

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Drill-hole and surface-section data, Fort Union Formation,
Bull Mountain coal field, south-central Montana--209 records
as entered in the National Coal Resources Data System

by

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and
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Open-File Report 89-6

This report is preliminary and has not been reviewed for conformity with
U.S. Geological Survey editorial standards and stratigraphic nomenclature.

¹Denver, Colorado

1989

INTRODUCTION

This report contains the drill-hole and surface-section data that formed the basis of Coal Investigations Maps C-126-A (Connor, 1988) and C-126-B (Connor, in press). Those maps describe the Mammoth coal bed, Paleocene Tongue River Member of the Fort Union Formation, of the Bull Mountain coal field, south-central Montana. This report provides additional data: for localities not included on the cross sections in C-126-A, and for intervals to 800 feet above and 600 feet below the Mammoth coal interval described in C-126-A and C-126-B. Connor has correlated most coal beds, and they are identified here by name. Drill-hole logs (other than simple coal/rock logs) are Connor's interpretations of company logs, not company interpretations.

The location of the Bull Mountain coal field is shown on figure 1 and a stratigraphic column of the field is shown on figure 2. Locations of drill holes and surface sections are shown on figure 3. Maps C-126-A and C-126-B should be referred to for a larger, more easily readable locality map on a topographic base (1:50,000), for background information on the Bull Mountain coal field, and for detailed information on the Mammoth coal bed.

These computer printouts are of data Connor submitted to, and which are stored in, the National Coal Resources Data System (NCRDS) at the U.S. Geological Survey, Reston, VA 22092 and Denver, CO 80225. A list of NCRDS terms and codes (only those used in this report) that are not self-explanatory is given below.

NCRDS TERMS AND CODES

DATE: (When I submitted data to NCRDS)

ELVPREC (elevation precision):

1	estimated from topographic map	± 10 ft
2	" " " "	± 20 ft
3	" " " "	± 50 ft

DESCRIPTION LOG:

Outcrop

101	roadcut
102	outcrop
104	surface mine

Log

201	core
202	drill hole
206	geophysical
225	rotary and core
230	multiple (See COMMENT 1 for list, then look for downhole changes in log type in COMMENT 2 column)
231	combination (See COMMENT 1 for list of combination of logs used for entire hole)

UNIT QUAL (unit qualifier)

A	analysis run on sample
C	coal thickness for resource calculation (different from posted thickness) is given in COMMENT 2 column
D	interbedded lithologies are listed in COMMENT 2 column
E	elevation of unit (base or top is indicated) is given in COMMENT 2 column
I	thickness given is known to be incomplete
L	change in log type is indicated in COMMENT 2 column
O	no thickness measurement available, but bed is or was present
U	uncertain bed name
X	extrapolated thickness, not to be used for coal resource calculation, but may be useful for control of isopach or structure contour

ACKNOWLEDGMENTS

We thank the following for making drill-hole logs available for interpretation: the Burlington Northern Railroad, the Meridian Land and Mineral Company, the Louisiana Land and Exploration Company, The Consolidation Coal Company, and the Montana Bureau of Mines and Geology.

REFERENCES

- Connor, C. W., 1988, Maps showing outcrop, structure contours, cross sections, and isopachs of partings--Mammoth coal bed, Paleocene Tongue River Member of the Fort Union Formation, Bull Mountain coal field, south-central Montana: U.S. Geological Survey Coal Investigations Map C-126-A, 4 maps (1:50,000), 9 cross sections, 5 figures, text.
- Connor, C.W., in press, Maps showing coal-split boundaries and isopachs of coal splits, and tables showing coal resources and coal quality--Mammoth coal bed, Paleocene Tongue River Member of the Fort Union Formation, Bull Mountain coal field, south-central Montana: U.S. Geological Survey Coal Investigations Map C-126-B, 8 maps (1:50,000), 4 tables, 3 figures, text.
- Woolsey, L.H., Richards, R.W., and Lupton, C.T., 1917, The Bull Mountain coal field, Musselshell and Yellowstone Counties, Montana: U.S. Geological Survey Bulletin 647, 218 p.

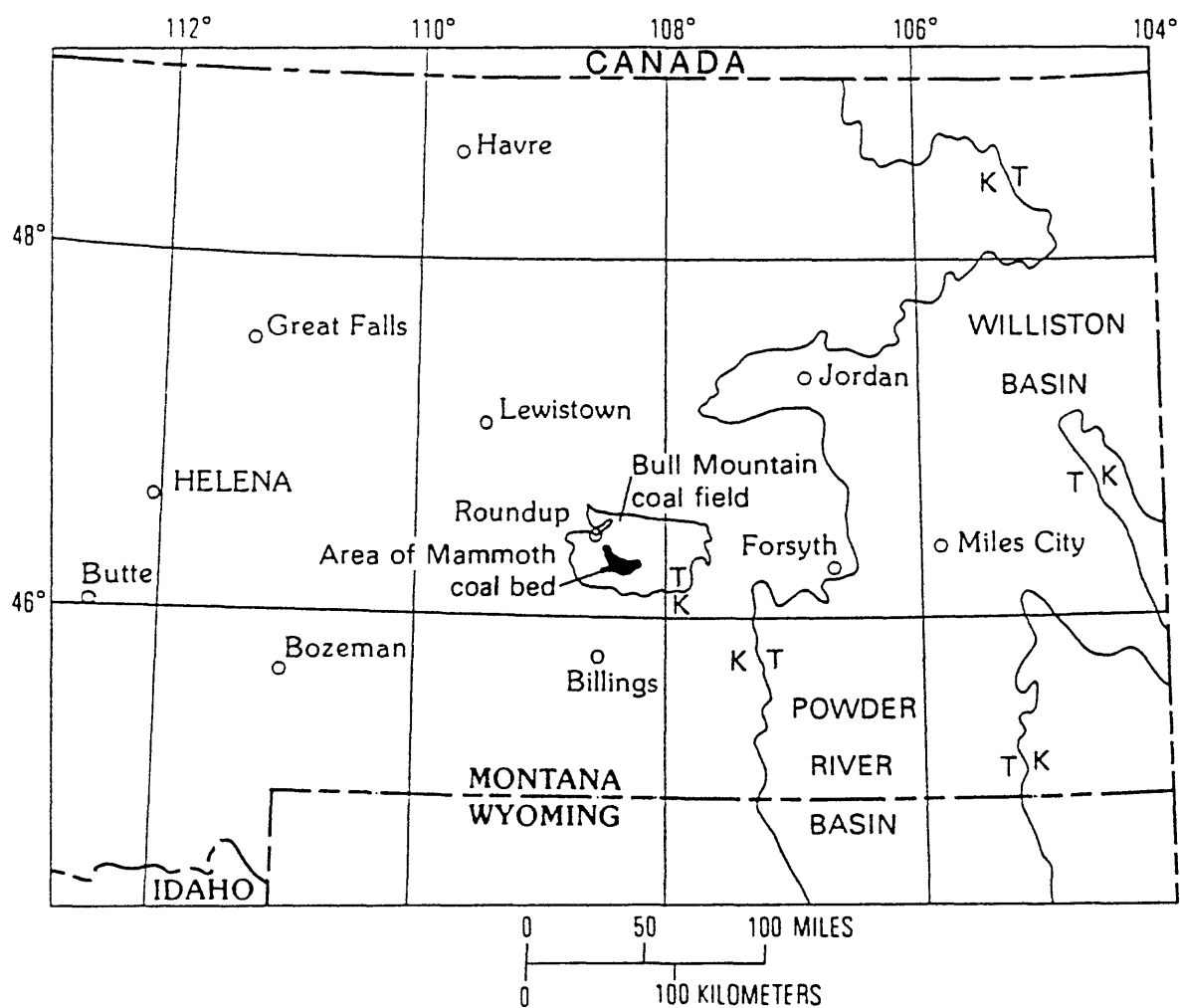


Figure 1.--Location of Bull Mountain coal field, Montana. Basin boundaries are drawn at the Cretaceous (K) -Tertiary (T) contact.

SYSTEM	SERIES	FORMATION, MEMBER, AND COAL BED	THICKNESS OF COAL BEDS IN FEET	THICKNESS
TERTIARY (part)	Paleocene (part)	Fort Union Formation (part) Tongue River Member (part)	Unnamed coal (or clinker) ▲▲▲ 3-7 Summit coal bed 3 Fatrig coal bed 3-4 Red Butte Strait 0-3 0-4 Wescott 0-3½ Bull Mountain coal bed 2½-6½ Matt 0-4 Rock Mesa coal bed 2-7½ Rehder split 0-5½ Mammoth coal bed 5-16 Pompey 0-3 Ostrander 3 Dougherty coal bed 1½-5 Buckey coal bed 0-6 Wildhorse coal bed 0-3 Roundup coal bed 0-6 McCleary coal bed 0-8 Carpenter coal bed 0-8	765'-845' feet 890-1,210 feet
		Lebo Shale Member (part)		

Figure 2.--Stratigraphic column, Bull Mountain coal field, showing coal beds. Interval encompassed by drill holes and surface sections bracketed.

EXPLANATION

———— Outcrop—Drawn on base of Mammoth coal bed

C5— Quadrangle Identifier—Prefix for drill-hole locality and surface locality numbers. For example, the complete locality number for drill-hole US24 in quadrangle A4—(Gage) is A4—US24. See "Index to Quadrangle Names." These complete numbers are the point identifiers recorded in NCRDS (National Coal Resources Data System, U.S. Geological Survey, Reston, VA 22092)

- **Drill-hole locality**—Data for all drill-hole localities have been entered in NCRDS

83D Drill-hole locality number—Combined with quadrangle identifier elsewhere in report to designate complete locality number.

<u>Locality number</u>	<u>Source</u>	<u>Date</u>
US1 to US24	U.S. Geological Survey	1978, 1979
1 to 23	Burlington Northern Railroad.	1975, 1976
24 to 95	Consolidation Coal Company.	1970?
27A—Z to 94A—Z	Louisiana Land and Exploration Co.	1979, 1981

- x **Surface locality**—Data for C. W. Connor outcrop localities characterized as merely "ash" or "bloom" or "weathered coal" have not been entered in NCRDS. All other surface locality data have been entered. Note: B4—C78 and B4—C79 are small strip mines

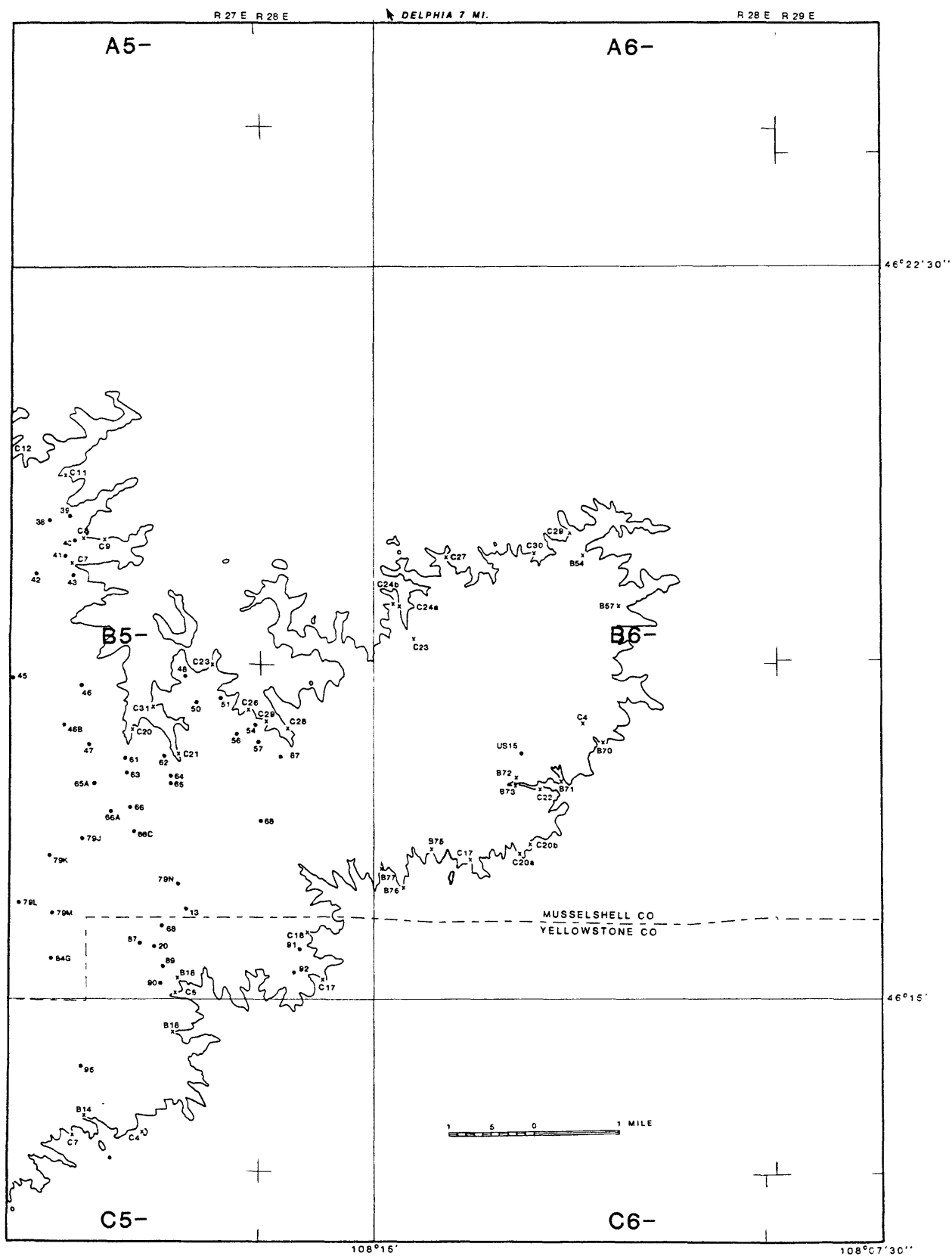
C5 Surface locality number—Combined with quadrangle identifier elsewhere in report to designate complete locality number.

<u>Locality number</u>	<u>Source</u>	<u>Date</u>
C1 to C59	C. W. Connor field notes.	1978, 1979
B9 to B92	Bulletin 647 (Woolsey and others, 1917). Most localities re-covered and verified by C. W. Connor.	1917

A3— ROUNDUP	A4— GAGE	A5— GAGE NE	A6— CHIMNEY BUTTE
B3— HARPER COULEE	B4— SIGNAL MOUNTAIN	B5— DUNN MOUNTAIN NORTH	B6— CHERRY SPRING
C3— HAY BASIN NE	C4— PARK COULEE	C5— DUNN MOUNTAIN SOUTH	C6— PK RANCH

INDEX TO QUADRANGLE NAMES

Figure 3a.--Explanation for locality map.



DATA POINT ID: A4-B25
 QUAD & SERIES: GAGE (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: USGS BULL 647 (1917)

DATE: 830117
 PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA
 COUNTY: MUSSELSHELL

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 SECTION: 12.0

PROVINCE: N GREAT PLAINS

TOWNSHIP: 7.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

RANGE: 26.00E

COMMENT1: BASE IS 27 FT ABOVE MAMMOTH 1 AT A4-C24

HYDRO CD: 0 FILEPOINTER: *****

OWNERSHIP: *****

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1 U			3.00' FORT UNION	MAMMOTH 2+3	COAL							
			3.00' EL: 3764.0-3761.0		WC1:	WC2:	COM2:				KEY:	58901
2 U			0.10' FORT UNION	MAMMOTH 2+3	BONE							
			3.10' EL: 3761.0-3760.9		WC1:	WC2:	COM2:				KEY:	58902
3 UE			0.90' FORT UNION	MAMMOTH 2+3	COAL							
			4.00' EL: 3760.9-3760.0		WC1:	WC2:	COM2: E Bs	3760			KEY:	58903

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DATA POINT ID: A4-C24
QUAD & SERIES: GAGE (7.5')

STATE: MONTANA
COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: SEE A4-B25
HYDRO CD: 0

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONNOR C W
SURFACE
ELEVATION: 3733.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 3.00'
DESCRIPTION
LOG : 102
WEATHERING: 0

RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
LATITUDE: 46 22 38
LONGITUDE: 108 24 46
LLPREC: 0

QUARTERS: NE
SECTION: 12.0
TOWNSHIP: 7.00N
RANGE: 26.00E

CONFID: 830117
PRIN MERIDIAN: 20

FILEPOINTER:
OWNERSHIP:

UQ
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 1 3.00' FORT UNION MAMMOTH 1 COAL WC1: WC2: COM2: E BS 3730 KEY: 58883
3.00' EL: 3733.0-3730.0

C F
O O
N S

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*****
DATA POINT ID: A4-C30
QUAD & SERIES: GAGE (7.5')

GEOLOGIST: USGD-CONNOR C W      DATE: 830113      CONFID:
SOURCE: CONNOR C W      PRIN MERIDIAN: 20

STATE: MONTANA
COUNTY: MUSSELSHELL

ELEVATION: 3655.00'      RANK: SUBBIT      QUARTERS:      NW
ELVPREC: 0      LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 4.0

TOTAL DEPTH      TOWNSHIP: 7.00N
LOGGED : 15.50'      LATITUDE: 46 23 38
DESCRIPTION      LONGITUDE: 108 28 44      RANGE: 26.00E
LOG : 102      LLPREC: 0
WEATHERING: 0

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN

COMMENT1:
HYDRO CD: 0      FILEPOINTER:
OWNERSHIP:
-----
UQ
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
-----
1 IC 0.70' FORT UNION MAMMOTH 3 COAL WC1: WC2: COM2: WEATH&SLUMPED, C 26 IN KEY: 60163
2 12.00' FORT UNION 0.70' EL: 3655.0-3654.3 NR WC1: WC2: COM2: KEY: 60164
3 0.70' FORT UNION 12.70' EL: 3654.3-3642.3 CLST SLTY WC1: WC2: COM2: PLANT FRAGS KEY: 60165
4 0.80' FORT UNION 13.40' EL: 3642.3-3641.6 COAL WC1: WC2: COM2: KEY: 60166
5 0.20' FORT UNION 14.20' EL: 3641.6-3640.8 RK WC1: WC2: COM2: KEY: 60167
6 1.00' FORT UNION 14.40' EL: 3640.8-3640.6 COAL WC1: WC2: COM2: KEY: 60168
7 I 0.10' FORT UNION 15.40' EL: 3640.6-3639.6 RK WC1: WC2: COM2: PROBABLY NOT TO BASE OF MAMMOTH KEY: 60169
8 OC 0.00' FORT UNION 15.50' EL: 3639.6-3639.5 COAL WC1: WC2: COM2: C 12IN KEY: 60170
15.50' EL: 3639.5-3639.5

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 DATA POINT ID: A4-US24
 QUAD & SERIES: GAGE (7.5')
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: USGS & MONT BU MINES
 SURFACE
 ELEVATION: 3825.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 860.00'
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: USGS & MBMG HOLE 79-6
 HYDRO CD: 0
 FILEPOINTER:
 DATE: 830117
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SE
 SECTION: 4.0
 LATITUDE: 46 23 5
 TOWNSHIP: 7.00N
 LONGITUDE: 108 28 6
 RANGE: 26.00E
 LLPREC: 0
 OWNERSHIP:
 C F
 O O
 N S
 T S FJC

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	KEY:
1 L	133.00'		FORT UNION		RK							
				133.00' EL: 3825.0-3692.0	WC1:	WC2:	COM2: TOP GAMMA					58884
2 UE	3.00'		FORT UNION	ROCK MESA	COAL							
				136.00' EL: 3692.0-3689.0	WC1:	WC2:	COM2: E BS 3689					58885
3	58.00'		FORT UNION		RK							
				194.00' EL: 3689.0-3631.0	WC1:	WC2:	COM2:					58886
4 E	2.00'		FORT UNION	MAMMOTH 3	COAL							
				196.00' EL: 3631.0-3629.0	WC1:	WC2:	COM2: E BS 3629, =RENDER					58887
5	14.00'		FORT UNION		RK							
				210.00' EL: 3629.0-3615.0	WC1:	WC2:	COM2:					58888
6	0.20'		FORT UNION	MAMMOTH 1+2	COAL							
				210.20' EL: 3615.0-3614.8	WC1:	WC2:	COM2: THICKNES ESTIMATED FROM LOG					58889
7 L	2.80'		FORT UNION	MAMMOTH 1+2	COAL							
				213.00' EL: 3614.8-3612.0	WC1:	WC2:	COM2: L TOP CORE					58890
8	0.40'		FORT UNION	MAMMOTH 1+2	SLST	CARB						
				213.40' EL: 3612.0-3611.6	WC1:	WC2:	COM2:					58891
9	4.20'		FORT UNION	MAMMOTH 1+2	COAL							
				217.60' EL: 3611.6-3607.4	WC1:	WC2:	COM2:					58892
10	0.20'		FORT UNION	MAMMOTH 1+2	SLST							
				217.80' EL: 3607.4-3607.2	WC1:	WC2:	COM2:					58893
11 E	1.30'		FORT UNION	MAMMOTH 1+2	COAL							
				219.10' EL: 3607.2-3605.9	WC1:	WC2:	COM2: E BS 3605.9					58894
12 DL	0.20'		FORT UNION		SS							
				219.30' EL: 3605.9-3605.7	WC1:	WC2:	COM2: D SS SLST, L BS CORE					58895
13	84.00'		FORT UNION		RK							
				303.30' EL: 3605.7-3521.7	WC1:	WC2:	COM2:					58896

DATA POINT ID: B4-C15

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: CONNOR C W

DATE: 820817

PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA

COUNTY: MUSSELSHELL

SURFACE

ELEVATION: 4080.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SW

PROVINCE: N GREAT PLAINS

LOGGED : 55.27'

LATITUDE: 46 15 8

TOWNSHIP: 6.00N

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

LOG : 101

LONGITUDE: 108 27 42

RANGE: 26.00E

COMMENT1: CONTINUES BELOW AT C4-C1

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	F	J	C
1	10.00'		10.00'FORT UNION	10.00' EL: 4080.0-4070.0	SS											
2	0.50'		0.50'FORT UNION	10.50' EL: 4070.0-4069.5	CLY					COM2: THICKNESS ESTIMATED, TO TOP OF CUT		KEY:				57935
3	1.60'		1.60'FORT UNION	MAMMOTH 1+2	COAL					COM2: WITH COAL STRKS		KEY:				57936
4	0.07'		0.07'FORT UNION	12.10' EL: 4069.5-4067.9	RK	CARB				COM2: THIS COAL COMPLETE ONLY IN CENTER OF CUTKEY:		KEY:				57937
5	0.80'		0.80'FORT UNION	12.17' EL: 4067.9-4067.8	COAL					COM2: HARD		KEY:				57938
6	0.20'		0.20'FORT UNION	12.97' EL: 4067.8-4067.0	RK					COM2: (CONT. FROM UNIT 3) OXIDIZED ELSEWHERE		KEY:				57939
7	4.20'		4.20'FORT UNION	13.17' EL: 4067.0-4066.8	COAL					COM2: WITH COAL STRKS		KEY:				57940
8	0.20'		0.20'FORT UNION	17.37' EL: 4066.8-4062.6	RK					COM2:		KEY:				57941
9	2.20'		2.20'FORT UNION	17.57' EL: 4062.6-4062.4	COAL					COM2: HARD		KEY:				57942
10	0.20'		0.20'FORT UNION	19.77' EL: 4062.4-4060.2	RK					COM2:		KEY:				57943
11 E	0.10'		0.10'FORT UNION	19.97' EL: 4060.2-4060.0	COAL					COM2: V HARD		KEY:				57944
12	0.20'		0.20'FORT UNION	20.07' EL: 4060.0-4059.9	CLY	ROOT				COM2: BS 4060		KEY:				57945
13	9.00'		9.00'FORT UNION	20.27' EL: 4059.9-4059.7	COVERED					COM2:		KEY:				57946
				29.27' EL: 4059.7-4050.7	WC2:					COM2: BENCH AT BASE		KEY:				57947

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FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T

S

F

J

C

DATA POINT ID: B4-C66
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

STATE: MONTANA
COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0 FILEPOINTER:

GEOLOGIST: USGD-CONNOR C W DATE: 820817
SOURCE: CONNOR C W
SURFACE
ELEVATION: 3906.00' RANK: SUBBIT
ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 QUARTERS: NW
TOTAL DEPTH
LOGGED : 7.00' LATITUDE: 46 17 14 TOWNSHIP: 6.00N
DESCRIPTION
LOG : 102 LONGITUDE: 108 26 15 RANGE: 26.00E
WEATHERING: 0 LLPREC: 0

OWNERSHIP:

UQ
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 2.00' FORT UNION 2.00' EL: 3906.0-3904.0 SS WC1: WC2: COM2: KEY: 57953
2 0.50' FORT UNION 2.50' EL: 3904.0-3903.5 SLST CARB WC1: WC2: COM2: KEY: 57954
3 0.10' FORT UNION 2.60' EL: 3903.5-3903.4 COAL WC1: WC2: COM2: KEY: 57955
4 0.70' FORT UNION 3.30' EL: 3903.4-3902.7 SS WC1: WC2: COM2: KEY: 57956
5 E 3.20' FORT UNION MAMMOTH 3 6.50' EL: 3902.7-3899.5 COAL WC1: WC2: COM2: BS 3900, =RENDER KEY: 57957
6 E, I 0.50' FORT UNION 7.00' EL: 3899.5-3899.0 SLST CARB WC1: WC2: COM2: BS 3899 KEY: 57958

C F
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N S

 DATA POINT ID: B4-C78
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: PM MINE, ELEV IS TOP OF MEAS IN S FACE
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONNOR C W
 SURFACE
 ELEVATION: 3879.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 18.60'
 DESCRIPTION
 LOG : 104
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SW
 SECTION: 13.0
 TOWNSHIP: 6.00N
 RANGE: 26.00E
 DATE: 820817
 CONFID: 20
 PRIN MERIDIAN:
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	F	J	C
1	I		5.00' FORT UNION	5.00' EL: 3879.0-3874.0	SS											
2			1.00' FORT UNION	6.00' EL: 3874.0-3873.0	CLST											
3			0.90' FORT UNION	6.90' EL: 3873.0-3872.1	COAL											
4	E		3.00' FORT UNION	9.90' EL: 3872.1-3869.1	CLY	SLTY										
5			0.60' FORT UNION	10.50' EL: 3869.1-3868.5	COAL											
6			0.05' FORT UNION	10.55' EL: 3868.5-3868.5	CLST											
7			1.00' FORT UNION	11.55' EL: 3868.5-3867.5	COAL											
8			0.10' FORT UNION	11.65' EL: 3867.5-3867.4	CLST											
9			3.70' FORT UNION	15.35' EL: 3867.4-3863.7	COAL											
10			0.25' FORT UNION	15.60' EL: 3863.7-3863.4	CLST											
11			2.70' FORT UNION	18.30' EL: 3863.4-3860.7	COAL											
12	E		0.30' FORT UNION	18.60' EL: 3860.7-3860.4	COAL	SIL										

KEY: 57959 LAM
 KEY: 57960
 KEY: 57961
 KEY: 57962
 KEY: 57963
 KEY: 57964
 KEY: 57965
 KEY: 57966
 KEY: 57967
 KEY: 57968
 KEY: 57969
 KEY: 57970

DATA POINT ID: B4-C79
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONNOR C W

DATE: 820817
 PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4044.00'
 ELVPREC: 0

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SW
 SECTION: 24.0

TOTAL DEPTH
 LOGGED : 79.00'

LATITUDE: 46 15 2
 TOWNSHIP: 6.00N

DESCRIPTION
 LOG : 104

LONGITUDE: 108 25 8
 RANGE: 26.00E

WEATHERING: 0
 LLPREC: 0

COMMENT1: DIVIDE MINE, EAST HIGHWALL
 HYDRO CD: 57971

OWNERSHIP:

FILEPOINTER:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	3.00'		FORT UNION	ROCK MESA	COAL							KEY: 1743143
2	5.00'		FORT UNION	3.00' EL: 4044.0-4041.0	WC1:	WC2:	COM2:					KEY: 1743144
3	1.00'		FORT UNION	8.00' EL: 4041.0-4036.0	WC1:	WC2:	COM2:					KEY: 1743145
4	8.00'		FORT UNION	9.00' EL: 4036.0-4035.0	WC1:	WC2:	COM2:					KEY: 1743146
5	10.00'		FORT UNION	17.00' EL: 4035.0-4027.0	WC1:	WC2:	COM2:					KEY: 1743147
6	0.50'		FORT UNION	27.00' EL: 4027.0-4017.0	WC1:	WC2:	COM2:					KEY: 1743148
7	11.50'		FORT UNION	27.50' EL: 4017.0-4016.5	WC1:	WC2:	COM2:					KEY: 1743149
8 U	1.50'		FORT UNION	39.00' EL: 4016.5-4005.0	WC1:	WC2:	COM2:					KEY: 1743150
9	2.50'		FORT UNION	40.50' EL: 4005.0-4003.5	WC1:	WC2:	COM2:					KEY: 1743151
10	1.00'		FORT UNION	43.00' EL: 4003.5-4001.0	WC1:	WC2:	COM2:					KEY: 1743152
11	12.00'		FORT UNION	44.00' EL: 4001.0-4000.0	WC1:	WC2:	COM2:					KEY: 1743153
12	0.30'		FORT UNION	56.00' EL: 4000.0-3988.0	WC1:	WC2:	COM2:					KEY: 1743154
13	3.00'		FORT UNION	56.30' EL: 3988.0-3987.7	WC1:	WC2:	COM2:					KEY: 1743155
				59.30' EL: 3987.7-3984.7	WC1:	WC2:	COM2:					

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14	0.10' FORT UNION 59.40' EL: 3984.7-3984.6	SH WC1:	CARB WC2:	COM2:	KEY: 1743156 LAM
15	7.00' FORT UNION	CLST WC1:	WC2:	COM2: =SS CHANNEL TO S	KEY: 1743157
16	0.80' FORT UNION LOCAL	COAL WC1:	WC2:	COM2: LOCAL, NOT REHDER	KEY: 1743158
17	2.30' FORT UNION 69.50' EL: 3976.8-3974.5	SLST WC1:	ROOT WC2:	COM2:	KEY: 1743159
18	0.60' FORT UNION MAMMOTH 1+2	COAL WC1:	WC2:	COM2:	KEY: 1743160
19	70.10' EL: 3974.5-3973.9	CLST WC1:	WC2:	COM2: ALTERED ASH?	KEY: 1743161
20	0.05' FORT UNION MAMMOTH 1+2	COAL WC1:	WC2:	COM2:	KEY: 1743162
21	70.15' EL: 3973.9-3973.9	CLST WC1:	WC2:	COM2: ALTERED ASH?	KEY: 1743163
22	1.00' FORT UNION MAMMOTH 1+2	COAL WC1:	WC2:	COM2:	KEY: 1743164
23	71.15' EL: 3973.9-3972.9	CLST WC1:	WC2:	COM2:	KEY: 1743165
24	71.20' EL: 3972.9-3972.8	COAL WC1:	WC2:	COM2:	KEY: 1743166
25	4.40' FORT UNION 75.60' EL: 3972.8-3968.4	SS WC1:	CARB WC2:	COM2: HARD	KEY: 1743167
26	0.20' FORT UNION MAMMOTH 1+2	COAL WC1:	WC2:	COM2: V HARD	KEY: 1743168
27	75.80' EL: 3968.4-3968.2	COAL WC1:	WC2:	COM2: BS 3965	KEY: 1743169
	2.60' FORT UNION MAMMOTH 1+2	COAL WC1:	WC2:	COM2:	
	78.40' EL: 3968.2-3965.6	COAL WC1:	WC2:	COM2:	
	0.25' FORT UNION MAMMOTH 1+2	COAL WC1:	WC2:	COM2:	
	78.65' EL: 3965.6-3965.4	COAL WC1:	WC2:	COM2:	
	0.20' FORT UNION MAMMOTH 1+2	COAL WC1:	WC2:	COM2:	
	78.85' EL: 3965.4-3965.2	CLY WC1:	WC2:	COM2:	
	0.15' FORT UNION 79.00' EL: 3965.2-3965.0	WC1:	WC2:	COM2:	

DATA POINT ID: B4-US1

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: USGS&MONT BUR MINES

DATE: 820817

PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4075.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NE

SECTION: 22.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH

LOGGED : 800.00'

LATITUDE: 46 15 27

TOWNSHIP: 6.00N

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

LOG : 231

LONGITUDE: 108 26 46

RANGE: 26.00E

COMMENT1: USGS & MBMG HOLE 79-2: GLOG, RESISTIVITY

WEATHERING: 0

LLPREC: 0

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

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1	26.00' FORT UNION	26.00' EL: 4075.0-4049.0	RK	WC1:	WC2:	COM2:	KEY:	57995
2	4.00' FORT UNION	MAMMOTH 3	COAL	WC1:	WC2:	COM2: BS 4045, =REHDER	KEY:	57996
3	44.00' FORT UNION	30.00' EL: 4049.0-4045.0	RK	WC1:	WC2:	COM2:	KEY:	57997
4	7.50' FORT UNION	74.00' EL: 4045.0-4001.0	COAL	WC1:	WC2:	COM2:	KEY:	57998
5	0.50' FORT UNION	81.50' EL: 4001.0-3993.5	RK	WC1:	WC2:	COM2:	KEY:	57999
6	2.00' FORT UNION	82.00' EL: 3993.5-3993.0	COAL	WC1:	WC2:	COM2:	KEY:	58000
7	716.00' FORT UNION	84.00' EL: 3993.0-3991.0	RK	WC1:	WC2:	COM2: BS 3991	KEY:	58001
		800.00' EL: 3991.0-3275.0	WC1:	WC2:	COM2: LOG POOR, CUTTINGS ONLY BOTTOM 300 FT.	KEY:		58001

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DATA POINT ID: B4-US2
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

STATE: MONTANA
COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN

COMMENT1: USGS & MBMG HOLE 79-4C:GLOG,RES,DENS,SP
HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	30.00'		FORT UNION		RK							
	30.00'		EL: 3942.0-3912.0		WC1:	WC2:	COM2:				KEY:	58002
2 E	8.00'		FORT UNION	MAMMOTH 1+2	COAL							
	38.00'		EL: 3912.0-3904.0		WC1:	WC2:	COM2: BS 3904				KEY:	58003
3	84.00'		FORT UNION		RK							
	122.00'		EL: 3904.0-3820.0		WC1:	WC2:	COM2:				KEY:	58004
4 U,E	2.00'		FORT UNION	POMPEY	COAL							
	124.00'		EL: 3820.0-3818.0		WC1:	WC2:	COM2: BS 3818				KEY:	58005
5	145.00'		FORT UNION		RK							
	269.00'		EL: 3818.0-3673.0		WC1:	WC2:	COM2:				KEY:	58006
6 U,E	4.00'		FORT UNION	DOUGHERTY	COAL							
	273.00'		EL: 3673.0-3669.0		WC1:	WC2:	COM2: BS 3669				KEY:	58007
7	27.00'		FORT UNION		RK							
	300.00'		EL: 3669.0-3642.0		WC1:	WC2:	COM2:				KEY:	58008

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DATA POINT ID: B4-US3

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 820817

CONFID: 20

SOURCE: USGS&MONT BUR MINES

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4030.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SE

SECTION: 12.0

TOTAL DEPTH

LOGGED : 400.00'

LATITUDE: 46 16 40

TOWNSHIP: 6.00N

LONGITUDE: 108 24 16

RANGE: 26.00E

LLPREC: 0

OWNERSHIP:

COMMENT1: USGS & MBMG HOLE 79-3C:GEOPHYS,CORE

HYDRO CD: 0 FILEPOINTER:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	150.00'		FORT UNION		RK							
2	U,E		150.00' EL: 4030.0-3880.0	ROCK MESA	WC1:	WC2:	COM2:				KEY:	58009
3			2.00' FORT UNION		COAL							
4	E		152.00' EL: 3880.0-3878.0		WC1:	WC2:	COM2: BS 3878				KEY:	58010
5			40.00' FORT UNION		RK						KEY:	58011
6			192.00' EL: 3878.0-3838.0		WC1:	WC2:	COM2:				KEY:	58012
7			4.00' FORT UNION	MAMMOTH 3	COAL						KEY:	58013
8			196.00' EL: 3838.0-3834.0		WC1:	WC2:	COM2: BS 3834, =REHDER				KEY:	58014
9			26.20' FORT UNION		RK						KEY:	58015
10			222.20' EL: 3834.0-3807.8		WC1:	WC2:	COM2:				KEY:	58016
11			4.50' FORT UNION		SS			VF-F			KEY:	58017
12			226.70' EL: 3807.8-3803.3		WC1:	WC2:	COM2: L TOP CORE				KEY:	58018
13			1.30' FORT UNION		SLST						KEY:	58019
14			228.00' EL: 3803.3-3802.0		WC1:	WC2:	COM2:				KEY:	58020
15			0.90' FORT UNION		CLST						KEY:	58021
16			228.90' EL: 3802.0-3801.1		WC1:	WC2:	COM2:				KEY:	58022
17			6.10' FORT UNION	MAMMOTH 1+2	COAL						KEY:	58023
18			235.00' EL: 3801.1-3795.0		WC1:	WC2:	COM2:				KEY:	58024
19			0.10' FORT UNION	MAMMOTH 1+2	BN	SLTY					KEY:	58025
20			235.10' EL: 3795.0-3794.9		WC1:	WC2:	COM2:				KEY:	58026
21			2.00' FORT UNION	MAMMOTH 1+2	COAL						KEY:	58027
22			237.10' EL: 3794.9-3792.9		WC1:	WC2:	COM2:				KEY:	58028
23			0.20' FORT UNION	MAMMOTH 1+2	SS			VF-F			KEY:	58029
24			237.30' EL: 3792.9-3792.7		WC1:	WC2:	COM2:				KEY:	58030
25			0.50' FORT UNION	MAMMOTH 1+2	COAL						KEY:	58031
26			237.80' EL: 3792.7-3792.2		WC1:	WC2:	COM2:				KEY:	58032

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14 E	0.20' FORT UNION	MAMMOTH 1+2	BN	SLTY	COM2: BS 3792	KEY: 58022
	238.00' EL: 3792.2-3792.0		WC1:	WC2:		
15 L	1.30' FORT UNION		SS		VF-F	
	239.30' EL: 3792.0-3790.7		WC1:	WC2:	COM2: L BASE CORE	KEY: 58023
16	92.70' FORT UNION		RK			
	332.00' EL: 3790.7-3698.0		WC1:	WC2:	COM2:	KEY: 58024
17 U,E	2.00' FORT UNION	POMPEY	COAL			
	334.00' EL: 3698.0-3696.0		WC1:	WC2:	COM2: BS 3696	KEY: 58025
18	66.00' FORT UNION		RK			
	400.00' EL: 3696.0-3630.0		WC1:	WC2:	COM2:	KEY: 58026

 DATA POINT ID: B4-4
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: BN 72719-1 DRILLERS LOG, CORE
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: BURLINGTON NORTHERN RR
 SURFACE
 ELEVATION: 3846.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 157.30'
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 DATE: 820817
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 SECTION: 19.0
 LATITUDE: 46 21 1
 LONGITUDE: 108 22 56
 LLPREC: 0
 RANGE: 27.00E
 OWNERSHIP:
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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	KEY
1	9.00'		FORT UNION	9.00' EL: 3846.0-3837.0	SS	WC2:	COM2:					58027
2	0.30'		FORT UNION	9.30' EL: 3837.0-3836.7	COAL	WC2:	COM2:					58028
3	0.70'		FORT UNION	10.00' EL: 3836.7-3836.0	SH	WC2:	COM2:					58029
4	0.30'		FORT UNION	10.30' EL: 3836.0-3835.7	COAL	WC2:	COM2:					58030
5	7.70'		FORT UNION	18.00' EL: 3835.7-3828.0	SS	WC2:	COM2:					58031
6	0.20'		FORT UNION	18.20' EL: 3828.0-3827.8	COAL	WC2:	COM2:					58032
7	3.80'		FORT UNION	22.00' EL: 3827.8-3824.0	SH	WC2:	COM2:					58033
8	2.00'		FORT UNION	24.00' EL: 3824.0-3822.0	SS	WC2:	COM2:					58034
9	1.00'		FORT UNION	25.00' EL: 3822.0-3821.0	SH	WC2:	COM2:					58035
10	6.00'		FORT UNION	31.00' EL: 3821.0-3815.0	SS	WC2:	COM2:					58036
11	0.30'		FORT UNION	31.30' EL: 3815.0-3814.7	COAL	WC2:	COM2:					58037
12	2.70'		FORT UNION	34.00' EL: 3814.7-3812.0	SH	WC2:	COM2:					58038
13	3.00'		FORT UNION	37.00' EL: 3812.0-3809.0	SS	WC2:	COM2:					58039

14	1.50'FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58040
	38.50' EL: 3809.0-3807.5						
15 U,E	2.50'FORT UNION	COAL	WC1:	WC2:	COM2: BS 3805	KEY:	58041
	41.00' EL: 3807.5-3805.0						
16	7.00'FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58042
	48.00' EL: 3805.0-3798.0						
17	8.00'FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	58043
	56.00' EL: 3798.0-3790.0						
18	4.00'FORT UNION	SH	WC1:	WC2: CALC	COM2:	KEY:	58044
	60.00' EL: 3790.0-3786.0						
19	3.00'FORT UNION	SH	WC1:	WC2: SDY	COM2:	KEY:	58045
	63.00' EL: 3786.0-3783.0						
20	1.00'FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	58046
	64.00' EL: 3783.0-3782.0						
21	4.00'FORT UNION	SH	WC1:	WC2: SDY	COM2:	KEY:	58047
	68.00' EL: 3782.0-3778.0						
22	42.00'FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58048
	110.00' EL: 3778.0-3736.0						
23 L	18.00'FORT UNION	SS	WC1:	WC2:	COM2: L TOP CORE	KEY:	58049
	128.00' EL: 3736.0-3718.0						
24	1.00'FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58050
	129.00' EL: 3718.0-3717.0						
25	0.20'FORT UNION	COAL	WC1:	WC2:	COM2: =REHDER	KEY:	58051
	129.20' EL: 3717.0-3716.8						
26	0.10'FORT UNION	SH	WC1:	WC2:	COM2: =REHDER	KEY:	58052
	129.30' EL: 3716.8-3716.7						
27 E	1.80'FORT UNION	COAL	WC1:	WC2:	COM2: BS 3714.9, =REHDER	KEY:	58053
	131.10' EL: 3716.7-3714.9						
28	0.90'FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58054
	132.00' EL: 3714.9-3714.0						
29	0.20'FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	58055
	132.20' EL: 3714.0-3713.8						
30	2.40'FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58056
	134.60' EL: 3713.8-3711.4						
31 E	3.60'FORT UNION	COAL	WC1:	WC2:	COM2: BS 3707.8	KEY:	58057
	138.20' EL: 3711.4-3707.8						
32	3.30'FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58058
	141.50' EL: 3707.8-3704.5						
33	0.30'FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58059
	141.80' EL: 3704.5-3704.2						
34	1.70'FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58060
	143.50' EL: 3704.2-3702.5						
35 E	4.80'FORT UNION	COAL	WC1:	WC2:	COM2: BS 3697.7	KEY:	58061
	148.30' EL: 3702.5-3697.7						
36 L	1.50'FORT UNION	SH	WC1:	WC2:	COM2: L BS CORE, 3696.2	KEY:	58062
	149.80' EL: 3697.7-3696.2						

37	7.50' FORT UNION 157.30' EL: 3696.2-3688.7	SH WC1:	WC2:	COM2:	KEY: 58063
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 DATA POINT ID: B4-7
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: BN 72719-4 DRILLERS LOG, CORE
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: BURLINGTON NORTHERN RR
 SURFACE
 ELEVATION: 3950.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 280.00'
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SE
 SECTION: 19.0
 TOWNSHIP: 7.00N
 RANGE: 27.00E
 DATE: 820817
 PRIN MERIDIAN: 20
 CONFID: *****

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	F	J	C
1	22.00'		FORT UNION		SS											
			22.00' EL:	3950.0-3928.0	WC1:	WC2:	COM2:				KEY:					58064
2	1.00'		FORT UNION		SH											
			23.00' EL:	3928.0-3927.0	WC1:	WC2:	COM2:				KEY:					58065
3	14.00'		FORT UNION		SS											
			37.00' EL:	3927.0-3913.0	WC1:	WC2:	COM2:				KEY:					58066
4	5.00'		FORT UNION		SH	SDY										
			42.00' EL:	3913.0-3908.0	WC1:	WC2:	COM2:				KEY:					58067
5	3.00'		FORT UNION		SS											
			45.00' EL:	3908.0-3905.0	WC1:	WC2:	COM2:				KEY:					58068
6	13.50'		FORT UNION		SH	SDY										
			58.50' EL:	3905.0-3891.5	WC1:	WC2:	COM2:				KEY:					58069
7	0.30'		FORT UNION		COAL											
			58.80' EL:	3891.5-3891.2	WC1:	WC2:	COM2:				KEY:					58070
8	2.20'		FORT UNION		SLST											
			61.00' EL:	3891.2-3889.0	WC1:	WC2:	COM2:				KEY:					58071
9	0.50'		FORT UNION		SH	CALC										
			61.50' EL:	3889.0-3888.5	WC1:	WC2:	COM2:				KEY:					58072
10	30.00'		FORT UNION		SH	SDY										
			91.50' EL:	3888.5-3858.5	WC1:	WC2:	COM2:				KEY:					58073
11	0.50'		FORT UNION		COAL											
			92.00' EL:	3858.5-3858.0	WC1:	WC2:	COM2:				KEY:					58074
12	9.00'		FORT UNION		SS											
			101.00' EL:	3858.0-3849.0	WC1:	WC2:	COM2:				KEY:					58075
13	3.00'		FORT UNION		SH											
			104.00' EL:	3849.0-3846.0	WC1:	WC2:	COM2:				KEY:					58076

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FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

