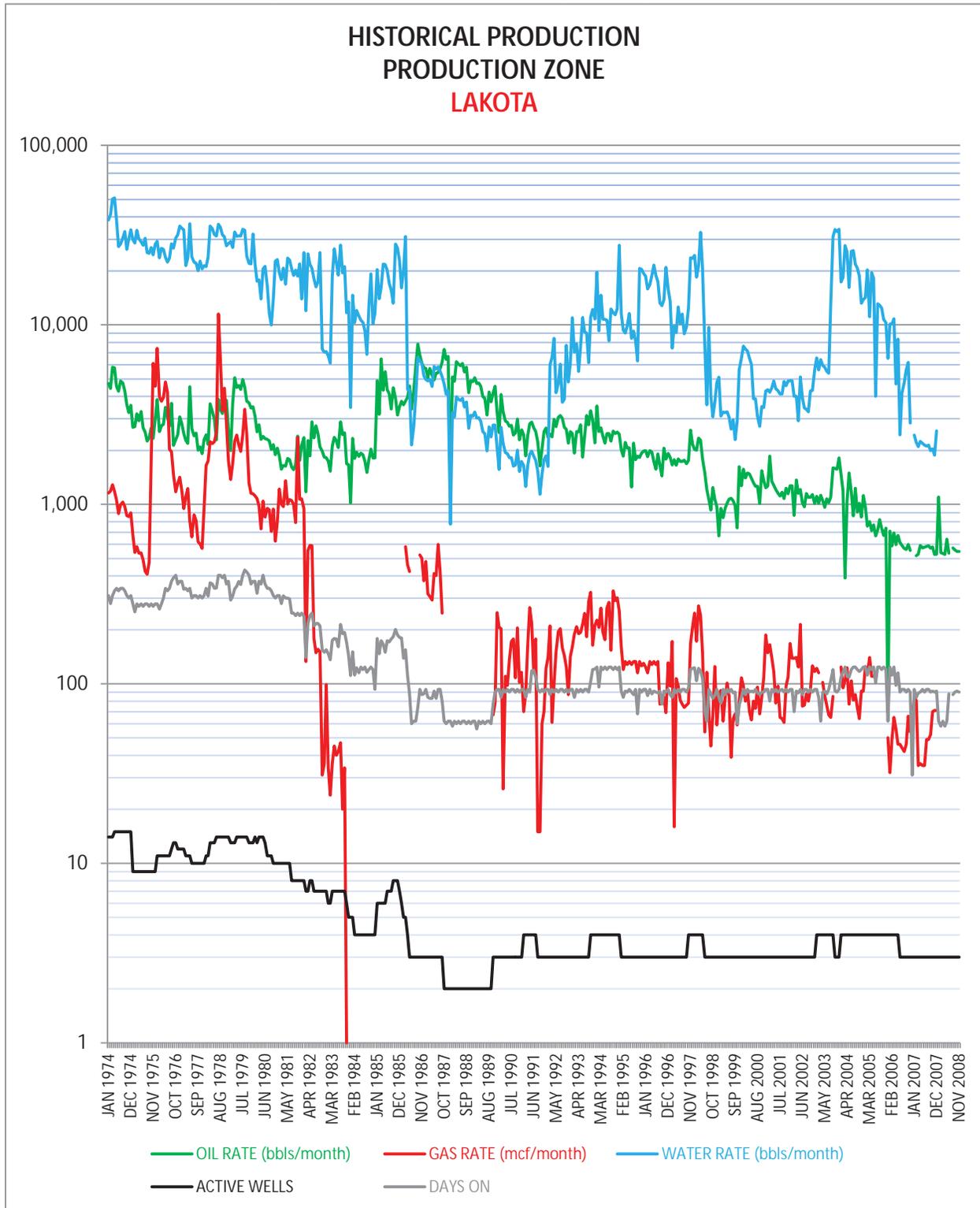
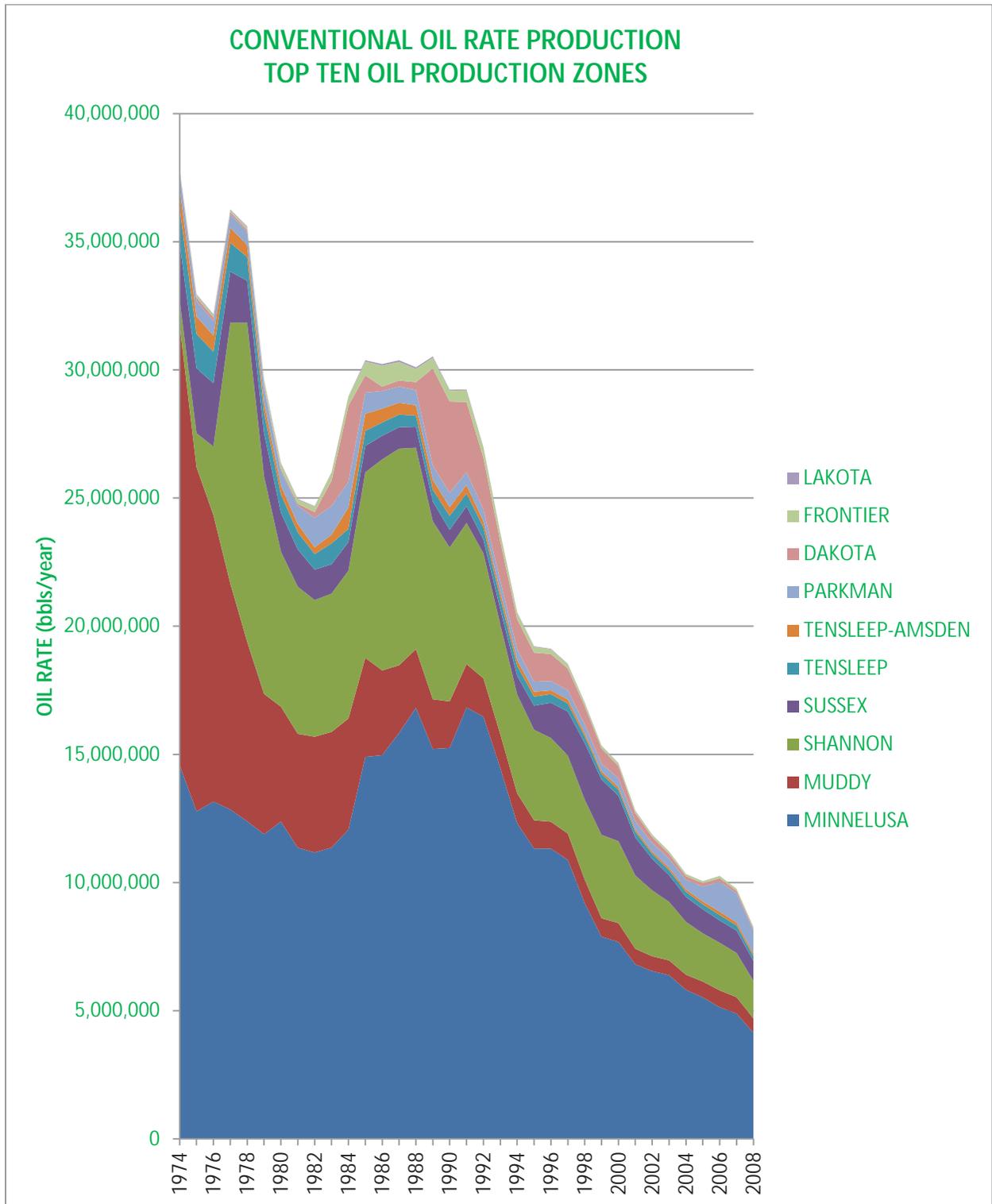


Figure 20. Comparison of conventional oil production for the top 10 oil producing zones within the Buffalo Planning Area. Data from IHS Energy Group (2009).



Wyoming State Office
Reservoir Management Group

Figure 21. Comparison of conventional oil production, by relative percentage, for the top 10 oil producing zones within the Buffalo Planning Area. Data from IHS Energy Group (2009).

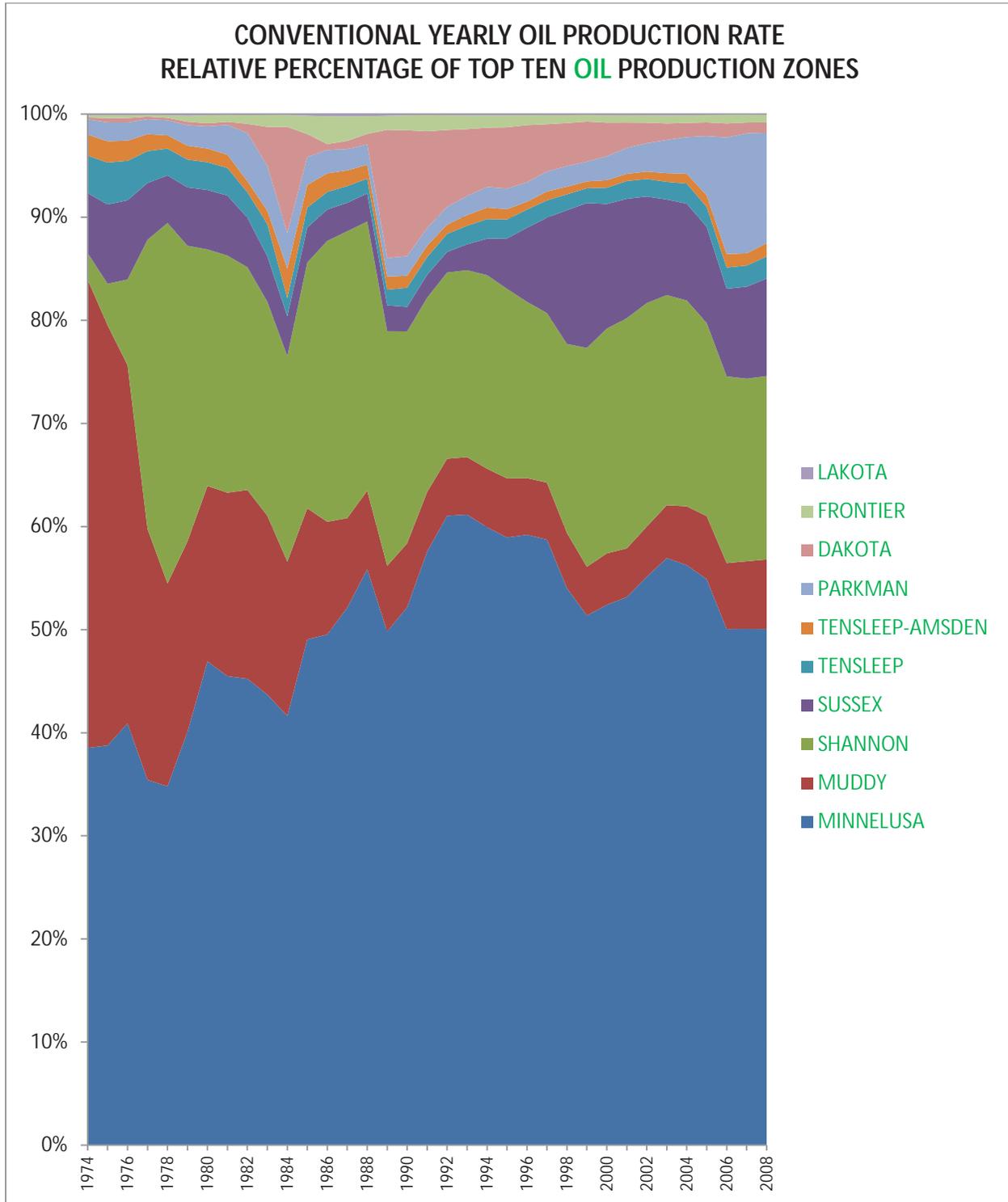


Figure 22. Historical conventional oil, gas, and water production from the Turner Sandstone within the Buffalo Planning Area. Data from IHS Energy Group (2009).

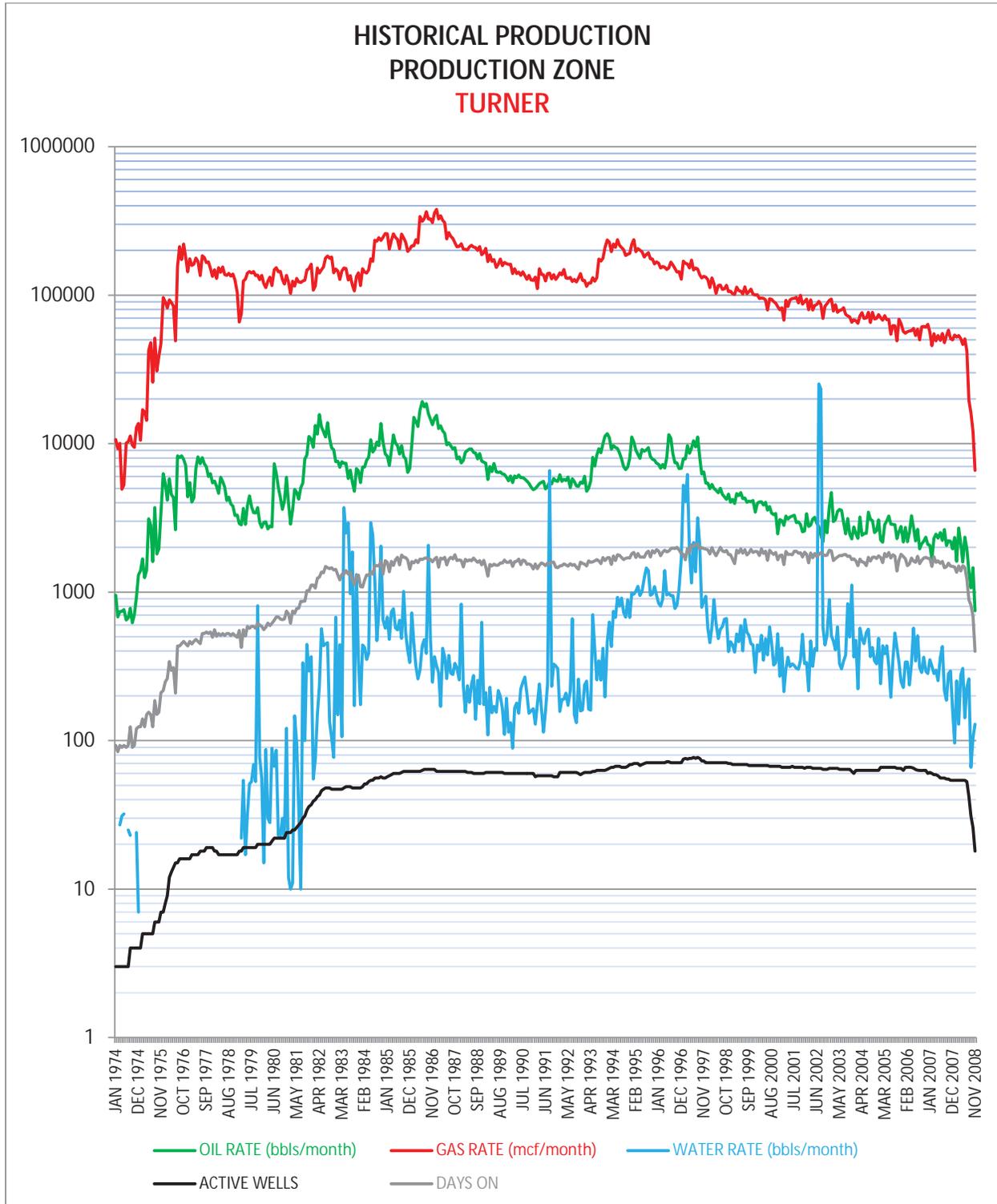


Figure 23. Historical conventional oil, gas, and water production from the Muddy Sandstone-Mowry shale within the Buffalo Planning Area. Data from IHS Energy Group (2009).

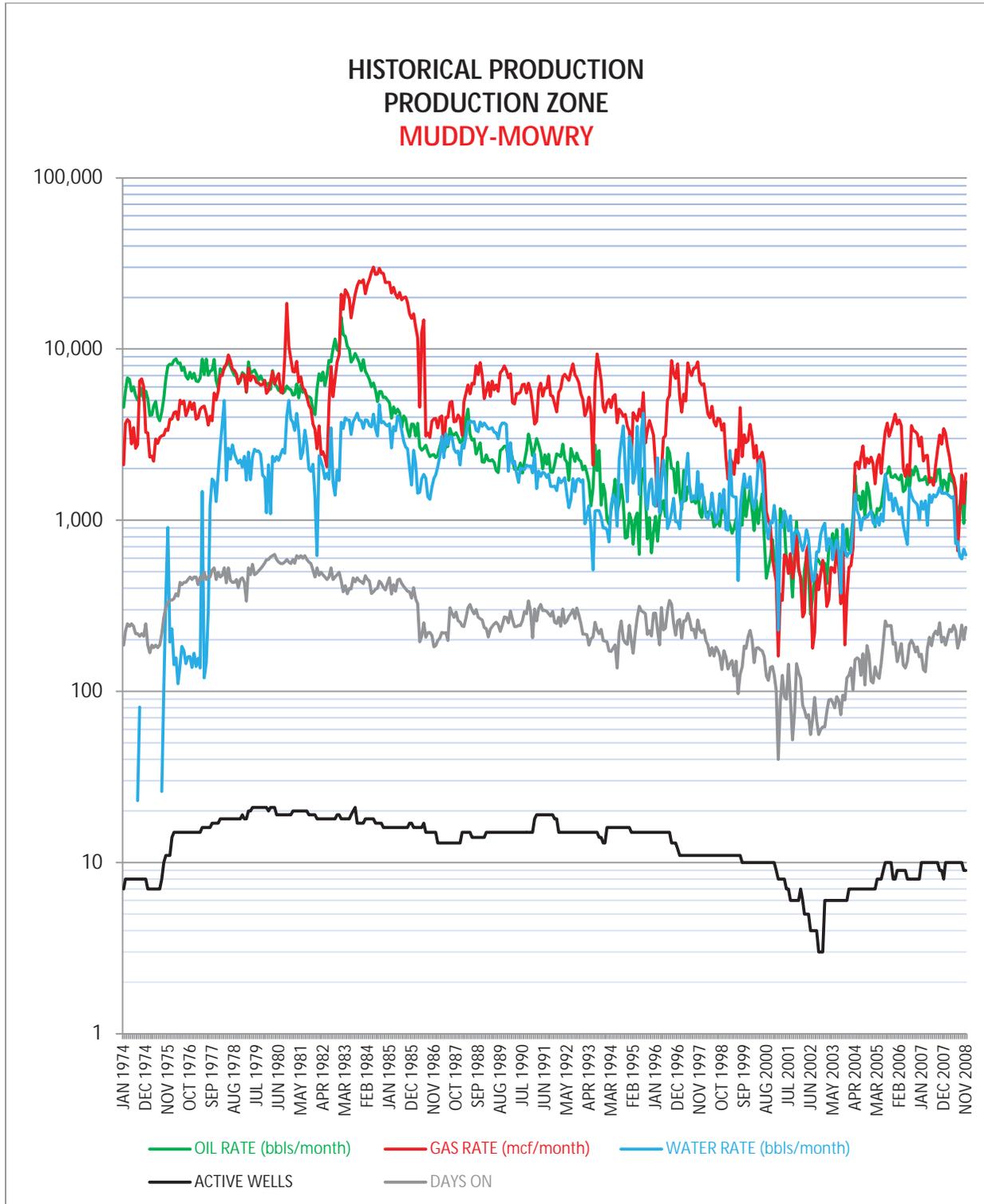


Figure 24. Comparison of conventional gas production for the top 10 gas producing zones within the Buffalo Planning Area. Data from IHS Energy Group (2009).

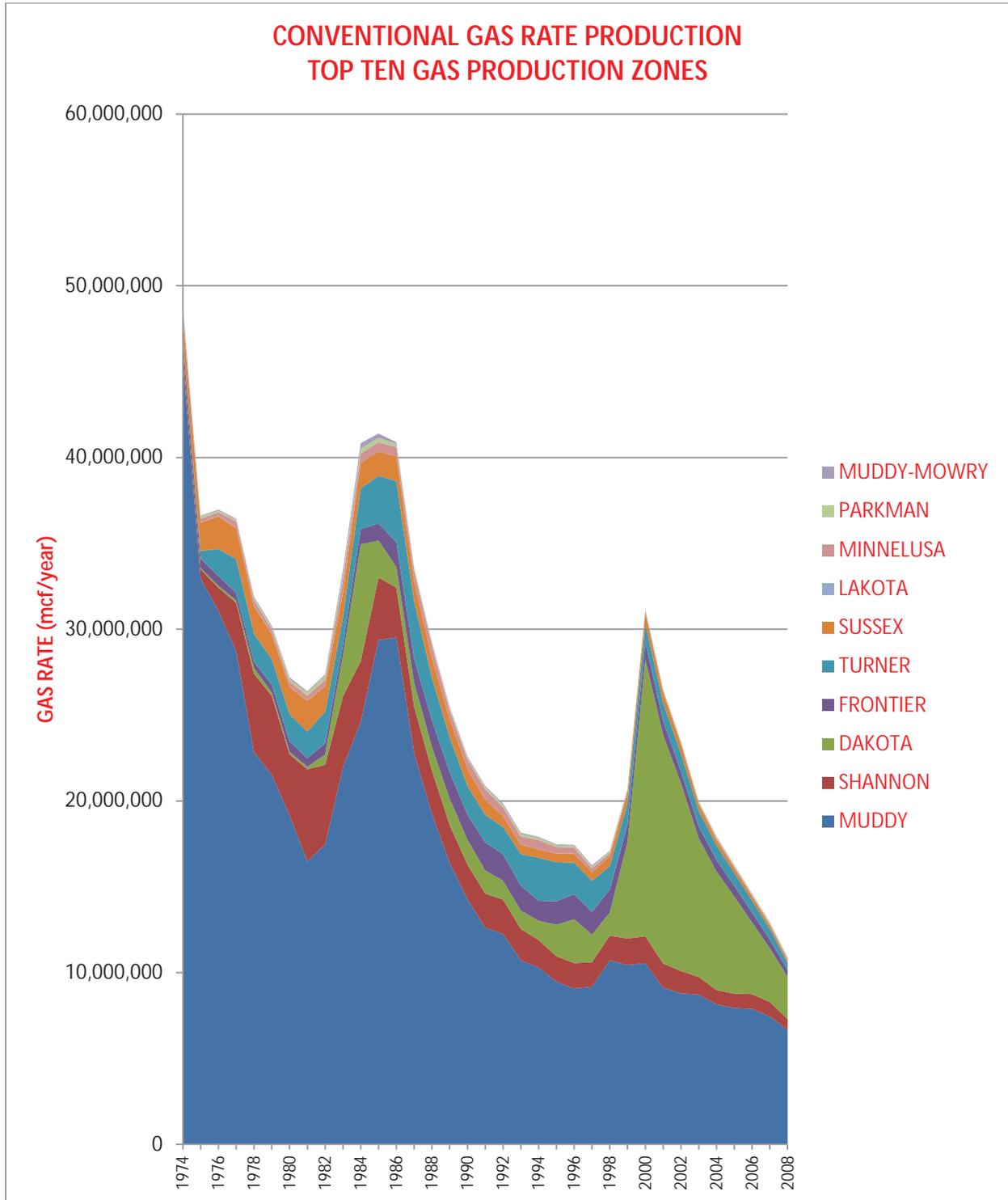
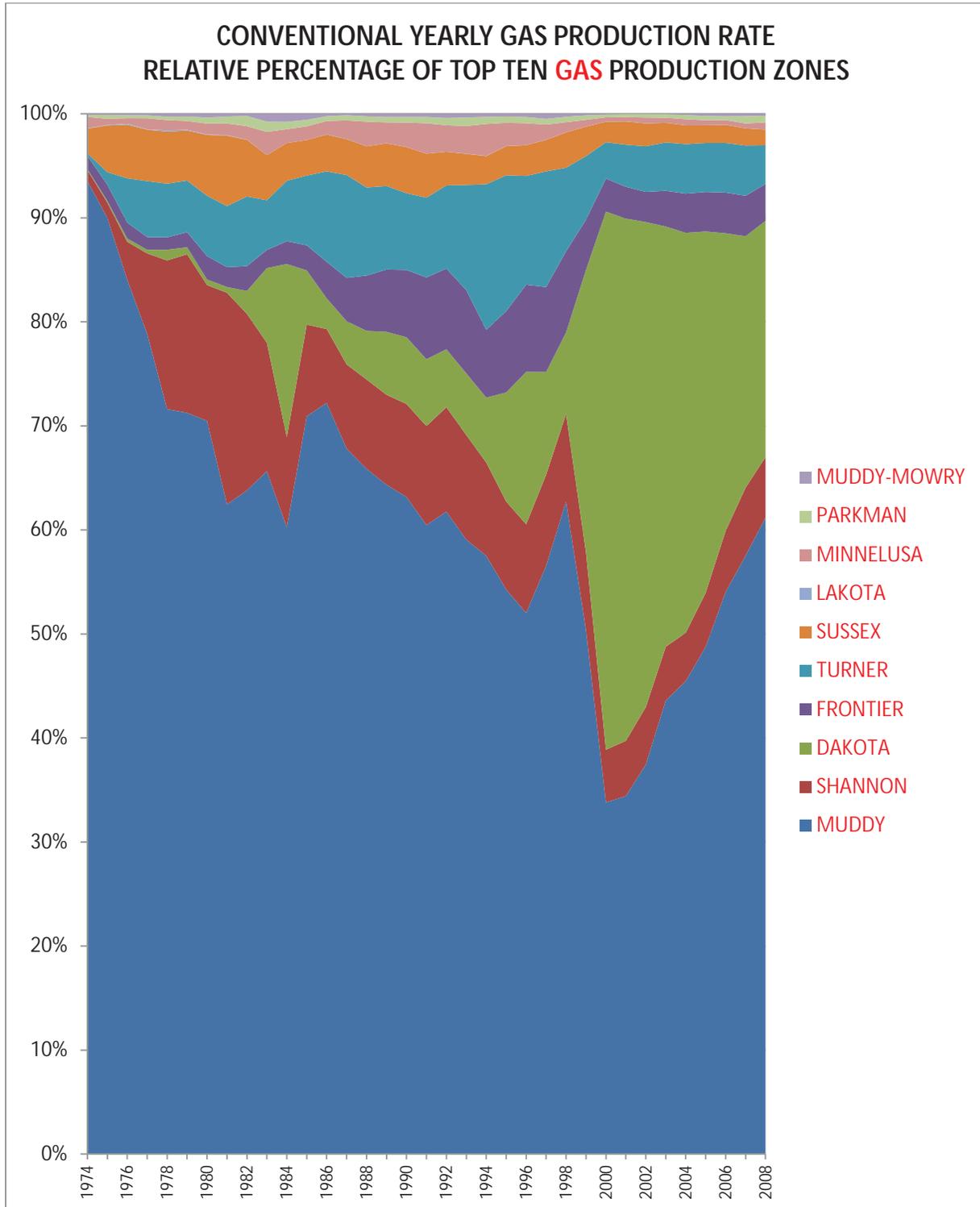


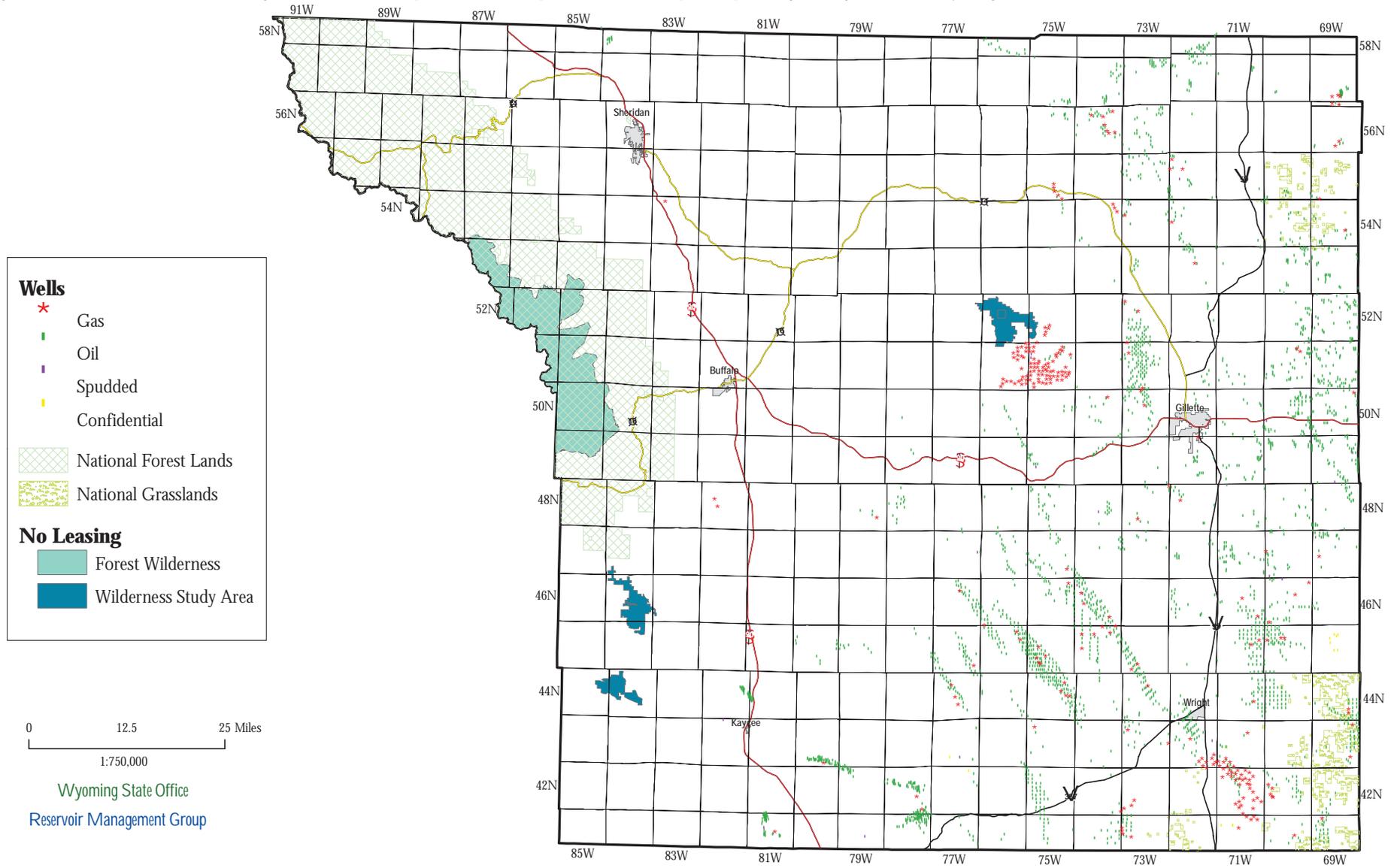
Figure 25. Comparison of conventional gas production, by relative percentage, for the top 10 gas producing zones within the Buffalo Planning Area. Data from IHS Energy Group (2009).



Wyoming State Office
Reservoir Management Group

Figure 26.

