

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

Oil and Gas Conservation Division

Thomas L. Judge, Governor



ANNUAL REVIEW FOR THE YEAR 1977

Relating to

OIL AND GAS

Volume 21

BOARD OF OIL AND GAS CONSERVATION

R. A. CAMPBELL, Chairman
1222 North 27th Street
Billings, Montana 59101

C. J. IVERSON, Vice-Chairman
P.O. Box 830
Shelby, Montana 59474

MILTON G. ANDERSON
P.O. Box 73
Sidney, Montana 59270

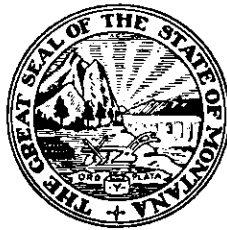
PAUL C. BUNN
P.O. Box 1111
Havre, Montana 59501

JOHN P. MOORE
P.O. Box 997
Cut Bank, Montana 59427

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

Oil and Gas Conservation Division

Thomas L. Judge, Governor



ANNUAL REVIEW FOR THE YEAR 1977

Relating to

OIL AND GAS

Volume 21

BOARD OF OIL AND GAS CONSERVATION

R. A. CAMPBELL, Chairman
1222 North 27th Street
Billings, Montana 59101

C. J. IVERSON, Vice-Chairman
P.O. Box 830
Shelby, Montana 59474

MILTON G. ANDERSON
P.O. Box 73
Sidney, Montana 59270

PAUL C. BUNN
P.O. Box 1111
Havre, Montana 59501

JOHN P. MOORE
P.O. Box 997
Cut Bank, Montana 59427

1977
SUMMARY OF YEAR ACTIVITIES

Oil Produced 32,680,054 Bbls.

Oil Imported (Refined)

Canadian	-	20,920,718	
North Dakota	-	200,417	39,368,846 Bbls.
Wyoming	-	<u>18,247,711</u>	

Oil Exported (Transporters) 23,563,633

Gas Withdrawals

Natural	-	43,627,869	
Associated	-	<u>3,607,072</u>	47,234,941 Mcf.

Averages: (365 days)

Oil Produced	-	89,534 Bbls.
Oil Imported	-	107,859 Bbls.
Oil Exported	-	64,558 Bbls.
Natural Gas	-	129,410 Mcf.

Board of Oil and Gas Conservation of the State of Montana

Thomas L. Judge, Governor

ADMINISTRATORS

DONALD E. CHISHOLM, ADMINISTRATOR
P.O. BOX 217
HELENA, MONTANA 59601

DONALD A. GARRITY, ATTORNEY
1400 11TH AVE.
HELENA, MONTANA 59601

JUDSON D. SWEET, PETROLEUM ENGINEER
15 POLY DRIVE
BILLINGS, MONTANA 59101

CHARLES G. MAIO, GEOLOGIST
15 POLY DRIVE
BILLINGS, MONTANA 59101



BOARD MEMBERS

R. A. CAMPBELL, CHAIRMAN
1222 NORTH 27TH STREET
BILLINGS, MONTANA 59101

C. J. IVERSON, VICE-CHAIRMAN
P.O. BOX 830
SHELBY, MONTANA 59474

MILTON G. ANDERSON
P. O. BOX 73
SIDNEY, MONTANA 59270

PAUL C. BUNN
P.O. BOX 1111
HAVRE, MONTANA 59501

JOHN P. MOORE
P. O. BOX 997
CUT BANK, MONTANA 59427

Administrative Office 325 Fuller Avenue, Helena, Montana 59601
Technical Office and
Southern District Field Office 15 Poly Drive, Billings, Montana 59101
Northern District Field Office 218 Main Street, Shelby, Montana 59474

Annual Review for the Year 1977 Volume 21

ACTIVITY REVIEW — MONTANA 1977

Gas production in Montana continues to increase. Total for 1977 was 47,234,941 MCF, up by 3.02 billion cubic feet over last year's gas withdrawals of 44,212,874 MCF. The bulk of the increase is due to new well production as well as the continued process of placing shut-in wells on stream as upgraded facilities become available. Marketed associated gas in 1977, which is included in the total shown above, also increased over last year's associated gas production by 271,071 MCF. This is mainly the result of a concerted effort to conserve all gas produced with oil where economically feasible.

Montana's oil production for 1977 was 32,680,054 barrels, down by 134,206 barrels as compared to the total for 1976. Although 1977 overall oil production decreased, two specific areas had substantial increases.

Oil output from the Powder River Basin Area has steadily increased since 1975 and was up by 302,598 barrels over 1976. A successful secondary recovery program at Bell Creek, a major field in the basin, is the primary factor in this increased production.

The high success rate of active exploratory and development drilling in the Williston Basin portion of eastern Montana has also increased the total production from this area over the past two years. Oil is from pay zones in the deeper Paleozoic reservoirs. As compared to the total 1976 output, oil production was up by 125,255 barrels in 1977.

There were 678 wells drilled in Montana in 1977, 109 less than in 1976. The number of exploratory and development wells drilled were down by 76 and 33 wells respectively. Weather and rig availability were responsible for a portion of the drilling decline. The 172 wildcats drilled included 11 oil and 7 gas new field discoveries and 17 new pay or significant field extensions. A total of 506 development wells resulted in 220 gas and 98 oil completions.

The potential of major reserves of oil and gas along the Overthrust Belt of western Montana continues to accelerate activity in this area. A December 1977 sale brought the highest bonus total in nine years at the Montana State lands sale. More than 60% of the total tracts offered were in the Overthrust Belt area. Considerable interest was also shown in subsequent state land sales in March and June.

The outlook for future oil and gas development in Montana is good. Emphasis will primarily be on the Overthrust Belt area as well as the shallow Cretaceous sand gas reservoirs of north central and northwest Montana. The high success rate of active exploratory drilling in the Williston Basin portion of eastern Montana is also expected to continue to generate more drilling along this flank of the basin with similar success.

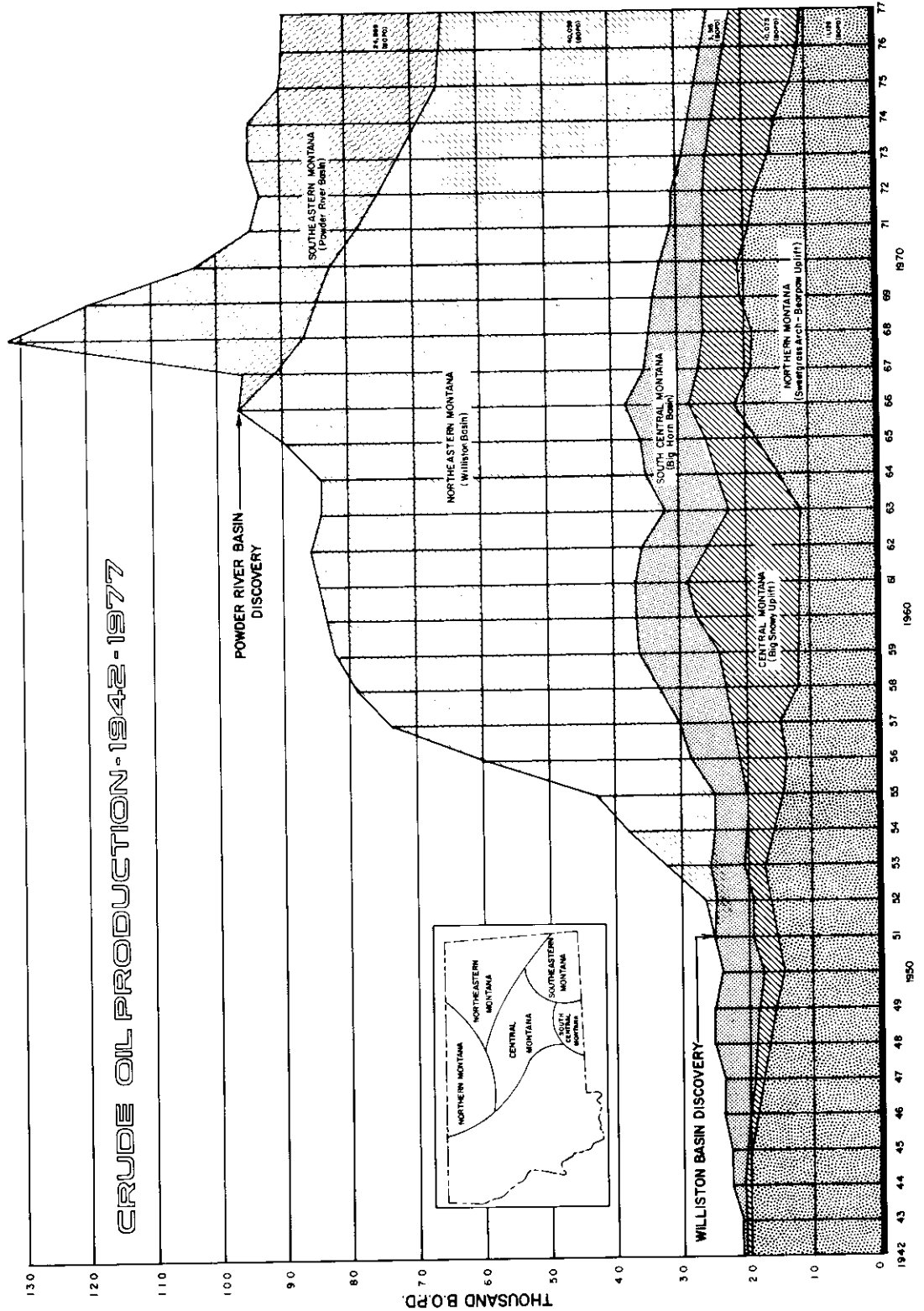
FIVE YEAR SUMMARY

	1973	1974	1975	1976	1977
Production, Northern Montana — Bbls.	5,948,826	5,464,319	4,551,324	4,200,539	4,060,957
South Central — Bbls.	1,515,088	1,432,528	1,318,779	1,246,005	1,210,064
Central — Bbls.	3,238,967	3,334,759	3,954,024	4,063,897	3,677,361
Williston Basin — Bbls.	15,735,703	14,939,292	14,312,685	14,496,380	14,621,635
Powder River Basin — Bbls.	8,181,598	9,383,064	8,706,862	8,807,439	9,110,037
TOTAL	34,620,182	34,553,962	32,843,674	32,814,260	32,680,054
No. of Producing Wells, Northern Montana	1,708	1,802	2,067	1,978	1,999
South Central	83	86	100	97	109
Central	245	267	303	316	343
Williston Basin	709	712	734	737	789
Powder River Basin	248	233	231	181	178
TOTAL	2,993	3,100	3,435	3,309	3,417
Average Daily Production/Well — BOPD,					
Northern Montana ..	9.5	8.3	6.0	5.8	5.6
South Central	50.0	45.6	36.1	35.1	30.4
Central	36.2	34.2	35.8	35.2	29.4
Williston Basin	60.8	57.4	53.4	53.8	50.8
Powder River Basin ..	90.4	100.3	103.2	133.3	140.2
STATE AVG. ...	31.7	30.5	26.2	27.1	26.2
Development Wells Drilled, Oil Wells	46	58	105	106	98
Gas Wells	165	179	261	264	220
Dry Holes	100	212	222	169	188
TOTAL	311	449	588	539	506
Exploratory Wells Drilled, Oil Wells	6	7	6	17	24
Gas Wells	36	21	15	8	19
Dry Holes	366	265	236	223	129
TOTAL WELLS DRILLED	408	293	257	248	172
TOTAL FOOTAGE DRILLED	1,834,288	2,173,519	2,467,838	2,826,301	2,482,379
AVERAGE DEPTH OF ALL WELLS	2,551	2,929	2,921	3,591	3,661

SUMMARY OF DRILLING BY COUNTIES — 1977
STATE OF MONTANA

County	Wildcats		Development			Total Wells	Footage Drilled	Average Depth
	Dry	Oil	Gas	Dry	Oil			
Beaverhead	1					1	4,351	4,351
Big Horn	3	1				5	20,186	4,037
Blaine	1		3	19	2	49	93,337	1,905
Carbon	3	1			2	9	56,745	6,305
Carter	1			1		2	7,670	3,835
Chouteau	4			13		32	63,615	1,988
Daniels	1					1	7,698	7,698
Dawson	1			1		2	18,735	9,367
Fallon	1			5	10	19	135,500	7,131
Fergus	3					3	8,356	2,785
Garfield	5					5	28,866	5,773
Glacier	1			16	6	29	91,968	3,171
Golden Valley	6					7	17,406	2,486
Hill	8			10		22	51,648	2,347
Liberty	5		2	18	9	71	174,602	2,459
McCone	4			2	1	7	43,459	6,208
Musselshell	3	2		20	10	35	147,079	4,202
Petroleum	6			1		7	18,206	2,601
Phillips	7					63	114,680	1,820
Pondera	12			3	5	30	63,830	2,127
Powder River	2		6	13		21	97,506	4,643
Richland	12	14		4	12	42	483,710	11,517
Roosevelt		1		3	6	10	71,400	7,140
Rosebud	10	1		11	17	39	204,306	5,238
Sheridan	2	1		5	5	13	118,635	9,126
Stillwater	2					3	10,744	3,581
Sweetgrass	2					2	6,334	3,167
Teton	6			2	4	15	37,133	2,475
Toole	13	1	7	38	7	124	254,698	2,054
Valley	1					1	8,830	8,830
Wibaux				1		1	9,136	9,136
Yellowstone	3		1	2	2	8	12,010	1,501
TOTALS	129	24	19	188	98	678	2,482,379	3,661

CRUDE OIL PRODUCTION-1942-1977



GAS PRODUCTION DATA — 1977

15.025 PSIA @ 60° F

Field	County	Producing Formations	1977 Production MCF
Natural Gas:			
Alma	Liberty	Blackleaf, Bow Island and Sawtooth	29,552
Bears Den	Liberty	Sawtooth and Sunburst	5,751
Big Coulee	Golden Valley and Stillwater	Lakota and Morrison	1,397,243
Big Rock	Glacier	Blackleaf, Bow Island	1,477,076
Black Coulee	Blaine	Eagle	56,823
Black Jack	Liberty	Sunburst, Swift, and Blackleaf	191,227
Bowdoin	Phillips, Valley	Bowdoin and Phillips	6,033,954
Bowes	Blaine	Eagle	885,524
Browns Coulee	Hill	Judith River and Eagle	17,220
Bullwacker and Area	Blaine, Chouteau	Judith River, Eagle (Virgelle)	1,634,602
Canadian Coulee	Hill, Liberty	Sawtooth	558,955
Cedar Creek	Fallon	Judith River, Eagle	1,856,267
Chip Creek	Chouteau	Eagle-Virgelle	26,539
Coal Coulee	Hill	Eagle	57,433
Conrad Butte (Ledger field)	Pondera, Toole	Bow Island	162,413
Cut Bank and Reagan	Glacier, Toole	Blackleaf, Moulton, Sunburst, Cut Bank, and Madison	4,761,538
Dry Creek	Carbon	Judith River, Eagle, Frontier, Greybull, Lakota	765,124
Dunkirk, North	Toole	Bow Island	16,748
Ethridge	Toole	Bow Island, Swift	67,388
Flat Coulee	Liberty	Bow Island, Dakota, Swift, and Sawtooth	106,174
Fred and George	Toole	Sunburst, Swift	9,369
Fresno	Hill	Judith River and Eagle (Virgelle)	95,965
Goid Butte	Toole	Bow Island	14,252
Grandview	Liberty	Bow Island, Madison	83,979
Hardin	Big Horn	Frontier	32,329
Haystack	Liberty	Bow Island	150,085
Keith Block	Liberty	Blackleaf, Bow Island, Sawtooth	1,116,347
Kevin Sunburst Nisku	Toole	Nisku	152,289
Kevin Sunburst	Toole	Bow Island, Sunburst, Swift, Sun River, and Nisku	410,715
Kicking Horse	Toole	Bow Island, Sunburst, Sawtooth	232,081
Kinyon Coulee Area	Toole	Bow Island	101,675
Lake Basin	Stillwater	Claggett, Eagle-Virgelle, Telegraph Creek, Frontier	355,940
Liscom Creek	Custer	Shannon	259,507
Middle Butte	Toole	Bow Island	12,526
Middle Dry Creek	Carbon	Frontier and Lakota	35,390
Mt. Lilly	Liberty	Madison	148,079
Miners Coulee	Toole	Bow Island, Sunburst-Swift	129,578
North Clark Fork	Carbon	Lakota	7,953
Plevna	Fallon	Judith River	47,312
Prairie Dell	Toole	Bow Island, Swift	396,678
Pumpkin Creek	Custer	Shannon	220,287
Rapelje	Stillwater	Judith River, Claggett, Eagle, and Virgelle	332,266
Rocky Boy Area	Hill	Eagle	77,838
Sage Creek	Liberty	Blackleaf	6,531
Sawtooth Mt. Area	Blaine	Judith River and Eagle	2,312,602
Sherard	Blaine, Chouteau	Judith River and Eagle	1,010,659
Snoose Coulee	Liberty	Bow Island	171,715
South Devon	Toole	Bow Island	129,216
South Shelby	Toole	Bow Island	143,800
Strawberry Creek Area	Toole	Bow Island	41,116
Swanson Creek	Phillips	Phillips	64,556
Tiger Ridge	Blaine, Hill	Judith River, Eagle	13,403,047
Trail Creek	Liberty, Toole	Bow Island and Sunburst	37,440
Utopia	Liberty	Sawtooth	359,910
West Butte	Toole	Bow Island, Sawtooth, and Madison	274,500
Whitlash	Liberty	Bow Island, Kootenai, Swift	1,107,956
Willow Ridge	Toole	Bow Island	34,830
TOTAL NATURAL GAS			43,627,869
Associated Gas:			
Bell Creek	Powder River	Muddy	383,159
Big Muddy	Roosevelt	Interlake-Red River	167,732
Blue Hills	Richland	Red River	28,881
Cabin Creek	Fallon	Mission Canyon, Interlake and Red River	369,600
Elk Basin	Carbon	Tensleep	216,535
Fairview	Richland	Winnipegosis and Red River	502,735
Four Mile Creek	Richland	Red River	75,591
Four Mile Creek West	Richland	Red River	22,093
Glendive	Dawson	Red River	1,902
Otis Creek	Richland	Red River	54,377
Pine	Dawson, Prairie, Fallon, and Wibaux	Interlake, Red River	375,318
Rattlesnake Coulee	Toole	Sunburst	15
Richland	Richland, Roosevelt	Mm, Dw, Si, Orr	525,105
Sioux Pass	Richland	Mmc, Si, Orr	236,777
Sioux Pass East	Richland	Red River	11,397
Sioux Pass, Middle	Richland	Red River	99,413
Sioux Pass, North	Richland	Red River (Associated)	146,750
South Clarks Fork	Carbon	Greybull	41,711
Sumatra	Rosebud	Tyler	266,213
Tule Creek	Roosevelt	Nisku	81,768
TOTAL ASSOCIATED GAS			3,607,072
TOTAL GAS PRODUCED — 1977			47,234,941
NATURAL GAS IMPORTED		NATURAL GAS EXPORTED	
Canada	32,251 MMCF	Midwest states	16,094 MMCF
Wyoming	21,743 MMCF	Canada	32 MMCF
		Dakotas	18,570 MMCF
	<u>53,994 MMCF</u>		<u>34,696 MMCF</u>