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14	0.50' FORT UNION	104.50' EL: 3846.0-3845.5	COAL	WC1:	WC2:	COM2:	KEY: 58077
15	4.50' FORT UNION	109.00' EL: 3845.5-3841.0	SH	WC2:	SDY		
16	0.70' FORT UNION	109.70' EL: 3841.0-3840.3	COAL	WC1:	WC2:	COM2:	KEY: 58078
17	11.30' FORT UNION	121.00' EL: 3840.3-3829.0	SH	WC2:	SDY		KEY: 58079
18	20.00' FORT UNION	141.00' EL: 3829.0-3809.0	SS	WC1:	WC2:	COM2:	KEY: 58080
19	2.00' FORT UNION	143.00' EL: 3809.0-3807.0	SH	WC2:	SDY		KEY: 58081
20	6.00' FORT UNION	149.00' EL: 3807.0-3801.0	SS	WC1:	WC2:	COM2:	KEY: 58082
21	1.00' FORT UNION	150.00' EL: 3801.0-3800.0	COAL	WC1:	WC2:	COM2:	KEY: 58083
22	6.00' FORT UNION	156.00' EL: 3800.0-3794.0	SH	WC2:	SDY		KEY: 58084
23 E	3.50' FORT UNION	159.50' EL: 3794.0-3790.5	COAL	WC1:	WC2:	COM2:	KEY: 58085
24	18.00' FORT UNION	177.50' EL: 3790.5-3772.5	SH	WC2:	SDY	COM2: BS 3790.5	KEY: 58086
25	0.50' FORT UNION	178.00' EL: 3772.5-3772.0	COAL	WC1:	WC2:	COM2:	KEY: 58087
26	12.00' FORT UNION	190.00' EL: 3772.0-3760.0	SH	WC1:	WC2:	COM2:	KEY: 58088
27	40.00' FORT UNION	230.00' EL: 3760.0-3720.0	SS	WC1:	WC2:	COM2:	KEY: 58089
28 L	17.60' FORT UNION	247.60' EL: 3720.0-3702.4	SS	WC1:	WC2:	COM2:	KEY: 58090
29	0.50' FORT UNION	248.10' EL: 3702.4-3701.9	SH	WC1:	WC2:	COM2: L TOP CORE	KEY: 58091
30	1.10' FORT UNION	249.20' EL: 3701.9-3700.8	COAL	WC1:	WC2:	COM2:	KEY: 58092
31	0.80' FORT UNION	250.00' EL: 3700.8-3700.0	NR	WC1:	WC2:	COM2: CLAY PARTING 0.2 ABOVE BASE, =REHDER	KEY: 58093
32 E	0.30' FORT UNION	250.30' EL: 3700.0-3699.7	COAL	WC1:	WC2:	COM2: =REHDER	KEY: 58094
33	3.70' FORT UNION	254.00' EL: 3699.7-3696.0	SH	WC1:	WC2:	COM2: BS 3699.7=REHDER	KEY: 58095
34 E	3.80' FORT UNION	257.80' EL: 3696.0-3692.2	COAL	WC1:	WC2:	COM2:	KEY: 58096
35	0.80' FORT UNION	258.60' EL: 3692.2-3691.4	SH	WC1:	WC2:	COM2: BS 3692.2	KEY: 58097
36 E	6.70' FORT UNION	265.30' EL: 3691.4-3684.7	COAL	WC1:	WC2:	COM2:	KEY: 58098
						COM2: BS 3684.7	KEY: 58099

37	1.40' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58100
	266.70' EL: 3684.7-3683.3						
38	1.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58101
	267.70' EL: 3683.3-3682.3						
39 L	1.90' FORT UNION	SH	WC1:	WC2:	COM2: L BASE CORE	KEY:	58102
	269.60' EL: 3682.3-3680.4						
40	10.40' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58103
	280.00' EL: 3680.4-3670.0						

DATA POINT ID: B4-23
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: BURLINGTON NORTHERN RR
SURFACE

DATE: 820817
PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA
COUNTY: MUSSELSHELL

ELEVATION: 4035.00'
ELVPREC: 0
LOGGED : 539.50'
TOTAL DEPTH

RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
SECTION: 1.0

PROVINCE: N GREAT PLAINS

TOWNSHIP: 6.00N

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN

LOG : 230
LONGITUDE: 108 24 18
LLPREC: 0
RANGE: 26.00E

COMMENT1: BN 6261-1 DRILLERS LOG, CORE
HYDRO CD: 0
FILEPOINTER:

OWNERSHIP: -----

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	15.00'		FORT UNION		SS							
	15.00'		EL: 4035.0-4020.0		WC1:	WC2:	COM2:				KEY:	58104
2	6.00'		FORT UNION		CLY							
	21.00'		EL: 4020.0-4014.0		WC1:	WC2:	COM2:				KEY:	58105
3	1.00'		FORT UNION		SS							
	22.00'		EL: 4014.0-4013.0		WC1:	WC2:	COM2:				KEY:	58106
4	10.50'		FORT UNION		CLY							
	32.50'		EL: 4013.0-4002.5		WC1:	WC2:	COM2:				KEY:	58107
5	0.20'		FORT UNION		COAL							
	32.70'		EL: 4002.5-4002.3		WC1:	WC2:	COM2:				KEY:	58108
6	6.00'		FORT UNION		CLY							
	38.70'		EL: 4002.3-3996.3		WC1:	WC2:	COM2:				KEY:	58109
7	1.00'		FORT UNION		COAL							
	39.70'		EL: 3996.3-3995.3		WC1:	WC2:	COM2:				KEY:	58110
8	3.00'		FORT UNION		SH	SDY						
	42.70'		EL: 3995.3-3992.3		WC1:	WC2:	COM2:				KEY:	58111
9	7.00'		FORT UNION		SS							
	49.70'		EL: 3992.3-3985.3		WC1:	WC2:	COM2:				KEY:	58112
10	8.00'		FORT UNION		SH	SDY						
	57.70'		EL: 3985.3-3977.3		WC1:	WC2:	COM2:				KEY:	58113
11 U,E	3.50'		FORT UNION	BULL MTN	COAL							
	61.20'		EL: 3977.3-3973.8		WC1:	WC2:	COM2:	POSSIBLE PARTING, E BASE 3973.8			KEY:	58114
12	3.50'		FORT UNION		SH	SDY						
	64.70'		EL: 3973.8-3970.3		WC1:	WC2:	COM2:				KEY:	58115
13	15.00'		FORT UNION		SH	CALC						
	79.70'		EL: 3970.3-3955.3		WC1:	WC2:	COM2:				KEY:	58116

C F
O O
N S

14	5.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58117
	84.70' EL: 3955.3-3950.3			WC2:			
15	1.00' FORT UNION	SH	WC1:	CARB	COM2:	KEY:	58118
	85.70' EL: 3950.3-3949.3			WC2:			
16	5.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58119
	90.70' EL: 3949.3-3944.3						
17	2.00' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	58120
	92.70' EL: 3944.3-3942.3						
18	7.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58121
	99.70' EL: 3942.3-3935.3			WC2:			
19	10.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58122
	109.70' EL: 3935.3-3925.3						
20	15.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58123
	124.70' EL: 3925.3-3910.3			WC2:			
21	3.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58124
	127.70' EL: 3910.3-3907.3						
22	2.00' FORT UNION	SH	WC1:	CALC	COM2:	KEY:	58125
	129.70' EL: 3907.3-3905.3			WC2:			
23	28.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58126
	157.70' EL: 3905.3-3877.3			WC2:			
24	2.00' FORT UNION	SH	WC1:	CARB	COM2:	KEY:	58127
	159.70' EL: 3877.3-3875.3			WC2:			
25	11.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58128
	170.70' EL: 3875.3-3864.3			WC2:			
26	1.00' FORT UNION	SH	WC1:	CARB	COM2:	KEY:	58129
	171.70' EL: 3864.3-3863.3			WC2:			
27	5.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58130
	176.70' EL: 3863.3-3858.3			WC2:			
28	2.00' FORT UNION	SH	WC1:	CARB	COM2:	KEY:	58131
	178.70' EL: 3858.3-3856.3			WC2:			
29	16.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58132
	194.70' EL: 3856.3-3840.3			WC2:			
30	20.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58133
	214.70' EL: 3840.3-3820.3						
31	6.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58134
	220.70' EL: 3820.3-3814.3			WC2:			
32	2.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58135
	222.70' EL: 3814.3-3812.3						
33	14.00' FORT UNION	SH	WC1:	SDY	COM2:	KEY:	58136
	236.70' EL: 3812.3-3798.3			WC2:			
34 L	2.20' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58137
	238.90' EL: 3798.3-3796.1						
35	0.50' FORT UNION	SH	WC1:	CARB	COM2:	KEY:	58138
	239.40' EL: 3796.1-3795.6			WC2:			
36	0.30' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	58139
	239.70' EL: 3795.6-3795.3						

37	2.00' FORT UNION	ROCK MESA	SH	CARB			
	241.70' EL: 3795.3-3793.3		WC1:	WC2:	COM2:	KEY:	58140
38 E	4.00' FORT UNION	ROCK MESA	COAL				
	245.70' EL: 3793.3-3789.3		WC1:	WC2:	COM2: E BASE 3789.3	KEY:	58141
39 L	1.00' FORT UNION		SH				
	246.70' EL: 3789.3-3788.3		WC1:	WC2:	COM2: L BASE CORE	KEY:	58142
40	5.00' FORT UNION		SH	SDY			
	251.70' EL: 3788.3-3783.3		WC1:	WC2:	COM2:	KEY:	58143
41	0.50' FORT UNION		COAL				
	252.20' EL: 3783.3-3782.8		WC1:	WC2:	COM2: PART OF ROCK MESA?	KEY:	58144
42	12.50' FORT UNION		SH	SDY			
	264.70' EL: 3782.8-3770.3		WC1:	WC2:	COM2:	KEY:	58145
43	25.00' FORT UNION		SS				
	289.70' EL: 3770.3-3745.3		WC1:	WC2:	COM2:	KEY:	58146
44	15.00' FORT UNION		SH	SDY			
	304.70' EL: 3745.3-3730.3		WC1:	WC2:	COM2:	KEY:	58147
45 L	8.10' FORT UNION		SS				
	312.80' EL: 3730.3-3722.2		WC1:	WC2:	COM2: L TOP CORE	KEY:	58148
46	0.10' FORT UNION		SH	CARB			
	312.90' EL: 3722.2-3722.1		WC1:	WC2:	COM2:	KEY:	58149
47 D	2.00' FORT UNION		SS				
	314.90' EL: 3722.1-3720.1		WC1:	WC2:	COM2: D SS,SH	KEY:	58150
48	3.00' FORT UNION		NR				
	317.90' EL: 3720.1-3717.1		WC1:	WC2:	COM2:	KEY:	58151
49	0.80' FORT UNION		SH	CARB			
	318.70' EL: 3717.1-3716.3		WC1:	WC2:	COM2:	KEY:	58152
50	0.60' FORT UNION		SH				
	319.30' EL: 3716.3-3715.7		WC1:	WC2:	COM2:	KEY:	58153
51	2.90' FORT UNION	MAMMOTH 3	COAL				
	322.20' EL: 3715.7-3712.8		WC1:	WC2:	COM2: W-CRUMBLED PYRITE,=REHDER	KEY:	58154
52	0.20' FORT UNION	MAMMOTH 3	SH				
	322.40' EL: 3712.8-3712.6		WC1:	WC2:	COM2: =REHDER	KEY:	58155
53 E	0.40' FORT UNION	MAMMOTH 3	COAL				
	322.80' EL: 3712.6-3712.2		WC1:	WC2:	COM2: W-PYRITE, E BASE 3712.2, =REHDER	KEY:	58156
54 D	1.90' FORT UNION		SH				
	324.70' EL: 3712.2-3710.3		WC1:	WC2:	COM2: D SH,SS	KEY:	58157
55	2.30' FORT UNION		SH				
	327.00' EL: 3710.3-3708.0		WC1:	WC2:	COM2:	KEY:	58158
56	0.50' FORT UNION		SH	CARB			
	327.50' EL: 3708.0-3707.5		WC1:	WC2:	COM2:	KEY:	58159
57	2.10' FORT UNION		SH				
	329.60' EL: 3707.5-3705.4		WC1:	WC2:	COM2:	KEY:	58160
58	0.10' FORT UNION	MAMMOTH 1+2	COAL				
	329.70' EL: 3705.4-3705.3		WC1:	WC2:	COM2:	KEY:	58161
59	0.40' FORT UNION	MAMMOTH 1+2	SH				
	330.10' EL: 3705.3-3704.9		WC1:	WC2:	COM2:	KEY:	58162

60	4.80'FORT UNION	MAMMOTH 1+2	COAL	WC1:	COM2: W-SOME PYRITE	KEY:	58163
	334.90' EL:	3704.9-3700.1		WC2:			
61 E	4.00'FORT UNION	MAMMOTH 1+2	COAL	WC1:	COM2: E BASE 3696.1	KEY:	58164
	338.90' EL:	3700.1-3696.1		WC2:			
62	2.90'FORT UNION		SS	WC1:	COM2:	KEY:	58165
	341.80' EL:	3696.1-3693.2		WC2:			
63	0.40'FORT UNION		SH	WC1:	COM2:	KEY:	58166
	342.20' EL:	3693.2-3692.8		WC2:			
64	0.10'FORT UNION		SH	WC1:	COM2:	KEY:	58167
	342.30' EL:	3692.8-3692.7		WC2:			
65 L	2.20'FORT UNION		SH	WC1:	COM2: L BASE CORE	KEY:	58168
	344.50' EL:	3692.7-3690.5		WC2:			
66 D	20.00'FORT UNION		SH	WC1:	COM2: D SH,SS	KEY:	58169
	364.50' EL:	3690.5-3670.5		WC2:			
67 D	57.00'FORT UNION		SH	WC1:	COM2: D CALC SH,SS	KEY:	58170
	421.50' EL:	3670.5-3613.5		WC2:			
68	1.50'FORT UNION	POMPEY	COAL	WC1:	COM2:	KEY:	58171
	423.00' EL:	3613.5-3612.0		WC2:			
69 D	40.50'FORT UNION		SH	WC1:	COM2: D SH,SS	KEY:	58172
	463.50' EL:	3612.0-3571.5		WC2:			
70	1.00'FORT UNION		SH	WC1:	COM2:	KEY:	58173
	464.50' EL:	3571.5-3570.5		WC2:			
71 D	13.00'FORT UNION		SH	WC1:	COM2: D SH,SS	KEY:	58174
	477.50' EL:	3570.5-3557.5		WC2:			
72	2.00'FORT UNION		SH	WC1:	COM2:	KEY:	58175
	479.50' EL:	3557.5-3555.5		WC2:			
73 D	60.00'FORT UNION		SH	WC1:	COM2: D SH,SS	KEY:	58176
	539.50' EL:	3555.5-3495.5		WC2:			

DATA POINT ID: B4-24
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
GEOLOGIST: USGD-CONNOR C W DATE: 820817
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3837.00' RANK: SUBBIT
ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 15.0
TOTAL DEPTH
LOGGED : 404.60' LATITUDE: 46 21 31
DESCRIPTION
LOG : 202 LONGITUDE: 108 27 50
WEATHERING: 0 LLPREC: 0
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM104
HYDRO CD: 0
STATE: MONTANA
COUNTY: MUSSELSHELL
PRIN MERIDIAN: 20
CONFID: 20
OWNERSHIP:
FILEPOINTER:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC	C	F
1			51.00' FORT UNION		RK											
			51.00' EL:	3837.0-3786.0	WC1:	WC2:	COM2:				KEY:				57297	
2 E			7.70' FORT UNION	ROCK MESA	COAL											
			58.70' EL:	3786.0-3778.3	WC1:	WC2:	COM2:	BS 3778			KEY:				57298	
3			86.00' FORT UNION		RK											
			144.70' EL:	3778.3-3692.3	WC1:	WC2:	COM2:				KEY:				57299	
4			3.00' FORT UNION	MAMMOTH 1+2	COAL											
			147.70' EL:	3692.3-3689.3	WC1:	WC2:	COM2:				KEY:				57300	
5			0.70' FORT UNION	MAMMOTH 1+2	RK											
			148.40' EL:	3689.3-3688.6	WC1:	WC2:	COM2:				KEY:				57301	
6 E			6.20' FORT UNION	MAMMOTH 1+2	COAL											
			154.60' EL:	3688.6-3682.4	WC1:	WC2:	COM2:	BS 3682			KEY:				57302	
7 E			250.00' FORT UNION		RK											
			404.60' EL:	3682.4-3432.4	WC1:	WC2:	COM2:	BS 3432			KEY:				57303	

 DATA POINT ID: B4-26
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM3802
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO
 SURFACE
 ELEVATION: 3840.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 150.10'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SE
 SECTION: 15.0
 TOWNSHIP: 7.00N
 RANGE: 26.00E
 DATE: 820817
 CONFID: 20
 PRIN MERIDIAN: 20
 OWNERSHIP:
 FILEPOINTER:
 UQ
 NU T
 IA H
 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 61.00'FORT UNION 61.00' EL: 3840.0-3779.0 RK WC2: COM2: KEY: 57308
 2 E 4.30'FORT UNION ROCK MESA COAL WC1: COAL WC2: COM2: BS 3775 KEY: 57309
 3 62.50'FORT UNION 65.30' EL: 3779.0-3774.7 RK WC1: RK WC2: COM2: KEY: 57310
 4 E 127.80' EL: 3774.7-3712.2 COAL WC1: COAL WC2: COM2: BS 3710,=REHDER KEY: 57311
 5 129.80' EL: 3712.2-3710.2 RK WC1: RK WC2: COM2: KEY: 57312
 6 E 140.80' EL: 3710.2-3699.2 COAL WC1: COAL WC2: COM2: BS 3690 KEY: 57313
 150.10' EL: 3699.2-3689.9 WC1: WC2: COM2: BS 3690 KEY: 57313
 C F
 O O
 N S

DATA POINT ID: B4-27

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: CONSOLIDATION COAL CO

DATE: 820817

PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM103

HYDRO CD: 0

FILE POINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	167.00'		FORT UNION		RK							
				167.00' EL: 3866.0-3699.0	WC1:	WC2:	COM2:				KEY:	57314
2	3.40'		FORT UNION	MAMMOTH 1+2	COAL							
				170.40' EL: 3699.0-3695.6	WC1:	WC2:	COM2:				KEY:	57315
3	0.70'		FORT UNION	MAMMOTH 1+2	RK							
				171.10' EL: 3695.6-3694.9	WC1:	WC2:	COM2:				KEY:	57316
4	5.80'		FORT UNION	MAMMOTH 1+2	COAL							
				176.90' EL: 3694.9-3689.1	WC1:	WC2:	COM2: BS 3689				KEY:	57317

UQ

NU T

IA H

UNIT TL K

C F

O O

N S

T S FJC

DATA POINT ID: B4-27A
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA
COUNTY: MUSSELSHELL

ELEVATION: 3885.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: 17.0

SW

PROVINCE: N GREAT PLAINS

LOGGED : 227.50' LATITUDE: 46 21 12

TOWNSHIP: 7.00N

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN

LOG : 202 LONGITUDE: 108 22 38

RANGE: 27.00E

COMMENT1: LL&E 72717-2 (BN1)

WEATHERING: 0 LLPREC: 0

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

-----										C F			
-----										O O			
-----										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	142.00'		FORT UNION		RK								
			142.00' EL: 3885.0-3743.0		WC1:	WC2:	COM2:				KEY:	57400	
2	E		2.00' FORT UNION	MAMMOTH 3	COAL								
			144.00' EL: 3743.0-3741.0		WC1:	WC2:	COM2: BS 3742, =REHDER				KEY:	57401	
3			2.00' FORT UNION		RK								
			146.00' EL: 3741.0-3739.0		WC1:	WC2:	COM2:				KEY:	57402	
4	E		3.50' FORT UNION	MAMMOTH 2	COAL								
			149.50' EL: 3739.0-3735.5		WC1:	WC2:	COM2: BS 3736				KEY:	57403	
5			9.00' FORT UNION		RK								
			158.50' EL: 3735.5-3726.5		WC1:	WC2:	COM2:				KEY:	57404	
6	E		5.00' FORT UNION	MAMMOTH 1	COAL								
			163.50' EL: 3726.5-3721.5		WC1:	WC2:	COM2: BS 3722				KEY:	57405	
7	E		64.00' FORT UNION		RK								
			227.50' EL: 3721.5-3657.5		WC1:	WC2:	COM2: BS 3658				KEY:	57406	

DATA POINT ID: B4-27B

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 820817

CONFID: PRIN MERIDIAN: 20

SOURCE: LOUISIANA LAND&EXPLOR

SURFACE

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3895.00'

ELVPREC: 0

TOTAL DEPTH

PROVINCE: N GREAT PLAINS

LOGGED : 198.90'

LATITUDE: 46 21 5

TOWNSHIP: 7.00N

DESCRIPTION

REGION: POWDER RIVER

LOG : 230

LONGITUDE: 108 22 53

RANGE: 27.00E

FIELD: BULL MOUNTAIN

WEATHERING: 0

LLPREC: 0

COMMENT1: LL&E 72717-4 (BN3):GEOPHYS.,CORE

HYDRO CD: 0 FILE POINTER:

OWNERSHIP:

UQ

NU T

IA H

UNIT TL K FORMATION

BED NAME

LITH

LITHMOO

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1	79.00' FORT UNION	79.00' EL: 3895.0-3816.0	WC1: RK	WC2:	COM2:	KEY:	57407
2	L 3.50' FORT UNION	82.50' EL: 3816.0-3812.5	WC1: SH	WC2: SDY	COM2: L TOP CORE	KEY:	57408
3	0.50' FORT UNION	83.00' EL: 3812.5-3812.0	WC1: SH	WC2:	COM2:	KEY:	57409
4	E 3.00' FORT UNION	86.00' EL: 3812.0-3809.0	WC1: COAL	WC2:	COM2: BS 3809	KEY:	57410
5	1.50' FORT UNION	87.50' EL: 3809.0-3807.5	WC1: SH	WC2:	COM2:	KEY:	57411
6	L 1.50' FORT UNION	89.00' EL: 3807.5-3806.0	WC1: SS	WC2:	COM2: L BASE CORE	KEY:	57412
7	D 24.00' FORT UNION	113.00' EL: 3806.0-3782.0	WC1: SS	WC2: SH	COM2: D SS,SH	KEY:	57413
8	44.00' FORT UNION	157.00' EL: 3782.0-3738.0	WC1: SS	WC2:	COM2:	KEY:	57414
9	L 12.00' FORT UNION	169.00' EL: 3738.0-3726.0	WC1: SS	WC2:	COM2: L TOP CORE	KEY:	57415
10	D 2.00' FORT UNION	171.00' EL: 3726.0-3724.0	WC1: SS	WC2:	COM2: D SS,SH	KEY:	57416
11	D 2.00' FORT UNION	173.00' EL: 3724.0-3722.0	WC1: SH	WC2:	COM2: D SH,SS	KEY:	57417
12	E 2.50' FORT UNION	175.50' EL: 3722.0-3719.5	WC1: COAL	WC2:	COM2: BS 3720,=REHDER	KEY:	57418
13	2.50' FORT UNION	178.00' EL: 3719.5-3717.0	WC1: SH	WC2:	COM2:	KEY:	57419