Buffalo Planning Area locations of all conventional oil and gas wells that have been spudded and not completed and those still capable of producing oil and gas. Data from Wyoming oil and Gas Conservation Commission (2009).



May, 2009

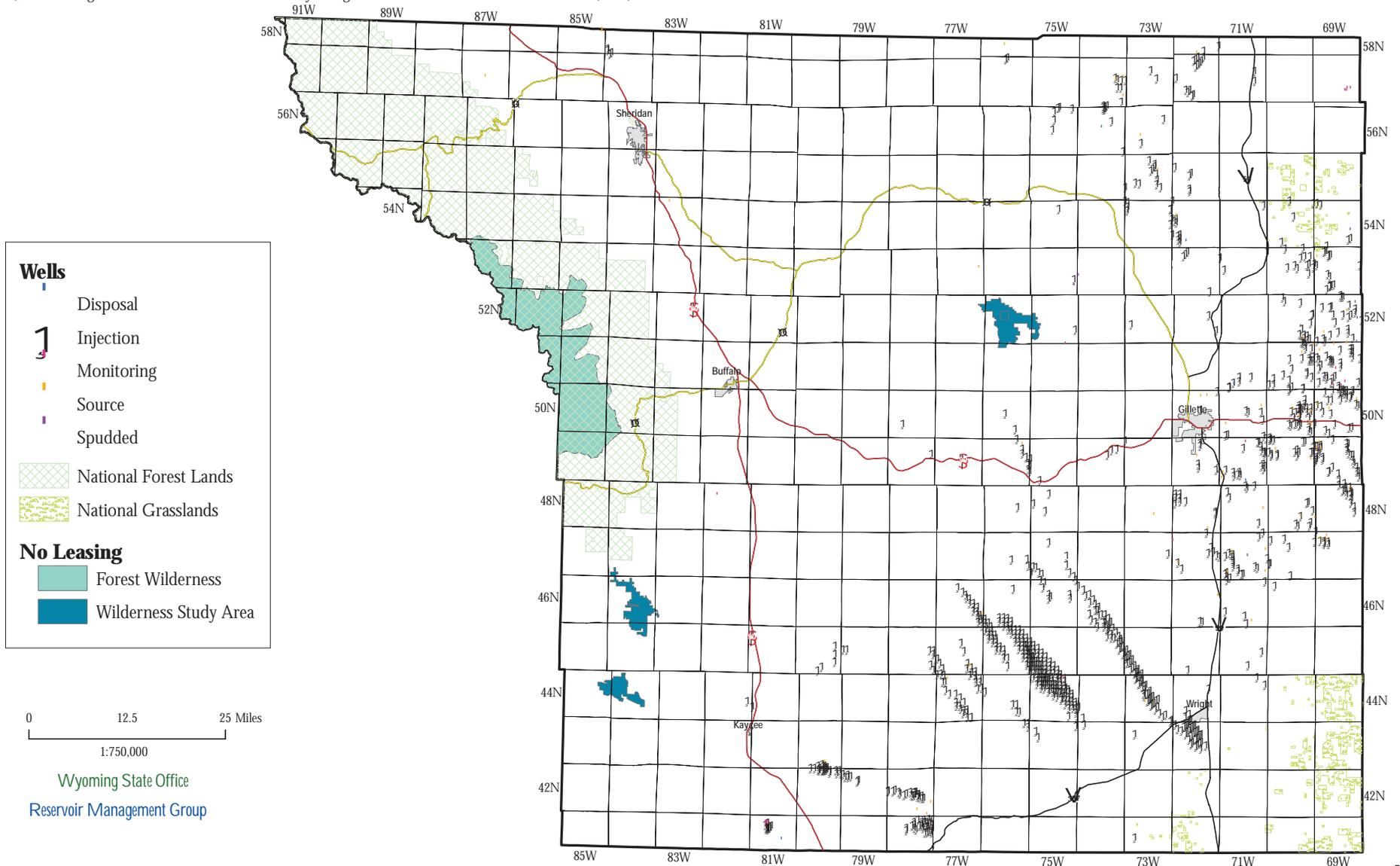
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 27.

Buffalo Planning Area locations of all conventional oil and gas wells being used for enhanced oil recovery purposes (steam injection, water injection, polymer-enhanced flooding, surfactant flooding, and carbon dioxide injection), for disposal (acid gas and water disposal), monitoring, and as source wells. Data from Wyoming Oil and Gas Conservation Commission (2009).



May, 2009

Dean Stilwell, Geologist
 Al Elser, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 28. Annual conventional oil and gas wells spudded and cumulative wells spudded within Buffalo Planning Area from 1960 through 2008. Data from IHS Energy Group (2009).

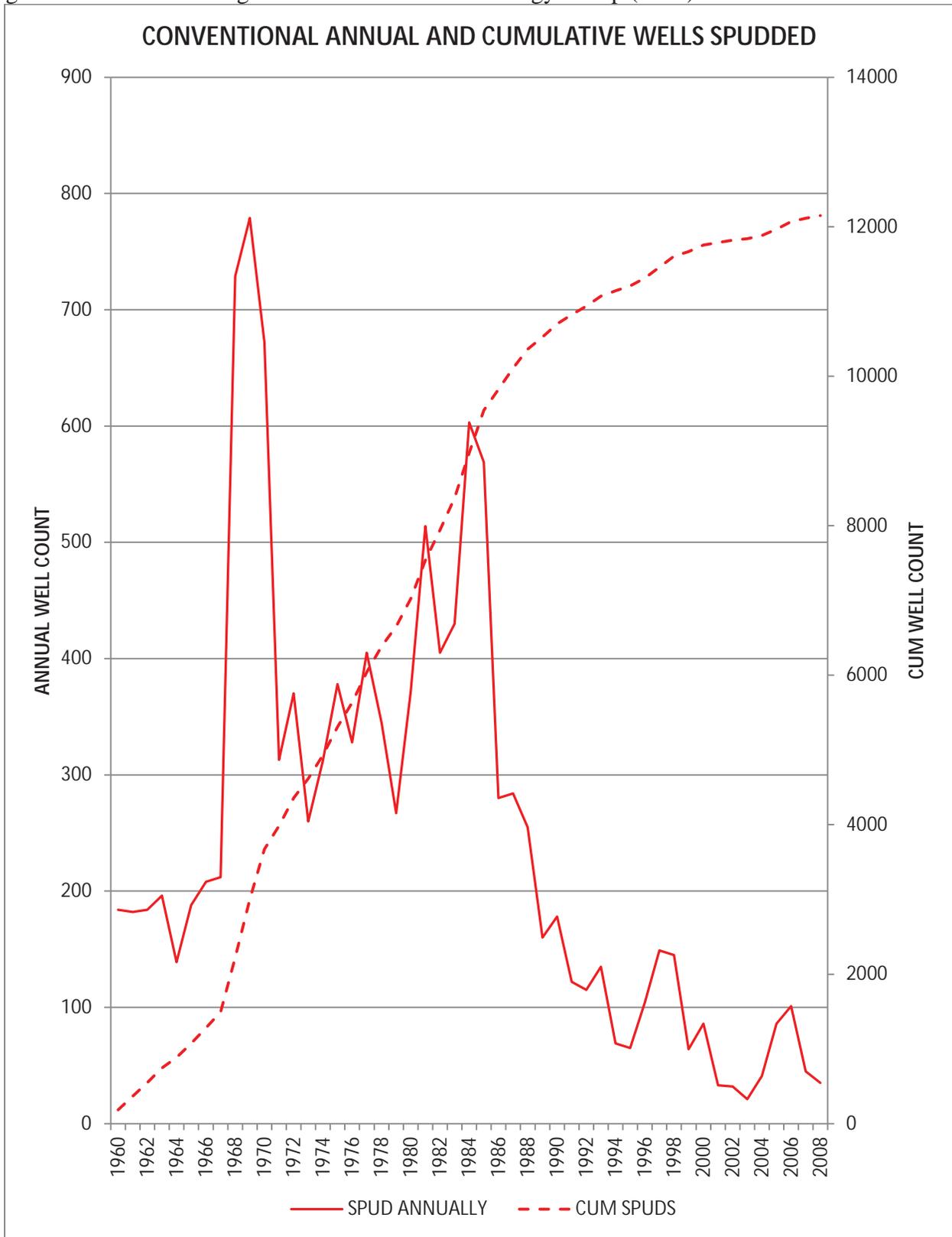


Figure 29. Conventional oil and gas well footage drilled within the Buffalo Planning Area on a yearly basis and average annual well depth. Data from IHS Energy Group (2009).

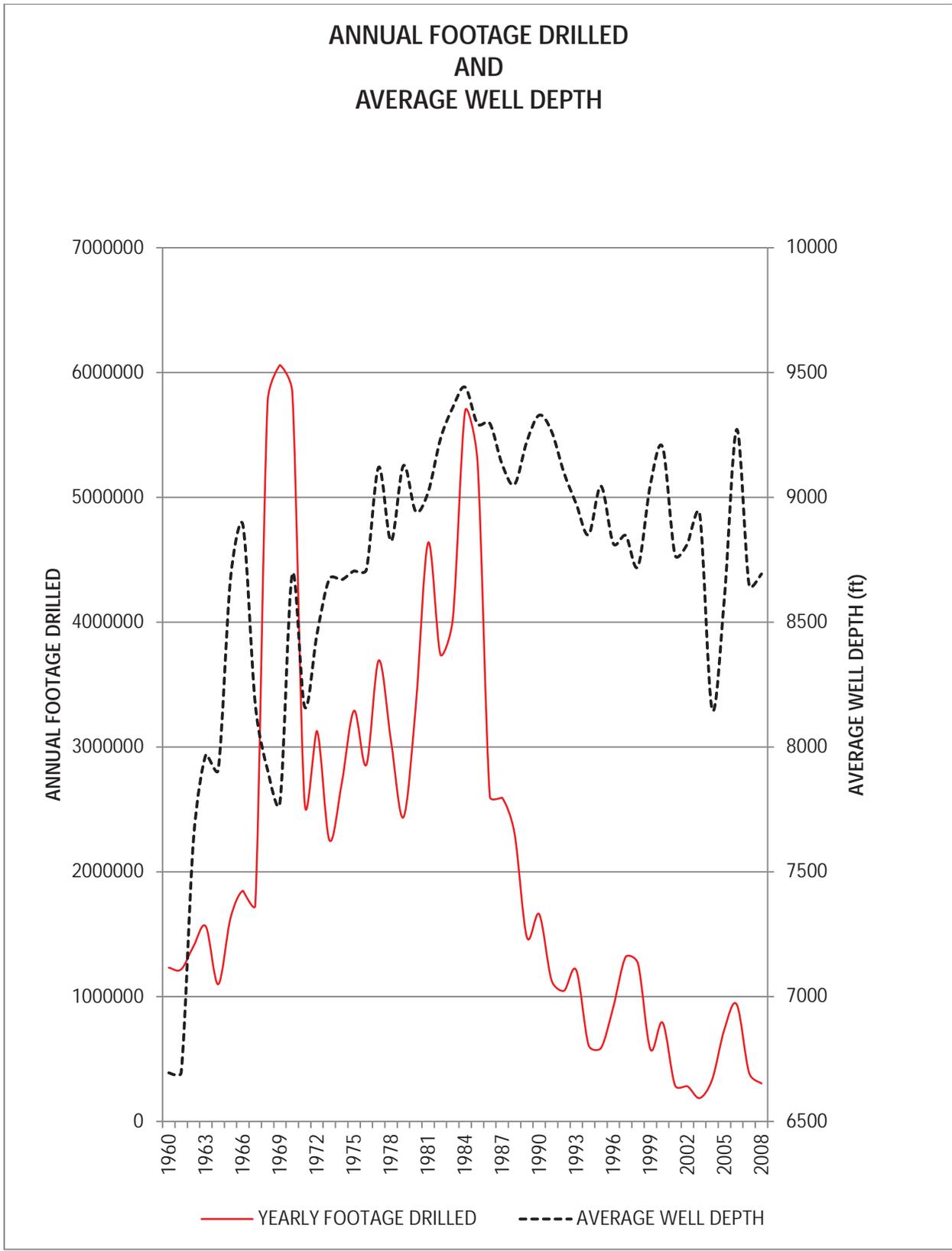
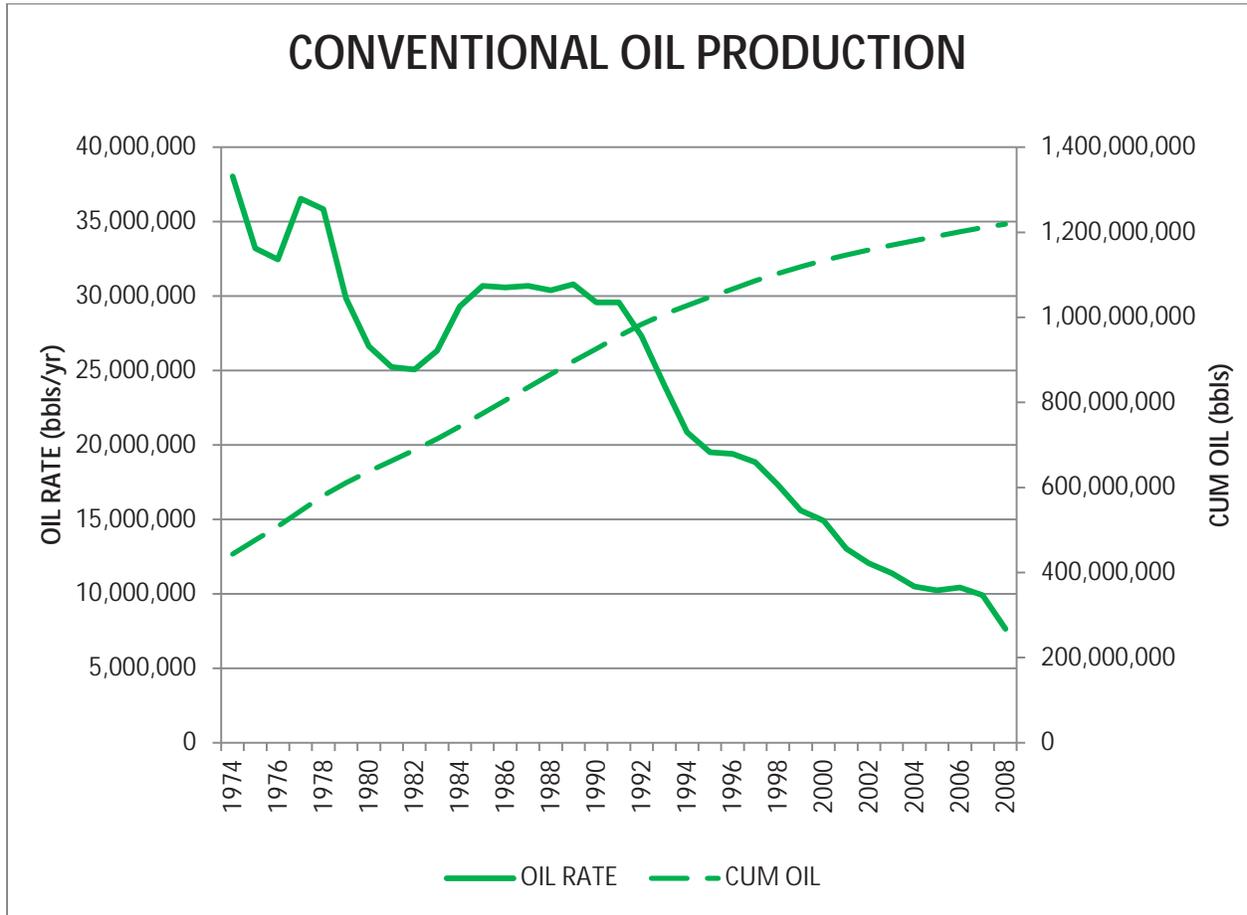
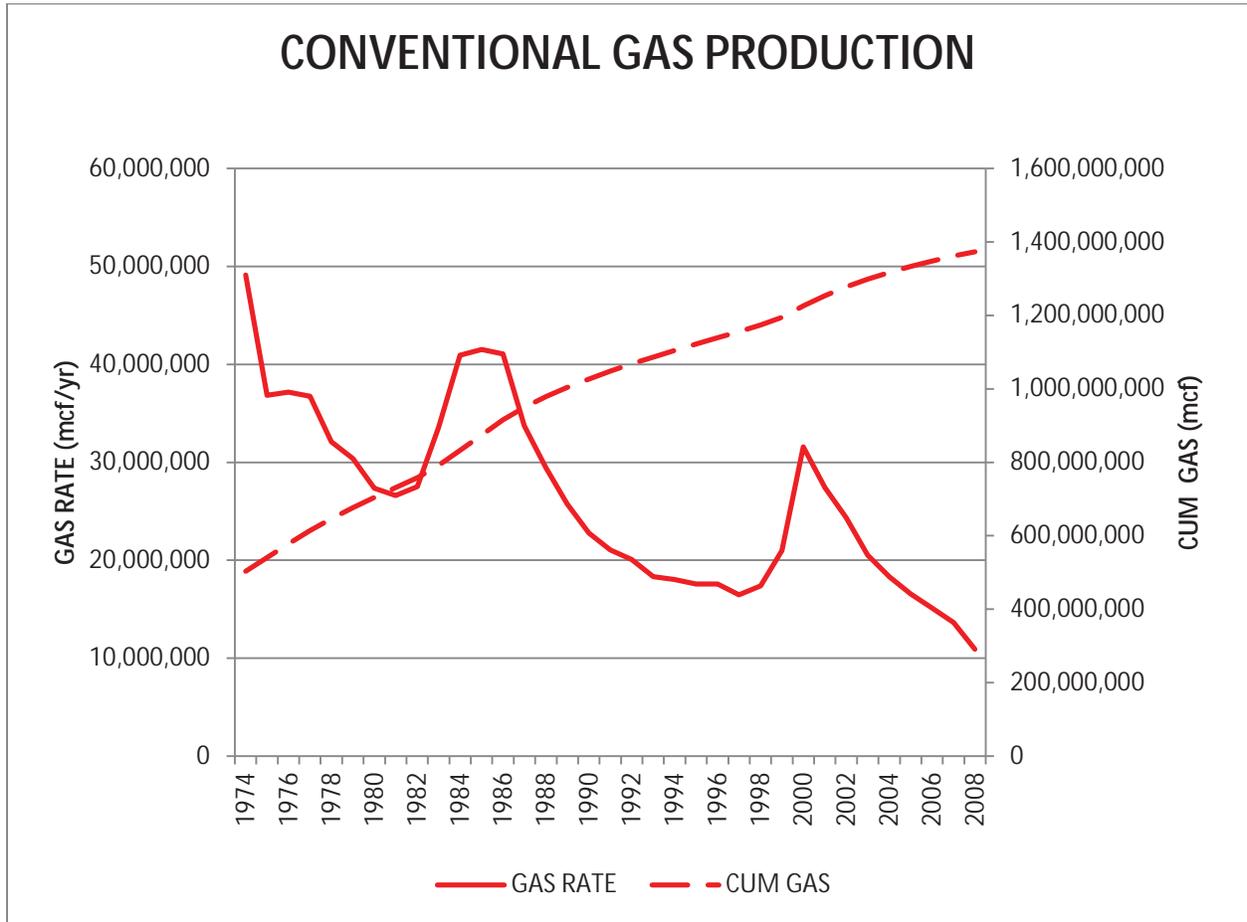


Figure 30. Yearly and cumulative oil production from Federal, private, and state wells in the Buffalo Planning Area. Data from IHS Energy Group (2009).



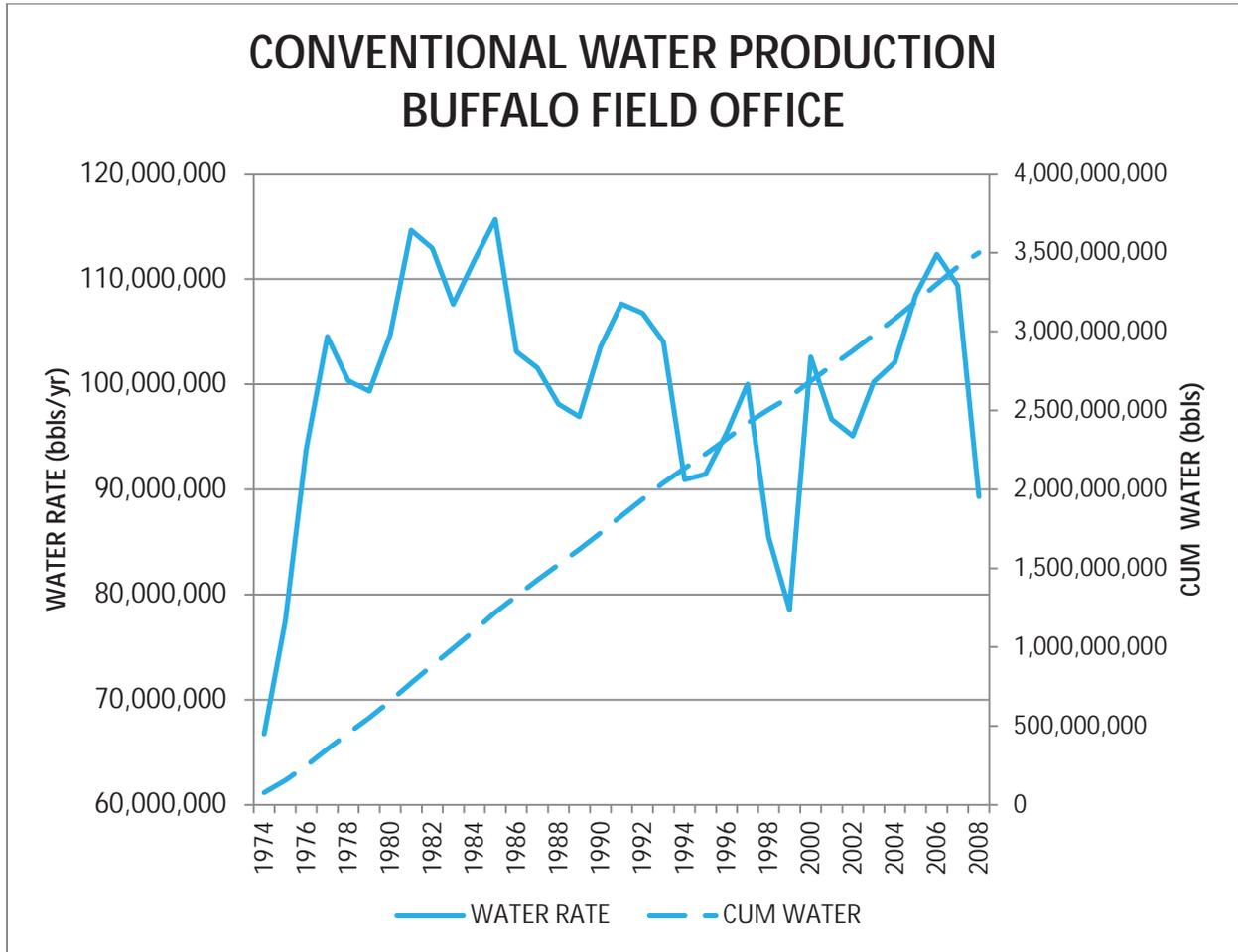
bbls = barrels

Figure 31. Yearly and cumulative gas production from Federal, private, and state wells in the Buffalo Planning Area. Data from IHS Energy Group (2009).



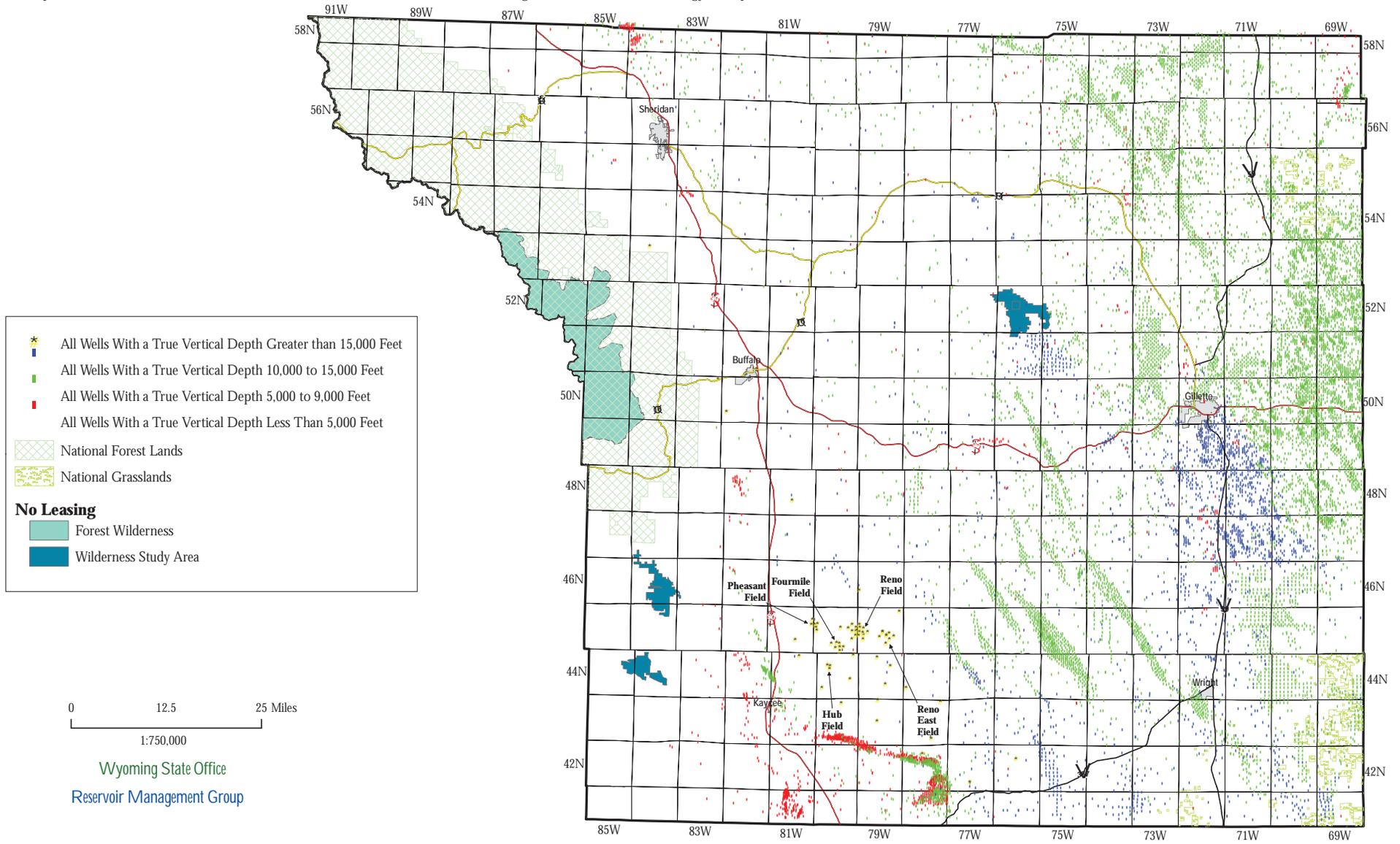
mcf = thousand cubic feet

Figure 32. Yearly and cumulative water production from Federal, private, and state wells in the Buffalo Planning Area. Data from IHS Energy Group (2009).



bbls = barrels

Figure 33. True vertical depths of vertical, directional, and horizontal wells drilled within the Buffalo Planning Area. Data from IHS Energy Group (2009).



May, 2009

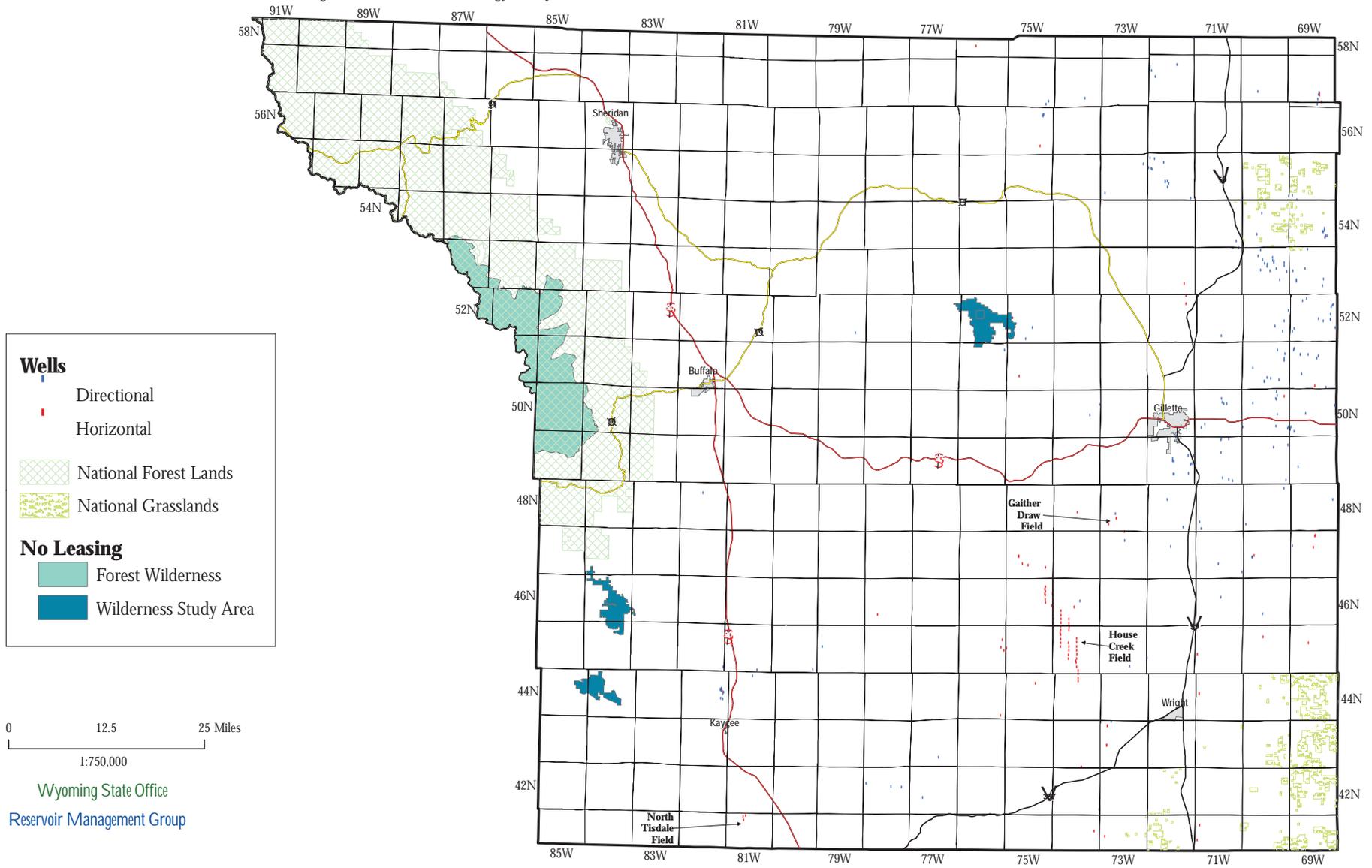
Dean Stilwell, Geologist
 Al Elser, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Wyoming State Office
 Reservoir Management Group

Figure 34.
 Directional and horizontal borehole locations within the Buffalo Planning Area. Data from IHS Energy Group (2009).