BARRELS OF CRUDE OIL REFINED IN MONTANA — 1977

Fields	BIG WEST OIL CO.	CONTINENTAL OIL CO.	EXXON COMPANY	FARMERS UNION	KENCO REF. INC.	PHILLIPS PETR. CO.	TESORO PETR. CO.	WESTCO REF. CO.	TOTAL
Big Wall			62,039						62,039
Bleed Creek				150,189					150,189
Cat Creek		25,376		68,382					93,758
Cut Bank & Others		295,931	58,432	194,635		1,194,705		1,041,497	2,785,200
Dean Dome				8,306					8,306
Elk Basin		226,540	286,991	5,006					518,537
Flat Coulee								110,782	110,782
Fred & George Creek		14,651	42,301			456,874			456,874
Hiawatha & Hibbard		27,494							56,952
Ivanhoe		313,042							27,494
Jim Coulee		75,424	806						313,042
Keg Coulee			25,163	15,210					91,440
Kelly	109,715								25,163
Kevin-Sunburst								225,843	335,558
Little Wall Creek Area		267,029							267,029
Lodge Grass		6,739							6,739
Mason Lake		3,156							3,156
Melstone				57,122					57,122
Mosser		5,460							5,460
Pondera						156,996			156,996
Ragged Point		80,257							80,257
Rosebud		35,273							35,273
Richey, Southwest					23,346		1,535		25,881
Snyder		4,916							4,916
Sumatra, Stensvad & High Fire		1,772,126	96,115	287,368			66,339		2,155,609
Tule Creek & Others									710,311
Vaux									65,535
Volt							14,235		107,609
Weed Creek				14,815					14,815
Whitlash								145,689	145,689
Winnett Junction				39,797					39,797
Wolf Springs			11,626						11,626
Total Montana Oil	109,715	3,153,414	521,434	902,869	826,227	1,808,575	82,109	1,523,811	8,928,154
Canadian Oil Imported	200,139	10,063,941	5,234,265	5,105,123		317,250			20,920,718
North Dakota Oil Imported				193,246	7,171				200,417
Wyoming Oil Imported		3,558,278	8,211,304	6,478,129					18,247,711
Total Montana, Canadian, North Dakota & Wyoming Oil	309,854	16,775,633	13,967,003	12,679,367	833,398	2,125,825	82,109	1,523,811	48,297,000

PERCENTAGE OF CRUDE OIL REFINED

	PERCENTAGE OF CRUDE OIL REFINED			AVERAGE BARRELS PER DAY					
	Montana	Canada	North Dakota	Wyoming	Montana	Canada	North Dakota	Wyoming	Total
Year: 1975	18.56%	40.28%	—	41.16%	24,463	53,077	—	54,237	131,777
Year: 1976	16.93%	46.69%	—	36.38%	23,272	64,192	—	50,029	137,493
Year: 1977	18.49%	43.32%	.41%	37.78%	24,461	57,317	549	49,994	132,320

REFINING FIVE YEAR COMPARISON

1973	1974	1975	1976	1977
50,967,206	48,052,776	48,098,535	50,322,433	48,297,000

SUMMARY OF SECONDARY RECOVERY PROJECTS - JANUARY 1, 1978

Field, Formation	Operator	Type of Project	Injection Pattern	Date Injections Commenced	Cumulative Injections 1000's Bbls. or MCF	Avg. Daily Inj. Rate Bbls. or MCF	No. of Injection Wells	Source of Injection Media and Remarks
Ash Creek, Shannon	Transocean, Inc.	Waterflood	Peripheral	10-15-64	1,113	100	2	Parkman
Bell Creek, Unit "A", Muddy	Gary	Waterflood	Peripheral	7- 1-70	90,347	41,000	32	Madison
Bell Creek, Unit "B", Muddy	Gary	Waterflood	Peripheral	10- 1-70	24,998	5,000	11	Madison
Bell Creek, Ranch Creek Unit, Muddy	Gary	Waterflood	Peripheral	7- 1-71	29,125	7,300	10	Madison
Bell Creek, Unit "C", Muddy	Gary	Waterflood	Peripheral	12- 1-71	14,414	7,800	6	Madison
Bell Creek, Unit "D", Muddy	Gary	Waterflood	Peripheral	8-72	17,445	8,700	13	Madison
Bell Creek, Unit "E", Muddy	Gary	Waterflood	Peripheral	8-72	13,233	9,300	17	Madison
Big Wall, Tyler B	Texaco, Inc.	Waterflood	Peripheral	8-20-66	19,879	5,600	2	Produced, Amsden & Tyler
Blackfoot, Cut Bank	Craft Petroleum Co.	Waterflood	Random	11-76	185	700	4	Madison
Border, New, Cut Bank	BG&O Co.	Waterflood	Random	6- 1-73	302	275	1	Madison
Border, Old, Cut Bank	BG&O Co.	Waterflood	Random	6- 1-73	739	300	4	Madison
Bowes, Sawtooth	Texaco, Inc.	Waterflood	Random	5-23-61	7,848	1,000	4	Madison
Cabin Creek, Sifuro-Ord.	Shell	Waterflood	Semi-Peripheral	6-12-59	186,643	32,600	29	Produced & Fox Hills
Cat Creek, East Dome, Swift	Hoss	Waterflood	Semi-Peripheral	7-30-70	454	216	4	Third Cat Creek
Cat Creek, (Unit 1), 1st & 2nd CC	Farmers Union	Waterflood	Semi-Peripheral	10-10-62	11,692	1,500	6	Third Cat Creek
Cat Creek, (Unit 2), 1st & 2nd CC	Farmers Union	Waterflood	Semi-Peripheral	12- 1-59	18,129	1,370	6	Third Cat Creek
Cat Creek, Mosby, Swift	Farmers Union	Waterflood	Random	7-67	4,238	1,100	4	Third Cat Creek
Cat Creek, Mosby, Amsden	Farmers Union	Waterflood	Random	6- 1-71	128	130	1	Third Cat Creek
Cut Bank, Marine West, Cut Bank	BG&O Co.	Waterflood	5-Spot	6-72	1,900	500	6	Madison
Cut Bank, Tweedy, Cut Bank	BG&O Co.	Waterflood	5-Spot	6-72	901	330	4	Madison
Cut Bank, NE, Cut Bank	Texaco, Inc.	Waterflood	5-Spot	6- 2-63	13,408	1,000	6	Madison
Cut Bank, NW, Cut Bank	Phillips	Waterflood	5-Spot	1-30-62	15,511	1,350	14	Madison
Cut Bank, SE, Cut Bank	Union	Waterflood	5-Spot	5-63	24,230	5,400	36	Madison
Cut Bank, SE, Cut Bank	Texaco, Inc.	Waterflood	5-Spot	4-62	54,943	8,000	51	Madison
Cut Bank, SW, Cut Bank	Phillips	Waterflood	5-Spot	9-62	82,432	16,100	89	Madison
Cut Bank, Lander A	Phillips	Waterflood	Random	4-65	1,527	100	2	Madison
Cut Bank, Lander	Texaco, Inc.	Waterflood	Random	7-64	7,891	1,100	3	Eagle
Cut Bank, McGuiness, Moulton	Union	Waterflood	Random	12-62	4,338	875	1	Madison
Cut Bank, Cut Bank	Tesoro	Waterflood	5-Spot	9- 1-71	3,958	2,400	13	Madison
Cut Bank, Two Medicine, Cut Bank	Miami	Waterflood	Random	12-67	42,018	3,900	49	Madison
Cut Bank, Moulton, Moulton	Union	Waterflood Gas Injection	Random	11-69 5-15-71	16,501 Discontinued	1,300	6	Wtr inj into Madison-Discont'd Gas inj into Madison-Discont'd
Darling, State, Moulton	BG&O Co.	Waterflood	Random	2-67	2,474	75	1	Madison
Darling, NE Unit, Moulton	Ralph Fair	Waterflood	Random	2-68	5,197	900	3	Produced Water
Darling, South Swenson, Moulton	BG&O Co.	Waterflood	Random	2-67	7,504	400	3	Madison
Dwyer, Ratcliffe	Phillips	Waterflood	Peripheral	10-68	1,769	500	5	Madison
Elk Basin, Embar-Tensleep	Amoco	Gas Injection	Random	12-72	2,331 MCF	290 MCF	1	Produced Gas
Elk Basin, Frontier	Amoco	Waterflood	Random	1926	3,114	1,160	1	Madison
Elk Basin, Unit 2, Tensleep	Amoco	Waterflood	Random	1949	2,431	-	-	Produced Water
Elk Basin, Madison	Amoco	Waterflood	Peripheral	1962	64,489	10,600	8	Produced Water
Elk Basin, NW, Tensleep	Atlantic-Richfield	Waterflood	Semi-Peripheral	5-76	4,851	425	2	Madison
Fairview, NW Unit, Red River	Superior	Gas Injection	Crestal	10-25-67	3,315 MCF	900 MCF	1	Purchased Gas
Flat Coulee, Swift	Phillips	Waterflood	Peripheral	2- 1-72	4,214	1,800	14	Eagle
Flat Lake, Ratcliffe	Chevron	Waterflood	Random	6- 1-71	15,057	5,250	11	Produced Water
Frannie, Tensleep	Continental	Waterflood	Random	9-70	2,408	900	1	Produced Water
Fred & George, Sunburst	Fulton	Waterflood	Random	7-70	17,953	7,600	2	Madison & Eagle
Gas City, Red River	Shell	Waterflood	Semi-Peripheral	10-31-69	9,300	584	3	Mission Canyon
Goose Lake, Ratcliffe	Cotton Petroleum	Waterflood	Semi-Peripheral	1-73	5,467	1,875	3	Produced Water
Jfm Coulee, Tyler B	McAlester Fuel	Waterflood	Semi-Peripheral	6- 1-72	6,138	2,900	5	Third Cat Creek
Keg Coulee, NW Unit, Tyler B	Ada Resources, Inc.	Waterflood	Semi-Peripheral	8-31-66	5,212	400	2	Madison
Keg Coulee, East, Tyler	Continental	Waterflood	Semi-Peripheral	12-24-69	3,541	162	2	Third Cat Creek
Keg Coulee, South, Tyler	BG&O Co.	Waterflood	Semi-Peripheral	1- 1-70	2,662	1,200	2	Madison
Kelley, Tyler	McAlester Fuel	Waterflood	Random	7-69	2,264	870	3	Third Cat Creek
Kevin-Sunburst, Madison	BG&O Co.	Waterflood	Random	8-64	6,426	2,100	10	Madison
Kevin-Sunburst, Madison	Texaco, Inc.	Waterflood	Semi-Peripheral	8-64	9,293	1,100	11	Madison
Laird Creek, Swift	Burlington Northern, Inc.	Waterflood	Semi-Peripheral	2-25-77	284	1,000	3	Sawtooth
Little Beaver, Red River	Shell	Waterflood	Semi-Peripheral	8- 7-66	27,638	6,300	13	Produced Water
Little Beaver, East, Red River	Shell	Waterflood	Semi-Peripheral	4-65	10,887	2,800	6	Red River-Minnelusa
Lpkout Butte, Red River	Shell	Waterflood	Semi-Peripheral	4-67	22,842	6,800	11	Minnelusa
Lookout Butte, Lodgepole	Shell	Waterflood	Semi-Peripheral	2-69	2,501	1,380	1	Minnelusa
Pennel, Red River	Shell	Waterflood	Random	6-28-69	60,138	17,700	53	Dakota & Produced
Pine, South, Red River	Shell	Waterflood	Semi-Peripheral	3-59	16,744	3,500	10	Fox Hills & Produced
Pine, North, Sifurion-Ord	Shell	Waterflood	Semi-Peripheral	3-68	147,827	25,000	35	Lodgepole
Prichard Creek, Sunburst	Fulton Producing Co.	Waterflood	Random	4-73	330	280	1	Eagle
Ragged Point, Tyler	BG&O Co.	Waterflood	Semi-Peripheral	12- 3-66	6,947	1,300	4	Third Cat Creek
Reagan, Madison	Union	Gas Injection	Random	8-61	4,737	635 MCF	2	Gas Injection
Reagan, Madison	Union	Waterflood	Random	7-73	1,177	900	4	Produced Water
Red Creek, Cut Bank	Exxon	Waterflood	5-Spot	6-65	11,659	2,400	5	Madison
Richey, SW, Dawson Bay & Interlake	Atlantic-Richfield	Waterflood	Random	12-65	2,312	175	1	Fox Hills
Stensved, Tyler	Ada Resources, Inc.	Waterflood	Semi-Peripheral	2-63	28,000	730	8	Madison
Sumatra, West, Tyler	Continental	Waterflood	Semi-Peripheral	10-68	18,661	8,600	8	Produced Water
Sumatra, Central, Tyler	Texaco, Inc.	Waterflood	Semi-Peripheral	9-16-69	71,650	24,000	16	Madison & Produced Water
Sumatra, NE, Tyler	Texaco, Inc.	Waterflood	Semi-Peripheral	9-16-69	4,428	1,300	5	Madison & Produced Water
Sumatra, SE, Tyler	BG&O Co.	Waterflood	Semi-Peripheral	12- 1-69	9,426	3,400	7	Madison
Sumatra, Grebe, Tyler	Farmers Union	Waterflood	Random	6-16-75	274	280	1	Judith River
Winnett Junction, Tyler	Petro-Lewis	Waterflood	Random	10- 1-77	131	858	1	Produced