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14 E	3.00' FORT UNION	MAMMOTH 2	WC1:	COAL					
	181.00' EL: 3717.0-3714.0		WC2:		COM2: BS 3714	KEY:	57420		
15 D	3.50' FORT UNION		SH						
	184.50' EL: 3714.0-3710.5		WC1:		COM2: D SH, SS	KEY:	57421		
16	3.80' FORT UNION	MAMMOTH 1	COAL						
	188.30' EL: 3710.5-3706.7		WC1:		COM2:	KEY:	57422		
17	0.10' FORT UNION	MAMMOTH 1	RK						
	188.40' EL: 3706.7-3706.6		WC1:		COM2:	KEY:	57423		
18 E	2.50' FORT UNION	MAMMOTH 1	COAL						
	190.90' EL: 3706.6-3704.1		WC1:		COM2: BS 3704	KEY:	57424		
19 L	4.50' FORT UNION		SH	SDY					
	195.40' EL: 3704.1-3699.6		WC2:		COM2: L BASE CORE	KEY:	57425		
20 E	3.50' FORT UNION		RK						
	198.90' EL: 3699.6-3696.1		WC1:		COM2: BS 3696	KEY:	57426		

```

*****
DATA POINT ID: B4-27C
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W      DATE: 820817      CONFID:
SOURCE: LOUISIANA LAND&EXPLORE  PRIN MERIDIAN: 20
SURFACE
ELEVATION: 3885.00'      RANK: SUBBIT      QUARTERS:      SW
ELVPREC: 0      LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 17.0
TOTAL DEPTH
LOGGED : 180.40'      LATITUDE: 46 21 5      TOWNSHIP: 7.00N
DESCRIPTION
LOG : 230      LONGITUDE: 108 22 33      RANGE: 27.00E
WEATHERING: 0      LLPREC: 0
COMMENT1: LL&E 72717-3 (BN2); GEOPHYS.,CORE
HYDRO CD: 0      FILEPOINTER:
OWNERSHIP:
-----
UQ
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
-----
1 E 45.50'FORT UNION 45.50' EL: 3885.0-3839.5 WC1: WC2: COM2: BS 3840 KEY: 57427
2 L 3.90'FORT UNION 49.40' EL: 3839.5-3835.6 WC1: WC2: COM2: L TOP CORE KEY: 57428
3 3.60'FORT UNION 53.00' EL: 3835.6-3832.0 WC1: WC2: COM2: CLY KEY: 57429
4 5.00'FORT UNION 58.00' EL: 3832.0-3827.0 WC1: WC2: COM2: SDY KEY: 57430
5 E 3.20'FORT UNION 61.20' EL: 3827.0-3823.8 WC1: WC2: COM2: CARB KEY: 57431
6 2.00'FORT UNION 63.20' EL: 3823.8-3821.8 WC1: WC2: COM2: SDY KEY: 57432
7 1.70'FORT UNION 64.90' EL: 3821.8-3820.1 WC1: WC2: COM2: MED KEY: 57433
8 L 0.50'FORT UNION 65.40' EL: 3820.1-3819.6 WC1: WC2: COM2: L BASE CORE KEY: 57434
9 E 55.10'FORT UNION 120.50' EL: 3819.6-3764.5 WC1: WC2: COM2: BS 3764 KEY: 57435
10 L 10.10'FORT UNION 130.60' EL: 3764.5-3754.4 WC1: WC2: COM2: L TOP CORE KEY: 57436
11 4.90'FORT UNION 135.50' EL: 3754.4-3749.5 WC1: WC2: COM2: SDY KEY: 57437
12 6.00'FORT UNION 141.50' EL: 3749.5-3743.5 WC1: WC2: COM2: MED KEY: 57438
13 1.30'FORT UNION 142.80' EL: 3743.5-3742.2 WC1: WC2: COM2: KEY: 57439

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*****
DATA POINT ID: B4-31
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
DATE: 820817
CONFID:
PRIN MERIDIAN: 20
*****
STATE: MONTANA
COUNTY: MUSSELSHELL
ELEVATION: 4040.00'
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS:
SECTION: 23.0
NE
TOTAL DEPTH
LOGGED : 348.70'
LATITUDE: 46 20 40
TOWNSHIP: 7.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 25 59
RANGE: 26.00E
WEATHERING: 0
LLPREC: 0
*****
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM128
HYDRO CD: 0
FILEPOINTER:
OWNERSHIP:
*****
UQ
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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJ
1 333.00' FORT UNION 333.00' EL: 4040.0-3707.0 WC1: WC2: COM2: KEY: 5731
2 E 3.50' FORT UNION MAMMOTH 2 COAL WC1: WC2: COM2: BS 3704 KEY: 5731
3 6.00' FORT UNION 336.50' EL: 3707.0-3703.5 WC1: WC2: COM2: COM2: KEY: 5732
4 E 6.20' FORT UNION 342.50' EL: 3703.5-3697.5 WC1: WC2: COM2: COM2: BS 3691 KEY: 5732
348.70' EL: 3697.5-3691.3 WC1: WC2: COM2: BS 3691 KEY: 5732
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DATA POINT ID: B4-31A
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817

CONFID: 20

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 72623-4

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	41.00'		FORT UNION		RK									
				41.00' EL: 3750.0-3709.0	WC1:	WC2:	COM2:							KEY: 57451
2	3.50'		FORT UNION	MAMMOTH 1+2	COAL									
				44.50' EL: 3709.0-3705.5	WC1:	WC2:	COM2:							KEY: 57452
3	2.00'		FORT UNION	MAMMOTH 1+2	RK									
				46.50' EL: 3705.5-3703.5	WC1:	WC2:	COM2:							KEY: 57453
4 E	6.00'		FORT UNION	MAMMOTH 1+2	COAL									
				52.50' EL: 3703.5-3697.5	WC1:	WC2:	COM2: BS 3698							KEY: 57454
5 E	107.50'		FORT UNION		RK									
				160.00' EL: 3697.5-3590.0	WC1:	WC2:	COM2: BS 3590							KEY: 57455

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DATA POINT ID: B4-31B
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W DATE: 830117 CONFID: PRIN MERIDIAN: 20
 SOURCE: LOUISIANA LAND AND EXPL

SURFACE
 ELEVATION: 3860.00' RANK: SUBBIT QUARTERS: SW
 ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 23.0

TOTAL DEPTH

LOGGED : 190.00' LATITUDE: 46 20 39 TOWNSHIP: 7.00N

DESCRIPTION

LOG : 230 LONGITUDE: 108 26 13 RANGE: 26.00E

WEATHERING: 0 LLPREC: 0

OWNERSHIP:

FILEPOINTER:

UQ		NU		IA		TL		K		FORMATION		BED NAME		LITH		LITHMOD		COLOR		GRNSIZE		GRNSHAPE		MINERALOGY		BEDDING		T S FJC		C F	
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC	O	O	N	S													
1	75.00'	FORT UNION	75.00' EL: 3860.0-3785.0	WC1:	RK	WC2:	COM2:				KEY:	58603																			
2	E	2.00'	FORT UNION	77.00' EL: 3785.0-3783.0	WC1:	COAL	WC2:	COM2: E BS 3783			KEY:	58604																			
3	53.00'	FORT UNION	130.00' EL: 3783.0-3730.0	WC1:	RK	WC2:	COM2:				KEY:	58605																			
4	E	2.00'	FORT UNION	MAMMOTH 3	COAL	WC1:	COM2: E BS 3728, =REHDER				KEY:	58606																			
5	2.00'	FORT UNION	132.00' EL: 3730.0-3728.0	WC1:	CLST	WC2:	COM2:				KEY:	58607																			
6	3.00'	FORT UNION	134.00' EL: 3728.0-3726.0	WC1:	SLST	WC2:	COM2:				KEY:	58608																			
7	D	12.00'	FORT UNION	137.00' EL: 3726.0-3723.0	WC1:	SS	COM2: D SS SLST				KEY:	58609																			
8	5.00'	FORT UNION	149.00' EL: 3723.0-3711.0	WC1:	SS	WC2:	COM2:				KEY:	58610																			
9	3.00'	FORT UNION	154.00' EL: 3711.0-3706.0	WC1:	SLST	WC2:	COM2:				KEY:	58611																			
10	2.00'	FORT UNION	157.00' EL: 3706.0-3703.0	WC1:	CLST	WC2:	COM2:				KEY:	58612																			
11	4.00'	FORT UNION	159.00' EL: 3703.0-3701.0	WC1:	COAL	WC2:	COM2:				KEY:	58613																			
12	3.50'	FORT UNION	163.00' EL: 3701.0-3697.0	WC1:	CLST	WC2:	COM2:				KEY:	58614																			
13	4.00'	FORT UNION	166.50' EL: 3697.0-3693.5	WC1:	COAL	WC2:	COM2:				KEY:	58615																			
			170.50' EL: 3693.5-3689.5	WC1:		WC2:	COM2:				KEY:	58615																			

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*****
DATA POINT ID: B4-31C
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 72623-1
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
SURFACE
ELEVATION: 4060.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 420.00'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SE
DATE: 820817
PRIN MERIDIAN: 20
CONFID:
TOWNSHIP: 7.00N
RANGE: 26.00E
LLPREC: 0
OWNERSHIP:
*****
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 75.00' FORT UNION RK WC1: WC2: COM2: KEY: 57456
2 E 2.50' FORT UNION BULL MTN WC1: WC2: COM2: BS 3982 KEY: 57457
3 249.50' FORT UNION 327.00' EL: 3982.5-3733.0 WC1: WC2: COM2: KEY: 57458
4 E 2.50' FORT UNION MAMMOTH 3 WC1: WC2: COM2: BS 3730,=REHDER KEY: 57459
5 13.00' FORT UNION 342.50' EL: 3730.5-3717.5 WC1: WC2: COM2: KEY: 57460
6 E 3.00' FORT UNION MAMMOTH 2 WC1: WC2: COM2: BS 3714 KEY: 57461
7 6.00' FORT UNION 351.50' EL: 3714.5-3708.5 WC1: WC2: COM2: KEY: 57462
8 E 5.50' FORT UNION MAMMOTH 1 WC1: WC2: COM2: BS 3703 KEY: 57463
9 E 63.00' FORT UNION 420.00' EL: 3703.0-3640.0 WC1: WC2: COM2: BS 3640 KEY: 57464

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DATA POINT ID: B4-31D
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 72623-2
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR
 SURFACE
 ELEVATION: 3966.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SW
 SECTION: 23.0
 TOTAL DEPTH
 LOGGED : 280.50'
 LATITUDE: 46 20 21
 TOWNSHIP: 7.00N
 DESCRIPTION
 LOG : 202
 LONGITUDE: 108 26 11
 RANGE: 26.00E
 WEATHERING: 0
 LLPREC: 0
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	162.00'		FORT UNION		RK									
2	E		162.00' EL: 3966.0-3804.0	ROCK MESA	WC1:	WC2:	COM2:				KEY:			57465
3			2.00' FORT UNION		COAL									
4	E		164.00' EL: 3804.0-3802.0		WC1:	WC2:	COM2: BS 3802				KEY:			57466
5			59.50' FORT UNION		RK									
6	E		223.50' EL: 3802.0-3742.5		WC1:	WC2:	COM2:				KEY:			57467
7			2.50' FORT UNION	MAMMOTH 3	COAL									
8	E		226.00' EL: 3742.5-3740.0		WC1:	WC2:	COM2: BS 3740, =REHDER				KEY:			57468
9			25.00' FORT UNION		RK									
10			251.00' EL: 3740.0-3715.0		WC1:	WC2:	COM2:				KEY:			57469
11	E		3.50' FORT UNION	MAMMOTH 1+2	COAL									
12			254.50' EL: 3715.0-3711.5		WC1:	WC2:	COM2:				KEY:			57470
13			0.50' FORT UNION	MAMMOTH 1+2	RK									
14	E		255.00' EL: 3711.5-3711.0		WC1:	WC2:	COM2:				KEY:			57471
15			6.50' FORT UNION	MAMMOTH 1+2	COAL									
16	E		261.50' EL: 3711.0-3704.5		WC1:	WC2:	COM2: BS 3704				KEY:			57472
17			19.00' FORT UNION		RK									
18			280.50' EL: 3704.5-3685.5		WC1:	WC2:	COM2: BS 3686				KEY:			57473

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DATA POINT ID: B4-32
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO
 DATE: 820817
 CONFID: PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 3823.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NE
 SECTION: 19.0

TOTAL DEPTH
 LOGGED : 140.10' LATITUDE: 46 20 38 TOWNSHIP: 7.00N
 DESCRIPTION
 LOG : 202 LONGITUDE: 108 23 29 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM1897
 HYDRO CD: 0

OWNERSHIP:

FILEPOINTER:

-----										C F		
UQ										O O		
NU										N S		
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	44.50'		FORT UNION		RK							
			44.50' EL: 3823.0-3778.5		WC1:	WC2:	COM2:				KEY:	57322
2 E	3.50'		FORT UNION	ROCK MESA	COAL							
			48.00' EL: 3778.5-3775.0		WC1:	WC2:	COM2: BS 3775				KEY:	57323
3	72.00'		FORT UNION		RK							
			120.00' EL: 3775.0-3703.0		WC1:	WC2:	COM2:				KEY:	57324
4 E	3.60'		FORT UNION	MAMMOTH 2	COAL							
			123.60' EL: 3703.0-3699.4		WC1:	WC2:	COM2: BS 3699				KEY:	57325
5	9.00'		FORT UNION		RK							
			132.60' EL: 3699.4-3690.4		WC1:	WC2:	COM2:				KEY:	57326
6 E	5.50'		FORT UNION	MAMMOTH 1	COAL							
			138.10' EL: 3690.4-3684.9		WC1:	WC2:	COM2: BS 3685				KEY:	57327
7 E	2.00'		FORT UNION		RK							
			140.10' EL: 3684.9-3682.9		WC1:	WC2:	COM2: BS 3683				KEY:	57328

DATA POINT ID: B4-32A
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
COUNTY: MUSSELSHELL

SURFACE
ELEVATION: 3850.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: NE
SECTION: 19.0

TOTAL DEPTH
LOGGED : 175.60'
LATITUDE: 46 20 48
TOWNSHIP: 7.00N

DESCRIPTION
LOG : 230
LONGITUDE: 108 23 32
RANGE: 27.00E
WEATHERING: 0
LLPREC: 0

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 72719-2 (BN5):DRILL HOLE,CORE
HYDRO CD: 0
FILEPOINTER:

OWNERSHIP:

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IA H

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 63.00'FORT UNION RK WC2: COM2: KEY: 57474

2 L 4.00'FORT UNION SS WC1: SS WC2: COM2: L TOP CORE KEY: 57475

3 E 3.00'FORT UNION ROCK MESA COAL WC1: COAL WC2: COM2: BS 3780 KEY: 57476

4 L 2.00'FORT UNION SH WC1: SH WC2: COM2: L BASE CORE KEY: 57477

5 49.00'FORT UNION RK WC1: RK WC2: COM2: KEY: 57478

6 L 3.00'FORT UNION SDY WC1: SDY WC2: COM2: L TOP CORE KEY: 57479

7 D 15.50'FORT UNION SS WC1: SS WC2: COM2: D SS,SH KEY: 57480

8 1.50'FORT UNION SH WC1: SH WC2: COM2: KEY: 57481

9 E 2.00'FORT UNION MAMMOTH 3 COAL WC1: COAL WC2: COM2: BS 3707,-REHENDER KEY: 57482

10 1.00'FORT UNION SH CARB WC1: SH WC2: COM2: KEY: 57483

11 3.50'FORT UNION SH WC1: SH WC2: COM2: KEY: 57484

12 E 4.00'FORT UNION MAMMOTH 2 COAL WC1: COAL WC2: COM2: BS 3698 KEY: 57485

13 6.20'FORT UNION SH WC1: SH WC2: COM2: KEY: 57486

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

157.70' EL: 3698.5-3692.3

DATA POINT ID: B4-33
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO

DATE: 820817
 PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SURFACE
 ELEVATION: 3828.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NE
 SECTION: 19.0

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

TOTAL DEPTH
 LOGGED : 159.70'
 LATITUDE: 46 20 45
 TOWNSHIP: 7.00N

COMMENT1: CONSOL BM1896
 HYDRO CD: 0
 FILEPOINTER:

DESCRIPTION
 LOG : 202
 LONGITUDE: 108 23 19
 RANGE: 27.00E
 WEATHERING: 0
 LLPREC: 0

OWNERSHIP:

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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	41.00'		FORT UNION		RK							
	41.00'		EL: 3828.0-3787.0		WC1:	WC2:	COM2:				KEY:	57329
2	E		4.00' FORT UNION	ROCK MESA	COAL							
	45.00'		EL: 3787.0-3783.0		WC1:	WC2:	COM2: BS 3783				KEY:	57330
3	73.50'		FORT UNION		RK							
	118.50'		EL: 3783.0-3709.5		WC1:	WC2:	COM2:				KEY:	57331
4	E		2.10' FORT UNION	MAMMOTH 2	COAL							
	120.60'		EL: 3709.5-3707.4		WC1:	WC2:	COM2: BS 3707				KEY:	57332
5	17.00'		FORT UNION		RK							
	137.60'		EL: 3707.4-3690.4		WC1:	WC2:	COM2:				KEY:	57333
6	E		6.10' FORT UNION	MAMMOTH 1	COAL							
	143.70'		EL: 3690.4-3684.3		WC1:	WC2:	COM2: BS 3684				KEY:	57334
7	E		16.00' FORT UNION		RK							
	159.70'		EL: 3684.3-3668.3		WC1:	WC2:	COM2: BS 3668				KEY:	57335

DATA POINT ID: B4-34

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: CONSOLIDATION COAL CO

DATE: 820817

CONFID: 20

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

SURFACE

ELEVATION: 3774.00'

RANK: SUBBIT

NE

ELVPREC: 0

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: 19.0

TOTAL DEPTH

LOGGED : 99.10'

LATITUDE: 46 20 44

TOWNSHIP: 7.00N

DESCRIPTION

LOG : 202

LONGITUDE: 108 22 56

RANGE: 27.00E

WEATHERING: 0

LLPREC: 0

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM1894

HYDRO CD: 0

FILE POINTER:

OWNERSHIP:

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOO

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1

61.50'FORT UNION

61.50' EL: 3774.0-3712.5

RK

WC1:

WC2:

COM2:

KEY: 57336

2

EU

2.50'FORT UNION

MAMMOTH 3

COAL

WC1:

WC2:

COM2: BS 3710,=RENDER

KEY: 57337

3

2.50'FORT UNION

64.00' EL: 3712.5-3710.0

RK

WC1:

WC2:

COM2:

KEY: 57338

4

EU

6.00'FORT UNION

MAMMOTH 2

COAL

WC1:

WC2:

COM2: BS 3701

KEY: 57339

5

3.00'FORT UNION

72.50' EL: 3707.5-3701.5

RK

WC1:

WC2:

COM2:

KEY: 57340

6

U

4.10'FORT UNION

MAMMOTH 1

COAL

WC1:

WC2:

COM2:

KEY: 57341

7

U

7.00'FORT UNION

MAMMOTH 1

RK

WC1:

WC2:

COM2:

KEY: 57342

8

EU

6.50'FORT UNION

MAMMOTH 1

COAL

WC1:

WC2:

COM2: BS 3681

KEY: 57343

9

E

6.00'FORT UNION

MAMMOTH 1

RK

WC1:

WC2:

COM2: BS 3675

KEY: 57344

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DATA POINT ID: B4-348

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 820817

CONFID:

SOURCE: LOUISIANA LAND&EXPLOR

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

SURFACE

ELEVATION: 3890.00'

RANK: SUBBIT

SW

ELVPREC: 0

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: 19.0

TOTAL DEPTH

LOGGED : 218.80'

LATITUDE: 46 20 14

TOWNSHIP: 7.00N

PROVINCE: N GREAT PLAINS

DESCRIPTION

LONG : 230

RANGE: 27.00E

REGION: POWDER RIVER

LOG : 230

LONGITUDE: 108 24 4

LLPREC: 0

FIELD: BULL MOUNTAIN

WEATHERING: 0

LLPREC: 0

RANGE: 27.00E

COMMENT1: LL&E 72719-3 (BN6):GEOPHYS.,CORE

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1	112.00' FORT UNION	112.00' EL: 3890.0-3778.0	WC1: COAL	WC2: COM2:	KEY: 57494
2 E	2.50' FORT UNION	ROCK MESA	WC1: SS	WC2: COM2: BS 3776	KEY: 57495
3 D	25.00' FORT UNION	114.50' EL: 3778.0-3775.5	WC1: SS	WC2: COM2: D SS, SH	KEY: 57496
4	36.00' FORT UNION	139.50' EL: 3775.5-3750.5	WC1: SS	WC2: COM2: MED	KEY: 57497
5 L	8.50' FORT UNION	175.50' EL: 3750.5-3714.5	WC1: SS	WC2: COM2: L TOP CORE	KEY: 57498
6 E	1.30' FORT UNION	184.00' EL: 3714.5-3706.0	WC1: COAL	WC2: COM2: BS 3705, =REHDER	KEY: 57499
7	7.50' FORT UNION	185.30' EL: 3706.0-3704.7	WC1: SS	WC2: COM2:	KEY: 57500
8	4.00' FORT UNION	192.80' EL: 3704.7-3697.2	WC1: SH	WC2: COM2:	KEY: 57501
9 E	3.00' FORT UNION	196.80' EL: 3697.2-3693.2	WC1: COAL	WC2: COM2: BS 3690	KEY: 57502
10	2.50' FORT UNION	199.80' EL: 3693.2-3690.2	WC1: SH	WC2: COM2:	KEY: 57503
11	1.00' FORT UNION	202.30' EL: 3690.2-3687.7	WC1: SS	WC2: COM2:	KEY: 57504
12 D	2.00' FORT UNION	203.30' EL: 3687.7-3686.7	WC1: SH	WC2: COM2: D SH, SS	KEY: 57505
13 E	5.50' FORT UNION	205.30' EL: 3686.7-3684.7	WC1: COAL	WC2: COM2: BS 3679	KEY: 57506
		210.80' EL: 3684.7-3679.2	WC1:		

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14	1.50' FORT UNION	SH				
	212.30' EL: 3679.2-3677.7	WC1:	WC2:	COM2:	KEY:	57507
15 L	4.00' FORT UNION	SS				
	216.30' EL: 3677.7-3673.7	WC1:	WC2:	COM2: L BASE CORE	KEY:	57508
16 E	2.50' FORT UNION	RK				
	218.80' EL: 3673.7-3671.2	WC1:	WC2:	COM2: BS 3671	KEY:	57509

DATA POINT ID: 84-34C
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR

CONFID: 20
PRIN MERIDIAN: 20

STATE: MONTANA
COUNTY: MUSSELSHELL

ELEVATION: 3940.00'
ELVPREC: 0

RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW
SECTION: 29.0

TOTAL DEPTH
LOGGED : 268.00'

LATITUDE: 46 19 59
TOWNSHIP: 7.00N

DESCRIPTION
LOG : 230

LONGITUDE: 108 22 51
RANGE: 27.00E

WEATHERING: 0
LLPREC: 0

OWNERSHIP:

COMMENT1: LL&E 72729-1 (BN8):GEOPHYS.,CORE
HYDRO CD: 0 FILEPOINTER:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 147.50' FORT UNION 147.50' EL: 3940.0-3792.5 WC1: WC2: COM2: KEY: 57510

2 E 3.50' FORT UNION 151.00' EL: 3792.5-3789.0 WC1: WC2: COM2: BS 3789 KEY: 57511

3 7.00' FORT UNION 158.00' EL: 3789.0-3782.0 WC1: WC2: COM2: KEY: 57512

4 7.00' FORT UNION 165.00' EL: 3782.0-3775.0 WC1: WC2: COM2: KEY: 57513

5 1.00' FORT UNION 166.00' EL: 3775.0-3774.0 WC1: WC2: COM2: KEY: 57514

6 5.00' FORT UNION 171.00' EL: 3774.0-3769.0 WC1: WC2: COM2: KEY: 57515

7 2.00' FORT UNION 173.00' EL: 3769.0-3767.0 WC1: WC2: COM2: KEY: 57516

8 47.50' FORT UNION 220.50' EL: 3767.0-3719.5 WC1: WC2: COM2: MED KEY: 57517

9 L 8.50' FORT UNION 229.00' EL: 3719.5-3711.0 WC1: WC2: COM2: L TOP CORE KEY: 57518

10 3.00' FORT UNION 232.00' EL: 3711.0-3708.0 WC1: WC2: COM2: SDY F KEY: 57519

11 8.00' FORT UNION 240.00' EL: 3708.0-3700.0 WC1: WC2: COM2: KEY: 57520

12 1.00' FORT UNION 241.00' EL: 3700.0-3699.0 WC1: WC2: COM2: KEY: 57521

13 E 1.20' FORT UNION 242.20' EL: 3699.0-3697.8 WC1: WC2: COM2: BS 3698,=REHDER KEY: 57522

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14	4.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	57523
	246.70' EL: 3697.8-3693.3						
15	3.70' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	57524
	250.40' EL: 3693.3-3689.6						
16	0.80' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	57525
	251.20' EL: 3689.6-3688.8						
17	3.20' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	57526
	254.40' EL: 3688.8-3685.6						
18	0.10' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	57527
	254.50' EL: 3685.6-3685.5						
19 E	2.50' FORT UNION	COAL	WC1:	WC2:	COM2: BS 3683	KEY:	57528
	257.00' EL: 3685.5-3683.0						
20	1.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	57529
	258.00' EL: 3683.0-3682.0						
21 L	1.00' FORT UNION	SS	WC1:	WC2:	COM2: L BASE CORE	KEY:	57530
	259.00' EL: 3682.0-3681.0						
22 E	9.00' FORT UNION	RK	WC1:	WC2:	COM2: BS 3672	KEY:	57531
	268.00' EL: 3681.0-3672.0						

DATA POINT ID: B4-34D

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817

PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3970.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SE

SECTION: 27.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH

LOGGED : 249.50'

LATITUDE: 46 19 25

TOWNSHIP: 7.00N

RANGE: 26.00E

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 72627-1

HYDRO CD: 0

FILEPOINTER: *****

OWNERSHIP: *****

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOO

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1 144.50'FORT UNION

144.50' EL: 3970.0-3825.5

ROCK MESA

WC1: WC2:

COM2: COM2:

COM2: BS 3823

COM2: BS 3776,=REHDER

COM2: BS 3776,=REHDER

COM2: BS 3776,=REHDER

COM2: BS 3776,=REHDER

COM2: BS 3776,=REHDER

COM2: BS 3776,=REHDER

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COM2: BS 3776,=REHDER

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KEY: 57532

KEY: 57533

KEY: 57534

KEY: 57535

KEY: 57536

KEY: 57537

KEY: 57538

KEY: 57539

KEY: 57540

 DATA POINT ID: B4-35A
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 72635-4
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLORE
 SURFACE
 ELEVATION: 3858.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NW
 SECTION: 35.0
 TOTAL DEPTH
 LOGGED : 139.50'
 LATITUDE: 46 19 11
 TOWNSHIP: 7.00N
 DESCRIPTION
 LOG : 202
 LONGITUDE: 108 26 28
 WEATHERING: 0
 LLPREC: 0
 RANGE: 26.00E
 DATE: 820817
 CONFID: 20
 PRIN MERIDIAN: 20
 OWNERSHIP:
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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 119.50' FORT UNION 119.50' EL: 3858.0-3738.5 WC1: WC2: COM2: KEY: 57541
 2 E 2.50' FORT UNION MAMMOTH 2 122.00' EL: 3738.5-3736.0 WC1: WC2: COM2: BS 3736 KEY: 57542
 3 5.00' FORT UNION 127.00' EL: 3736.0-3731.0 WC1: WC2: COM2: KEY: 57543
 4 E 5.50' FORT UNION MAMMOTH 1 132.50' EL: 3731.0-3725.5 WC1: WC2: COM2: BS 3726 KEY: 57544
 5 E 7.00' FORT UNION 139.50' EL: 3725.5-3718.5 WC1: WC2: COM2: BS 3718 KEY: 57545
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DATA POINT ID: B4-358
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 820817

CONFID: 20

SOURCE: LOUISIANA LAND&EXPLOR

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 72635-5

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1			36.00'	FORT UNION	RK	WC1:	WC2:	COM2:								KEY:	57546
2	E		4.00'	FORT UNION	COAL	WC1:	WC2:	COM2:	BS 4008							KEY:	57547
3			213.00'	FORT UNION	RK	WC1:	WC2:	COM2:								KEY:	57548
4	E		2.50'	FORT UNION	COAL	WC1:	WC2:	COM2:	BS 3792,-REHDER							KEY:	57549
5			53.50'	FORT UNION	RK	WC1:	WC2:	COM2:								KEY:	57550
6	E		1.50'	FORT UNION	COAL	WC1:	WC2:	COM2:	BS 3738							KEY:	57551
7			4.00'	FORT UNION	RK	WC1:	WC2:	COM2:								KEY:	57552
8			4.50'	FORT UNION	COAL	WC1:	WC2:	COM2:								KEY:	57553
9			1.00'	FORT UNION	RK	WC1:	WC2:	COM2:								KEY:	57554
10	E		2.00'	FORT UNION	COAL	WC1:	WC2:	COM2:	BS 3726							KEY:	57555
11	E		19.00'	FORT UNION	RK	WC1:	WC2:	COM2:	BS 3707							KEY:	57556

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 DATA POINT ID: B4-35C
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 72635-3
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLO
 SURFACE
 ELEVATION: 3987.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 279.50'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 DATE: 820817
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SE
 SECTION: 35.0
 TOWNSHIP: 7.00N
 RANGE: 26.00E
 LLPREC: 0
 OWNERSHIP:
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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 202.00' FORT UNION RK WC1: 3987.0-3785.0 WC2: COM2: KEY: 57557
 2 E 2.50' FORT UNION MAMMOTH 3 WC1: 204.50' EL: 3785.0-3782.5 WC2: COM2: BS 3782,=REHDER KEY: 57558
 3 41.50' FORT UNION RK WC1: 246.00' EL: 3782.5-3741.0 WC2: COM2: KEY: 57559
 4 E 2.00' FORT UNION MAMMOTH 2 WC1: 248.00' EL: 3741.0-3739.0 WC2: COM2: BS 3738 KEY: 57560
 5 2.50' FORT UNION RK WC1: 250.50' EL: 3739.0-3736.5 WC2: COM2: KEY: 57561
 6 E 6.00' FORT UNION MAMMOTH 1 WC1: 256.50' EL: 3736.5-3730.5 WC2: COM2: BS 3730 KEY: 57562
 7 E 23.00' FORT UNION RK WC1: 279.50' EL: 3730.5-3707.5 WC2: COM2: BS 3707 KEY: 57563
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 DATA POINT ID: B4-35D
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 72635-2 DRILLERS LOG,CORE
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR
 SURFACE
 ELEVATION: 4038.00'
 ELVPREC: 0
 TOTAL DEPTH
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SE
 SECTION: 35.0
 TOWNSHIP: 7.00N
 RANGE: 26.00E
 DATE: 820817
 PRIN MERIDIAN: 20
 CONFID: *****

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	27.00'		FORT UNION		NR							
2	U,E		27.00' EL: 4038.0-4011.0		WC1:	WC2:	COM2:					KEY: 57564
			2.50' FORT UNION	BULL MTN	COAL							
3	120.00'		29.50' EL: 4011.0-4008.5		WC1:	WC2:	COM2: BS 4008					KEY: 57565
			120.00' FORT UNION		SS							
4	D		149.50' EL: 4008.5-3888.5		WC1:	WC2:	COM2:					KEY: 57566
			15.00' FORT UNION		SLST							
5	D		164.50' EL: 3888.5-3873.5		WC1:	WC2:	COM2: D SLS,SS					KEY: 57567
			5.00' FORT UNION		SH							
6			169.50' EL: 3873.5-3868.5		WC1:	WC2:	COM2: D SH,SLS					KEY: 57568
			40.00' FORT UNION		SS							
7	U,D		209.50' EL: 3868.5-3828.5		WC1:	WC2:	COM2:					KEY: 57569
			5.00' FORT UNION	ROCK MESA	COAL							
8	D		214.50' EL: 3828.5-3823.5		WC1:	WC2:	COM2: D COAL,SLS					KEY: 57570
			15.00' FORT UNION		SS							
9	U,D		229.50' EL: 3823.5-3808.5		WC1:	WC2:	COM2: D SS,SLS					KEY: 57571
			5.00' FORT UNION	ROCK MESA	COAL							
10			234.50' EL: 3808.5-3803.5		WC1:	WC2:	COM2: D COAL,SLS					KEY: 57572
			50.00' FORT UNION		SS							
11	E		284.50' EL: 3803.5-3753.5		WC1:	WC2:	COM2:					KEY: 57573
			3.00' FORT UNION	MAMMOTH 3	COAL							
12			287.50' EL: 3753.5-3750.5		WC1:	WC2:	COM2: BS 3750,=REHDER					KEY: 57574
			5.00' FORT UNION		SLST							
13	L		292.50' EL: 3750.5-3745.5		WC1:	WC2:	COM2:					KEY: 57575
			1.00' FORT UNION		CLS	SDY						
			293.50' EL: 3745.5-3744.5		WC1:	WC2:	COM2: L TOP CORE					KEY: 57576

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14	14.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	57577
	308.00' EL: 3744.5-3730.0						
15	0.60' FORT UNION	CLS	WC1:	WC2:	COM2:	KEY:	57578
	308.60' EL: 3730.0-3729.4						
16 D	1.90' FORT UNION	SS	WC1:	WC2:	COM2: D SS, SLS	KEY:	57579
	310.50' EL: 3729.4-3727.5						
17	1.50' FORT UNION	CLS	WC1:	WC2:	COM2:	KEY:	57580
	312.00' EL: 3727.5-3726.0						
18 E	3.00' FORT UNION	COAL	WC1:	WC2:	COM2: BS 3723	KEY:	57581
	315.00' EL: 3726.0-3723.0						
19	3.80' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	57582
	318.80' EL: 3723.0-3719.2						
20	0.60' FORT UNION	CLS	WC1:	WC2:	COM2:	KEY:	57583
	319.40' EL: 3719.2-3718.6						
21	3.70' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	57584
	323.10' EL: 3718.6-3714.9						
22	0.10' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	57585
	323.20' EL: 3714.9-3714.8						
23 E	2.20' FORT UNION	COAL	WC1:	WC2:	COM2: BS 3713	KEY:	57586
	325.40' EL: 3714.8-3712.6						
24	0.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	57587
	325.90' EL: 3712.6-3712.1						
25	4.00' FORT UNION	CLS	WC1:	WC2:	COM2:	KEY:	57588
	329.90' EL: 3712.1-3708.1						
26 D	2.00' FORT UNION	CLS	WC1:	WC2:	COM2: D CLS, SLS	KEY:	57589
	331.90' EL: 3708.1-3706.1						
27 L	0.40' FORT UNION	SS	WC1:	WC2:	COM2: L BASE CORE	KEY:	57590
	332.30' EL: 3706.1-3705.7						
28 E	69.10' FORT UNION	RK	WC1:	WC2:	COM2: BS 3637	KEY:	57591
	401.40' EL: 3705.7-3636.6						

DATA POINT ID: B4-35E
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA
COUNTY: MUSSELSHELL

SURFACE
ELEVATION: 4027.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: 35.0
SW

PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN

TOTAL DEPTH
LOGGED : 300.00'
LATITUDE: 46 18 30
TOWNSHIP: 7.00N

COMMENT1: LL&E 72635-6
HYDRO CD: 0
FILEPOINTER:

DESCRIPTION
LOG : 202
LONGITUDE: 108 26 11
RANGE: 26.00E
WEATHERING: 0
LLPREC: 0

OWNERSHIP:

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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	183.50'		FORT UNION		RK							
	183.50'		EL: 4027.0-3843.5		WC1:	WC2:	COM2:				KEY:	57592
2	E		2.50' FORT UNION	ROCK MESA	COAL							
	186.00'		EL: 3843.5-3841.0		WC1:	WC2:	COM2:	BS 3841			KEY:	57593
3	37.50'		FORT UNION		RK							
	223.50'		EL: 3841.0-3803.5		WC1:	WC2:	COM2:				KEY:	57594
4	E		2.50' FORT UNION	MAMMOTH 3	COAL							
	226.00'		EL: 3803.5-3801.0		WC1:	WC2:	COM2:	BS 3801,=REHDER			KEY:	57595
5	50.00'		FORT UNION		RK							
	276.00'		EL: 3801.0-3751.0		WC1:	WC2:	COM2:				KEY:	57596
6	E		2.00' FORT UNION	MAMMOTH 2	COAL							
	278.00'		EL: 3751.0-3749.0		WC1:	WC2:	COM2:	BS 3749			KEY:	57597
7	3.00'		FORT UNION		RK							
	281.00'		EL: 3749.0-3746.0		WC1:	WC2:	COM2:				KEY:	57598
8	E		6.00' FORT UNION	MAMMOTH 1	COAL							
	287.00'		EL: 3746.0-3740.0		WC1:	WC2:	COM2:	BS 3740			KEY:	57599
9	E		13.00' FORT UNION		RK							
	300.00'		EL: 3740.0-3727.0		WC1:	WC2:	COM2:	BS 3727			KEY:	57600

DATA POINT ID: B4-35F

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817

PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 72635-1

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1	235.00'FORT UNION	235.00' EL: 4003.0-3768.0	RK	WC1:	WC2:	COM2:	KEY:	57601
2 E	3.00'FORT UNION	MAMMOTH 3	COAL	WC1:	WC2:	COM2: BS 3764,=REHDER	KEY:	57602
3	26.00'FORT UNION	238.00' EL: 3768.0-3765.0	RK	WC1:	WC2:	COM2:	KEY:	57603
4	3.00'FORT UNION	264.00' EL: 3765.0-3739.0	COAL	WC1:	WC2:	COM2:	KEY:	57604
5	1.00'FORT UNION	267.00' EL: 3739.0-3736.0	RK	WC1:	WC2:	COM2:	KEY:	57605
6 E	6.50'FORT UNION	268.00' EL: 3736.0-3735.0	COAL	WC1:	WC2:	COM2:	KEY:	57606
7 E	27.00'FORT UNION	274.50' EL: 3735.0-3728.5	RK	WC1:	WC2:	COM2: BS 3728	KEY:	57607
		301.50' EL: 3728.5-3701.5	WC1:	WC2:	COM2: BS 3702	KEY:	57607	

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DATA POINT ID: B4-35G

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 820817

CONFID: 20

PRIN MERIDIAN: 20

SOURCE: LOUISIANA LAND&EXPLOR

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4165.00'

RANK: SUBBIT

QUARTERS: NW

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 36.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH

LATITUDE: 46 19 11

TOWNSHIP: 7.00N

REGION: POWDER RIVER

LOG : 206

LONGITUDE: 108 25 6

RANGE: 26.00E

FIELD: BULL MOUNTAIN

WEATHERING: 0

LLPREC: 0

COMMENT1: LL&E 72636-3

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

										C F			
										O O			
										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOO	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S	FJC
1	180.00'		FORT UNION		RK								
				180.00' EL: 4165.0-3985.0	WC1:	WC2:	COM2:				KEY:		57608
2	E			BULL MTN	COAL								
				182.50' EL: 3985.0-3982.5	WC1:	WC2:	COM2: BS 3982				KEY:		57609
3					RK								
				270.00' EL: 3982.5-3895.0	WC1:	WC2:	COM2:				KEY:		57610
4					SS								
				359.00' EL: 3895.0-3806.0	WC1:	WC2:	COM2:				KEY:		57611
5	E			ROCK MESA	COAL								
				362.50' EL: 3806.0-3802.5	WC1:	WC2:	COM2: BS 3802				KEY:		57612
6	D				SLST								
				383.00' EL: 3802.5-3782.0	WC1:	WC2:	COM2: D SLS,SH				KEY:		57613
7					SS								
				421.00' EL: 3782.0-3744.0	WC1:	WC2:	COM2:				KEY:		57614
8					SH								
				428.00' EL: 3744.0-3737.0	WC1:	WC2:	COM2:				KEY:		57615
9	E			MAMMOTH 3	COAL								
				430.50' EL: 3737.0-3734.5	WC1:	WC2:	COM2: BS 3734,=RENDER				KEY:		57616
10					SS								
				440.50' EL: 3734.5-3724.5	WC1:	WC2:	COM2:				KEY:		57617
11					SH								
				445.50' EL: 3724.5-3719.5	WC1:	WC2:	COM2:				KEY:		57618
12				MAMMOTH 1+2	COAL								
				449.00' EL: 3719.5-3716.0	WC1:	WC2:	COM2:				KEY:		57619
13					RK								
				451.50' EL: 3716.0-3713.5	WC1:	WC2:	COM2:				KEY:		57620

14 E	6.00' FORT UNION	MAMMOTH 1+2	COAL				
	457.50' EL:	3713.5-3707.5	WC1:	WC2:	COM2: BS 3708	KEY:	57621
15 E	22.00' FORT UNION		RK				
	479.50' EL:	3707.5-3685.5	WC1:	WC2:	COM2: BS 3686	KEY:	57622

 DATA POINT ID: 84-35H
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 72636-2
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4393.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 716.00'
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NW
 SECTION: 36.0
 TOWNSHIP: 7.00N
 RANGE: 26.00E
 DATE: 830117
 CONFID: 20
 PRIN MERIDIAN: 20
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	82.00'		FORT UNION		RK									
	82.00'		EL: 4393.0-4311.0		WC1:	WC2:	COM2:					KEY:		58619
2	UE		3.00' FORT UNION	FATTIG	COAL									
	85.00'		EL: 4311.0-4308.0		WC1:	WC2:	COM2: E BS 4308					KEY:		58620
3	33.50'		FORT UNION		RK							KEY:		58621
	118.50'		EL: 4308.0-4274.5		WC1:	WC2:	COM2:					KEY:		58622
4	UE		1.00' FORT UNION	RED BUTTE	COAL							KEY:		58623
	119.50'		EL: 4274.5-4273.5		WC1:	WC2:	COM2: E BS 4273.5					KEY:		58624
5	D		185.50' FORT UNION		SS							KEY:		58625
	305.00'		EL: 4273.5-4088.0		WC1:	WC2:	COM2: D SS SLST CLST					KEY:		58626
6			20.00' FORT UNION		SS							KEY:		58627
	325.00'		EL: 4088.0-4068.0		WC1:	WC2:	COM2:					KEY:		58628
7	4.00'		FORT UNION		CLST							KEY:		58629
	329.00'		EL: 4068.0-4064.0		WC1:	WC2:	COM2:					KEY:		58630
8	5.50'		FORT UNION		SS							KEY:		58631
	334.50'		EL: 4064.0-4058.5		WC1:	WC2:	COM2:					KEY:		58632
9	1.00'		FORT UNION		CLST							KEY:		58633
	335.50'		EL: 4058.5-4057.5		WC1:	WC2:	COM2:					KEY:		58634
10	6.50'		FORT UNION		SS							KEY:		58635
	342.00'		EL: 4057.5-4051.0		WC1:	WC2:	COM2:					KEY:		58636
11	3.00'		FORT UNION		CLST							KEY:		58637
	345.00'		EL: 4051.0-4048.0		WC1:	WC2:	COM2:					KEY:		58638
12	4.50'		FORT UNION		SS							KEY:		58639
	349.50'		EL: 4048.0-4043.5		WC1:	WC2:	COM2:					KEY:		58640
13	30.50'		FORT UNION		SLST							KEY:		58641
	380.00'		EL: 4043.5-4013.0		WC1:	WC2:	COM2: FINES TO CLST AT TOP					KEY:		58642

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14	27.70' FORT UNION	SS	WC1:	WC2:	COM2: SOME SLST INTERBEDS	KEY:	58632
15	UE 407.70' EL: 4013.0-3985.3 2.30' FORT UNION BULL MTN	COAL	WC1:	WC2:	COM2: E BS 3983	KEY:	58633
16	410.00' EL: 3985.3-3983.0 3.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	58634
17	D 413.00' EL: 3983.0-3980.0 112.00' FORT UNION	SS	WC1:	WC2:	COM2: D SS SLST	KEY:	58635
18	525.00' EL: 3980.0-3868.0 12.00' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	58636
19	D 537.00' EL: 3868.0-3856.0 32.00' FORT UNION	SS	WC1:	WC2:	COM2: D SS SLST	KEY:	58637
20	569.00' EL: 3856.0-3824.0 19.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58638
21	588.00' EL: 3824.0-3805.0 3.00' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	58639
22	E 591.00' EL: 3805.0-3802.0 4.00' FORT UNION ROCK MESA	COAL	WC1:	WC2:	COM2: E BS 3798	KEY:	58640
23	595.00' EL: 3802.0-3798.0 5.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	58641
24	600.00' EL: 3798.0-3793.0 66.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58642
25	666.00' EL: 3793.0-3727.0 2.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	58643
26	E 668.00' EL: 3727.0-3725.0 2.00' FORT UNION MAMMOTH 3	COAL	WC1:	WC2:	COM2: E BS 3723, =REHDER	KEY:	58644
27	670.00' EL: 3725.0-3723.0 5.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58645
28	675.00' EL: 3723.0-3718.0 2.00' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	58646
29	677.00' EL: 3718.0-3716.0 3.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	58647
30	680.00' EL: 3716.0-3713.0 1.80' FORT UNION MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY:	58648
31	681.80' EL: 3713.0-3711.2 0.20' FORT UNION MAMMOTH 1+2	RK	WC1:	WC2:	COM2:	KEY:	58649
32	682.00' EL: 3711.2-3711.0 1.00' FORT UNION MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY:	58650
33	683.00' EL: 3711.0-3710.0 0.80' FORT UNION MAMMOTH 1+2	CLST	WC1:	WC2:	COM2:	KEY:	58651
34	683.80' EL: 3710.0-3709.2 1.00' FORT UNION MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY:	58652
35	684.80' EL: 3709.2-3708.2 0.20' FORT UNION MAMMOTH 1+2	RK	WC1:	WC2:	COM2:	KEY:	58653
36	685.00' EL: 3708.2-3708.0 2.10' FORT UNION MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY:	58654
	687.10' EL: 3708.0-3705.9		WC1:	WC2:	COM2:		

37	0.20' FORT UNION	MAMMOTH 1+2	RK						
	687.30' EL: 3705.9-3705.7		WC1:	WC2:	COM2:	KEY:	58655		
38 E	2.50' FORT UNION	MAMMOTH 1+2	COAL						
	689.80' EL: 3705.7-3703.2		WC1:	WC2:	COM2: E BS 3703.2	KEY:	58656		
39 E	26.20' FORT UNION		RK						
	716.00' EL: 3703.2-3677.0		WC1:	WC2:	COM2: E BS 3677	KEY:	58657		

DATA POINT ID: B4-35J
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W DATE: 820817 CONFID: PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SOURCE: LOUISIANA LAND&EXPLOR
 SURFACE
 ELEVATION: 4143.00' RANK: SUBBIT QUARTERS: SW
 ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 36.0

TOTAL DEPTH

LOGGED : 460.50' LATITUDE: 46 18 37 TOWNSHIP: 7.00N

DESCRIPTION

LOG : 202 LONGITUDE: 108 25 4 RANGE: 26.00E

WEATHERING: 0 LLPREC: 0

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	72.50'		FORT UNION		RK									
2	U,E		72.50' EL: 4143.0-4070.5	WESCOTT	WC1:	WC2:	COM2:					KEY:		57623
3			3.50' FORT UNION		COAL									
4	E		76.00' EL: 4070.5-4067.0		WC1:	WC2:	COM2: BS 4067					KEY:		57624
5			68.50' FORT UNION		RK									
6	E		144.50' EL: 4067.0-3998.5	BULL MTN	WC1:	WC2:	COM2:					KEY:		57625
7			147.50' EL: 3998.5-3995.5		COAL									
8	E		182.00' FORT UNION		RK							KEY:		57626
9			329.50' EL: 3995.5-3813.5	ROCK MESA	WC1:	WC2:	COM2:					KEY:		57627
10	E		332.50' EL: 3813.5-3810.5		COAL									
11	E		75.00' FORT UNION		RK							KEY:		57628
			407.50' EL: 3810.5-3735.5	MAMMOTH 3	WC1:	WC2:	COM2:					KEY:		57629
			410.50' EL: 3735.5-3732.5		COAL									
			420.50' EL: 3732.5-3722.5	MAMMOTH 1+2	WC1:	WC2:	COM2: BS 3732, =REHDER					KEY:		57630
			430.50' EL: 3722.5-3712.5		RK							KEY:		57631
			460.50' EL: 3712.5-3682.5		COAL							KEY:		57632
					RK							KEY:		57633

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DATA POINT ID: B4-44A
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLORE

DATE: 820817
 PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SURFACE
 ELEVATION: 3987.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NE
 SECTION: 3.0

TOTAL DEPTH
 LOGGED : 240.00'
 LATITUDE: 46 18 29
 TOWNSHIP: 6.00N

DESCRIPTION
 LOG : 202
 LONGITUDE: 108 27 7
 RANGE: 26.00E

WEATHERING: 0
 LLPREC: 0

OWNERSHIP:

FILEPOINTER:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 134.50'FORT UNION 134.50' EL: 3987.0-3852.5 WC1: WC2: COM2: KEY: 57634

2 E 3.00'FORT UNION ROCK MESA COAL WC1: WC2: COM2: BS 3850 KEY: 57635

3 38.50'FORT UNION 137.50' EL: 3852.5-3849.5 WC1: WC2: COM2: KEY: 57636

4 E 3.00'FORT UNION 176.00' EL: 3849.5-3811.0 WC1: WC2: COM2: BS 3808,=REHDER KEY: 57637

5 41.50'FORT UNION 179.00' EL: 3811.0-3808.0 WC1: WC2: COM2: COM2: KEY: 57638

6 1.50'FORT UNION 220.50' EL: 3808.0-3766.5 WC1: WC2: COM2: COM2: KEY: 57639

7 1.00'FORT UNION 222.00' EL: 3766.5-3765.0 WC1: WC2: COM2: COM2: KEY: 57640

8 E 6.00'FORT UNION 223.00' EL: 3765.0-3764.0 WC1: WC2: COM2: COM2: KEY: 57641

9 E 11.00'FORT UNION 229.00' EL: 3764.0-3758.0 WC1: WC2: COM2: BS 3758 COM2: BS 3747 KEY: 57642

240.00' EL: 3758.0-3747.0 WC1: WC2: COM2: BS 3747

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DATA POINT ID: B4-44B

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: LOUISIANA LAND&EXPLO

DATE: 820817

PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 6261-7

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT TL K FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1	186.00'	FORT UNION	186.00' EL: 4009.0-3823.0	WC1: RK	WC2: COM2:	KEY: 57643
2	3.00'	FORT UNION	ROCK MESA	WC1: COAL	WC2: COM2: BS 3820	KEY: 57644
3	57.00'	FORT UNION	189.00' EL: 3823.0-3820.0	WC1: RK	WC2: COM2:	KEY: 57645
4	2.50'	FORT UNION	246.00' EL: 3820.0-3763.0	WC1: COAL	WC2: COM2: BS 3760,=RENDER	KEY: 57646
5	24.50'	FORT UNION	248.50' EL: 3763.0-3760.5	WC1: RK	WC2: COM2:	KEY: 57647
6	9.50'	FORT UNION	273.00' EL: 3760.5-3736.0	WC1: COAL	WC2: COM2: BS 3726	KEY: 57648
7	17.00'	FORT UNION	282.50' EL: 3736.0-3726.5	WC1: RK	WC2: COM2: BS 3709	KEY: 57649

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N S

DATA POINT ID: B4-44C

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 820817

CONFID:

SOURCE: LOUISIANA LANDSEXPLOR

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

SURFACE

ELEVATION: 3986.00'

RANK: SUBBIT

SW

ELVPREC: 0

QUARTERS: 1.0

LOCAL STRIKE/DIP/ANGLE: 0 0 0

TOTAL DEPTH

LOGGED : 260.00'

LATITUDE: 46 17 48

TOWNSHIP: 6.00N

DESCRIPTION

LOG : 206

LONGITUDE: 108 25 24

RANGE: 26.00E

WEATHERING: 0

LLPREC: 0

OWNERSHIP:

FILEPOINTER:

HYDRO CD: 0

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 6261-5

UNIT TL K FORMATION BED NAME

1 129.00' FORT UNION

2 E 129.00' EL: 3986.0-3857.0

3 2.00' FORT UNION

4 E 131.00' EL: 3857.0-3855.0

5 47.50' FORT UNION

6 178.50' EL: 3855.0-3807.5

7 2.00' FORT UNION

8 E 180.50' EL: 3807.5-3805.5

9 11.00' FORT UNION

10 191.50' EL: 3805.5-3794.5

11 9.00' FORT UNION

12 200.50' EL: 3794.5-3785.5

13 2.00' FORT UNION

14 202.50' EL: 3785.5-3783.5

15 10.00' FORT UNION

16 212.50' EL: 3783.5-3773.5

17 10.50' FORT UNION

18 223.00' EL: 3773.5-3763.0

19 6.80' FORT UNION

20 229.80' EL: 3763.0-3756.2

21 0.20' FORT UNION

22 230.00' EL: 3756.2-3756.0

23 2.00' FORT UNION

24 232.00' EL: 3756.0-3754.0

25 28.00' FORT UNION

26 260.00' EL: 3754.0-3726.0

27 129.00' EL: 3986.0-3857.0

28 2.00' FORT UNION

29 131.00' EL: 3857.0-3855.0

30 47.50' FORT UNION

31 178.50' EL: 3855.0-3807.5

32 2.00' FORT UNION

33 180.50' EL: 3807.5-3805.5

34 11.00' FORT UNION

35 191.50' EL: 3805.5-3794.5

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37 200.50' EL: 3794.5-3785.5

38 2.00' FORT UNION

39 202.50' EL: 3785.5-3783.5

40 10.00' FORT UNION

41 212.50' EL: 3783.5-3773.5

42 10.50' FORT UNION

43 223.00' EL: 3773.5-3763.0

44 6.80' FORT UNION

45 229.80' EL: 3763.0-3756.2

46 0.20' FORT UNION

47 230.00' EL: 3756.2-3756.0

48 2.00' FORT UNION

49 232.00' EL: 3756.0-3754.0

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51 260.00' EL: 3754.0-3726.0

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56 178.50' EL: 3855.0-3807.5

57 2.00' FORT UNION

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66 212.50' EL: 3783.5-3773.5

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73 2.00' FORT UNION

74 232.00' EL: 3756.0-3754.0

75 28.00' FORT UNION

76 260.00' EL: 3754.0-3726.0

77 129.00' EL: 3986.0-3857.0

78 2.00' FORT UNION

79 131.00' EL: 3857.0-3855.0

80 47.50' FORT UNION

81 178.50' EL: 3855.0-3807.5

82 2.00' FORT UNION

83 180.50' EL: 3807.5-3805.5

84 11.00' FORT UNION

85 191.50' EL: 3805.5-3794.5

86 9.00' FORT UNION

87 200.50' EL: 3794.5-3785.5

88 2.00' FORT UNION

89 202.50' EL: 3785.5-3783.5

90 10.00' FORT UNION

91 212.50' EL: 3783.5-3773.5

92 10.50' FORT UNION

93 223.00' EL: 3773.5-3763.0

94 6.80' FORT UNION

95 229.80' EL: 3763.0-3756.2

96 0.20' FORT UNION

97 230.00' EL: 3756.2-3756.0

98 2.00' FORT UNION

99 232.00' EL: 3756.0-3754.0

100 28.00' FORT UNION

101 260.00' EL: 3754.0-3726.0

102 129.00' EL: 3986.0-3857.0

103 2.00' FORT UNION

104 131.00' EL: 3857.0-3855.0

105 47.50' FORT UNION

106 178.50' EL: 3855.0-3807.5

107 2.00' FORT UNION

108 180.50' EL: 3807.5-3805.5

109 11.00' FORT UNION

110 191.50' EL: 3805.5-3794.5

111 9.00' FORT UNION

112 200.50' EL: 3794.5-3785.5

113 2.00' FORT UNION

114 202.50' EL: 3785.5-3783.5

115 10.00' FORT UNION

116 212.50' EL: 3783.5-3773.5

117 10.50' FORT UNION

118 223.00' EL: 3773.5-3763.0

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120 229.80' EL: 3763.0-3756.2

121 0.20' FORT UNION

122 230.00' EL: 3756.2-3756.0

123 2.00' FORT UNION

124 232.00' EL: 3756.0-3754.0

125 28.00' FORT UNION

126 260.00' EL: 3754.0-3726.0

127 129.00' EL: 3986.0-3857.0

128 2.00' FORT UNION

129 131.00' EL: 3857.0-3855.0

130 47.50' FORT UNION

131 178.50' EL: 3855.0-3807.5

132 2.00' FORT UNION

133 180.50' EL: 3807.5-3805.5

134 11.00' FORT UNION

135 191.50' EL: 3805.5-3794.5

136 9.00' FORT UNION

137 200.50' EL: 3794.5-3785.5

138 2.00' FORT UNION

139 202.50' EL: 3785.5-3783.5

140 10.00' FORT UNION

141 212.50' EL: 3783.5-3773.5

142 10.50' FORT UNION

143 223.00' EL: 3773.5-3763.0

144 6.80' FORT UNION

145 229.80' EL: 3763.0-3756.2

146 0.20' FORT UNION

147 230.00' EL: 3756.2-3756.0

148 2.00' FORT UNION

149 232.00' EL: 3756.0-3754.0

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152 129.00' EL: 3986.0-3857.0

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154 131.00' EL: 3857.0-3855.0

155 47.50' FORT UNION

156 178.50' EL: 3855.0-3807.5

157 2.00' FORT UNION

158 180.50' EL: 3807.5-3805.5

159 11.00' FORT UNION

160 191.50' EL: 3805.5-3794.5

161 9.00' FORT UNION

162 200.50' EL: 3794.5-3785.5

163 2.00' FORT UNION

164 202.50' EL: 3785.5-3783.5

165 10.00' FORT UNION

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167 10.50' FORT UNION

168 223.00' EL: 3773.5-3763.0

169 6.80' FORT UNION

170 229.80' EL: 3763.0-3756.2

171 0.20' FORT UNION

172 230.00' EL: 3756.2-3756.0

173 2.00' FORT UNION

174 232.00' EL: 3756.0-3754.0

175 28.00' FORT UNION

176 260.00' EL: 3754.0-3726.0

177 129.00' EL: 3986.0-3857.0

178 2.00' FORT UNION

179 131.00' EL: 3857.0-3855.0

180 47.50' FORT UNION

181 178.50' EL: 3855.0-3807.5

182 2.00' FORT UNION

183 180.50' EL: 3807.5-3805.5

184 11.00' FORT UNION

185 191.50' EL: 3805.5-3794.5

186 9.00' FORT UNION

187 200.50' EL: 3794.5-3785.5

188 2.00' FORT UNION

189 202.50' EL: 3785.5-3783.5

190 10.00' FORT UNION

191 212.50' EL: 3783.5-3773.5

192 10.50' FORT UNION

193 223.00' EL: 3773.5-3763.0

194 6.80' FORT UNION

195 229.80' EL: 3763.0-3756.2

196 0.20' FORT UNION

197 230.00' EL: 3756.2-3756.0

198 2.00' FORT UNION

199 232.00' EL: 3756.0-3754.0

200 28.00' FORT UNION

201 260.00' EL: 3754.0-3726.0

202 129.00' EL: 3986.0-3857.0

203 2.00' FORT UNION

204 131.00' EL: 3857.0-3855.0

205 47.50' FORT UNION

206 178.50' EL: 3855.0-3807.5

207 2.00' FORT UNION

208 180.50' EL: 3807.5-3805.5

209 11.00' FORT UNION

210 191.50' EL: 3805.5-3794.5

211 9.00' FORT UNION

212 200.50' EL: 3794.5-3785.5

213 2.00' FORT UNION

214 202.50' EL: 3785.5-3783.5

215 10.00' FORT UNION

216 212.50' EL: 3783.5-3773.5

217 10.50' FORT UNION

218 223.00' EL: 3773.5-3763.0

219 6.80' FORT UNION

220 229.80' EL: 3763.0-3756.2

221 0.20' FORT UNION

222 230.00' EL: 3756.2-3756.0

223 2.00' FORT UNION

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*****
DATA POINT ID: B4-440
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 6261-6
HYDRO CD: 58658
FILEPOINTER:

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL
SURFACE
ELEVATION: 4025.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SW
TOTAL DEPTH
LOGGED : 296.60'
LATITUDE: 46 17 51
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 225
LONGITUDE: 108 25 0
RANGE: 26.00E
WEATHERING: 0
LLPREC: 0

OWNERSHIP:

*****
UNIT TL K FORMATION BED NAME LITH LITHMOO COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
-----
1 20.40' FORT UNION NR WC1: NR WC2: COM2: KEY: 1743170
2 2.00' FORT UNION 20.40' EL: 4025.0-4004.6 WC1: SS WC2: COM2: F KEY: 1743171
3 8.00' FORT UNION 22.40' EL: 4004.6-4002.6 WC1: CLST WC2: COM2: KEY: 1743172
4 3.50' FORT UNION 30.40' EL: 4002.6-3994.6 WC1: SS WC2: COM2: VF KEY: 1743173
5 2.00' FORT UNION 33.90' EL: 3994.6-3991.1 WC1: CLST WC2: COM2: KEY: 1743174
6 3.00' FORT UNION 35.90' EL: 3991.1-3989.1 WC1: NR WC2: COM2: KEY: 1743175
7 2.50' FORT UNION 38.90' EL: 3989.1-3986.1 WC1: CLST WC2: COM2: KEY: 1743176
8 4.00' FORT UNION 41.40' EL: 3986.1-3983.6 WC1: SS WC2: COM2: F KEY: 1743177
9 6.50' FORT UNION 45.40' EL: 3983.6-3979.6 WC1: CLST WC2: COM2: VF KEY: 1743178
10 5.50' FORT UNION 51.90' EL: 3979.6-3973.1 WC1: SS WC2: COM2: KEY: 1743179
11 1.00' FORT UNION 57.40' EL: 3973.1-3967.6 WC1: CLST WC2: COM2: KEY: 1743180
12 5.00' FORT UNION 58.40' EL: 3967.6-3966.6 WC1: SS WC2: COM2: VF-M KEY: 1743181
13 D 3.00' FORT UNION 63.40' EL: 3966.6-3961.6 WC1: SS WC2: COM2: KEY: 1743182
13 D 3.00' FORT UNION 66.40' EL: 3961.6-3958.6 WC1: SS WC2: COM2: D SS SLST KEY: 1743182

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14	6.50'FORT UNION	SLST	WC1:	WC2:	COM2:	KEY: 1743183
	72.90' EL: 3958.6-3952.1	CLST				
15	3.00'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743184
	75.90' EL: 3952.1-3949.1	SS			F-M	
16	9.50'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743185
	85.40' EL: 3949.1-3939.6	SLST				
17 D	15.00'FORT UNION	WC1:	WC2:	COM2: D SLST SS		KEY: 1743186
	100.40' EL: 3939.6-3924.6	CLST				
18	6.50'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743187
	106.90' EL: 3924.6-3918.1	SLST				
19	6.00'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743188
	112.90' EL: 3918.1-3912.1	SS				
20	2.50'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743189
	115.40' EL: 3912.1-3909.6	SLST				
21	10.00'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743190
	125.40' EL: 3909.6-3899.6	CLST				
22	4.60'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743191
	130.00' EL: 3899.6-3895.0	COAL				
23 E	0.40'FORT UNION	WC1:	WC2:	COM2: E BS 3894.6		KEY: 1743192
	130.40' EL: 3895.0-3894.6	SS				
24	2.50'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743193
	132.90' EL: 3894.6-3892.1	CLST				
25	2.00'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743194
	134.90' EL: 3892.1-3890.1	SS				
26	1.50'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743195
	136.40' EL: 3890.1-3888.6	SS				
27 D	3.00'FORT UNION	WC1:	WC2:	COM2: D SS SLST		KEY: 1743196
	139.40' EL: 3888.6-3885.6	CLST				
28	5.00'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743197
	144.40' EL: 3885.6-3880.6	CLST				
29 D	3.00'FORT UNION	WC1:	WC2:	COM2: D CLST SLST SS		KEY: 1743198
	147.40' EL: 3880.6-3877.6	SS			F-M	
30	16.00'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743199
	163.40' EL: 3877.6-3861.6	SLST				
31	1.00'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743200
	164.40' EL: 3861.6-3860.6	SS				
32	15.00'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743201
	179.40' EL: 3860.6-3845.6	CLST				
33 D	2.00'FORT UNION	WC1:	WC2:	COM2: D CLST SLST		KEY: 1743202
	181.40' EL: 3845.6-3843.6	SS				
34 D	6.00'FORT UNION	WC1:	WC2:	COM2: D SS SLST		KEY: 1743203
	187.40' EL: 3843.6-3837.6	CLST				
35	3.60'FORT UNION	WC1:	WC2:	COM2:		KEY: 1743204
	191.00' EL: 3837.6-3834.0	COAL				
36 UE	0.30'FORT UNION	WC1:	WC2:	COM2: E BS 3833.7		KEY: 1743205
	191.30' EL: 3834.0-3833.7					

37	2.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY: 1743206
	193.30' EL: 3833.7-3831.7					
38	3.10' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY: 1743207
	196.40' EL: 3831.7-3828.6					
39	4.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY: 1743208
	200.40' EL: 3828.6-3824.6					
40	0.20' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY: 1743209
	200.60' EL: 3824.6-3824.4					
41	0.70' FORT UNION	NR	WC1:	WC2:	COM2:	KEY: 1743210
	201.30' EL: 3824.4-3823.7					
42 E	0.60' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3823.1	KEY: 1743211
	201.90' EL: 3823.7-3823.1					
43	2.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY: 1743212
	203.90' EL: 3823.1-3821.1					
44 D	13.50' FORT UNION	SS	WC1:	WC2:	COM2: D SS SLST	KEY: 1743213
	217.40' EL: 3821.1-3807.6					
45	5.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY: 1743214
	222.40' EL: 3807.6-3802.6					
46 D	2.50' FORT UNION	SS	WC1:	WC2:	COM2: D SS SLST	KEY: 1743215
	224.90' EL: 3802.6-3800.1					
47	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY: 1743216
	225.40' EL: 3800.1-3799.6					
48 D	10.00' FORT UNION	SLST	WC1:	WC2:	COM2: D SLST SS	KEY: 1743217
	235.40' EL: 3799.6-3789.6					
49 D	8.00' FORT UNION	SS	WC1:	WC2:	COM2: D SS SLST	KEY: 1743218
	243.40' EL: 3789.6-3781.6					
50	2.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY: 1743219
	245.40' EL: 3781.6-3779.6					
51 E	2.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3777.1,=REHDER	KEY: 1743220
	247.90' EL: 3779.6-3777.1					
52 D	9.00' FORT UNION	SS	WC1:	WC2:	COM2: D SS SLST	KEY: 1743221
	256.90' EL: 3777.1-3768.1					
53 L	1.00' FORT UNION	CLST	WC1:	WC2:	COM2: L TOP CORE	KEY: 1743222
	257.90' EL: 3768.1-3767.1					
54 D	4.70' FORT UNION	SS	WC1:	WC2:	COM2: D SS CLST	KEY: 1743223
	262.60' EL: 3767.1-3762.4					
55	2.40' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY: 1743224
	265.00' EL: 3762.4-3760.0					
56 D	3.10' FORT UNION	CLST	WC1:	WC2:	COM2: D CLST SS SLST, THIN COAL BAND AT BS	KEY: 1743225
	268.10' EL: 3760.0-3756.9					
57 D	2.30' FORT UNION	SLST	WC1:	WC2:	COM2: D SLST SS CARB	KEY: 1743226
	270.40' EL: 3756.9-3754.6					
58	2.20' FORT UNION	SS	WC1:	WC2:	COM2:	KEY: 1743227
	272.60' EL: 3754.6-3752.4					
59	0.40' FORT UNION	SH	WC1:	WC2:	COM2:	KEY: 1743228
	273.00' EL: 3752.4-3752.0					

60	0.70' FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY: 1743229
	273.70' EL: 3752.0-3751.3						
61	0.30' FORT UNION	MAMMOTH 1+2	SH	WC1:	CARB	COM2:	KEY: 1743230
	274.00' EL: 3751.3-3751.0						
62	2.50' FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY: 1743231
	276.50' EL: 3751.0-3748.5						
63	0.20' FORT UNION	MAMMOTH 1+2	SH	WC1:	CARB	COM2:	KEY: 1743232
	276.70' EL: 3748.5-3748.3						
64	3.60' FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY: 1743233
	280.30' EL: 3748.3-3744.7						
65	0.10' FORT UNION	MAMMOTH 1+2	SS	WC1:	WC2:	COM2:	KEY: 1743234
	280.40' EL: 3744.7-3744.6						
66 E	2.70' FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY: 1743235
	283.10' EL: 3744.6-3741.9						
67	0.50' FORT UNION		CLST	WC1:	WC2:	COM2:	KEY: 1743236
	283.60' EL: 3741.9-3741.4						
68	3.00' FORT UNION		SS	WC1:	SHLY	COM2:	KEY: 1743237
	286.60' EL: 3741.4-3738.4						
69 L	6.00' FORT UNION		SS	WC1:	WC2:	COM2:	KEY: 1743238
	292.60' EL: 3738.4-3732.4						
70 E	4.00' FORT UNION		SS	WC1:	WC2:	COM2:	KEY: 1743239
	296.60' EL: 3732.4-3728.4						

DATA POINT ID: B4-44E
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
 PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4012.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SE
 SECTION: 1.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 300.00'
 LATITUDE: 46 18 0
 TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

DESCRIPTION
 LOG : 206
 LONGITUDE: 108 24 39
 RANGE: 26.00E
 WEATHERING: 0
 LLPREC: 0

COMMENT1: LL&E 6261-4
 HYDRO CD: 0

FILEPOINTER:

OWNERSHIP: *****

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	188.00'		FORT UNION		RK							
	188.00'		EL: 4012.0-3824.0		WC1:	WC2:	COM2:				KEY:	57663
2 E	3.00'		FORT UNION	ROCK MESA	COAL							
	191.00'		EL: 3824.0-3821.0		WC1:	WC2:	COM2: BS 3821				KEY:	57664
3	20.00'		FORT UNION		SLST							
	211.00'		EL: 3821.0-3801.0		WC1:	WC2:	COM2: D SLS,SH				KEY:	57665
4	47.00'		FORT UNION		SS							
	258.00'		EL: 3801.0-3754.0		WC1:	WC2:	COM2:				KEY:	57666
5	5.00'		FORT UNION		SH							
	263.00'		EL: 3754.0-3749.0		WC1:	WC2:	COM2:				KEY:	57667
6 E	3.00'		FORT UNION	MAMMOTH 3	COAL							
	266.00'		EL: 3749.0-3746.0		WC1:	WC2:	COM2: BS 3746,=REHDER				KEY:	57668
7 D	6.50'		FORT UNION		SS							
	272.50'		EL: 3746.0-3739.5		WC1:	WC2:	COM2: D SS,SLS				KEY:	57669
8	7.50'		FORT UNION		SH							
	280.00'		EL: 3739.5-3732.0		WC1:	WC2:	COM2:				KEY:	57670
9	2.80'		FORT UNION	MAMMOTH 1+2	COAL							
	282.80'		EL: 3732.0-3729.2		WC1:	WC2:	COM2:				KEY:	57671
10	0.20'		FORT UNION	MAMMOTH 1+2	RK							
	283.00'		EL: 3729.2-3729.0		WC1:	WC2:	COM2:				KEY:	57672
11	3.80'		FORT UNION	MAMMOTH 1+2	COAL							
	286.80'		EL: 3729.0-3725.2		WC1:	WC2:	COM2:				KEY:	57673
12	0.20'		FORT UNION	MAMMOTH 1+2	RK							
	287.00'		EL: 3725.2-3725.0		WC1:	WC2:	COM2:				KEY:	57674
13 E	2.00'		FORT UNION	MAMMOTH 1+2	COAL							
	289.00'		EL: 3725.0-3723.0		WC1:	WC2:	COM2: BS 3723				KEY:	57675

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14 E	11.00	FORT UNION	RK	COM2: BS 3712	KEY: 57676
	300.00	EL: 3723.0-3712.0	WC1:		

 DATA POINT ID: B4-44F
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR
 DATE: 820817
 CONFID: 20
 PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 6261-3
 HYDRO CD: 0
 SURFACE
 ELEVATION: 3993.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 279.50'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SE
 SECTION: 1.0
 TOWNSHIP: 6.00N
 RANGE: 26.00E
 LLPREC: 0
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	170.00'		FORT UNION		RK							
	170.00'		EL: 3993.0-3823.0		WC1:	WC2:	COM2:				KEY:	57677
2 E	3.00'		FORT UNION	ROCK MESA	COAL							
	173.00'		EL: 3823.0-3820.0		WC1:	WC2:	COM2:	BS 3819			KEY:	57678
3	64.50'		FORT UNION		RK							
	237.50'		EL: 3820.0-3755.5		WC1:	WC2:	COM2:				KEY:	57679
4 E	2.50'		FORT UNION	MAMMOTH 3	COAL							
	240.00'		EL: 3755.5-3753.0		WC1:	WC2:	COM2:	BS 3752,=REHDER			KEY:	57680
5	15.50'		FORT UNION		RK							
	255.50'		EL: 3753.0-3737.5		WC1:	WC2:	COM2:				KEY:	57681
6 E	9.00'		FORT UNION	MAMMOTH 1+2	COAL							
	264.50'		EL: 3737.5-3728.5		WC1:	WC2:	COM2:	BS 3728			KEY:	57682
7 E	15.00'		FORT UNION		RK							
	279.50'		EL: 3728.5-3713.5		WC1:	WC2:	COM2:	BS 3714			KEY:	57683

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DATA POINT ID: B4-44G
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
 PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SURFACE
 ELEVATION: 4010.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SE
 SECTION: 1.0

TOTAL DEPTH
 LOGGED : 279.00'
 LATITUDE: 46 17 33
 TOWNSHIP: 6.00N

DESCRIPTION
 LOG : 202
 LONGITUDE: 108 24 45
 RANGE: 26.00E

WEATHERING: 0
 LLPREC: 0

OWNERSHIP:

FILEPOINTER:

HYDRO CD: 0

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 164.50' FORT UNION 164.50' EL: 4010.0-3845.5 WC1: WC2: COM2: KEY: 57684

2 E 3.00' FORT UNION ROCK MESA COAL WC1: WC2: COM2: BS 3842 KEY: 57685

3 55.00' FORT UNION 167.50' EL: 3845.5-3842.5 WC1: WC2: COM2: KEY: 57686

4 E 2.50' FORT UNION 222.50' EL: 3842.5-3787.5 WC1: WC2: COM2: KEY: 57687

5 25.00' FORT UNION 225.00' EL: 3787.5-3785.0 WC1: WC2: COM2: BS 3785, =REHDER KEY: 57688

6 E 9.00' FORT UNION 250.00' EL: 3785.0-3760.0 WC1: WC2: COM2: KEY: 57689

7 E 20.00' FORT UNION 259.00' EL: 3760.0-3751.0 WC1: WC2: COM2: BS 3751 KEY: 57690

279.00' EL: 3751.0-3731.0 WC1: WC2: COM2: BS 3731

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DATA POINT ID: B4-44H

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817

PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 6261-2

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	71.00'		FORT UNION		RK							
				71.00' EL: 3917.0-3846.0	WC1:	WC2:	COM2:				KEY:	57691