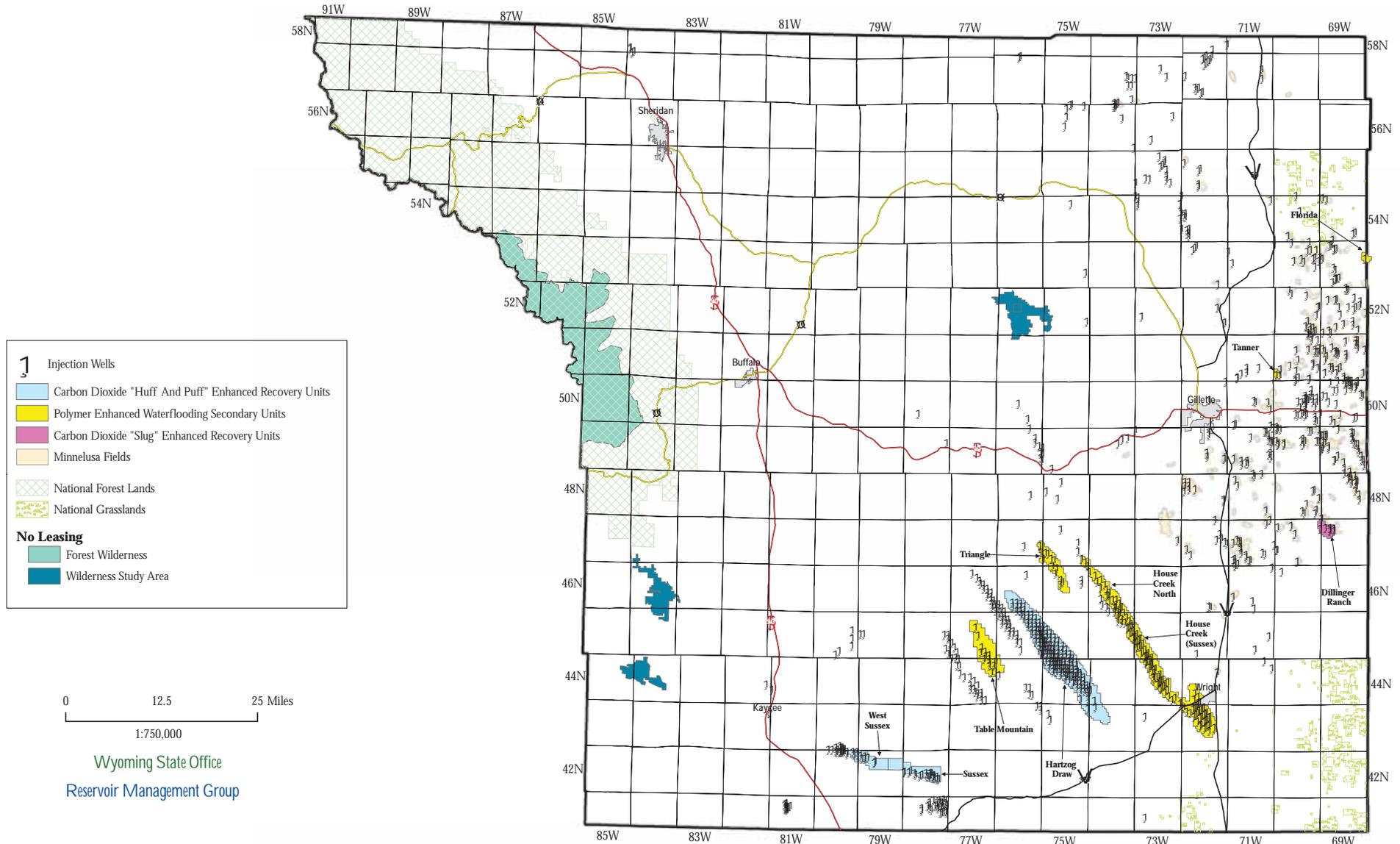
May, 2009
 Dean Stilwell, Geologist
 Al Elser, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 35.

Buffalo Planning Area locations of select secondary and enhanced oil recovery units and fields. Data from IHS Energy Group (2009), Wyoming Oil and Gas Conservation Commission (2009), DeBruin (2007) and Bureau files.



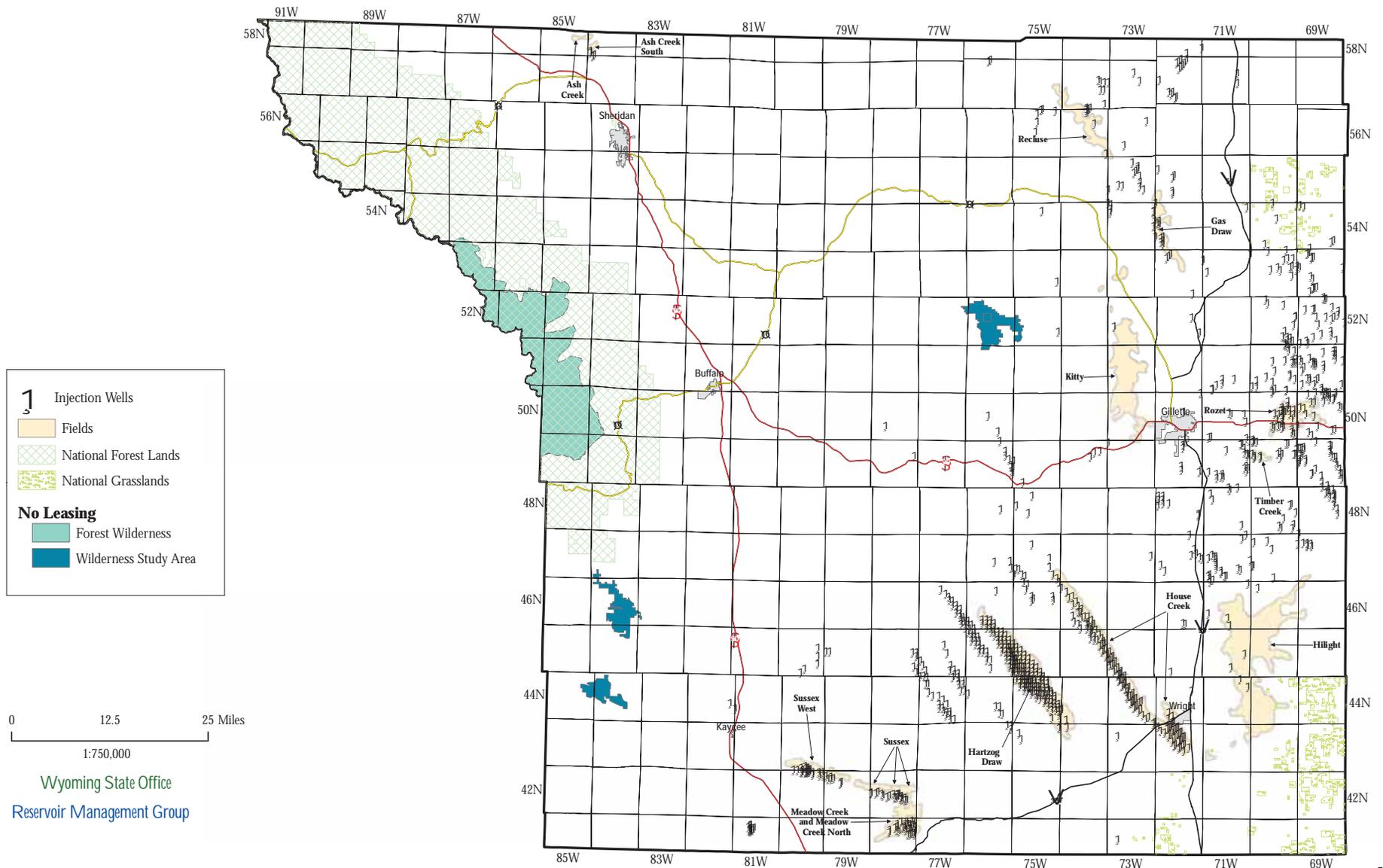
May, 2009
 Dean Stilwell, Geologist
 Al Elser, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 36.

Buffalo Planning Area locations of fields identified as amenable to carbon dioxide enhanced oil recovery projects. Data from IHS Energy Group (2009), DeBruin (2007), Nummendal et al. (2003), and Advanced Resources International (2006).



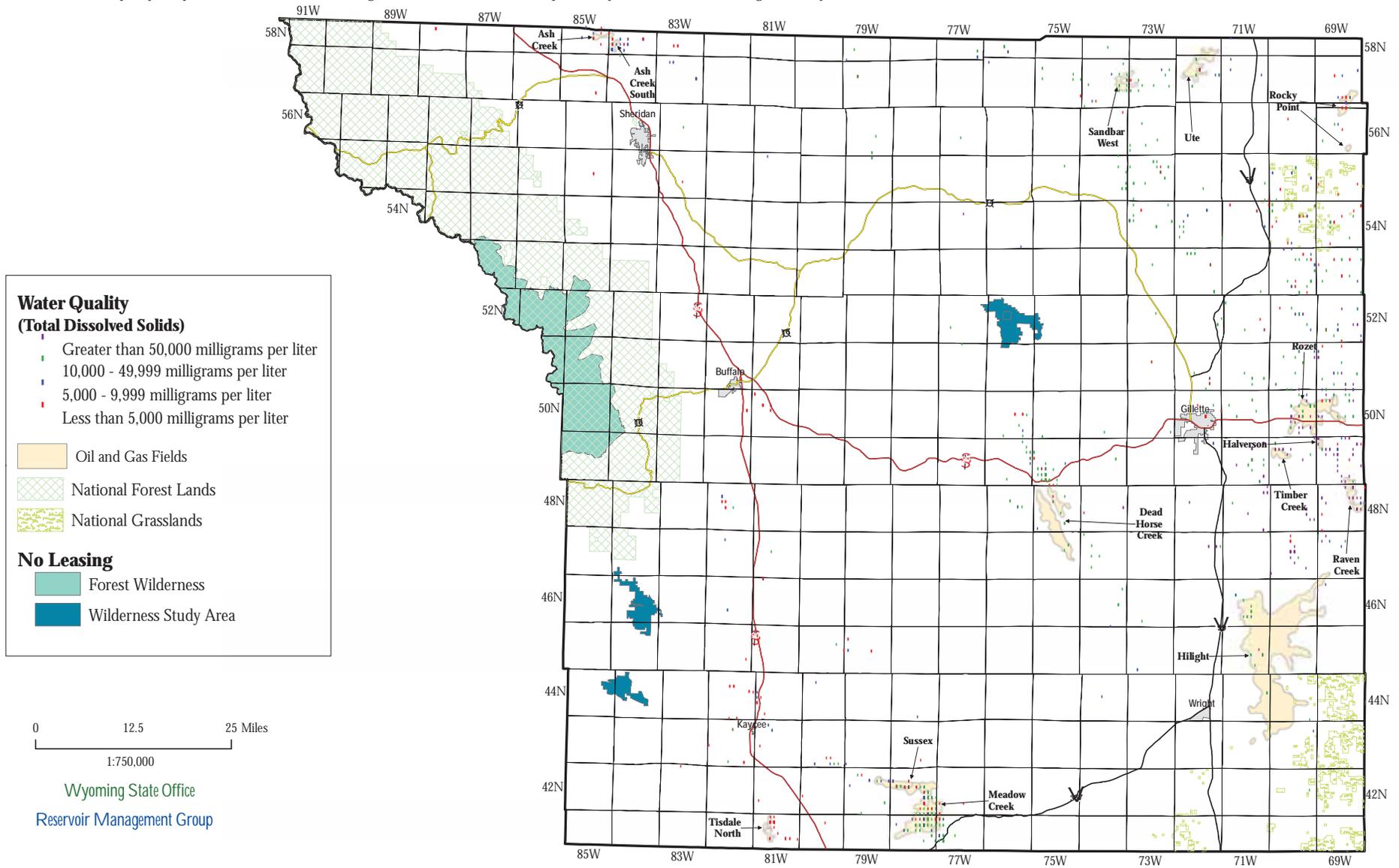
May, 2009

Dean Stilwell, Geologist
 Al Elser, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 37. Geographic distribution of water quality samples across the Buffalo Planning Area and distribution of sample salinity. Data from U.S. Geological Survey (2008a) and DeBruin (2007).



May, 2009

Dean Stilwell, Geologist
 Al Elser, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 38. Stratigraphic section of Tertiary age coals in the Powder River Basin (modified from Stricker, 2007).

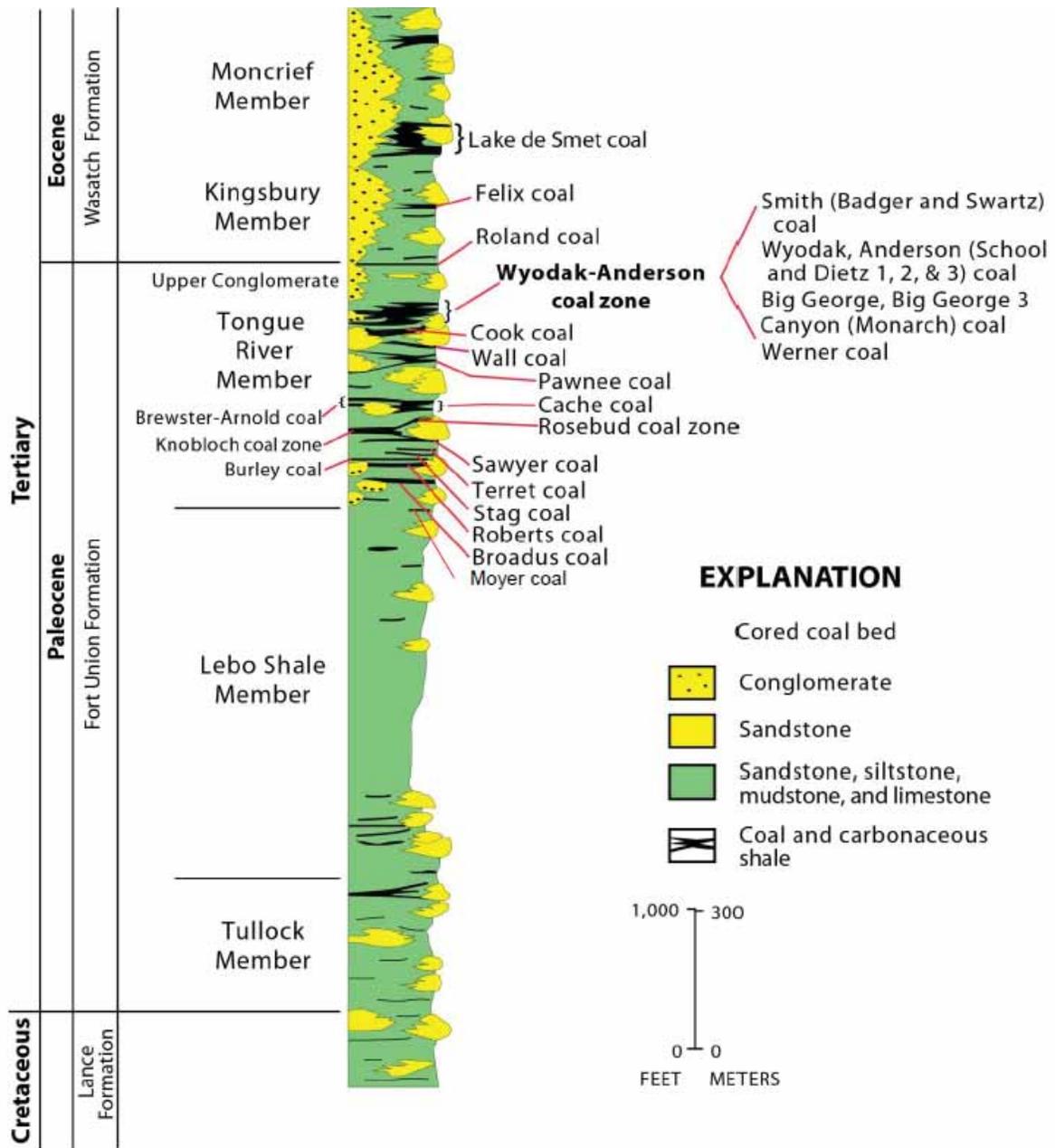


Figure 39. Coalbed natural gas wells drilled in the Buffalo Planning Area from 1990 through 2011. The proportion of Public Domain and split estate land is shown for completeness. Note the increase in the proportion of Federal wells over time. Based on mineral ownership and the location of anticipated future development, the proportion of Federal wells will probably continue above 60 percent. Data are from the Wyoming Oil and Gas Conservation Commission (2012) and IHS Energy Group (2012).

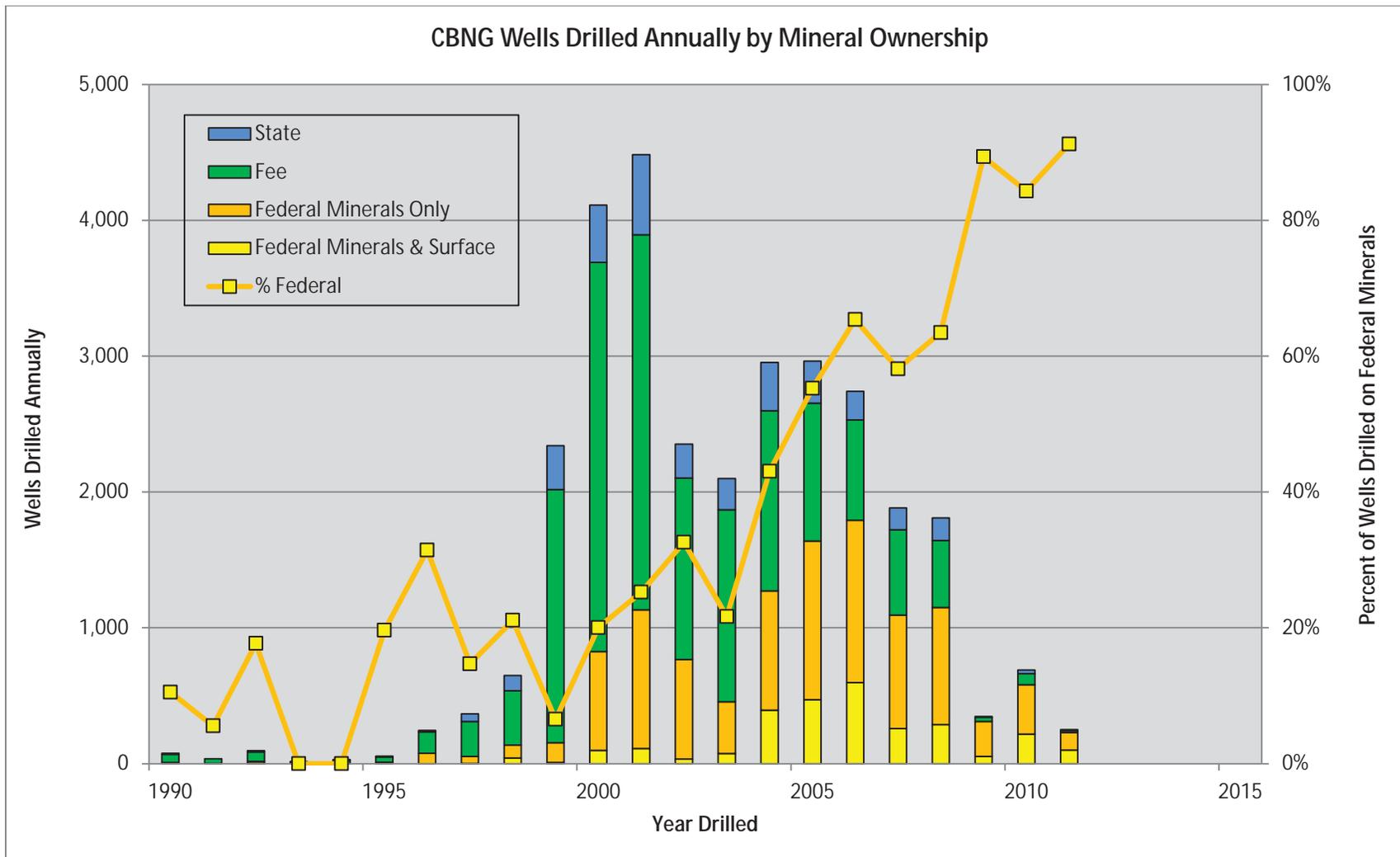
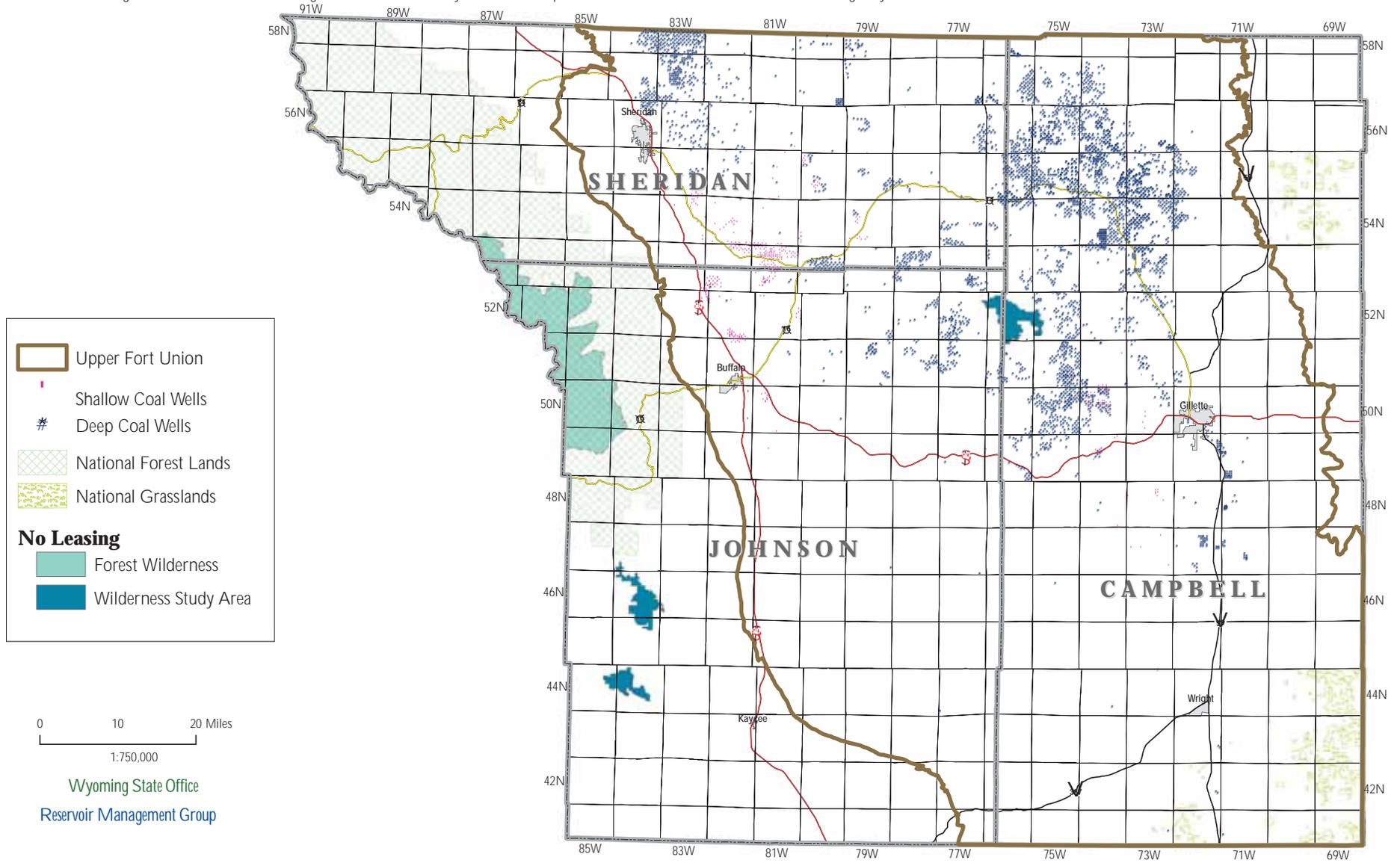


Figure 40.

Deep and shallow coalbed natural gas wells in the Buffalo Planning Area. Note the scarcity of wells to deep coals south of Interstate 90 and west of U.S. Highway 59.



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 41. Annual producing coalbed natural gas wells within the Buffalo Planning Area, by county. Note that historically Campbell County contained more wells than Sheridan and Johnson counties combined. Although over 29,000 wells were drilled (see Figure 42) during this time, fewer than 20,000 were ever productive at one time. Data are from IHS Energy Group (2012).

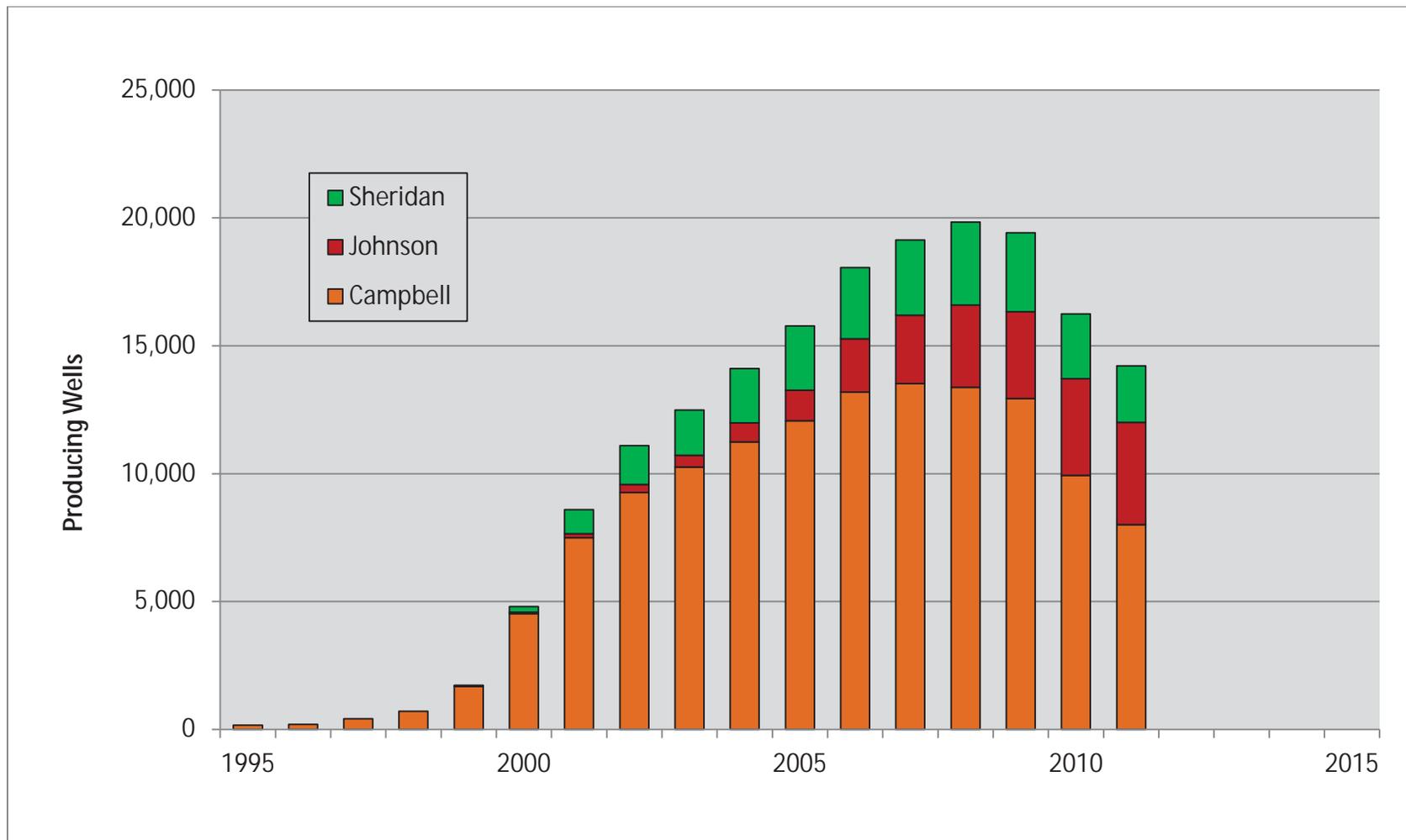


Figure 42. Annual proportion of coalbed natural gas wells drilled in each of the counties in the Buffalo Planning Area. A total of 29,461 wells were drilled from 1995-2011. Data are from IHS Energy Group. (2012).

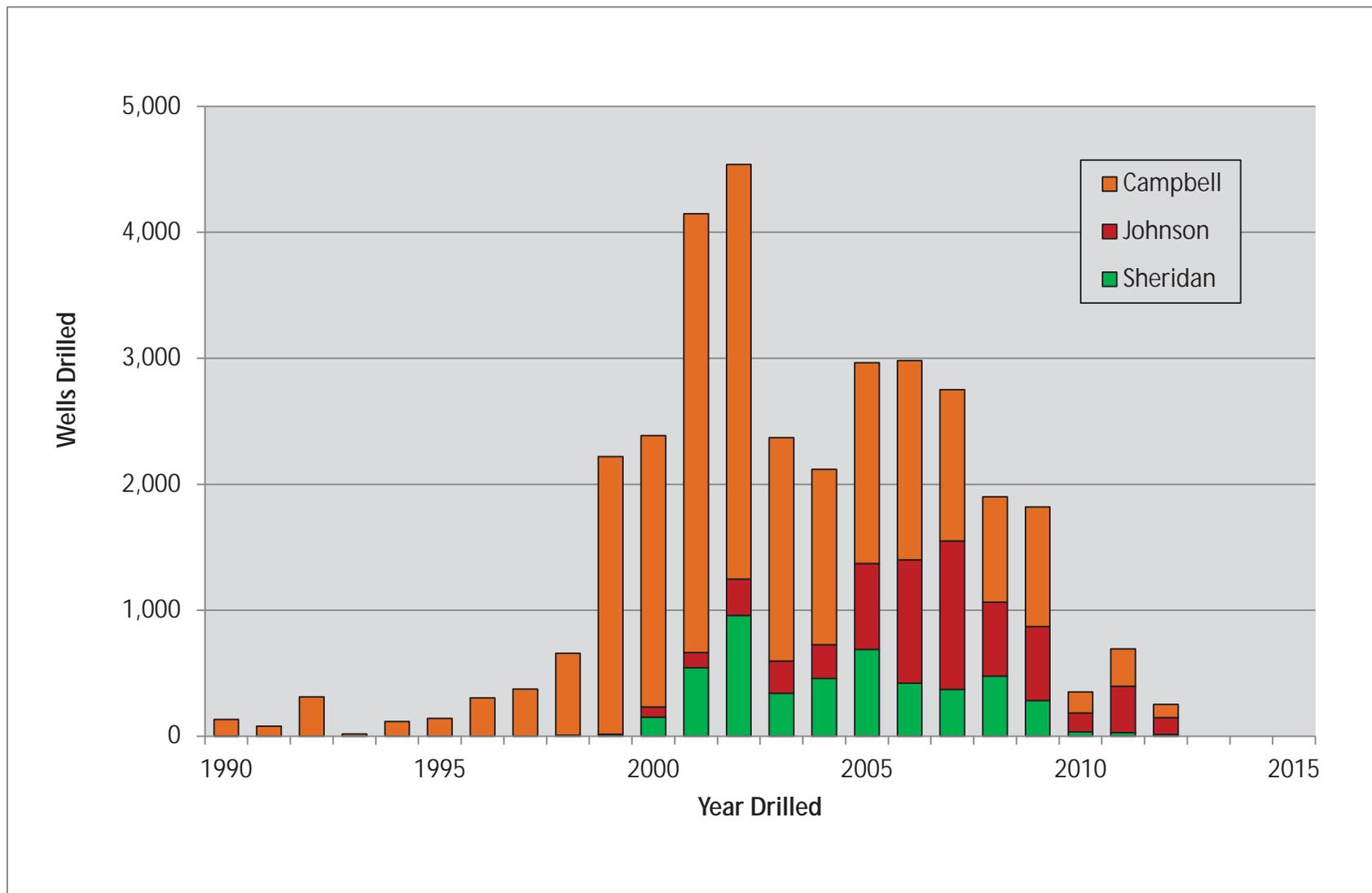


Figure 43. Annual proportion of coalbed natural gas wells drilled in each of the counties in the Buffalo Planning Area. A total of 29,461 wells were drilled from 1995-2011. Data are from IHS Energy Group (2012).