OIL AND GAS DISCOVERIES IN 1977

County	Operator-Well Name and Location	Field	Total Depth	Initial Percent Oil B/D Gas:WCF	Producing Formation	Date Completed
Big Horn	Brownlie, Wallace, Armstrong & Bander, Tr 13-44, SE SE 13-6S-32E	E. Soap Cr.	4,000	25	Tensleep	9-9-77
Blaine	Energetics, Hundt 31-13, NW NE 13-28N-18E	Two Forks	1,862	Shut-in	Judith River	7-27-77
Blaine	John J. Lyon, Battle Creek 1, C NW SE 33-36N-19E	Battle Cr.	1,665	Shut-in	Eagle	1-31-77
Liberty	True Oil, Lees 11-13, C NW NW 13-33N-4E	Utopia	2,306	100	Swift	10-18-76
Liberty	Western Natural Gas, Blair 2-10, C NE NW 10-34N-4E	Grandview	2,753	545	Sawtooth	2-3-77
Musselshell	Western Natural Gas, Camargo 1, SW NE 30-34N-6E	Broad Flats	2,350	Shut-in	Bow Island	3-22-77
Musselshell	Exeter Exploration, BN 3-7, NE NW 7-10N-27E	N. Big Well	3,633	60	Lower Tyler	10-12-77
Musselshell	Exeter Exploration, Kluzek et al 14X-32, SE SW 32-11N-28E	N. Big Gully	4,069	41	Lower Tyler	1-29-77
Pondera	Millan R. Ayers, Yeager 1, SE NE 22-30N-3W	S. Marias River	1,435	Shut-in	Bow Island	4-10-77
Pondera	Millan R. Ayers, State 1, SW SW 16-30N-4W	Bull Head	1,753	147	Bow Island	8-5-77
Richland	True Oil, Steinbeisser 31-2, NW NE 2-22N-58E	S. Vaux	12,463	2,050	Interlake	2-4-77
Richland	Brownlie, Wallace, Armstrong & Bander, Rau 15-43 NESE 15-22N-59E	Eagle	9,300	58	Madison	7-7-77
Liberty	Pennzoil, Larson 1, SE NE 24-23N-57E	E. Putnam	12,532	232	Red River	4-16-77
Liberty	CK Petroleum, Rudie 1, SW NE 7-24N-59E	Second Cr.	12,765	1,776	Red River	4-11-77
Roosevelt	Pennzoil, Brookman 1, SE NE 26-31N-48E	W. Long Cr.	7,916	238	Nisku	3-4-77
Sheridan	Patrick Petroleum, Guenther-Anderson 1, C E½ E½ 17-33N-58E	Clear Lake	11,375	1,529	Bed River	6-24-77
Toole	Thunderbird Oil & Gas, Kanning 3-31, NE NW 31-34N-3E	S. Willow Ridge	2,140	1,300	Sunburst	7-31-77
Toole	Fulton Producing, Texas Pacific 44-6, SE SE 6-37N-3E	Pete Cr.	2,760	17	Sunburst	3-4-77
SIGNIFICANT EXTENSIONS AND NEW PAY ZONES IN 1977						
Blaine	John J. Lyon, Battle Creek 2, C SW NE 14-36N-20E	Battle Cr. 1/	2,850	60	Eagle	2-24-77
Fallon	Shell Oil, BN 34X-7, SW NE 7-5N-61E	E. Little Beaver 1/	8,520	40	Red River	5-20-77
Liberty	Montana Power, Joy 9-20, NE SE 20-35N-7E	Alma Area 1/	2,214	177	Bow Island	5-3-77
Pondera	Millan Ayers, Verstraete 3, SE SW 2-30N-3W	S. Marias River 1/	1,627	Shut-in	Bow Island	7-30-77
Pondera	John J. Lyon, State C-1, C SE NW 36-30N-4W	Bull Head 1/	1,837	500	Bow Island	8-27-77
Powder River	Potomus, USA 23-1, SE SW 23-8S-51E	Leary 1/	5,889	19	Muddy	11-21-77
Powder River	True Oil, Groskinsky 33-6, NW SE 6-22N-59E	S. Vaux 1/2 1/	9,111	150	Madison	8-8-77
Richland	Shell Oil, Swigart 24X-8, SE SW 8-22N-60E	Mondak West 1/	12,770	860*-Cmgte w/RR**	*Madison**Stony Mt	5-12-77
Richland	Shell Oil, BN 22-17, SE NW 17-22N-60E	Mondak West 1/	12,630	208	Bakken	7-11-77
Richland	Pennzoil, Franz 1, W½ SW½ 8-23N-57E	S. Fork 1/	12,518	1,236	Red River	9-9-77
Richland	Brinkerhoff Drilling, Bond et al 1, SE NE 8-23N-58E	S. Bronson (Area)	12,550	1,170	Red River	8-16-77
Richland	Farmers Union, Simard 10-27, NW SE 27-23N-58E	Vaux 1/	12,500	287	Red River	7-15-77
Richland	Le Clair Westwood, GPE-BH 1, C NE NE 9-23N-59E	Canal 1/	9,480	51	Mission Canyon	11-7-77
Richland	Farmers Union, Unit 5-30, SW NW 30-23N-60E	Mondak West 1/	12,575	140 est. (DST)	Duperow	2-16-77
Richland	Shell Oil, Watts 2, NW NW 22-24N-59E	N. Fork 1/	12,737	138	Mission Canyon	8-16-77
Toole	Burton Hawks, Rittenhouse 11-1, SW SW 11-33N-3W	Prairie Dell (Area)	1,727	516W	Swift	10-20-77
Toole	Fulton Producing, Parsell 22-25, SE NW 25-36N-2E	Arch Apex 1/	2,930	83.2	Bow Island	1-3-77

OIL AND GAS FIELDS

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
ALMA					
Blackleaf (L. Cret.)	1	Structural Strat.	Depletion	640-acre spacing units. Location to be no closer than 990' from spacing unit boundary. (Order 19-77.)	None
Bow Island (L. Cret.)	1				
Sawtooth (M. Jur.)					
ANTELOPE					
Swift (U. Jur.)	4	Structural	Water Drive	(Listed as part of Cat Creek Field.)	None
Kootenai (L. Cret.)	4				
ARCH APEX					
Bow Island (L. Cret.) Gas	11	Strat.	Volumetric	330' from legal subdivision; 2400' from any other drilling or producible gas well producing from the same reservoir; 75' topographic tolerance. (Order 4-60.) (Sometimes called Colorado Blackleaf pool.) (Swift) Statewide.	None
Swift (Jurassic) Gas	4	Strat.	Volumetric		
Swift (Jurassic) Oil	2	Strat.	Volumetric		
	4	Strat.	Volumetric		
ASH CREEK					
Shannon (U. Cret.)	2	Structural	Partial Water Drive and Depletion	Spacing waived within utilized portion of field except no well may be drilled closer than 660' from unit boundary. (Order 4-65.)	Waterflood started October, 1964. (Orders 22-64, 15-66.)
	4				
(Shut-in)					
(Shut-in)					
BAINVILLE					
Red River (Ord.)	1	Structural-Strat.	Depletion-Water Drive	State-wide.	Produced water disposed into Red River formation. (Order 7-A-75).
BANNATYNE					
Swift (U. Jur.)	1	Structural	Comb. Water Drive and Volumetric	Center of 10-acre tracts, 50' topographic tolerance. Commingling permitted. (Order 20-58.)	Pilot waterflood of Swift suspended in 1963.
Sun River (U. Miss.)	8				
(Shut-in)					
BEARS DEN					
Sunburst (L. Cret.) Gas	3	Structural	Depletion and Gas Cap Drive	State-wide.	None
Swift (U. Jur.) Oil	6				
Sawtooth (Jur.) Gas	1				
BELL CREEK					
Muddy (L. Cret.) Oil & Gas	172	Strat.	Depletion	Originally 40-acre spacing units with location 660' from unit boundary with 150' tolerance for topographic reasons only. (Order 37-67, 39-67, 50-67, 1-69, 17-70.) Field now unitized.	Six areas unitized (Unit "A", "B", "C", "D", and "E") Floods used Madison water. (Orders 7-70, 23-70, 8-71, 26-71, 35-71, 36-71.)
Gas	4				
BELL CREEK SOUTHEAST					
Muddy (L. Cret.) Gas	3	Strat.	Depletion	160-acre spacing units, wells 660' from spacing boundary. (Order 31-72.)	None
BENRUD					
Nisku (Dev.)	2	Structural	Water Drive	160-acre spacing units with permitted location within a 1320' square in center of quarter section. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
BENRUD, EAST Nisku (Dev.)	3	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 64-62, 32-66.)
BENRUD, NORTHEAST Nisku (Dev.)	1	Structural	Water Drive	Same as Benrud Field. (Order 6-65.)	Water disposal into Judith River formation. (Order 32-66.)
BERTHELOTE Sunburst (L. Cret.)	1	Strat.	Depletion	40-acre spacing units with well no closer than 330' from lease or property line and no closer than 660' between wells. (Order 18-66.)	None
(Shut-in)	1				
BIG BEND Red River (Ord.)	1	Structural	Water Drive	Refer to Rule 203 (Order 16-71, Docket 14-71.)	None
BIG COULEE 3rd Cat Creek (L. Cret.) Gas Morrison (U. Jur.) Gas	5 4	Structural Structural	Water Drive Water Drive	State-wide.	None
BIG GULLY L. Tyler (Penn.)	3	Strat.	Depletion	State-wide.	None
BIG MUDDY CREEK Interlake (Sil.) Red River (Ord.)	1 3	Structural	Water Drive	One well per 320 acre spacing unit with well no closer than 660 feet from boundary of four east-west units. (Order 4-75.)	None
BIG ROCK Blackleaf (L. Cret.) Gas Bow Island (L. Cret.) Gas	16 7 9	Strat.	Depletion	State-wide.	None
(Shut-in)					
BIG WALL Amsden (Penn.) Tyler (Penn.)	2 13 4	Structural Struct.- Strat.	Water Drive Depletion	Spaced by old state-wide spacing. 330' from lease or property line, 990' between wells in same reservoir. (Order 12-54.)	Previous disposal into Tyler "A" stopped in 1961. Waterflood of Tyler "B" sand started August, 1966. (Order 22-66.) Excess produced water disposed into the Tyler "B" Formation. (Order 13-A-77.)
(Shut-in)					None
BLACK COULEE Eagle (U. Cret.) Gas	3 1	Structural- Strat.	Water Drive	One well per 320-acre spacing unit, two adjacent quarter sections, direction operator's option. Wells to be at least 990' from unit boundary. (Order 6-73.)	None
(Shut-in)					
BLACKFOOT Cut Bank (L. Cret.)	6	Strat.	Depletion	One well only per 40-acre spacing unit, 300' tolerance from center of spacing unit. Dual completion in Cut Bank and Madison with administrative approval. (Order 3-57.)	Waterflood started November, 1976. (Order 34-76.)
BLACK JACK Sunburst (L. Cret.) Gas Swift (U. Jur.) Gas & Oil Blackleaf (U. Cret.) Gas	12 2 2	Strat.	Depletion	One gas well per 160-acres, no closer than 660' from boundary of each unit. (Order 3-69.) State-wide spacing. Order 3-69 amended to include Blackleaf in spacing and field rules for gas. (Order 4-74.) Blackleaf gas pooled (Order 3-75.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
BLUE HILL Red River (Ord.)	1	Structural	Water Drive	State-wide.	None
BORDER Cut Bank (L. Cret.) Oil & Gas	11	Strat.	Depletion	Oil: Unitized into New and Old Border fields. Unitized 6-1-73. (Orders 8-73, 9-73.) Gas: 330' from boundary of legal subdivision. 2,400' between wells in same formation on same lease. 75' topographic tolerance. (Order 7-54.)	Waterflood approved. (Orders 8-73, 9-73.)
BOULDER Duperow (Dev.)	1	Structural	Water Drive	Refer to Rule 203 (Order 16-71, Docket 14-71.)	None
BOWDOIN Bowdoin & Phillips sands in Colorado Shale (U. Cret.) Gas (Shut-in) 116 *Gas wells outside boundary.	379 57 116	Structural	Volumetric	One well per quarter section not less than 1000' from lease boundary or less than 2000' from any gas well in same horizon. (Order 29-55.) Unitized 1958. Delineated: (Order 3-72.)	Produced water injected into Phillips Sand-Ashfield unit. (Order 10-A-77.)
BOWES Eagle (U. Cret.) Gas (Shut-in) 3	27 3	Structural	Volumetric	660' from boundary of legal subdivision, 1320' from other wells in same formation. 75' topographic tolerance. (Order 23-54.) Order 23-54 amended by establishing 160-acre Eagle spacing units in Sec. 5, 6, 7, 8, 17, 18-31N-19E. (Order 44-75.)	None
Sawtooth (M. Jur.) Oil (Shut-in) 17	61 17	Structural	Partial Water Drive	330' from lease or property line, 990' between wells in the same formation. (Order 13-54.)	Pilot waterflood initiated in 1961 and expanded to fieldwide waterflood in 1965. (Order 6-61.) Water from Madison.
BRADLEY Sun River (Miss.)	1	Structural	Water Drive	State-wide.	None
BRADY Sunburst (L. Cret.) (Shut-in) 2	1 2	Strat.	Depletion Partial Water Drive	10-acre spacing units with 75' topographic tolerance from center of spacing unit. (Order 34-62, 55-62.)	None
BREED CREEK Tyler (Penn.)	5	Strat.	Depletion	State-wide.	None
BROBSON Mission Canyon (Miss.) Oil & Gas Red River (Ord.) Oil & Gas	5 4	Structural	Volumetric Water Drive	One well per 160-acre unit, no closer than 660' from unit boundary (Mission Canyon and Red River), (Order 5-69.) Gas to Brobson Field Plant.	None
BROBSON, SOUTH Red River (Ord.) Oil & Gas	3	Structural	Volumetric, Water Drive	One well per 160-acre unit, no closer than 660' from unit boundary. (Order 26-68.) Gas to Brobson Field plant. Reduced Field Area. (Order 26-77.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
BROWN'S COULEE Judith River (U. Cret.) Gas Eagle (U. Cret.) Gas	2 1 (Shut-in)	Structural	Volumetric	One well per 160-acre unit with well location no closer than 660' from unit boundary. Commingling permitted with administrative approval. (Order 7-74.)	None
BRUSH LAKE Red River (Ord.) Oil & Gas	5 2 (Shut-in)	Structural-Strat.	Depletion Water Drive	320-acre spacing with initial nine spacing units described in (Order 15-71 corrected.)	None
BULLWACKER Judith River (U. Cret.) Gas Eagle-Virgelle (U. Cret.) Gas	6 35 (Shut-in)	Structural	Volumetric	One well per 320-acre spacing unit with well location no closer than 660' from unit boundary & 990' from field boundary. (Order 26-74.)	None
BURNS CREEK Red River (Ord.)	1	Structural	Depletion Water Drive	State-wide.	None
CABIN CREEK Mission Canyon (Miss.) Oil & Gas	14 18 (Shut-in)	Structural	Water Drive Depletion	Spacing waived and General Rules No. 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes operative. (Order 36-62.) Many wells produce from both Interlake and Red River by dual completions. Gas through extraction plant.	Waterflood of Siluro-Ordovician reservoir has been expanded to full scale peripheral flood. (Orders 60-62, 30-63.)
CANADIAN COULEE Sawtooth (M. Jur.) Gas	3 1 (Shut-in)	Structural-Strat.	Volumetric	320-acre spacing units with well location no closer than 660' from unit boundary, and 990' from field exterior boundaries. (Order 18-76.)	None
CANADIAN COULEE, NORTH Sawtooth (M. Jur.) Gas	2 1 (Shut-in)	Structural-Strat.	Volumetric	640-acre spacing unit. Location to be no closer than 1650' to section line. (Order 15-74.)	None
CANAL Red River (Ord.) Mission Canyon (Miss.)	1 1	Structural Structural	Water Drive Depletion	320-acre spacing units consisting of East half and West half of governmental section. (Order 34-70.)	None
CAT CREEK Kootenai (L. Cret.) (3 sands) Morrison (U. Jur.) Ellis (U. Jur.) Amsden (Penn.)	37 2 2 16 2	Structural-Strat. Structural-Strat. Structural Structural-Strat.	Water Drive Water Drive Depletion- Water Drive Water Drive	220' from lease or property line, 440' from every other well in same formation. (Order 17-55.) Five separate producing areas, East, Antelope, Mosby, West and Landheim Domes. State-wide.	Three Kootenai, two Ellis, and one Amsden waterflood in progress. (Orders 17-56, 18-59, 13-62, 8-68, 38-70, 11-71.) Water from Third Cat Creek sand. Waterflood modified. (Order 29-74.)
CEDAR CREEK Judith River (U. Cret.) Gas Eagle (U. Cret.) Gas	75 66	Structural Structural	Volumetric Volumetric	1200' from legal subdivision line, 2400' from every other well in same formation. (Order 33-54.) 320-acre spacing units. Wells in center of NW¼ and SE¼ of each section with 200' topographic tolerance. (Order 1-61.) Field extension (Order 23-76.)	None None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
CHARLIE CREEK Nisku (Dev.) Duperow (Dev.)	1 1	Structural Structural	Water Drive Water Drive	320-acre spacing units, either east-west or north-south at option of operator, located no closer than 660' from spacing unit boundary and no closer than 1650' from another producing well. Spacing units may not cross section lines. (Order 66-76.)	None
CHELSEA CREEK Nisku (Dev.)	1 (Abandoned)	Structural	Water Drive	State-wide.	None
CHIP CREEK Eagle-Virgelle (U. Cret.)	3	Structural- Strat	Volumetric	160-acre spacing units: Location no closer than 660' from spacing unit boundary. (Order 89-76.)	None
CLARK'S FORK Frontier (U. Cret.)	1 (Shut-in)	Structural- Strat.	Depletion	330' from quarter-quarter section line, 1320' between wells with 75' topographic tolerance. (Order 17-54.)	None
CLARK'S FORK, NORTH Lakota (L. Cret.) Gas & Oil	2	Structural- Strat.	Volumetric	160-acre quarter section spacing with location no closer than 660' from spacing unit boundary. (Order 23-75.)	None
CLARK'S FORK, SOUTH Greybull (. Cret.) Oil & Gas	1	Structural- Strat.	Depletion- Water Drive	160-acre spacing, location no closer than 330' from quarter section line or 1320' from any other well.	None
CLEAR LAKE Red River (Ord.)	2	Structural	Water Drive	State-wide.	None
COAL COULEE Eagle (U. Cret.) Gas	3	Structural- Strat.	Volumetric	State-wide.	None
CONRAD BUTTE (See Ledger Field)					
CONRAD, SOUTH Dakota (L. Cret.)	1 3 (Shut-in)	Strat.	Depletion	10-acre spacing units. Wells in center of each unit with 75' topographic tolerance. (Orders 34-62, 31-63.)	None
COW CREEK Charles Miss.)	2	Structural	Water Drive	80-acre spacing units, direction at option of operator but wells to be in SW $\frac{1}{4}$ and NE $\frac{1}{4}$ of each quarter section. (Order 11-69.)	None
COW CREEK, EAST Kibbey (Miss.)	10	Structural	Water Drive	40-acre spacing units consisting of quarter-quarter section with permitted well to be at center with 150' topographic tolerance. (Order 35-74.)	Produced water disposed into Dakota formation. (Order 30-A-75 and 61-A-76.)
CULBERTSON Red River (Ord.)	1	Structural- Strat.	Depletion- Water Drive	State-wise in part. Unitized as to SE $\frac{1}{4}$ of Section 32, SW $\frac{1}{4}$ of Section 33, N $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 4, and N $\frac{1}{2}$ NE $\frac{1}{4}$ of Section 5. (Order 29-70.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks		Secondary Recovery or Water Disposal	
CUPTON Red River (Ord.)	10	Structural-Strat.	Water Drive	160-acre quarter section spacing units. Location no closer than 660' from spacing unit boundary. (Order 4-72.)	None		
CUT BANK Kootenai (L. Cret.) Oil & Gas Madison (Miss.) Oil & Gas (Gas only) Cut Bank (L. Cret.) Gas Sunburst (L. Cret.) Gas Moulton (L. Cret.) Gas	828 31 29 137 22 4 3 20	Strat. Strat. Strat. Strat. Strat. Strat.	Depletion Water Drive Depletion Depletion Depletion	(Kootenai formation includes Moulton, Sunburst, and Cut Bank sands.) Oil: 330' from legal subdivision line. 650' between wells in same formation 5-spot on 40-acre tract permitted. 75' topographic tolerance. (Order 10-54.) Gas: 330' from legal subdivision, 2400' between wells in same formation. 75' topographic tolerance. (Order 10-54.) Sections 20, 29, and 32 of Township 36 North, Range 4 West spaced 320-acres (N½ & S½.) (Order 26-70.) *320-acre spacing units for gas: (Cut Bank) units; (E½ & W½) wells to be located no closer than 330' from legal subdivision line nor less than 2400' from drilling or producible well producing from same reservoir. (Orders 82-76, 6-77.)	None	13 There are 18 waterfloods in progress. Water from Eagle and Madison, or produced. Produced water disposed into Madison formation. (Order 22-A-74, 55-A-77.)	
DAGMAR Red River (Ord.)	2	Structural	Water Drive	State-wide.	None		
DARLING (Included as part of Cut Bank Field)							
DEAN DOME Greybull (L. Cret.) Gas Oil	1 1	Structural	Water Drive	State-wide. Oil ring below gas cap.	None		
DEER CREEK Interlake (Sil.)	1	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Well location in NE¼ and SW¼ of each quarter section with 75' topographic tolerance. (Orders 23-55 & 14-59.) Commingling of production permitted upon approval of Commission Petroleum Engineer. (Order 18-63.)	None	Excess produced water is disposed into Dakota and Lakota formations. (Orders 6-56 & 3-58.) Two Silurian wells shut-in.	
DELPHIA Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None		
DEVIL'S BASIN Heath (U. Miss.)	4	Structural	Depletion	State-wide.	None		
DEVON Blackleaf (U. Cret.) Gas Kootenai (L. Cret.) Oil	21	Strat. Strat.	Volumetric Depletion	State-wide. State-wide.	None None		
DEVON, SOUTH Bow Island (L. Cret.) Gas	1 10	Strat.	Volumetric	Drilled on state-wide spacing. Utilized for primary production. (Order 28-71, corrected).	None		

