

**2017 Annual Report
Powder River Basin Controlled Groundwater Area
Technical Advisory Committee**

Introduction

The Powder River Basin Controlled Groundwater Area (PRBCGA) was established to protect existing water users from impacts resulting from coal bed methane (CBM) development. The Montana Board of Oil and Gas Conservation (MBOGC) implements the PRBCGA through regulations that require characterization, monitoring, and evaluation of ground-water conditions, and mitigation of impacts to existing water users.

A technical advisory committee (TAC) was established to oversee the ground-water characterization, monitoring, and evaluation requirements of the PRBCGA. TAC consists of five members selected by DNRC for their expertise in hydrogeology, water quality, and CBM extraction systems and operations. Two additional ex-officio members represent the CBM industry, and water user and conservation interests. In addition to overseeing monitoring and reporting requirements for individual fields, TAC is assigned to review groundwater data and scientific evidence related to the PRBCGA and make recommendations to the MBOGC regarding mitigation of impacts.

The purpose of this report is to describe the impacts of CBM development on groundwater resources through September 2016.

Groundwater Monitoring

MBMG published open file report 694 titled 2016 Annual Coalbed Methane Regional Groundwater Monitoring Report: Powder River Basin, Montana. The 2016 annual report presents hydrographs of groundwater level responses to CBM and coal mine activities that show water level recovery in some wells while water levels remain depressed in others. Looking forward to 2017, the MBMG monitoring network will be reduced from 225 to 124 sites.

CBM Water Production

Total water production from all CBM wells through September 2016 is listed in Table 1. The Coal Creek and Dietz fields operated by Summit Gas were in production in Montana during 2016. The CX Field owned by Fidelity Exploration & Production Company near Decker Montana had no production in 2016.

MBMG monitors groundwater levels and chemistry in dedicated monitoring wells installed beginning in the 1970s to document the effects dewatering of coal-mine and for coal bed methane production. Locations of regional monitoring wells, and data and interpretations from monitoring conducted through 2015 are found in Meredith and Kuzara (2016).

Table 1. Total water produced from CBM wells through September 2016. Numbers of wells include wells that produced water and/or gas.

Year / Field	# Wells	Total Water Production	
		Barrels	Acre-Feet
2000	165	20,169,638	2600
CX Ranch Field	165	20,169,638	2600
2001	236	38,756,615	4996

	CX Ranch Field	236	38,756,615	4996
2002		244	16,299,771	2101
	CX Ranch Field	244	16,299,771	2101
2003		327	11,415,551	1471
	CX Ranch Field	327	11,415,551	1471
2004		423	15,426,082	1988
	CX Ranch Field	423	15,426,082	1988
2005		529	19,426,428	2504
	Coal Creek Field		1,665,378	215
	CX Ranch Field		17,760,490	2289
	Dietz Field		561	0
2006		808	21,317,810	2748
	Coal Creek Field		2,653,015	342
	CX Ranch Field		18,536,211	2389
	Dietz Field		128,584	17
2007		723	38,325,853	4940
	Coal Creek Field		3,090,469	398
	CX Ranch Field		33,463,422	4314
	Dietz Field		1,771,963	228
2008		908	40,210,222	5183
	Coal Creek Field	32	1,766,946	228
	CX Ranch Field	773	35,501,872	4576
	Dietz Field	102	2,763,864	356
	Waddle Creek Field	1	88,770	11
2009		887	35,850,182	4621
	Coal Creek Field	32	2,087,222	269
	CX Ranch Field	759	31,765,126	4095
	Dietz Field	95	1,846,468	238
	Waddle Creek Field	1	151,366	20
2010		822	33,540,339	4323
	Coal Creek Field	28	2,261,728	292
	CX Ranch Field	711	29,310,387	3778
	Dietz Field	82	1,817,520	234
	Waddle Creek Field	1	150,704	19
2011		748	26,940,211	3473
	Coal Creek Field	23	1,841,774	237
	CX Ranch Field	654	23,766,841	3064
	Dietz Field	70	1,239,176	160
	Waddle Creek Field	1	92,420	12
2012		575	15,818,948	2039
	Coal Creek Field	19	866,486	112
	CX Ranch Field	497	14,009,519	1806
	Dietz Field	58	927,316	120
	Waddle Creek Field	1	15,627	2
2013		378	9,856,565	1271
	Coal Creek Field	30	1,486,035	192
	CX Ranch Field	295	7,141,952	921
	Dietz Field	52	1,228,578	158
	Waddle Creek Field	1	0	0
2014		90	3,817,654	492
	Coal Creek Field	33	2,494,936	322
	CX Ranch Field	0	0	0
	Dietz Field	55	1,322,718	171

	Waddle Creek Field	2	0	0
2015		90	2,361,453	304
	Coal Creek Field	28	1,275,262	164
	CX Ranch Field	0	0	0
	Dietz	60	1,086,191	140
	Waddle Creek Field	2	0	0
2016		58	1,016,895	131
	Coal Creek Field	14	427,041	53
	CX Ranch Field	0	0	
	Dietz	44	589,854	76
	Waddle Creek Field	0	0	