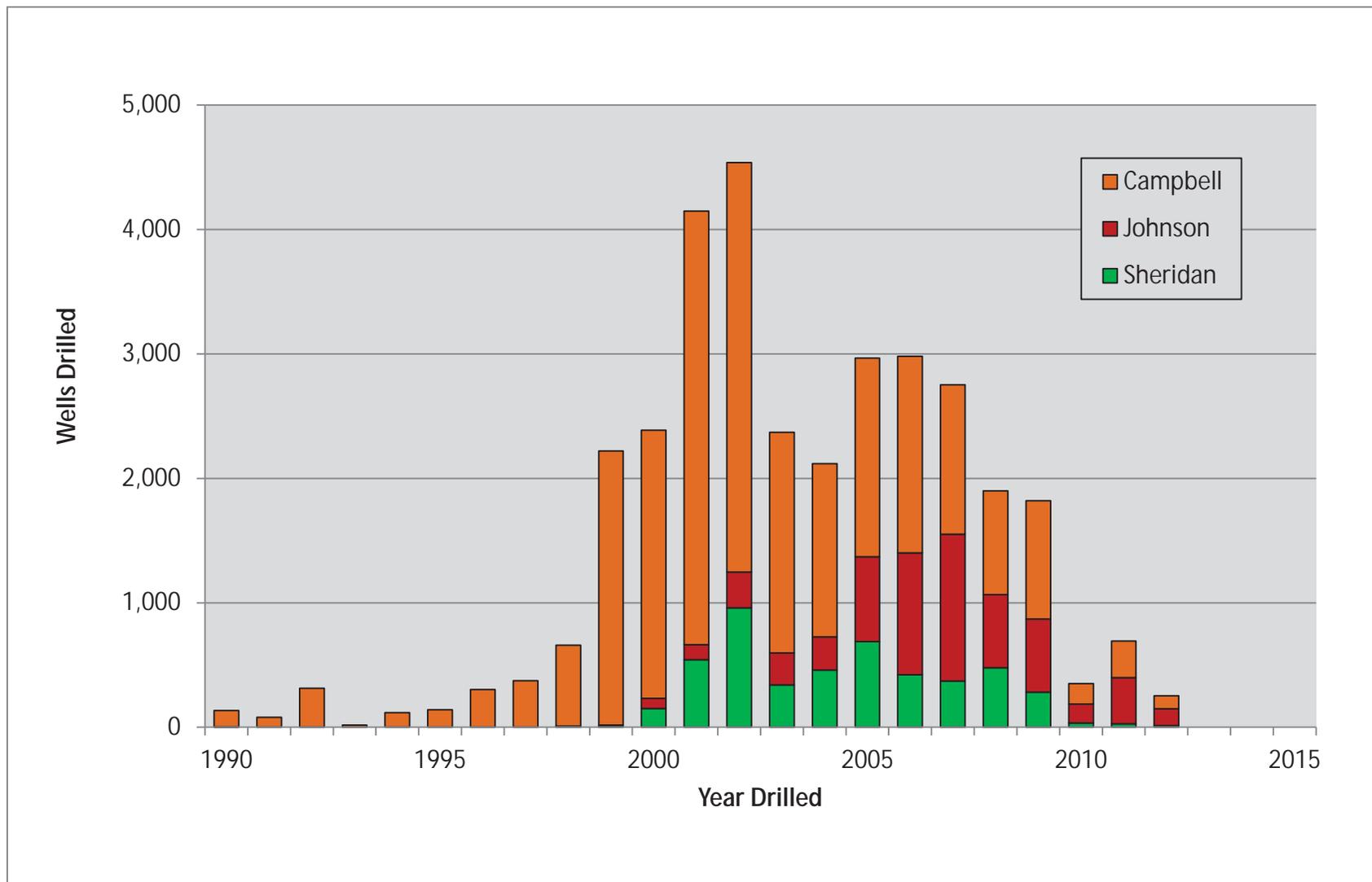


Figure 44. Annual coalbed natural gas production for the Buffalo Planning Area by county, starting in 1995. Note that Johnson County currently has the largest production. Data from IHS Energy Group (2012).

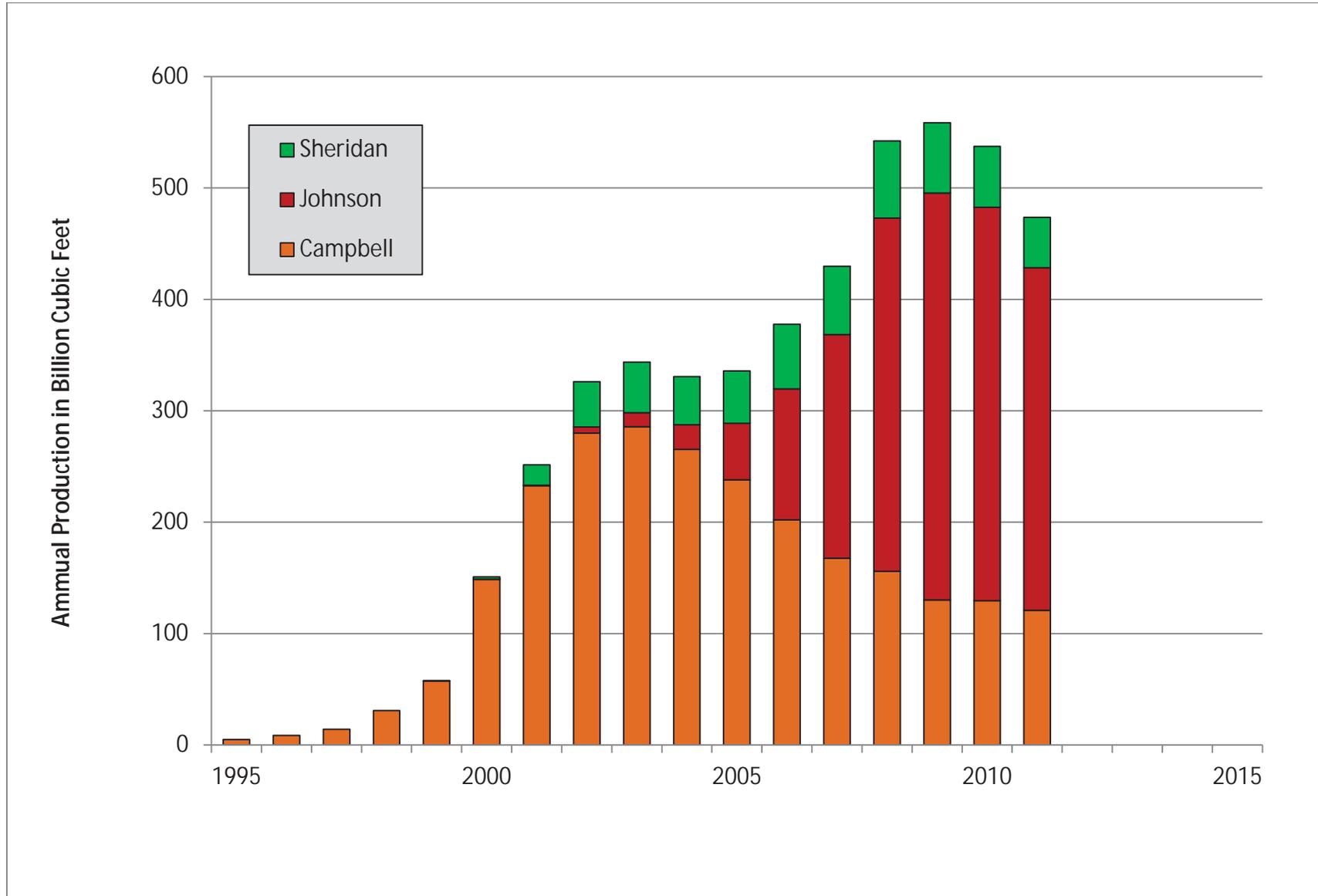
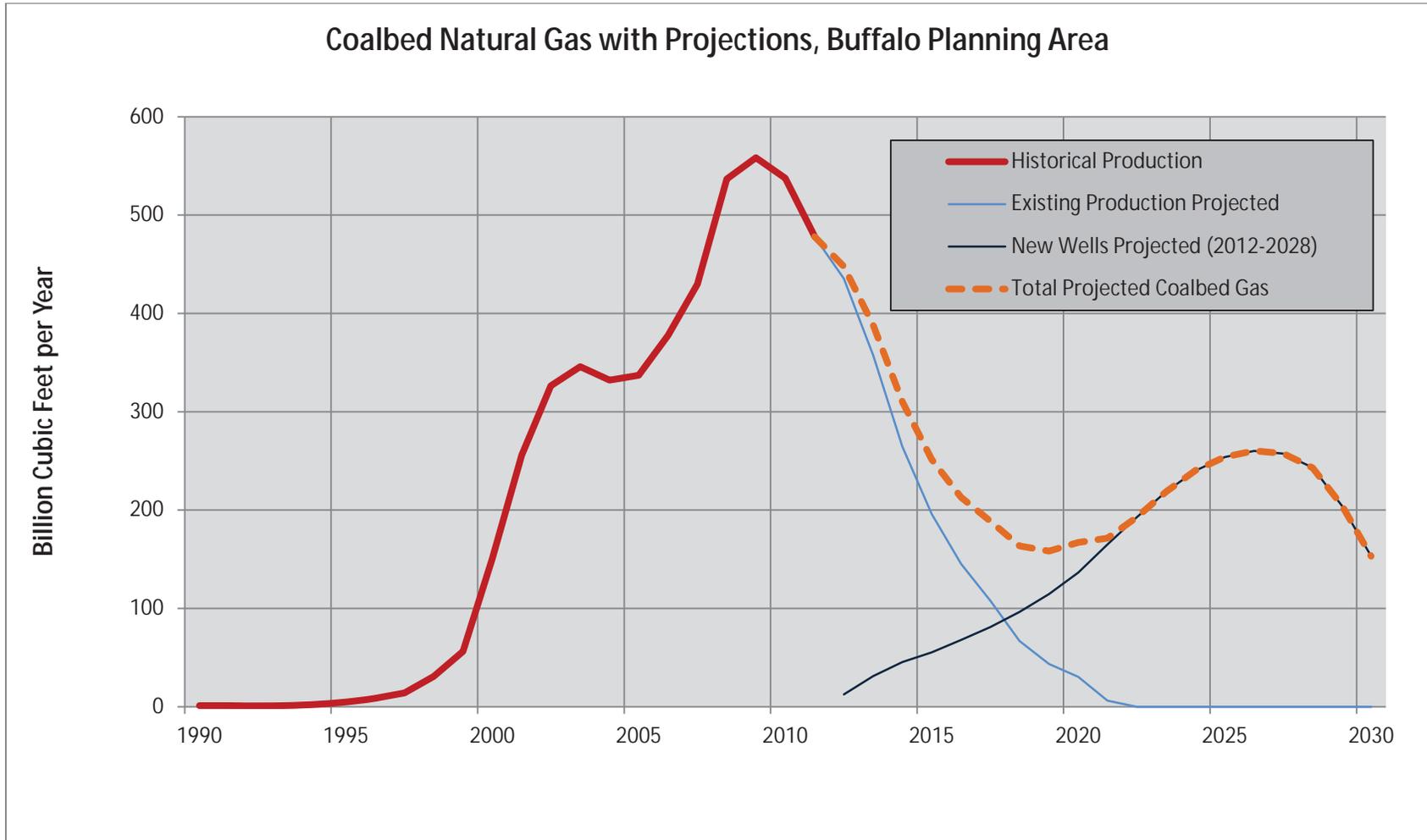
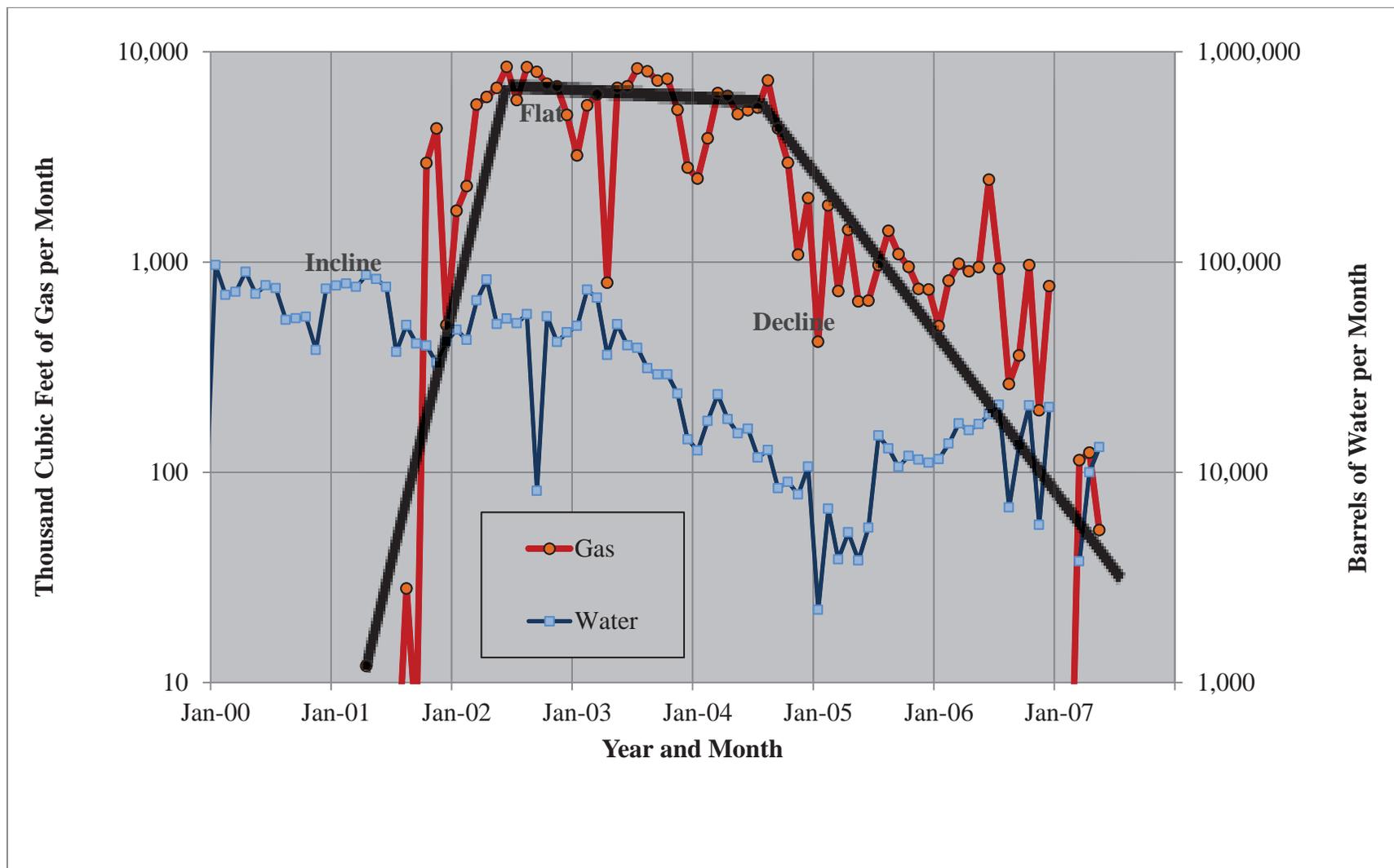


Figure 45. Historical coalbed natural gas production and base line projection of production through 2028 for the Buffalo Planning Area. Cumulative production through 2011 is 4,789 billion cubic feet of gas. Estimated cumulative production through 2028 is 8,906 billion cubic feet of gas. Data are from Wyoming Oil and Gas Conservation Commission and IHS Energy Group (2012).



Wyoming State Office
Reservoir Management Group

Figure 46. Plot of monthly coalbed natural gas production for the Pilot State #16-A well in Section 16, T. 48 N., R. 77 W., Johnson County, Wyoming. Production began in 1999 and is shown through 2007. Cumulative recovery was 223 million cubic feet of gas and 3.48 million barrels of water (449 acre feet). Production was from the Big George Coal. Data from IHS Energy Group (2009).



Wyoming State Office
Reservoir Management Group

Figure 47. Annual water production from coalbed natural gas wells by county for the Buffalo Planning Area. Note that water production has been relatively steady from 2001 through 2008 even though the number of producing wells has increased substantially. Data from IHS Energy Group (2012).

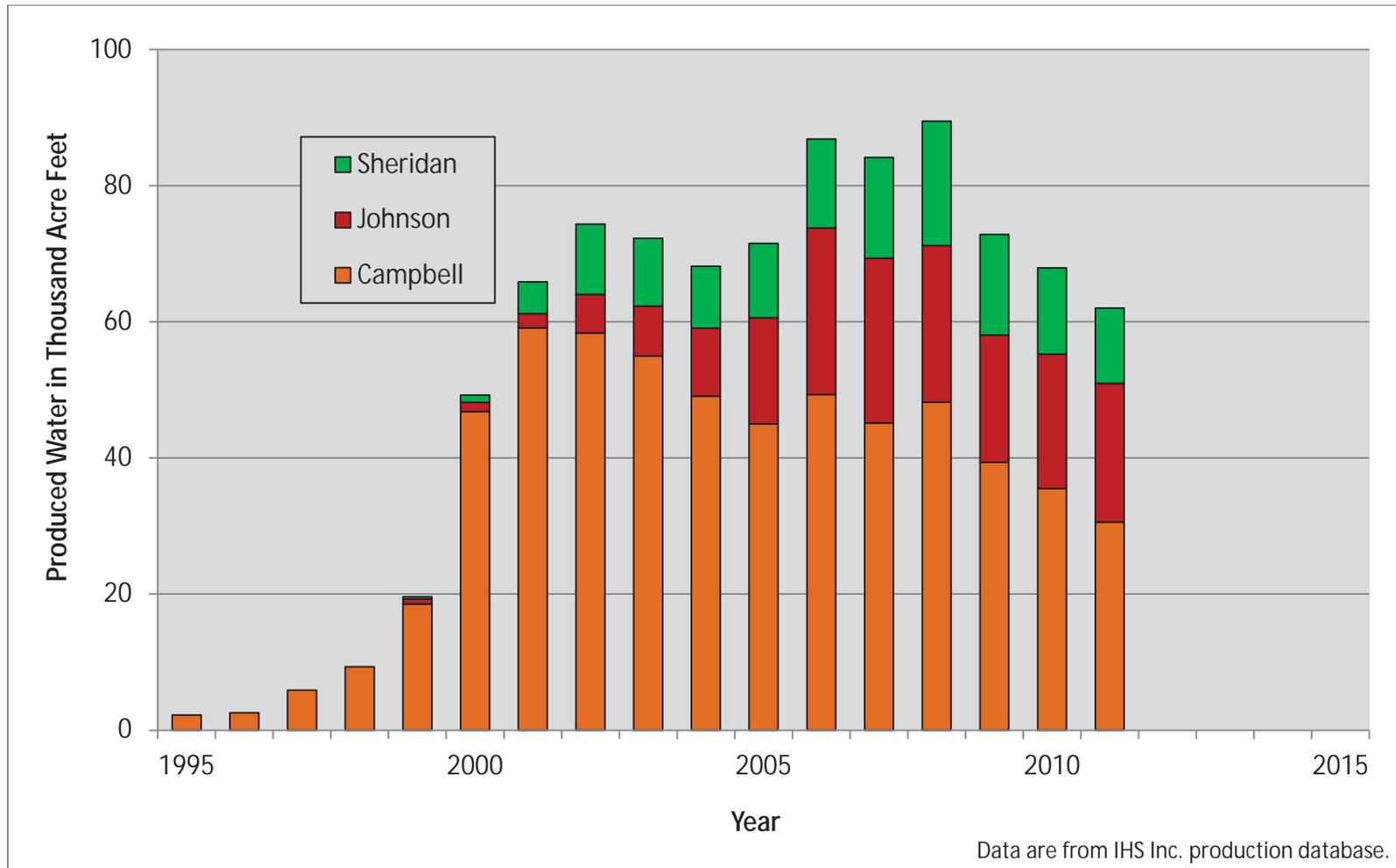
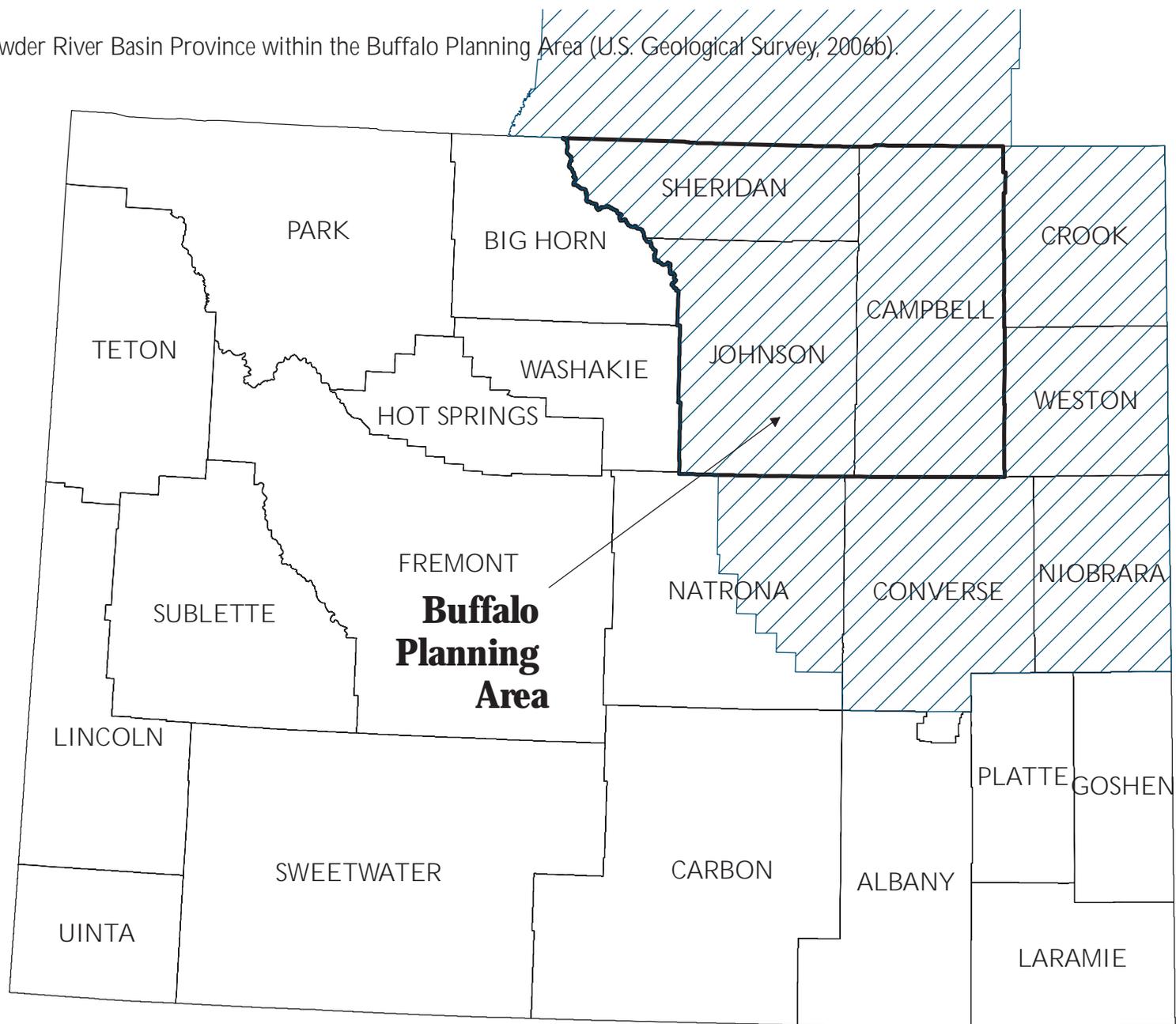
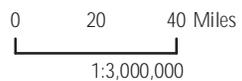


Figure 48.

Location of the Powder River Basin Province within the Buffalo Planning Area (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

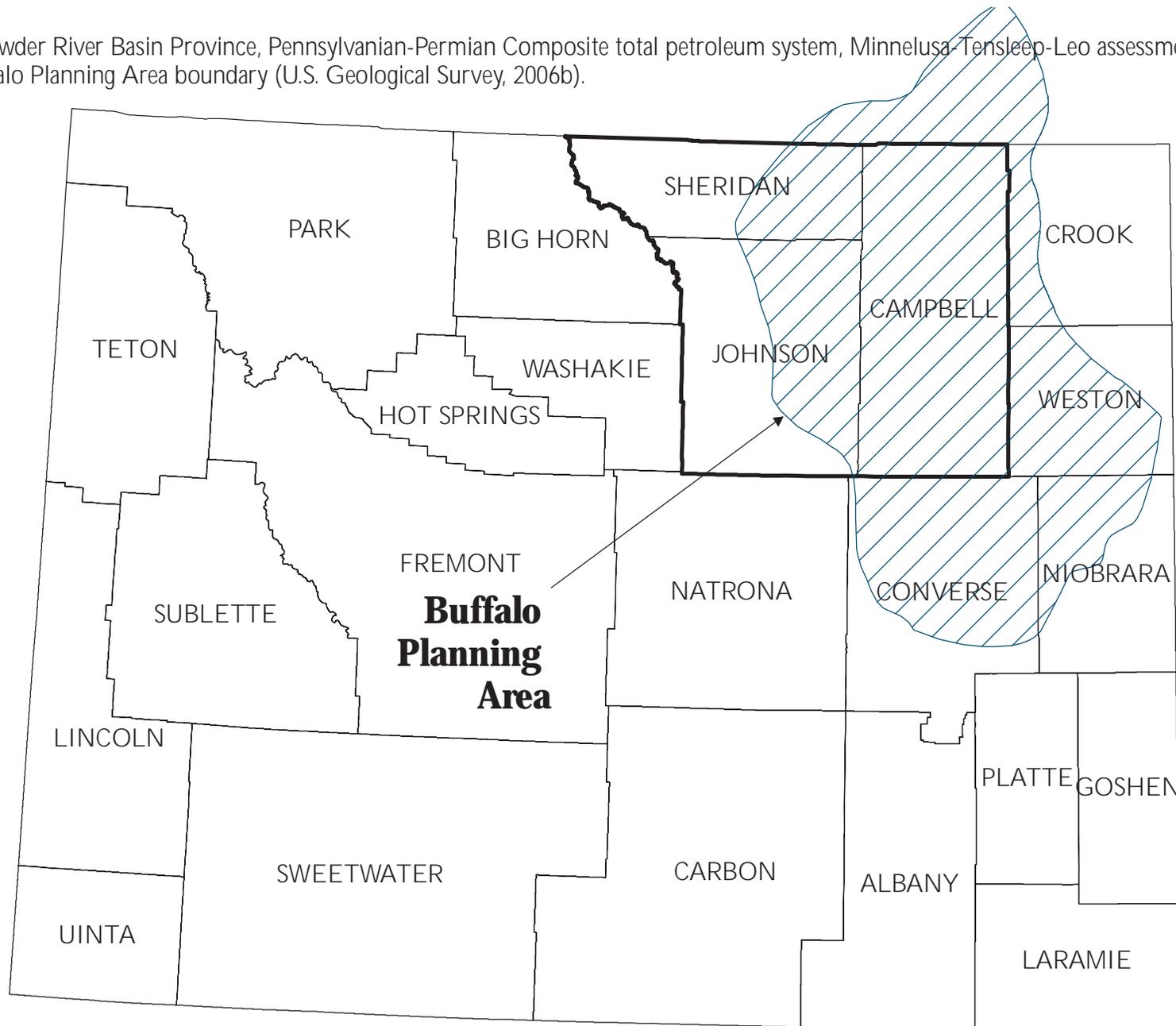
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 49.