2	E		3.50' FORT UNION	ROCK MESA	COAL							
				74.50' EL: 3846.0-3842.5	WC1:	WC2:	COM2: BS 3842				KEY:	57692
3			69.50' FORT UNION		RK							
				144.00' EL: 3842.5-3773.0	WC1:	WC2:	COM2:				KEY:	57693
4	E		2.50' FORT UNION	MAMMOTH 3	COAL							
				146.50' EL: 3773.0-3770.5	WC1:	WC2:	COM2: BS 3770, =REHDER				KEY:	57694
5			27.50' FORT UNION		RK							
				174.00' EL: 3770.5-3743.0	WC1:	WC2:	COM2:				KEY:	57695
6	E		9.00' FORT UNION	MAMMOTH 1+2	COAL							
				183.00' EL: 3743.0-3734.0	WC1:	WC2:	COM2: BS 3734				KEY:	57696
7	E		17.00' FORT UNION		RK							
				200.00' EL: 3734.0-3717.0	WC1:	WC2:	COM2: BS 3717				KEY:	57697

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 DATA POINT ID: B4-58
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 6277-1 (BN 10) DRILL HOLE: CORE
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR
 SURFACE
 ELEVATION: 4025.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 320.20'
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 DATE: 820817
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 SECTION: 7.0
 TOWNSHIP: 6.00N
 LONGITUDE: 108 23 2
 LLPREC: 0
 RANGE: 27.00E
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	23.00'		FORT UNION		RK							
			23.00' EL: 4025.0-4002.0		WC1:		COM2:				KEY:	57698
2	E		3.00' FORT UNION	BULL MTN	COAL							
			26.00' EL: 4002.0-3999.0		WC1:		COM2: BS 3999				KEY:	57699
3			176.00' FORT UNION		RK							
			202.00' EL: 3999.0-3823.0		WC1:		COM2:				KEY:	57700
4	E		4.00' FORT UNION	ROCK MESA	COAL							
			206.00' EL: 3823.0-3819.0		WC1:		COM2: BS 3819				KEY:	57701
5			54.30' FORT UNION		RK							
			260.30' EL: 3819.0-3764.7		WC1:		COM2:				KEY:	57702
6	L		4.00' FORT UNION		SLST							
			264.30' EL: 3764.7-3760.7		WC1:		COM2: L TOP CORE				KEY:	57703
7			1.20' FORT UNION		SH	SDY						
			265.50' EL: 3760.7-3759.5		WC1:		COM2:				KEY:	57704
8			1.50' FORT UNION		SH							
			267.00' EL: 3759.5-3758.0		WC1:		COM2:				KEY:	57705
9	E		3.00' FORT UNION	MANMOTH 3	COAL							
			270.00' EL: 3758.0-3755.0		WC1:		COM2: BS 3755, =REHDER				KEY:	57706
10			0.50' FORT UNION		CLY	SLTY						
			270.50' EL: 3755.0-3754.5		WC1:		COM2:				KEY:	57707
11			7.50' FORT UNION		SS							
			278.00' EL: 3754.5-3747.0		WC1:		COM2:				KEY:	57708
12	D		7.00' FORT UNION		SH							
			285.00' EL: 3747.0-3740.0		WC1:		COM2: D SH SS				KEY:	57709
13			1.00' FORT UNION		SH							
			286.00' EL: 3740.0-3739.0		WC1:		COM2:				KEY:	57710

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14	3.70' FORT UNION	MAMMOTH 1+2 289.70' EL: 3739.0-3735.3	WC1:	COAL	WC2:	COM2:	KEY:	57711
15	0.20' FORT UNION	MAMMOTH 1+2 289.90' EL: 3735.3-3735.1	WC1:	RK	WC2:	COM2:	KEY:	57712
16	3.60' FORT UNION	MAMMOTH 1+2 293.50' EL: 3735.1-3731.5	WC1:	COAL	WC2:	COM2:	KEY:	57713
17	0.10' FORT UNION	MAMMOTH 1+2 293.60' EL: 3731.5-3731.4	WC1:	SH	WC2:	COM2:	KEY:	57714
18 E	2.60' FORT UNION	MAMMOTH 1+2 296.20' EL: 3731.4-3728.8	WC1:	COAL	WC2:	COM2: BS 3729	KEY:	57715
19	1.80' FORT UNION	298.00' EL: 3728.8-3727.0	WC1:	SH	WC2:	COM2:	KEY:	57716
20 L	1.00' FORT UNION	299.00' EL: 3727.0-3726.0	WC1:	SH	WC2:	COM2: L BASE CORE	KEY:	57717
21 E	21.20' FORT UNION	320.20' EL: 3726.0-3704.8	WC1:	SH	WC2:	COM2: BS 3705	KEY:	57718

DATA POINT ID: B4-58A
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

DATE: 820817
 PRIN MERIDIAN: 20

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW
 SECTION: 7.0

TOWNSHIP: 6.00N

RANGE: 27.00E

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 6277-4

LOG : 202
 LONGITUDE: 108 23 38

WEATHERING: 0
 LLPREC: 0

HYDRO CD: 0
 FILEPOINTER:

OWNERSHIP:

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UNIT TL K FORMATION BED NAME

LITH LITHMOO COLOR GRN SIZE GRN SHAPE MINERALOGY BEDDING T S FJC

1 171.50' FORT UNION RK WC1: 3988.0-3816.5 WC2: 3988.0-3816.5

2 E 3.00' FORT UNION ROCK MESA WC1: 3816.5-3813.5 WC2: 3816.5-3813.5

3 62.50' FORT UNION 237.00' EL: 3813.5-3751.0 WC1: 3813.5-3751.0 WC2: 3813.5-3751.0

4 E 2.50' FORT UNION MAMMOTH 3 239.50' EL: 3751.0-3748.5 WC1: 3751.0-3748.5 WC2: 3751.0-3748.5

5 15.50' FORT UNION 255.00' EL: 3748.5-3733.0 WC1: 3748.5-3733.0 WC2: 3748.5-3733.0

6 E 9.50' FORT UNION MAMMOTH 1+2 264.50' EL: 3733.0-3723.5 WC1: 3733.0-3723.5 WC2: 3733.0-3723.5

7 E 12.00' FORT UNION 276.50' EL: 3723.5-3711.5 WC1: 3723.5-3711.5 WC2: 3723.5-3711.5

KEY: 57719
 KEY: 57720
 KEY: 57721
 KEY: 57722
 KEY: 57723
 KEY: 57724
 KEY: 57725


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DATA POINT ID: B4-58C
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA
COUNTY: MUSSELSHELL

RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
ELEVATION: 3935.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 200.80'
LATITUDE: 46 17 12
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 230
LONGITUDE: 108 23 22
WEATHERING: 0
LLPREC: 0
RANGE: 27.00E

PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 6277-6 DRILLERS LOG, GEOPHYS, CORE
HYDRO CD: 0
FILE POINTER:

OWNERSHIP:
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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRN SIZE GRN SHAPE MINERALOGY BEDDING T S FJC
-----
1 L 25.00' FORT UNION ALUV WC2: COM2: L TOP DRILLERS LOG KEY: 57733
2 28.00' FORT UNION SS WC1: WC2: COM2: KEY: 57734
3 15.00' FORT UNION SH WC1: WC2: COM2: KEY: 57735
4 L 27.00' FORT UNION SS WC1: WC2: COM2: L BASE DRILLERS LOG KEY: 57736
5 L 3.00' FORT UNION ROCK MESA COAL WC1: WC2: COM2: L TOP GEOPHYS. KEY: 57737
6 1.00' FORT UNION SH WC1: WC2: COM2: KEY: 57738
7 4.00' FORT UNION SS WC1: WC2: COM2: KEY: 57739
8 1.00' FORT UNION SS CALC WC1: WC2: COM2: KEY: 57740
9 35.00' FORT UNION SS WC1: WC2: COM2: KEY: 57741
10 D 14.00' FORT UNION SS WC1: WC2: COM2: D SS, SH KEY: 57742
11 L 3.00' FORT UNION SS WC1: WC2: COM2: L BASE GEOPHYS. KEY: 57743
12 L 2.00' FORT UNION SH WC1: WC2: COM2: L TOP CORE KEY: 57744
13 E 3.00' FORT UNION MAMMOTH 3 COAL WC1: WC2: COM2: BS 3774, =REHDER KEY: 57745
161.00' EL: 3777.0-3774.0

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14	1.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	57746
	162.00' EL: 3774.0-3773.0	WC1:	WC2:				
15	3.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	57747
	165.00' EL: 3773.0-3770.0	WC1:	WC2:				
16	1.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	57748
	166.00' EL: 3770.0-3769.0	WC1:	WC2:				
17	2.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	57749
	168.50' EL: 3769.0-3766.5	WC1:	WC2:				
18	11.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	57750
	179.50' EL: 3766.5-3755.5	WC1:	WC2:				
19	2.70' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	57751
	182.20' EL: 3755.5-3752.8	WC1:	WC2:				
20	0.10' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	57752
	182.30' EL: 3752.8-3752.7	WC1:	WC2:				
21	4.90' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	57753
	187.20' EL: 3752.7-3747.8	WC1:	WC2:				
22	0.10' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	57754
	187.30' EL: 3747.8-3747.7	WC1:	WC2:				
23 E	2.00' FORT UNION	COAL	WC1:	WC2:	COM2: BS 3746	KEY:	57755
	189.30' EL: 3747.7-3745.7	WC1:	WC2:				
24 L	5.00' FORT UNION	SS	WC1:	WC2:	COM2: L BASE CORE	KEY:	57756
	194.30' EL: 3745.7-3740.7	WC1:	WC2:				
25 L	6.50' FORT UNION	RK	WC1:	WC2:	COM2: L GEOPHYS.	KEY:	57757
	200.80' EL: 3740.7-3734.2	WC1:	WC2:				

DATA POINT ID: B4-58D
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 6277-5
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR
 SURFACE
 ELEVATION: 3995.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NE
 SECTION: 7.0
 TOWNSHIP: 6.00N
 LOGGED : 284.00'
 LATITUDE: 46 17 11
 LONGITUDE: 108 22 59
 RANGE: 27.00E
 LOG : 202
 LLPREC: 0
 WEATHERING: 0
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	162.00'		FORT UNION		RK							
			162.00' EL: 3995.0-3833.0		WC1:	WC2:	COM2:				KEY:	57758
2	E		4.00' FORT UNION	ROCK MESA	COAL							
			166.00' EL: 3833.0-3829.0		WC1:	WC2:	COM2: BS 3829				KEY:	57759
3			60.00' FORT UNION		RK							
			226.00' EL: 3829.0-3769.0		WC1:	WC2:	COM2:				KEY:	57760
4	E		2.50' FORT UNION	MAMMOTH 3	COAL							
			228.50' EL: 3769.0-3766.5		WC1:	WC2:	COM2: BS 3766, =REHDER				KEY:	57761
5			15.50' FORT UNION		RK							
			244.00' EL: 3766.5-3751.0		WC1:	WC2:	COM2:				KEY:	57762
6	E		10.00' FORT UNION	MAMMOTH 1+2	COAL							
			254.00' EL: 3751.0-3741.0		WC1:	WC2:	COM2: BS 3741				KEY:	57763
7	E		30.00' FORT UNION		RK							
			284.00' EL: 3741.0-3711.0		WC1:	WC2:	COM2: BS 3711				KEY:	57764

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DATA POINT ID: B4-58E
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
SURFACE
ELEVATION: 3915.00'
ELVPREC: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SW
TOTAL DEPTH
LOGGED : 205.00'
LATITUDE: 46 16 53
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 24 4
RANGE: 27.00E
WEATHERING: 0
LLPREC: 0

STATE: MONTANA
COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 6277-2
HYDRO CD: 0
FILEPOINTER:

OWNERSHIP:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 49.00' FORT UNION RK WC1: 3915.0-3866.0 WC2: COM2: KEY: 57765
2 E 3.50' FORT UNION ROCK MESA COAL WC1: 52.50' EL: 3866.0-3862.5 WC2: COM2: BS 3862 KEY: 57766
3 46.50' FORT UNION RK WC1: 99.00' EL: 3862.5-3816.0 WC2: COM2: KEY: 57767
4 E 2.50' FORT UNION MAMMOTH 3 COAL WC1: 101.50' EL: 3816.0-3813.5 WC2: COM2: BS 3814, =REHDER KEY: 57768
5 36.00' FORT UNION RK WC1: 137.50' EL: 3813.5-3777.5 WC2: COM2: KEY: 57769
6 E 9.50' FORT UNION MAMMOTH 1+2 COAL WC1: 147.00' EL: 3777.5-3768.0 WC2: COM2: BS 3768 KEY: 57770
7 E 58.00' FORT UNION RK WC1: 205.00' EL: 3768.0-3710.0 WC2: COM2: BS 3710 KEY: 57771

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DATA POINT ID: B4-58F
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 6277-8W
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR
 SURFACE
 ELEVATION: 3970.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SW
 SECTION: 7.0
 TOTAL DEPTH
 LOGGED : 197.00'
 LATITUDE: 46 16 46
 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 206
 LONGITUDE: 108 23 59
 RANGE: 27.00E
 WEATHERING: 0
 LLPREC: 0
 OWNERSHIP:

FILE POINTER:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	77.00'		FORT UNION		RK							
			77.00' EL:	3970.0-3893.0	WC1:	WC2:	COM2:				KEY:	57772
2	E		3.50' FORT UNION	ROCK MESA	COAL							
			80.50' EL:	3893.0-3889.5	WC1:	WC2:	COM2:	BS 3890			KEY:	57773
3	D		52.50' FORT UNION		SS							
			133.00' EL:	3889.5-3837.0	WC1:	WC2:	COM2:	D SS,SH			KEY:	57774
4	E		3.00' FORT UNION	MAMMOTH 3	COAL							
			136.00' EL:	3837.0-3834.0	WC1:	WC2:	COM2:	BS 3834,=REHDER			KEY:	57775
5	D		31.00' FORT UNION		SS							
			167.00' EL:	3834.0-3803.0	WC1:	WC2:	COM2:	D SS,SH			KEY:	57776
6	E		9.00' FORT UNION	MAMMOTH 1+2	COAL							
			176.00' EL:	3803.0-3794.0	WC1:	WC2:	COM2:	BS 3794			KEY:	57777
7	E		21.00' FORT UNION		RK							
			197.00' EL:	3794.0-3773.0	WC1:	WC2:	COM2:	BS 3773			KEY:	57778

C F
O O
N S

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*****
DATA POINT ID: B4-58G
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
SURFACE
ELEVATION: 3911.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SW
SECTION: 7.0
TOWNSHIP: 6.00N
RANGE: 27.00E

TOTAL DEPTH
LOGGED : 157.50'
LATITUDE: 46 16 46
LONGITUDE: 108 23 38
LOG : 202
LLPREC: 0
WEATHERING: 0

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 6277-3
HYDRO CD: 0
FILE POINTER:

OWNERSHIP:

*****
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 95.50' FORT UNION 95.50' EL: 3911.0-3815.5 WC1: WC2: COM2: KEY: 57779
2 E 2.50' FORT UNION MAMMOTH 3 WC1: WC2: COM2: BS 3813,=RENDER KEY: 57780
3 23.00' FORT UNION 121.00' EL: 3813.0-3790.0 WC1: WC2: COM2: KEY: 57781
4 E 8.50' FORT UNION MAMMOTH 1+2 WC1: WC2: COM2: BS 3781 KEY: 57782
5 E 28.00' FORT UNION 157.50' EL: 3781.5-3753.5 WC1: WC2: COM2: BS 3754 KEY: 57783

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UQ
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

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*****
DATA POINT ID: B4-58H
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
DATE: 820817
CONFID:
PRIN MERIDIAN: 20
STATE: MONTANA
COUNTY: MUSSELSHELL
ELEVATION: 3935.00'
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
ELVPREC: 1
TOTAL DEPTH
LOGGED : 213.00'
LATITUDE: 46 17 19
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 201
LONGITUDE: 108 23 31
RANGE: 27.00E
WEATHERING: 0
LLPREC: 0
OWNERSHIP:
FILEPOINTER:
HYDRO CD: 0
UQ
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 19.00'FORT UNION NR WC1: WC2: COM2: KEY: 57784
2 9.00'FORT UNION CLST WC1: WC2: COM2: KEY: 57785
3 9.00'FORT UNION CLST SLTY WC1: WC2: COM2: KEY: 57786
4 8.50'FORT UNION CLST WC1: WC2: COM2: KEY: 57787
5 0.20'FORT UNION COAL WC1: WC2: COM2: KEY: 57788
6 0.50'FORT UNION CLST WC1: WC2: COM2: KEY: 57789
7 2.00'FORT UNION SS WC1: WC2: COM2: F KEY: 57790
8 2.00'FORT UNION CLST WC1: WC2: COM2: F KEY: 57791
9 2.00'FORT UNION SS WC1: WC2: COM2: F KEY: 57792
10 0.30'FORT UNION CLST WC1: WC2: COM2: VF-F KEY: 57793
11 8.00'FORT UNION SS WC1: WC2: COM2: VF-F KEY: 57794
12 1.00'FORT UNION CLST WC1: WC2: COM2: KEY: 57795
13 D 4.00'FORT UNION SS WC1: WC2: COM2: D SS,SLS KEY: 57796

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14	1.00' FORT UNION	SS	WC1:	WC2:	COM2:	F	KEY:	57797
15 D	66.50' EL: 3869.5-3868.5	SS	WC1:	WC2:	COM2:		KEY:	57798
16	4.00' FORT UNION	SS	WC1:	WC2:	COM2: D SS, SLST		KEY:	57799
17 D	8.00' FORT UNION	SS	WC1:	WC2:	COM2:	F-MED	KEY:	57800
18	78.50' EL: 3864.5-3856.5	SLST	WC1:	WC2:	COM2: D SLST/CLST		KEY:	57801
19	1.50' FORT UNION	COAL	WC1:	WC2:	COM2:		KEY:	57802
20	80.00' EL: 3856.5-3855.0	CLST	WC1:	WC2:	COM2:		KEY:	57803
21	80.30' EL: 3855.0-3854.7	SLST	WC1:	WC2:	COM2:	F	KEY:	57804
22	82.30' EL: 3854.7-3852.7	SS	WC1:	WC2:	COM2:		KEY:	57805
23	86.30' EL: 3852.7-3848.7	CLST	WC1:	WC2:	COM2:		KEY:	57806
24	105.30' EL: 3848.7-3829.7	COAL	WC1:	WC2:	COM2:		KEY:	57807
25	108.80' EL: 3829.7-3826.2	CLST	WC1:	WC2:	COM2:		KEY:	57808
26	108.90' EL: 3826.2-3826.1	COAL	WC1:	WC2:	COM2:		KEY:	57809
27 E	108.90' EL: 3826.1-3825.6	CLST	WC1:	WC2:	COM2: BS 3819.7		KEY:	57810
28	109.40' EL: 3826.1-3825.6	COAL	WC1:	WC2:	COM2:		KEY:	57811
29	109.50' EL: 3825.6-3825.5	CLST	WC1:	WC2:	COM2:	F-VF	KEY:	57812
30	112.00' EL: 3825.5-3823.0	SS	WC1:	WC2:	COM2:		KEY:	57813
31	3.30' FORT UNION	CLST	WC1:	WC2:	COM2:		KEY:	57814
32	115.30' EL: 3823.0-3819.7	COAL	WC1:	WC2:	COM2:		KEY:	57815
33	2.00' FORT UNION	CLST	WC1:	WC2:	COM2:		KEY:	57816
34	117.30' EL: 3819.7-3817.7	SS	WC1:	WC2:	COM2:		KEY:	57817
35 D	118.00' EL: 3817.7-3817.0	CLST	WC1:	WC2:	COM2: D SS, SLST		KEY:	57818
36	120.50' EL: 3817.0-3814.5	COAL	WC1:	WC2:	COM2:		KEY:	57819
	121.10' EL: 3814.5-3813.9	SS	WC1:	WC2:	COM2:			
	124.00' EL: 3813.9-3811.0	SLST	WC1:	WC2:	COM2:			
	130.20' EL: 3811.0-3804.8	SS	WC1:	WC2:	COM2:			
	132.00' EL: 3804.8-3803.0	SS	WC1:	WC2:	COM2:			
	135.50' EL: 3803.0-3799.5	SLST	WC1:	WC2:	COM2:			
	140.00' EL: 3799.5-3795.0	WC1:	WC2:	COM2:				

37	3.50' FORT UNION 143.50' EL: 3795.0-3791.5	WC1:	SLST	CNCR	WC2:	COM2:	KEY:	57820
38	7.00' FORT UNION 150.50' EL: 3791.5-3784.5	WC1:	SS		WC2:	F-MED	KEY:	57821
39	5.50' FORT UNION 156.00' EL: 3784.5-3779.0	WC1:	SLST	LMN	WC2:		KEY:	57822
40	13.50' FORT UNION 169.50' EL: 3779.0-3765.5	WC1:	SS		WC2:	F-VF	KEY:	57823
41	5.00' FORT UNION 174.50' EL: 3765.5-3760.5	WC1:	SLST		WC2:		KEY:	57824
42	1.60' FORT UNION 176.10' EL: 3760.5-3758.9	WC1:	CLST		WC2:		KEY:	57825
43	2.90' FORT UNION 179.00' EL: 3758.9-3756.0	WC1:	COAL		WC2:		KEY:	57826
44	0.50' FORT UNION 179.50' EL: 3756.0-3755.5	WC1:	SH		WC2:	=REHDER	KEY:	57827
45 E	0.30' FORT UNION 179.80' EL: 3755.5-3755.2	WC1:	COAL		WC2:	=REHDER	KEY:	57828
46	0.20' FORT UNION 180.00' EL: 3755.2-3755.0	WC1:	CLST		WC2:	COM2: BS 3755.2, =REHDER	KEY:	57829
47	8.50' FORT UNION 188.50' EL: 3755.0-3746.5	WC1:	SS		WC2:	F	KEY:	57830
48	1.50' FORT UNION 190.00' EL: 3746.5-3745.0	WC1:	SLST		WC2:		KEY:	57831
49	6.80' FORT UNION 196.80' EL: 3745.0-3738.2	WC1:	CLST		WC2:		KEY:	57832
50	8.00' FORT UNION 204.80' EL: 3738.2-3730.2	WC1:	COAL		WC2:		KEY:	57833
51	0.10' FORT UNION 204.90' EL: 3730.2-3730.1	WC1:	SS		WC2:		KEY:	57834
52 E	1.50' FORT UNION 206.40' EL: 3730.1-3728.6	WC1:	COAL		WC2:		KEY:	57835
53	1.00' FORT UNION 207.40' EL: 3728.6-3727.6	WC1:	SS		WC2:	COM2: BS 3728.6	KEY:	57836
54	1.10' FORT UNION 208.50' EL: 3727.6-3726.5	WC1:	CLST		WC2:		KEY:	57837
55 E	4.50' FORT UNION 213.00' EL: 3726.5-3722.0	WC1:	SS		WC2:	F-VF	KEY:	57838
		WC1:			WC2:	COM2: BS 3722		

DATA POINT ID: B4-69
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM3076
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 4035.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 51.10'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SW
SECTION: 15.0
TOWNSHIP: 6.00N
RANGE: 26.00E
DATE: 820817
CONFID: PRIN MERIDIAN: 20
FILEPOINTER:
OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 35.00' FORT UNION RK WC1: 4035.0-4000.0 WC2: COM2: KEY: 57345
2 E 9.10' FORT UNION MAMMOTH 1+2 COAL WC1: WC2: COM2: BS 3991 KEY: 57346
3 E 7.00' FORT UNION RK WC1: 51.10' EL: 3990.9-3983.9 WC2: COM2: BS 3984 KEY: 57347

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 35.00' FORT UNION RK WC1: 4035.0-4000.0 WC2: COM2: KEY: 57345
2 E 9.10' FORT UNION MAMMOTH 1+2 COAL WC1: WC2: COM2: BS 3991 KEY: 57346
3 E 7.00' FORT UNION RK WC1: 51.10' EL: 3990.9-3983.9 WC2: COM2: BS 3984 KEY: 57347

C F
O O
N S

DATA POINT ID: B4-70

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: CONSOLIDATION COAL CO

DATE: 820817

PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4010.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SE

SECTION: 15.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH

LOGGED : 50.90'

LATITUDE: 46 16 0

TOWNSHIP: 6.00N

RANGE: 26.00E

LLPREC: 0

LONGITUDE: 108 27 10

WEATHERING: 0

DESCRIPTION

LOG : 202

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM3079

HYDRO CD: 0

FILE POINTER:

OWNERSHIP:

C F

O O

N S

T S FJC

BEDDING

MINERALOGY

GRNSIZE

GRNSHAPE

LITHMOD

COLOR

LITH

WC1:

WC2:

RK

COAL

MAMMOTH 1+2

3976.0-3969.7

3969.7-3969.5

3969.5-3967.1

3967.1-3959.1

4010.0-3976.0

34.00' EL:

6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

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40.30' EL:

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40.30' EL:

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40.30' EL:

34.00' FORT UNION

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40.30' EL:

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8.00' FORT UNION

50.90' EL:

40.30' EL:

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6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

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2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

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8.00' FORT UNION

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40.30' EL:

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8.00' FORT UNION

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40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

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8.00' FORT UNION

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40.30' EL:

34.00' FORT UNION

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8.00' FORT UNION

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40.30' EL:

34.00' FORT UNION

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8.00' FORT UNION

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40.30' EL:

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40.30' EL:

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40.30' EL:

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8.00' FORT UNION

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40.30' EL:

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8.00' FORT UNION

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40.30' EL:

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6.30' FORT UNION

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8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

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40.30' EL:

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8.00' FORT UNION

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40.30' EL:

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40.30' EL:

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40.30' EL:

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40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

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2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

6.30' FORT UNION

0.20' FORT UNION

2.40' FORT UNION

8.00' FORT UNION

50.90' EL:

40.30' EL:

34.00' FORT UNION

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*****
DATA POINT ID: B4-71
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

STATE: MONTANA
COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM24A
HYDRO CD: 0

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3927.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: NW
TOTAL DEPTH
LOGGED : 151.40'
LATITUDE: 46 16 35
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 25 17
WEATHERING: 0
LLPREC: 0
RANGE: 26.00E

DATE: 820817
CONFID: 20
PRIN MERIDIAN: 20

FILEPOINTER:
OWNERSHIP:

-----
UQ      C F
NU      O O
IA      N S
UNIT TL K  FORMATION  BED NAME  LITH  LITHMOD  COLOR  GRNSIZE  GRNSHAPE  MINERALOGY  BEDDING  T S FJC
-----
1      94.00' FORT UNION  94.00' EL: 3927.0-3833.0  WC1:  WC2:  COM2:  KEY:  57353
2 E    9.40' FORT UNION  103.40' EL: 3833.0-3823.6  WC1:  WC2:  COM2: BS 3824  KEY:  57354
3 E    48.00' FORT UNION  151.40' EL: 3823.6-3775.6  WC1:  WC2:  COM2: BS 3776  KEY:  57355

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DATA POINT ID: B4-71A
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
 PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 3949.00'
 ELVPREC: 0

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW
 SECTION: 13.0

TOTAL DEPTH
 LOGGED : 155.00'

LATITUDE: 46 16 36
 TOWNSHIP: 6.00N

DESCRIPTION
 LOG : 202

LONGITUDE: 108 24 52
 RANGE: 26.00E

WEATHERING: 0
 LLPREC: 0

OWNERSHIP: *****

FILEPOINTER: *****

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	42.00'		FORT UNION		RK									
	42.00'		EL: 3949.0-3907.0		WC1:	WC2:	COM2:				KEY:	57839		
2	E		3.00'	FORT UNION	COAL									
	45.00'		EL: 3907.0-3904.0	ROCK MESA	WC1:	WC2:	COM2:	BS 3904			KEY:	57840		
3	47.00'		FORT UNION		RK									
	92.00'		EL: 3904.0-3857.0		WC1:	WC2:	COM2:				KEY:	57841		
4	E		3.00'	FORT UNION	COAL									
	95.00'		EL: 3857.0-3854.0	MAMMOTH 3	WC1:	WC2:	COM2:	BS 3854,=REHDER			KEY:	57842		
5	31.00'		FORT UNION		RK									
	126.00'		EL: 3854.0-3823.0		WC1:	WC2:	COM2:				KEY:	57843		
6	E		9.00'	FORT UNION	COAL									
	135.00'		EL: 3823.0-3814.0	MAMMOTH 1+2	WC1:	WC2:	COM2:	BS 3814			KEY:	57844		
7	E		20.00'	FORT UNION	RK									
	155.00'		EL: 3814.0-3794.0		WC1:	WC2:	COM2:	BS 3794			KEY:	57845		

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DATA POINT ID: B4-71B
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
 PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62613-1
 HYDRO CD: 57846

FILEPOINTER:

ELEVATION: 4076.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 280.50'
 DESCRIPTION
 LOG : 225
 WEATHERING: 0

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: 13.0
 TOWNSHIP: 6.00N
 RANGE: 26.00E

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	F	J
1	173.00'		FORT UNION		RK										
			173.00'	EL: 4076.0-3903.0	WC1:		COM2:					KEY:	174312		
2	E		3.00'	FORT UNION	COAL										
			176.00'	EL: 3903.0-3900.0	WC1:		COM2: BS 3900					KEY:	174312		
3			35.00'	FORT UNION	RK										
			211.00'	EL: 3900.0-3865.0	WC1:		COM2:					KEY:	174312		
4	E		3.00'	FORT UNION	COAL										
			214.00'	EL: 3865.0-3862.0	WC1:		COM2: BS 3862,=REHDER					KEY:	174312		
5			19.60'	FORT UNION	RK										
			233.60'	EL: 3862.0-3842.4	WC1:		COM2:					KEY:	174312		
6	L		5.50'	FORT UNION	SS				F						
			239.10'	EL: 3842.4-3836.9	WC1:		COM2: L TOP CORE					KEY:	174312		
7			0.50'	FORT UNION	SH										
			239.60'	EL: 3836.9-3836.4	WC1:		COM2:					KEY:	174312		
8			1.30'	FORT UNION	SS										
			240.90'	EL: 3836.4-3835.1	WC1:		COM2:					KEY:	174312		
9			0.20'	FORT UNION	SH										
			241.10'	EL: 3835.1-3834.9	WC1:		COM2:					KEY:	174312		
10			11.50'	FORT UNION	SS				F						
			252.60'	EL: 3834.9-3823.4	WC1:		COM2:					KEY:	174312		
11			0.20'	FORT UNION	SH	SDY									
			252.80'	EL: 3823.4-3823.2	WC1:		COM2: CONTORTED AND BURROWED					KEY:	174313		
12			0.80'	FORT UNION	NR										
			253.60'	EL: 3823.2-3822.4	WC1:		COM2:					KEY:	174313		
13			0.70'	FORT UNION	SS	CARB									
			254.30'	EL: 3822.4-3821.7	WC1:		COM2:					KEY:	174313		

14	6.50'FORT UNION	MAMMOTH 1+2 260.80' EL: 3821.7-3815.2	COAL WC1:	WC2:	COM2:	KEY: 1743133
15	0.10'FORT UNION	MAMMOTH 1+2 260.90' EL: 3815.2-3815.1	SH WC1:	CARB WC2:	COM2:	KEY: 1743134
16 E	2.60'FORT UNION	MAMMOTH 1+2 263.50' EL: 3815.1-3812.5	COAL WC1:	WC2:	COM2: E BS 3812.5	KEY: 1743135
17	1.10'FORT UNION	264.60' EL: 3812.5-3811.4	SH WC1:	CARB WC2:	COM2:	KEY: 1743136
18	1.50'FORT UNION	266.10' EL: 3811.4-3809.9	SS WC1:	WC2:	COM2: VF	KEY: 1743137
19	0.50'FORT UNION	266.60' EL: 3809.9-3809.4	MDST WC1:	WC2:	COM2:	KEY: 1743138
20	2.60'FORT UNION	269.20' EL: 3809.4-3806.8	SS WC1:	WC2:	COM2: VF	KEY: 1743139
21	2.60'FORT UNION	271.80' EL: 3806.8-3804.2	SH WC1:	SDY WC2:	COM2:	KEY: 1743140
22 L	1.80'FORT UNION	273.60' EL: 3804.2-3802.4	SS WC1:	WC2:	COM2: F	KEY: 1743141
23 E	6.90'FORT UNION	280.50' EL: 3802.4-3795.5	RK WC1:	WC2:	COM2: L BS CORE	KEY: 1743142
					COM2: E BS 3795.5	

DATA POINT ID: B4-71C
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62717-5
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
SURFACE
ELEVATION: 4011.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 259.60'
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
LATITUDE: 46 16 38
LONGITUDE: 108 22 52
LLPREC: 0
DATE: 820817
PRIN MERIDIAN: 20
CONFID: NW
QUARTERS: 17.0
SECTION: 6.00N
TOWNSHIP: 27.00E
RANGE: 0
OWNERSHIP:
FILEPOINTER:

UNIT TL K FORMATION BED NAME EL: 4011.0-3859.0
1 152.00' FORT UNION 152.00' EL: 4011.0-3859.0
2 E 4.00' FORT UNION 156.00' EL: 3859.0-3855.0
3 62.00' FORT UNION 218.00' EL: 3855.0-3793.0
4 E 3.50' FORT UNION 221.50' EL: 3793.0-3789.5
5 15.50' FORT UNION 237.00' EL: 3789.5-3774.0
6 E 9.60' FORT UNION 246.60' EL: 3774.0-3764.4
7 E 13.00' FORT UNION 259.60' EL: 3764.4-3751.4
LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
RK WC2: COM2: KEY: 57853
COAL WC1: WC2: COM2: BS 3855 KEY: 57854
RK WC1: WC2: COM2: KEY: 57855
COAL WC1: WC2: COM2: BS 3790,=REHDER KEY: 57856
RK WC1: WC2: COM2: KEY: 57857
COAL WC1: WC2: COM2: BS 3764 KEY: 57858
RK WC1: WC2: COM2: BS 3751 KEY: 57859
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DATA POINT ID: B4-71D
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
 PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SURFACE
 ELEVATION: 4071.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NW
 SECTION: 17.0

TOTAL DEPTH
 LOGGED : 311.20'
 LATITUDE: 46 16 22
 TOWNSHIP: 6.00N

DESCRIPTION
 LOG : 202
 LONGITUDE: 108 22 55
 RANGE: 27.00E

WEATHERING: 0
 LLPREC: 0

OWNERSHIP:

FILEPOINTER:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 205.50' FORT UNION RK WC1: 4071.0-3865.5 WC2: 3862.0-3792.0 COM2: BS 3789,=REHDER KEY: 57860

2 E 3.50' FORT UNION ROCK MESA COAL WC1: 3865.5-3862.0 WC2: 3792.0-3789.0 COM2: BS 3769 KEY: 57861

3 70.00' FORT UNION RK WC1: 3862.0-3792.0 WC2: 3792.0-3789.0 COM2: BS 3789,=REHDER KEY: 57862

4 E 3.00' FORT UNION MAMMOTH 3 COAL WC1: 3792.0-3789.0 WC2: 3789.0-3778.5 COM2: BS 3769 KEY: 57863

5 10.50' FORT UNION RK WC1: 3789.0-3778.5 WC2: 3778.5-3768.8 COM2: BS 3760 KEY: 57864

6 E 9.70' FORT UNION MAMMOTH 1+2 COAL WC1: 3778.5-3768.8 WC2: 3768.8-3759.8 COM2: BS 3760 KEY: 57865

7 E 9.00' FORT UNION RK WC1: 3768.8-3759.8 WC2: 3759.8-3750.0 COM2: BS 3760 KEY: 57866

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 DATA POINT ID: B4-71E
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62613-7
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4070.00'
 ELVPREC: 0
 LOGGED : 273.80'
 DESCRIPTION
 LOG : 200
 WEATHERING: 0
 DATE: 830117
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 TOWNSHIP: 6.00N
 RANGE: 26.00E
 OWNERSHIP:
 FILEPOINTER:
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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 15.00' FORT UNION NR WC2: COM2: KEY: 58723
 2 DL 15.00' EL: 4070.0-4055.0 WC1: SS WC2: COM2: D SS SLST, L TOP CORE KEY: 58724
 3 21.50' EL: 4055.0-4048.5 WC1: CLST WC2: COM2: KEY: 58725
 4 28.00' EL: 4048.5-4042.0 WC1: SS WC2: COM2: VF-F KEY: 58726
 5 D 40.50' EL: 4042.0-4029.5 WC1: SS WC2: COM2: D SS SLST KEY: 58727
 6 43.50' EL: 4029.5-4026.5 WC1: SS WC2: COM2: F KEY: 58728
 7 82.50' EL: 4026.5-3987.5 WC1: SLST WC2: COM2: KEY: 58729
 8 93.00' EL: 3987.5-3977.0 WC1: CLST WC2: COM2: VF KEY: 58730
 9 97.00' EL: 3977.0-3973.0 WC1: SS WC2: COM2: KEY: 58731
 10 D 100.00' EL: 3973.0-3970.0 WC1: SLST WC2: COM2: D SLST CLST KEY: 58732
 11 E 102.00' EL: 3970.0-3968.0 WC1: COAL WC2: COM2: E BS 3967.6 KEY: 58733
 12 102.40' EL: 3968.0-3967.6 WC1: SS WC2: COM2: F KEY: 58734
 13 105.00' EL: 3967.6-3965.0 WC1: CLST WC2: COM2: KEY: 58735
 111.00' EL: 3965.0-3959.0 WC1: WC2: COM2: KEY: 58735

14	6.00' FORT UNION	117.00' EL: 3959.0-3953.0	WC1:	SLST	WC2:	COM2:	KEY:	58736
15	3.00' FORT UNION	120.00' EL: 3953.0-3950.0	WC1:	CLST	WC2:	COM2:	KEY:	58737
16 D	1.00' FORT UNION	121.00' EL: 3950.0-3949.0	WC1:	CLST	WC2:	COM2: D CLST SLST	KEY:	58738
17	2.00' FORT UNION	123.00' EL: 3949.0-3947.0	WC1:	SS	WC2:	VF	KEY:	58739
18 D	6.00' FORT UNION	129.00' EL: 3947.0-3941.0	WC1:	SLST	WC2:	COM2: D SLST SS	KEY:	58740
19	3.00' FORT UNION	132.00' EL: 3941.0-3938.0	WC1:	SS	WC2:	VF	KEY:	58741
20	1.00' FORT UNION	133.00' EL: 3938.0-3937.0	WC1:	SLST	WC2:	COM2:	KEY:	58742
21	6.00' FORT UNION	139.00' EL: 3937.0-3931.0	WC1:	SS	WC2:	VF	KEY:	58743
22	2.00' FORT UNION	141.00' EL: 3931.0-3929.0	WC1:	CLST	WC2:	COM2:	KEY:	58744
23 D	4.00' FORT UNION	145.00' EL: 3929.0-3925.0	WC1:	SLST	WC2:	COM2: D SLST SS	KEY:	58745
24	1.50' FORT UNION	146.50' EL: 3925.0-3923.5	WC1:	CLST	WC2:	COM2:	KEY:	58746
25	10.00' FORT UNION	156.50' EL: 3923.5-3913.5	WC1:	SS	WC2:	F	KEY:	58747
26	1.50' FORT UNION	158.00' EL: 3913.5-3912.0	WC1:	SLST	WC2:	COM2:	KEY:	58748
27	1.50' FORT UNION	159.50' EL: 3912.0-3910.5	WC1:	CLST	WC2:	COM2:	KEY:	58749
28	0.30' FORT UNION	159.80' EL: 3910.5-3910.2	WC1:	NR	WC2:	COM2: CORE LOSS= COAL?	KEY:	58750
29 E	0.60' FORT UNION	160.40' EL: 3910.2-3909.6	WC1:	COAL	WC2:	COM2: E BS 3909.6	KEY:	58751
30	2.10' FORT UNION	162.50' EL: 3909.6-3907.5	WC1:	SS	WC2:	COM2:	KEY:	58752
31	1.50' FORT UNION	164.00' EL: 3907.5-3906.0	WC1:	CLST	WC2:	COM2:	KEY:	58753
32 E	2.30' FORT UNION	166.30' EL: 3906.0-3903.7	WC1:	COAL	WC2:	COM2: E BS 3903.7	KEY:	58754
33	2.90' FORT UNION	169.20' EL: 3903.7-3900.8	WC1:	SLST	WC2:	COM2:	KEY:	58755
34	0.40' FORT UNION	169.60' EL: 3900.8-3900.4	WC1:	COAL	WC2:	COM2:	KEY:	58756
35	1.30' FORT UNION	170.90' EL: 3900.4-3899.1	WC1:	SLST	WC2:	COM2:	KEY:	58757
36	3.00' FORT UNION	173.90' EL: 3899.1-3896.1	WC1:	NR	WC2:	COM2:	KEY:	58758

DATA POINT ID: B4-72
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM864
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3899.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 60.80'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NW
SECTION: 13.0
TOWNSHIP: 6.00N
RANGE: 26.00E
LLPREC: 0
DATE: 820817
CONFID: 20
PRIN MERIDIAN: 20
FILEPOINTER: 0
OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 48.00' FORT UNION 48.00' EL: 3899.0-3851.0 WC1: WC2: COM2: KEY: 57356
2 E 8.80' FORT UNION 56.80' EL: 3851.0-3842.2 WC1: WC2: COM2: BS 3842 KEY: 57357
3 E 4.00' FORT UNION 60.80' EL: 3842.2-3838.2 WC1: WC2: COM2: BS 3838 KEY: 57358
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DATA POINT ID: B4- 72A
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
DATE: 820817
PRIN MERIDIAN: 20
CONFID:
*****
STATE: MONTANA
COUNTY: MUSSELSHELL
ELEVATION: 3921.00'
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
SECTIONS: 13.0
NW
TOTAL DEPTH
LOGGED : 99.90'
LATITUDE: 46 16 34
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 25 22
WEATHERING: 0
LLPREC: 0
RANGE: 26.00E
OWNERSHIP:
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FILEPOINTER:
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UNIT TL K FORMATION BED NAME LITH LITHMOO COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
*****
1 73.00' FORT UNION
RK
WC1: 73.00' EL: 3921.0-3848.0
COM2:
KEY: 57866
2 E 9.90' FORT UNION
MAMMOTH 1+2
COAL
WC1: 82.90' EL: 3848.0-3838.1
COM2: BS 3838
KEY: 57866
3 E 17.00' FORT UNION
RK
WC1: 99.90' EL: 3838.1-3821.1
COM2: BS 3821
KEY: 57866
*****

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 DATA POINT ID: B4-73
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM850
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO
 SURFACE
 ELEVATION: 3873.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 40.10'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 DATE: 820817
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NW
 SECTION: 13.0
 LATITUDE: 46 16 12
 TOWNSHIP: 6.00N
 LONGITUDE: 108 25 19
 LLPREC: 0
 RANGE: 26.00E
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOO	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	16.00'		FORT UNION		RK							
				16.00' EL: 3873.0-3857.0	WC1:	WC2:	COM2:				KEY:	57359
2	E		7.10' FORT UNION	MAMMOTH 1+2	COAL							
				23.10' EL: 3857.0-3849.9	WC1:	WC2:	COM2: BS 3850				KEY:	57360
3	E		17.00' FORT UNION		RK							
				40.10' EL: 3849.9-3832.9	WC1:	WC2:	COM2: BS 3833				KEY:	57361

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 DATA POINT ID: B4-73A
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62613-3, GEOPHYS & GEOL LOG
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 3964.00'
 ELVPREC: 0
 LOGGED : 150.00'
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 SECTION: 13.0
 TOWNSHIP: 6.00N
 RANGE: 26.00E
 DATE: 830117
 CONFID: 20
 PRIN MERIDIAN:
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	3.00'		FORT UNION		NR									
			3.00' EL: 3964.0-3961.0		WC1:	WC2:	COM2:					KEY:	58775	
2	13.00'		FORT UNION		CLST	SDY								
			16.00' EL: 3961.0-3948.0		WC1:	WC2:	COM2:					KEY:	58776	
3	4.50'		FORT UNION		SH	SDY								
			20.50' EL: 3948.0-3943.5		WC1:	WC2:	COM2:					KEY:	58777	
4	5.70'		FORT UNION		SH									
			26.20' EL: 3943.5-3937.8		WC1:	WC2:	COM2:					KEY:	58778	
5	0.80'		FORT UNION		COAL									
			27.00' EL: 3937.8-3937.0		WC1:	WC2:	COM2:	D	COAL & CARB	SH		KEY:	58779	
6	5.50'		FORT UNION		SH									
			32.50' EL: 3937.0-3931.5		WC1:	WC2:	COM2:					KEY:	58780	
7	1.90'		FORT UNION	ROCK MESA	COAL									
			34.40' EL: 3931.5-3929.6		WC1:	WC2:	COM2:	E	BS	3929.6		KEY:	58781	
8	1.60'		FORT UNION		SH									
			36.00' EL: 3929.6-3928.0		WC1:	WC2:	COM2:					KEY:	58782	
9	3.00'		FORT UNION		SS									
			39.00' EL: 3928.0-3925.0		WC1:	WC2:	COM2:					KEY:	58783	
10	1.00'		FORT UNION		COAL									
			40.00' EL: 3925.0-3924.0		WC1:	WC2:	COM2:					KEY:	58784	
11	11.00'		FORT UNION		SLST									
			51.00' EL: 3924.0-3913.0		WC1:	WC2:	COM2:					KEY:	58785	
12	1.00'		FORT UNION		SS									
			52.00' EL: 3913.0-3912.0		WC1:	WC2:	COM2:					KEY:	58786	
13	9.50'		FORT UNION		SH									
			61.50' EL: 3912.0-3902.5		WC1:	WC2:	COM2:	D	SH	SLST		KEY:	58787	

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14	10.00' FORT UNION 71.50' EL: 3902.5-3892.5	SS	WC1:	WC2:	COM2:	KEY:	58788
15	0.70' FORT UNION 72.20' EL: 3892.5-3891.8	SH	WC1:	WC2:	COM2:	KEY:	58789
16 E	2.80' FORT UNION MAMMOTH 3 75.00' EL: 3891.8-3889.0	COAL	WC1:	WC2:	COM2: E BS 3889,=REHDER	KEY:	58790
17	3.50' FORT UNION 78.50' EL: 3889.0-3885.5	SH	WC1:	WC2:	COM2:	KEY:	58791
18 D	39.00' FORT UNION 117.50' EL: 3885.5-3846.5	SS	WC1:	WC2:	COM2: D SS SH	KEY:	58792
19	1.00' FORT UNION LOCAL 118.50' EL: 3846.5-3845.5	COAL	WC1:	WC2:	COM2: LOCAL, NOT REHDER	KEY:	58793
20	3.50' FORT UNION 122.00' EL: 3845.5-3842.0	MDST	WC1:	WC2: CARB	COM2:	KEY:	58794
21	1.50' FORT UNION MAMMOTH 1+2 123.50' EL: 3842.0-3840.5	COAL	WC1:	WC2:	COM2:	KEY:	58795
22	0.10' FORT UNION MAMMOTH 1+2 123.60' EL: 3840.5-3840.4	RK	WC1:	WC2:	COM2:	KEY:	58796
23	3.40' FORT UNION MAMMOTH 1+2 127.00' EL: 3840.4-3837.0	COAL	WC1:	WC2:	COM2:	KEY:	58797
24	0.30' FORT UNION MAMMOTH 1+2 127.30' EL: 3837.0-3836.7	RK	WC1:	WC2:	COM2:	KEY:	58798
25 E	2.70' FORT UNION MAMMOTH 1+2 130.00' EL: 3836.7-3834.0	COAL	WC1:	WC2:	COM2: E BS 3834	KEY:	58799
26	10.00' FORT UNION 140.00' EL: 3834.0-3824.0	MDST	WC1:	WC2:	COM2:	KEY:	58800
27 E	10.00' FORT UNION 150.00' EL: 3824.0-3814.0	SS	WC1:	WC2:	COM2: E BS 3814	KEY:	58801

DATA POINT ID: B4-74
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
ELEVATION: 3878.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 39.50'
DESCRIPTION
LOG : 202
WEATHERING: 0
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM875
HYDRO CD: 0
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SW
SECTION: 13.0
TOWNSHIP: 6.00N
RANGE: 26.00E
DATE: 820817
PRIN MERIDIAN: 20
CONFID: 20
FILEPOINTER: 0
OWNERSHIP: 0

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC										C F	
1	22.00'	FORT UNION									
	22.00'	EL: 3878.0-3856.0	WC1:	WC2:	COM2:					KEY:	57362
2	E	8.50'	FORT UNION	MAMMOTH 1+2	COAL						
	30.50'	EL: 3856.0-3847.5	WC1:	WC2:	COM2: BS 3848					KEY:	57363
3	E	9.00'	FORT UNION								
	39.50'	EL: 3847.5-3838.5	WC1:	WC2:	COM2: BS 3838					KEY:	57364

DATA POINT ID: B4-74A
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
DATE: 820817
CONFID: PRIN MERIDIAN: 20
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62613-6
HYDRO CD: 0
FILEPOINTER:
SURFACE
ELEVATION: 3948.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SE
SECTION: 13.0
TOTAL DEPTH
LOGGED : 120.00'
LATITUDE: 46 15 59
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 24 31
RANGE: 26.00E
WEATHERING: 0
LLPREC: 0
OWNERSHIP:

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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC

1	56.50'		FORT UNION		RK								
	56.50'		EL: 3948.0-3891.5		WC1:	WC2:	COM2:				KEY:	57870	
2	E	2.50'	FORT UNION	MAMMOTH 3	COAL								
	59.00'		EL: 3891.5-3889.0		WC1:	WC2:	COM2: BS 3889,	=REHDER			KEY:	57871	
3	32.50'		FORT UNION		RK								
	91.50'		EL: 3889.0-3856.5		WC1:	WC2:	COM2:				KEY:	57872	
4	E	7.50'	FORT UNION	MAMMOTH 1+2	COAL								
	99.00'		EL: 3856.5-3849.0		WC1:	WC2:	COM2: BS 3849				KEY:	57873	
5	E	21.00'	FORT UNION		RK								
	120.00'		EL: 3849.0-3828.0		WC1:	WC2:	COM2: BS 3828				KEY:	57874	

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DATA POINT ID: B4-75
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
DATE: 820817
CONFID: PRIN MERIDIAN: 20
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM907
HYDRO CD: 0
FILE POINTER:
SURFACE
ELEVATION: 3930.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 55.40'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SW
TOWNSHIP: 6.00N
RANGE: 26.00E
LLPREC: 0
OWNERSHIP:
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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 42.00' FORT UNION 42.00' EL: 3930.0-3888.0 WC1: WC2: COM2: KEY: 57365
2 E 7.40' FORT UNION MAMMOTH 1+2 49.40' EL: 3888.0-3880.6 WC1: WC2: COM2: BS 3881 KEY: 57366
3 E 6.00' FORT UNION 55.40' EL: 3880.6-3874.6 WC1: WC2: COM2: BS 3875 KEY: 57367

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DATA POINT ID: B4-76
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

STATE: MONTANA
COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM882
HYDRO CD: 0

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3926.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SW
TOTAL DEPTH
LOGGED : 59.80'
LATITUDE: 46 15 55
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 25 3
RANGE: 26.00E
WEATHERING: 0
LLPREC: 0

FILEPOINTER:
OWNERSHIP:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
-----
1 35.00' FORT UNION 35.00' EL: 3926.0-3891.0 WC1: WC2: COM2: KEY: 57368
2 E 8.80' FORT UNION MAMMOTH 1+2 COAL WC1: WC2: COM2: BS 3882 KEY: 57369
3 E 16.00' FORT UNION 59.80' EL: 3882.2-3866.2 WC1: WC2: COM2: BS 3866 KEY: 57370

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DATA POINT ID: B4-77

QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: CONSOLIDATION COAL CO

PRIN MERIDIAN: 20

CONFID: 20

DATE: 820817

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM879

HYDRO CD: 0

FILE POINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	48.00'		FORT UNION		RK							
				48.00' EL: 3925.0-3877.0	WC1:	WC2:	COM2:				KEY:	57371
2	0.80'		FORT UNION	MAMMOTH 1+2	COAL							
				48.80' EL: 3877.0-3876.2	WC1:	WC2:	COM2:				KEY:	57372
3	1.20'		FORT UNION	MAMMOTH 1+2	RK							
				50.00' EL: 3876.2-3875.0	WC1:	WC2:	COM2:				KEY:	57373
4 E	7.80'		FORT UNION	MAMMOTH 1+2	COAL							
				57.80' EL: 3875.0-3867.2	WC1:	WC2:	COM2: BS 3867				KEY:	57374
5 E	2.00'		FORT UNION		RK							
				59.80' EL: 3867.2-3865.2	WC1:	WC2:	COM2: BS 3865				KEY:	57375

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DATA POINT ID: B4-78
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

STATE: MONTANA
COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM23A
HYDRO CD: 0

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 4022.00'
ELVPREC: 3
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SE
SECTION: 13.0
TOWNSHIP: 6.00N
RANGE: 26.00E
LATITUDE: 46 15 55
LONGITUDE: 108 24 17
LLPREC: 0
LOG : 202
WEATHERING: 0
DESCRIPTION
TOTAL DEPTH
LOGGED : 136.20'
OWNERSHIP:
FILEPOINTER:

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UNIT TL K FORMATION BED NAME EL: 4022.0-3895.0
1 127.00' FORT UNION
2 0.60' FORT UNION MAMMOTH 1+2
3 1.80' FORT UNION MAMMOTH 1+2
4 E 6.80' FORT UNION MAMMOTH 1+2
136.20' EL: 3892.6-3885.8
WC1: WC2: COM2: BS 3886, DO NOT USE FOR STRUCTURE
KEY: 57376
KEY: 57377
KEY: 57378
KEY: 57379
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BEDDING T S FJC

DATA POINT ID: B4-78A
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR
 DATE: 820817
 CONFIG: 20
 PRIN MERIDIAN: 20
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 SURFACE
 ELEVATION: 4024.00'
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NW
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 203.50'
 LATITUDE: 46 15 47
 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 202
 LONGITUDE: 108 24 13
 RANGE: 27.00E
 WEATHERING: 0
 LLPREC: 0
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62719-8
 HYDRO CD: 0
 FILEPOINTER:
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	72.50'		FORT UNION		RK							
				72.50' EL: 4024.0-3951.5	WC1:	WC2:	COM2:				KEY:	57885
2	E		3.50'	ROCK MESA	COAL							
				76.00' EL: 3951.5-3948.0	WC1:	WC2:	COM2: BS 3948				KEY:	57886
3			47.50'	FORT UNION	RK							
				123.50' EL: 3948.0-3900.5	WC1:	WC2:	COM2:				KEY:	57887
4	E		2.00'	MAMMOTH 3	COAL							
				125.50' EL: 3900.5-3898.5	WC1:	WC2:	COM2: BS 3899, =REHDER				KEY:	57888
5			42.00'	FORT UNION	RK							
				167.50' EL: 3898.5-3856.5	WC1:	WC2:	COM2:				KEY:	57889
6	E		9.00'	MAMMOTH 1+2	COAL							
				176.50' EL: 3856.5-3847.5	WC1:	WC2:	COM2: BS 3848				KEY:	57890
7	E		27.00'	FORT UNION	RK							
				203.50' EL: 3847.5-3820.5	WC1:	WC2:	COM2: BS 3821				KEY:	57891

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DATA POINT ID: B4-80
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM2
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 4020.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 330.00'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
SECTION: 23.0
TOWNSHIP: 6.00N
RANGE: 26.00E
LLPREC: 0
DATE: 820817
PRIN MERIDIAN: 20
CONFID: 20
OWNERSHIP:
FILEPOINTER:

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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	69.00'		FORT UNION		RK								
			69.00' EL:	4020.0-3951.0	WC1:	WC2:	COM2:				KEY:	57380	
2	0.50'		FORT UNION	MAMMOTH 1+2	COAL								
			69.50' EL:	3951.0-3950.5	WC1:	WC2:	COM2:				KEY:	57381	
3	3.50'		FORT UNION	MAMMOTH 1+2	RK								
			73.00' EL:	3950.5-3947.0	WC1:	WC2:	COM2:				KEY:	57382	
4 E	7.50'		FORT UNION	MAMMOTH 1+2	COAL								
			80.50' EL:	3947.0-3939.5	WC1:	WC2:	COM2: BS 3940				KEY:	57383	
5	228.00'		FORT UNION		RK								
			308.50' EL:	3939.5-3711.5	WC1:	WC2:	COM2:				KEY:	57384	
6 U,E	3.50'		FORT UNION	DOUGHERTY	COAL								
			312.00' EL:	3711.5-3708.0	WC1:	WC2:	COM2: BS 3708				KEY:	57385	
7 E	18.00'		FORT UNION		RK								
			330.00' EL:	3708.0-3690.0	WC1:	WC2:	COM2: BS 3690				KEY:	57386	

DATA POINT ID: B4-81
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM21
 HYDRO CD: 0

FILE POINTER: 0

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	27.00'		FORT UNION		RK							
				27.00' EL: 3945.0-3918.0	WC1:	WC2:	COM2: BEGINS BELOW MAMMOTH				KEY:	57387
2 E	2.60'		FORT UNION		COAL							
				29.60' EL: 3918.0-3915.4	WC1:	WC2:	COM2: BS 3915				KEY:	57388
3	47.00'		FORT UNION		RK							
				76.60' EL: 3915.4-3868.4	WC1:	WC2:	COM2:				KEY:	57389
4	1.50'		FORT UNION		COAL							
				78.10' EL: 3868.4-3866.9	WC1:	WC2:	COM2:				KEY:	57390
5	5.00'		FORT UNION		RK							
				83.10' EL: 3866.9-3861.9	WC1:	WC2:	COM2:				KEY:	57391
6 E	1.50'		FORT UNION		COAL							
				84.60' EL: 3861.9-3860.4	WC1:	WC2:	COM2: BS 3860				KEY:	57392
7 E	50.00'		FORT UNION		RK							
				134.60' EL: 3860.4-3810.4	WC1:	WC2:	COM2: BS 3810				KEY:	57393

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 DATA POINT ID: B4-82
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM168
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO
 SURFACE
 ELEVATION: 4045.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 69.10'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 DATE: 820817
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 LATITUDE: 46 15 0
 LONGITUDE: 108 25 47
 LLPREC: 0
 QUARTERS: SE
 SECTION: 23.0
 TOWNSHIP: 6.00N
 RANGE: 26.00E
 OWNERSHIP:
 FILEPOINTER:
 UQ
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 UNIT TL K FORMATION BED NAME
 1 27.00' FORT UNION
 2 27.00' EL: 4045.0-4018.0
 2 2.00' FORT UNION MAMMOTH 3
 29.00' EL: 4018.0-4016.0
 3 1.00' FORT UNION MAMMOTH 3
 30.00' EL: 4016.0-4015.0
 4 E 1.00' FORT UNION MAMMOTH 3
 31.00' EL: 4015.0-4014.0
 28.50' FORT UNION
 5 59.50' EL: 4014.0-3985.5
 9.60' FORT UNION MAMMOTH 1+2
 69.10' EL: 3985.5-3975.9
 LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 RK WC2: COM2: KEY: 57394
 COAL WC1: COM2: =REHDER KEY: 57395
 RK WC1: COM2: =REHDER KEY: 57396
 COAL WC1: COM2: =REHDER, BS 4014 KEY: 57397
 RK WC1: COM2: KEY: 57398
 COAL WC1: COM2: BS 3976 KEY: 57399

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DATA POINT ID: B4-83
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
DATE: 820817
CONFID: PRIN MERIDIAN: 20
STATE: MONTANA
COUNTY: MUSSELSHELL
ELEVATION: 4096.00'
ELVPREC: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
TOTAL DEPTH
LOGGED : 471.00'
LATITUDE: 46 15 45
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 23 6
RANGE: 27.00E
WEATHERING: 0
LLPREC: 0
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62719-1 & BN 17
HYDRO CD: 0
FILEPOINTER:
OWNERSHIP:

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										O O		
										N S		
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	168.00'		FORT UNION		RK							
			168.00' EL: 4096.0-3928.0		WC1:	WC2:	COM2:				KEY:	57892
2	E		4.00' FORT UNION	ROCK MESA	COAL							
			172.00' EL: 3928.0-3924.0		WC1:	WC2:	COM2: BS 3924				KEY:	57893
3			44.00' FORT UNION		RK							
			216.00' EL: 3924.0-3880.0		WC1:	WC2:	COM2: THIS THICKNESS FROM BN 17				KEY:	57894
4	E		3.00' FORT UNION	MAMMOTH 3	COAL							
			219.00' EL: 3880.0-3877.0		WC1:	WC2:	COM2: BS 3877, =REHDER				KEY:	57895
5			51.00' FORT UNION		RK							
			270.00' EL: 3877.0-3826.0		WC1:	WC2:	COM2:				KEY:	57896
6	E		9.00' FORT UNION	MAMMOTH 1+2	COAL							
			279.00' EL: 3826.0-3817.0		WC1:	WC2:	COM2: BS 3817				KEY:	57897
7	E		192.00' FORT UNION		RK							
			471.00' EL: 3817.0-3625.0		WC1:	WC2:	COM2: BS 3625				KEY:	57898

 DATA POINT ID: B4-83A
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62719-5 GEOPHYS., CORE
 HYDRO CD: 0 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W DATE: 820817
 SOURCE: LOUISIANA LAND&EXPLOR
 SURFACE
 ELEVATION: 4157.00' RANK: SUBBIT
 ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTIONS: 19.0 NE
 TOTAL DEPTH
 LOGGED : 311.70' LATITUDE: 46 15 36 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 230 LONGITUDE: 108 23 34 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0
 OWNERSHIP:

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 IA H O O
 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 18.50' FORT UNION RK WC1: 18.50' EL: 4157.0-4138.5 WC2: COM2: KEY: 57899
 2 E 3.50' FORT UNION BULL MTN WC1: 22.00' EL: 4138.5-4135.0 WC2: COM2: BS 4135 KEY: 57900
 3 181.50' FORT UNION RK WC1: 203.50' EL: 4135.0-3953.5 WC2: COM2: KEY: 57901
 4 E 2.50' FORT UNION ROCK MESA WC1: 206.00' EL: 3953.5-3951.0 WC2: COM2: BS 3951 KEY: 57902
 5 53.00' FORT UNION RK WC1: 259.00' EL: 3951.0-3898.0 WC2: COM2: KEY: 57903
 6 E 2.50' FORT UNION MAMMOTH 3 WC1: 261.50' EL: 3898.0-3895.5 WC2: COM2: BS 3896, =REHDER KEY: 57904
 7 10.50' FORT UNION SLST WC1: 272.00' EL: 3895.5-3885.0 WC2: COM2: KEY: 57905
 8 E 2.00' FORT UNION SH WC1: 274.00' EL: 3885.0-3883.0 WC2: COM2: BS 3883 KEY: 57906
 9 L 4.00' FORT UNION SLST WC1: 278.00' EL: 3883.0-3879.0 WC2: COM2: L TOP CORE KEY: 57907
 10 10.60' FORT UNION SS WC1: 288.60' EL: 3879.0-3868.4 WC2: COM2: KEY: 57908
 11 4.60' FORT UNION SH WC1: 293.20' EL: 3868.4-3863.8 WC2: COM2: KEY: 57909
 12 1.40' FORT UNION MAMMOTH 1+2 WC1: 294.60' EL: 3863.8-3862.4 WC2: COM2: KEY: 57910
 13 0.05' FORT UNION MAMMOTH 1+2 WC1: 294.65' EL: 3862.4-3862.4 WC2: COM2: KEY: 57911

14	4.65' FORT UNION	MAMMOTH 1+2 299.30' EL: 3862.4-3857.7	COAL WC1:	WC2:	COM2:	KEY: 57912
15	0.20' FORT UNION	MAMMOTH 1+2 299.50' EL: 3857.7-3857.5	RK WC1:	WC2:	COM2:	KEY: 57913
16 E	3.20' FORT UNION	MAMMOTH 1+2 302.70' EL: 3857.5-3854.3	COAL WC1:	WC2:	COM2: BS 3854	KEY: 57914
17	0.80' FORT UNION		CLY WC1:	WC2:	COM2:	KEY: 57915
18	4.20' FORT UNION	303.50' EL: 3854.3-3853.5	SLST WC1:	WC2:	COM2:	KEY: 57916
19 L,E	4.00' FORT UNION	307.70' EL: 3853.5-3849.3	SS WC1:	WC2:	COM2: L BASE CORE, BS 3845.3	KEY: 57917
		311.70' EL: 3849.3-3845.3				

DATA POINT ID: B4-83C
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND&EXPLOR

DATE: 820817
 PRIN MERIDIAN: 20

CONFID: SE

SURFACE
 ELEVATION: 4140.00'
 ELVPREC: 0

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: 19.0

TOTAL DEPTH

LOGGED : 314.50' LATITUDE: 46 15 25 TOWNSHIP: 6.00N

DESCRIPTION

LOG : 202 LONGITUDE: 108 23 1 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62719-6
 HYDRO CD: 0

OWNERSHIP:

FILEPOINTER:

Uq		C F	
NU	T	O	O
IA	H	N	S
UNIT	TL	K	FJC
FORMATION	BED NAME	LITH	LITHMOD
GRNSIZE	COLOR	GRNSHAPE	MINERALOGY
BEDDING	T	S	FJC
1	164.00' FORT UNION	RK	
	164.00' EL: 4140.0-3976.0	WC1:	WC2:
2	3.50' FORT UNION	COAL	COM2:
	167.50' EL: 3976.0-3972.5	WC1:	WC2:
3	52.50' FORT UNION	RK	
	220.00' EL: 3972.5-3920.0	WC1:	WC2:
4	2.50' FORT UNION	COAL	
	222.50' EL: 3920.0-3917.5	WC1:	WC2:
5	44.50' FORT UNION	RK	
	267.00' EL: 3917.5-3873.0	WC1:	WC2:
6	8.50' FORT UNION	COAL	
	275.50' EL: 3873.0-3864.5	WC1:	WC2:
7	39.00' FORT UNION	RK	
	314.50' EL: 3864.5-3825.5	WC1:	WC2:
		COM2: BS 3917, =REHDER	KEY: 57921
		COM2: BS 3972	KEY: 57922
		COM2:	KEY: 57923
		COM2: BS 3917, =REHDER	KEY: 57924
		COM2:	KEY: 57925
		COM2: BS 3864	KEY: 57926
		COM2: BS 3825	KEY: 57927

14	0.20' FORT UNION	WC1:	COAL	WC2:	COM2:	KEY:	58815
15	75.80' EL: 4016.4-4016.2 2.20' FORT UNION	WC1:	CLST	WC2:	COM2:	KEY:	58816
16 E	78.00' EL: 4016.2-4014.0 3.50' FORT UNION ROCK MESA	WC1:	COAL	WC2:	COM2:	KEY:	58817
17 D	81.50' EL: 4014.0-4010.5 3.50' FORT UNION	WC1:	SLST	WC2:	COM2: E BS 4010.5	KEY:	58818
18	85.00' EL: 4010.5-4007.0 2.00' FORT UNION	WC1:	CLST	WC2:	COM2: D SLST SS	KEY:	58819
19	87.00' EL: 4007.0-4005.0 1.00' FORT UNION	WC1:	COAL	WC2:	COM2:	KEY:	58820
20	88.00' EL: 4005.0-4004.0 3.20' FORT UNION	WC1:	SS	WC2:	COM2: F	KEY:	58821
21	91.20' EL: 4004.0-4000.8 0.40' FORT UNION	WC1:	CLST	WC2:	COM2:	KEY:	58822
22	91.60' EL: 4000.8-4000.4 6.40' FORT UNION	WC1:	SS	WC2:	COM2: F-M	KEY:	58823
23	98.00' EL: 4000.4-3994.0 2.80' FORT UNION	WC1:	CLST	WC2:	COM2:	KEY:	58824
24	100.80' EL: 3994.0-3991.2 2.20' FORT UNION	WC1:	SLST	WC2:	COM2:	KEY:	58825
25	103.00' EL: 3991.2-3989.0 3.00' FORT UNION	WC1:	SS	WC2:	COM2: F	KEY:	58826
26	106.00' EL: 3989.0-3986.0 1.00' FORT UNION	WC1:	SLST	WC2:	COM2:	KEY:	58827
27	107.00' EL: 3986.0-3985.0 0.70' FORT UNION	WC1:	CLST	WC2:	COM2:	KEY:	58828
28	107.70' EL: 3985.0-3984.3 0.50' FORT UNION	WC1:	COAL	WC2:	COM2:	KEY:	58829
29	108.20' EL: 3984.3-3983.8 4.80' FORT UNION	WC1:	SLST	WC2:	COM2:	KEY:	58830
30 E	113.00' EL: 3983.8-3979.0 1.60' FORT UNION MAMMOTH 3	WC1:	COAL	WC2:	COM2:	KEY:	58831
31	114.60' EL: 3979.0-3977.4 2.90' FORT UNION	WC1:	CLST	WC2:	COM2: E BS 3977.4, = REHDER	KEY:	58832
32	117.50' EL: 3977.4-3974.5 0.50' FORT UNION	WC1:	COAL	WC2:	COM2:	KEY:	58833
33 D	118.00' EL: 3974.5-3974.0 5.50' FORT UNION	WC1:	SS	WC2:	COM2:	KEY:	58834
34	123.50' EL: 3974.0-3968.5 2.00' FORT UNION	WC1:	SS	WC2:	COM2: D SS SLST F	KEY:	58835
35 D	125.50' EL: 3968.5-3966.5 5.50' FORT UNION	WC1:	SLST	WC2:	COM2:	KEY:	58836
36 D	131.00' EL: 3966.5-3961.0 15.00' FORT UNION	WC1:	SS	WC2:	COM2: D SLST SS	KEY:	58837
	146.00' EL: 3961.0-3946.0	WC1:	WC2:	COM2: D SS SLST			

37	7.80' FORT UNION	SS	WC1:	WC2:	COM2:	F	KEY:	58838
	153.80' EL: 3946.0-3938.2	WC1:	WC2:					
38	1.00' FORT UNION	SLST					KEY:	58839
	154.80' EL: 3938.2-3937.2	WC1:	WC2:					
39	0.40' FORT UNION	COAL					KEY:	58840
	155.20' EL: 3937.2-3936.8	WC1:	WC2:					
40	5.90' FORT UNION	SS					KEY:	58841
	161.10' EL: 3936.8-3930.9	WC1:	WC2:					
41	6.10' FORT UNION	COAL					KEY:	58842
	167.20' EL: 3930.9-3924.8	WC1:	WC2:					
42	0.15' FORT UNION	RK					KEY:	58843
	167.35' EL: 3924.8-3924.7	WC1:	WC2:					
43 E	2.45' FORT UNION	COAL					KEY:	58844
	169.80' EL: 3924.7-3922.2	WC1:	WC2:					
44	3.30' FORT UNION	SS					KEY:	58845
	173.10' EL: 3922.2-3918.9	WC1:	WC2:					
45	3.20' FORT UNION	SLST					KEY:	58846
	176.30' EL: 3918.9-3915.7	WC1:	WC2:					
46 L	9.80' FORT UNION	SS					KEY:	58847
	186.10' EL: 3915.7-3905.9	WC1:	WC2:					
47	29.00' FORT UNION	SS					KEY:	58848
	215.10' EL: 3905.9-3876.9	WC1:	WC2:					
48	7.00' FORT UNION	SLST					KEY:	58849
	222.10' EL: 3876.9-3869.9	WC1:	WC2:					
49	1.00' FORT UNION	COAL					KEY:	58850
	223.10' EL: 3869.9-3868.9	WC1:	WC2:					
50	2.00' FORT UNION	SLST					KEY:	58851
	225.10' EL: 3868.9-3866.9	WC1:	WC2:					
51	6.00' FORT UNION	CLST					KEY:	58852
	231.10' EL: 3866.9-3860.9	WC1:	WC2:					
52	12.00' FORT UNION	SS					KEY:	58853
	243.10' EL: 3860.9-3848.9	WC1:	WC2:					
53	3.00' FORT UNION	SLST					KEY:	58854
	246.10' EL: 3848.9-3845.9	WC1:	WC2:					
54	6.00' FORT UNION	CLST					KEY:	58855
	252.10' EL: 3845.9-3839.9	WC1:	WC2:					
55	9.00' FORT UNION	SS					KEY:	58856
	261.10' EL: 3839.9-3830.9	WC1:	WC2:					
56	0.10' FORT UNION	COAL					KEY:	58857
	261.20' EL: 3830.9-3830.8	WC1:	WC2:					
57 D	5.80' FORT UNION	SLST					KEY:	58858
	267.00' EL: 3830.8-3825.0	WC1:	WC2:					
58	4.00' FORT UNION	SS					KEY:	58859
	271.00' EL: 3825.0-3821.0	WC1:	WC2:					
59	2.00' FORT UNION	SLST					KEY:	58860
	273.00' EL: 3821.0-3819.0	WC1:	WC2:					

60 E 2.00' FORT UNION 275.00' EL: 3819.0-3817.0 SS WC1: WC2: COM2: E BS 3817 KEY: 58861

DATA POINT ID: B4-83E
 QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL

DATE: 830117
 PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SURFACE
 ELEVATION: 4148.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SW

TOTAL DEPTH

LOGGED : 280.00' LATITUDE: 46 15 10 TOWNSHIP: 6.00N

DESCRIPTION

LOG : 230 LONGITUDE: 108 23 44 RANGE: 27.00E

WEATHERING: 0 LLPREC: 0

COMMENT1: LL&E 62719-4, GEOPHYS & SAMPLE LOG

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UO NU T C F

IA H O O

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 134.00' FORT UNION RK WC2: COM2: KEY: 58862

2 E 134.00' EL: 4148.0-4014.0 COAL WC2: COM2: KEY: 58863

3 137.50' EL: 4014.0-4010.5 WC1: WC2: COM2: E BS 4010.5 KEY: 58864

4 141.50' EL: 4010.5-4006.5 WC1: WC2: COM2: KEY: 58865

5 142.00' EL: 4006.5-4006.0 WC1: WC2: COM2: KEY: 58866

6 D 143.50' EL: 4006.0-4004.5 WC1: WC2: COM2: D SS SH KEY: 58867

7 155.50' EL: 4004.5-3992.5 WC1: WC2: COM2: KEY: 58868

8 157.50' EL: 3992.5-3990.5 WC1: WC2: COM2: KEY: 58869

9 164.50' EL: 3990.5-3983.5 WC1: WC2: COM2: KEY: 58870

10 166.50' EL: 3983.5-3981.5 WC1: WC2: COM2: KEY: 58871

11 172.50' EL: 3981.5-3975.5 WC1: WC2: COM2: KEY: 58872

12 E 174.50' EL: 3975.5-3973.5 WC1: WC2: COM2: KEY: 58873

13 176.50' EL: 3973.5-3971.5 WC1: WC2: COM2: E BS 3971.5, = REHDER KEY: 58874

181.50' EL: 3971.5-3966.5 WC1: WC2: COM2: KEY: 58874

14	45.50' FORT UNION	227.00' EL: 3966.5-3921.0	WC1:	SS	WC2:	COM2:	KEY:	58875
15	1.50' FORT UNION		WC1:	CLST	WC2:	COM2:	KEY:	58876
16	1.60' FORT UNION	228.50' EL: 3921.0-3919.5	WC1:	COAL	WC2:	COM2:	KEY:	58877
17	0.30' FORT UNION	230.10' EL: 3919.5-3917.9	WC1:	RK	WC2:	COM2:	KEY:	58878
18	4.60' FORT UNION	230.40' EL: 3917.9-3917.6	WC1:	COAL	WC2:	COM2:	KEY:	58879
19	0.20' FORT UNION	235.00' EL: 3917.6-3913.0	WC1:	RK	WC2:	COM2:	KEY:	58880
20 E	2.80' FORT UNION	235.20' EL: 3913.0-3912.8	WC1:	COAL	WC2:	COM2:	KEY:	58881
21 E	42.00' FORT UNION	238.00' EL: 3912.8-3910.0	WC1:	RK	WC2:	COM2: E BS 3910	KEY:	58882
		280.00' EL: 3910.0-3868.0	WC1:		WC2:	COM2: E BS 3868		