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
DRY CREEK					
Eagle (U. Cret.) Gas	1	Structural-Strat.	Volumetric	State-wide	None
Judith River (U. Cret.)	(Shut-in)	Strat.		Field re-delineated. (Order 8-70.)	
Frontier (U. Cret.) Gas	9	Structural	Volumetric	Six additional gas storage wells, west end of structure.	
Greybull (L. Cret.) Gas	2	Structural-Strat.	Volumetric-Depletion		
Greybull (L. Cret.) Oil	3	Strat.			
DRY CREEK MIDDLE					
Frontier (U. Cret.) Gas	1	Structural-Strat.	Volumetric	320-acre spacing units consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option with permitted well no closer than 660' from spacing boundary (Order 25-75.)	None
Lakota (L. Cret.) Gas	1	Structural-Strat.	Volumetric		
DRY CREEK (Shallow Gas)					
Judith River (U. Cret.)	2	Structural	Volumetric	160-acre spacing units; (all formations capable of producing gas from the top of the Cody to the surface). One well per horizon per spacing unit to be located no closer than 660' from unit boundary. (Order 31-76)	None
Eagle (U. Cret.)	1	Structural-Strat.	Volumetric		
Virgelle (U. Cret.)	1	Strat.			
DUNKIRK, NORTH					
Bow Island (L. Cret.) Gas	7	Strat.	Water Drive	One well per governmental section per zone or horizon. Each producing well to be located anywhere within section but no closer than 990 feet from section line (Order 25-77).	None
DWYER					
Ratcliffe (Miss.)	10	Structural-Strat.	Water Drive-Volumetric	160-acre spacing units; well location in center of SE $\frac{1}{4}$ of spacing unit with 175' topographic tolerance. (Orders 25-60, 29-61.)	Produced water disposed into Dakota formation. (Order 26-63.) Waterflood. (Order 20-68.)
(Shut-in)	5	Strat.			
EAST KEITH & KEITH					
Bow Island (L. Cret.) Gas	7	Structural	Water Drive	State-wide, except unitized portions spaced by (Order 22-62). Pooling (Order 19-66.)	None
(Shut-in)	2	Strat.			
Black Leafe (L. Cret.) Gas	12	Structural	Gravity Drainage		
Sawtooth (Jur.) Gas	5	Structural	Gravity Drainage		
(Shut-in)	2	Strat.			
ELK BASIN (Mont. Portion)					
Frontier (U. Cret.)	12	Structural	Gravity	Rule No. 203 (Spacing) is waived within Unit Area. (Order 10-61.) Gas to Elk Basin gasoline plant.	Frontier: Water injection. (Order 1-72.)
(Shut-in)	8	Strat.	Drainage		Embar - Tensleep; pressure maintenance by crestal gas injection. Waterflood approved in 1966. (Order 5-66.)
Embar-Tensleep (Perm., Penn.) Oil and Gas	18	Structural	Gravity		Madison: Water injection (Order 17-61.)
(Shut-in)	13	Strat.	Drainage		
Madison (Miss.)	22	Structural	Water Drive		

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
ELK BASIN, NORTHWEST					
Frontier (U. Cret.)	7 (Shut-in)	Structural	Depletion	Spacing waived within unitized portion except that bottom of hole be no closer than 330' from unit boundary and there be at least 1320' surface distance between wells in same formation; 75' topographic tolerance. (Orders 43-63, 28-64.) Gas to Elk Basin gasoline plant.	Frontier: Waterflood in progress. Embar - Tensleep: Waterflood. (Order 3-67.) Madison, produced water.
Embar-Tensleep (Perm., Penn.) Oil and Gas	3	Structural	Gravity Drainage		
Madison (Miss.)	1 2 (Shut-in)	Structural	Water Drive		
EHRIDGE AREA					
Bow Island (L. Cret.) Gas	3 (Shut-in)	Strat.	Water Drive	State-wide.	None
Swift (U. Jur.) Gas	5 1 (Shut-in)	Strat.	Water Drive	State-wide, except two wells by (Order 28-65.)	
FAIRVIEW					
Winnipegosis (Dev.) Oil & Gas	1	Structural	Water Drive	160-acre spacing unit. Well location anywhere in spacing unit but no closer than 660' from unit boundary. (Order 48-65, 1-67, 43-67, 44-67.) Gas to Fairview plant.	Northwest part of field unitized for gas injection. Gas from Fairview and Bronson fields. (Order 11-70.) Salt water disposal into Dakota. (Orders 9-A-71, 24-A-71.)
Red River (Ord.) Oil & Gas	7	Structural	Water Drive		
Mission Canyon (Miss.)	1 1 (Shut-in)	Structural	Water Drive		
FERTILE PRAIRIE					
Red River (Ord.)	2	Structural-Strat.	Water Drive	80 acre spacing units consisting of north-south rectangular units. Well location in NW¼ and SE¼ of quarter section with 75' topographic tolerance. (Orders 3-56, 7-62.)	None
FLAT COULEE					
Bow Island (L. Cret.) Gas	4 (Shut-in)	Structural	Depletion	330' from boundary of legal subdivision and 1320' from other wells in same reservoir. (Order 16-55.) State-wide, exception (Order 11-66.) State-wide gas spacing. 40-acre spacing units. Well in center of spacing unit with 150' topographic tolerance. (Orders 16-62, 19-63.) State-wide.	Waterflood unit and redelimitation approved for Swift sandstone. (Orders 13-71, 17-A-71, 22-71.)
Dakota (L. Cret.) Gas	1	Strat.	Depletion		
Swift (Jur.) Gas	20	Strat.	Depletion		
Swift (Jur.) Oil	1 1 (Shut-in)	Strat.	Depletion		
Sawtooth (Jur.) Gas	1 1 (Shut-in)	Strat.	Depletion		
FLAT LAKE					
Nesson (Miss.)	1 (Shut-in)	Strat.	Partial Water Drive	160-acre spacing units; well location in center of NE¼ of quarter section with 200' topographic tolerance. Wells no closer than 961' to North Dakota state line and no closer than 1600' to Canadian line. (Orders 10-65 amended, 43-65, 23-66, 33-66.)	Excess salt water disposed into Muddy, Dakota, or Lakota formations. (Orders 39-64, 39-66.) Unit operation for eastern part of field. (Order 7-71.) Unit operation for western part of field. (Order 32-74.)
Ratcliffe (Miss.)	50 3 (Shut-in)	Structural-Strat.	Partial Water Drive		
FLAT LAKE, SOUTH					
Ratcliffe (Miss.)	5	Structural-Strat.	Partial Water Drive	Same as Flat Lake spacing. (Order 2-67.)	Excess salt water disposed into Muddy, Dakota, or Lakota. (Order 19-67.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
FOUR MILE CREEK Red River (Ord.)	1	Structural	Depletion	320-acre spacing units. (Order 43-75.)	None
FOUR MILE CREEK, WEST Red River (Ord.)	1	Structural	Depletion	State-wide.	None
FRANNIE (Mont. Portion) Tensleep (Penn.)	1	Structural	Comb. Water Drive and Gravity Drainage	10-acre spacing units; well location in center of each unit with 100' topographic tolerance. (Order 35-63.)	Unitized for waterflood of Phosphoria-Tensleep formations using produced fluids. (Order 21-70.)
FRED & GEORGE CREEK Sunburst (L. Cret.) Oil & Gas (Shut-in)	20	Strat.	Depletion	Oil: 40-acre spacing units; well location in center of unit with 250' topographic tolerance. (Orders 29-63, 1-65.)	Sunburst waterflood initiated July, 1970, using water from Madison, (Order 13-70) and Eagle water. (Order 27-71.)
Swift (U. Jur.) Oil & Gas	21	Strat.	Depletion	State-wide. Order 29-63 amended by (Order 48-77).	
FRESNO Eagle-Virgelle (U. Cret.)	5	Structural-Strat.	Volumetric	640-acre spacing units, well located no closer than 990' from unit boundary. One well may be drilled within each spacing unit for each production horizon within the spacing unit. (Order 14-76.)	None
FROID, SOUTH Red River (Ord.)	1	Structural-Strat.	Depletion	State-wide.	None
FT. GILBERT Red River (Ord.)	2	Structural-Strat.	Depletion	State-wide.	None
(Shut-in)	1				
GAGE Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
GAS CITY Red River (ord.)	14	Structural	Depletion-Water Drive	80-acre spacing units consisting of E½ and W½ of quarter sections; well location in NW¼ and SE¼ of quarter section; 150' topographic tolerance. Spacing waived and state-wide Rules 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are waived in unitized portion of field. (Order 29-62.)	Excess produced water disposed into Judith River formation. (Orders 32-61, 20-64.) Waterflood using produced water and Madison water. (Order 16-69.)
(Shut-in)	9				
GIRARD Red River (Ord.) Interlake (Sil.)	1	Structural-Strat.	Depletion-Water Drive	State-wide.	None
	1				