Location of the Powder River Basin Province, Pennsylvanian-Permian Composite total petroleum system, Minnelusa-Tensleep-Leo assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

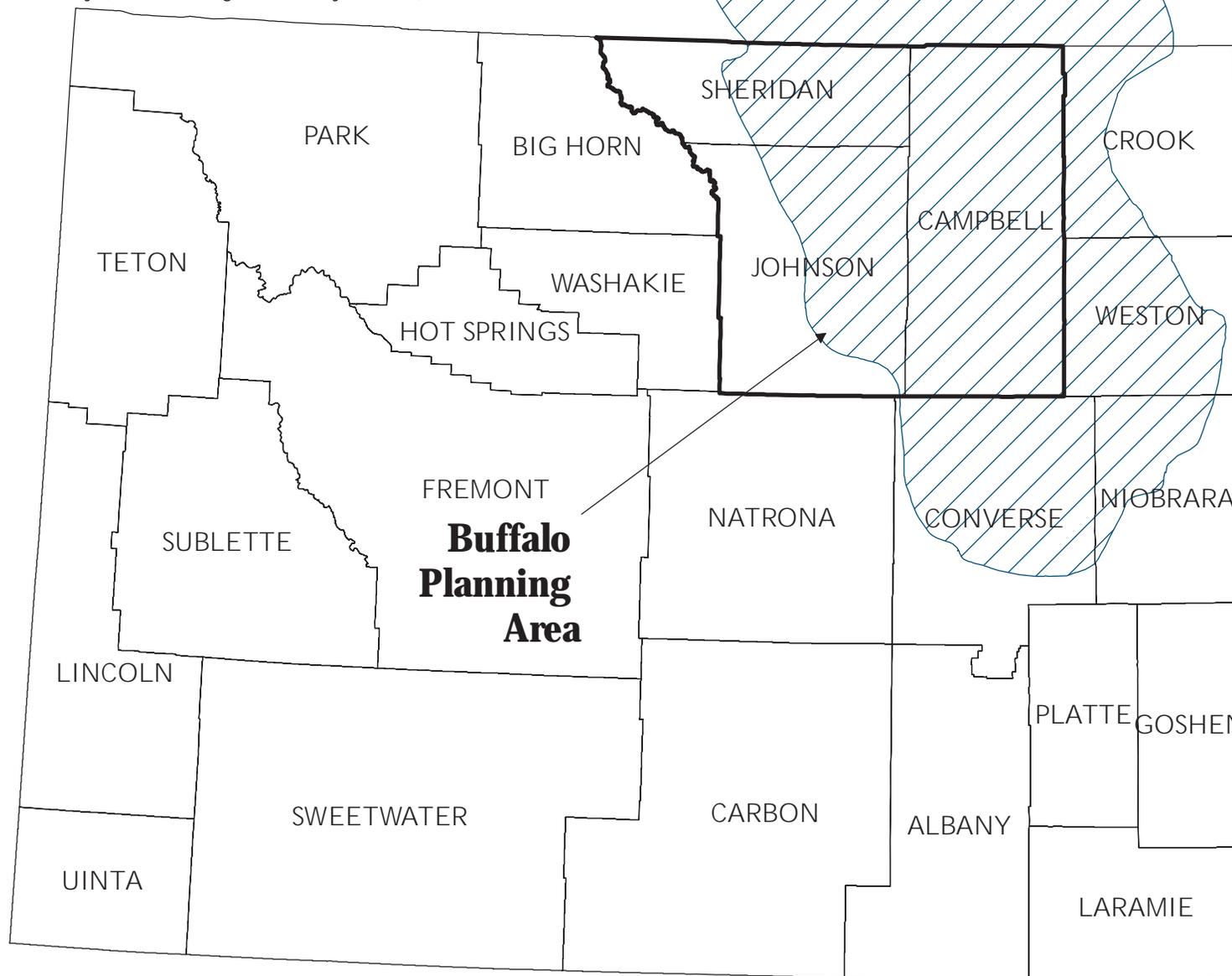
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 50.

Location of the Powder River Basin Province, Mowry total petroleum system, Fall River-Lakota Sandstone assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

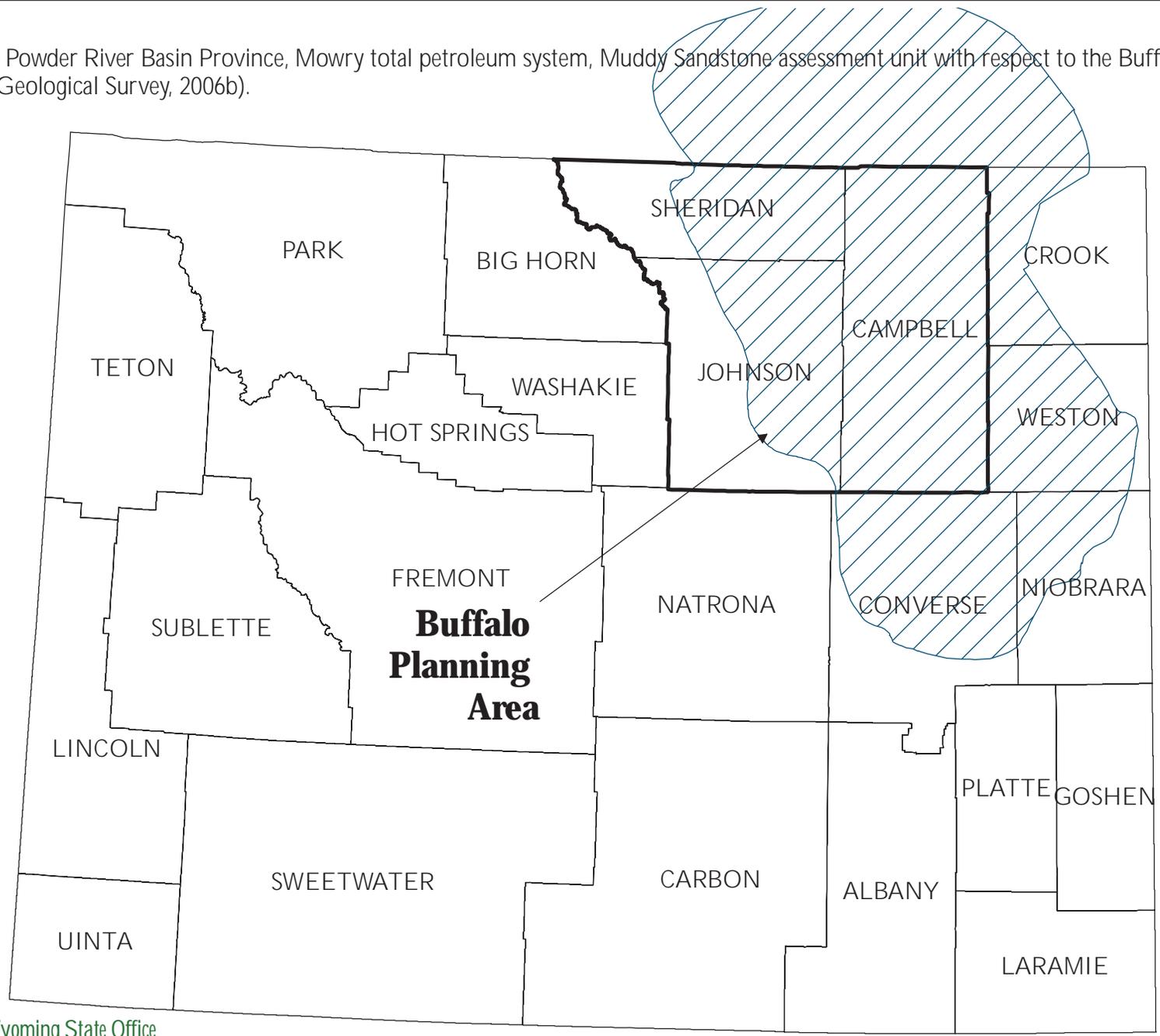
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 51.

Location of the Powder River Basin Province, Mowry total petroleum system, Muddy Sandstone assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group

August, 2012

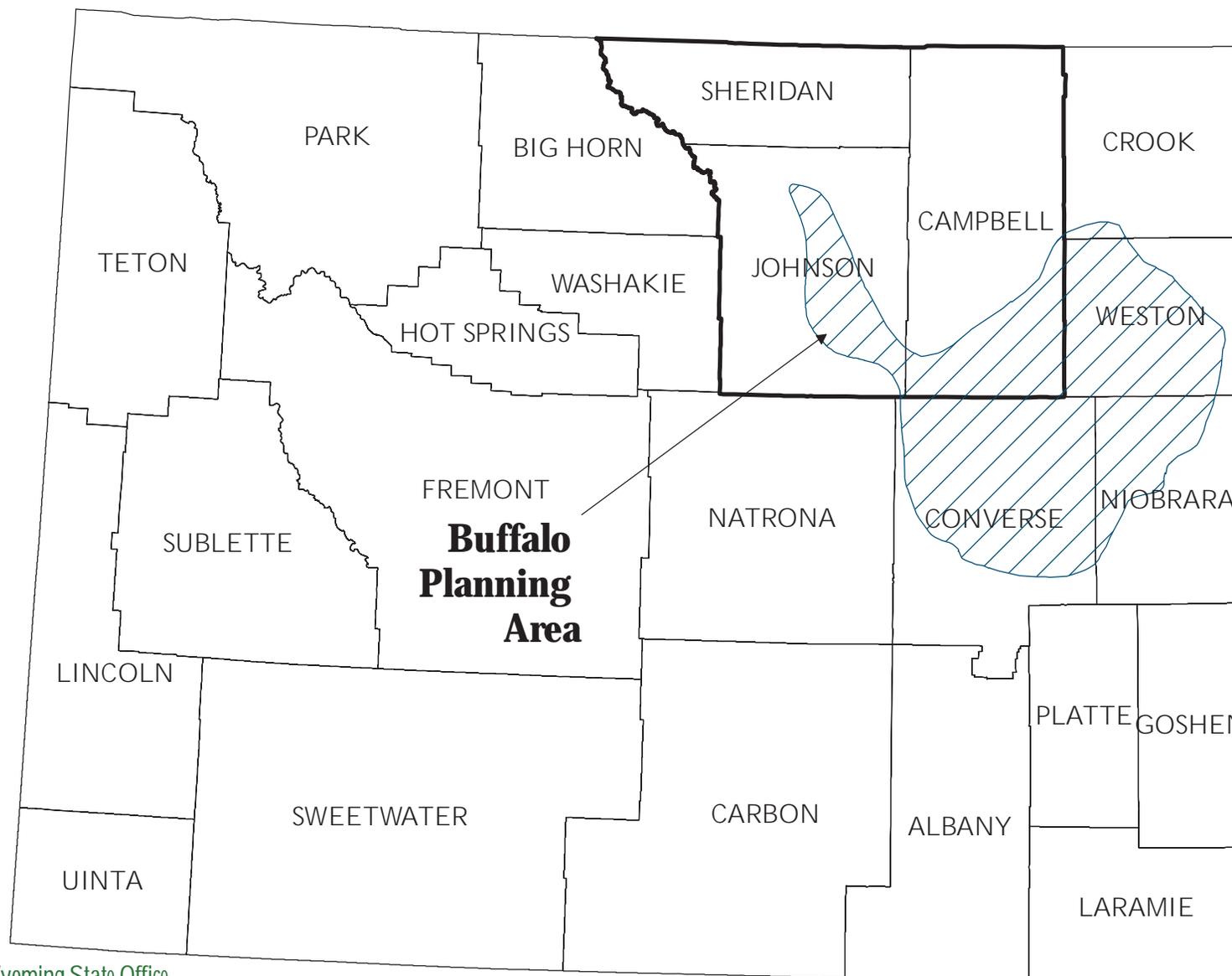
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.

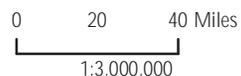


Figure 52.

Location of the Powder River Basin Province, Niobrara total petroleum system, Frontier-Turner Sandstones assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

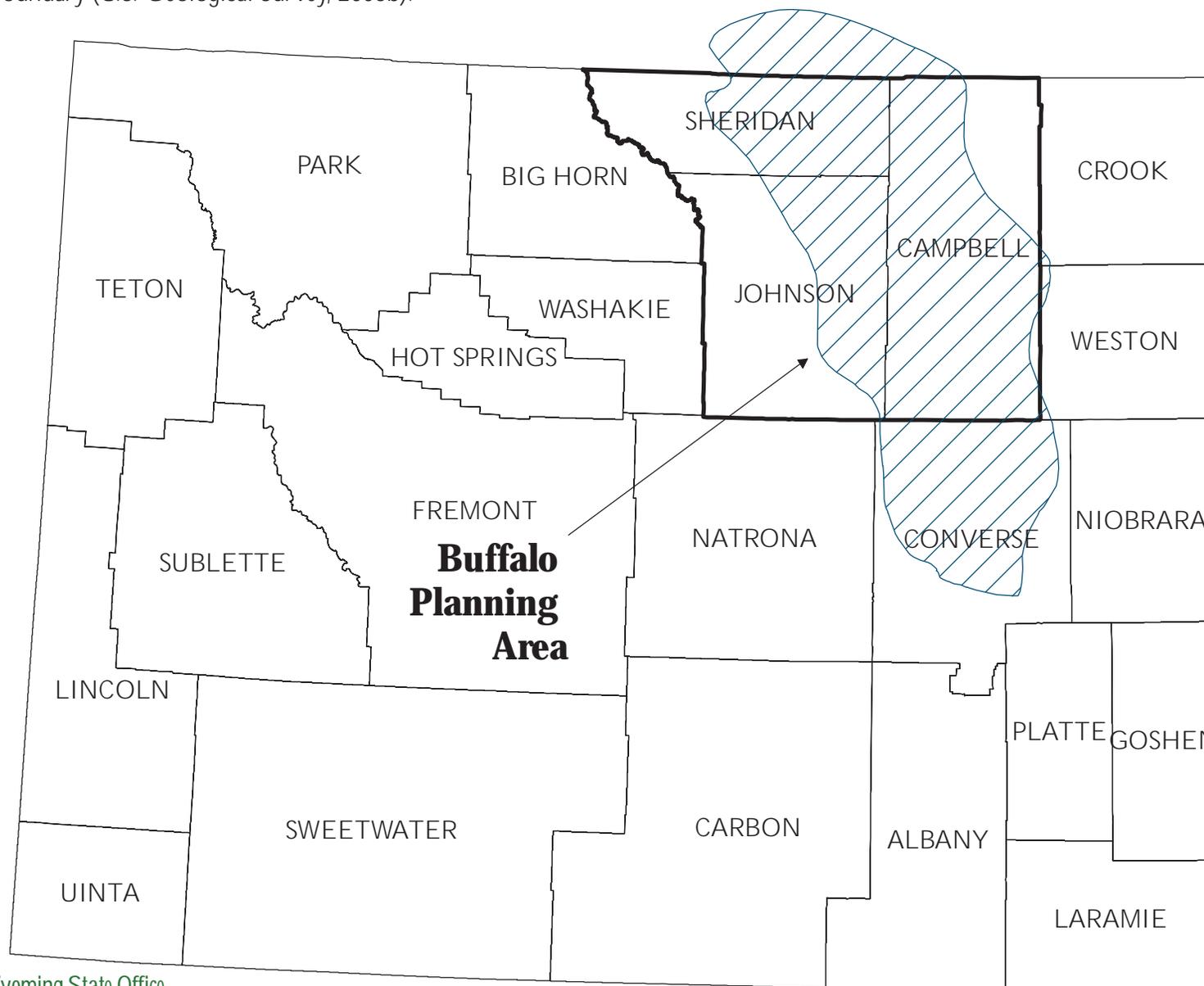
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 53.

Location of the Powder River Basin Province, Niobrara total petroleum system, Sussex-Shannon Sandstones assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group

0 20 40 Miles
1:3,000,000

August, 2012

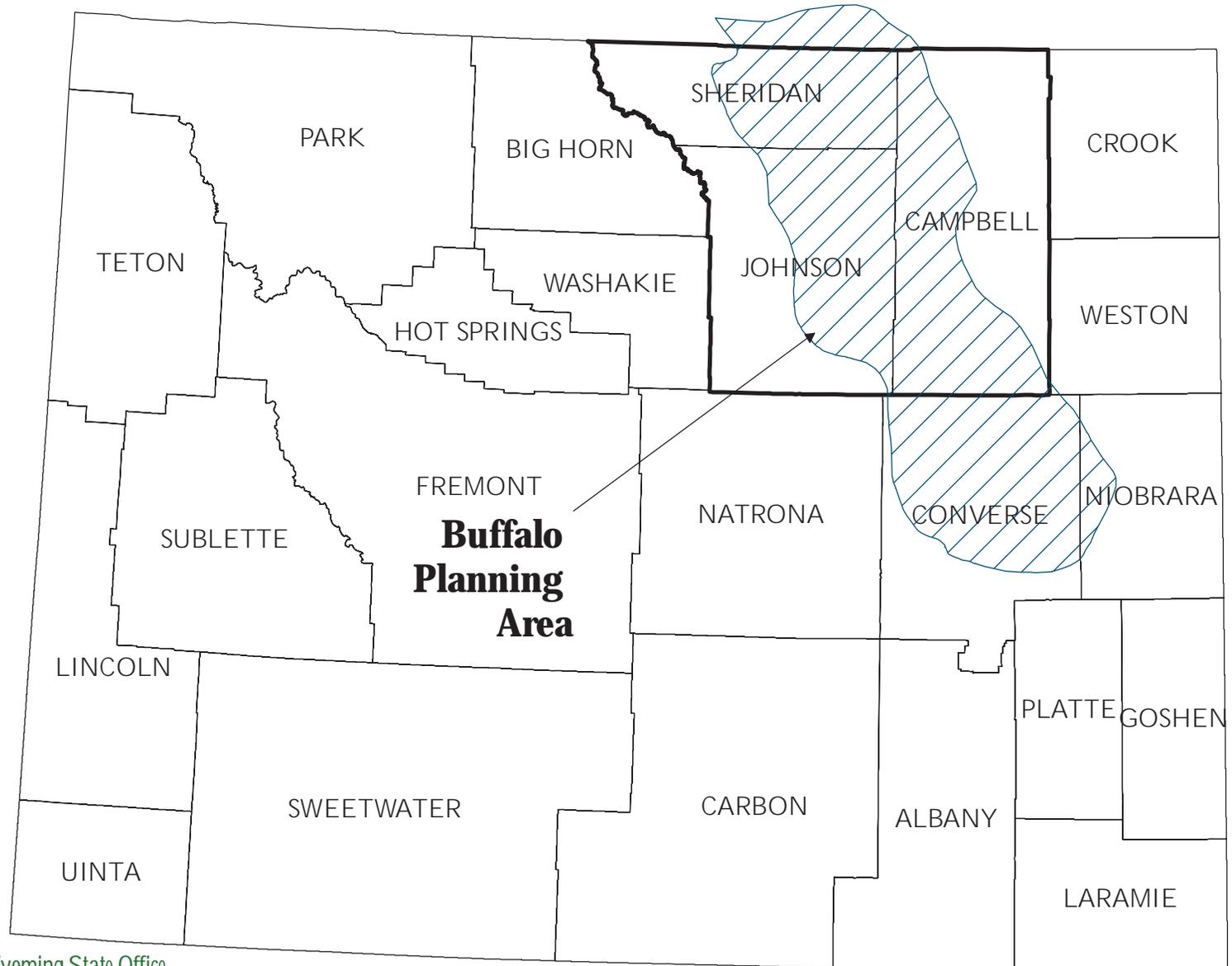
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 54.

Location of the Powder River Basin Province, Niobrara total petroleum system, Mesaverde-Lewis Sandstones assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

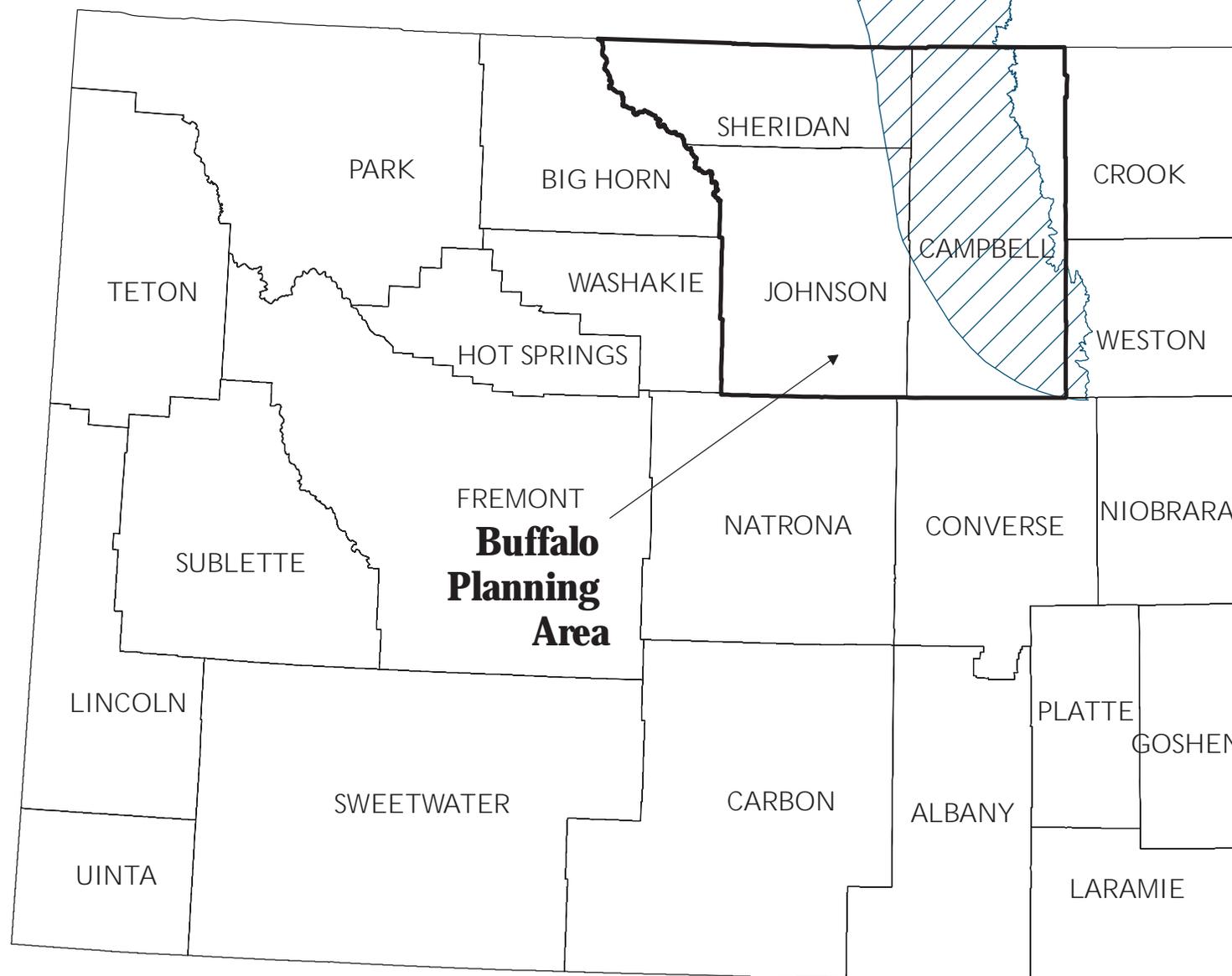
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 55.

Location of the Powder River Basin Province, Tertiary-Upper Cretaceous Coalbed Methane total petroleum system, Eastern Basin Margin Upper Fort Union Sandstone assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group

August, 2012

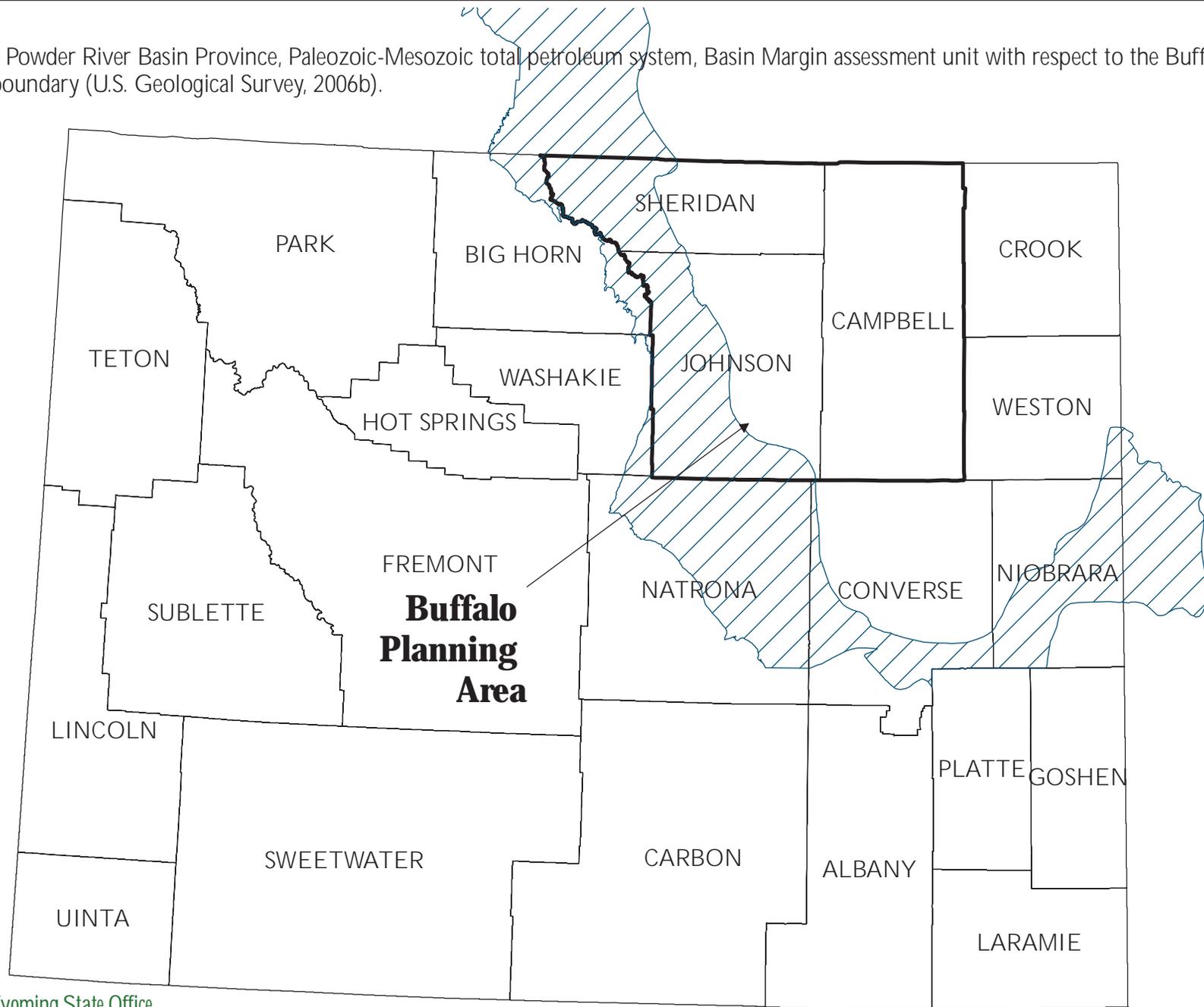
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.

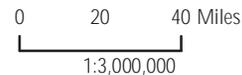


Figure 56.

Location of the Powder River Basin Province, Paleozoic-Mesozoic total petroleum system, Basin Margin assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

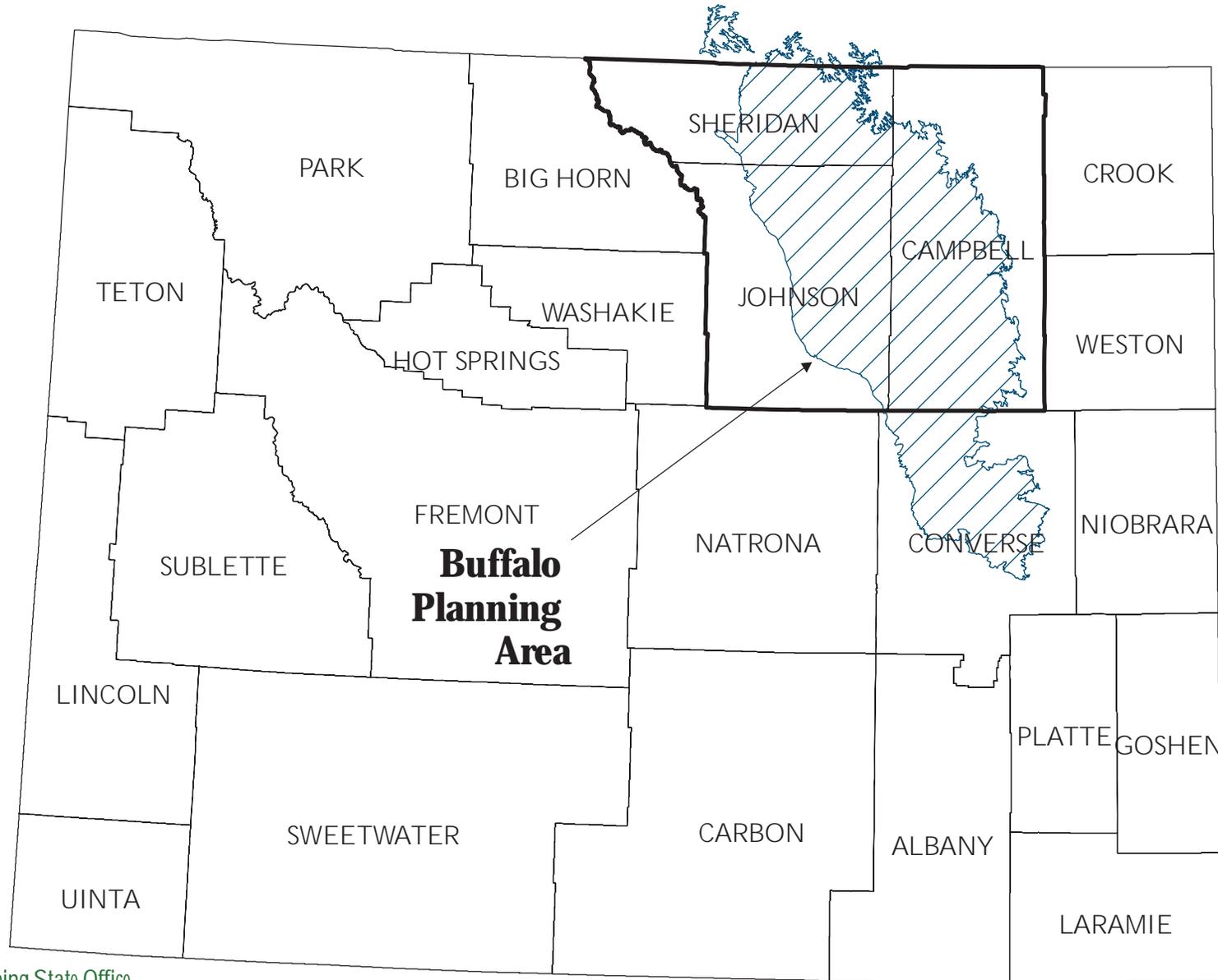
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.

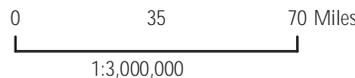


Figure 57.