```

*****
DATA POINT ID: B4-83F
QUAD & SERIES: SIGNAL MOUNTAIN (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND&EXPLOR
SURFACE
ELEVATION: 4197.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SE
SECTION: 19.0

TOTAL DEPTH
LOGGED : 325.50'
LATITUDE: 46 15 6
TOWNSHIP: 6.00N

DESCRIPTION
LOG : 202
LONGITUDE: 108 23 18
RANGE: 27.00E
WEATHERING: 0
LLPREC: 0

STATE: MONTANA
COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62719-7

HYDRO CD: 0
FILE POINTER:

OWNERSHIP:

-----
UNIT TL K FORMATION BED NAME LITH LITHMOO COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 17.00' FORT UNION 17.00' EL: 4197.0-4180.0 RK WC2: COM2: KEY: 57928
2 E 4.00' FORT UNION BULL MTN 21.00' EL: 4180.0-4176.0 WC1: COAL WC2: COM2: BS 4176 KEY: 57929
3 184.00' FORT UNION 205.00' EL: 4176.0-3992.0 RK WC1: COAL WC2: COM2: KEY: 57930
4 E 3.50' FORT UNION ROCK MESA 208.50' EL: 3992.0-3988.5 WC1: COAL WC2: COM2: BS 3988 KEY: 57931
5 87.50' FORT UNION 296.00' EL: 3988.5-3901.0 RK WC1: COAL WC2: COM2: KEY: 57932
6 E 8.50' FORT UNION MAMMOTH 1+2 304.50' EL: 3901.0-3892.5 WC1: COAL WC2: COM2: BS 3892 KEY: 57933
7 E 21.00' FORT UNION 325.50' EL: 3892.5-3871.5 RK WC1: COAL WC2: COM2: BS 3872 KEY: 57934

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UQ
NU T
IA H

C F
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N S

DATA POINT ID: B5-B18
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: YELLOWSTONE
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: USGS BULL 647 (1917)
SURFACE
ELEVATION: 3920.00'
ELVPREC: 1
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SW
SECTION: 24.0
TOWNSHIP: 6.00N
RANGE: 27.00E
LATITUDE: 46 15 12
LONGITUDE: 108 17 51
LLPREC: 0
WEATHERING: 0
LOG : 102
TOTAL DEPTH
LOGGED : 12.20'
DESCRIPTION
CONFID: 20
PRIN MERIDIAN: 20
DATE: 880517
OWNERSHIP:

UQ														
NU		T												
IA		H												
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC

1			8.20'FORT UNION	MAMMOTH 1+2+3	COAL									
			8.20' EL: 3920.0-3911.8		WC1:	WC2:	COM2: W THIN SH PARTINGS				KEY:	1743117		
2			0.10'FORT UNION	MAMMOTH 1+2+3	SH									
			8.30' EL: 3911.8-3911.7		WC1:	WC2:	COM2:				KEY:	1743118		
3 E			3.90'FORT UNION	MAMMOTH 1+2+3	COAL									
			12.20' EL: 3911.7-3907.8		WC1:	WC2:	COM2: E BS 3908				KEY:	1743119		

DATA POINT ID: B5-C7
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1:
 HYDRO CD: 0 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W DATE: 830113
 SOURCE: CONNOR C W
 SURFACE
 ELEVATION: 3802.00' RANK: SUBBIT
 ELVREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SE
 TOTAL DEPTH
 LOGGED : 27.03' LATITUDE: 46 19 26 TOWNSHIP: 7.00N
 DESCRIPTION
 LOG : 102 LONGITUDE: 108 19 26 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

OWNERSHIP:

										C F			
										O O			
										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	10.00'		FORT UNION		SLST	CALC							
			10.00' EL:	3802.0-3792.0	WC1:	WC2:	COM2:				KEY:	59961	
2	0.30'		FORT UNION		CLST	SLTY							
			10.30' EL:	3792.0-3791.7	WC1:	WC2:	COM2: WOODY				KEY:	59962	
3	2.30'		FORT UNION	MAMMOTH 1+2+3	COAL								
			12.60' EL:	3791.7-3789.4	WC1:	WC2:	COM2:				KEY:	59963	
4	0.60'		FORT UNION	MAMMOTH 1+2+3	CLST								
			13.20' EL:	3789.4-3788.8	WC1:	WC2:	COM2:				KEY:	59964	
5	4.10'		FORT UNION	MAMMOTH 1+2+3	COAL								
			17.30' EL:	3788.8-3784.7	WC1:	WC2:	COM2:				KEY:	59965	
6	0.03'		FORT UNION	MAMMOTH 1+2+3	CLST								
			17.33' EL:	3784.7-3784.7	WC1:	WC2:	COM2:				KEY:	59966	
7	0.85'		FORT UNION	MAMMOTH 1+2+3	COAL								
			18.18' EL:	3784.7-3783.8	WC1:	WC2:	COM2:				KEY:	59967	
8	3.00'		FORT UNION	MAMMOTH 1+2+3	CLST	SLTY							
			21.18' EL:	3783.8-3780.8	WC1:	WC2:	COM2:				KEY:	59968	
9	2.30'		FORT UNION	MAMMOTH 1+2+3	COAL								
			23.48' EL:	3780.8-3778.5	WC1:	WC2:	COM2:				KEY:	59969	
10	0.25'		FORT UNION	MAMMOTH 1+2+3	RK								
			23.73' EL:	3778.5-3778.3	WC1:	WC2:	COM2:				KEY:	59970	
11 E	3.00'		FORT UNION	MAMMOTH 1+2+3	COAL								
			26.73' EL:	3778.3-3775.3	WC1:	WC2:	COM2: E BS 3775.3				KEY:	59971	
12	0.20'		FORT UNION		CLST		BLK						
			26.93' EL:	3775.3-3775.1	WC1:	WC2:	COM2: HARD				KEY:	59972	
13 I	0.10'		FORT UNION		CLST	SLTY							
			27.03' EL:	3775.1-3774.1	WC1:	WC2:	COM2: ROOTED				KEY:	59973	

DATA POINT ID: B5-C8

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

SOURCE: CONNOR C W

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3810.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SE

SECTION: 27.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH

LOGGED : 21.40'

LATITUDE: 46 19 42

TOWNSHIP: 7.00N

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

LOG : 102

LONGITUDE: 108 19 15

RANGE: 27.00E

COMMENT1:

WEATHERING: 0

LLPREC: 0

HYDRO CD: 0

OWNERSHIP:

FILEPOINTER:

UQ

NU T

IA H

TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

C F

O O

N S

1

2.20' FORT UNION

MAMMOTH 2+3

COAL

WC1:

COM2:

KEY: 59974

2

1.20' FORT UNION

MAMMOTH 2+3

CLST

WC1:

COM2:

KEY: 59975

3

4.30' FORT UNION

MAMMOTH 2+3

COAL

WC1:

COM2:

KEY: 59976

4

1.00' FORT UNION

MAMMOTH 2+3

CLST

WC1:

COM2:

KEY: 59977

5

2.80' FORT UNION

MAMMOTH 2+3

RK

WC1:

COM2:

KEY: 59978

6

5.00' FORT UNION

MAMMOTH 2+3

SS

WC1:

COM2:

KEY: 59979

7

2.30' FORT UNION

MAMMOTH 1

COAL

WC1:

COM2:

KEY: 59980

8

0.20' FORT UNION

MAMMOTH 1

RK

WC1:

COM2:

KEY: 59981

9 E

2.40' FORT UNION

MAMMOTH 1

COAL

WC1:

COM2:

KEY: 59982

21.40' EL: 3791.0-3788.6

WC1:

COM2:

KEY: 59982

DATA POINT ID: B5-C20
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

COMMENT1:
 HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

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										O O			
										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	20.00'		FORT UNION		SS								
				20.00' EL: 3840.0-3820.0	WC1:	WC2:	COM2:				KEY:	59983	
2	0.50'		FORT UNION	MAMMOTH 1+2+3	COAL								
				20.50' EL: 3820.0-3819.5	WC1:	WC2:	COM2:				KEY:	59984	
3	0.05'		FORT UNION	MAMMOTH 1+2+3	SLST	CARB							
				20.55' EL: 3819.5-3819.5	WC1:	WC2:	COM2:				KEY:	59985	
4	1.20'		FORT UNION	MAMMOTH 1+2+3	COAL								
				21.75' EL: 3819.5-3818.3	WC1:	WC2:	COM2:				KEY:	59986	
5	0.40'		FORT UNION	MAMMOTH 1+2+3	CLST								
				22.15' EL: 3818.3-3817.9	WC1:	WC2:	COM2:				KEY:	59987	
6	3.40'		FORT UNION	MAMMOTH 1+2+3	COAL								
				25.55' EL: 3817.9-3814.5	WC1:	WC2:	COM2:				KEY:	59988	
7	0.20'		FORT UNION	MAMMOTH 1+2+3	SLST	CARB							
				25.75' EL: 3814.5-3814.3	WC1:	WC2:	COM2:				KEY:	59989	
8	1.14'		FORT UNION	MAMMOTH 1+2+3	COAL								
				26.89' EL: 3814.3-3813.1	WC1:	WC2:	COM2:				KEY:	59990	
9	0.58'		FORT UNION	MAMMOTH 1+2+3	CLST								
				27.47' EL: 3813.1-3812.5	WC1:	WC2:	COM2:				KEY:	59991	
10	2.60'		FORT UNION	MAMMOTH 1+2+3	COAL								
				30.07' EL: 3812.5-3809.9	WC1:	WC2:	COM2:				KEY:	59992	
11	0.25'		FORT UNION	MAMMOTH 1+2+3	SLST	CARB							
				30.32' EL: 3809.9-3809.7	WC1:	WC2:	COM2:				KEY:	59993	
12	2.83'		FORT UNION	MAMMOTH 1+2+3	COAL								
				33.15' EL: 3809.7-3806.9	WC1:	WC2:	COM2:				KEY:	59994	
13	0.20'		FORT UNION	MAMMOTH 1+2+3	BONE								
				33.35' EL: 3806.9-3806.7	WC1:	WC2:	COM2:				KEY:	59995	

14	E	0.05' FORT UNION	MAMMOTH 1+2+3	COAL					
		33.40' EL: 3806.7-3806.6		WC1:	WC2:	COM2: E BS 3806.5	KEY:	59996	
15		1.00' FORT UNION		CLST					
		34.40' EL: 3806.6-3805.6		WC1:	WC2:	COM2:	KEY:	59997	
16		5.30' FORT UNION		SS					
		39.70' EL: 3805.6-3800.3		WC1:	WC2:	COM2:	KEY:	59998	