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
GLENDIVE Red River (Ord.) Oil & Gas	15 3 (Shut-in)	Structural- Strat.	Depletion- Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; wells located in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section with 75' topographic tolerance. (Orders 27-55, 19-62, 58-62, 20-66.)	Excess produced water disposed into Swift, Dakota and Judith River formations. (Orders 16-56, 16-63, 40-A-70.)
GOLD BUTTE Bow Island (L. Cret.)	1 1 (Shut-in)	Structural	Water Drive?	640-acre spacing, well location any quarter-quarter section cornering on center of section. (Order 26-59.) Amended field boundary. (Order 43-77.)	None
GOLDEN DOME Eagle (U. Cret.) Gas Greybull (L. Cret.) Oil	2 1 (Shut-in)	Structural- Strat.	Water Drive Depletion	160-acre spacing; 660' from spacing unit boundary. (Order 15-72.)	None
GOOSE LAKE Ratcliffe (Miss.) Oil & Gas	19 4 (Shut-in)	Structural- Strat.	Partial Water Drive	Unitized. (Order 17-72.) Reduced field area; (Order 29-77.) Unit production curtailment; (Order 45-77.)	Excess produced water disposed into Mission Canyon and Dakota formations. (Orders 12-64, 14-66, 12-68.)
GRABEN COULEE Sunburst (L. Cret.)	1 2 33 (Shut-in)	Structural- Strat.	Depletion	40-acre spacing units; well location no closer than 330' from legal subdivision.	None
Cut Bank (L. Cret.)	7 (Shut-in)	Structural- Strat.	Depletion	(Cut Bank and Madison) Oil: 330' from boundary of legal subdivision and 650' from any other well in same reservoir and on same lease. 75' topographic tolerance. (Order 73-62.)	
Cut Bank-Madison (Dual)	3	Structural- Strat.	Depletion		
GRANDVIEW Bow Island (L. Cret.) Gas (2 Zones)	6	Structural	Unknown	320-acre spacing units aligned in a north-south direction; well locations no closer than 660' to a spacing unit boundary. (Order 49-67.) Dual completion with Bow Island.	None
Madison (Miss.) Gas Swift (U. Jur.) Oil	1 1 (Shut-in)	Structural Structural	Unknown Unknown		
GRANDVIEW, EAST Swift (Jur.)	1	Structural	Water Drive	State-wide.	None
GUMBO RIDGE Tyler (L. Penn.)	6	Structural- Strat.	Unknown	State-wide.	None
GYPSY BASIN Sunburst (L. Cret.) Oil & Gas	3	Structural- Strat.	Comb. Water Drive and Completion	330' from lease lines and 660' between wells in same formation. Only two wells per quarter-quarter section. Order 7-66.)	Order 6-64 permits injection of excessive gas (produced with oil) into the Sunburst gas cap.
Swift (U. Jur.)	2 (Shut-in)	Structural- Strat.	Comb. Water Drive and Depletion	Same as Sunburst	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
Sawtooth-Madison (Jur. & Miss.) Oil & Gas (Shut-in)	2	Structural-Strat.	Comb. Water Drive and Completion	(Sawtooth-Madison) Oil: 40-acre spacing units; wells no closer than 330' from lease line. (Order 7-66.) (Sawtooth-Madison) Gas: 160-acre spacing units; well locations in center of any quarter-quarter section in each 160-acre unit, 2340' between gas wells. 150' topographic tolerance. (Order 13-59.)	None
HARDIN Frontier (U. Cret.) Gas	18 30 (Shut-in)	Strat.	Volumetric	State-wide.	Water disposal into Red River. (Order 20-A-70.)
HAVRE Eagle (U. Cret.)	1	Structural-Strat.	Water Drive Depletion	State-wide. Single well used in town of Havre.	
HAY CREEK Mission Canyon (Miss.)	2	Structural	Depletion	State-wide.	None
Red River (Ord.)	2	Structural	Volumetric Water Drive	320-acre spacing, any two adjacent quarter sections, direction to be determined by operator. Location no closer than 660' from unit boundary. (Orders 15-69, 27-73.) Gas to Bronson plant.	
HAYSTACK BUTTE Eagle-Virg. (U. Cret.) Bow Island (L. Cret.) Kootenai (L. Cret.)	8	Structural-Strat.	Volumetric	640-acre spacing units; one well per each producing horizon above Kootenai. Location no closer than 990' from spacing unit boundary. (Order 85-76.) Amended field boundary (Order 37-77.)	None
HIAWATHA Tyler (L. Penn) (2 sands)	4 1 (Shut-in)	Structural-Strat.	Depletion	State-wide.	None
HIBBARD Amsden (Penn.)	1	Unknown	Water Drive	State-wide.	None
HIGH FIVE Tyler (Penn.)	13	Structural-Strat.	Water Drive	State-wide.	Water disposal into Dakota Formation (Order 33-A-77).
HIGHVIEW Madison (Miss.) Oil & Gas	1 3 (Shut-in)	Structural	Water Drive	160-acre spacing units, located no closer than 660' from spacing unit boundary. 150' topographic tolerance. (Order 84-76.)	None
HORSE CREEK Swift (U. Jur.)	1	Structural	Water Drive	State-wide.	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
HOWARD COULEE Tyler (L. Penn.)	1	Structural-Strat.	Unknown	State-wide.	None
Piper Line (M. Jur.) INJUN CREEK Tyler (Penn.) Abandoned	2	Strat.?	Unknown		None
IVANHOE Morrison (U. Jur.)	1	Structural-Strat.	Depletion	40-acre spacing unit for production from any one common formation; well location in center of unit with 200' topographic tolerance. (Order 7-60 and 9-56.)	Waterflood of Tyler B & C sands discontinued.
Amsden (L. Penn.)	6	Structural-Strat.	Water Drive		
Tyler (L. Penn.)	4	Structural-Strat.	Depletion		
JIM COULEE Tyler (L. Penn.)	17 1	Structural-Strat.	Depletion Water Drive	Unitized (Order 18-72.) No well closer than 330' from unit boundary.	Waterflood; produced and Third Cat Creek water.
KEG COULEE Tyler (Penn.) Oil & Gas	17 3	Strat.	Depletion	40-acre spacing in southwest portion of field except that spacing is waived in unitized portion. (Orders 3-64, 4-64, 23-64.) 80-acre spacing in remainder of field with variable pattern. (Orders 11-60, 28-62.) (40-acre spacing; W $\frac{1}{2}$ E $\frac{1}{2}$ and W $\frac{1}{2}$ Sec. 35-11N-30E; NW $\frac{1}{4}$ Sec. 2-10N-30E.) (Order 23-72.) Topographic tolerance varies from 100' to 250'. (Orders 11-60, 4-64, 23-64.) Buffer zone waived. (Order 16-65.) Field Reduction (Order 2-76.) (Orders 11-60, 4-64, and 2-76) Amended by: (Orders 58-76.)	Three waterflood units. (Orders 3-64, 28-66, 10-69, 14-69.) Madison water injected.
KEG COULEE, NORTH Tyler (Penn.)	3	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 150' topographic tolerance. (Order 46-64.) Buffer zone waived. (Order 16-65.) Field Area amended (Orders 59-76.)	None
KEITH (see East Keith)	1				
KELLEY Tyler (Penn.)	3	Strat.	Depletion	State-wide, 250' topographic tolerance. (Order 15-67.)	Waterflood using Third Cat Creek water. (Order 8-69.)
KEVIN-SUNBURST Sunburst (L. Cret.) Oil & Gas	122	Strat	Depletion	9 wells per 40-acre tract; only 3 wells on any side of tract set back at least 220' from line. Field delineated by (Orders 8-54, 28-55.) (Estimated 400 wells shut-in.)	There are four waterfloods in operation, using Madison water. (Orders 9-64, 17-64, 30-64, 36-65, 29-71.)
Swift (U. Jur.)	1	Structure			
Sun River (Miss.) Oil & Gas Gas only	506 12 ?	Structure-Strat.	Depletion		
Nisku (Dev.) Gas	1			640-acre spacing units; location no closer than 990' from spacing unit boundary. (Order 83-76.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
KICKING HORSE Bow Island (L. Cret.) Sawtooth (Jur.) Gas Sunburst (L. Cret.)	8 1 1	Structural Strat.	Depletion Depletion	320-acre spacing with location permitted no closer than 660' from unit boundary and 990' from field boundary. (Order 17-74.) One 640-acre unit. (Order 17-74.)	None
KINYON COULEE Bow Island (L. Cret.)	4	Structural-Strat.	Volumetric	State-wide.	None
LAIRD CREEK Swift (U. Jur.) Oil & Gas	10	Strat.	Depletion	State-wide. One shut-in gas well.	Unitized and waterflood authorized in Swift for oil production. (Order 25-74.) Commenced 2-25-77.
LAKE BASIN Telegraph Creek 7U. Cret. O Gas Virgelle (U. Cret.) Gas	9	Structural-Strat.	Volumetric	160-acre spacing units to base of Virgelle; wells no closer than 660' from unit boundary and 990' from field boundary. Commingling permitted after administrative approval. (Order 9-74.) Gas from Telegraph Creek pooled. (Order 29-75.)	None
LAKE BASIN, NORTH Eagle, Frontier (U. Cret.) Gas Claggett Eagle-Virg. (U. Cret.) Gas	1 3 1	Structural Structural	Unknown Unknown	640-acre spacing units consisting of one section. Locations 990' from section line. (Order 3-74.) 160-acre spacing units located no closer than 660' from quarter section lines within restricted Sections. (Order 63-76.)	None None
LANDSLIDE BUTTE Sun River (Miss.)	1 2	Unknown	Water Drive	State-wide.	None
LAREDO Eagle (U. Cret.) Judith River (U. Cret.)	21 1	Unknown	Depletion	320-acre spacing with unit consisting of one-half section lying N-S or E-W at operator's option after administrative approval. Well no closer than 990' from unit boundary. (Order 8-74.)	None
LEARY Muddy (L. Cret.)	4	Structural-Strat.	Depletion	80-acre spacing with locations in NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section, 200' topographic tolerance. (Order 12-69, 19-70.) Reduced Field Area (Order 68-76.)	None
LEDGER Bow Island (L. Cret.) Gas	10 9	Structural	Volumetric	640-acre spacing; one well per section per Sand to be located no closer than 990' from section line. Permissible to commingle two or more Shnds, subject to administrative approval by the Petroleum Engineer. (Order 53-77.)	

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
LEROY Judith River-Eagle Virgelle (U. Cret.) Gas	27	Unknown	Depletion	320-acre spacing with unit consisting of one-half section lying N-S or E-W at operator's option after administrative approval. Well no closer than 660' from unit boundary and 990' from field boundary. (Order 19-75.)	None
LISCOM CREEK Shannon (U. Cret.) Gas	7 1	Structural- Strat.	Depletion	Spacing, one well per 640 acres, with location no closer than 990' from section boundary. (Order 20-72.)	None
LITTLE BEAVER (Mont. Portion) Red River (Ord.)	23 1	Structural	Comb. Depletion and Water Drive	Spacing waived and General Rules 213 (Deviation), 218 (Commingling) and 219 (Dual Completion) are suspended until present Unit Agreement becomes inoperative. (Order 41-62.)	Waterflood of the Red River was commenced in August, 1967. (Order 3-66.) Minnelusa water.
LITTLE BEAVER, EAST (Montana Portion) Red River (Ord.)	10 3	Structural	Comb. Depletion and Water Drive	Same as for Little Beaver. (Order 42-62.)	Waterflood of the Red River was commenced in April, 1965. (Order 33-64.)
LITTLE WALL CREEK Tyler (Penn.)	14 2	Strat.	Depletion Water Drive	State-wide.	Produced water injected into Tyler Formation (Order 54-A-77).
LODGE GRASS Tensleep (Penn.)	1	Structural- Strat.	Water Drive	160-acre spacing units; well locations vary according to areas; 250' topographic tolerance. (Orders 26-64, 26-65.)	None
LONE BUTTE Red River (Ord.)	2	Structural	Unknown	320-acre spacing units with well location at least 660' from unit boundary. Not delineated.	None
LONETREE CREEK Red River (Ord.)	6 1	Structural	Depletion	320-acre spacing, wells 660' from spacing boundary, 2000' between wells. (Order 29-72.)	None
LONG CREEK Madison (Miss.) Charles	1	Structural	Water Drive	State-wide spacing.	None
LONG CREEK, WEST NISKU (Dev.)	2	Structural	Water Drive	80-acre spacing units comprised of two contiguous quarter section units which may lie in either one of two governmental sections, aligned either North-South, East-West with location to be no closer than 330 feet from unit boundary nor less than 1000 feet from any other producing well. (Order 27-77.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
LOOKOUT BUTTE (Includes Coral Creek Unit) Madison (Miss.)	3 6 26 6	Structural Structural	Water Drive Comb. Depletion and Water Drive	State-wide spacing. 160-acre spacing; well location in center of SE¼ of each quarter section with 150' topographic tolerance. (Order 21-62.) Coral Creek Unit not subject to spacing rules. Redelineated per (Order 7-63.)	Water disposal into Madison. (Order 68-62.) Waterflood of Silurian-Ordovician approved in 1966. (Order 35-66.) Water from Minnelusa.
MASON LAKE Lakota (L. Cret.)	2	Structural	Water Drive	State-wide.	None
MELSTONE Tyler (Penn.)	9 3	Structural-Strat.	Depletion	State-wide.	None
MIDDLE BUTTE Bow Island (Cret.)	1 2	Structural	Volumetric	Orders (3-60, 21-75) Amended to delineated field extension and 320-acre spacing units consisting of the E½ & W½ of each section; well location no closer than 990' from the section line and 660' from the interior boundary. (Order 47-77.)	None
MINERAL BENCH Dupetrow (Dev.)	1	Structural	Water Drive	State-wide.	Water disposal into Dakota-Lakota per (Order 18-65.)
MINERS COULEE Sunburst (L. Cret.) Oil Swift (U. Jur.) Oil	1 1	Strat. Strat.	Depletion Depletion Water Drive	Oil: 40-acre units consisting of quarter-quarter sections; well location no closer than 330' from lease or property line and 660' from any other well. (Order 9-66.) Order 9-66 amended to comply with Order 5-74. Gas: 160-acre spacing with wells 990' from unit boundary. (Order 5-74.) Sawtooth gas spacing unit. (Order 43-76.) Field redelineation (Order 44-77.)	None
Sunburst-Swift Gas Sawtooth (M. Jur.) Bow Island (L. Cret.)	1 1 6	Strat.	Depletion		
MONARCH Mission Canyon (Miss.)	1	Structural-Strat.	Water Drive	80-acre spacing units consisting of east and west half of quarter section. Well location in SW¼ and NE¼ of quarter section. Location within 660' square at center of quarter section. (Order 18-61.)	Produced water is disposed into the salt water disposal system for the Pennel Field.
Interlake, Red River (Sil.-Ord.)	15	Structural-Strat.		160-acre spacing units consisting of a quarter section; well location in center of SW¼ of each quarter section with 175' topographic tolerance. (Orders 12-59, 4-63.)	Waterflood initiated 12-1-73. (Order 23-73.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
MON DAK WEST Madison (Miss.) Dawson Bay (Dev.) Winnipegosis (Dev.) InterLake (Sil.) Stony Mtn. (Ord.) Red River (Ord.)	Total-9	Structural Structural	Water Drive Comb. Depletion and Water Drive	*320-acre spacing units consisting of, (N½, S½, E½ or W½) location to be no closer than 660' to unit boundary and no closer than 1650' to any well drilling or producing from the same formations in Madison, Devonian, Silurian, or Ordovician. (Order 23-77-42-77.) Silurian and Ordovician production may be commingled subject to prior administrative approval (Order 42-77.)	
MOSBY (See Cat Creek)	3 4 (Shut-in)	Structural- Strat.	Water Drive	Listed as part of Cat Creek.	Waterflood, 2nd Cat Creek sand. (Order 8-68.) Water-flood in Amsden. (Order 11-71.)
MOSSER Greybull (L. Cret.)	12 1 (Shut-in)	Structural	Water Drive	Spacing waived. Future development requires administrative approval of the Commission. (Order 27-62.)	None
MT. LILLY Madison (Miss.) Gas	3	Structural	Water Drive	640-acre spacing, well location in approximate center of any of the four quarter-quarter sections adjoining center of section; 250' topographic tolerance. (Order 37-63.)	None
MUD CREEK Amsden (L. Penn.)	2	Structural	Water Drive	640-acre spacing unit. Well location anywhere in 160-acre tract in center of each 640-acre well spacing unit (Order 9-63.)	None
NOHLY Red River (Ord.)	2	Structural	Volumetric Water Drive	State-wide.	None
NORTH FORK Red River (Ord.) Mission Canyon (Miss.)	1 1	Structural Structural	Water Drive Water Drive	State-wide.	None
NORTH GILDFORD Sawtooth (M. Jur.)	1 (Shut-in)	Structural	Unknown	320-acre specified spacing units. One well per unit 660' from boundary, 2640' between wells. (Order 9-58.) Boundary reduction (Order 38-76.)	None
NORTH LAKE BASIN (See Lake Basin, North)					
NORTH WILLOW CREEK (See Willow Creek, North)					

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
OTIS CREEK Red River (Ord.)	2	Structural	Depletion	State-wide.	None
OTIS CREEK, SOUTH Red River (ord.)	2	Structural	Depletion	320-acre spacing units; well to be located no closer than 660' to unit boundary (Order 39-72.) Extended field boundary (Order 56-76, 67-76.)	None
OUTLOOK Dupewor (Dev.)	1 (Shut-in)	Structural-Strat.	Water Drive	State-wide.	Produced water is disposed into Dakota and Siluro - Devonian formations. (Orders 16-59, 17-65, 36-66, 9-A-77.)
Winnepogis (Dev.)	3	Structural-Strat.	Water Drive	State-wide.	
Silurian-Devonian	3 (Shut-in)	Structural-Strat.	Water Drive	160-acre spacing units; well location in center of either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ of each quarter section; 175' topographic tolerance. (Order 19-59A.)	
OUTLOOK, SOUTH Winnepogis (Dev.)	1	Structural	Water Drive	160-acre spacing; permitted wells in either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ of quarter section; 175' topographic tolerance. (Order 19-59A.) Commingling permitted. (Order 45-64.)	Produced water disposed into Muddy and Dakota formations. (Orders 19-59, 17-65.)
OUTLOOK, WEST Winnepogis (Dev.)	2	Structural	Water Drive	160-acre spacing units consisting of quarter sections; permitted wells in either SW $\frac{1}{4}$ or NE $\frac{1}{4}$ with a tolerance of 175'. (Order 7-67.)	Produced water disposed into Dakota formation. (Order 42-66.)
PENNEL Mission Canyon (Miss.)	8	Structural	Depletion-Water Drive	80-acre spacing units consisting of east and west half of quarter section; wells located in center of SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of quarter sections with 150' topographic tolerance. (Order 15-61.)	Produced water is being injected into Dakota, Siluro-Ordovician and Madison formations. (Orders 16-60, 46-62, 68-62, 36-63, 13-64.) Waterflood for Siluro-Ordovician approved Nov. 1968. (Order 24-68.)
Siluro-Ordovician Oil & Gas	110	Structural	Depletion-Water Drive	80-acre spacing units on west side and 160-acre spacing units on east side of pool. Wells to be located in SE $\frac{1}{4}$ and NW $\frac{1}{4}$ of each quarter section (80 acres) and in SE $\frac{1}{4}$ of each quarter section on 160-acre spacing. (Orders 1-56, 8-56, 15-61, 20-62, 4-63, 7-63.) Commingling approved. (Order 59-62.)	
PHANTOM Bow Island (Cret.) Gas Sunburst (L. Cret.) Oil Swift (U. Jur.) Gas	Total-3	Structural Strat. Strat.	Depletion Depletion Depletion	*Gas: wells permitted anywhere within the unit but no closer than 990' to the unit boundary. *Oil: projected depths greater than 6,000' to be located no closer than 660' to the unit boundary. Projected depths less than 6000' to be located no closer than 330' to the unit boundary. (Order 48-77.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
PINE					
Mission Canyon (Miss.) Oil & Gas	2	Structural	Water Drive	Spacing and General Rules 213, 218 and 219 are waived within the Pine Unit. 80-acre spacing units outside of unit area; well location in NW¼ and SE¼ of quarter section; 150' topographic tolerance. (Order 37-62.) Gas through extraction plant.	A waterflood program for the south area was started in 1959. A waterflood of the north area was approved in 1967 (Orders 13-68, 1-60, 8-62, 32-67.) Produced water injected into Mission Canyon. (Order 10-A-74.)
Siluro-Ordovician Oil & Gas	102	Structural	Depletion-Water Drive		
PLEVNA					
Judith River (U. Cret.) Gas	19	Structural	Water Drive	1200' from legal subdivision line; 2400' from other wells on same lease or unit; 75' topographic tolerance. (Orders 34-54, 4-57.)	None
(Shut-in) 1					
POLICE COULEE					
Bow Island (L. Cret.)	3	Structural	Depletion	320-acre spacing units; location no closer than 990' from section line and 660' from half section lines. Spacing units to consist of north half or south half, east half or west half at discretion of operator. (Order 53-76.) Extended Field boundaries (Order 24-77.)	None
(Shut-in) 3					
PONDERA					
Sun River (Miss.) Oil & Gas	318	Structural-Strat.	Depletion-Water Drive	Oil: 220' from legal subdivision, 430' from other wells in same reservoir on same lease; 75' topographic tolerance. Porter Bench Extension: 330' from legal subdivision line; 650' from other wells in same reservoir on same lease or unit; 75' topographic tolerance. (Order 9-54.) Gas: 1320' from legal subdivision; 3700' from other wells on same lease or unit; 75' topographic tolerance. (Order 9-54.) General Rules 207, 211, 219, 221, 223, and 224 do not apply.	Produced water injected into lower Madison. (Orders 11-56, 15-56, 4-65, 4-66, 20-A-71.) A small waterflood project has been in operation since 1959, using Madison water.
PONDERA COULEE					
Sun River (Miss.)	3	Structural	Water Drive	330' from legal subdivision lines or upon a 10-acre spacing pattern; 75' topographic tolerance. (Order 5-62.)	None
(Shut-in)					
POPLAR, EAST					
Madison (Miss.)	59	Structural	Water Drive	State-wide spacing, field delineated by (Order 7-55.)	Unitized in 1955. (Order 7-55.)
(Charles & Mission Canyon fms.)	3	Structural-Strat.	Water Drive	Re-delineation of field (Order 25-76.)	Excess produced water has been injected into the Dakota Judith River, and Mission Canyon formations. (Orders No. 1-55, 5-57, 7-57, 14-61, 21-61, 34-61, 10-62, 51-67, 10-A-73.)
Heath (Tyler) (Penn.)	1	Structural	Water Drive		
Nisku (Dev.)					
POPLAR NORTHWEST					
Charles (Miss.)	16	Structural	Water Drive	80-acre spacing units for all zones in Charles formation consisting of E½ and W½ of each quarter section; permitted wells in NW¼ and SE¼ of quarter section except for certain specified spacing unit tracts (Orders 18-55 & 26-76.) Commingling approved. (Order 26-76.)	None
("B" & "C" or McGowan Zone)					