Location of the Powder River Basin Province, Tertiary-Upper Cretaceous Coalbed Methane total petroleum system, Wasatch Formation assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

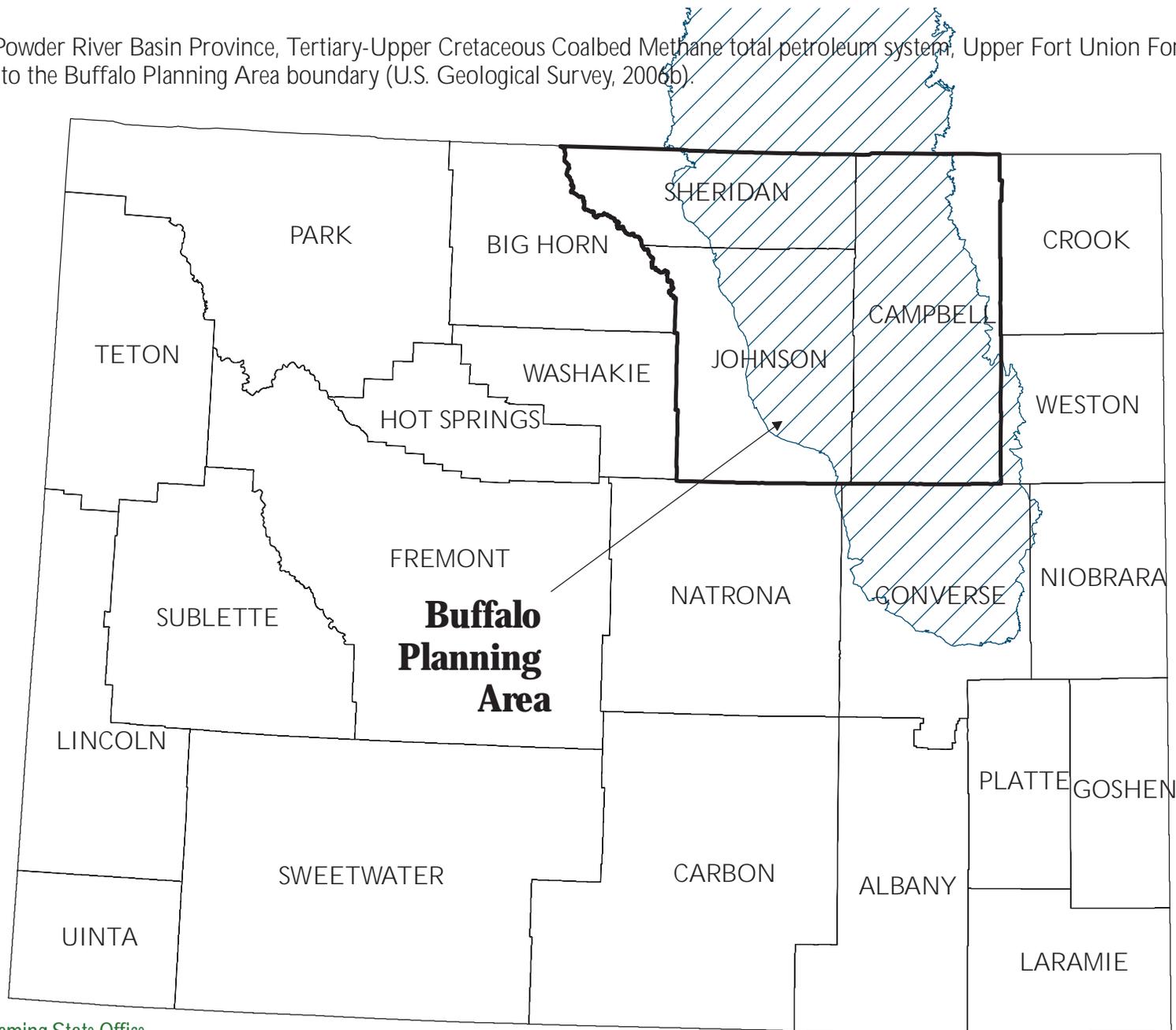
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.

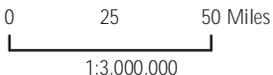


Figure 58.

Location of the Powder River Basin Province, Tertiary-Upper Cretaceous Coalbed Methane total petroleum system, Upper Fort Union Formation assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

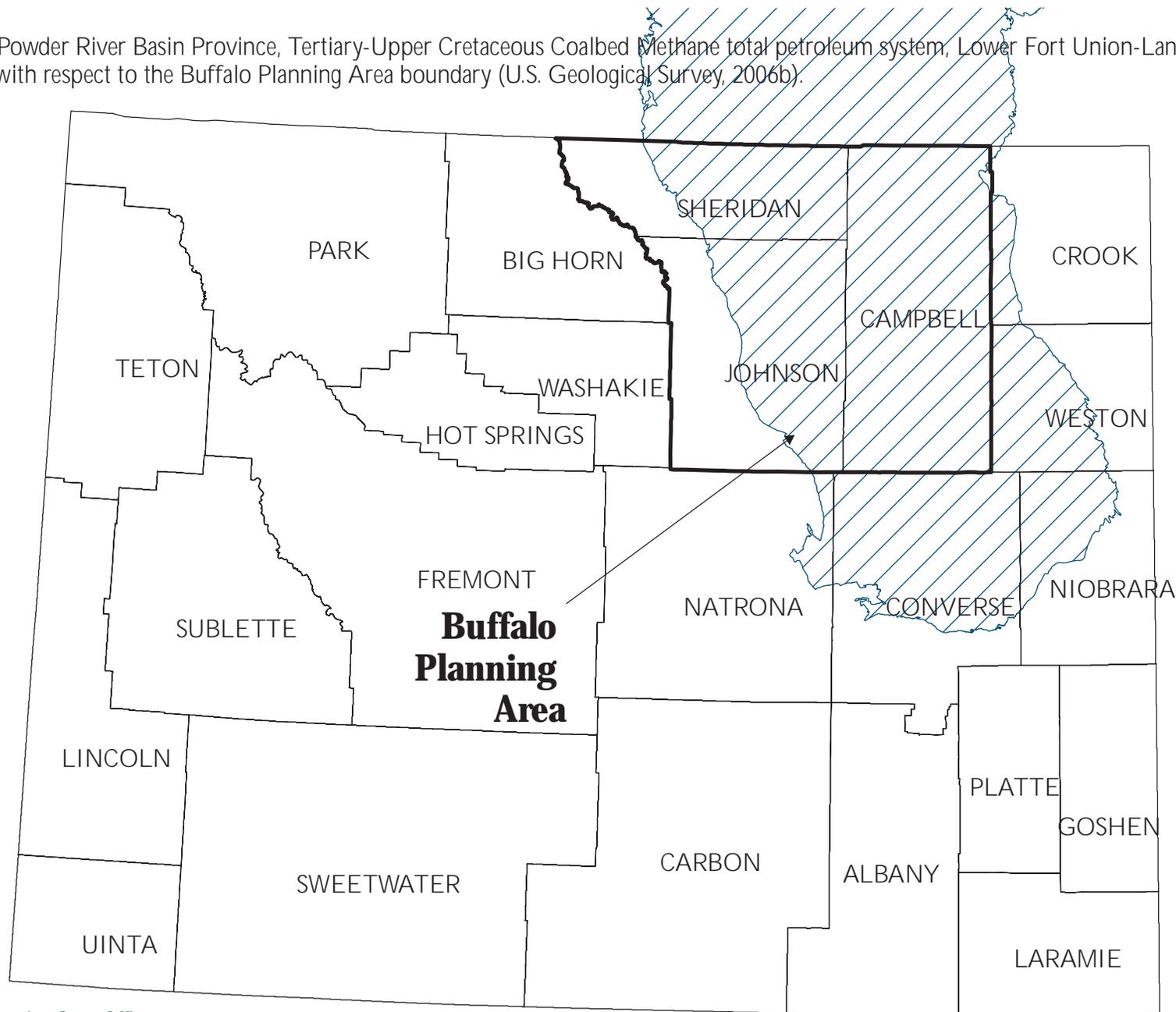
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 59.

Location of the Powder River Basin Province, Tertiary-Upper Cretaceous Coalbed Methane total petroleum system, Lower Fort Union-Lance Formations assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group



August, 2012

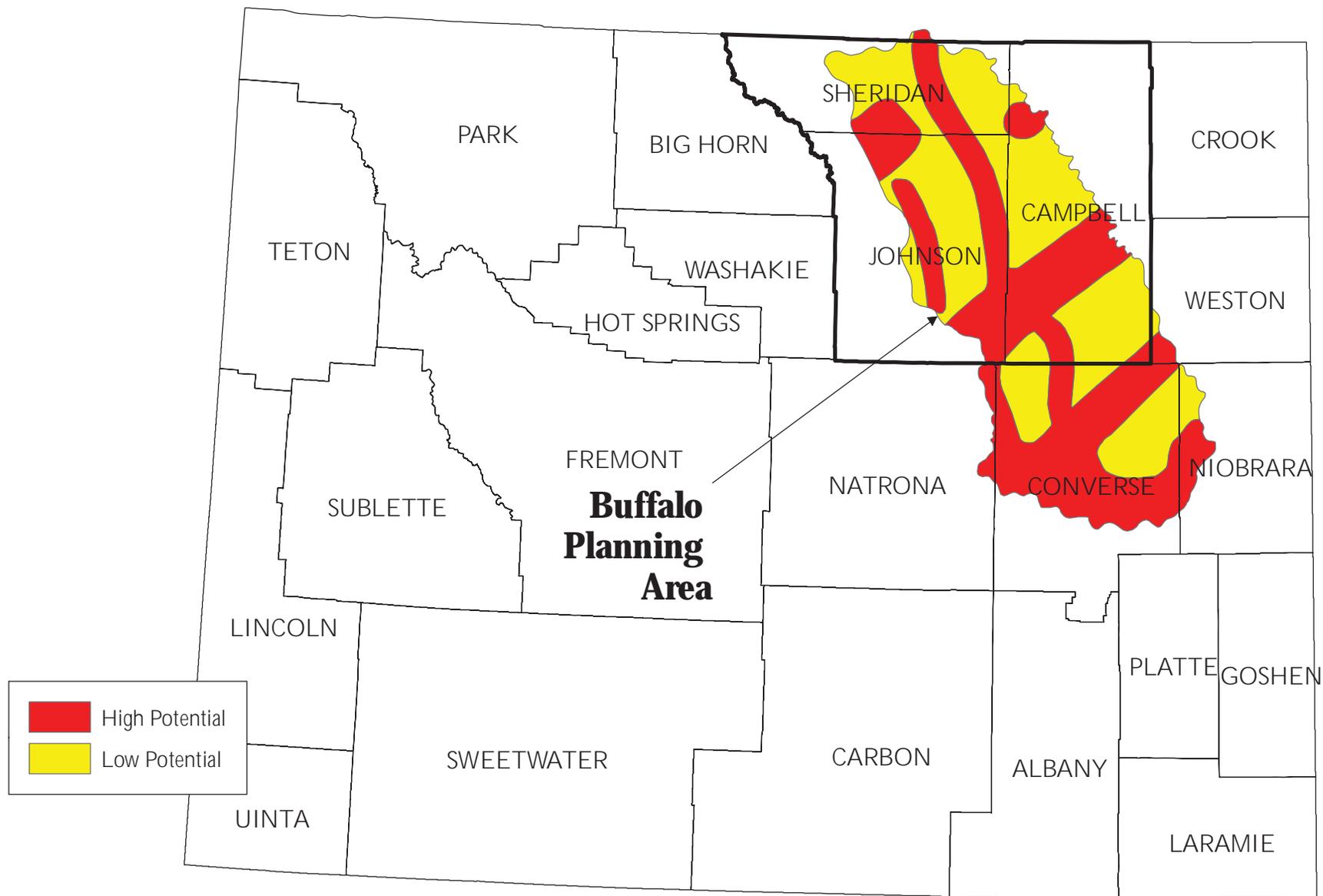
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 60.

Location of the Powder River Basin Province, Mowry total petroleum system, Mowry Continuous Oil assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group

August, 2012

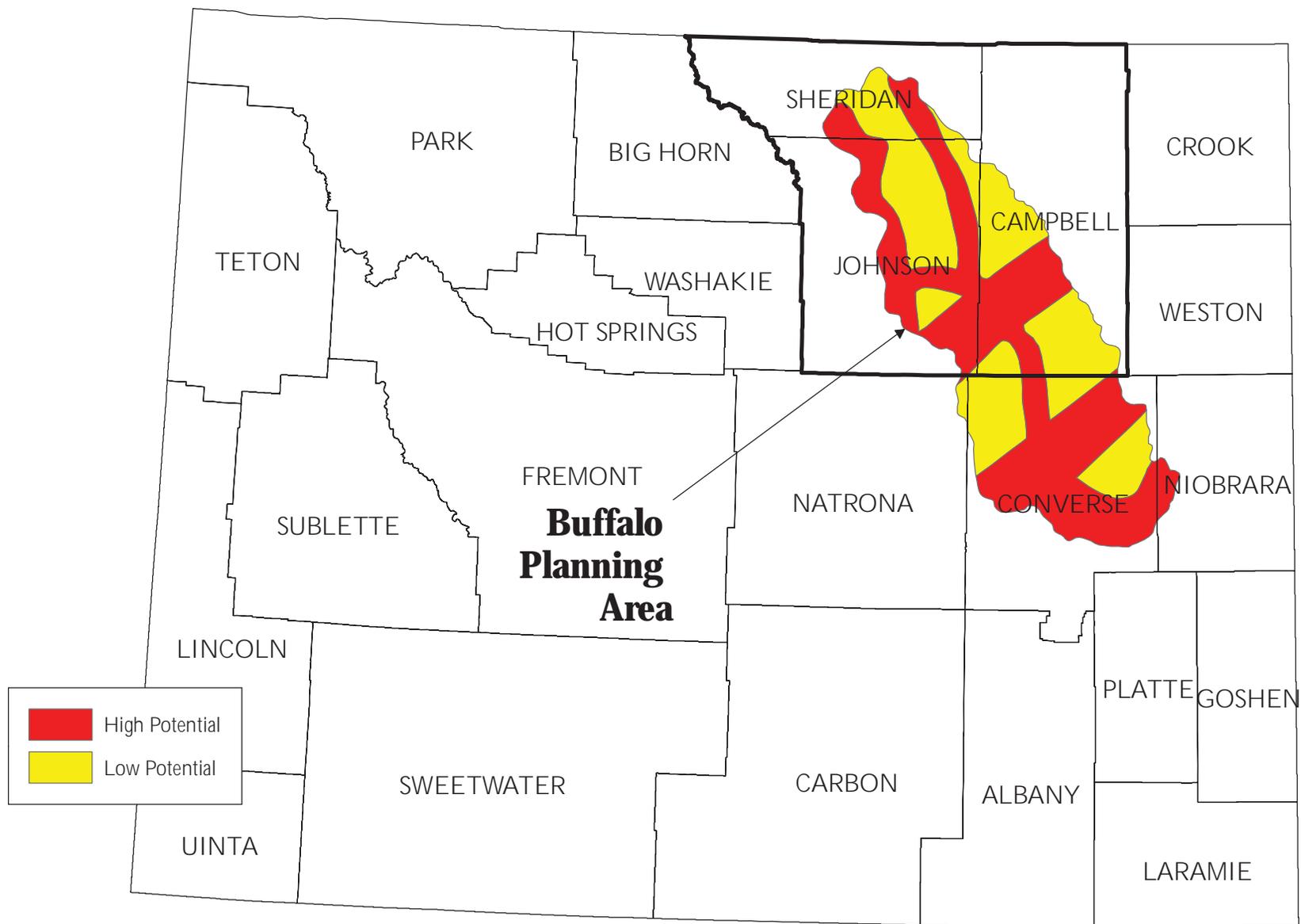
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 61.

Location of the Powder River Basin Province, Niobrara total petroleum system, Niobrara Continuous Oil assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group

August, 2012

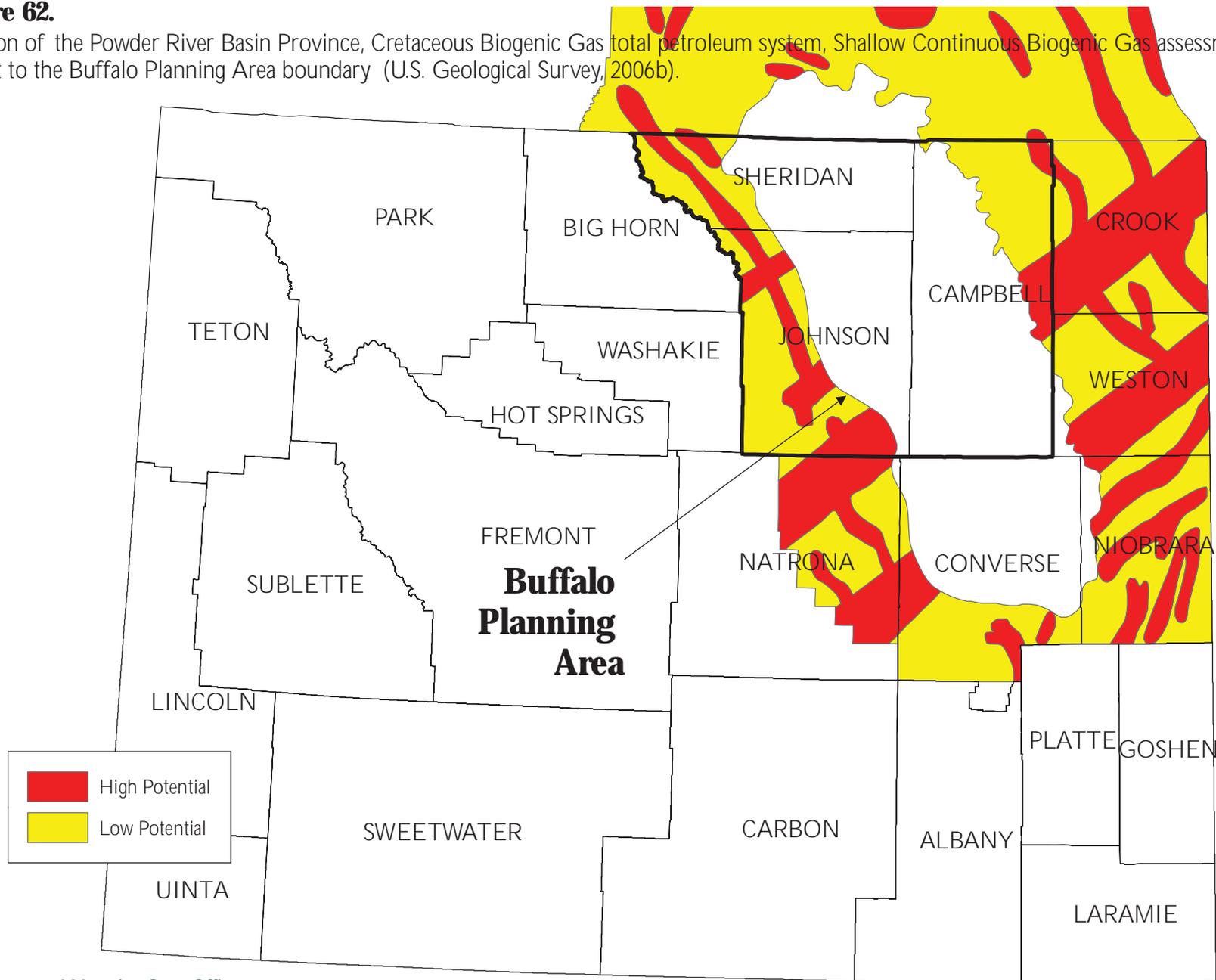
Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 62.

Location of the Powder River Basin Province, Cretaceous Biogenic Gas total petroleum system, Shallow Continuous Biogenic Gas assessment unit with respect to the Buffalo Planning Area boundary (U.S. Geological Survey, 2006b).



Wyoming State Office
Reservoir Management Group

August, 2012

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 63. Wyoming historical natural gas prices with future natural gas price projections (Energy Information Administration, 2012).

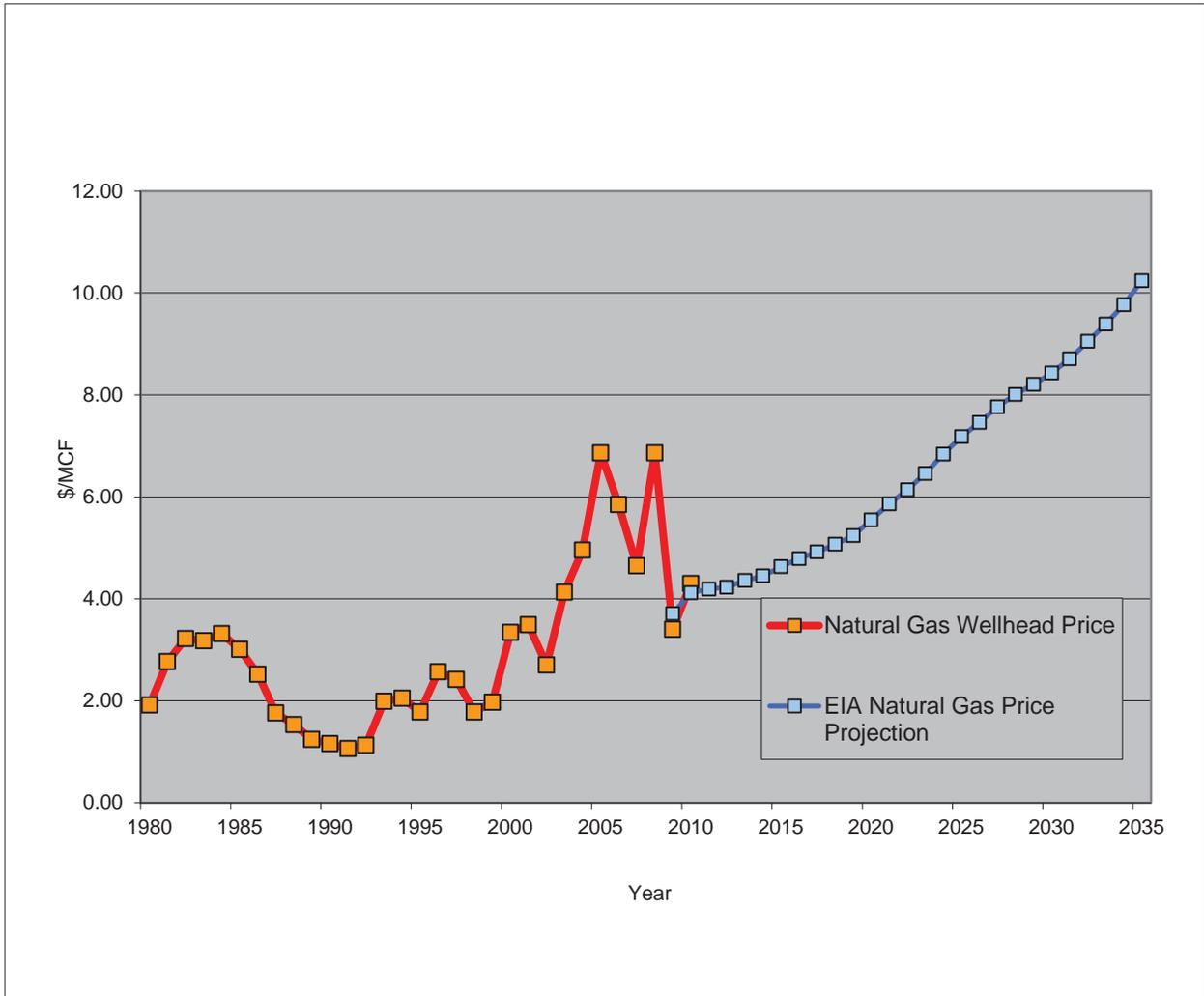


Figure 64. Wyoming historical crude oil prices with future crude oil price projections (Energy Information Administration, 2012).

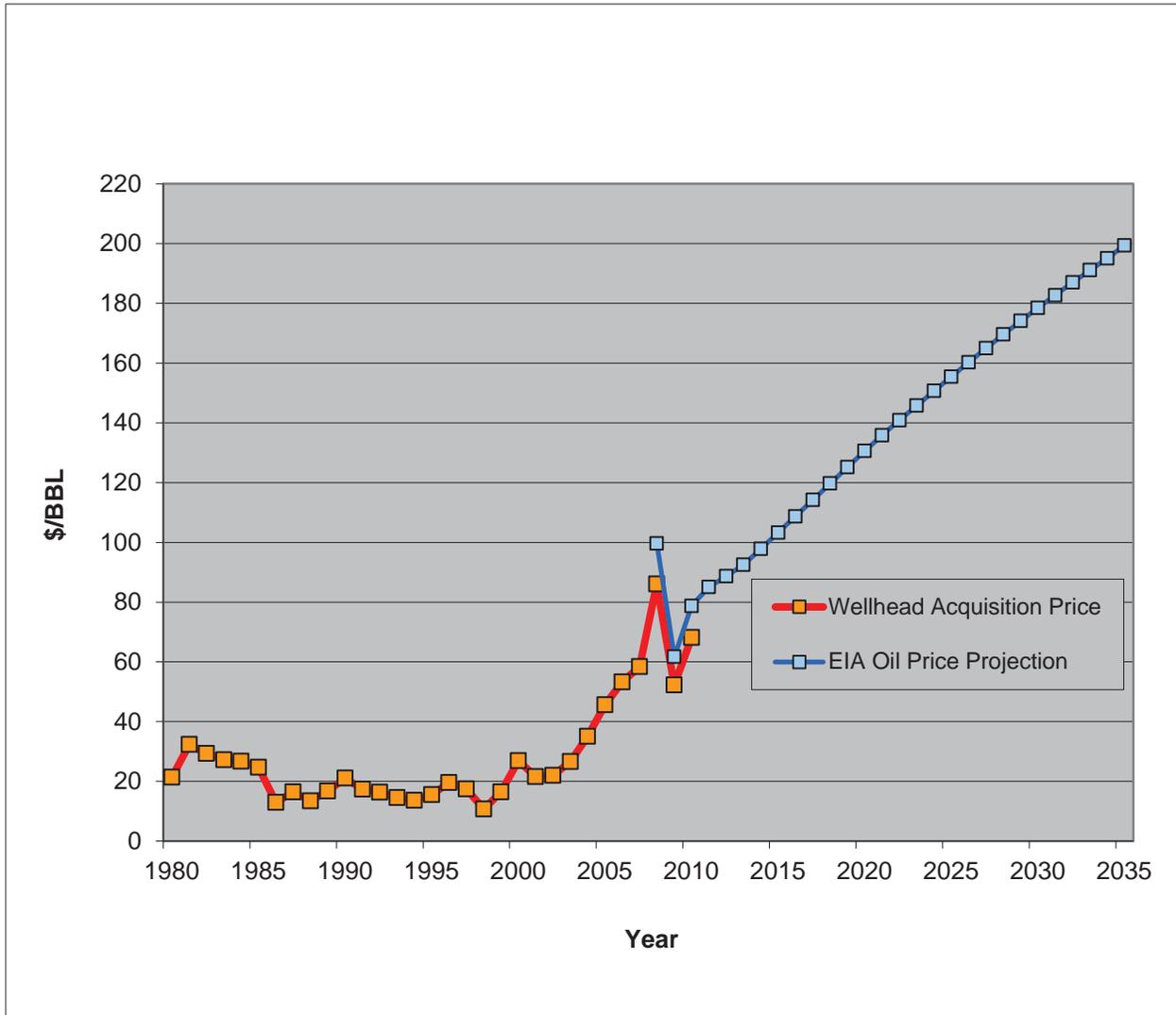
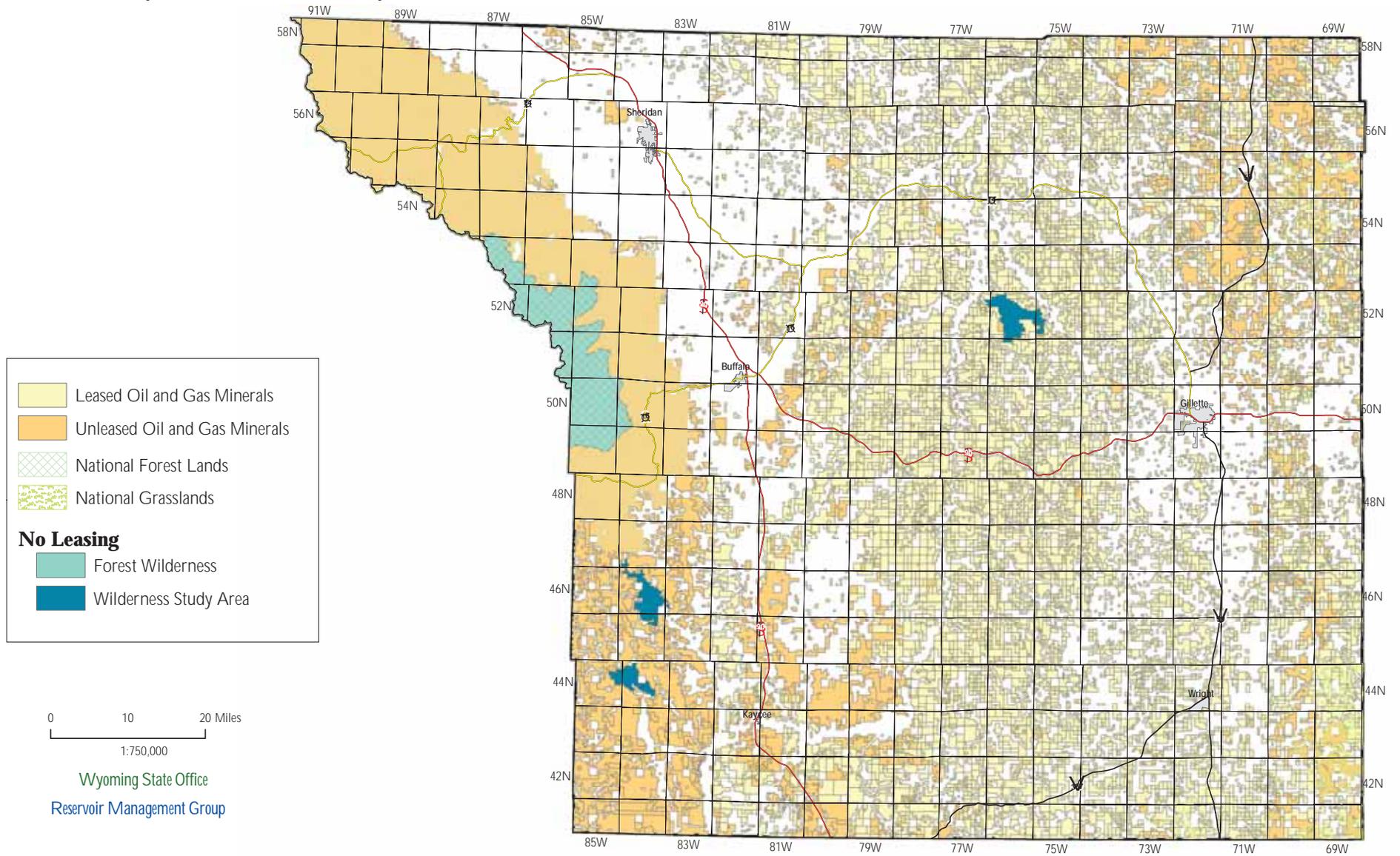


Figure 65.

Leased and unleased Federal oil and gas minerals within the Buffalo Planning Area. Data from Bureau files.



August, 2012

Dean Stilwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 66. Federal acreage leased annually via competitive oil and gas lease sales for the counties within the Buffalo Planning Area. Acreage which did not receive a minimum bid and was leased after the sale is not included. Data were compiled from Federal Oil and Gas Lease Sales results.