DATA POINT ID: B5-9
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: BN 72729-2 (=B5-37A)
 HYDRO CD: 0 FILE POINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: BURLINGTON NORTHERN RR
 SURFACE
 ELEVATION: 4000.00'
 ELVPREC: 1
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SW
 TOTAL DEPTH
 LOGGED : 480.10' LATITUDE: 46 19 25 TOWNSHIP: 7.00N
 DESCRIPTION
 LOG : 230 LONGITUDE: 108 22 27 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	12.00'		FORT UNION		SS							
			12.00' EL:	4000.0-3988.0	WC1:	WC2:	COM2:					KEY: 60012
2	2.00'		FORT UNION		COAL							
			14.00' EL:	3988.0-3986.0	WC1:	WC2:	COM2:					KEY: 60013
3	9.00'		FORT UNION		SS							
			23.00' EL:	3986.0-3977.0	WC1:	WC2:	COM2:					KEY: 60014
4	4.00'		FORT UNION		SH	SDY						
			27.00' EL:	3977.0-3973.0	WC1:	WC2:	COM2:					KEY: 60015
5	0.50'		FORT UNION		SS							
			27.50' EL:	3973.0-3972.5	WC1:	WC2:	COM2:					KEY: 60016
6	3.50'		FORT UNION		SH							
			31.00' EL:	3972.5-3969.0	WC1:	WC2:	COM2:					KEY: 60017
7	7.00'		FORT UNION		SS							
			38.00' EL:	3969.0-3962.0	WC1:	WC2:	COM2:					KEY: 60018
8	13.00'		FORT UNION		SLST							
			51.00' EL:	3962.0-3949.0	WC1:	WC2:	COM2:					KEY: 60019
9	0.30'		FORT UNION		COAL							
			51.30' EL:	3949.0-3948.7	WC1:	WC2:	COM2:					KEY: 60020
10	5.70'		FORT UNION		SLST							
			57.00' EL:	3948.7-3943.0	WC1:	WC2:	COM2:					KEY: 60021
11	0.30'		FORT UNION		COAL							
			57.30' EL:	3943.0-3942.7	WC1:	WC2:	COM2:					KEY: 60022
12	17.70'		FORT UNION		SLST							
			75.00' EL:	3942.7-3925.0	WC1:	WC2:	COM2:					KEY: 60023
13	6.00'		FORT UNION		SH	SDY						
			81.00' EL:	3925.0-3919.0	WC1:	WC2:	COM2:					KEY: 60024

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14	1.00' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60025
	82.00' EL: 3919.0-3918.0	SH	WC2:	SDY			
15	3.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60026	
	85.00' EL: 3918.0-3915.0	SLST					
16	15.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60027	
	100.00' EL: 3915.0-3900.0	SH					
17	5.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60028	
	105.00' EL: 3900.0-3895.0	SLST					
18	11.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60029	
	116.00' EL: 3895.0-3884.0	SH					
19	4.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60030	
	120.00' EL: 3884.0-3880.0	SS					
20	5.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60031	
	125.00' EL: 3880.0-3875.0	SH		BLUE GN			
21	10.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60032	
	135.00' EL: 3875.0-3865.0	SS					
22	5.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60033	
	140.00' EL: 3865.0-3860.0	SH	SDY				
23	14.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60034	
	154.00' EL: 3860.0-3846.0	COAL					
24	0.30' FORT UNION	WC1:	WC2:	COM2:	KEY:	60035	
	154.30' EL: 3846.0-3845.7	SH	SDY				
25	19.10' FORT UNION	WC1:	WC2:	COM2:	KEY:	60036	
	173.40' EL: 3845.7-3826.6	COAL					
26 L	0.10' FORT UNION	WC1:	WC2:	COM2: L TOP CORE	KEY:	60037	
	173.50' EL: 3826.6-3826.5	SLST					
27	0.20' FORT UNION	WC1:	WC2:	COM2:	KEY:	60038	
	173.70' EL: 3826.5-3826.3	SH					
28	7.50' FORT UNION	WC1:	WC2:	COM2:	KEY:	60039	
	181.20' EL: 3826.3-3818.8	COAL					
29 E	1.60' FORT UNION	WC1:	WC2:	COM2: E BS 3817.2	KEY:	60040	
	182.80' EL: 3818.8-3817.2	SH	CARB				
30	1.30' FORT UNION	WC1:	WC2:	COM2:	KEY:	60041	
	184.10' EL: 3817.2-3815.9	SH					
31 L	1.70' FORT UNION	WC1:	WC2:	COM2: L BS CORE	KEY:	60042	
	185.80' EL: 3815.9-3814.2	SH					
32	12.30' FORT UNION	WC1:	WC2:	COM2:	KEY:	60043	
	198.10' EL: 3814.2-3801.9	COAL					
33	0.30' FORT UNION	WC1:	WC2:	COM2:	KEY:	60044	
	198.40' EL: 3801.9-3801.6	SH	SDY				
34	4.70' FORT UNION	WC1:	WC2:	COM2:	KEY:	60045	
	203.10' EL: 3801.6-3796.9	SS					
35	57.00' FORT UNION	WC1:	WC2:	COM2:	KEY:	60046	
	260.10' EL: 3796.9-3739.9	SS					
36 L	3.00' FORT UNION	WC1:	WC2:	COM2: L TOP CORE	KEY:	60047	
	263.10' EL: 3739.9-3736.9						

37	3.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60048
	266.60' EL: 3736.9-3733.4						
38	3.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60049
	270.10' EL: 3733.4-3729.9						
39	1.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	60050
	271.60' EL: 3729.9-3728.4						
40	0.60' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	60051
	272.20' EL: 3728.4-3727.8						
41	1.50' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	60052
	273.70' EL: 3727.8-3726.3						
42	0.60' FORT UNION	SH	WC1:	WC2:	COM2: =REHDER	KEY:	60053
	274.30' EL: 3726.3-3725.7						
43 E	0.20' FORT UNION	COAL	WC1:	WC2:	COM2: =REHDER	KEY:	60054
	274.50' EL: 3725.7-3725.5						
44	1.80' FORT UNION	SH	WC1:	WC2:	COM2: =REHDER, E BS 3725.5	KEY:	60055
	276.30' EL: 3725.5-3723.7						
45	4.80' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	60056
	281.10' EL: 3723.7-3718.9						
46	0.20' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60057
	281.30' EL: 3718.9-3718.7						
47	3.50' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	60058
	284.80' EL: 3718.7-3715.2						
48	0.10' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60059
	284.90' EL: 3715.2-3715.1						
49 E	2.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3712.6	KEY:	60060
	287.40' EL: 3715.1-3712.6						
50 L	2.80' FORT UNION	SH	WC1:	WC2:	COM2: L BS CORE	KEY:	60061
	290.20' EL: 3712.6-3709.8						
51	14.90' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60062
	305.10' EL: 3709.8-3694.9						
52	18.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	60063
	323.10' EL: 3694.9-3676.9						
53	1.00' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60064
	324.10' EL: 3676.9-3675.9						
54	17.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60065
	341.10' EL: 3675.9-3658.9						
55	10.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60066
	351.10' EL: 3658.9-3648.9						
56	0.50' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60067
	351.60' EL: 3648.9-3648.4						
57	11.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60068
	363.10' EL: 3648.4-3636.9						
58	2.00' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60069
	365.10' EL: 3636.9-3634.9						
59	10.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60070
	375.10' EL: 3634.9-3624.9						

DATA POINT ID: B5-13
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: BURLINGTON NORTHERN RR
 SURFACE

CONFID: 830113
 PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4330.00'
 ELVPREC: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SW
 SECTION: 13.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 659.50' LATITUDE: 46 15 55 TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

DESCRIPTION
 LOG : 202 LONGITUDE: 108 17 45 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

COMMENT1: BN 62713-1 (=B5-79P)

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	8.00'		FORT UNION		SS									
				8.00' EL: 4330.0-4322.0	WC1:	WC2:	COM2:					KEY:	60077	
2	7.00'		FORT UNION		SH									
				15.00' EL: 4322.0-4315.0	WC1:	WC2:	COM2:					KEY:	60078	
3	3.00'		FORT UNION		SS									
				18.00' EL: 4315.0-4312.0	WC1:	WC2:	COM2:					KEY:	60079	
4	2.00'		FORT UNION		SH									
				20.00' EL: 4312.0-4310.0	WC1:	WC2:	COM2:					KEY:	60080	
5	4.00'		FORT UNION		SS									
				24.00' EL: 4310.0-4306.0	WC1:	WC2:	COM2:					KEY:	60081	
6	6.00'		FORT UNION		SH									
				30.00' EL: 4306.0-4300.0	WC1:	WC2:	COM2:					KEY:	60082	
7 E	1.00'		FORT UNION		COAL									
				31.00' EL: 4300.0-4299.0	WC1:	WC2:	COM2:	E BS 4299				KEY:	60083	
8	4.00'		FORT UNION		SS									
				35.00' EL: 4299.0-4295.0	WC1:	WC2:	COM2:					KEY:	60084	
9	8.00'		FORT UNION		SLST									
				43.00' EL: 4295.0-4287.0	WC1:	WC2:	COM2:					KEY:	60085	
10 E	1.00'		FORT UNION		COAL									
				44.00' EL: 4287.0-4286.0	WC1:	WC2:	COM2:	E BS 4286				KEY:	60086	
11	3.00'		FORT UNION		SH									
				47.00' EL: 4286.0-4283.0	WC1:	WC2:	COM2:					KEY:	60087	
12 E	1.00'		FORT UNION		COAL									
				48.00' EL: 4283.0-4282.0	WC1:	WC2:	COM2:	E BS 4282				KEY:	60088	
13	15.00'		FORT UNION		SLST									
				63.00' EL: 4282.0-4267.0	WC1:	WC2:	COM2:					KEY:	60089	

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14	0.50' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60090
	63.50' EL: 4267.0-4266.5						
15	7.50' FORT UNION	SLST	WC1:	WC2:	COM2: TR COAL AT BASE	KEY:	60091
	71.00' EL: 4266.5-4259.0						
16	5.50' FORT UNION	SLST	WC1:	WC2:	COM2: TR COAL AT BASE	KEY:	60092
	76.50' EL: 4259.0-4253.5						
17	24.50' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	60093
	101.00' EL: 4253.5-4229.0						
18	2.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	60094
	103.50' EL: 4229.0-4226.5						
19	13.50' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	60095
	117.00' EL: 4226.5-4213.0						
20	5.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	60096
	122.00' EL: 4213.0-4208.0						
21	5.00' FORT UNION	SH	WC1:	WC2:	COM2: TR COAL AT BASE	KEY:	60097
	127.00' EL: 4208.0-4203.0			SDY			
22	15.00' FORT UNION	SH	WC1:	WC2:	COM2: TR COAL AT BASE	KEY:	60098
	142.00' EL: 4203.0-4188.0			SLTY			
23	5.00' FORT UNION	SH	WC1:	WC2:	COM2: TR COAL AT BASE	KEY:	60099
	147.00' EL: 4188.0-4183.0						
24	8.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60100
	155.00' EL: 4183.0-4175.0						
25	1.00' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60101
	156.00' EL: 4175.0-4174.0						
26	9.00' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	60102
	165.00' EL: 4174.0-4165.0						
27	2.50' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60103
	167.50' EL: 4165.0-4162.5						
28	8.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60104
	175.50' EL: 4162.5-4154.5						
29	1.50' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60105
	177.00' EL: 4154.5-4153.0						
30	10.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60106
	187.00' EL: 4153.0-4143.0						
31 UE	3.00' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 4140	KEY:	60107
	BULL MTN						
32	15.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	60108
	190.00' EL: 4143.0-4140.0						
33	205.00' EL: 4140.0-4125.0	SH	WC1:	WC2:	COM2:	KEY:	60109
	1.00' FORT UNION						
34 UE	206.00' EL: 4125.0-4124.0	COAL	WC1:	WC2:	COM2: E BS 4121.5	KEY:	60110
	MATT						
35	208.50' EL: 4124.0-4121.5	SH	WC1:	WC2:	COM2:	KEY:	60111
	23.50' FORT UNION						
36	232.00' EL: 4121.5-4098.0	LS	WC1:	WC2:	COM2:	KEY:	60112
	2.00' FORT UNION						
	234.00' EL: 4098.0-4096.0						

37	58.00' FORT UNION	SH	WC1:	WC2:	COM2: TR COAL AT BASE	KEY:	60113
	292.00' EL: 4096.0-4038.0			SDY			
38	66.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60114
39	10.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	60115
40 E	3.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3958.5	KEY:	60116
	371.50' EL: 3962.0-3958.5						
41	11.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60117
	383.00' EL: 3958.5-3947.0						
42	3.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	60118
	386.00' EL: 3947.0-3944.0			SDY			
43	22.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60119
	408.00' EL: 3944.0-3922.0						
44	0.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60120
	408.50' EL: 3922.0-3921.5			SDY			
45	27.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60121
	435.50' EL: 3921.5-3894.5						
46 E	13.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3881	KEY:	60122
	449.00' EL: 3894.5-3881.0						
47	109.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60123
	558.00' EL: 3881.0-3772.0						
48 UE	2.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3769.5	KEY:	60124
	560.50' EL: 3772.0-3769.5						
49	3.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60125
	563.50' EL: 3769.5-3766.5						
50	0.50' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60126
	564.00' EL: 3766.5-3766.0						
51	0.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60127
	564.50' EL: 3766.0-3765.5						
52	2.00' FORT UNION	LS	WC1:	WC2:	COM2:	KEY:	60128
	566.50' EL: 3765.5-3763.5						
53	13.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60129
	579.50' EL: 3763.5-3750.5						
54	23.00' FORT UNION	LS	WC1:	WC2:	COM2: PROB. CALC SLST?	KEY:	60130
	602.50' EL: 3750.5-3727.5			SDY			
55	32.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60131
	634.50' EL: 3727.5-3695.5						
56 UE	3.00' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3692.5	KEY:	60132
	637.50' EL: 3695.5-3692.5						
57	12.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	60133
	649.50' EL: 3692.5-3680.5						
58 E	2.00' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3678.5	KEY:	60134
	651.50' EL: 3680.5-3678.5						
59 E	8.00' FORT UNION	SH	WC1:	WC2:	COM2: E BS 3670.5	KEY:	60135
	659.50' EL: 3678.5-3670.5						

DATA POINT ID: B5-18
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: BURLINGTON NORTHERN RR
DATE: 830113
PRIN MERIDIAN: 20
CONFID: *****
STATE: MONTANA
COUNTY: MUSSELSHELL
ELEVATION: 4529.00'
ELVPREC: 1
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: 21.0
ME
PROVINCE: N GREAT PLAINS
TOTAL DEPTH
LOGGED : 722.00'
LATITUDE: 46 15 50
TOWNSHIP: 6.00N
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
LOG : 202
LONGITUDE: 108 20 46
RANGE: 27.00E
WEATHERING: 0
LLPREC: 0
COMMENT1: BN 62721-1 (=B5-84), SUMMARIZED
HYDRO CD: 0
FILEPOINTER: *****
OWNERSHIP: *****

UNIT	TL	IA	NU	T	H	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC	C	F
1							12.00'FORT UNION		RK	WC1:	WC2:	COM2:			KEY:			60136		
2	E						7.00'FORT UNION	CLINKER	COAL	WC1:	WC2:	COM2: E BS 4510			KEY:			60137		
3							69.50'FORT UNION		RK	WC1:	WC2:	COM2:			KEY:			60138		
4	E						3.00'FORT UNION	SUMMIT	COAL	WC1:	WC2:	COM2: E BS 4437.5			KEY:			60139		
5							33.50'FORT UNION		RK	WC1:	WC2:	COM2:			KEY:			60140		
6	E						4.00'FORT UNION	FATTIG	COAL	WC1:	WC2:	COM2: E BS 4400			KEY:			60141		
7							32.00'FORT UNION		RK	WC1:	WC2:	COM2:			KEY:			60142		
8	E						3.00'FORT UNION	RED BUTTE	COAL	WC1:	WC2:	COM2: E BS 4365			KEY:			60143		
9							38.00'FORT UNION		RK	WC1:	WC2:	COM2:			KEY:			60144		
10	UE						2.00'FORT UNION	STRAIT	COAL	WC1:	WC2:	COM2: E BS 4325			KEY:			60145		
11							3.00'FORT UNION		RK	WC1:	WC2:	COM2:			KEY:			60146		
12	E						2.00'FORT UNION		COAL	WC1:	WC2:	COM2: E BS 4320			KEY:			60147		
13							9.00'FORT UNION		RK	WC1:	WC2:	COM2:			KEY:			60148		

14 E	2.00' FORT UNION	220.00' EL: 4311.0-4309.0	COAL	WC1:	WC2:	COM2: E BS 4309	KEY:	60149
15	73.00' FORT UNION		RK	WC1:	WC2:		KEY:	60150
16 E	2.50' FORT UNION	293.00' EL: 4309.0-4236.0	COAL	WC1:	WC2:	COM2:	KEY:	60151
17	55.50' FORT UNION	295.50' EL: 4236.0-4233.5	RK	WC1:	WC2:	COM2: E BS 4233.5	KEY:	60152
18 UE	1.50' FORT UNION	351.00' EL: 4233.5-4178.0	COAL	WC1:	WC2:	COM2:	KEY:	60153
19	31.50' FORT UNION	352.50' EL: 4178.0-4176.5	RK	WC1:	WC2:	COM2: E BS 4176.5	KEY:	60154
20 E	1.00' FORT UNION	384.00' EL: 4176.5-4145.0	COAL	WC1:	WC2:	COM2:	KEY:	60155
21	29.50' FORT UNION	385.00' EL: 4145.0-4144.0	RK	WC1:	WC2:	COM2: E BS 4144	KEY:	60156
22 UE	1.50' FORT UNION	414.50' EL: 4144.0-4114.5	COAL	WC1:	WC2:	COM2:	KEY:	60157
23	19.00' FORT UNION	416.00' EL: 4114.5-4113.0	RK	WC1:	WC2:	COM2: E BS 4113	KEY:	60158
24 UE	4.00' FORT UNION	435.00' EL: 4113.0-4094.0	COAL	WC1:	WC2:	COM2:	KEY:	60159
25	24.7.00' FORT UNION	439.00' EL: 4094.0-4090.0	RK	WC1:	WC2:	COM2: E BS 4090	KEY:	60160
26 E	14.00' FORT UNION	686.00' EL: 4090.0-3843.0	COAL	WC1:	WC2:	COM2:	KEY:	60161
27 E	22.00' FORT UNION	700.00' EL: 3843.0-3829.0	RK	WC1:	WC2:	COM2: E BS 3829	KEY:	60162
		722.00' EL: 3829.0-3807.0	WC1:	WC2:	COM2: E BS 3807			

DATA POINT ID: B5-20
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: BURLINGTON NORTHERN RR
 SURFACE

DATE: 830113
 PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA
 COUNTY: YELLOWSTONE

ELEVATION: 4072.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NE
 SECTION: 23.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 800.00'
 LATITUDE: 46 15 32
 TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

LOG : 202
 LONGITUDE: 108 18 13
 RANGE: 27.00E
 WEATHERING: 0
 LLPREC: 0

COMMENT1: BN 62723-1 (=B5-88)

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

-----										C F			
UQ										O O			
NU T										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	11.00'		FORT UNION		SS								
	11.00'		EL: 4072.0-4061.0		WC1:	WC2:	COM2:				KEY:	49475	
2	4.00'		FORT UNION		SH								
	15.00'		EL: 4061.0-4057.0		WC1:	WC2:	COM2:				KEY:	49476	
3	2.00'		FORT UNION		CL								
	17.00'		EL: 4057.0-4055.0		WC1:	WC2:	COM2: CL=CLINKER				KEY:	49477	
4	1.00'		FORT UNION		SH								
	18.00'		EL: 4055.0-4054.0		WC1:	WC2:	COM2:				KEY:	49478	
5	1.00'		FORT UNION		CL								
	19.00'		EL: 4054.0-4053.0		WC1:	WC2:	COM2: CL=CLINKER				KEY:	49479	
6	2.00'		FORT UNION		SH								
	21.00'		EL: 4053.0-4051.0		WC1:	WC2:	COM2:				KEY:	49480	
7 E	2.00'		FORT UNION		COAL								
	23.00'		EL: 4051.0-4049.0		WC1:	WC2:	COM2: E BS 4049				KEY:	49481	
8	18.50'		FORT UNION		SH								
	41.50'		EL: 4049.0-4030.5		WC1:	WC2:	COM2:				KEY:	49482	
9	10.50'		FORT UNION		SS								
	52.00'		EL: 4030.5-4020.0		WC1:	WC2:	COM2:				KEY:	49483	
10	9.00'		FORT UNION		SH								
	61.00'		EL: 4020.0-4011.0		WC1:	WC2:	COM2:				KEY:	49484	
11 E	26.00'		FORT UNION		SH	SDY							
	87.00'		EL: 4011.0-3985.0		WC1:	WC2:	COM2: E BS 3985, TR COAL				KEY:	49485	
12	6.00'		FORT UNION		SH	SDY							
	93.00'		EL: 3985.0-3979.0		WC1:	WC2:	COM2:				KEY:	49486	
13 E	1.00'		FORT UNION		COAL								
	94.00'		EL: 3979.0-3978.0		WC1:	WC2:	COM2: E BS 3978				KEY:	49487	

14	E	4.00' FORT UNION	SH	WC1:	WC2:	COM2: E BS 3974, TR COAL	KEY:	49488
		98.00' EL: 3978.0-3974.0						
15		2.00' FORT UNION	NR	WC1:	WC2:	COM2:	KEY:	49489
16		100.00' EL: 3974.0-3972.0						
		4.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49490
		104.00' EL: 3972.0-3968.0						
17	E	3.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3964.5	KEY:	49491
		107.50' EL: 3968.0-3964.5						
18		3.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49492
		111.00' EL: 3964.5-3961.0						
19		4.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49493
		115.00' EL: 3961.0-3957.0						
20		11.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49494
		126.00' EL: 3957.0-3946.0						
21		5.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49495
		131.00' EL: 3946.0-3941.0						
22		38.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49496
		169.00' EL: 3941.0-3903.0						
23	E	14.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3888.5	KEY:	49497
		183.50' EL: 3903.0-3888.5						
24		37.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49498
		221.00' EL: 3888.5-3851.0						
25		11.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49499
		232.00' EL: 3851.0-3840.0						
26		43.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49500
		275.00' EL: 3840.0-3797.0						
27		3.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49501
		278.00' EL: 3797.0-3794.0						
28		2.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49502
		280.00' EL: 3794.0-3792.0						
29		13.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49503
		293.00' EL: 3792.0-3779.0						
30		2.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49504
		295.00' EL: 3779.0-3777.0						
31		1.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49505
		296.00' EL: 3777.0-3776.0						
32		1.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49506
		297.00' EL: 3776.0-3775.0						
33		1.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49507
		298.00' EL: 3775.0-3774.0						
34		1.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49508
		299.00' EL: 3774.0-3773.0						
35		41.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	49509
		340.00' EL: 3773.0-3732.0						
36		35.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	49510
		375.00' EL: 3732.0-3697.0						

 DATA POINT ID: B5-28
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM-1405
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO
 SURFACE
 ELEVATION: 3859.00'
 ELVPREC: 1
 TOTAL DEPTH
 LOGGED : 89.80'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 DATE: 830113
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 SECTION: 17.0
 TOWNSHIP: 7.00N
 RANGE: 27.00E
 FILEPOINTER:
 OWNERSHIP:
 C F
 O O
 N S
 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 61.00'FORT UNION 61.00' EL: 3859.0-3798.0 RK WC1: WC2: COM2: KEY: 58904
 2 E 1.80'FORT UNION MAMMOTH 3 COAL WC1: WC2: COM2: E BS 3796.2,=REHDER KEY: 58905
 3 3.40'FORT UNION 62.80' EL: 3798.0-3796.2 RK WC1: WC2: COM2: KEY: 58906
 4 E 3.90'FORT UNION 66.20' EL: 3796.2-3792.8 MAMMOTH 2 COAL WC1: WC2: COM2: E BS 3788.9 KEY: 58907
 5 7.70'FORT UNION 70.10' EL: 3792.8-3788.9 RK WC1: WC2: COM2: KEY: 58908
 6 2.80'FORT UNION 77.80' EL: 3788.9-3781.2 MAMMOTH 1 COAL WC1: WC2: COM2: KEY: 58909
 7 0.30'FORT UNION 80.60' EL: 3781.2-3778.4 MAMMOTH 1 RK WC1: WC2: COM2: KEY: 58910
 8 E 2.40'FORT UNION 80.90' EL: 3778.4-3778.1 MAMMOTH 1 COAL WC1: WC2: COM2: E BS 3775.7 KEY: 58911
 9 E 6.50'FORT UNION 83.30' EL: 3778.1-3775.7 RK WC1: WC2: COM2: E BS 3769.2 KEY: 58912
 89.80' EL: 3775.7-3769.2

DATA POINT ID: 85-29

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID:

SOURCE: CONSOLIDATION COAL CO

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3854.00'

RANK: SUBBIT

QUARTERS:

SW

ELVPREC: 1

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 17.0

TOTAL DEPTH

LOGGED : 139.50'

LATITUDE: 46 21 5

TOWNSHIP: 7.00N

PROVINCE: N GREAT PLAINS

DESCRIPTION

LONGITUDE: 108 22 23

RANGE: 27.00E

REGION: POWDER RIVER

LOG : 202

LLPREC: 0

WEATHERING: 0

FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM-1477

OWNERSHIP:

HYDRO CD: 0

FILE POINTER:

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1

114.00' FORT UNION

114.00' EL: 3854.0-3740.0

WC1:

WC2:

COM2:

KEY:

58913

2 E

2.10' FORT UNION

116.10' EL: 3740.0-3737.9

WC1:

WC2:

COM2:

KEY:

58914

3

2.70' FORT UNION

118.80' EL: 3737.9-3735.2

WC1:

WC2:

COM2:

KEY:

58915

4 E

4.20' FORT UNION

123.00' EL: 3735.2-3731.0

WC1:

WC2:

COM2:

KEY:

58916

5

5.00' FORT UNION

128.00' EL: 3731.0-3726.0

WC1:

WC2:

COM2:

KEY:

58917

6 E

5.50' FORT UNION

133.50' EL: 3726.0-3720.5

WC1:

WC2:

COM2:

KEY:

58918

7 E

6.00' FORT UNION

139.50' EL: 3720.5-3714.5

WC1:

WC2:

COM2:

KEY:

58919

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DATA POINT ID: B5-30
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-1841
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3843.00'
ELVPREC: 1
TOTAL DEPTH
LOGGED : 21.10'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NW
SECTION: 16.0
TOWNSHIP: 7.00N
RANGE: 27.00E
DATE: 830113
PRIN MERIDIAN: 20
CONFID:
OWNERSHIP:
FILEPOINTER:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 13.00' FORT UNION RK WC1: 3843.0-3830.0 WC2: COM2: KEY: 58920
2 E 5.10' FORT UNION MAMMOTH 1 COAL WC1: 3830.0-3824.9 WC2: COM2: E BS 3824.9 KEY: 58921
3 E 3.00' FORT UNION RK WC1: 3824.9-3821.9 WC2: COM2: E BS 3821.9 KEY: 58922

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 13.00' FORT UNION RK WC1: 3843.0-3830.0 WC2: COM2: KEY: 58920
2 E 5.10' FORT UNION MAMMOTH 1 COAL WC1: 3830.0-3824.9 WC2: COM2: E BS 3824.9 KEY: 58921
3 E 3.00' FORT UNION RK WC1: 3824.9-3821.9 WC2: COM2: E BS 3821.9 KEY: 58922

C F
O O
N S

DATA POINT ID: B5-35

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID:

SOURCE: CONSOLIDATION COAL CO

PRIN MERIDIAN: 20

SURFACE

ELEVATION: 3775.00' **RANK:** SUBBIT **QUARTERS:** NW

ELVPREC: 1	LOCAL STRIKE/DIP/ANGLE: 0 0 0	SECTION: 21.0
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TOTAL DEPTH

LOGGED : 51.20' LATITUDE: 46 20 51 TOWNSHIP: 7.00N

DESCRIPTION

LOG : 202
LONGITUDE: 108 21 39
RANGE: 27.00E

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WEATHERING: 0      LLPREC: 0
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COMMENT1: CONSOL BM-2062

HYDRO CD: 0 FILE POINTER: 0

OWNERSHIP:

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FORMATION

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EDUCATION

BENDING

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2 T S F-1C

1 15.00' FORT UNION RK

15.00' EL: 3775.0-3760.0 WC1: WC2: COM2: KEY: 58923

LEVEL	NEW STUDY GROUPS	NO. OF STUDENTS	NO. OF STUDENTS
2 E	2.80' FORT UNION	MANMOTH 3	COAL

E E	EISS FORT UNION	HARRISON 2	SCHE
	17-80' EI-	3760 0-3757.2	UC1:
			UC2:
			CON2: F RS 3757.2 =REHDER
			KEY: 58926

NO.	DATE	TIME	LOCATION	REMARKS
3	25 OCT 1964	11:00	2501 FORT UNION	WIND: 10-15 KTS, 10-15 KNOTS
3	25 OCT 1964	11:00	2501 FORT UNION	WIND: 10-15 KTS, 10-15 KNOTS

2	2.50	10K	UNION	NR	KEY:	58925
	20	301	FI: 3757 2-3756 7	WC1:	WC2:	COM2:

	WGT:	COML:	REL:	JUNE
6 E	20.50 LB.	3134.7		
	3 ONEFORT UNION	MAMMOTH 1+2	COAL	

DATA POINT ID: B5-36
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W DATE: 830113 CONFID: 20
 SOURCE: CONSOLIDATION COAL CO PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL
 ELEVATION: 3845.00' RANK: SUBBIT QUARTERS: NW
 ELVPREC: 2 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 21.0

TOTAL DEPTH LOGGED : 76.10' LATITUDE: 46 20 55 TOWNSHIP: 7.00N

DESCRIPTION LOG : 202 LONGITUDE: 108 21 11 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM-1548
 HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	58.00'		FORT UNION		RK							
			58.00' EL: 3845.0-3787.0		WC1:	WC2:	COM2:				KEY:	58930
2	0.80'		FORT UNION	MAMMOTH 2+3	COAL							
			58.80' EL: 3787.0-3786.2		WC1:	WC2:	COM2:				KEY:	58931
3	0.20'		FORT UNION	MAMMOTH 2+3	RK							
			59.00' EL: 3786.2-3786.0		WC1:	WC2:	COM2:				KEY:	58932
4 E	5.10'		FORT UNION	MAMMOTH 2+3	COAL							
			64.10' EL: 3786.0-3780.9		WC1:	WC2:	COM2: E BASE 3780.9				KEY:	58933
5	5.20'		FORT UNION		RK							
			69.30' EL: 3780.9-3775.7		WC1:	WC2:	COM2:				KEY:	58934
6 E	5.80'		FORT UNION	MAMMOTH 1	COAL							
			75.10' EL: 3775.7-3769.9		WC1:	WC2:	COM2: E BASE 3769.9				KEY:	58935
7 E	1.00'		FORT UNION		RK							
			76.10' EL: 3769.9-3768.9		WC1:	WC2:	COM2: E BASE 3768.9				KEY:	58936

C F
 O O
 N S

DATA POINT ID: B5-36A

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: CONSOLIDATION COAL CO

SURFACE

ELEVATION: 3825.00'

ELVPREC: 1

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW

SECTION: 21.0

TOWNSHIP: 7.00N

RANGE: 27.00E

LLPREC: 0

OWNERSHIP:

FILEPOINTER:

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM-2022

HYDRO CD: 0

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FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

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N S

UNIT

1

70.00' FORT UNION

70.00' EL: 3825.0-3755.0

WC1:

WC2:

COM2:

KEY:

58937

2 E

2.00' FORT UNION

MAMMOTH 3

72.00' EL: 3755.0-3753.0

WC1:

WC2:

COM2:

KEY:

58938

3

2.30' FORT UNION

74.30' EL: 3753.0-3750.7

WC1:

WC2:

COM2:

KEY:

58939

4

5.20' FORT UNION

MAMMOTH 1+2

79.50' EL: 3750.7-3745.5

WC1:

WC2:

COM2:

KEY:

58940

5

2.90' FORT UNION

MAMMOTH 1+2

82.40' EL: 3745.5-3742.6

WC1:

WC2:

COM2:

KEY:

58941

6 E

5.10' FORT UNION

MAMMOTH 1+2

87.50' EL: 3742.6-3737.5

WC1:

WC2:

COM2:

KEY:

58942

7 E

13.00' FORT UNION

100.50' EL: 3737.5-3724.5

WC1:

WC2:

COM2:

KEY:

58943

DATA POINT ID: B5-38
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO

DATE: 830113
 PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA
 COUNTY: MUSSELSHELL

SURFACE
 ELEVATION: 3862.00'
 ELVPREC: 1
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

RANK: SUBBIT
 QUARTERS: NE

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

LOGGED : 111.10'
 LATITUDE: 46 19 53
 LONGITUDE: 108 19 45
 LOG : 202
 WEATHERING: 0

TOWNSHIP: 7.00N
 RANGE: 27.00E

COMMENT1: CONSOL BM-2260
 HYDRO CD: 0

FILEPOINTER: *****

OWNERSHIP: *****

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	79.00'		FORT UNION		RK							
2	1.90'		FORT UNION	3862.0-3783.0	WC1:	WC2:	COM2:				KEY:	58951
3	0.70'		FORT UNION	3783.0-3781.1	WC1:	WC2:	COM2:				KEY:	58952
4	5.10'		FORT UNION	3781.1-3780.4	WC1:	WC2:	COM2:				KEY:	58953
5	6.00'		FORT UNION	3780.4-3775.3	WC1:	WC2:	COM2:	E BS 3775.3			KEY:	58954
6	4.90'		FORT UNION	3775.3-3769.3	WC1:	WC2:	COM2:				KEY:	58955
7	13.50'		FORT UNION	3769.3-3764.4	WC1:	WC2:	COM2:	E BS 3764.4			KEY:	58956
	111.10'			3764.4-3750.9	WC1:	WC2:	COM2:	E BS 3750.9			KEY:	58957

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DATA POINT ID: B5-39
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-1521
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3850.00'
ELVPREC: 1
TOTAL DEPTH
LOGGED : 80.50'
DESCRIPTION
LOG : 202
WEATHERING: 0
DATE: 830113
PRIN MERIDIAN: 20
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
SECTION: 27.0
TOWNSHIP: 7.00N
RANGE: 27.00E
LLPREC: 0
OWNERSHIP:

FILEPOINTER:

UQ	NU	T	IA	H	UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
					1	44.00'		FORT UNION		RK									
						44.00'		EL: 3850.0-3806.0		WC1:	WC2:	COM2:					KEY:		58958
					2	1.90'		FORT UNION	MAMMOTH 2+3	COAL									
						45.90'		EL: 3806.0-3804.1		WC1:	WC2:	COM2:					KEY:		58959
					3	1.50'		FORT UNION	MAMMOTH 2+3	RK									
						47.40'		EL: 3804.1-3802.6		WC1:	WC2:	COM2:					KEY:		58960
					4 E	4.30'		FORT UNION	MAMMOTH 2+3	COAL									
						51.70'		EL: 3802.6-3798.3		WC1:	WC2:	COM2: E BS	3798.3				KEY:		58961
					5	11.00'		FORT UNION		RK									
						62.70'		EL: 3798.3-3787.3		WC1:	WC2:	COM2:					KEY:		58962
					6 E	4.80'		FORT UNION	MAMMOTH 1	COAL									
						67.50'		EL: 3787.3-3782.5		WC1:	WC2:	COM2: E BS	3782.5				KEY:		58963
					7 E	13.00'		FORT UNION		RK									
						80.50'		EL: 3782.5-3769.5		WC1:	WC2:	COM2: E BS	3769.5				KEY:		58964

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DATA POINT ID: B5-40
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO

DATE: 830113
 PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 3816.00'
 ELVPREC: 1

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SE
 SECTION: 27.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 50.10' LATITUDE: 46 19 41 TOWNSHIP: 7.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM-991

DESCRIPTION
 LOG : 202 LONGITUDE: 108 19 23 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC	
1			27.00' FORT UNION		RK								
			27.00' EL: 3816.0-3789.0		WC1:	WC2:	COM2:					KEY:	58965
2			2.20' FORT UNION	MAMMOTH 2+3	COAL								
			29.20' EL: 3789.0-3786.8		WC1:	WC2:	COM2:					KEY:	58966
3			0.80' FORT UNION	MAMMOTH 2+3	RK								
			30.00' EL: 3786.8-3786.0		WC1:	WC2:	COM2:					KEY:	58967
4	E		4.90' FORT UNION	MAMMOTH 2+3	COAL								
			34.90' EL: 3786.0-3781.1		WC1:	WC2:	COM2: E BS 3781.1					KEY:	58968
5			5.30' FORT UNION		RK								
			40.20' EL: 3781.1-3775.8		WC1:	WC2:	COM2:					KEY:	58969
6	E		4.90' FORT UNION	MAMMOTH 1	COAL								
			45.10' EL: 3775.8-3770.9		WC1:	WC2:	COM2: E BS 3770.9					KEY:	58970
7	E		5.00' FORT UNION		RK								
			50.10' EL: 3770.9-3765.9		WC1:	WC2:	COM2: E BS 3765.9					KEY:	58971

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DATA POINT ID: B5-41

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

SOURCE: CONSOLIDATION COAL CO

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3824.00'

RANK: SUBBIT

SE

ELVPREC: 1

QUARTERS: 27.0

TOTAL DEPTH

SECTION: 7.00N

LOGGED : 80.50'

LATITUDE: 46 19 32

TOWNSHIP: 7.00N

PROVINCE: N GREAT PLAINS

DESCRIPTION

REGION: POWDER RIVER

LONGITUDE: 108 19 31

RANGE: 27.00E

FIELD: BULL MOUNTAIN

LLPREC: 0

COMMENT1: CONSOL BM-2257

WEATHERING: 0

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT

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FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1

48.00' FORT UNION

48.00' EL: 3824.0-3776.0

RK

WC1:

WC2:

COM2:

KEY: 58972

2

2.30' FORT UNION

50.30' EL: 3776.0-3773.7

COAL

WC1:

WC2:

COM2:

KEY: 58973

3

0.80' FORT UNION

51.10' EL: 3773.7-3772.9

RK

WC1:

WC2:

COM2:

KEY: 58974

4

4.80' FORT UNION

55.90' EL: 3772.9-3768.1

COAL

WC1:

WC2:

COM2:

KEY: 58975

5

5.60' FORT UNION

61.50' EL: 3768.1-3762.5

RK

WC1:

WC2:

COM2:

KEY: 58976

6 E

5.00' FORT UNION

66.50' EL: 3762.5-3757.5

COAL

WC1:

WC2:

COM2: E BS 3757.5

KEY: 58977

7 E

14.00' FORT UNION

80.50' EL: 3757.5-3743.5

RK

WC1:

WC2:

COM2: E BS 3743.5

KEY: 58978

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 DATA POINT ID: B5-41A
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 72727-1
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 3951.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 238.75'
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 DATE: 830113
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SW
 SECTION: 27.0
 TOMNSHIP: 7.00N
 RANGE: 27.00E
 LLPREC: 0
 OWNERSHIP:
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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 112.00' FORT UNION WC1: WC2: COM2: KEY: 59083
 2 E 2.00' FORT UNION ROCK MESA COAL WC1: WC2: COM2: E BS 3837 KEY: 59084
 3 L 23.00' FORT UNION 114.00' EL: 3839.0-3837.0 SLST WC1: WC2: COM2: L TOP GEOPHYS KEY: 59085
 4 2.50' FORT UNION 137.00' EL: 3837.0-3814.0 SH WC1: WC2: COM2: KEY: 59086
 5 28.50' FORT UNION 139.50' EL: 3814.0-3811.5 SLST WC1: WC2: COM2: FINER DOWNWARD KEY: 59087
 6 28.00' FORT UNION 168.00' EL: 3811.5-3783.0 SS WC1: WC2: COM2: KEY: 59088
 7 2.50' FORT UNION 196.00' EL: 3783.0-3755.0 SH WC1: WC2: COM2: KEY: 59089
 8 4.50' FORT UNION 198.50' EL: 3755.0-3752.5 SS WC1: WC2: COM2: KEY: 59090
 9 L 4.00' FORT UNION 203.00' EL: 3752.5-3748.0 SH WC1: WC2: COM2: KEY: 59091
 10 1.50' FORT UNION 207.00' EL: 3748.0-3744.0 COAL WC1: WC2: COM2: KEY: 59092
 11 0.75' FORT UNION 208.50' EL: 3744.0-3742.5 MAMMOTH 1+2+3 SH WC1: WC2: COM2: KEY: 59093
 12 4.50' FORT UNION 209.25' EL: 3742.5-3741.8 MAMMOTH 1+2+3 COAL WC1: WC2: COM2: KEY: 59094
 13 0.50' FORT UNION 213.75' EL: 3741.8-3737.3 SH WC1: WC2: COM2: KEY: 59095
 214.25' EL: 3737.3-3736.8 WC1: WC2: COM2: KEY: 59095

14	2.60' FORT UNION	MAMMOTH 1+2+3	COAL				
	216.85' EL: 3736.8-3734.2		WC1:	WC2:	COM2:	KEY:	59096
15	0.40' FORT UNION	MAMMOTH 1+2+3	SH				
	217.25' EL: 3734.2-3733.8		WC1:	WC2:	COM2:	KEY:	59097
16 LE	2.50' FORT UNION	MAMMOTH 1+2+3	COAL				
	219.75' EL: 3733.8-3731.3		WC1:	WC2:	COM2: L BS GEOPHYS, E BS 3731.2	KEY:	59098
17 E	19.00' FORT UNION		RK				
	238.75' EL: 3731.3-3712.3		WC1:	WC2:	COM2: E BS 3712.2	KEY:	59099

DATA POINT ID: B5-42
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM-4
 HYDRO CD: 0

FILE POINTER: OWNERSHIP:

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UNIT TL K FORMATION BED NAME LITH LITHMOO COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1	21.50'	FORT UNION	21.50' EL: 3866.0-3844.5	WC1:	RK	WC2:	COM2:					KEY:	58979
2	E	2.50'	FORT UNION	ROCK MESA	WC1:	COAL	WC2:	COM2: E BS 3842				KEY:	58980
3		87.00'	FORT UNION		WC1:	RK	WC2:	COM2:				KEY:	58981
4		2.10'	FORT UNION	MAMMOTH 1+2+3	WC1:	COAL	WC2:	COM2:				KEY:	58982
5		0.80'	FORT UNION	MAMMOTH 1+2+3	WC1:	RK	WC2:	COM2:				KEY:	58983
6		4.80'	FORT UNION	MAMMOTH 1+2+3	WC1:	COAL	WC2:	COM2:				KEY:	58984
7		3.40'	FORT UNION	MAMMOTH 1+2+3	WC1:	RK	WC2:	COM2:				KEY:	58985
8	E	5.50'	FORT UNION	MAMMOTH 1+2+3	WC1:	COAL	WC2:	COM2: E BS 3738.4				KEY:	58986
9	E	52.50'	FORT UNION		WC1:	RK	WC2:	COM2: E BS 3685.9				KEY:	58987

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DATA POINT ID: B5-43

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

PRIN MERIDIAN: 20

SOURCE: CONSOLIDATION COAL CO

SURFACE

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3838.00'

RANK: SUBBIT

QUARTERS: SE

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 27.0

TOTAL DEPTH

LOGGED : 110.00'

LATITUDE: 46 19 20

TOWNSHIP: 7.00N

DESCRIPTION

LOG : 202

LONGITUDE: 108 19 24

RANGE: 27.00E

WEATHERING: 0

LLPREC: 0

COMMENT1: CONSOL BM-2256

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1 58.00' FORT UNION

58.00' EL: 3838.0-3780.0

1.40' FORT UNION MAMMOTH 1+2+3

59.40' EL: 3780.0-3778.6

0.50' FORT UNION MAMMOTH 1+2+3

59.90' EL: 3778.6-3778.1

6.50' FORT UNION MAMMOTH 1+2+3

66.40' EL: 3778.1-3771.6

4.50' FORT UNION MAMMOTH 1+2+3

70.90' EL: 3771.6-3767.1

5.10' FORT UNION MAMMOTH 1+2+3

76.00' EL: 3767.1-3762.0

34.00' FORT UNION

110.00' EL: 3762.0-3728.0

RK

WC1: WC2:

COAL

WC1: WC2:

RK

WC1: WC2:

COAL

WC1: WC2:

RK

WC1: WC2:

COAL

WC1: WC2:

RK

KEY: 58988

KEY: 58989

KEY: 58990

KEY: 58991

KEY: 58992

KEY: 58993

KEY: 58994

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DATA POINT ID: B5-43A
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID:

PRIN MERIDIAN: 20

SOURCE: LOUISIANA LAND AND EXPL
 SURFACE

ELEVATION: 4072.00' RANK: SUBBIT

QUARTERS: SW

ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 33.0

TOTAL DEPTH

LOGGED : 400.50' LATITUDE: 46 18 32 TOWNSHIP: 7.00N

DESCRIPTION

LOG : 230 LONGITUDE: 108 21 38 RANGE: 27.00E

WEATHERING: 0

LLPREC: 0

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	79.00'		FORT UNION		RK									
				79.00' EL: 4072.0-3993.0	WC1:	WC2:	COM2:				KEY:			59100
2	UE		3.50'	FORT UNION	COAL									
				BULL MTN	WC1:	WC2:	COM2: E BS 3989.5				KEY:			59101
3			11.50'	FORT UNION	RK									
				94.00' EL: 3989.5-3978.0	WC1:	WC2:	COM2:				KEY:			59102
4	UE		2.00'	FORT UNION	MATT									
				96.00' EL: 3978.0-3976.0	WC1:	WC2:	COM2: E BS 3976				KEY:			59103
5			162.00'	FORT UNION	RK									
				258.00' EL: 3976.0-3814.0	WC1:	WC2:	COM2:				KEY:			59104
6	E		3.50'	FORT UNION	ROCK MESA									
				261.50' EL: 3814.0-3810.5	WC1:	WC2:	COM2: E BS 3810.5				KEY:			59105
7			74.00'	FORT UNION	RK									
				335.50' EL: 3810.5-3736.5	WC1:	WC2:	COM2:				KEY:			59106
8	L		8.00'	FORT UNION	SS									
				343.50' EL: 3736.5-3728.5	WC1:	WC2:	COM2: L TOP CORE, CGL BASE OF UNIT				KEY:			59107
9			12.50'	FORT UNION	SS									
				356.00' EL: 3728.5-3716.0	WC1:	WC2:	COM2:				KEY:			59108
10			1.50'	FORT UNION	SLST									
				357.50' EL: 3716.0-3714.5	WC1:	WC2:	COM2:				KEY:			59109
11			2.20'	FORT UNION	MAMMOTH 1+2+3									
				359.70' EL: 3714.5-3712.3	WC1:	WC2:	COM2:				KEY:			59110
12			0.80'	FORT UNION	MAMMOTH 1+2+3									
				360.50' EL: 3712.3-3711.5	WC1:	WC2:	COM2:				KEY:			59111
13			8.00'	FORT UNION	MAMMOTH 1+2+3									
				368.50' EL: 3711.5-3703.5	WC1:	WC2:	COM2:				KEY:			59112