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
PRAIRIE DELL Bow Island (L. Cret.) Gas Swift (U. Jur.) (Dual) Gas	7 5	Structural-Strat.	Depletion	320-acre spacing units with well location no closer than 660' from spacing unit boundary. (Order 10-76.)	None
PRAIRIE ELK Charles "C" (Miss.)	1 1 (Shut-in)	Unknown	Water Drive	State-wide.	None
PRICHARD CREEK Sunburst (L. Cret.) Oil & Gas	5 2 (Shut-in)	Strat.	Depletion	Well locations subject to administrative approval.	None. Utilized as to Sunburst for water injection. (Order 7-73.)
PUMPKIN CREEK Shannon (U. Cret.) Gas	3 5 (Shut-in)	Strat. Strat.	Depletion	State-wide. Delineated. (Order 10-71.)	None
PUTNAM Interlake (Sil.)	1	Structural	Volumetric Water Drive	State-wide.	None. Gas to McCulloch Gas Processing Corp. Bronson Plant.
Red River (Ord.)	1	Structural	Volumetric Water Drive		
RABBIT HILLS Sawtooth (Jur.)	4	Structural Strat.	Volumetric Water Drive	160-acre spacing unit. Well location 660' from spacing unit boundary. (Orders 17-73, 34-74, 33-76.) Re-delineation (Order 47-76.)	Produced water disposed into Eagle formation. (Order 49-A-75.)
RAGGED POINT Tyler (Penn.)	24	Strat.	Depletion	40-acre spacing units; 75' topographic tolerance. (Order 8-59.) Spacing waived for Tyler "A" sand reservoir within Tyler "A" Sand Unit except no well can be closer than 660' to Unit Boundary. (Order 35-65.)	A waterflood project of the Tyler "A" sand was commenced in February, 1966, using Third Cat Creek water. (Order 35-65.)
Kibbey (Miss.)	0	Structural	Water Drive	State-wide spacing. (Order 15-54.) Commingling of production from Tyler and Kibbey permitted in one well per (order 11-65.)	
RAPELJE Claggett, Eagle, Judith River, Virgelle (U. Cret.)	15 1	Structural-Strat.	Water Drive	160-acre spacing. Wells no closer than 990' to unit boundary. Commingling after administrative approval. (Order 29-73.)	None
RATTLER BUTTE Tyler (Penn.)	3	Strat.	Depletion	State-wide.	None
RATTLENAKE COULEE Sunburst (L. Cret.) Oil & Gas	2	Strat.	Depletion	State-wide.	None
Bow Island (L. Cret.) Gas	1 (Shut-in)				

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
RAYMOND Duperow (Dev.) Nisku-Winnepegosis (Dev.) Dual Winnepegosis (Dev.)	1 1 2	Structural-Strat.	Depletion Water Drive	320-acre spacing units. Wells 660' from spacing unit boundary. (Order 38-72.)	Produced water injected into Dakota formation. (Order 38-A-74.)
RAYMOND, NORTHEAST Winnepegosis (Dev.) (Dual) Red River (Ord.)	1	Structural-Strat.	Depletion Water Drive	160-acre spacing units. Wells 660' from spacing unit boundary. (Order 12-74.)	None
REAGAN Sun River (Miss.) Oil Gas (Shut-in)	49 14 2	Structural	Gas Cap- Water Drive	State-wide. (Order 17-54.)	A pressure maintenance project utilizing gas injection was started in 1961. (Order 21-60.) Water-flood. (Order 27-72.)
REAGAN, WEST Blackleaf (L. Cret.) Gas Bow Island (L. Cret.) Oil (Shut-in)	1 1	Strat. Structural-Strat.	Depletion Volumetric	State-wide. Injected into Reagan field as secondary recovery agent.	None
RED CREEK Cut Bank (L. Cret.) Oil & Gas (Shut-in) Sun River (Miss.) Oil & Gas (Shut-in)	7 2 12 7	Strat. Structural	Depletion Water Drive	40-acre spacing units; wells in center of spacing unit with 75' topographic or obstruction tolerance; spacing and field rules waived for unitized portion. (Orders 16-58, 73-62, 31-64, 5-70.)	Excess produced water injected into Bow Island and Madison. (Orders 22-63, 37-64.) A water-flood project in the Cut Bank sand was initiated in June, 1965, using Madison water.
RED FOX Nisku (Dev.)	1	Structural	Water Drive	Field consists of one 160-acre spacing unit which straddles the section line. (Order 20-67.)	None
REDSTONE Winnepegosis (Dev.)	1	Unknown	Water Drive	One well per 160-acre unit, but no closer than 660' from unit boundary.	None
REPEAT Red River (Ord.)	1	Unknown	Water Drive	State-wide.	None
RESERVE Winnepegosis (Dev.) Red River (Ord.) (Shut-in)	1 2 1	Structural-Strat. Strat. Structural-Strat.	Water Drive Water Drive	160-acre spacing units; permitted well within 1320' square in center of quarter section. Commingling of Red River and Interlake production permitted on individual well basis. (Orders 34-66, 27-67.)	Excess water injected into Dakota sand. (Order 23-A-67.)
RICHEY Charles (Miss.)	3	Structural	Water Drive	State-wide.	Original 80-acre spacing revoked. (Order 11-73.)

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
RICHEY, SOUTHWEST Interlake, Dawson Bay (Sil.) (Dev.)	5 1 (Shut-in)	Structural	Depletion	160-acre spacing units; wells no closer than 900' from boundary of spacing unit. (Order 25-62.)	A waterflood project in the Interlake and Dawson Bay was started in 1965. (Order 34-65.)
RIPRAP COULEE Ratcliffe (Miss.)	2	Structural-Strat.	Depletion	State-wide.	None
ROSCOE Lakota (L. Cret.)	1 (Shut-in)	Structural	Water Drive	State-wide.	None
ROSEBUD Tyler (L. Penn.)	5	Structural-Strat.	Unknown	State-wide	None
ROUGH CREEK Muddy (L. Cret.)	1 (Shut-in)	Structural Strat.	Depletion	State-wide. Formerly called Duncan Creek.	None
RUDYARD Sawtooth (M. Jur.) Gas	3 (Shut-in)	Structural	Volumetric	640-acre spacing units consisting of one section; well location in center of NW $\frac{1}{4}$ of section with 75' topographic tolerance. (Order 2-58.) Field boundaries reduced. (Order 39-76.)	None
RUSH MOUNTAIN Winnipegosis (M. Dev.) Red River (Ord.)	1	Structural	Volumetric-Water Drive	State-wide. Dual zone completion in discovery well.	Excess water injected into Dakota sand. (Order 5-A-71.)
SAGE CREEK Greenhorn (Cret.) Gas Black Leaf (L. Cret.) Gas	1 1 20 (Shut-in)	Strat.	Depletion	640-acre spacing, one producing well per section per formation above the Kootenai to be located no closer than 990 feet from section line. (Order 38-77.)	None
SALT LAKE Bakken-Nisku (Miss.-Dev.)	3	Structural	Water Drive	State-wide.	None
SAND CREEK Interlake, Red River (Sil.) (Ord.)	4 2 (Shut-in)	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections. Wells located in center of NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section. (Order 16-59.) Commingling of production from Interlake and Red River authorized per (Order 49-62.)	Excess produced water is injected into the Swift formation. (Order 9-61.)
SANDWICH Sunburst (L. Cret.) Gas Swift (U. Jur.) Gas	1 1 (Shut-in)	Strat.	Depletion	320-acre spacing unit. Well: located no closer than 990' to spacing unit boundaries. (Order 17-77.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
SAWTOOTH MOUNTAIN Judith River (U. Cret.)	6 (Shut-in)	Structural-Strat.	Volumetric Water Drive	640-acre spacing units, one well per section per formation, location to be not less than 990' from governmental section line. (Order 45-76.)	None
Eagle (U. Cret.)	21 (Shut-in)				
SECOND CREEK Red River (Ord.)	4	Structural	Volumetric Water Drive	State-wide.	None
SHEEPHERDER Tyler (L. Penn.)	3	Structural-Strat.	Unknown	State-wide.	None
SHELBY AREA Sunburst (L. Cret.) Gas Swift (Jur.) Gas Bow Island (L. Cret.) Gas	33 5	Structural-Strat.	Depletion	State-wide. Field outline not delineated. A few small Swift sand wells commingled with Sunburst.	None
SHERARD Eagle (U. Cret.) Gas	20 9	Structural-Strat.	Volumetric Water Drive	640-acre spacing units; 990' from section line. (Order 1-74.) 160-acre spacing units; (Eagle) 990' from section line, 660' from quarter section line. (Order 7-77.)	None
Judith River (U. Cret.) Dual	1				
SHERRARD WEST Eagle, Virgelle (U. Cret.)	1	Structural-Strat.	Volumetric Water Drive	160-acre spacing units; location no closer than 660' to unit boundary. (Order 90-76.)	None
SHOTGUN CREEK Ratcliffe (Miss.)	1 (Shut-in)	Structural	Water Drive	State-wide.	None
SHOTGUN CREEK, NORTH Guntton (Ord.) Red River (Ord.)	1	Structural	Water Drive	320-acre spacing units consisting of two contiguous governmental quarter sections which may be in one or two sections with permitted well to be no closer than 600' to the unit exterior boundary and no closer than 1500' to any well producing from the same formation. IF NOT feasible to produce two zones separately, commingling permissible with prior administrative approval. (Order 49-77.)	None
SIDNEY Mission Canyon (Miss.)	4	Structural	Water Drive	State-wide.	None
SIoux PASS Interlake (Sil.) Red River (Ord.) Mission Canyon (Miss.)	Dual 2 4 1	Structural	Volumetric Water Drive	320-acre spacing units consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option. Permitted well no closer than 660' from unit boundary. (Interlake and Red River). 160-acre spacing unit (Mission Canyon) with well no closer than 660' from unit boundary. Commingling of Interlake and Red River production authorized. (Order 10-75.) Amended field boundary. (Order 15-77.)	Excess water injected into Dakota formation. (Order 15-A-75.)

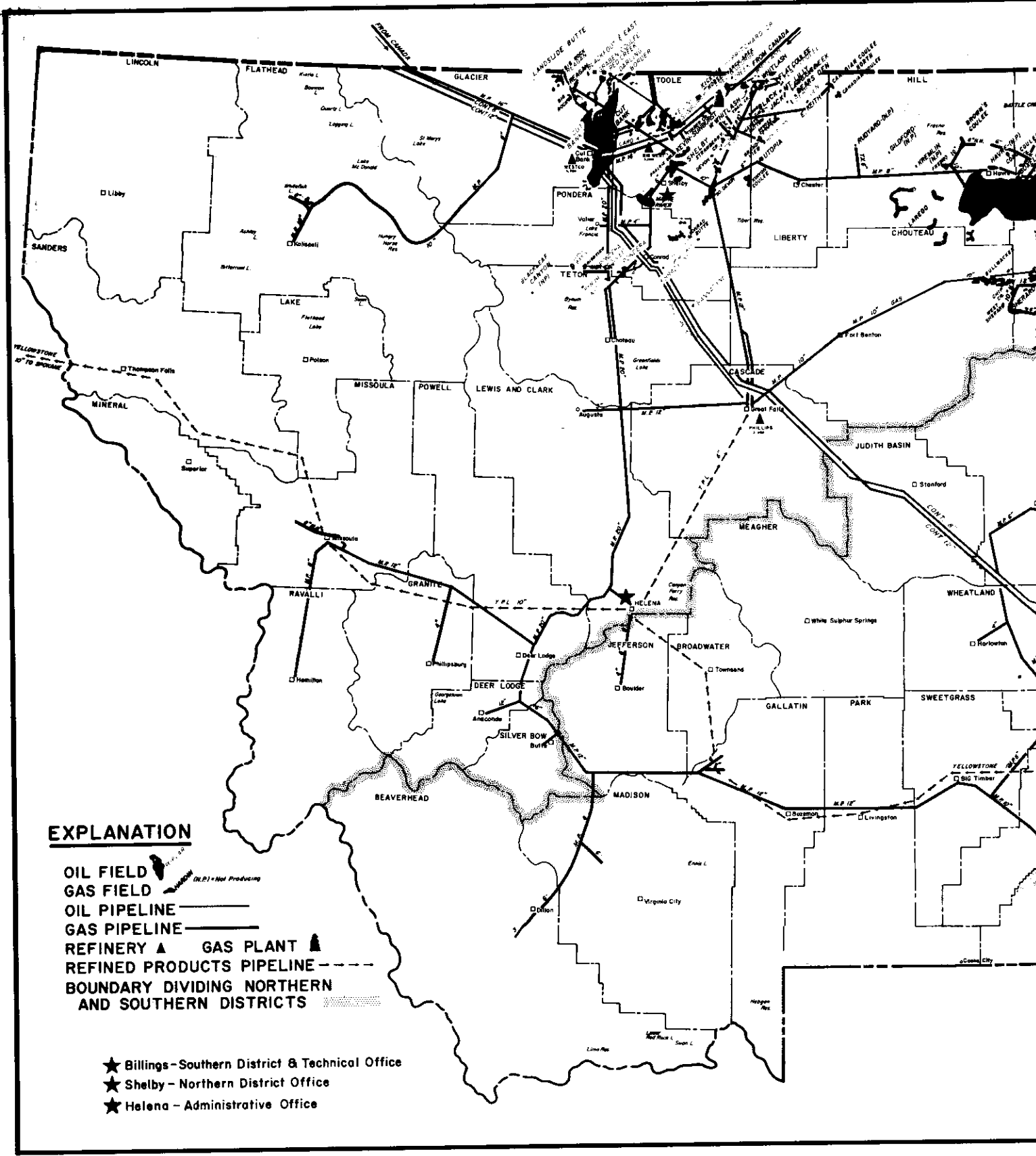
Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
SIOUX PASS, EAST Red River (Ord.)	1	Structural-Strat.	Water Drive	State-wide.	None
SIOUX PASS, MIDDLE Red River (Ord.)	2	Structural	Water Drive	320-acre spacing units to consist of two contiguous governmental quarter sections at operator's option. Location to be no closer than 660' from exterior boundary of unit and no closer than 1650' from well producing from same formation. Commingling permissible with Administrative approval. (Order 55-76.)	None
SIOUX PASS, NORTH Interlake (Sil.) Red River (Ord.) Dual Winnipegosis (Dev.)	1	Structural	Unknown	320-acre spacing units with well location at least 660' from unit boundary. (Order 12-75.) Field enlarged (Order 16-75.)	None
Nisku (Dev.) Red River (Ord.) Dual Red River (Ord.)	1 4	Water Drive		Commingling from Interlake and Red River approved (Order 36-74.) Refer to Order 35-75 for modification. Field Extension (Order 12-77.)	None
SNOOSE COULEE Bow Island (L. Cret.) Gas	6	Structural-Strat.	Volumetric	640-acre spacing units; location no closer than 990' from spacing unit boundary. Bow Island and Shallowen Formations (Order 18-18-77.)	None
SNOW COULEE Sunburst (L. Cret.) Gas	1	Strat.	Depletion	Spacing units; E½ section 33 and W½ section 34, 36N-4E designated as spacing units. (Order 78-76.)	None
SNYDER Tensleep (Penn.)	3 1	Structural	Water Drive	10-acre spacing units with center 5-spot permitted; 150' topographic tolerance. (Order 45-62.)	None
SOAP CREEK Tensleep, Amsden, Madison (Penn.) (Penn.) (Miss.)	23 1	Structural	Water Drive	One well per 10-acre spacing unit per producing formation; well location in center of spacing unit with 100' topographic tolerance. (Order 26-60.)	None
SOUTH FORK Red River (Ord.)	2	Structural	Water Drive	State-wide.	None
SPRING LAKE Nisku (Dev.) Red River (Ord.)	1 2	Structural	Depletion Depletion	One well per 160-acre spacing unit. Well location anywhere within 840' square in center of spacing unit. (Order 6-63.) Field redelineation. (Orders 30-76, 49-76.)	None
SQUAW COULEE (Now included as part of Tiger Ridge Field.) (Order 10-70.0					