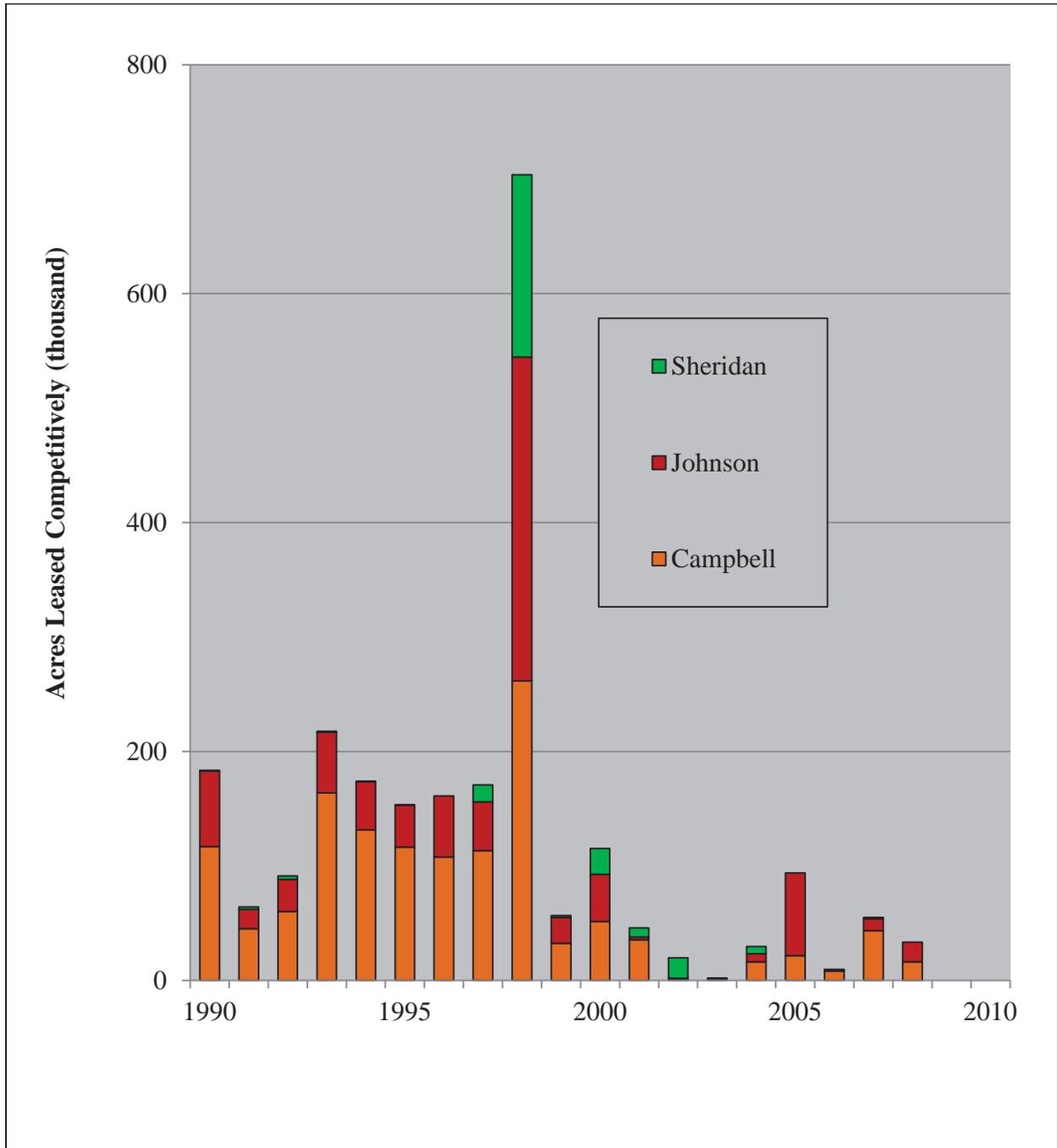


Figure 67. Federal receipts for lease bonus payments for Buffalo Planning Area acreage leased competitively at oil and gas lease sales. Federal lease sales in 1998 were almost entirely for coalbed natural gas development. Data were compiled from Federal Oil and Gas Lease Sale results.

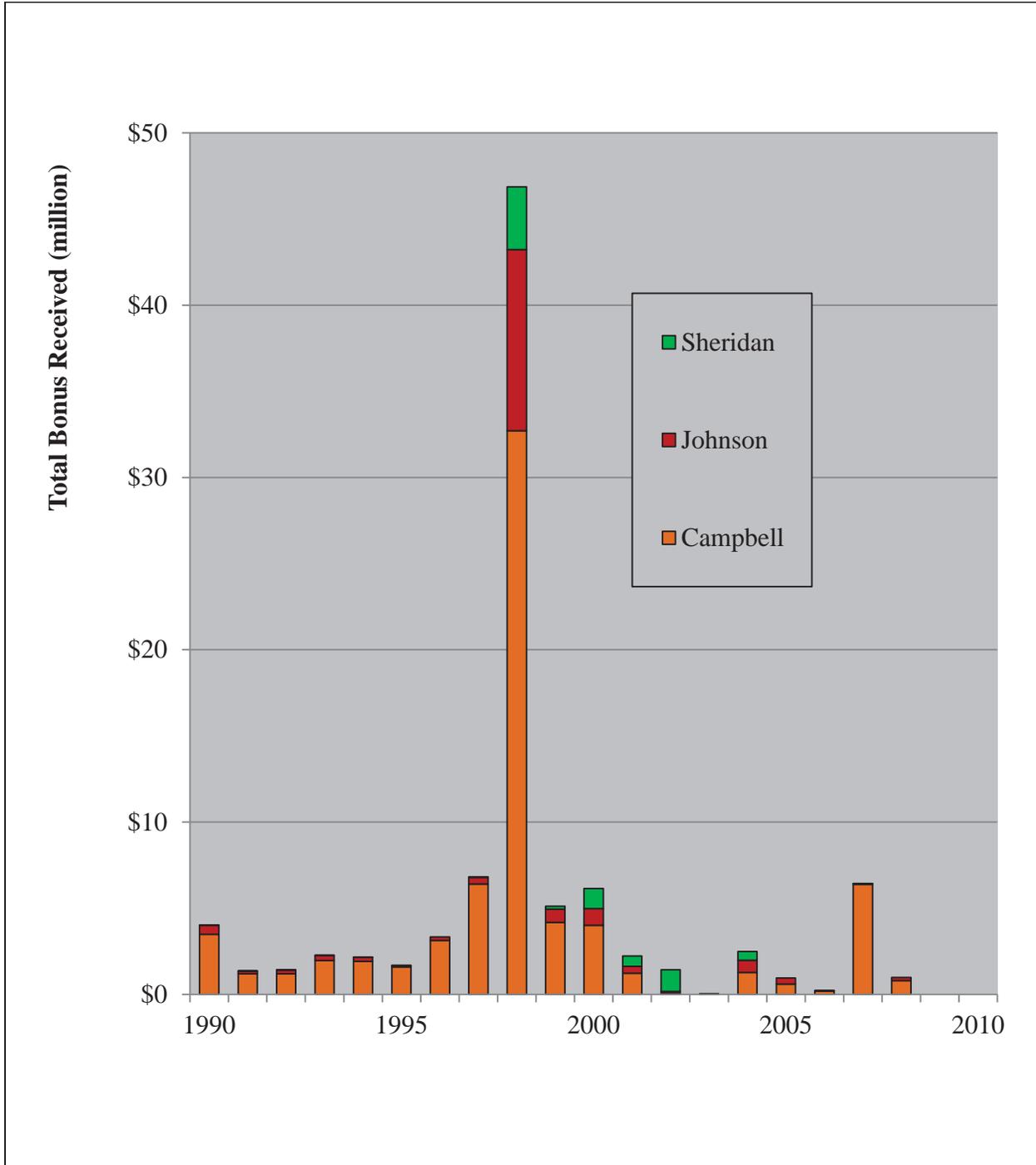
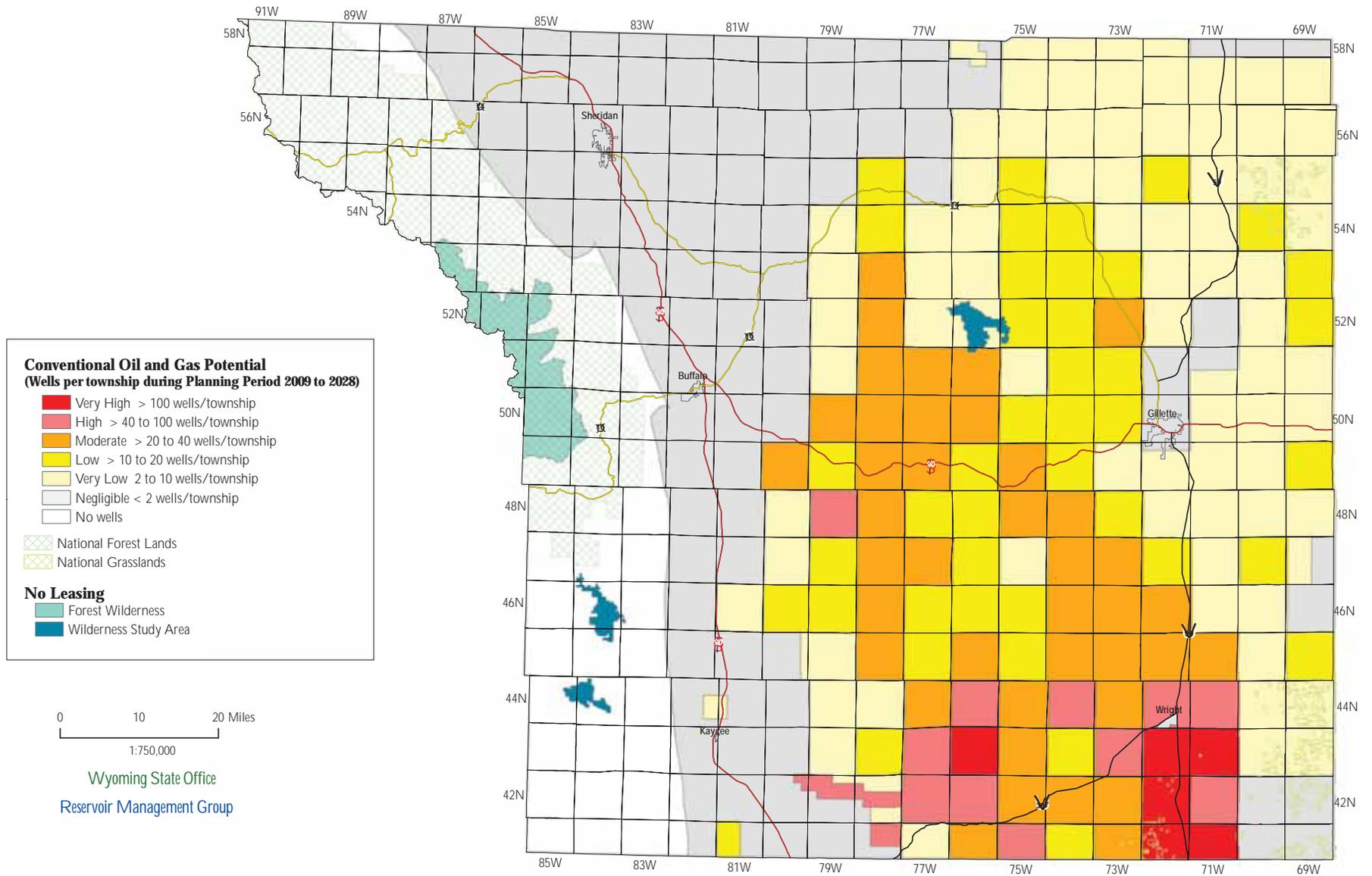


Figure 68.
Conventional oil and gas development potential and projected drilling densities within the Buffalo Planning Area for 2009 through 2028.



August, 2012

Dean Stillwell, Geologist
Al Elser, Geologist
Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Figure 69. Annual drilling and plugging rates predicted for coalbed natural gas wells in the Buffalo Planning Area. High and low projections are shown for projected drilling. Data are from the Wyoming Oil and Gas Conservation Commission website (2012) and IHS Energy Group (2012).

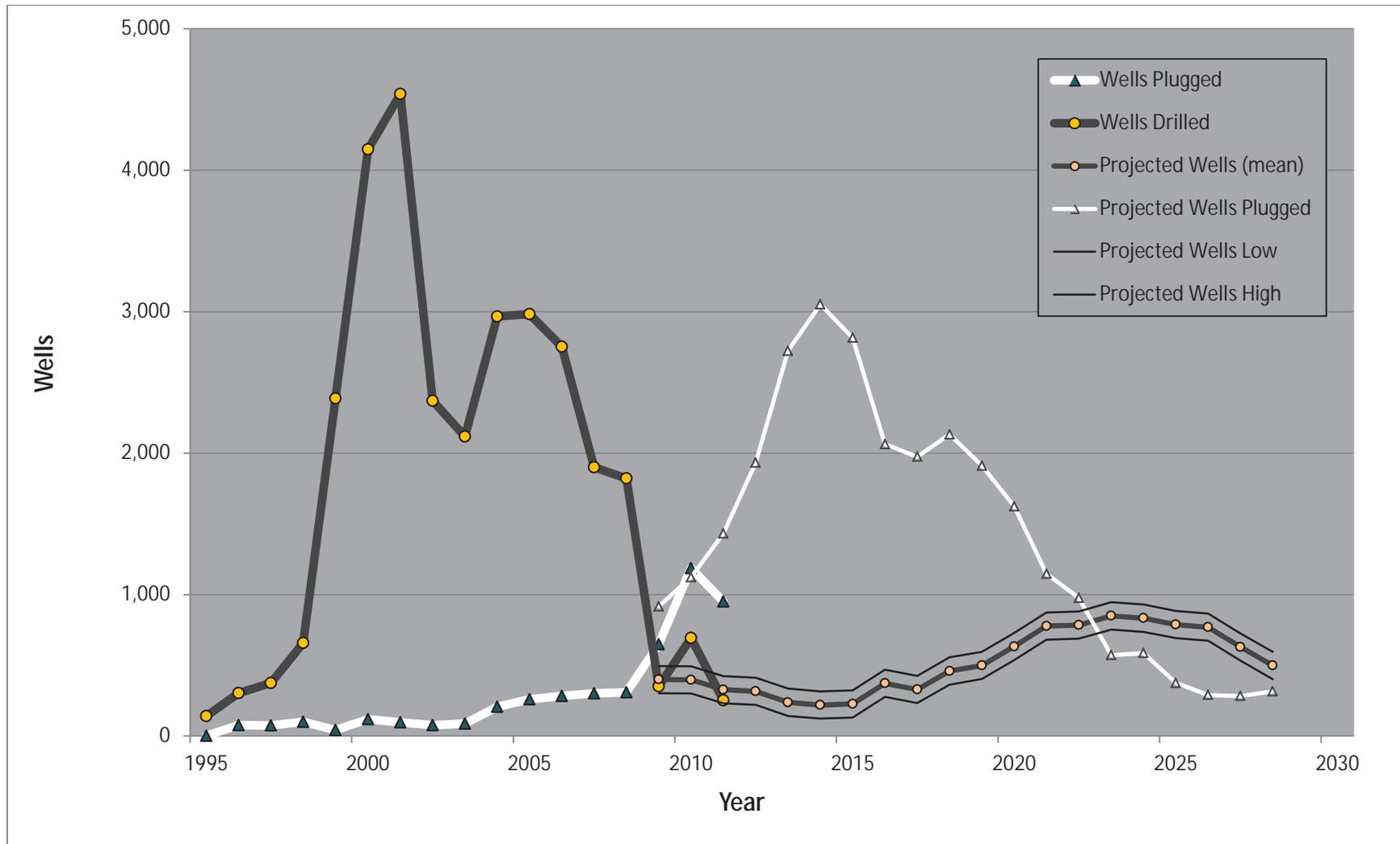
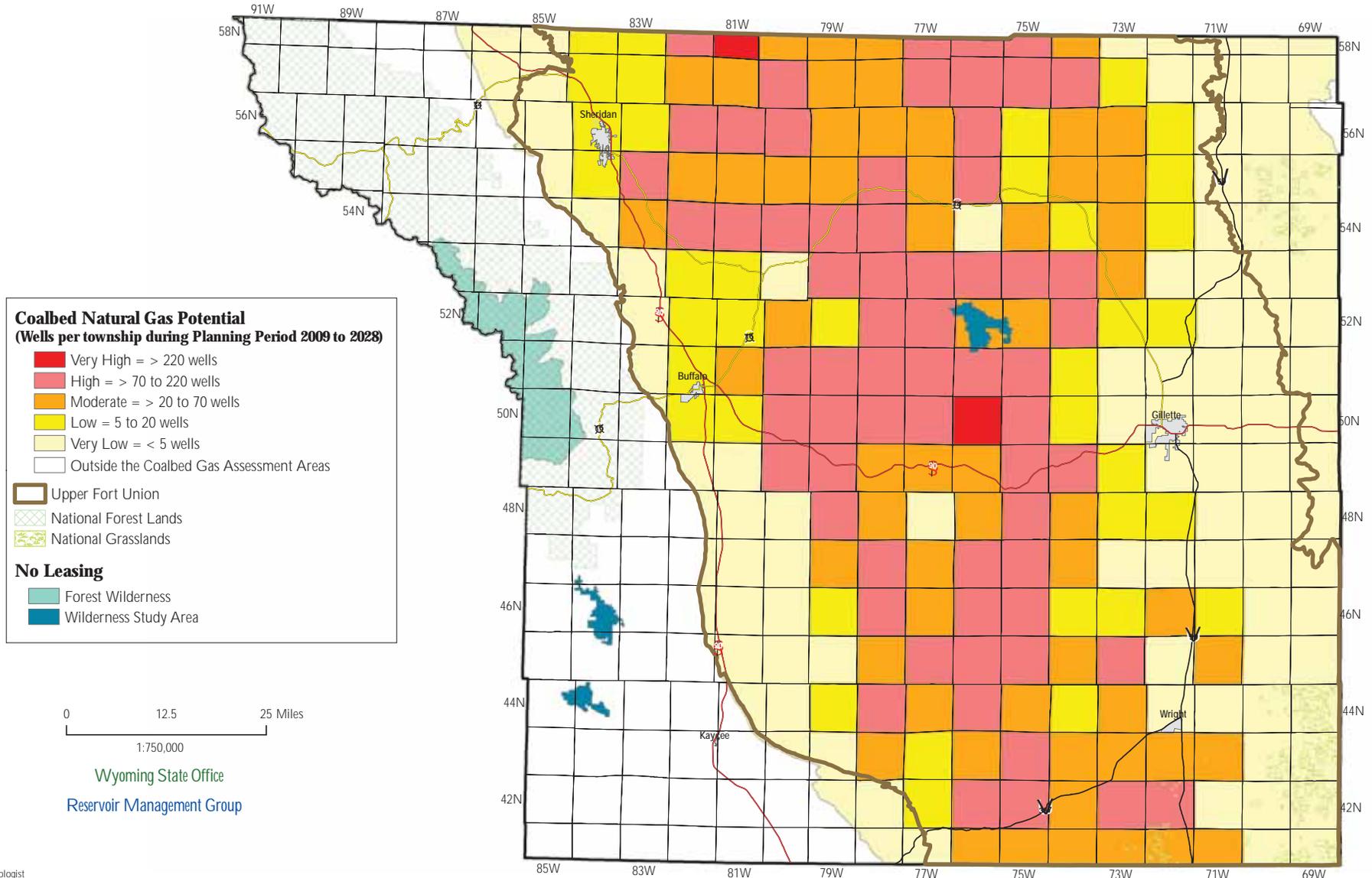


Figure 70.
Coalbed natural gas development potential within the Buffalo Planning Area for 2009 through 2028.



August, 2012

Dean Stilwell, Geologist
 Al Elser, Geologist
 Fred Crockett, Geologist
 Stan Lawrence, Petroleum Engineer

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources. This information was developed through digital means and may be updated without notification.



Table 1.

Buffalo Planning Area conventional oil and gas productive zones; cumulative oil, gas, and water production; production ranking; and percent of production (through December, 2008). Data modified from IHS Energy Group (2009).

	PRODUCTION ZONE	CUMULATIVE OIL (barrels)	OIL RANK/PERCENT	CUMULATIVE GAS (thousand cubic feet)	GAS RANK/PERCENT	CUMULATIVE WATER (barrels)
1	CROW MOUNTAIN	5,102,479	11/0.4159	94,620	21/0.0068	39,435,041
2	DAKOTA	28,326,493	8/2.3091	108,655,984	3/7.8632	10,905,958
3	DAKOTA/TURNER	18,713	25/0.0015	130,415	19/0.0094	11,198
4	FOX HILLS	68,508	22/0.0056	170,194	17/0.0123	3,280,971
5	FRONTIER	11,897,108	9/0.9698	59,183,407	4/4.2830	5,661,066
6	FRONTIER-DAKOTA	18,348	26/0.0015	669,666	15/0.0485	918
7	LAKOTA	9,002,916	10/0.7339	22,149,270	7/1.6029	5,492,102
8	MINNEKAHTA	5,431	29/0.0004	0	29/0.0000	31,737
9	MINNELUSA	496,943,586	1/40.5098	13,356,894	8/0.9666	1,878,859,217
10	MORRISON	2,078	30/0.0002	0	30/0.0000	42,900
11	MOWRY	297,692	18/0.0243	425,082	16/0.0308	22,885
12	MUDDY	256,572,898	2/20.9152	914,153,664	1/66.1554	742,183,003
13	MUDDY/DAKOTA	26,999	23/0.0022	165,674	18/0.0120	547
14	MUDDY-MOWRY	1,745,901	14/0.1423	2,737,138	10/0.1981	722,144
15	MUDDY/TURNER	438,142	17/0.0357	2,241,433	11/0.1622	14,119
16	NEWCASTLE	215,270	19/0.0175	86,256	22/0.0062	62,331
17	NIOBRARA	631,629	15/0.0515	1,282,030	13/0.0928	30,106
18	NIOBRARA/TURNER	20,198	24/0.0016	9,417	28/0.0007	469
19	PARKMAN	33,626,732	7/2.7412	7,720,005	9/0.5587	40,356,023
20	PARKMAN/NIOBRARA/TURNER	82,116	20/0.0067	54,501	24/0.0039	36,431
21	PARKMAN-SUSSEX-TURNER	7,814	28/0.0006	11,255	27/0.0008	9,399
22	SHANNON	204,666,527	3/16.6840	135,546,369	2/9.8092	140,402,912
23	SUNDANCE	2,000,164	13/0.1630	96,371	20/0.0070	1,113,878
24	SUSSEX	63,873,911	4/5.2069	53,422,890	6/3.8661	46,922,966
25	SUSSEX-PARKMAN	71,441	21/0.0058	53,393	25/0.0039	39,623
26	TEAPOT	498,530	16/0.0406	84,979	23/0.0061	11,061
27	TECKLA	1,249	31/0.0001	0	31/0.0000	444
28	TENSLEEP	58,715,756	5/4.7864	2,076,529	12/0.1503	426,949,776
29	TENSLEEP-AMSDEN	49,394,882	6/4.0266	1,197,726	14/0.0867	162,306,351
30	TURNER	2,434,188	12/0.1984	56,018,714	5/4.0540	239,620
31	UNKNOWN	16,353	27/0.0013	0	32/0.0000	0
32	WASATCH	0	32/0.0000	33,071	26/0.0024	0
	TOTALS	1,226,724,052		1,381,826,947		3,505,145,196

Table 2.
Buffalo Planning Area conventional oil and gas productive fields and well status. Data modified from HIS Energy Group (2009).

FIELD	OIL (barrels)	GAS (thousand cubic feet)	WATER (barrels)	ACTIVE WELLS	INACTIVE WELLS	TOTAL WELLS
1 ADON	29,813	0	0	0	1	1
2 ADON NORTH	288,982	2,943	2,864,378	2	1	3
3 ADON ROAD	2,760,904	12,369	4,631,730	3	5	8
4 ADON ROAD NORTH	1,757,595	34,352	2,876,660	6	1	7
5 ADON SOUTH	104,038	1,812	1,206,390	0	1	1
6 AG FARM	1,425,927	0	4,533,736	3	1	4
7 ALICIA	205,180	6,014,727	33,464	5	0	5
8 ALLISON	95,448	0	1,738	1	0	1
9 ALLISON SOUTH	18,542	0	0	0	1	1
10 ALPHA	5,701,596	24,843	12,610,557	8	4	12
11 AM-KIRK	2,292,151	781,026	2,806,034	6	6	12
12 AMOS DRAW	2,714,235	68,578,876	377,954	41	5	46
13 AMP	2,733	10,220	5,665	0	1	1
14 ANDY	1,098,991	25,384,173	126,510	13	7	20
15 APOSTOLOS	11,028	38,968	0	0	1	1
16 ARCHIBALD	615,594	1,703,092	1,276	2	6	8
17 ARROW	20,502	0	0	0	1	1
18 ARVADA	5,614	0	158,242	0	1	1
19 ASH	910,095	0	2,525,048	2	1	3
20 ASH CREEK	6,277,886	33,486	12,566,739	2	28	30
21 ASH CREEK SOUTH	7,516,173	153,291	31,835,278	9	10	19
22 ASH DRAW	1,013,072	15,376	10,773,062	3	4	7
23 BAR CREEK	1,290	7,153	3,670	0	1	1
24 BAR U DRAW	91,472	0	158,968	0	2	2
25 BARBER CREEK	5,641,236	689,552	8,926,762	14	18	32
26 BARBER CREEK EAST	6,922	10,528	90	0	1	1
27 BARBER CREEK WEST	735,290	60,990	225,450	2	5	7
28 BASIN	814,204	37,102	312,421	0	7	7
29 BASIN NORTHWEST	1,831,899	216,510	911,972	5	6	11
30 BAUMFALK	26,477	2,620	4,148	0	1	1
31 BEAVER DRAW	1,623	0	2,726	0	1	1
32 BERTHA	295,525	17,527	106,456	2	5	7
33 BETHLEHEM	288,882	514,980	57,866	4	3	7
34 BIG CAT	60,759	27,270	572	4	0	4
35 BIG HAND	7,783,285	2,974,002	3,757,378	12	46	58
36 BIG MAC	1,026,415	2	2,178,266	3	3	6
37 BIGFOOT	983,274	0	1,186,037	2	3	5
38 BISHOP RANCH	612,232	9,006	1,893,986	0	3	3
39 BISHOP RANCH EAST	28,296	0	57,716	0	1	1
40 BISHOP RANCH SOUTH	4,443,093	126,659	3,442,984	2	13	15
41 BLACK BILL	4,446	408,753	1,743	1	0	1
42 BLACK ROCK DRAW	133,560	150,427	152,463	1	1	2
43 BLUEBIRD	4,393	18,563	58,599	0	2	2
44 BOGIE DRAW	69,954	12,508	192,543	0	4	4
45 BONE PILE	8,819,287	795,994	10,540,942	19	5	24
46 BOOTON	485,267	86,236	652,744	1	1	2
47 BOWMAN HILL	12,967	0	6,026	0	2	2
48 BOZEMAN TRAIL	484,919	1,836,191	8,806	2	3	5
49 BRACKEN	1,931,354	28,270	15,442,365	8	0	8
50 BREAKS	3,579,684	1	21,155,483	6	0	6
51 BREEN	3,078,644	270,360	2,218,052	9	8	17
52 BRENNAN	3,623,945	206,460	2,551,889	3	5	8
53 BRIDGE DRAW	2,737,858	256,393	2,848,995	13	26	39
54 BRONCO	194,885	93	127,057	1	2	3
55 BUCK DRAW	616,916	3,838,534	104,367	2	5	7
56 BUCK DRAW NORTH	24,435,791	90,175,136	1,269,471	25	3	28
57 BUFF	802,522	5,574,498	51,364	11	4	15
58 BUGHER DRAW	58,433	41,501	172,836	0	4	4
59 BULL CREEK	3,127,307	0	13,106,008	3	2	5
60 BULL CREEK NORTH	634,022	103	8,918,698	0	3	3
61 BULLMARCH	216,126	92	33,986	0	3	3
62 BUTTE	48,987	24,594	69,349	1	3	4
63 BUTTE CREEK	354,442	0	1,419,359	0	3	3
64 C-H	5,421,150	23,146	23,229,381	0	15	15
65 CABIN CREEK	2,316	180	9,875	0	1	1

Table 2.
Buffalo Planning Area conventional oil and gas productive fields and well status. Data modified from HIS Energy Group (2009).

FIELD	OIL (barrels)	GAS (thousand cubic feet)	WATER (barrels)	ACTIVE WELLS	INACTIVE WELLS	TOTAL WELLS	
66	CAMP CREEK	6,246,304	496	4,633,610	7	7	14
67	CAMP CREEK NORTHWEST	60,528	0	37,413	1	0	1
68	CANCUN	162,196	25,665	66,112	2	0	2
69	CANDY DRAW	3,989,193	0	5,500,093	12	2	14
70	CARDINAL	276,495	3,731	3,034,625	2	2	4
71	CARSON	2,003,440	3,937,801	880,069	7	21	28
72	CARSON WEST	28,566	1,383	12,667	0	1	1
73	CEDAR DRAW	30,081	1,300,278	13,330	3	0	3
74	CELLARS RANCH	6,140,409	2,978	33,043,043	9	8	17
75	CHALK HILLS	12,777	4,008	5,941	0	1	1
76	CHAN	4,655,797	4,893,013	3,484,268	16	27	43
77	CLABAUGH	704,113	46,860	211,407	5	3	8
78	CLEARWATER	78,223	0	20	1	0	1
79	CLUBHOUSE	25,188	67,796	0	0	1	1
80	COAL CREEK	361,487	0	2,688,852	2	0	2
81	COLLINS	1,197,321	775,320	4,751	7	0	7
82	COLLUMS	8,359,408	9,409,343	32,054,899	2	48	50
83	CORONA	96,756	22,421	146,570	1	2	3
84	CRAWFORD DRAW	2,045,890	11,191,214	13,798	8	2	10
85	CULP DRAW	6,416,163	3,095,252	2,368,190	55	7	62
86	DEAD HORSE CREEK	11,596,720	2,997,427	5,407,542	18	49	67
87	DEAD HORSE CREEK SOUTH	1,912,106	229,867	6,684,364	12	8	20
88	DEEP DRAW	471,335	0	1,716	2	1	3
89	DEER FLY	1,222,249	7,625	2,093,321	4	5	9
90	DEER FLY SOUTH	379,592	0	786,885	2	1	3
91	DEMOTT DRAW	53,440	0	29,215	1	1	2
92	DEMOTT DRAW WEST	243,801	4,631	16,401	0	2	2
93	DENNEL DRAW	9,730	63,871	537	0	1	1
94	DILLINGER RANCH	16,354,110	1,576,313	65,174,305	12	32	44
95	DILLINGER RANCH EAST	187,625	198,877	25,623	3	2	5
96	DITTO LAKE	125,072	0	9,367	0	2	2
97	DOE	206,631	8,323	146,048	0	3	3
98	DONKEY CREEK	140,409	0	36,810	1	1	2
99	DOUBLE SHIELD	888,022	1,707	3,303,408	3	3	6
100	DOUD SOUTHEAST	94,858	0	6,990	1	0	1
101	DRY CREEK	1,346	808	14	0	1	1
102	DRY GULCH	5,197,058	140,738	17,030,030	11	7	18
103	DUCK CREEK	310,460	1,065	8,615	1	3	4
104	DUCK NEST CREEK	15,404	0	6,087	0	2	2
105	DUNLAP	206,532	0	134,353	0	1	1
106	DUTCH	4,021,823	66,826	8,106,346	6	5	11
107	DUTCH RESERVOIR	999	0	25,028	0	2	2
108	DUVALL RANCH	14,567,599	46,550	24,249,908	20	21	41
109	EAGLE ROCK	138,891	4,710	82,131	0	2	2
110	EAST DRAW	33,098	9,570	27,312	0	1	1
111	EAST FORK	71,464	0	0	1	0	1
112	ECHETA	14,932	511,831	5,656	2	0	2
113	EIGHTY-FIVE CREEK	48,787	0	2,637,420	0	1	1
114	EINAR	270,296	0	62,553	0	4	4
115	ELK CREEK	50,021	2,742	2,166	0	2	2
116	ELK DRAW	397,055	9,505,454	69,484	17	5	22
117	EMPIRE	1,688,783	874,571	3,444,533	6	14	20
118	ENYARD DRAW	1,154	515	33,417	0	2	2
119	FALCON RIDGE	2,056,296	65,838	5,258,697	6	2	8
120	FD	3,218,129	84,474	7,213,760	7	4	11
121	FELIX	836,217	18,381,203	52,327	11	3	14
122	FENCE CREEK	3,188,202	898,967	3,075,716	9	21	30
123	FENTON	457,488	4,932,733	2,606	2	2	4
124	FISH	721,722	0	262,021	2	3	5
125	FISHING LAKE	28,809	0	772	1	0	1
126	FLAT CREEK	146,426	0	6,316	3	0	3
127	FLAT DRAW	0	0	0	0	1	1
128	FLORIDA	215,519	30,540	69,251	2	1	3
129	FLYING E	115,248	107,587	3,904	0	3	3

Table 2.
Buffalo Planning Area conventional oil and gas productive fields and well status. Data modified from HIS Energy Group (2009).