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
STRAWBERRY CREEK Bow Island (l. Cret.) Gas Sawtooth (M. Jur.)	3 1	Structural- Strat.	Volumetric Water Drive	State-wide.	None
STENSVAD Tyler (Penn.)	4 12 (Shut-in)	Strat.	Depletion	40-acre spacing units; well location in center of spacing unit with 200' tolerance. (Orders 2-59, 7-60.) Wells may be drilled anywhere within waterflood unit boundary, no closer than 660' from unit boundary. (Orders 5-65, Amended.)	A waterflood operation has been in progress since 1963, using Madison water. (Orders 48-67, 9-67.) Excess produced water disposed into Madison (Order 70-A-76).
SUMATRA Tyler (Penn.) Oil & Gas	110	Strat.	Depletion	40-acre spacing units; well located in center of unit with 75' tolerance. (Order 14-58.) Field re-delineated (Order 14-75.)	Four waterflood units using Madison water. (Orders 48-67, 6-69, 15-69, 19-69, 3-70, 16-72, 24-74, 5-75.) Produced water disposed into Madison formation. (Order 7-A-76.)
SWANSON CREEK Phillips (U. Cret.) Gas	4	Strat.	Depletion	320-acre spacing units, well location SE NW each section. Wells no closer than 990' from unit boundary. (Order 36-75.)	None
TIGER RIDGE Judith River (U. Cret.) Gas	5 3 (Shut-in)	Structural- Strat.	Volumetric Water Drive	Field delineated; (Orders 17-67, 23-68) re-delineated and established. State-wide spacing (Order 10-70.) State-wide for field area not unitized. Two units; wells to be located closer than 990' from unit boundary (Order 11-72, 41-72) 160-acre spacing units; sections 20, 21, 22, 27, 28, 33, 34, 32N-16E (Judith River) locations to be no closer than 660' from unit boundary (Order 32-73) Enlarge and re-delineate Field (Order 13-75) 160-acre spacing units in sections 22, 23, 24, 32N-14E (Eagle & Virgelle) wells to be located no closer than 990' from section line and 660' from quarter section line (Order 37-75) 160-acre spacing units, NW¼ & NE¼ section 30, T-31N, 4-17E well to be located at least 990' from quarter section line. 75' tolerance allowed for topographic reasons (Order 51-77.)	Excess produced water injected into Eagle Formation (Order 19-A-73, 46-A-75.)
Eagle (U. Cret.) Gas	222 45 (Shut-in)	Structural- Strat.	Volumetric Water Drive	160-acre spacing units; sections 32, 33, 31N-17E & Section 4, 30N-17E (Eagle) to be located no closer than 990' to a section line and 660' to quarter section line. (Order 52-77.)	
TIMBER CREEK Sunburst (L. Cret.) Gas	2 (Shut-in)	Strat.	Depletion	320-acre spacing consisting of two adjacent governmental quarter sections lying N-S or E-W at operator's option. Permitted well no closer than 660' from spacing boundary and 990' from field boundary. (Order 24-75.)	(Orders 17-67, 23-68, 10-70.)









Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
TIMBER CREEK, WEST Sunburst (L. Cret.) Gas	1 (Shut-in)	Strat.	Depletion	640-acre spacing unit located no closer than 660' from unit boundary. (Order 91-76.)	None
TRAIL CREEK Sunburst (L. Cret.) Gas Bow Island (L. Cret.) Gas	2 2	Structural-Strat.	Water Drive Volumetric	One well per 320 acres consisting of S½ and N½ of each governmental section but no closer than 990' from spacing boundary. (Orders 33-70, 28-76.)	None
TULE CREEK Nisku (Dev.)	5 2 (Shut-in)	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320' square in center of each unit. (Orders 26-62, 6-65, 11-67, 5-77.)	Produced water injected into Dakota and Judith River formations. (Orders 12-66, 24-67, 8-A-76.)
TULE CREEK, EAST Nisku (Dev.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within 1320' square in center of each unit. (Orders 40-64, 6-65.)	Water injected into Judith River formation. (Order 13-68.)
TULE CREEK, SOUTH Nisku (Dev.)	3	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320' square in center of each unit.	Authority given to dispose of produced water into Dakota. (Order 44-64.) Into Judith River formation. (Order 29-67.)
UTOPIA Sawtooth (Jur.) Gas Swift (U. Jur.) Oil	3 4 2 3 (Shut-in)	Structural Structural	Depletion Water Drive Water Drive	State-wide. Two wells produced small amount of oil from Swift sand.	None
VAUX Red River (Ord.)	3	Structural	Water Drive	State-wide.	None
VAUX, SOUTH Interlake (Sil.)	1	Structural-Strat.	Water Drive	State-wide.	None
VIDA Interlake (Sil.)	2	Structural	Water Drive	160-acre spacing units with permitted well anywhere within an 840' square in center of each unit. (Order 39-63.) Field Area reduction (Order 79-76.)	Water injected into Lakota formation. (Order 14-68.)
VIKING Dawson Bay (Dev.) Winnipegosis	1	Structural-Strat.	Water Drive	320-acre spacing units, designated; to be located no closer than 660' to the unit exterior boundary and no closer than 1500' to any well producing from the same formation. If not feasible to produce two zones separately, commingling permissible with prior administrative approval. (Order 50-77.)	None

Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
VOLT Nisku (Dev.)	5 (Shut-in)	Structural	Water Drive	160-acre spacing units with permitted well anywhere within a 1320' square in center of each unit. (Orders 27-64, 6-65, 32-65.) State-wide.	Excess produced water is disposed into Judith River. (Order 3-65, 37-A-74.)
Charles "C" (Miss.)	1	Structural	Water Drive		
WAGON BOX Tyler (Penn.)	1 (Shut-in)	Structural-Strat.	Unknown	State-wide.	None
WEED CREEK Amsden (Penn.)	1	Structural	Water Drive	State-wide.	None
WELDON Kibbey (Miss.)	3 (Shut-in)	Structural	Partial Water Drive	80-acre spacing unit; each quarter section divided into two separate units running in either a north-south or east-west direction; well location in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of quarter section with 200' topographic tolerance. (Order 9-65.)	Excess produced water is disposed into the Dakota, Lakota, Morrison, and Charles formations. (Orders 31-65, 47-65, 37-66, 16-67.)
WEST BUTTE Sunburst (L. Cret.) Oil	1	Structural-Strat.	Depletion	State-wide, except W $\frac{1}{2}$ Section 16 is considered a single spacing unit.	None
Bow Island (L. Cret.) Gas	1				
Sawtooth (Jur.) Gas	3 (Shut-in)	Structural	Water Drive	Sawtooth-Madison gas commingled, unitized. (Order 5-72.) No well closer than 330' from unit boundary.	
Madison (Miss.) Gas	1				
WEST BUTTE SHALLOW GAS Bow Island (L. Cret.)	1	Structural-Strat.	Volumetric	160-acre spacing units; with one well to be permitted to produce from each individual gas producing formation above the top of the Kootenai to the surface within each 160 acre spacing unit. Well locations to be anywhere within the spacing unit but not closer than 990 feet from the spacing unit boundaries. (Order 39-77.)	None
WEST REAGAN (See Reagan, West)					
WHITLASH Bow Island, Kootenai, Swift (Cret.) (Jur.)	63 Oil (Shut-in) 7 Gas 25 (Shut-in) 8 2	Structural-Strat.	Volumetric	Gas: 300' from legal subdivision line and 2400' between wells; 75' topographic tolerance. Oil: 330' from legal subdivision line and 650' between wells; 5-spot location at center of 40-acre tract permitted; 75' topographic tolerance. General Rules 207, 211, 219, 221, 223, and 224 suspended. (Orders 16-54, 27-70.)	None
Madison (Miss.) Gas					
WHITLASH, WEST Sunburst, Swift (Cret.) (Jur.) Sawtooth (Jur.)	1 (Shut-in) Oil 7 Gas (Shut-in) 1	Structural-Strat.	Volumetric	Gas: 160-acre spacing units consisting of quarter sections; well location anywhere within a 660' square in center of spacing unit. Oil: 330' from legal subdivision line, 650' between wells in same reservoir on same lease; 5-spot location permitted. (Orders 61-62, 22-65 as amended.) Order 61-62 Amended by (Order 48-77.)	None

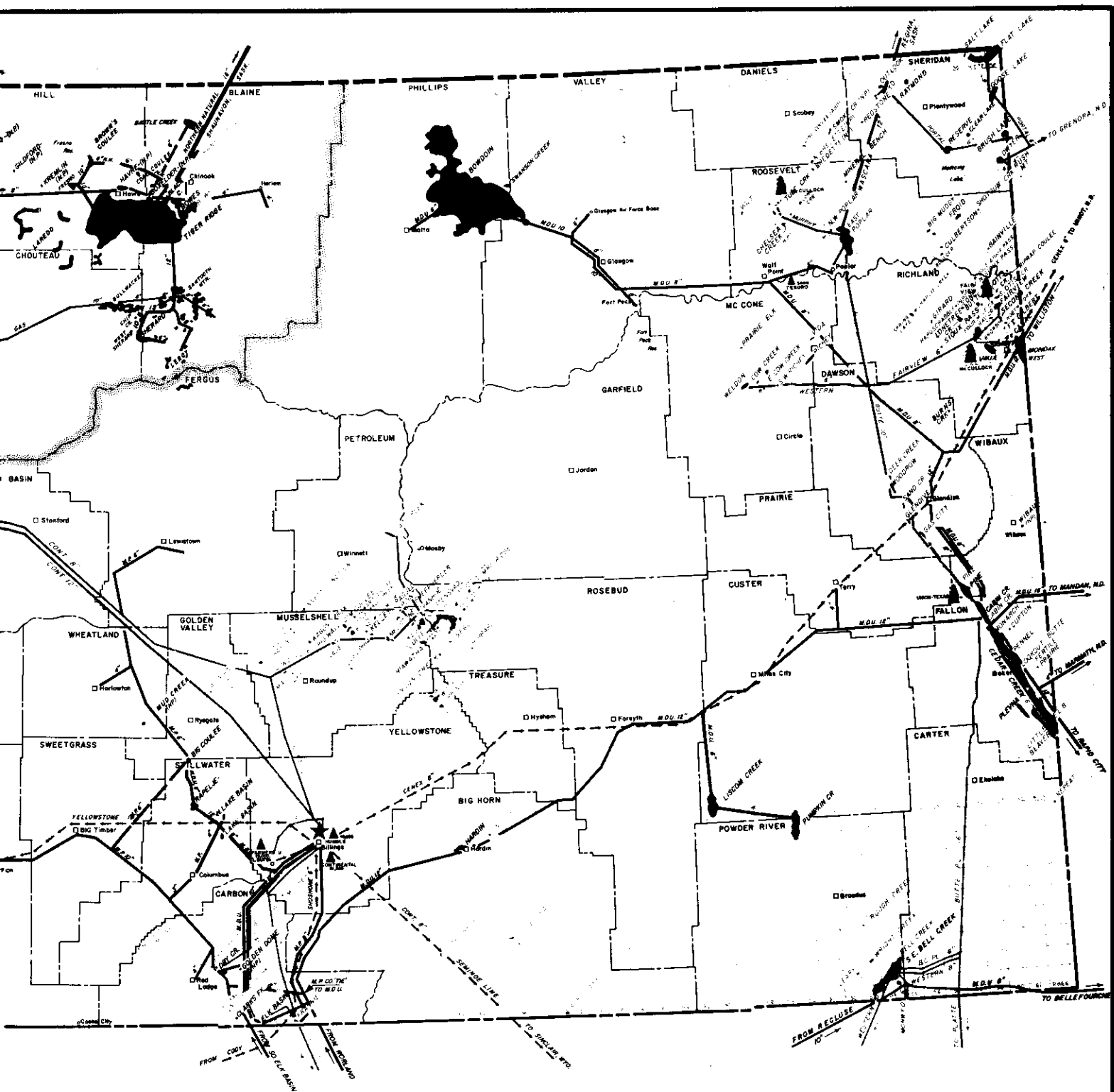
Field, Formation, Age	No. Prod. Wells	Type of Trap	Probable Drive Mechanism	Spacing Regulations, Field Rules, and Remarks	Secondary Recovery or Water Disposal
WILLOW CREEK, NORTH Tyler (Penn.) Oil	2	Structural-Strat.	Depletion Water Drive	State-wide.	Pilotflood. (order 19-72.)
WILLOW RIDGE Bow Island (L. Cret.) Gas Burwash (Cret.) Oil	4 2	Structural-Strat.	Volumetric	State-wide.	None
WILLS CREEK, SOUTH Interlake (Sil.)	3	Structural	Partial Water Drive	160-acre spacing units. Well location in center of SE $\frac{1}{4}$ of each unit with 175' topographic tolerance. (Orders 5-64, 30-66.)	Waterflood initiated 12-1-73. (Order 23-73.)
WINNETT JUNCTION Tyler (Penn.)	6	Strat.	Depletion Water Drive	20-acre spacing units. Units to be designated as W $\frac{1}{2}$ and E $\frac{1}{2}$ of quarter-quarter section, no closer than 120' to the boundary of a spacing unit. (Order 57-76.) Certain lands bound by (Order 57-76) vacated by (Order 41-77.)	A waterflood operation commenced October 1, 1977 into Tyler Formation (Order 41-77).
WOLF SPRINGS Amsden (Penn.)	2 1 (Shut-in)	Structural	Water Drive	80-acre spacing units consisting of N $\frac{1}{2}$ and S $\frac{1}{2}$ of each quarter section. Well location in center of NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section with 75' topographic tolerance. (Order 4-56, 9-59.) Field Area reduction (Order 92-76.)	None
WOODROW Charles, Duperow, Interlake Red River (Ord.)	1 1 1 (Shut-in)	Structural	Water Drive	80-acre spacing units consisting of any two adjacent quarter-quarter sections; well locations in center of NE $\frac{1}{4}$ and SW $\frac{1}{4}$ of each quarter section with 200' topographic tolerance. (Order 47-62.)	Produced water injected into Dakota. (Order 48-62.)
WRIGHT CREEK Muddy (L. Cret.)	3 1 (Shut-in)	Structural-Strat.	Depletion Water Drive	80-acre spacing consisting of N $\frac{1}{2}$ and S $\frac{1}{2}$ of quarter section with locations in NW $\frac{1}{4}$ and SE $\frac{1}{4}$ of each quarter section with 200' tolerance. Field Area reduction (Order 69-76.)	Excess produced water is disposed of into the Muddy Formation (Order 8-A-77).



EXPLANATION

- OIL FIELD 
- GAS FIELD  (N.P.) = Not Producing
- OIL PIPELINE 
- GAS PIPELINE 
- REFINERY  GAS PLANT 
- REFINED PRODUCTS PIPELINE 
- BOUNDARY DIVIDING NORTHERN AND SOUTHERN DISTRICTS 

- ★ Billings - Southern District & Technical Office
- ★ Shelby - Northern District Office
- ★ Helena - Administrative Office



MONTANA
OIL AND GAS FIELDS, PIPELINES AND REFINERIES
1977

BOARD OF OIL AND GAS CONSERVATION

GENERALIZ

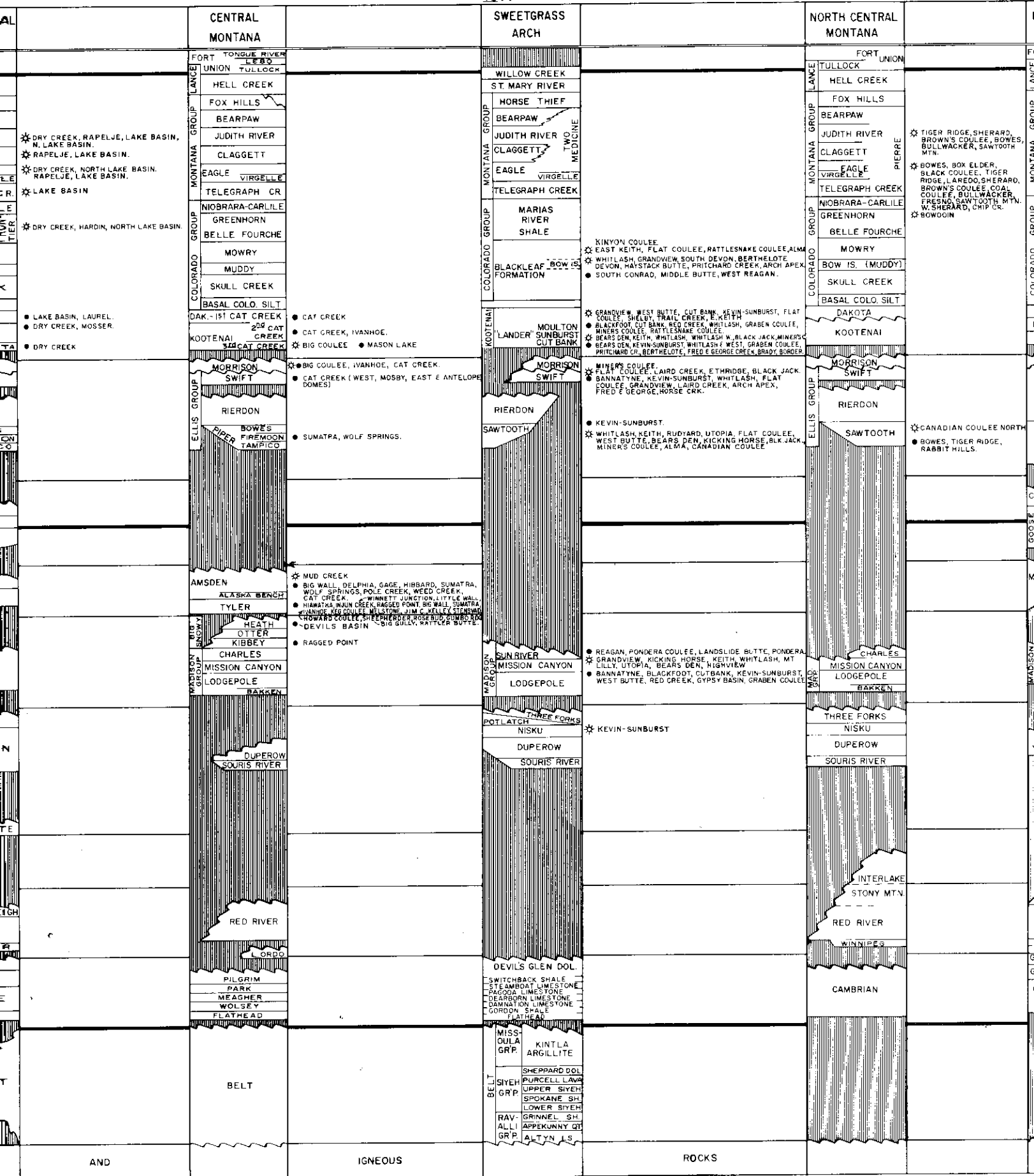
MONTANA BOARD OF OIL AND GAS CONSERVATION

ERA	PERIOD	SOUTHWESTERN MONTANA	CRAZY MOUNTAIN BASIN	BIG HORN BASIN		SOUTH CENTRAL MONTANA		
CENOZOIC	TERTIARY	BEAVERHEAD	TONGUE RIVER	FORT UNION				
			TULLOCH	LANCE				
MESOZOIC	CRETACEOUS	UPPER	LIVINGSTON	MEETEETSE		HELL CREEK		
			LIVINGSTON	MEETEETSE		LENNEP		
			LIVINGSTON	MEETEETSE		BEARPAW		
			LIVINGSTON	MEETEETSE		JUDITH RIVER	* DRY CREEK, RAPELJE, LAKE BASIN, N. LAKE BASIN.	
			LIVINGSTON	MEETEETSE		CLAGGETT	* RAPELJE, LAKE BASIN.	
	LOWER		MONTANA-COLORADO GROUPS	MONTANA SHALE	MESA VERDE		EAGLE	* DRY CREEK, NORTH LAKE BASIN, RAPELJE, LAKE BASIN.
				SHALE	CODY SHALE		VIRGELLE	* LAKE BASIN
				SHALE	FRONTIER		TELEGRAPH CR.	
				SHALE	FRONTIER		NIOBARARA-CARLILE	
				SHALE	FRONTIER		FRONTIER	
PALEOZOIC	JURASSIC	UPPER	MORRISON	MORRISON		MORRISON		
			SWIFT	SWIFT		UPPER SUNDANCE		
			RIERDON	RIERDON		LOWER SUNDANCE		
			SAWTOOTH	PIPER		GYPSUM SPRING		
			SAWTOOTH	PIPER		GYPSUM SPRING		
	TRIASSIC	LOWER ?		THAYNES	CHUGWATER		CHUGWATER	
				WOODSIDE	DINWOODY		DINWOODY	
				DINWOODY	DINWOODY		DINWOODY	
				PHOSPHORIA	PHOSPHORIA		PHOSPHORIA	
				PHOSPHORIA	PHOSPHORIA		PHOSPHORIA	
PALEOZOIC	PERMIAN		QUADRANT	TENSLEEP		TENSLEEP		
			AMSDEN	AMSDEN		AMSDEN		
	PENNSYLVANIAN			AMSDEN	AMSDEN		AMSDEN	
				AMSDEN	AMSDEN		AMSDEN	
	MISSISSIPPIAN			BIG SNOWY & OR BRAZER GRP	BIG SNOWY & OR BRAZER GRP		BIG SNOWY & OR BRAZER GRP	
				MADISON	MADISON		MADISON	
	DEVONIAN	UPPER		SAPPINGTON	SAPPINGTON		SAPPINGTON	
				THREE FORKS	THREE FORKS		THREE FORKS	
				THREE FORKS	NISKU		NISKU	
				JEFFERSON	DUPEROW		DUPEROW	
JEFFERSON				DUPEROW		DUPEROW		
DEVONIAN	MIDDLE		MAYWOOD	SOURIS RIVER		BEAR TOOTH BUTTE		
			MAYWOOD	SOURIS RIVER		BEAR TOOTH BUTTE		
			MAYWOOD	SOURIS RIVER		BEAR TOOTH BUTTE		
DEVONIAN	LOWER					BEAR TOOTH BUTTE		
						BEAR TOOTH BUTTE		
SILURIAN						BEAR TOOTH BUTTE		
						BEAR TOOTH BUTTE		
ORDOVICIAN	LOWER		BIG HORN	BIG HORN		BIG HORN		
			BIG HORN	BIG HORN		BIG HORN		
CAMBRIAN	UPPER		RED LION	GROVE CREEK		GROVE CREEK		
			RED LION	GROVE CREEK		GROVE CREEK		
	MIDDLE		PILGRIM PARK	SNOWY RANGE		GALLATIN		
			PILGRIM PARK	SNOWY RANGE		GALLATIN		
LOWER		SILVER HILL	WOLSEY		GROS VENTRE			
		SILVER HILL	WOLSEY		GROS VENTRE			
PROTEROZOIC	PRE-CAMBRIAN		BELT	BELT		BELT		
			BELT	BELT		BELT		
ARCHEOZOIC					METAMORPHIC		AND	

GENERALIZED STRATIGRAPHIC CORRELATION CHART

SHOWING PRODUCTIVE FORMATIONS IN MONTANA OIL AND GAS FIELDS *
 * OIL * GAS

1977



RELATION CHART

FIELDS *

CHARLES G. MAID, GEOLOGIST

JUDSON D. SWEET, PETROLEUM ENGINEER

NORTH CENTRAL MONTANA		NORTH POWDER RIVER BASIN		WILLISTON BASIN		PERIOD	ERA
<p>FORT UNION</p> <p>TULLOCK</p> <p>HELL CREEK</p> <p>FOX HILLS</p> <p>BEARPAW</p> <p>JUDITH RIVER</p> <p>CLAGGETT</p> <p>EAGLE</p> <p>VIRGELLE</p> <p>TELEGRAPH CREEK</p> <p>NIORARA-CARLILE</p> <p>GREENHORN</p> <p>BELLE FOURCHE</p> <p>MOWRY</p> <p>BOW IS. (MUDDY)</p> <p>SKULL CREEK</p> <p>BASAL COLO SILT</p> <p>DAKOTA</p> <p>KOOTENAI</p> <p>MORRISON</p> <p>SWIFT</p> <p>RIERDON</p> <p>SAW TOOTH</p> <p>CHARLES</p> <p>MISSION CANYON</p> <p>LOGGEPOLE</p> <p>BARREN</p> <p>THREE FORKS</p> <p>NISKU</p> <p>DUPEROW</p> <p>SOURIS RIVER</p> <p>INTERLAKE</p> <p>STONY MTN.</p> <p>RED RIVER</p> <p>WINNIPEG</p> <p>CAMBRIAN</p>		<p>FORT TONGUE RIVER</p> <p>LEBO</p> <p>UNION</p> <p>TULLOCK</p> <p>HELL CREEK</p> <p>FOX HILLS</p> <p>BEARPAW</p> <p>JUDITH RIVER</p> <p>PARKMAN</p> <p>CLAGGETT</p> <p>EAGLE</p> <p>SHANNON</p> <p>TELEGRAPH CREEK</p> <p>NIORARA-CARLILE</p> <p>GREENHORN</p> <p>BELLE FOURCHE</p> <p>MOWRY</p> <p>MUDDY (NEWCASTLE)</p> <p>SKULL CREEK</p> <p>BASAL COLO SILT</p> <p>DAKOTA</p> <p>FUSON (KOOTENAI)</p> <p>LAKOTA</p> <p>MORRISON</p> <p>SUNDANCE</p> <p>GYPNUM SPRING</p> <p>CHUGWATER</p> <p>SPEARFISH</p> <p>MINNEKAHTA</p> <p>OPECHE</p> <p>TENSLEEP</p> <p>AMSDEN</p> <p>CHARLES</p> <p>MISSION CANYON</p> <p>LOGGEPOLE</p> <p>JEFFERSON GROUP</p> <p>INTERLAKE</p> <p>STONY MTN.</p> <p>RED RIVER</p> <p>BIG HORN</p> <p>WINNIPEG</p> <p>LOWER ORDOVICIAN</p> <p>GROVE CREEK</p> <p>GALLATIN</p> <p>GROS VENTRE</p> <p>DEADWOOD</p>		<p>FORT TONGUE RIVER</p> <p>UNION</p> <p>LUDLOW</p> <p>HELL CREEK</p> <p>FOX HILLS</p> <p>BEARPAW</p> <p>JUDITH RIVER</p> <p>CLAGGETT</p> <p>EAGLE</p> <p>TELEGRAPH CREEK</p> <p>NIORARA-CARLILE</p> <p>GREENHORN</p> <p>BELLE FOURCHE</p> <p>MOWRY</p> <p>MUDDY (NEWCASTLE)</p> <p>SKULL CREEK</p> <p>BASAL COLO SILT</p> <p>DAKOTA</p> <p>FUSON (KOOTENAI)</p> <p>LAKOTA</p> <p>MORRISON</p> <p>SWIFT</p> <p>RIERDON</p> <p>PIPER</p> <p>BOWES</p> <p>FIREMOON</p> <p>TAMPIO</p> <p>NESSON</p> <p>SAUDE</p> <p>SPEARFISH</p> <p>MINNEKAHTA</p> <p>OPECHE</p> <p>AMSDEN</p> <p>TYLER</p> <p>HEATH</p> <p>OTTER</p> <p>KIBBEY</p> <p>CHARLES</p> <p>MISSION CANYON</p> <p>LOGGEPOLE</p> <p>BARREN</p> <p>THREE FORKS</p> <p>BIRDBEAR (NISKU)</p> <p>DUPEROW</p> <p>SOURIS RIVER</p> <p>DAWSON BAY</p> <p>PRAIRIE EVAP</p> <p>WINNIPEGOSIS</p> <p>ASHERN</p> <p>INTERLAKE</p> <p>STONY MTN.</p> <p>RED RIVER</p> <p>WINNIPEG</p> <p>LOWER ORDO</p> <p>DEADWOOD</p>		<p>UPPER</p> <p>LOWER</p> <p>UPPER</p> <p>MIDDLE</p> <p>LOWER ?</p> <p>PERMIAN</p> <p>PENNSYLVANIAN</p> <p>MISSISSIPPIAN</p> <p>UPPER</p> <p>MIDDLE</p> <p>LOWER</p> <p>UPPER</p> <p>MIDDLE</p> <p>LOWER</p> <p>UPPER</p> <p>MIDDLE</p> <p>LOWER</p>	<p>CRETACEOUS</p> <p>MESOZOIC</p> <p>JURASSIC</p> <p>TRIASSIC</p> <p>PERMIAN</p> <p>PENNSYLVANIAN</p> <p>MISSISSIPPIAN</p> <p>DEVONIAN</p> <p>SILURIAN</p> <p>ORDOVICIAN</p> <p>CAMBRIAN</p> <p>PROTEROZOIC</p> <p>ARCHEOZOIC</p>
<p>* TIGER RIDGE, SHERARD, BROWN'S COULEE, BOWES, BULLWACKER, SAWTOOTH MTN.</p> <p>* BOWES, BOX ELDER, BLACK COULEE, TIGER RIDGE, LAREDO, SHERARD, BROWN'S COULEE, COAL COULEE, BULLWACKER, FRESNO, SAWTOOTH MTN, W. SHERARD, CHIP CR.</p> <p>** BOWDOIN</p> <p>* CANADIAN COULEE NORTH</p> <p>* BOWES, TIGER RIDGE, RABBIT HILLS.</p>		<p>* ASH CREEK</p> <p>* LISCOM CREEK, PUMPKIN CREEK.</p> <p>* HARD-N</p> <p>* BELL CREEK</p> <p>* BELL CREEK, ROUGH CREEK, WRIGHT CREEK, LEARY</p> <p>* LODGE GRASS, SOAP CREEK, SAYDER</p> <p>* SOAP CREEK.</p>		<p>* CEDAR CREEK, PLEVNA</p> <p>* CEDAR CREEK</p> <p>* WELDON, EAST COW CREEK</p> <p>* FLAT LAKE, SHOTGUN CREEK, SMOKE CREEK, KATY LAKE, DWYER, POPLAR, RICHEY, PRAIRIE ELK, COW CREEK, VOLT, MINERAL BENCH, GAS CITY, GOOSE LAKE, RIPRAP C.</p> <p>* SIDNEY, BRORSON, CABIN CREEK, MONARCH, PENNEL, POPLAR, OUTLOOK, HARDCRABBLE CREEK, SHOTGUN CREEK, SOUTH FLAT LAKE, SIOUX PASS, MONDAK WEST, MONDAK WEST</p> <p>* TULE CREEK, BENRUD, E. BENRUD, LONE TREE, SPRING LAKE, NE. BENRUD, VOLT, SO. TULE CREEK, E. TULE LAKE, CHARLIE CR., MONDAK WEST</p> <p>* SW RICHEY.</p> <p>* RED STONE, OUTLOOK, WEST OUTLOOK, FAIRVIEW, RESERVE, RUSH MOUNTAIN, RAYMOND, NE. RAYMOND N. SIOUX PASS</p> <p>* BIG MUDDY CREEK</p> <p>* SIOUX PASS, N. SIOUX PASS,</p> <p>* DEER CREEK, MONARCH, OUTLOOK, PENNEL, PINE, SAND CR., SW RICHEY, CABIN CR., LOOKOUT BUTTE, WILLS CR., WOODROW, VIDA, RESERVE MONDAK WEST</p> <p>* GLENDIVE, LOOKOUT BUTTE, PENNEL, WOODROW, BURNS CR., NOHLY, RAYMOND, SECOND CREEK,</p> <p>* BEAVER, LITTLE BEAVER EAST, MONARCH, OUTLOOK, PENNEL, PINE, REPEAT, SAND CR., WILLS CR., FERTILE PRAIRIE, LOOKOUT BUTTE, WOODROW, RESERVE, GAS CITY, FAIRVIEW, BRORSON, RUSH MTN., SPRING LAKE, BRUSH LAKE, BAINEVILLE, CULBERTSON, FROID, HAY CREEK, GIRARD CANAL, FT. GILBERT, OTIS CR., LONE TREE</p> <p>* SIOUX PASS, N. SIOUX PASS, LONE BUTTE, NE. RAYMOND, BIG MUDDY CREEK, MONDAK WEST, MIDDLE SIOUX PASS.</p>			

* SOME FIELDS SHOWN ARE DEPLETED OR NO LONGER PRODUCTIVE.