FIELD	OIL (barrels)	GAS (thousand cubic feet)	WATER (barrels)	ACTIVE WELLS	INACTIVE WELLS	TOTAL WELLS
130 FOURCHE	112,768	29,534	273,009	0	4	4
131 FOURMILE	2,323,898	170,445	7,294,669	4	2	6
132 GAITHER DRAW	275,138	38,979	39,553	6	1	7
133 GAP	1,318,028	0	874,495	1	3	4
134 GARNER LAKE	682,193	18	328,090	2	2	4
135 GARNER LAKE NORTH	475,000	0	345,373	2	1	3
136 GAS DRAW	27,382,584	12,802,935	135,218,545	17	75	92
137 GAS DRAW EAST	934,591	204,821	3,310,743	1	3	4
138 GIBBS	3,784,783	103,502	3,161,102	9	2	11
139 GIBBS NORTH	7,707	0	0	0	1	1
140 GIBBS SOUTH	600,916	196,634	1,389,695	1	0	1
141 GLASSER DRAW	57,122	29,111	2,046	1	2	3
142 GLO	899,210	0	206,814	4	1	5
143 GLO NORTH	2,484,112	310	4,419,598	5	1	6
144 GOER DRAW	7,432	145	0	1	0	1
145 GOLD MINE DRAW	349,985	0	318,163	1	4	5
146 GRASSLAND	71,321	0	0	0	1	1
147 GRASSLAND WEST	528,050	22,410	1,251,703	1	2	3
148 GRAY	0	0	0	0	1	1
149 GRAY SOUTH	723,586	0	557,276	1	1	2
150 HA CREEK	894,138	24,956,513	141,966	30	9	39
151 HAIGHT	2,067,365	320,266	3,154,736	9	2	11
152 HAL	64,902	0	58,586	2	0	2
153 HALVERSON	15,500,840	353,811	42,386,096	18	27	45
154 HALVERSON NORTH	536,906	0	29,740	2	0	2
155 HAMM	8,046,042	81,130	32,882,394	4	5	9
156 HARPER DRAW	53,586	23,784	4,240	2	0	2
157 HARTZOG DRAW	114,278,627	40,554,056	27,035,019	361	35	396
158 HARTZOG DRAW EAST	13,497	31,209	290	0	1	1
159 HATCH	45,146	72,711	491	1	0	1
160 HAWK POINT	4,798,145	1,229,660	12,218,216	0	10	10
161 HAWKEYE	69,029	0	0	1	0	1
162 HAY	4,682	0	81	0	1	1
163 HELDT DRAW	7,317,091	4,413,661	2,425,704	39	5	44
164 HELLS DRAW	76,106	31,954	1,347	0	1	1
165 HIGH ROAD	1,343,122	189,785	2,422,635	2	2	4
166 HILDA	597,631	14,413	2,137,977	2	0	2
167 HILIGHT	76,516,631	279,422,048	404,558,501	190	213	403
168 HINES	120,524	891,737	5,352	3	5	8
169 HIRSCH	84,744	103,957	313	1	0	1
170 HOE CREEK	98,757	2,507	43,247	0	2	2
171 HOLLER DRAW	3,100,273	1,784,647	402,662	16	16	32
172 HOME	396,089	64,867	170,643	0	1	1
173 HOOVER GULCH	727,270	2,861	1,260,566	3	0	3
174 HOUSE CREEK	39,700,894	23,024,734	41,878,069	317	65	382
175 HOUSE CREEK NORTH	174,102	99,433	17,712	3	1	4
176 HOUSE CREEK WEST	902,315	724,142	380,399	13	5	18
177 HUGHIE DRAW	105,742	0	766,502	1	1	2
178 HUNTER RANCH	1,048,140	603,256	3,522,731	9	6	15
179 IBERLIN	1,394,079	439,946	794,362	5	27	32
180 INDIAN CREEK	3,248,294	4,053,323	1,396,164	9	17	26
181 INDIAN TREE	2,038,958	0	4,200,038	5	3	8
182 INFINITY	4,645	0	4,331	0	1	1
183 INTERSTATE	448,937	1,035,960	26,083	1	3	4
184 IRVINE	1,797	405	4	0	1	1
185 JACKELOPE	129,745	0	36,772	0	2	2
186 JAY DRAW	40,097	0	18,486	1	0	1
187 JAZBO	1,483,251	0	11,472,373	4	2	6
188 JEFFERS DRAW	7,825	75,357	323	1	0	1
189 JEPSON DRAW	2,863,650	413,365	41,983	16	25	41
190 JOE CREEK	2,222,839	2,999,462	1,734,820	7	9	16
191 JOHNSON DRAW	9,528	46,316	7,766	0	1	1
192 JOY DRAW	3,369	780	2,520	0	1	1
193 JOYCES	122,928	13,738	165,461	0	1	1
194 JUNCTION	31,319	24,363	187	0	1	1

Table 2.
Buffalo Planning Area conventional oil and gas productive fields and well status. Data modified from HIS Energy Group (2009).

FIELD	OIL (barrels)	GAS (thousand cubic feet)	WATER (barrels)	ACTIVE WELLS	INACTIVE WELLS	TOTAL WELLS
195 JUNIPER DRAW	61,904	34,625	2,135	1	2	3
196 K BAR	1,062,552	704,086	1,644,745	20	10	30
197 KAMON	8,062	424	9,599	0	1	1
198 KANE	1,270,481	32,097	4,721,584	1	3	4
199 KICKEN DRAW	866,857	0	441,840	4	0	4
200 KINGSBURY CREEK	637,391	11,353,274	50,129	5	5	10
201 KINGSBURY ROAD	4,984	17,692	23,173	0	2	2
202 KITTY	21,718,099	124,455,344	580,511	150	139	289
203 KUEHNE RANCH	4,647,134	29,511	6,579,817	14	3	17
204 KUEHNE RANCH EAST	810,406	16,276	1,643,959	6	4	10
205 KUEHNE RANCH NORTHEAST	167,308	0	143,726	0	3	3
206 KUEHNE RANCH SOUTHEAST	3,464,552	103,772	9,857,489	4	8	12
207 L-X BAR	923,107	4,609,564	176,983	0	14	14
208 LANE	107,011	0	1,049,391	0	3	3
209 LANEY	4,195	0	31,771	0	1	1
210 LAZY B	3,067,694	7,220,071	2,777,481	8	14	22
211 LEE DRAW	9,059	0	0	0	1	1
212 LEWIS	110,569	30,350	90,312	0	2	2
213 LITTLE	28,915	0	265,071	0	2	2
214 LITTLE BUGHER DRAW	3,133	40,614	13,168	0	2	2
215 LITTLE MITCHELL CREEK	11,110,356	59,061	9,797,956	11	4	15
216 LITTLE PINE	96,264	0	623,302	2	0	2
217 LITTLE POWDER	72,143	57,325	69,029	0	4	4
218 LITTLE THUNDER	5,691	481,596	77	1	1	2
219 LOBLOLLY	14,617	71,379	581	0	2	2
220 LOGAN DRAW	87,229	71,124	2,842,099	0	2	2
221 LONE CEDAR	3,431,922	43,411	12,962,391	6	7	13
222 LONG TREE	1,069,729	20	867,777	4	6	10
223 LONG TREE NORTH	79,606	3,085	715,415	0	1	1
224 M-D	2,370,712	444	30,540,969	1	3	4
225 M-D NORTH	212,067	2	114,132	0	2	2
226 MAC	607,336	16,541	2,704,933	1	2	3
227 MADER DRAW	258,869	0	91,493	2	1	3
228 MALLARD	1,362,078	972	1,128,462	1	5	6
229 MALMQUIST	741,781	120,001	102,942	3	1	4
230 MAPES	658,465	0	3,241,081	2	1	3
231 MARNIE	785,525	12,174	5,784,065	1	4	5
232 MARNIE SOUTH	493,461	98	275,872	3	1	4
233 MARY DRAW	1,003	197,785	1,673	0	1	1
234 MARYS RESERVOIR	19,688	0	332	0	1	1
235 MAY	37,533	48	35,593	0	2	2
236 MAYSDORF	5,536,213	405,241	18,447,883	28	16	44
237 MAYSDORF SOUTH	444,436	56,400	83,190	2	0	2
238 MCCREERY	457,094	20,454	25,941	0	5	5
239 MEADOW CREEK	38,591,986	82,146,567	95,042,180	22	202	224
240 MEADOW CREEK EAST	167,429	129,408	31,074	0	12	12
241 MEADOW CREEK NORTH	9,864,668	30,829,453	1,888,534	1	101	102
242 MEADOW CREEK WEST	28,495	3,027	2,004	0	2	2
243 MEXICAN DRAW	18,961	933	73,098	0	1	1
244 MEXICAN DRAW WEST	17,796	0	22,598	0	1	1
245 MIDDLE PRONG	3,711	1,272	5,875	0	2	2
246 MILL	59,964	62,732	186	0	1	1
247 MILL-GILLETTE	3,637,262	8,788,301	2,954,149	10	34	44
248 MILLER CREEK ROAD	100,676	0	1,251,882	1	0	1
249 MILLION CREEK	235	24,139	0	1	0	1
250 MINTURN	13,802	335	8,830	0	1	1
251 MITCHELL BREAKS	116,038	0	179,167	1	0	1
252 MONGOOSE	28,230	359,917	3,258	0	1	1
253 MOOSE DRAW	0	33,071	0	0	1	1
254 MORAN	4,181,910	83,250	3,860,898	11	8	19
255 MORSE	646,252	1,179,456	1,324,034	0	6	6
256 MOSEBAR	6,912	9,574	3,307	0	2	2
257 MOSEBAR DRAW	87,473	0	719,485	1	0	1
258 NAPIER ROAD	57,895	58,588	231,233	1	0	1

Table 2.
Buffalo Planning Area conventional oil and gas productive fields and well status. Data modified from HIS Energy Group (2009).

FIELD	OIL (barrels)	GAS (thousand cubic feet)	WATER (barrels)	ACTIVE WELLS	INACTIVE WELLS	TOTAL WELLS
259 NETA	537,723	0	317,013	1	1	2
260 NICK RAY	3,889	24,502	1,765	0	1	1
261 NIGHT CREEK	73,803	0	1,841	1	1	2
262 NINEMILE	61,903	218,828	164	1	0	1
263 NIPPLE	1,021,054	949,510	5,882	3	4	7
264 NORTH FORK	23,893,484	485,377	242,684,678	14	15	29
265 NORTH STAR	559,489	167,245	372	2	0	2
266 OCONNOR	753,739	635,086	77,634	3	5	8
267 OEDEKOVEN	2,997,379	6,558,432	11,070,183	4	17	21
268 OK	3,247,387	96,233	14,138,381	5	5	10
269 OLMSTEAD	65,982	21,600	1,525	1	0	1
270 OLSEN	841,057	1,620	1,617,832	2	4	6
271 OTTIE DRAW	1,212,995	0	1,071,373	3	3	6
272 OXBOW	326,483	7,091	219,658	2	1	3
273 PALM	870	1,482	1,509	0	1	1
274 PARNELL DRAW	86,508	22,294	9,732	1	2	3
275 PAUL	257,979	556,909	18,555	3	0	3
276 PAUL DRAW	800,391	0	11,006,080	5	0	5
277 PAYNE	3,215,289	7,252,678	36,730	17	27	44
278 PHEASANT	880,604	0	931,693	1	3	4
279 PHOENIX	199,617	566,315	4,560	2	1	3
280 PICKREL RANCH	1,416,777	25,076	2,152,478	0	7	7
281 PIERCE	1,147,234	196,675	1,897,208	3	1	4
282 PINE TREE	9,204,207	14,276,581	125,162	47	3	50
283 PINEY	265,230	70,239	474,217	2	4	6
284 PINNACLE	507,365	125,537	665,946	0	3	3
285 PINNACLE DIVIDE	354,142	0	50,117	1	2	3
286 PLEASANT VALLEY	1,341,371	35,399	4,612,364	2	2	4
287 PLEASANTDALE	623,523	7,524	260,230	6	4	10
288 PORCUPINE	4,511,347	78,964,467	367,156	74	44	118
289 POST DRAW	18,565	3,775	89	0	1	1
290 POWELL	1,524,612	12,584,836	91,851	5	8	13
291 POWNALL RANCH	2,865,523	10,388	2,074,362	15	8	23
292 PRAIRIE CREEK	988	0	296	0	1	1
293 PREP	984,146	212,305	196,711	1	4	5
294 PUMPKIN BUTTES	1,484,564	649,752	10,545	19	3	22
295 PUMPKIN CREEK	71,859	24,827	58	1	2	3
296 QUINN	433,987	184,174	329,069	0	5	5
297 R W CREEK	303,390	3,354,312	7,712	6	1	7
298 RABBIT EARS	196,049	0	164,339	0	4	4
299 RAILROAD BEND	216,260	662	1,219	0	1	1
300 RAINBOW RANCH	1,469,409	124,211	4,674,464	5	4	9
301 RAINBOW RANCH NORTH	3,648,834	49,564	32,989,617	6	8	14
302 RAVEN CREEK	44,724,224	49,606	175,149,792	26	34	60
303 RECLUSE	24,722,791	104,503,879	9,315,850	24	87	111
304 RECLUSE SOUTHEAST	537,005	587,799	0	3	1	4
305 REEL	10,353,871	15,203	31,698,756	7	9	16
306 REMINGTON CREEK	118,250	49,869	113,852	0	3	3
307 RENO	12,756,745	225,598	6,672,578	9	8	17
308 RENO EAST	1,910,572	1,517	19,200,911	0	6	6
309 RESERVOIR CREEK	19,698	164,580	520	2	0	2
310 RIDGEVIEW	732,919	47,032	246,019	3	0	3
311 RIGHT A WAY	1,215,637	560	811,286	4	2	6
312 ROCK CREEK	841,969	60,459	533,393	2	2	4
313 ROCKHOPPER	127,665	0	950,074	2	0	2
314 ROCKY BUTTE	108,068	7,293	0	0	1	1
315 ROCKY HILL	84,199	910,875	735	1	1	2
316 ROCKY POINT	14,542,467	14,572,879	564,901,332	30	30	60
317 ROEHRS	571,287	13,154	1,078,061	2	1	3
318 ROEHRS SOUTH	271,344	0	398,694	1	0	1
319 ROURKE GAP	4,325,321	6,413	3,521,892	3	5	8
320 ROYAL DRAW	949,613	0	739,497	0	5	5
321 ROZET	27,630,015	8,961,519	103,225,166	59	70	129
322 ROZET EAST	4,608,689	26,393	7,606,966	8	5	13
323 ROZET SOUTH	5,141,397	77,701	28,142,642	7	9	16

Table 2.
Buffalo Planning Area conventional oil and gas productive fields and well status. Data modified from HIS Energy Group (2009).

FIELD	OIL (barrels)	GAS (thousand cubic feet)	WATER (barrels)	ACTIVE WELLS	INACTIVE WELLS	TOTAL WELLS
324 ROZET WEST	9,810,295	3,846	38,561,283	8	9	17
325 RULE	1,316,231	82,477	2,090,118	2	0	2
326 RUMPH	438,773	55	10,110,918	4	0	4
327 S A CREEK	1,001,065	0	1,407,932	3	0	3
328 S-BAR	511,220	1,919,081	43,585	1	10	11
329 SAND ROCK	458,276	916	83,331	0	3	3
330 SANDBAR	16,863	66,424	0	0	4	4
331 SANDBAR EAST	11,059,282	3,603,950	26,545,111	11	23	34
332 SANDBAR WEST	4,278,121	9,021,538	732,764	3	27	30
333 SAPPHIRE	3,363	106,350	228	0	1	1
334 SAWGRASS	298,819	0	10,991,510	1	1	2
335 SAWMILL DRAW	60,932	15,999	75,121	1	0	1
336 SCHOOL CREEK	1,579,304	19,148,643	131,548	30	14	44
337 SCHOONER CANYON	1,249	0	0	0	1	1
338 SCHOONOVER	6,927	0	0	0	1	1
339 SCHOONOVER ROAD	9,370	90,319	550	1	0	1
340 SCRIBNER	109,816	21,990	499	1	1	2
341 SHARP	1,281,110	66,891	4,439,995	3	6	9
342 SHEARING PEN DRAW	5,283	3,693	2,662	0	1	1
343 SHELL DRAW	215,797	5,321,506	30,129	4	1	5
344 SHIPPY	2,552,623	17,688	3,281,902	4	5	9
345 SIEVERS	101,015	16,068	75	1	0	1
346 SIMPSON NORTH	487,352	0	2,334,792	1	0	1
347 SIMPSON RANCH	1,245,333	78,157	5,229,233	4	1	5
348 SLATTERY	9,376,387	609,242	8,592,543	17	12	29
349 SMELTENN	137,199	2,336,004	3,775	5	1	6
350 SMITH	77,502	70,526	1,162	1	1	2
351 SODA WELL	1,410,725	0	20,130,732	3	3	6
352 SODA WELL EAST	914,631	3,878	410,375	4	8	12
353 SPOTTED HORSE	528,183	9,076,261	349,307	3	17	20
354 SPRING HOLE	1,430,824	0	309,299	6	0	6
355 SPRINGEN NORTH	128,829	23,011	22,417	3	0	3
356 SPRINGEN RANCH	8,926,779	8,656,877	24,051,046	1	55	56
357 SQUAW CREEK	61,566	203,432	16,757	0	3	3
358 STEWART	16,027,027	73,350	32,583,134	22	20	42
359 STORE	893,463	4,939,795	3,357,492	4	2	6
360 STRAAG DRAW	161,461	0	79,426	0	2	2
361 SUMMERFIELD	328,735	118	25,079	4	2	6
362 SUPERHORNET	1,261,818	1	3,395,165	3	3	6
363 SURPRISE	3,216	0	31,737	0	1	1
364 SUSSEX	76,536,069	16,353,329	184,991,121	46	205	251
365 SUSSEX WEST	18,737,213	8,942,693	47,808,123	53	92	145
366 SWARTZ DRAW	1,895,427	205	1,562,634	10	6	16
367 T A BUTTES	1,048,454	0	771,341	2	3	5
368 T-T ROAD	35,668	0	9,451	0	1	1
369 TABLE MOUNTAIN	5,454,986	3,472,118	4,291,504	34	13	47
370 TANNER	1,105,222	0	1,987,331	3	0	3
371 TAYLOR	943,958	4,944,207	24,564	4	3	7
372 TERRACE	6,407,402	1,193	15,194,588	5	2	7
373 THOLSON	4,543,850	19,532	18,456,331	7	7	14
374 THREE MILE	7,619	19,036	23	0	1	1
375 THRONE	67,466	853,077	9,088	1	3	4
376 THUNDER CREEK	807,644	20,943,659	81,833	20	1	21
377 TIMBER CREEK	19,852,575	1,359,010	10,672,752	14	25	39
378 TIMBER CREEK NORTH	2,343,057	151,444	3,432,440	6	2	8
379 TIMBER CREEK NORTH SHALLOW	73,476	147,156	187,775	1	0	1
380 TIMBER CREEK NORTHWEST	1,820,727	751	1,578,175	7	5	12
381 TIMBER CREEK SOUTH	82,149	2,910	21,888	1	1	2
382 TISDALE EAST	3,007,929	75,896	45,987,961	2	20	22
383 TISDALE NORTH	6,418,503	94,620	60,405,907	50	36	86
384 TODD	45,280	59,865	33	0	1	1
385 TRABING	876,170	1,138,135	57,105	0	4	4
386 TRIANGLE U	4,462,072	1,187,085	615,423	10	33	43
387 TRIANGLE U EAST	341,744	62,361	170,965	4	1	5

Table 2.
Buffalo Planning Area conventional oil and gas productive fields and well status. Data modified from HIS Energy Group (2009).

FIELD	OIL (barrels)	GAS (thousand cubic feet)	WATER (barrels)	ACTIVE WELLS	INACTIVE WELLS	TOTAL WELLS
388 TROUT POND	1,240,962	0	825,814	5	0	5
389 TUIT DRAW	713,906	4,621,156	71,736	13	8	21
390 TURNERCREST	203,219	3,240,415	10,210	3	1	4
391 TWENTY-ONE MILE BUTTE	346,753	109,247	93,580	9	0	9
392 TWIN CREEK	192,880	304	290,369	0	4	4
393 TWO V CREEK	2,813	0	0	0	1	1
394 UNKNOWN	49,851	50,716	105,622	1	5	6
395 UNNAMED	2,105,629	217,969	2,593,782	36	9	45
396 UPPER DUCK CREEK	242,814	0	226,683	2	0	2
397 UTE	11,194,032	22,965,759	21,756,767	15	71	86
398 VICTOR	2,006,990	0	3,259,513	5	4	9
399 WAGENSEN	318,189	1,138,471	326,495	3	4	7
400 WAGON SPOKE	3,144,432	40,767	16,752,170	0	7	7
401 WALLACE	7,920,648	21,119	14,989,237	12	9	21
402 WALLACE NORTH	504,784	0	30,798	3	0	3
403 WALLACE SOUTH	1,893,058	147,215	2,148,588	5	2	7
404 WARD CREEK	6,297	0	35,015	0	3	3
405 WARD CREEK SOUTHEAST	122,694	83,272	3,677	0	1	1
406 WARDEN	271,715	9,381	80,466	4	2	6
407 WD	1,039,945	0	5,196,449	2	3	5
408 WELL CREEK	166,560	588	1,437,327	0	1	1
409 WEST FORK	526,175	5,398	108,997	2	0	2
410 WHEAT DRAW	2,194,283	0	9,108,526	3	0	3
411 WHISLER	841,516	6,175	2,005,591	3	5	8
412 WHITE	47,773	871	0	0	2	2
413 WHITETAIL	6,011,868	1,888,149	31,518,229	0	25	25
414 WIDGE	1,139,261	263,385	164,121	4	1	5
415 WIDGE NORTH	186,705	0	94,119	1	2	3
416 WILDHORSE CREEK	334,155	1,062,542	1,373	3	1	4
417 WILLIAMS DRAW	2,773	0	7,870	0	1	1
418 WINDMILL	6,424,218	118,872	25,897,511	11	5	16
419 WINTER DRAW	6,481,523	8,332	14,944,626	7	5	12
420 WOLF DRAW	275	0	0	1	0	1
421 WORTH	8,617	0	33,703	0	1	1
422 YELLOW HAMMER	196,843	38,453	2,043	0	2	2
423 YELLOW HAMMER NORTHWEST	41,648	381	17,616	0	2	2
424 YORK	1,422,449	0	1,644,379	5	3	8
425 YORK NORTH	239,812	0	298,969	2	1	3
426 ZOE DRAW	95,132	1,080	428,718	1	0	1
TOTALS	1,222,757,562	1,382,632,515	3,489,209,732	3,090	3,331	6,421

Wyoming State Office

Reservoir Management Group

Table 3. Coalbed natural gas wells within Buffalo Planning Area. Data are from IHS Energy Group (2012).

Time Interval	Years	Number of Wells Drilled	Number of operators	Average Well Depth	Average Recovery per Well in Billion Cubic Feet
before 1987	8	12	6	578	0.20
1987-1998	11	1642	65	605	0.22
1999-2008	10	27,122	91	1,109	0.21
2009-forward	20	10,343 projected	unknown	Over 1,200 ft.	Approximately 0.35

Table 4
 U.S. Geological Survey Estimated Undiscovered Technically Recoverable Resource Quantities
 Within Powder River Basin Province and Buffalo Planning Area

Assessment Unit Name	Estimated Undiscovered Powder River Basin Province Resource Quantities at Probabilities of Occurrence of 95 and 5 Percent and for the Mean Case									% of Play Lying Within Field Office	Estimated Undiscovered Planning Area Resource Quantities at Probabilities of Occurrence of 95 and 5 Percent and for the Mean Case ¹								
	Oil (MMBO)			Gas (BCFG)			NGL (MBNGL)				Oil (MMBO)			Gas (BCFG)			NGL (MBNGL)		
	95%	5%	Mean	95%	5%	Mean	95%	5%	Mean		95%	5%	Mean	95%	5%	Mean	95%	5%	Mean
Minnelusa-Tensleep-Leo Conventional	21.38	112.13	60.51	4.21	19.24	10.15	0.19	1.11	0.54	49.58	10.60	55.59	30.00	2.09	9.54	5.03	0.09	0.55	0.27
Fall River-Lakota Sandstone Conventional	18.14	127.53	64.05	123.43	1,419.83	649.21	10.75	142.22	61.93	39.71	7.20	50.64	25.43	49.01	563.81	257.80	4.27	56.48	24.59
Muddy Sandstone Conventional	10.95	106.81	47.34	83.64	924.70	397.91	7.64	91.45	38.28	39.75	4.35	42.46	18.82	33.25	367.57	158.17	3.04	36.35	15.22
Frontier-Turner Sandstones Conventional	2.46	21.37	10.18	8.72	93.45	40.47	0.59	6.97	2.91	26.73	0.66	5.71	2.72	2.33	24.98	10.82	0.16	1.86	0.78
Sussex-Shannon Sandstones Conventional	2.75	16.98	8.67	2.25	17.30	8.09	0.17	1.45	0.65	67.11	1.85	11.40	5.82	1.51	11.61	5.43	0.11	0.97	0.44
Mesaverde-Lewis Sandstones Conventional	1.55	13.20	6.00	1.90	19.84	8.41	0.13	1.44	0.59	63.66	0.99	8.40	3.82	1.21	12.63	5.35	0.08	0.92	0.38
Eastern Basin Margin Upper Fort Union Sandstone Conventional				0.00	107.43	27.37	0.00	0.00	0.00	45.94				0.00	49.35	12.57	0.00	0.00	0.00
Basin Margin Conventional	4.79	36.76	17.93	3.46	32.89	14.66	0.11	1.23	0.53	23.56	1.13	8.66	4.22	0.82	7.75	3.45	0.03	0.29	0.12
Wastach Formation Coalbed Gas Continuous				1,011.94	3,257.89	1,934.09	0.00	0.00	0.00	80.05				810.06	2,607.94	1,548.24	0.00	0.00	0.00
Upper Fort Union Formation Coalbed Gas Continuous				7,232.13	18,721.10	12,132.50	0.00	0.00	0.00	48.66				3,519.15	9,109.69	5,903.67	0.00	0.00	0.00
Lower Fort Union-Lance Formation Coalbed Gas Continuous				0.00	440.90	197.90	0.00	0.00	0.00	35.02				0.00	154.40	69.30	0.00	0.00	0.00
Mowry Oil Continuous	116.99	306.38	197.61	103.35	332.95	197.61	5.56	21.37	11.86	65.82	77.00	201.66	130.07	68.02	219.15	130.07	3.66	14.07	7.81
Niobrara Oil Continuous	135.53	349.03	226.67	119.54	379.87	226.67	6.43	24.40	13.60	62.27	84.39	217.34	141.15	74.44	236.55	141.15	4.00	15.19	8.47
Shallow Biogenic Gas Continuous				341.92	1,483.26	786.64	0.00	0.00	0.00	13.86				47.39	205.58	109.03	0.00	0.00	0.00
Total Undiscovered Resources	315	1,090	639	9,036	27,251	16,632	32	292	131		188.17	601.86	362.05	4,609.28	13,580.55	8,360.09	15.44	126.68	58.07

MMBO = Million Barrels of Oil

NGL = Natural Gas Liquids

BCFG = Billion Cubic Feet of Gas

MBNGL = Thousand Barrels of Natural Gas Liquids

¹ Potential resource is assumed to be evenly distributed across each assessment area.

Table 5. Estimated conventional oil and gas development potential acres, townships, average drilling densities, and percentage of Buffalo Planning Area within each potential type for 2009 through 2028.

Development Potential	Acres	Area (townships)	Average New Wells per Township	Percent of Planning Area
Very High	128,962	5.60	129.00	1.75
High	274,797	11.93	70.00	3.74
Moderate	917,973	39.84	30.00	12.48
Low	948,637	41.17	15.00	12.89
Very Low	1,729,547	75.07	6.00	23.51
Negligible	2,050,165	88.98	0.50	27.87
No Wells	1,167,067	50.65	0.00	15.86
Not Assessed	139,492	6.05	0.00	1.90
Totals	7,356,639	319.30		100

Table 6. Development potentials and average drilling densities for the coalbed natural gas play area in the Buffalo Planning Area for wells drilled during 2009 through 2028.

Development Potential Rating	Average Number of Wells Drilled/Township
None	0
Very Low	Fewer than 5
Low	5 to 20
Moderate	More than 20 to 70
High	More than 70 to 220
Very High	More than 220

Table 7.

Forecast of Buffalo Planning Area annual and cumulative conventional oil and gas production for 2009 through 2028.

Year	Gas Production (thousand cubic feet)	Oil Production (Barrels)
2009	1,082,050	413,955
2010	2,600,618	1,033,387
2011	4,540,354	1,864,086
2012	5,465,661	2,352,999
2013	4,931,401	2,271,016
2014	7,468,993	3,271,688
2015	8,451,155	3,713,155
2016	11,575,205	4,968,490
2017	11,551,445	5,080,347
2018	15,307,845	6,587,018
2019	17,037,509	7,418,497
2020	19,209,812	8,373,409
2021	20,288,658	8,922,646
2022	23,572,914	10,242,070
2023	25,297,974	11,069,330
2024	28,090,114	12,241,511
2025	28,944,663	12,696,191
2026	31,382,360	13,712,580
2027	31,329,559	13,801,439
2028	33,295,693	14,573,724
Cumulative Production	331,423,983	144,607,538