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14	0.25' FORT UNION	MAMMOTH 1+2+3	BONE	WC1:	WC2:	COM2:	KEY:	59113
	368.75' EL:	3703.5-3703.3						
15 E	2.75' FORT UNION	MAMMOTH 1+2+3	COAL	WC1:	WC2:	COM2:	KEY:	59114
	371.50' EL:	3703.3-3700.5						
16	9.00' FORT UNION		SS	WC1:	WC2:	COM2:	KEY:	59115
	380.50' EL:	3700.5-3691.5						
17 L	1.50' FORT UNION		SLST	WC1:	WC2:	COM2:	KEY:	59116
	382.00' EL:	3691.5-3690.0						
18 E	18.50' FORT UNION		RK	WC1:	WC2:	COM2:	KEY:	59117
	400.50' EL:	3690.0-3671.5						

DATA POINT ID: B5-43B

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 72733-2

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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-----										O O			
-----										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	177.00'		FORT UNION		RK								
	177.00'		EL: 3995.0-3818.0		WC1:	WC2:	COM2:				KEY:	59118	
2 E	3.50'		FORT UNION	ROCK MESA	COAL								
	180.50'		EL: 3818.0-3814.5		WC1:	WC2:	COM2: E BS 3814.5				KEY:	59119	
3	90.50'		FORT UNION		RK								
	271.00'		EL: 3814.5-3724.0		WC1:	WC2:	COM2:				KEY:	59120	
4 E	2.00'		FORT UNION	MAMMOTH 3	COAL								
	273.00'		EL: 3724.0-3722.0		WC1:	WC2:	COM2: E BS 3722,=RENDER				KEY:	59121	
5	1.00'		FORT UNION		RK								
	274.00'		EL: 3722.0-3721.0		WC1:	WC2:	COM2:				KEY:	59122	
6 E	11.00'		FORT UNION	MAMMOTH 1+2	COAL								
	285.00'		EL: 3721.0-3710.0		WC1:	WC2:	COM2: E BS 3710				KEY:	59123	
7 E	15.00'		FORT UNION		RK								
	300.00'		EL: 3710.0-3695.0		WC1:	WC2:	COM2: E BS 3695				KEY:	59124	

DATA POINT ID: B5-43C
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 72733-1
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL
SURFACE
ELEVATION: 3925.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 221.00'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SE
SECTION: 33.0
TOWNSHIP: 7.00N
RANGE: 27.00E
LLPREC: 0
DATE: 850113
CONFID: 20
PRIN MERIDIAN: 20
OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC										C F	
NU T										O O	
IA H										N S	
1	88.00'	FORT UNION	88.00' EL: 3925.0-3837.0	RK	WC1:	WC2:	COM2:	KEY:	59125		
2 E	3.00'	FORT UNION	ROCK MESA	COAL	WC1:	WC2:	COM2: E BS 3834	KEY:	59126		
3	96.00'	FORT UNION	91.00' EL: 3837.0-3834.0	RK	WC1:	WC2:	COM2:	KEY:	59127		
4 E	2.00'	FORT UNION	187.00' EL: 3834.0-3738.0	COAL	WC1:	WC2:	COM2: E BS 3736,=REHDER	KEY:	59128		
5	1.00'	FORT UNION	189.00' EL: 3738.0-3736.0	RK	WC1:	WC2:	COM2:	KEY:	59129		
6 E	11.00'	FORT UNION	190.00' EL: 3736.0-3735.0	COAL	WC1:	WC2:	COM2: E BS 3724	KEY:	59130		
7 E	20.00'	FORT UNION	201.00' EL: 3735.0-3724.0	RK	WC1:	WC2:	COM2: E BS 3704	KEY:	59131		
	221.00'	FORT UNION	221.00' EL: 3724.0-3704.0	WC1:	WC2:						

DATA POINT ID: B5-45
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO

DATE: 830113
 PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 3892.00'
 ELVREC: 1

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW
 SECTION: 3.0

PROVINCE: N GREAT PLAINS

TOWNSHIP: 6.00N

RANGE: 27.00E

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

LOG : 202
 LONGITUDE: 108 20 17

WEATHERING: 0
 LLPREC: 0

COMMENT1: CONSOL BM-3
 HYDRO CD: 0

OWNERSHIP:

FILEPOINTER:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	65.00'		FORT UNION		RK							
			65.00' EL: 3892.0-3827.0		WC1:	WC2:	COM2:				KEY:	58995
2	E		3.20' FORT UNION	ROCK MESA	COAL							
			68.20' EL: 3827.0-3823.8		WC1:	WC2:	COM2: E BS 3823.8				KEY:	58996
3			93.00' FORT UNION		RK							
			161.20' EL: 3823.8-3730.8		WC1:	WC2:	COM2:				KEY:	58997
4	E		14.20' FORT UNION	MAMMOTH 1+2+3	COAL							
			175.40' EL: 3730.8-3716.6		WC1:	WC2:	COM2: E BS 3716.6				KEY:	58998
5	E		384.50' FORT UNION		RK							
			559.90' EL: 3716.6-3332.1		WC1:	WC2:	COM2: E BS 3332.1				KEY:	58999

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DATA POINT ID: B5-45A
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 6273-1
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
DATE: 830113
CONFID: 20
PRIN MERIDIAN: 20
SURFACE
ELEVATION: 3950.00'
ELVPREC: 0
LOGGED : 261.00'
TOTAL DEPTH
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: 3.0
TOWNSHIP: 6.00N
RANGE: 27.00E
OWNERSHIP:

UQ										C F	
UNIT ID										O O	
FORMATION										N S	
UNIT ID										T S FJC	
UNIT ID										BEDDING	
UNIT ID										MINERALOGY	
UNIT ID										GRNS/17	
UNIT ID										COLOR	
UNIT ID										THICK	
UNIT ID										R K	
1	122.00'	FORT UNION	122.00'	EL: 3950.0-3828.0	ROCK MESA	WC1:	WC2:	COM2:	KEY:	59132	
2 E	3.00'	FORT UNION	125.00'	EL: 3828.0-3825.0	MAMMOTH 3	WC1:	WC2:	COM2: E BS 3825	KEY:	59133	
3	96.00'	FORT UNION	221.00'	EL: 3825.0-3729.0	MAMMOTH 3	WC1:	WC2:	COM2:	KEY:	59134	
4	2.00'	FORT UNION	223.00'	EL: 3729.0-3727.0	MAMMOTH 3	WC1:	WC2:	COM2: E BS 3727,=RENDER	KEY:	59135	
5	1.00'	FORT UNION	224.00'	EL: 3727.0-3726.0	MAMMOTH 1+2	WC1:	WC2:	COM2:	KEY:	59136	
6 E	11.50'	FORT UNION	235.50'	EL: 3726.0-3714.5	MAMMOTH 1+2	WC1:	WC2:	COM2: E BS 3714.5	KEY:	59137	
7 E	25.50'	FORT UNION	261.00'	EL: 3714.5-3689.0	MAMMOTH 1+2	WC1:	WC2:	COM2: E BS 3689	KEY:	59138	

DATA POINT ID: B5-46

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

SOURCE: CONSOLIDATION COAL CO

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

SURFACE

ELEVATION: 3883.00'

RANK: SUBBIT

QUARTERS: NE

SECTION: 3.0

ELVPREC: 1

LOCAL STRIKE/DIP/ANGLE: 0 0 0

TOWNSHIP: 6.00N

RANGE: 27.00E

TOTAL DEPTH

LOGGED : 119.60'

LATITUDE: 46 18 12

LONGITUDE: 108 19 16

DESCRIPTION

LOG : 202

LLPREC: 0

WEATHERING: 0

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM-162D

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UQ

NU T

IA H

UNIT TL K

FORMATION

BED NAME

LITH

LITHMOO

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1	103.50' FORT UNION	103.50' EL: 3883.0-3779.5	WC1: RK	WC2: COM2:	KEY: 59000
2	2.20' FORT UNION	MAMMOTH 1+2+3	WC1: COAL	WC2: COM2:	KEY: 59001
3	0.50' FORT UNION	105.70' EL: 3779.5-3777.3	WC1: RK	WC2: COM2:	KEY: 59002
4	4.80' FORT UNION	106.20' EL: 3777.3-3776.8	WC1: COAL	WC2: COM2:	KEY: 59003
5	0.80' FORT UNION	111.00' EL: 3776.8-3772.0	WC1: RK	WC2: COM2:	KEY: 59004
6	2.50' FORT UNION	111.80' EL: 3772.0-3771.2	WC1: COAL	WC2: COM2:	KEY: 59005
7	0.30' FORT UNION	114.30' EL: 3771.2-3768.7	WC1: RK	WC2: COM2:	KEY: 59006
8 E	3.00' FORT UNION	114.60' EL: 3768.7-3768.4	WC1: COAL	WC2: COM2:	KEY: 59007
9 E	2.00' FORT UNION	117.60' EL: 3768.4-3765.4	WC1: RK	WC2: COM2: E BS 3765.4	KEY: 59008
		119.60' EL: 3765.4-3763.4	WC1: WC2:	WC2: COM2: E BS 3763.4	KEY: 59008

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DATA POINT ID: B5-46A
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W DATE: 830113

CONFID: PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 3990.00' RANK: SUBBIT
 ELVPREC: 1 LOCAL STRIKE/DIP/ANGLE: 0 0 0 QUARTERS: 3.0 SW

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 6273-3

TOTAL DEPTH
 LOGGED : 260.55' LATITUDE: 46 17 41 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 230 LONGITUDE: 108 20 23 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

HYDRO CD: 0 FILIPPOINTER: OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	137.50'		FORT UNION		RK							
			137.50' EL: 3990.0-3852.5		WC1:	WC2:	COM2:				KEY:	59139
2	E		3.00' FORT UNION	ROCK MESA	COAL							
			140.50' EL: 3852.5-3849.5		WC1:	WC2:	COM2: E BS 3849.5				KEY:	59140
3			86.00' FORT UNION		RK							
			226.50' EL: 3849.5-3763.5		WC1:	WC2:	COM2:				KEY:	59141
4	L		2.25' FORT UNION	MAMMOTH 1+2+3	COAL							
			228.75' EL: 3763.5-3761.3		WC1:	WC2:	COM2: L TOP CORE				KEY:	59142
5			0.05' FORT UNION	MAMMOTH 1+2+3	SH							
			228.80' EL: 3761.3-3761.2		WC1:	WC2:	COM2:				KEY:	59143
6			0.15' FORT UNION	MAMMOTH 1+2+3	COAL							
			228.95' EL: 3761.2-3761.1		WC1:	WC2:	COM2:				KEY:	59144
7			0.05' FORT UNION	MAMMOTH 1+2+3	SH							
			229.00' EL: 3761.1-3761.0		WC1:	WC2:	COM2:				KEY:	59145
8			0.50' FORT UNION	MAMMOTH 1+2+3	COAL							
			229.50' EL: 3761.0-3760.5		WC1:	WC2:	COM2:				KEY:	59146
9			0.30' FORT UNION	MAMMOTH 1+2+3	BONE							
			229.80' EL: 3760.5-3760.2		WC1:	WC2:	COM2:				KEY:	59147
10			4.40' FORT UNION	MAMMOTH 1+2+3	COAL							
			234.20' EL: 3760.2-3755.8		WC1:	WC2:	COM2:				KEY:	59148
11			0.10' FORT UNION	MAMMOTH 1+2+3	CLST							
			234.30' EL: 3755.8-3755.7		WC1:	WC2:	COM2:				KEY:	59149
12			3.20' FORT UNION	MAMMOTH 1+2+3	COAL							
			237.50' EL: 3755.7-3752.5		WC1:	WC2:	COM2:				KEY:	59150
13			0.05' FORT UNION	MAMMOTH 1+2+3	SH							
			237.55' EL: 3752.5-3752.5		WC1:	WC2:	COM2:				KEY:	59151

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14	1.05' FORT UNION	MAMMOTH 1+2+3	COAL						
	238.60' EL:	3752.5-3751.4	WC1:	WC2:	COM2:	KEY:	59152		
15	0.05' FORT UNION	MAMMOTH 1+2+3	SH						
	238.65' EL:	3751.4-3751.4	WC1:	WC2:	COM2:	KEY:	59153		
16 EL	1.90' FORT UNION	MAMMOTH 1+2+3	COAL						
	240.55' EL:	3751.4-3749.5	WC1:	WC2:	COM2: E BS 3749.2, L BS CORE	KEY:	59154		
17 E	20.00' FORT UNION		RK						
	260.55' EL:	3749.5-3729.5	WC1:	WC2:	COM2: E BS 3729.2	KEY:	59155		

DATA POINT ID: B5-468

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

SOURCE: LOUISIANA LAND AND EXPL

SURFACE

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3934.00'

RANK: SUBBIT

SE

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: 3.0

TOTAL DEPTH

LOGGED : 190.50'

LATITUDE: 46 17 48

TOWNSHIP: 6.00N

PROVINCE: N GREAT PLAINS

DESCRIPTION

LOG : 230

RANGE: 27.00E

REGION: POWDER RIVER

WEATHERING: 0

LLPREC: 0

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 6273-2

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UQ

NU T

IA H

UNIT

TL

K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

C F

O O

N S

1

64.50' FORT UNION

64.50' EL: 3934.0-3869.5

RK

WC1:

WC2:

COM2:

KEY:

59156

2

E 2.50' FORT UNION

ROCK MESA

COAL

WC1:

WC2:

COM2: E BS 3867

KEY:

59157

3

94.00' FORT UNION

67.00' EL: 3869.5-3867.0

RK

WC1:

WC2:

COM2:

KEY:

59158

4

L 1.50' FORT UNION

MAMMOTH 1+2+3

COAL

WC1:

WC2:

COM2: L TOP GEOPHYS

KEY:

59159

5

1.00' FORT UNION

MAMMOTH 1+2+3

SH

WC1:

WC2:

COM2:

KEY:

59160

6

3.20' FORT UNION

MAMMOTH 1+2+3

COAL

WC1:

WC2:

COM2:

KEY:

59161

7

D 2.00' FORT UNION

MAMMOTH 1+2+3

SH

WC1:

WC2:

COM2: D SH COAL

KEY:

59162

8

2.50' FORT UNION

MAMMOTH 1+2+3

COAL

WC1:

WC2:

COM2:

KEY:

59163

9

0.30' FORT UNION

MAMMOTH 1+2+3

SH

WC1:

WC2:

COM2:

KEY:

59164

10

LE 2.00' FORT UNION

MAMMOTH 1+2+3

COAL

WC1:

WC2:

COM2: L BS GEOPHYS, E BS 3760.5

KEY:

59165

11

E 17.00' FORT UNION

190.50' EL: 3760.5-3743.5

RK

WC1:

WC2:

COM2: E BS 3743.5

KEY:

59166

 DATA POINT ID: B5-47
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM-2206
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO
 SURFACE
 ELEVATION: 3891.00'
 ELVPREC: 1
 TOTAL DEPTH
 LOGGED : 119.50'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SW
 SECTION: 2.0
 DATE: 830113
 PRIN MERIDIAN: 20
 CONFID: *****
 FILEPOINTER: 0
 OWNERSHIP: *****

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	98.00'		FORT UNION		RK							
			98.00' EL: 3891.0-3793.0		WC1:	WC2:	COM2:				KEY:	59009
2	E		13.50' FORT UNION	MAMMOTH 1+2+3	COAL							
			111.50' EL: 3793.0-3779.5		WC1:	WC2:	COM2: E BS 3779.5				KEY:	59010
3	E		8.00' FORT UNION		RK							
			119.50' EL: 3779.5-3771.5		WC1:	WC2:	COM2: E BS 3771.5				KEY:	59011

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DATA POINT ID: B5-51
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-1113
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3912.00'
ELVPREC: 2
TOTAL DEPTH
LOGGED : 61.00'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
TOWNSHIP: 6.00N
RANGE: 27.00E
DATE: 830113
CONFID: 20
PRIN MERIDIAN: 20
OWNERSHIP:

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NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 32.00' FORT UNION 32.00' EL: 3912.0-3880.0 WC1: WC2: COM2: KEY: 59022
2 7.70' FORT UNION MAMMOTH 1+2+3 39.70' EL: 3880.0-3872.3 WC1: WC2: COM2: KEY: 59023
3 1.80' FORT UNION MAMMOTH 1+2+3 41.50' EL: 3872.3-3870.5 WC1: WC2: COM2: KEY: 59024
4 E 7.50' FORT UNION MAMMOTH 1+2+3 49.00' EL: 3870.5-3863.0 WC1: WC2: COM2: E BS 3863 KEY: 59025
5 E 12.00' FORT UNION 61.00' EL: 3863.0-3851.0 WC1: WC2: COM2: E BS 3851 KEY: 59026
C F
O O
N S

DATA POINT ID: 85-54
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
DATE: 830113
CONFID: 20
PRIN MERIDIAN: 20
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-2226
HYDRO CD: 0
ELEVATION: 3942.00'
ELVPREC: 1
LOGGED : 53.10'
TOTAL DEPTH
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SE
SECTION: 1.0
TOWNSHIP: 6.00N
RANGE: 27.00E
LLPREC: 0
OWNERSHIP:

UQ										C F		
NU T										O O		
IA H										N S		
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	37.00'		FORT UNION		RK							
				37.00' EL: 3942.0-3905.0	WC1:	WC2:	COM2:				KEY:	59027
2	8.00'		FORT UNION	MAMMOTH 1+2+3	COAL							
				45.00' EL: 3905.0-3897.0	WC1:	WC2:	COM2:				KEY:	59028
3	2.40'		FORT UNION	MAMMOTH 1+2+3	RK							
				47.40' EL: 3897.0-3894.6	WC1:	WC2:	COM2:				KEY:	59029
4 E	4.70'		FORT UNION	MAMMOTH 1+2+3	COAL							
				52.10' EL: 3894.6-3889.9	WC1:	WC2:	COM2: E BS 3889.9				KEY:	59030
5 E	1.00'		FORT UNION		RK							
				53.10' EL: 3889.9-3888.9	WC1:	WC2:	COM2: E BS 3888.9				KEY:	59031

DATA POINT ID: 05-56
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-6
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3973.00'
ELVPREC: 1
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SE
SECTION: 1.0
TOTAL DEPTH
LOGGED : 135.00'
LATITUDE: 46 17 42
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 16 59
WEATHERING: 0
LLPREC: 0
RANGE: 27.00E
DATE: 030113
CONFID:
PRIN MERIDIAN: 20
OWNERSHIP:

-----										C F	
NU T										O O	
IA H										N S	
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING T S FJC

1	81.00'		FORT UNION		RK						
	81.00'		EL: 3973.0-3892.0		WC1:	WC2:	COM2:			KEY:	59032
2	7.00'		FORT UNION	MAMMOTH 1+2+3	COAL						
	88.00'		EL: 3892.0-3885.0		WC1:	WC2:	COM2:			KEY:	59033
3	1.00'		FORT UNION	MAMMOTH 1+2+3	RK						
	89.00'		EL: 3885.0-3884.0		WC1:	WC2:	COM2:			KEY:	59034
4 E	6.00'		FORT UNION	MAMMOTH 1+2+3	COAL						
	95.00'		EL: 3884.0-3878.0		WC1:	WC2:	COM2: E BS 3878			KEY:	59035
5 E	40.00'		FORT UNION		RK						
	135.00'		EL: 3878.0-3838.0		WC1:	WC2:	COM2: E BS 3838			KEY:	59036

DATA POINT ID: B5-57
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM-2227
 HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UQ

NU T

IA H

UNIT TL K FORMATION BED NAME

LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 61.00' FORT UNION RK

WC1: 61.00' EL: 3963.0-3902.0 WC2: COM2: KEY: 59037

2 8.10' FORT UNION MAMMOTH 1+2+3 COAL

WC1: 69.10' EL: 3902.0-3893.9 WC2: COM2: KEY: 59038

3 1.90' FORT UNION MAMMOTH 1+2+3 RK

WC1: 71.00' EL: 3893.9-3892.0 WC2: COM2: KEY: 59039

4 E 5.10' FORT UNION MAMMOTH 1+2+3 COAL

WC1: 76.10' EL: 3892.0-3886.9 WC2: COM2: E BS 3886.9 KEY: 59040

5 E 4.00' FORT UNION RK

WC1: 80.10' EL: 3886.9-3882.9 WC2: COM2: E BS 3882.9 KEY: 59041

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DATA POINT ID: B5-59
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 6279-1 (=BN 11, ENTER LATER ?)
 HYDRO CD: 0 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W DATE: 830113 CONFID: PRIN MERIDIAN: 20
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4194.00' RANK: SUBBIT
 ELVPREC: 1 LOCAL STRIKE/DIP/ANGLE: 0 0 0 QUARTERS: NW
 TOTAL DEPTH
 LOGGED : 675.20' LATITUDE: 46 17 20 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 202 LONGITUDE: 108 21 19 RANGE: 27.00E
 WEATHERING: 0
 OWNERSHIP:

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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 194.00' FORT UNION RK WC1: 194.00' EL: 4194.0-4000.0 WC2: COM2: KEY: 59167
 2 E 3.50' FORT UNION BULL MTN COAL WC1: 197.50' EL: 4000.0-3996.5 WC2: COM2: E BS 3996.5 KEY: 59168
 3 164.00' FORT UNION 361.50' EL: 3996.5-3832.5 WC1: 164.00' FORT UNION RK WC2: COM2: KEY: 59169
 4 E 2.00' FORT UNION ROCK MESA COAL WC1: 363.50' EL: 3832.5-3830.5 WC2: COM2: E BS 3830.5 KEY: 59170
 5 80.00' FORT UNION 443.50' EL: 3830.5-3750.5 WC1: 80.00' FORT UNION RK WC2: COM2: KEY: 59171
 6 E 13.70' FORT UNION MAMMOTH 1+2+3 COAL WC1: 457.20' EL: 3750.5-3736.8 WC2: COM2: E BS 3736.8 KEY: 59172
 7 E 218.00' FORT UNION 675.20' EL: 3736.8-3518.8 WC1: 218.00' FORT UNION RK WC2: COM2: E BS 3518.8 KEY: 59173

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DATA POINT ID: B5-60
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM-1
 HYDRO CD: 0

FILEPOINTER: OWNERSHIP:

UQ NU T IA H K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1	59.00'	FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	59042
2	UE	3.10'	FORT UNION	BULL MTN	COAL			
3	14.00'	FORT UNION	RK	WC1:	WC2:	COM2: E BS 4022.9	KEY:	59043
4	UE	3.10'	FORT UNION	MATT	COAL			
5	245.00'	FORT UNION	RK	WC1:	WC2:	COM2: E BS 4005.8	KEY:	59045
6	E	11.30'	FORT UNION	MAMMOTH 1+2+3	COAL			
7	E	125.00'	FORT UNION	460.50'	RK	COM2: E BS 3749.5	KEY:	59047
						COM2: E BS 3624.5	KEY:	59048

UQ NU T IA H K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

DATA POINT ID: B5-60A
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL
SURFACE
ELEVATION: 4179.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 460.00'
DESCRIPTION
LOG : 202
WEATHERING: 0
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 6279-2
HYDRO CD: 0
FILEPOINTER:
DATE: 830113
CONFID: 20
PRIN MERIDIAN: 20
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: 9.0
TOWNSHIP: 6.00N
RANGE: 27.00E
OWNERSHIP:

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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	348.00'		FORT UNION		RK							
				348.00' EL: 4179.0-3831.0	WC1:	WC2:	COM2:				KEY:	59174
2	E		2.50' FORT UNION	ROCK MESA	COAL							
				350.50' EL: 3831.0-3828.5	WC1:	WC2:	COM2: E BS 3828.5				KEY:	59175
3			76.50' FORT UNION		RK							
				427.00' EL: 3828.5-3752.0	WC1:	WC2:	COM2:				KEY:	59176
4	E		2.00' FORT UNION	MAMMOTH 3	COAL							
				429.00' EL: 3752.0-3750.0	WC1:	WC2:	COM2: E BS 3750=REHDER				KEY:	59177
5			3.50' FORT UNION		SH							
				432.50' EL: 3750.0-3746.5	WC1:	WC2:	COM2:				KEY:	59178
6	E		9.50' FORT UNION	MAMMOTH 1+2	COAL							
				442.00' EL: 3746.5-3737.0	WC1:	WC2:	COM2: E BS 3737				KEY:	59179
7	E		18.00' FORT UNION		RK							
				460.00' EL: 3737.0-3719.0	WC1:	WC2:	COM2: E BS 3719				KEY:	59180

 DATA POINT ID: B5-60B
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 6279-3
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4129.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 399.50'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 DATE: 830113
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 SECTION: 9.0
 LATITUDE: 46 17 9
 LONGITUDE: 108 20 41
 LLPREC: 0
 TOWNSHIP: 6.00N
 RANGE: 27.00E
 OWNERSHIP:
 FILEPOINTER:
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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 85.00' FORT UNION RK WC1: 4129.0-4044.0 WC2: COM2: KEY: 59181
 2 UE 3.00' FORT UNION BULL MTN WC1: 4044.0-4041.0 WC2: COM2: E BS 4041 KEY: 59182
 3 10.50' FORT UNION RK WC1: 4041.0-4030.5 WC2: COM2: KEY: 59183
 4 UE 4.00' FORT UNION MATT WC1: 4030.5-4026.5 WC2: COM2: E BS 4026.5 KEY: 59184
 5 174.00' FORT UNION RK WC1: 4026.5-3852.5 WC2: COM2: KEY: 59185
 6 E 4.00' FORT UNION ROCK MESA WC1: 3852.5-3848.5 WC2: COM2: E BS 3848.5 KEY: 59186
 7 76.50' FORT UNION RK WC1: 3848.5-3772.0 WC2: COM2: KEY: 59187
 8 2.00' FORT UNION MAMMOTH 1+2+3 WC1: 3772.0-3770.0 WC2: COM2: KEY: 59188
 9 1.50' FORT UNION MAMMOTH 1+2+3 WC1: 3770.0-3768.5 WC2: COM2: KEY: 59189
 10 4.20' FORT UNION MAMMOTH 1+2+3 WC1: 3768.5-3764.3 WC2: COM2: KEY: 59190
 11 1.00' FORT UNION MAMMOTH 1+2+3 WC1: 3764.3-3763.3 WC2: COM2: KEY: 59191
 12 E 4.80' FORT UNION MAMMOTH 1+2+3 WC1: 3763.3-3758.5 WC2: COM2: E BS 3758.5 KEY: 59192
 13 E 29.00' FORT UNION 399.50' EL: 3758.5-3729.5 WC1: WC2: COM2: E BS 3729.5 KEY: 59193
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DATA POINT ID: B5-61
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-164
HYDRO CD: 0
FILEPOINTER:

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3873.00'
ELVPREC: 1
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: NW
SECTION: 11.0
TOTAL DEPTH
LOGGED : 100.50'
LATITUDE: 46 17 28
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 18 38
RANGE: 27.00E
WEATHERING: 0
LLPREC: 0

OWNERSHIP:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 50.00' FORT UNION 50.00' EL: 3873.0-3823.0 RK WC1: WC2: COM2: KEY: 59049
2 10.50' FORT UNION MAMMOTH 1+2+3 60.50' EL: 3823.0-3812.5 WC1: WC2: COM2: KEY: 59050
3 0.30' FORT UNION MAMMOTH 1+2+3 60.80' EL: 3812.5-3812.2 WC1: WC2: COM2: KEY: 59051
4 E 3.70' FORT UNION MAMMOTH 1+2+3 64.50' EL: 3812.2-3808.5 WC1: WC2: COM2: E BS 3808.5 KEY: 59052
5 E 36.00' FORT UNION 100.50' EL: 3808.5-3772.5 WC1: WC2: COM2: E BS 3772.5 KEY: 59053

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DATA POINT ID: B5-62
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-153
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE ELEVATION: 3906.00'
ELVPREC: 1
TOTAL DEPTH
LOGGED : 120.10'
DESCRIPTION
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
SECTION: 11.0
TOWNSHIP: 6.00N
RANGE: 27.00E
DATE: 830113
PRIN MERIDIAN: 20
CONFID: 20
OWNERSHIP:
FILE POINTER:

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IA H										N S									
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	F	J	C			
1	55.00'		FORT UNION		RK														
2	E		14.10'	FORT UNION	55.00' EL: 3906.0-3851.0	WC1:	WC2:	COM2:			KEY:								
				MAMMOTH 1+2+3	COAL														
3	E		69.10'	FORT UNION	69.10' EL: 3851.0-3836.9	WC1:	WC2:	COM2:	E BS 3836.9		KEY:								
					120.10' EL: 3836.9-3785.9	RK													
						WC1:	WC2:	COM2:	E BS 3785.9		KEY:								

DATA POINT ID: B5-63
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-2209
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3884.00'
ELVPREC: 1
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: NW
SECTION: 11.0
TOTAL DEPTH
LOGGED : 80.00'
LATITUDE: 46 17 19
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 18 37
WEATHERING: 0
LLPREC: 0
RANGE: 27.00E
DATE: 830113
CONFID: PRIN MERIDIAN: 20
OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 58.00' FORT UNION 58.00' EL: 3884.0-3826.0 WC1: WC2: COM2: KEY: 59057
2 E 14.00' FORT UNION 72.00' EL: 3826.0-3812.0 WC1: WC2: COM2: E BS 3812 COAL MAMMOTH 1+2+3
3 E 8.00' FORT UNION 80.00' EL: 3812.0-3804.0 WC1: WC2: COM2: E BS 3804 RK
C F
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DATA POINT ID: B5-64
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-2231
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
ELEVATION: 3919.00'
ELVPREC: 1
TOTAL DEPTH
LOGGED : 79.80'
DESCRIPTION
LOG : 202
WEATHERING: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: NE
SECTION: 11.0
TOWNSHIP: 6.00N
RANGE: 27.00E
DATE: 830113
PRIN MERIDIAN: 20
CONFID:
OWNERSHIP:
FILEPOINTER:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 62.00' FORT UNION RK
62.00' EL: 3919.0-3857.0 WC1: WC2: COM2: KEY: 59060
2 E 13.80' FORT UNION MAMMOTH 1+2+3 COAL
75.80' EL: 3857.0-3843.2 WC1: WC2: COM2: E BS 3843.2 KEY: 59061
3 E 4.00' FORT UNION
79.80' EL: 3843.2-3839.2 WC1: WC2: COM2: E BS 3839.2 KEY: 59062

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DATA POINT ID: B5-65
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-154
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3935.00'
ELVPREC: 2
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: NE
SECTION: 11.0
TOTAL DEPTH
LOGGED : 100.10'
LATITUDE: 46 17 12
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 17 57
WEATHERING: 0
LLPREC: 0
RANGE: 27.00E
DATE: 830113
CONFID: PRIN MERIDIAN: 20
OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 76.00' FORT UNION 76.00' EL: 3935.0-3859.0 MAMMOTH 1+2+3 WC1: WC2: COM2: KEY: 59063
2 E 13.60' FORT UNION 89.60' EL: 3859.0-3845.4 WC1: WC2: COM2: E BS 3845.4 KEY: 59064
3 E 10.50' FORT UNION 100.10' EL: 3845.4-3834.9 WC1: WC2: COM2: E BS 3834.9 KEY: 59065

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DATA POINT ID: R5-65A
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL
SURFACE
ELEVATION: 3925.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 160.00'
DESCRIPTION
LOG : 202
WEATHERING: 0
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62711-2
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
DATE: 830113
PRIN MERIDIAN: 20
CONFID:
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NW
SECTION: 11.0
TOWNSHIP: 6.00N
LONGITUDE: 108 19 5
RANGE: 27.00E
LLPREC: 0
OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 36.50' FORT UNION 36.50' EL: 3925.0-3888.5 WC1: WC2: COM2: KEY: 59194
ROCK MESA
2 E 3.00' FORT UNION 39.50' EL: 3888.5-3885.5 WC1: WC2: COM2: E BS 3886 KEY: 59195
83.00' FORT UNION 122.50' EL: 3885.5-3802.5 WC1: WC2: COM2: KEY: 59196
MAMMOTH 1+2+3
4 E 13.50' FORT UNION 136.00' EL: 3802.5-3789.0 WC1: WC2: COM2: E BS 3789 KEY: 59197
24.00' FORT UNION 160.00' EL: 3789.0-3765.0 WC1: WC2: COM2: E BS 3765 KEY: 59198

DATA POINT ID: B5-66
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
GEOLOGIST: USGD-CONNOR C W DATE: 830113 CONFID: PRIN MERIDIAN: 20
SOURCE: LOUISIANA LAND AND EXPL
SURFACE
STATE: MONTANA
COUNTY: MUSSELSHELL
ELEVATION: 3916.00' RANK: SUBBIT QUARTERS: SW
ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 11.0
TOTAL DEPTH LOGGED : 97.00' LATITUDE: 46 16 58 TOWNSHIP: 6.00N
DESCRIPTION LOG : 202 LONGITUDE: 108 18 33 RANGE: 27.00E
WEATHERING: 0 LLPREC: 0
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62711-1
HYDRO CD: 0 FILEPOINTER: OWNERSHIP:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 77.50'FORT UNION RK WC1: 3916.0-3838.5 WC2: COM2: KEY: 59199
2 E 14.00'FORT UNION MAMMOTH 1+2+3 COAL WC1: 3838.5-3824.5 WC2: COM2: E BS 3824.5 KEY: 59200
3 E 5.50'FORT UNION RK WC1: 3824.5-3819.0 WC2: COM2: E BS 3819 KEY: 59201

DATA POINT ID: B5-66A

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: PRIN MERIDIAN: 20

SOURCE: LOUISIANA LAND AND EXPL

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3971.00'

RANK: SUBBIT

QUARTERS:

SW

ELVPREC: 0

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 11.0

TOTAL DEPTH

LOGGED : 161.00'

LATITUDE: 46 16 55

TOWNSHIP: 6.00N

DESCRIPTION

LOG : 202

LONGITUDE: 108 18 51

RANGE: 27.00E

WEATHERING: 0

LLPREC: 0

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

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FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1

53.50' FORT UNION

53.50' EL: 3971.0-3917.5

RK

WC1:

COM2:

KEY:

59202

2

E 3.00' FORT UNION

56.50' EL: 3917.5-3914.5

COAL

WC1:

COM2: E BS 3914.5

KEY:

59203

3

73.50' FORT UNION

130.00' EL: 3914.5-3841.0

RK

WC1:

COM2:

KEY:

59204

4

E 15.00' FORT UNION

145.00' EL: 3841.0-3826.0

COAL

WC1:

COM2: E BS 3826

KEY:

59205

5

E 16.00' FORT UNION

161.00' EL: 3826.0-3810.0

RK

WC1:

COM2: E BS 3810

KEY:

59206

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DATA POINT ID: B5-66C
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 GEOLOGIST: USGS-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 DATE: 830113
 PRIN MERIDIAN: 20
 CONFID:

STATE: MONTANA	ELEVATION: 3984.00'	RANK: SUBBIT	QUARTERS:	SE
COUNTY: MUSSELSHELL	ELVPREC: 0	LOCAL STRIKE/DIP/ANGLE: 0 0 0	SECTION: 11.0	

PROVINCE: N GREAT PLAINS	LOGGED : 169.50'	LATITUDE: 46 16 43	TOWNSHIP: 6.00N
			DESCRIPTION

FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62711-4
HYDRO CD: 59207
WEATHERING: 0
LLPREC: 0
FILEPOINTER:
OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJ
UQ												C	F	
NU												O	O	
IA												N	S	

1	59.00' FORT UNION	59.00' EL: 3984.0-3925.0	WC1:	RK	WC2:	COM2:	KEY:	1743240
2 E	3.50' FORT UNION	ROCK MESA	WC1:	COAL	WC2:	COM2:	KEY:	1743241
3	73.00' FORT UNION	62.50' EL: 3925.0-3921.5	WC1:	RK	WC2:	COM2: E BS 3920	KEY:	1743241
4 L	1.50' FORT UNION	135.50' EL: 3921.5-3848.5	WC1:	COAL	WC2:	COM2:	KEY:	1743242
5	0.05' FORT UNION	137.00' EL: 3848.5-3847.0	WC1:	CLST	WC2:	COM2: L TOP CORE	KEY:	1743243
6	5.05' FORT UNION	137.05' EL: 3847.0-3846.1	WC1:	COAL	WC2:	COM2:	KEY:	1743244
7	0.10' FORT UNION	142.10' EL: 3846.1-3841.9	WC1:	CLST	WC2:	COM2:	KEY:	1743245
8	4.30' FORT UNION	142.20' EL: 3841.9-3841.8	WC1:	COAL	WC2:	COM2:	KEY:	1743246
9	0.07' FORT UNION	146.50' EL: 3841.8-3837.5	WC1:	RK	WC2:	COM2: CORE ANALYSED IN (CONT. UNIT 9)	KEY:	1743247
10	0.63' FORT UNION	146.57' EL: 3837.5-3837.4	WC1:	COAL	WC2:	COM2: USGS MAP C-126-B (CONNOR, IN PRESS, 1988)	KEY:	1743248
11	0.02' FORT UNION	147.20' EL: 3837.4-3836.8	WC1:	RK	WC2:	COM2:	KEY:	1743249
12 EL	1.28' FORT UNION	147.22' EL: 3836.8-3836.8	WC1:	COAL	WC2:	COM2:	KEY:	1743250
13 E	21.00' FORT UNION	148.50' EL: 3836.8-3835.5	WC1:	RK	WC2:	COM2: L BS CORE, E BS 3836	KEY:	1743251
		169.50' EL: 3835.5-3814.5	WC1:		WC2:	COM2: E BS 3814	KEY:	1743252

DATA POINT ID: B5-68

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: CONSOL BM-175

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UQ

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IA H

UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1	97.00' FORT UNION	97.00' EL: 4260.0-4163.0	WC1: WC2:	COM2:	KEY:	59071
2	3.50' FORT UNION	BULL MTN	WC1: WC2:	COM2:	KEY:	59072
3	10.00' FORT UNION	100.50' EL: 4163.0-4159.5	WC1: WC2:	COM2:	KEY:	59073
4	3.50' FORT UNION	110.50' EL: 4159.5-4149.5	WC1: WC2:	COM2:	KEY:	59074
5	140.00' FORT UNION	114.00' EL: 4149.5-4146.0	WC1: WC2:	COM2:	KEY:	59075
6	2.80' FORT UNION	254.00' EL: 4146.0-4006.0	WC1: WC2:	COM2:	KEY:	59076
7	70.00' FORT UNION	256.80' EL: 4006.0-4003.2	WC1: WC2:	COM2:	KEY:	59077
8	7.10' FORT UNION	326.80' EL: 4003.2-3933.2	WC1: WC2:	COM2:	KEY:	59078
9	0.40' FORT UNION	333.90' EL: 3933.2-3926.1	WC1: WC2:	COM2:	KEY:	59079
10	2.50' FORT UNION	334.30' EL: 3926.1-3925.7	WC1: WC2:	COM2:	KEY:	59080
11	0.20' FORT UNION	336.80' EL: 3925.7-3923.2	WC1: WC2:	COM2:	KEY:	59081
12	3.80' FORT UNION	337.00' EL: 3923.2-3923.0	WC1: WC2:	COM2:	KEY:	59082
		340.80' EL: 3923.0-3919.2	WC1: WC2:	COM2: E BS 3919.2? DO NOT USE FOR STRUCTURE	KEY:	59082

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DATA POINT ID: B5-79
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE

DATE: 830113
 CONFID: PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4199.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SE
 SECTION: 17.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 440.30'
 LATITUDE: 46 16 1
 TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

LOG : 230
 LONGITUDE: 108 21 50
 RANGE: 27.00E

COMMENT1: LL&E 62717-1 (=BN 16)

WEATHERING: 0
 LLPREC: 0

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	120.00'		FORT UNION		RK									
			120.00' EL: 4199.0-4079.0		WC1:	WC2:	COM2:				KEY:			59212
2	UE		3.50' FORT UNION	BULL MTN	COAL									
			123.50' EL: 4079.0-4075.5		WC1:	WC2:	COM2: E BS 4075.5				KEY:			59213
3			33.50' FORT UNION		RK						KEY:			59214
			157.00' EL: 4075.5-4042.0		WC1:	WC2:	COM2:							
4	UE		2.00' FORT UNION	MATT	COAL									
			159.00' EL: 4042.0-4040.0		WC1:	WC2:	COM2: E BS 4040				KEY:			59215
5			148.00' FORT UNION		RK									
			307.00' EL: 4040.0-3892.0		WC1:	WC2:	COM2:				KEY:			59216
6	E		4.00' FORT UNION	ROCK MESA	COAL									
			311.00' EL: 3892.0-3888.0		WC1:	WC2:	COM2: E BS 3888				KEY:			59217
7			44.00' FORT UNION		RK									
			355.00' EL: 3888.0-3844.0		WC1:	WC2:	COM2:				KEY:			59218
8	EL		3.00' FORT UNION	MAMMOTH 3	COAL									
			358.00' EL: 3844.0-3841.0		WC1:	WC2:	COM2: E BS 3841,=REHDER,L TOP CORE				KEY:			59219
9			29.00' FORT UNION		RK									
			387.00' EL: 3841.0-3812.0		WC1:	WC2:	COM2:				KEY:			59220
10			6.30' FORT UNION	MAMMOTH 1+2	COAL									
			393.30' EL: 3812.0-3805.7		WC1:	WC2:	COM2:				KEY:			59221
11			0.10' FORT UNION	MAMMOTH 1+2	RK									
			393.40' EL: 3805.7-3805.6		WC1:	WC2:	COM2:				KEY:			59222
12	EL		2.90' FORT UNION	MAMMOTH 1+2	COAL									
			396.30' EL: 3805.6-3802.7		WC1:	WC2:	COM2: E BS 3802.7,L BS CORE				KEY:			59223
13	E		44.00' FORT UNION		RK									
			440.30' EL: 3802.7-3758.7		WC1:	WC2:	COM2: E BS 3758.7				KEY:			59224

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 DATA POINT ID: B5-79A
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62717-6
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4058.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 361.10'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 DATE: 830113
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NW
 SECTION: 17.0
 TOWNSHIP: 6.00N
 RANGE: 27.00E
 LLPREC: 0
 OWNERSHIP:
 FILEPOINTER:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOO	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	190.00'		FORT UNION		RK							
			190.00' EL: 4058.0-3868.0		WC1:	WC2:	COM2:				KEY:	59225
2	E		3.00' FORT UNION	ROCK MESA	COAL							
			193.00' EL: 3868.0-3865.0		WC1:	WC2:	COM2: E BS 3865				KEY:	59226
3			64.00' FORT UNION		RK							
			257.00' EL: 3865.0-3801.0		WC1:	WC2:	COM2:				KEY:	59227
4	E		3.00' FORT UNION	MAMMOTH 3	COAL							
			260.00' EL: 3801.0-3798.0		WC1:	WC2:	COM2: E BS 3798, =REHDER				KEY:	59228
5			11.50' FORT UNION		RK							
			271.50' EL: 3798.0-3786.5		WC1:	WC2:	COM2:				KEY:	59229
6	E		9.60' FORT UNION	MAMMOTH 1+2	COAL							
			281.10' EL: 3786.5-3776.9		WC1:	WC2:	COM2: E BS 3776.9				KEY:	59230
7	E		80.00' FORT UNION		RK							
			361.10' EL: 3776.9-3696.9		WC1:	WC2:	COM2: E BS 3696.9				KEY:	59231

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 DATA POINT ID: B5-79B
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62717-8
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4131.00'
 ELVPREC: 1
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: 17.0
 TOTAL DEPTH
 LOGGED : 380.00'
 LATITUDE: 46 16 40
 DESCRIPTION
 LOG : 230
 LONGITUDE: 108 21 43
 WEATHERING: 0
 LLPREC: 0
 RANGE: 27.00E
 OWNERSHIP:
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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S F J
 1 80.50'FORT UNION WC1: WC2: COM2: KEY: 59233
 2 L 4.00'FORT UNION SS WC1: WC2: COM2: L TOP CORE KEY: 59233
 3 0.50'FORT UNION SH WC1: WC2: COM2: KEY: 59233
 4 UE 4.00'FORT UNION BULL MTN COAL WC1: WC2: COM2: E BS 4042 KEY: 59233
 5 L 1.50'FORT UNION SLST WC1: WC2: COM2: L BS CORE KEY: 59233
 6 172.00'FORT UNION RK WC1: WC2: COM2: KEY: 59233
 7 L 4.00'FORT UNION SLST WC1: WC2: COM2: L TOP CORE KEY: 59233
 8 0.50'FORT UNION SH WC1: WC2: COM2: KEY: 59233
 9 E 3.50'FORT UNION ROCK MESA COAL WC1: WC2: COM2: E BS 3860.5 KEY: 59244
 10 L 2.00'FORT UNION SLST WC1: WC2: COM2: L BS CORE KEY: 59244
 11 52.50'FORT UNION RK WC1: WC2: COM2: GEOPHYS AVAIL KEY: 59244
 12 LE 2.50'FORT UNION MAMMOTH 3 COAL WC1: WC2: COM2: L TOP CORE,=REHDER,E BS 3803.5 KEY: 59244
 13 2.00'FORT UNION SH WC1: WC2: COM2: KEY: 59244

14	6.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59245
	336.00' EL: 3801.5-3795.0						
15	3.00' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	59246
	339.00' EL: 3795.0-3792.0						
16	1.50' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	59247
	340.50' EL: 3792.0-3790.5						
17	2.50' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	59248
	343.00' EL: 3790.5-3788.0						
18 D	2.00' FORT UNION	SLST	WC1:	WC2:	COM2: D SLST SH	KEY:	59249
	345.00' EL: 3788.0-3786.0						
19	3.40' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59250
	348.40' EL: 3786.0-3782.6						
20	0.10' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	59251
	348.50' EL: 3782.6-3782.5						
21	4.40' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59252
	352.90' EL: 3782.5-3778.1						
22	0.20' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	59253
	353.10' EL: 3778.1-3777.9						
23 E	1.40' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3776.5	KEY:	59254
	354.50' EL: 3777.9-3776.5						
24 D	2.90' FORT UNION	SH	WC1:	WC2: CARB	COM2: D CARB SH&SS	KEY:	59255
	357.40' EL: 3776.5-3773.6						
25	1.00' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	59256
	358.40' EL: 3773.6-3772.6						
26	1.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	59257
	359.40' EL: 3772.6-3771.6						
27	3.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59258
	362.40' EL: 3771.6-3768.6						
28 L	2.00' FORT UNION	SLST	WC1:	WC2:	COM2: L BS CORE	KEY:	59259
	364.40' EL: 3768.6-3766.6						
29 E	15.60' FORT UNION	RK	WC1:	WC2:	COM2: E BS 3751	KEY:	59260
	380.00' EL: 3766.6-3751.0						

DATA POINT ID: B5-79C
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
DATE: 830113
SOURCE: LOUISIANA LAND AND EXPL
PRIN MERIDIAN: 20
CONFID:

STATE: MONTANA
COUNTY: MUSSELSHELL

ELEVATION:	4113.00'	RANK:	SUBBIT	QUARTERS:	NE
ELVPREC:	0	LOCAL STRIKE/DIP/ANGLE:	0 0 0	SECTION:	17.0

TOTAL DEPTH

LOGGED : 359.60' LATITUDE: 46 16 20 TOWNSHIP: 6.00N

DESCRIPTION

LOG : 230
LONGITUDE: 108 22 8
RANGE: 27.00E

WEATHERING: 0
LLPREC: 0

HYDRO CD: 0 FILE POINTER:

OWNERSHIP:

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1	48.00' FORT UNION	48.00' EL: 4113.0-4065.0	BULL MTN	COAL	WC1:	WC2:	COM2:	KEY:	59261
2	UE	3.00' FORT UNION	51.00' EL: 4065.0-4062.0	COAL	WC1:	WC2:	COM2: E BS 4062	KEY:	59262
3	185.00' FORT UNION	236.00' EL: 4062.0-3877.0	ROCK MESA	RK	WC1:	WC2:	COM2:	KEY:	59263
4	E	3.00' FORT UNION	239.00' EL: 3877.0-3874.0	COAL	WC1:	WC2:	COM2: E BS 3874	KEY:	59264
5	59.00' FORT UNION	298.00' EL: 3874.0-3815.0	MAMMOTH 3	RK	WC1:	WC2:	COM2:	KEY:	59265
6	LE	3.00' FORT UNION	301.00' EL: 3815.0-3812.0	COAL	WC1:	WC2:	COM2: L TOP GEOPHYS, =REHDER, E BS 3812	KEY:	59266
7	3.50' FORT UNION	304.50' EL: 3812.0-3808.5		SH	WC1:	WC2:	COM2:	KEY:	59267
8	5.00' FORT UNION	309.50' EL: 3808.5-3803.5		SLST	WC1:	WC2:	COM2:	KEY:	59268
9	3.00' FORT UNION	312.50' EL: 3803.5-3800.5		SH	WC1:	WC2:	COM2:	KEY:	59269
10	3.20' FORT UNION	315.70' EL: 3800.5-3797.3	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY:	59270
11	0.20' FORT UNION	315.90' EL: 3797.3-3797.1	MAMMOTH 1+2	RK	WC1:	WC2:	COM2:	KEY:	59271
12	3.00' FORT UNION	318.90' EL: 3797.1-3794.1	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:	KEY:	59272
13	0.30' FORT UNION	319.20' EL: 3794.1-3793.8	MAMMOTH 1+2	RK	WC1:	WC2:	COM2:	KEY:	59273

14	LE	2.40'	FORT UNION	MAMMOTH 1+2	COAL	WC2:	COM2: L BS GEOPHYS,E BS 3791.4	KEY:	59274
		321.60'	EL:	3793.8-3791.4	WC1:				
15	E	38.00'	FORT UNION		RK				
		359.60'	EL:	3791.4-3753.4	WC1:	WC2:	COM2: E BS 3753.4	KEY:	59275

 DATA POINT ID: B5-790
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62717-2
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4124.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 329.60'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 DATE: 830113
 PRIN MERIDIAN: 20
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SW
 SECTION: 17.0
 TOWNSHIP: 6.00N
 RANGE: 27.00E
 LLPREC: 0
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	25.00'		FORT UNION		RK							
			25.00' EL: 4124.0-4099.0		WC1:	WC2:	COM2:				KEY:	59276
2	UE		3.00' FORT UNION	BULL MTN	COAL							
			28.00' EL: 4099.0-4096.0		WC1:	WC2:	COM2: E BS 4096				KEY:	59277
3			194.00' FORT UNION		RK							
			222.00' EL: 4096.0-3902.0		WC1:	WC2:	COM2:				KEY:	59278
4	E		3.00' FORT UNION	ROCK MESA	COAL							
			225.00' EL: 3902.0-3899.0		WC1:	WC2:	COM2: E BS 3899				KEY:	59279
5			48.00' FORT UNION		RK							
			273.00' EL: 3899.0-3851.0		WC1:	WC2:	COM2:				KEY:	59280
6	E		2.50' FORT UNION	MAMMOTH 3	COAL							
			275.50' EL: 3851.0-3848.5		WC1:	WC2:	COM2: E BS 3848.5,=REHDER				KEY:	59281
7			27.50' FORT UNION		RK							
			303.00' EL: 3848.5-3821.0		WC1:	WC2:	COM2:				KEY:	59282
8	E		9.60' FORT UNION	MAMMOTH 1+2	COAL							
			312.60' EL: 3821.0-3811.4		WC1:	WC2:	COM2: E BS 3811.4				KEY:	59283
9	E		17.00' FORT UNION		RK							
			329.60' EL: 3811.4-3794.4		WC1:	WC2:	COM2: E BS 3794.4				KEY:	59284

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DATA POINT ID: B5-79E
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL
SURFACE
ELEVATION: 4223.00'
ELVPREC: 1
LOGGED : 461.00'
TOTAL DEPTH
DESCRIPTION
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62716-3
HYDRO CD: 0
DATE: 830113
PRIN MERIDIAN: 20
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NW
LATITUDE: 46 16 30
TOWNSHIP: 6.00N
LONGITUDE: 108 21 6
RANGE: 27.00E
LLPREC: 0
WEATHERING: 0
OWNERSHIP:
FILEPOINTER:

Uq										C F		
NU T										O O		
IA H										N S		
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	161.00'		FORT UNION		RK							
			161.00' EL: 4223.0-4062.0		WC1:	WC2:	COM2:				KEY:	59285
2	UE		4.00' FORT UNION	BULL MTN	COAL							
			165.00' EL: 4062.0-4058.0		WC1:	WC2:	COM2: E BS 4058				KEY:	59286
3			190.50' FORT UNION		RK							
			355.50' EL: 4058.0-3867.5		WC1:	WC2:	COM2:				KEY:	59287
4	E		3.50' FORT UNION	ROCK MESA	COAL							
			359.00' EL: 3867.5-3864.0		WC1:	WC2:	COM2: E BS 3864				KEY:	59288
5			69.00' FORT UNION		RK							
			428.00' EL: 3864.0-3795.0		WC1:	WC2:	COM2:				KEY:	59289
6			2.00' FORT UNION	MAMMOTH 1+2+3	COAL							
			430.00' EL: 3795.0-3793.0		WC1:	WC2:	COM2:				KEY:	59290
7			2.00' FORT UNION	MAMMOTH 1+2+3	RK							
			432.00' EL: 3793.0-3791.0		WC1:	WC2:	COM2:				KEY:	59291
8	E		10.00' FORT UNION	MAMMOTH 1+2+3	COAL							
			442.00' EL: 3791.0-3781.0		WC1:	WC2:	COM2: E BS 3781				KEY:	59292
9	E		19.00' FORT UNION		RK							
			461.00' EL: 3781.0-3762.0		WC1:	WC2:	COM2: E BS 3762				KEY:	59293

DATA POINT ID: B5-79F
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL

DATE: 830113
 PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4280.00'
 ELVPREC: 1
 TOTAL DEPTH

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NW
 SECTION: 16.0

PROVINCE: N GREAT PLAINS

TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62716-4

LOGGED : 499.50'
 LOG : 202
 WEATHERING: 0
 LONGITUDE: 108 21 36
 LLPREC: 0
 RANGE: 27.00E

HYDRO CD: 0
 FILEPOINTER:

OWNERSHIP:

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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	215.00'		FORT UNION		RK									
			215.00' EL: 4280.0-4065.0		WC1:	WC2:	COM2:				KEY:			59294
2	UE		4.00' FORT UNION	BULL MTN	COAL									
			219.00' EL: 4065.0-4061.0		WC1:	WC2:	COM2: E BS 4061				KEY:			59295
3			184.00' FORT UNION		RK									
			403.00' EL: 4061.0-3877.0		WC1:	WC2:	COM2:				KEY:			59296
4	E		3.50' FORT UNION	ROCK MESA	COAL									
			406.50' EL: 3877.0-3873.5		WC1:	WC2:	COM2: E BS 3873.5				KEY:			59297
5			53.00' FORT UNION		RK									
			459.50' EL: 3873.5-3820.5		WC1:	WC2:	COM2:				KEY:			59298
6	E		3.50' FORT UNION	MAMMOTH 3	COAL									
			463.00' EL: 3820.5-3817.0		WC1:	WC2:	COM2: E BS 3817, =REHDER				KEY:			59299
7			12.00' FORT UNION		RK									
			475.00' EL: 3817.0-3805.0		WC1:	WC2:	COM2:				KEY:			59300
8	E		9.50' FORT UNION	MAMMOTH 1+2	COAL									
			484.50' EL: 3805.0-3795.5		WC1:	WC2:	COM2: E BS 3795.5				KEY:			59301
9	E		15.00' FORT UNION		RK									
			499.50' EL: 3795.5-3780.5		WC1:	WC2:	COM2: E BS 3780.5				KEY:			59302

DATA POINT ID: B5-79G

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

SOURCE: LOUISIANA LAND AND EXPL

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4347.00'

RANK: SUBBIT

SE

ELVPREC: 2

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: 16.0

TOTAL DEPTH

LOGGED : 610.00'

LATITUDE: 46 16 14

TOWNSHIP: 6.00N

DESCRIPTION

LOG : 202

RANGE: 27.00E

REGION: POWDER RIVER

WEATHERING: 0

LONGITUDE: 108 20 43

LLPREC: 0

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 62716-1

HYDRO CD: 0

FILE POINTER:

OWNERSHIP:

UQ	NU	T	IA	H	UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	C	F
1					275.50'			FORT UNION	275.50' EL: 4347.0-4071.5	RK	WC1:	WC2:	COM2:			KEY:	59303	
2					3.50'			FORT UNION	279.00' EL: 4071.5-4068.0	COAL	WC1:	WC2:	COM2:			KEY:	59304	
3					174.50'			FORT UNION	453.50' EL: 4068.0-3893.5	RK	WC1:	WC2:	COM2:			KEY:	59305	
4	UE				2.50'			FORT UNION	456.00' EL: 3893.5-3891.0	COAL	WC1:	WC2:	COM2:	U SEEMS TOO FAR ABOVE MAMMOTH	E BS	3891	KEY:	59306
5					118.50'			FORT UNION	574.50' EL: 3891.0-3772.5	RK	WC1:	WC2:	COM2:			KEY:	59307	
6					2.00'			FORT UNION	MAMMOTH 1+2+3	COAL	WC1:	WC2:	COM2:			KEY:	59308	
7					1.00'			FORT UNION	MAMMOTH 1+2+3	RK	WC1:	WC2:	COM2:			KEY:	59309	
8	E				10.50'			FORT UNION	MAMMOTH 1+2+3	COAL	WC1:	WC2:	COM2:			KEY:	59310	
9	E				22.00'			FORT UNION	588.00' EL: 3769.5-3759.0	RK	WC1:	WC2:	COM2:	E BS	3759	KEY:	59311	
									610.00' EL: 3759.0-3737.0	RK	WC1:	WC2:	COM2:	E BS	3737	KEY:	59311	

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 DATA POINT ID: B5-79H
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62716-2
 HYDRO CD: 0
 GEOLOGIST: USGO-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4625.00'
 ELVPREC: 3
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SW
 SECTION: 16.0
 TOTAL DEPTH
 LOGGED : 825.00'
 LATITUDE: 46 16 3
 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 202
 LONGITUDE: 108 21 12
 RANGE: 27.00E
 WEATHERING: 0
 LLPREC: 0
 FILEPOINTER:
 OWNERSHIP:
 UQ
 NU T
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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 128.00' FORT UNION RK WC1: 4625.0-4497.0 CLINKER COAL WC2: COM2: KEY: 59312
 2 UE 3.00' FORT UNION 131.00' EL: 4497.0-4494.0 CLINKER COAL WC1: COM2: =BUTTE-CAPPING CLINKER OF BULL 647? KEY: 59313
 3 96.50' FORT UNION 227.50' EL: 4494.0-4397.5 FATTIG COAL WC1: COM2: KEY: 59314
 4 UE 3.00' FORT UNION 230.50' EL: 4397.5-4394.5 FATTIG COAL WC1: COM2: E BS 4394.5 KEY: 59315
 5 313.50' FORT UNION 544.00' EL: 4394.5-4081.0 BULL MTN COAL WC1: COM2: KEY: 59316
 6 UE 4.00' FORT UNION 548.00' EL: 4081.0-4077.0 BULL MTN COAL WC1: COM2: E BS 4077 KEY: 59317
 7 184.00' FORT UNION 732.00' EL: 4077.0-3893.0 ROCK MESA COAL WC1: COM2: KEY: 59318
 8 E 3.50' FORT UNION 735.50' EL: 3893.0-3889.5 ROCK MESA COAL WC1: COM2: E BS 3889.5 KEY: 59319
 9 57.50' FORT UNION 793.00' EL: 3889.5-3832.0 MAMMOTH 3 COAL WC1: COM2: KEY: 59320
 10 E 2.50' FORT UNION 795.50' EL: 3832.0-3829.5 MAMMOTH 3 COAL WC1: COM2: E BS 3829.5, =REHDER KEY: 59321
 11 5.50' FORT UNION 801.00' EL: 3829.5-3824.0 MAMMOTH 1+2 COAL WC1: COM2: KEY: 59322
 12 E 10.00' FORT UNION 811.00' EL: 3824.0-3814.0 MAMMOTH 1+2 COAL WC1: COM2: E BS 3814 KEY: 59323
 13 E 14.00' FORT UNION 825.00' EL: 3814.0-3800.0 MAMMOTH 1+2 COAL WC1: COM2: E BS 3800 KEY: 59324

DATA POINT ID: B5-79J
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL

DATE: 830113
 PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4057.00'
 ELVPREC: 0

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NE
 SECTION: 15.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 259.50' LATITUDE: 46 16 39

TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

LOG : 230 LONGITUDE: 108 19 16

RANGE: 27.00E

COMMENT1: LL&E 62715-5

WEATHERING: 0

LLPREC: 0

OWNERSHIP:

FILEPOINTER:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	145.50'		FORT UNION		RK									
				145.50' EL: 4057.0-3911.5	WC1:	WC2:	COM2:				KEY:			59325
2	E			3.50' FORT UNION	COAL									
				149.00' EL: 3911.5-3908.0	WC1:	WC2:	COM2: E BS 3908				KEY:			59326
3				78.00' FORT UNION	RK									
				227.00' EL: 3908.0-3830.0	WC1:	WC2:	COM2:				KEY:			59327
4	L			1.80' FORT UNION	COAL									
				228.80' EL: 3830.0-3828.2	WC1:	WC2:	COM2: L TOP GEOPHYS				KEY:			59328
5				0.20' FORT UNION	RK									
				229.00' EL: 3828.2-3828.0	WC1:	WC2:	COM2:				KEY:			59329
6				5.00' FORT UNION	COAL									
				234.00' EL: 3828.0-3823.0	WC1:	WC2:	COM2:				KEY:			59330
7				0.30' FORT UNION	RK									
				234.30' EL: 3823.0-3822.7	WC1:	WC2:	COM2:				KEY:			59331
8				3.00' FORT UNION	COAL									
				237.30' EL: 3822.7-3819.7	WC1:	WC2:	COM2:				KEY:			59332
9				0.20' FORT UNION	RK									
				237.50' EL: 3819.7-3819.5	WC1:	WC2:	COM2:				KEY:			59333
10	LE			3.00' FORT UNION	COAL									
				240.50' EL: 3819.5-3816.5	WC1:	WC2:	COM2: L BS GEOPHYS, E BS 3816				KEY:			59334
11	E			19.00' FORT UNION	RK									
				259.50' EL: 3816.5-3797.5	WC1:	WC2:	COM2: E BS 3797.5				KEY:			59335

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 DATA POINT ID: B5-79K
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62715-4
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4177.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 380.80'
 LOG : 230
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 SECTION: 15.0
 TOWNSHIP: 6.00N
 LONGITUDE: 108 19 46
 LLPREC: 0
 RANGE: 27.00E
 DATE: 830113
 PRIN MERIDIAN: 20
 CONFID: *****
 OWNERSHIP: *****
 UQ
 NU T
 IA H
 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 96.00' FORT UNION RK WC1: WC2: COM2: KEY: 59336
 2 UE 96.00' EL: 4177.0-4081.0 BULL MTN COAL WC1: WC2: COM2: E BS 4077.5 KEY: 59337
 3 165.50' FORT UNION RK WC1: WC2: COM2: KEY: 59338
 4 E 265.00' EL: 4077.5-3912.0 ROCK MESA COAL WC1: WC2: COM2: E BS 3909 KEY: 59339
 5 51.00' FORT UNION RK WC1: WC2: COM2: F KEY: 59340
 6 L 12.90' FORT UNION SS WC1: WC2: COM2: L TOP CORE KEY: 59341
 7 4.60' FORT UNION SLST WC1: WC2: COM2: KEY: 59342
 8 2.00' FORT UNION SH WC1: WC2: COM2: KEY: 59343
 9 1.90' FORT UNION MAMMOTH 1+2+3 COAL WC1: WC2: COM2: KEY: 59344
 10 0.10' FORT UNION MAMMOTH 1+2+3 SH WC1: WC2: COM2: KEY: 59345
 11 7.80' FORT UNION MAMMOTH 1+2+3 COAL WC1: WC2: COM2: KEY: 59346
 12 0.20' FORT UNION MAMMOTH 1+2+3 SH WC1: WC2: COM2: KEY: 59347
 13 E 3.30' FORT UNION MAMMOTH 1+2+3 COAL WC1: WC2: COM2: E BS 3825.2 KEY: 59348
 351.80' EL: 3828.5-3825.2

 DATA POINT ID: B5-79L
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62715-2, GEOPHYS AND DRILLER
 HYDRO CD: 0
 FILE POINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4551.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 750.00'
 DESCRIPTION
 LOG : 230
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SW
 SECTION: 15.0
 TOWNSHIP: 6.00N
 RANGE: 27.00E
 DATE: 830113
 CONFID: 20
 PRIN MERIDIAN:
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	44.00'		FORT UNION		RK							
2	5.00'		FORT UNION	44.00' EL: 4551.0-4507.0	WC1:	WC2:	COM2:				KEY:	59354
3	E			49.00' EL: 4507.0-4502.0	WC1:	WC2:	COM2:				KEY:	59355
4	4.00'		FORT UNION	CLINKER 55.00' EL: 4502.0-4496.0	WC1:	WC2:	COM2:	E BS 4496, BUTTE-CAPPING CL OF BULL.647			KEY:	59356
5	1.50'		FORT UNION	59.00' EL: 4496.0-4492.0	WC1:	WC2:	COM2:				KEY:	59357
6	5.50'		FORT UNION	60.50' EL: 4492.0-4490.5	WC1:	WC2:	COM2:				KEY:	59358
7	2.00'		FORT UNION	66.00' EL: 4490.5-4485.0	WC1:	WC2:	COM2:				KEY:	59359
8	26.00'		FORT UNION	68.00' EL: 4485.0-4483.0	WC1:	WC2:	COM2:				KEY:	59360
9	1.00'		FORT UNION	94.00' EL: 4483.0-4457.0	WC1:	WC2:	COM2:				KEY:	59361
10	16.00'		FORT UNION	95.00' EL: 4457.0-4456.0	WC1:	WC2:	COM2:				KEY:	59362
11	2.50'		FORT UNION	111.00' EL: 4456.0-4440.0	WC1:	WC2:	COM2:				KEY:	59363
12	5.00'		FORT UNION	113.50' EL: 4440.0-4437.5	WC1:	WC2:	COM2:				KEY:	59364
13	1.50'		FORT UNION	118.50' EL: 4437.5-4432.5	WC1:	WC2:	COM2:				KEY:	59365
				120.00' EL: 4432.5-4431.0	WC1:	WC2:	COM2:				KEY:	59366

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37	4.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59390
	237.00' EL: 4318.0-4314.0						
38	4.00' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	59391
	241.00' EL: 4314.0-4310.0						
39	5.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59392
	246.50' EL: 4310.0-4304.5						
40 E	1.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 4303	KEY:	59393
	248.00' EL: 4304.5-4303.0						
41	3.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59394
	251.00' EL: 4303.0-4300.0						
42	18.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59395
	269.00' EL: 4300.0-4282.0						
43	4.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59396
	273.00' EL: 4282.0-4278.0						
44	13.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59397
	286.00' EL: 4278.0-4265.0						
45	3.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59398
	289.00' EL: 4265.0-4262.0						
46	1.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59399
	290.00' EL: 4262.0-4261.0						
47	7.50' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	59400
	297.50' EL: 4261.0-4253.5						
48	14.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59401
	312.00' EL: 4253.5-4239.0						
49	3.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59402
	315.00' EL: 4239.0-4236.0						
50	5.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59403
	320.50' EL: 4236.0-4230.5						
51 E	1.50' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 4229	KEY:	59404
	322.00' EL: 4230.5-4229.0						
52	29.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59405
	351.00' EL: 4229.0-4200.0						
53	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59406
	351.50' EL: 4200.0-4199.5						
54	46.00' FORT UNION	SS	WC1:	WC2:	COM2: MAY BE 2 FT COAL 12 FT ABOVE BASE	KEY:	59407
	397.50' EL: 4199.5-4153.5						
55	4.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59408
	402.00' EL: 4153.5-4149.0						
56	11.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59409
	413.00' EL: 4149.0-4138.0						
57	8.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59410
	421.00' EL: 4138.0-4130.0						
58	17.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59411
	438.50' EL: 4130.0-4112.5						
59 UE	2.00' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 4110.5	KEY:	59412
	440.50' EL: 4112.5-4110.5						

60	12.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59413
	453.00' EL: 4110.5-4098.0						
61	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59414
	453.50' EL: 4098.0-4097.5						
62	5.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59415
	459.00' EL: 4097.5-4092.0						
63 UE	4.00' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59416
	463.00' EL: 4092.0-4088.0				COM2: E BS 4088		
64	6.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59417
	469.50' EL: 4088.0-4081.5						
65	8.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59418
	478.00' EL: 4081.5-4073.0						
66	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59419
	478.50' EL: 4073.0-4072.5						
67	11.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59420
	489.50' EL: 4072.5-4061.5						
68	2.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59421
	491.50' EL: 4061.5-4059.5						
69	4.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59422
	495.50' EL: 4059.5-4055.5						
70	7.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59423
	502.50' EL: 4055.5-4048.5						
71	10.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59424
	512.50' EL: 4048.5-4038.5						
72	3.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59425
	515.50' EL: 4038.5-4035.5						
73	3.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59426
	519.00' EL: 4035.5-4032.0						
74	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59427
	519.50' EL: 4032.0-4031.5						
75	98.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59428
	617.50' EL: 4031.5-3933.5						
76	1.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59429
	618.50' EL: 3933.5-3932.5						
77	4.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59430
	623.00' EL: 3932.5-3928.0						
78	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59431
	623.50' EL: 3928.0-3927.5						
79	4.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59432
	628.00' EL: 3927.5-3923.0						
80	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59433
	628.50' EL: 3923.0-3922.5						
81	4.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59434
	632.50' EL: 3922.5-3918.5						
82 E	3.00' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59435
	635.50' EL: 3918.5-3915.5				COM2: E BS 3915.5		

83	1.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59436
	636.50' EL: 3915.5-3914.5						
84	5.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59437
	641.50' EL: 3914.5-3909.5						
85	1.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59438
	642.50' EL: 3909.5-3908.5						
86	3.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59439
	646.00' EL: 3908.5-3905.0						
87	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59440
	646.50' EL: 3905.0-3904.5						
88	16.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59441
	662.50' EL: 3904.5-3888.5						
89	1.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59442
	663.50' EL: 3888.5-3887.5						
90	5.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59443
	668.50' EL: 3887.5-3882.5						
91	2.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59444
	670.50' EL: 3882.5-3880.5						
92	30.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59445
	700.50' EL: 3880.5-3850.5						
93	2.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59446
	702.50' EL: 3850.5-3848.5						
94	2.20' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59447
	MAMMOTH 1+2+3						
95	0.20' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	59448
	704.70' EL: 3848.5-3846.3						
96	3.80' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59449
	MAMMOTH 1+2+3						
97	0.10' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	59450
	708.70' EL: 3846.1-3842.3						
98	3.40' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59451
	MAMMOTH 1+2+3						
99	0.30' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	59452
	712.20' EL: 3842.2-3838.8						
100 E	2.50' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59453
	MAMMOTH 1+2+3						
101	26.00' FORT UNION	SS	WC1:	WC2:	COM2: E BS 3836	KEY:	59454
	715.00' EL: 3838.5-3836.0						
102	5.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	59455
	741.00' EL: 3836.0-3810.0						
103 E	4.00' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	59456
	746.00' EL: 3810.0-3805.0						
	750.00' EL: 3805.0-3801.0				COM2: E BS 3801		

DATA POINT ID: 85-79N
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL

DATE: 830113
 PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4154.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SW
 SECTION: 13.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 310.33'
 LATITUDE: 46 16 11
 TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

DESCRIPTION
 LOG : 225
 LONGITUDE: 108 17 52
 RANGE: 27.00E

COMMENT1: LL&E 62713-3

WEATHERING: 0
 LLPREC: 0

HYDRO CD: 59464

OWNERSHIP:

-----										C F			
-----										O O			
-----										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S	FJC

1	28.50'		FORT UNION		RK								
			28.50' EL: 4154.0-4125.5		WC1:	WC2:	COM2:					KEY:	1743253
2	UE		3.50' FORT UNION	BULL MTN	COAL								
			32.00' EL: 4125.5-4122.0		WC1:	WC2:	COM2: E BS 4122					KEY:	1743254
3			14.00' FORT UNION		RK								
			46.00' EL: 4122.0-4108.0		WC1:	WC2:	COM2:					KEY:	1743255
4	UE		3.00' FORT UNION	MATT	COAL								
			49.00' EL: 4108.0-4105.0		WC1:	WC2:	COM2: E BS 4105					KEY:	1743256
5			156.50' FORT UNION		RK								
			205.50' EL: 4105.0-3948.5		WC1:	WC2:	COM2:					KEY:	1743257
6	E		2.50' FORT UNION	ROCK MESA	COAL								
			208.00' EL: 3948.5-3946.0		WC1:	WC2:	COM2: E BS 3946					KEY:	1743258
7			73.00' FORT UNION		RK								
			281.00' EL: 3946.0-3873.0		WC1:	WC2:	COM2:					KEY:	1743259
8	L		1.90' FORT UNION	MAMMOTH 1+2+3	COAL								
			282.90' EL: 3873.0-3871.1		WC1:	WC2:	COM2: L TOP CORE					KEY:	1743260
9			0.03' FORT UNION	MAMMOTH 1+2+3	CLST								
			282.93' EL: 3871.1-3871.1		WC1:	WC2:	COM2:					KEY:	1743261
10			6.00' FORT UNION	MAMMOTH 1+2+3	COAL								
			288.93' EL: 3871.1-3865.1		WC1:	WC2:	COM2: CORE ANALYSED IN (CONT. UNIT 11)					KEY:	1743262
11			0.03' FORT UNION	MAMMOTH 1+2+3	RK								
			288.96' EL: 3865.1-3865.0		WC1:	WC2:	COM2: USGS MAP C-126-B(CONNOR, IN PRESS, 1988)KEY:					1743263	
12			3.90' FORT UNION	MAMMOTH 1+2+3	COAL								
			292.86' EL: 3865.0-3861.1		WC1:	WC2:	COM2:					KEY:	1743264
13			0.10' FORT UNION	MAMMOTH 1+2+3	SLST								
			292.96' EL: 3861.1-3861.0		WC1:	WC2:	COM2:					KEY:	1743265

14	1.80' FORT UNION	MAMMOTH 1+2+3	COAL						
	294.76' EL: 3861.0-3859.2		WC1:	WC2:	COM2:		KEY: 1743266		
15	0.07' FORT UNION	MAMMOTH 1+2+3	RK						
	294.83' EL: 3859.2-3859.2		WC1:	WC2:	COM2:		KEY: 1743267		
16 EL	0.50' FORT UNION	MAMMOTH 1+2+3	COAL						
	295.33' EL: 3859.2-3858.7		WC1:	WC2:	COM2: L BS CORE, E BS 3859		KEY: 1743268		
17 E	15.00' FORT UNION		RK						
	310.33' EL: 3858.7-3843.7		WC1:	WC2:	COM2: E BS 3844		KEY: 1743269		

DATA POINT ID: B5-790
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62716-5C (SAMPLED FOR CORE BOOK)
HYDRO CD: 0
FILEPOINTER:

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL
DATE: 830113
CONFID: 20

SURFACE
ELEVATION: 4660.00'
ELVPREC: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: 16.0
TOTAL DEPTH
LOGGED : 843.00'
LATITUDE: 46 16 2
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 201
LONGITUDE: 108 21 17
WEATHERING: 0
LLPREC: 0
RANGE: 27.00E

OWNERSHIP:

Uq
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOO COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJ
1 117.00' FORT UNION 117.00' EL: 4660.0-4543.0 WC1: WC2: CLINKER COM2: KEY: 5947
2 5.00' FORT UNION 122.00' EL: 4543.0-4538.0 WC1: WC2: NR BAKED COM2: KEY: 5947
3 L 6.00' FORT UNION 128.00' EL: 4538.0-4532.0 WC1: WC2: SS CORE VF COM2: L TOP CORE VF KEY: 5947
4 2.00' FORT UNION 130.00' EL: 4532.0-4530.0 WC1: WC2: SS VF COM2: VF KEY: 5947
5 D 7.00' FORT UNION 137.00' EL: 4530.0-4523.0 WC1: WC2: SLST COM2: D SS SLST KEY: 5947
6 D 5.00' FORT UNION 142.00' EL: 4523.0-4518.0 WC1: WC2: COAL CLINKER COM2: D SLST SS KEY: 5947
7 U 4.00' FORT UNION 146.00' EL: 4518.0-4514.0 WC1: WC2: CLST COM2: NO CORE, GEOPHYS INDIC CLST KEY: 5947
8 1.00' FORT UNION 147.00' EL: 4514.0-4513.0 WC1: WC2: SLST COM2: KEY: 5948
9 D 3.00' FORT UNION 150.00' EL: 4513.0-4510.0 WC1: WC2: NR COM2: D SLST SS KEY: 5948
10 2.00' FORT UNION 152.00' EL: 4510.0-4508.0 WC1: WC2: SLST COM2: KEY: 5948
11 D 7.00' FORT UNION 159.00' EL: 4508.0-4501.0 WC1: WC2: NR COM2: D SLST SS KEY: 5948
12 6.00' FORT UNION 165.00' EL: 4501.0-4495.0 WC1: WC2: SS COM2: GEOPHYS INDIC SH KEY: 5948
13 3.00' FORT UNION 168.00' EL: 4495.0-4492.0 WC1: WC2: COM2: KEY: 5948

C F
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N S

14	2.00'FORT UNION	170.00' EL: 4492.0-4490.0	WC1:	SLST	WC2:	COM2:	KEY: 59486
15	4.50'FORT UNION	174.50' EL: 4490.0-4485.5	WC1:	SLST	WC2:	COM2: D SLST SS	KEY: 59487
16	2.50'FORT UNION	177.00' EL: 4485.5-4483.0	WC1:	NR	WC2:	COM2:	KEY: 59488
17	2.00'FORT UNION	179.00' EL: 4483.0-4481.0	WC1:	CLST	WC2:	COM2:	KEY: 59489
18	0.10'FORT UNION	179.10' EL: 4481.0-4480.9	WC1:	CLST CARB	WC2:	COM2:	KEY: 59490
19	3.90'FORT UNION	183.00' EL: 4480.9-4477.0	WC1:	SS	WC2:	COM2:	KEY: 59491
20	6.00'FORT UNION	189.00' EL: 4477.0-4471.0	WC1:	SLST	WC2:	COM2:	KEY: 59492
21	1.00'FORT UNION	190.00' EL: 4471.0-4470.0	WC1:	NR	WC2:	COM2:	KEY: 59493
22	1.00'FORT UNION	191.00' EL: 4470.0-4469.0	WC1:	CLST	WC2:	COM2:	KEY: 59494
23	2.00'FORT UNION	193.00' EL: 4469.0-4467.0	WC1:	SS	WC2:	COM2:	KEY: 59495
24	2.00'FORT UNION	195.00' EL: 4467.0-4465.0	WC1:	CLST	WC2:	COM2:	KEY: 59496
25	8.50'FORT UNION	203.50' EL: 4465.0-4456.5	WC1:	SS	WC2:	COM2:	KEY: 59497
26	2.50'FORT UNION	206.00' EL: 4456.5-4454.0	WC1:	SLST	WC2:	COM2:	KEY: 59498
27	6.00'FORT UNION	212.00' EL: 4454.0-4448.0	WC1:	SS	WC2:	COM2:	KEY: 59499
28	3.00'FORT UNION	215.00' EL: 4448.0-4445.0	WC1:	CLST	WC2:	COM2:	KEY: 59500
29	2.00'FORT UNION	217.00' EL: 4445.0-4443.0	WC1:	COAL SUMMIT	WC2:	COM2: E BS 4443	KEY: 59501
30	2.00'FORT UNION	219.00' EL: 4443.0-4441.0	WC1:	CLST	WC2:	COM2:	KEY: 59502
31	3.50'FORT UNION	222.50' EL: 4441.0-4437.5	WC1:	SS	WC2:	COM2:	KEY: 59503
32	1.00'FORT UNION	223.50' EL: 4437.5-4436.5	WC1:	SLST	WC2:	COM2:	KEY: 59504
33	5.50'FORT UNION	229.00' EL: 4436.5-4431.0	WC1:	CLST	WC2:	COM2:	KEY: 59505
34	2.50'FORT UNION	231.50' EL: 4431.0-4428.5	WC1:	SS	WC2:	COM2:	KEY: 59506
35	2.50'FORT UNION	234.00' EL: 4428.5-4426.0	WC1:	SLST	WC2:	COM2:	KEY: 59507
36	6.00'FORT UNION	240.00' EL: 4426.0-4420.0	WC1:	CLST	WC2:	COM2:	KEY: 59508

37	11.50' FORT UNION	SS	WC1:	WC2:	COM2:	VF-F	KEY:	59509
	251.50' EL: 4420.0-4408.5							
38	3.00' FORT UNION	COAL	WC1:	WC2:	COM2:		KEY:	59510
	254.50' EL: 4408.5-4405.5							
39	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:		KEY:	59511
	255.00' EL: 4405.5-4405.0							
40	9.00' FORT UNION	SS	WC1:	WC2:	COM2:		KEY:	59512
	264.00' EL: 4405.0-4396.0							
41	3.00' FORT UNION	SS	WC1:	WC2:	COM2:	F	KEY:	59513
	267.00' EL: 4396.0-4393.0							
42	5.00' FORT UNION	CLST	WC1:	WC2:	COM2:		KEY:	59514
	272.00' EL: 4393.0-4388.0							
43	3.00' FORT UNION	SS	WC1:	WC2:	COM2:		KEY:	59515
	275.00' EL: 4388.0-4385.0							
44	5.00' FORT UNION	CLST	WC1:	WC2:	COM2:		KEY:	59516
	280.00' EL: 4385.0-4380.0							
45	1.50' FORT UNION	SLST	WC1:	WC2:	COM2:		KEY:	59517
	281.50' EL: 4380.0-4378.5							
46	1.00' FORT UNION	SS	WC1:	WC2:	COM2:	F	KEY:	59518
	282.50' EL: 4378.5-4377.5							
47	4.00' FORT UNION	SLST	WC1:	WC2:	COM2:		KEY:	59519
	286.50' EL: 4377.5-4373.5							
48	1.00' FORT UNION	CLST	WC1:	WC2:	COM2:		KEY:	59520
	287.50' EL: 4373.5-4372.5							
49	1.90' FORT UNION	COAL	WC1:	WC2:	COM2:		KEY:	59521
	289.40' EL: 4372.5-4370.6							
50	2.10' FORT UNION	CLST	WC1:	WC2:	COM2:		KEY:	59522
	291.50' EL: 4370.6-4368.5							
51	7.00' FORT UNION	SS	WC1:	WC2:	COM2:	F	KEY:	59523
	298.50' EL: 4368.5-4361.5							
52	2.50' FORT UNION	SS	WC1:	WC2:	COM2:		KEY:	59524
	301.00' EL: 4361.5-4359.0							
53	20.50' FORT UNION	SS	WC1:	WC2:	COM2:	F	KEY:	59525
	321.50' EL: 4359.0-4338.5							
54	1.50' FORT UNION	SLST	WC1:	WC2:	COM2:		KEY:	59526
	323.00' EL: 4338.5-4337.0							
55	1.50' FORT UNION	SS	WC1:	WC2:	COM2:		KEY:	59527
	324.50' EL: 4337.0-4335.5							
56	1.50' FORT UNION	NR	WC1:	WC2:	COM2:		KEY:	59528
	326.00' EL: 4335.5-4334.0							
57	5.00' FORT UNION	SS	WC1:	WC2:	COM2:	F	KEY:	59529
	331.00' EL: 4334.0-4329.0							
58	1.00' FORT UNION	SLST	WC1:	WC2:	COM2:		KEY:	59530
	332.00' EL: 4329.0-4328.0							
59	1.00' FORT UNION	CLST	WC1:	WC2:	COM2:		KEY:	59531
	333.00' EL: 4328.0-4327.0							

60	UE	1.30' FORT UNION	STRAIT	COAL	WC2:	COM2: E BS 4325.7	KEY: 59532
		334.30' EL: 4327.0-4325.7		WC1: CLST			
61		1.70' FORT UNION		WC1: CLST	WC2:	COM2:	KEY: 59533
62		1.50' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 59534
63		0.50' FORT UNION		WC1: CLST	WC2:	COM2:	KEY: 59535
64		2.00' FORT UNION		WC1: NR	WC2:	COM2:	KEY: 59536
65	D	1.50' FORT UNION		WC1: SS	WC2:	COM2: D SS SLST	KEY: 59537
66	D	5.00' FORT UNION		WC1: CLST	WC2:	COM2: D CLST SS	KEY: 59538
67		1.00' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 59539
68		0.50' FORT UNION		WC1: CLST	WC2:	COM2:	KEY: 59540
69		1.50' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 59541
70		1.90' FORT UNION		WC1: CLST	WC2:	COM2:	KEY: 59542
71	E	1.10' FORT UNION		WC1: COAL	WC2:	COM2: E BS 4307.5	KEY: 59543
72	D	6.50' FORT UNION		WC1: SS	WC2:	COM2: D SS SLST	KEY: 59544
73		1.00' FORT UNION		WC1: SLST	WC2:	COM2:	KEY: 59545
74		3.50' FORT UNION		WC1: CLST	WC2:	COM2:	KEY: 59546
75		11.50' FORT UNION		WC1: SS	WC2:	COM2: VF-M	KEY: 59547
76	D	2.00' FORT UNION		WC1: SLST	WC2:	COM2: D SLST SS	KEY: 59548
77		2.00' FORT UNION		WC1: CLST	WC2:	COM2:	KEY: 59549
78		1.50' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 59550
79		8.00' FORT UNION		WC1: CLST	WC2:	COM2: W FEW THIN COALS	KEY: 59551
80	D	6.50' FORT UNION		WC1: SLST	WC2:	COM2: D SLST SS	KEY: 59552
81		3.00' FORT UNION		WC1: CLST	WC2:	COM2:	KEY: 59553
82		4.50' FORT UNION		WC1: SS	WC2:	COM2: F	KEY: 59554
		402.50' EL: 4262.0-4257.5		WC1:	WC2:	COM2:	

106	1.00' FORT UNION		SS	WC1:	WC2:	COM2:	F	KEY:	59578
	469.50' EL: 4191.5-4190.5								
107 D	3.00' FORT UNION		SLST	WC1:	WC2:	COM2: D SLST CLST		KEY:	59579
	472.50' EL: 4190.5-4187.5								
108	7.50' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59580
	480.00' EL: 4187.5-4180.0								
109 D	1.00' FORT UNION		SLST	WC1:	WC2:	COM2: D SLST SS		KEY:	59581
	481.00' EL: 4180.0-4179.0								
110	4.00' FORT UNION		SS	WC1:	WC2:	COM2:		KEY:	59582
	485.00' EL: 4179.0-4175.0								
111	1.00' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59583
	486.00' EL: 4175.0-4174.0								
112 UE	1.80' FORT UNION	WESCOTT	COAL	WC1:	WC2:	COM2: E BS 4172.2		KEY:	59584
	487.80' EL: 4174.0-4172.2								
113	3.00' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59585
	490.80' EL: 4172.2-4169.2								
114	0.30' FORT UNION		COAL	WC1:	WC2:	COM2:		KEY:	59586
	491.10' EL: 4169.2-4168.9								
115	0.40' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59587
	491.50' EL: 4168.9-4168.5								
116	0.10' FORT UNION		COAL	WC1:	WC2:	COM2:		KEY:	59588
	491.60' EL: 4168.5-4168.4								
117	1.10' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59589
	492.70' EL: 4168.4-4167.3								
118	0.10' FORT UNION		COAL	WC1:	WC2:	COM2:		KEY:	59590
	492.80' EL: 4167.3-4167.2								
119	3.50' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59591
	496.30' EL: 4167.2-4163.7								
120	1.70' FORT UNION		NR	WC1:	WC2:	COM2:		KEY:	59592
	498.00' EL: 4163.7-4162.0								
121	6.60' FORT UNION		SS	WC1:	WC2:	COM2:		KEY:	59593
	504.60' EL: 4162.0-4155.4								
122	5.30' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59594
	509.90' EL: 4155.4-4150.1								
123 E	1.10' FORT UNION		COAL	WC1:	WC2:	COM2: E BS 4149		KEY:	59595
	511.00' EL: 4150.1-4149.0								
124	2.80' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59596
	513.80' EL: 4149.0-4146.2								
125	0.10' FORT UNION		COAL	WC1:	WC2:	COM2:		KEY:	59597
	513.90' EL: 4146.2-4146.1								
126	0.20' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59598
	514.10' EL: 4146.1-4145.9								
127	0.10' FORT UNION		COAL	WC1:	WC2:	COM2:		KEY:	59599
	514.20' EL: 4145.9-4145.8								
128	2.80' FORT UNION		CLST	WC1:	WC2:	COM2:		KEY:	59600
	517.00' EL: 4145.8-4143.0								

152	1.00'FORT UNION	NR	WC1:	WC2:	COM2:	KEY:	59624
	585.00' EL: 4076.0-4075.0	LS					
153	4.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59625	
	589.00' EL: 4075.0-4071.0	SLST					
154	1.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59626	
	590.00' EL: 4071.0-4070.0	SS					
155	5.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59627	
	595.00' EL: 4070.0-4065.0	SLST					
156 D	4.00'FORT UNION	WC1:	WC2:	COM2: D SLST SS	KEY:	59628	
	599.00' EL: 4065.0-4061.0	CLST					
157	9.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59629	
	608.00' EL: 4061.0-4052.0	SS					
158	1.50'FORT UNION	WC1:	WC2:	COM2:	KEY:	59630	
	609.50' EL: 4052.0-4050.5	SLST					
159 D	3.00'FORT UNION	WC1:	WC2:	COM2: D SLST CLST	KEY:	59631	
	612.50' EL: 4050.5-4047.5	SS					
160	3.50'FORT UNION	WC1:	WC2:	COM2:	KEY:	59632	
	616.00' EL: 4047.5-4044.0	SLST					
161	1.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59633	
	617.00' EL: 4044.0-4043.0	CLST					
162	2.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59634	
	619.00' EL: 4043.0-4041.0	SLST					
163 D	0.50'FORT UNION	WC1:	WC2:	COM2: D SLST CLST	KEY:	59635	
	619.50' EL: 4041.0-4040.5	CLST					
164	2.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59636	
	621.50' EL: 4040.5-4038.5	SS					
165 D	6.50'FORT UNION	WC1:	WC2:	COM2: D SS SLST	KEY:	59637	
	628.00' EL: 4038.5-4032.0	NR					
166	2.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59638	
	630.00' EL: 4032.0-4030.0	CLST					
167	8.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59639	
	638.00' EL: 4030.0-4022.0	NR					
168	7.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59640	
	645.00' EL: 4022.0-4015.0	CLST	SLTY				
169	1.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59641	
	646.00' EL: 4015.0-4014.0	CLST					
170	5.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59642	
	651.00' EL: 4014.0-4009.0	SS					
171 D	3.00'FORT UNION	WC1:	WC2:	COM2: D SS SLST	KEY:	59643	
	654.00' EL: 4009.0-4006.0	SS	M				
172	52.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59644	
	706.00' EL: 4006.0-3954.0	NR					
173	15.00'FORT UNION	WC1:	WC2:	COM2: GEOPHYS INDIC SS	KEY:	59645	
	721.00' EL: 3954.0-3939.0	SS	M				
174	7.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	59646	
	728.00' EL: 3939.0-3932.0						

175	5.00' FORT UNION 733.00' EL: 3932.0-3927.0	SLST WC1:	WC2:	COM2:	KEY: 59647
176	3.00' FORT UNION 736.00' EL: 3927.0-3924.0	CLST WC1:	WC2:	COM2:	KEY: 59648
177	6.00' FORT UNION 742.00' EL: 3924.0-3918.0	SS WC1:	WC2:	COM2:	KEY: 59649
178	5.50' FORT UNION 747.50' EL: 3918.0-3912.5	CLST WC1:	WC2:	COM2:	KEY: 59650
179	3.00' FORT UNION 750.50' EL: 3912.5-3909.5	SS WC1:	WC2:	COM2:	KEY: 59651
180 UE	3.00' FORT UNION 753.50' EL: 3909.5-3906.5	COAL WC1:	WC2:	COM2: GEOPHYS MEASURE, E BS 3906.5	KEY: 59652
181	3.50' FORT UNION 757.00' EL: 3906.5-3903.0	NR WC1:	WC2:	COM2:	KEY: 59653
182	3.50' FORT UNION 760.50' EL: 3903.0-3899.5	SS WC1:	WC2:	COM2:	KEY: 59654
183	3.00' FORT UNION 763.50' EL: 3899.5-3896.5	CLST WC1:	WC2:	COM2:	KEY: 59655
184	0.50' FORT UNION 764.00' EL: 3896.5-3896.0	COAL WC1:	WC2:	COM2:	KEY: 59656
185	12.00' FORT UNION 776.00' EL: 3896.0-3884.0	CLST WC1:	WC2:	COM2:	KEY: 59657
186	9.50' FORT UNION 785.50' EL: 3884.0-3874.5	SS WC1:	WC2:	COM2: VF-F	KEY: 59658 F
187	11.50' FORT UNION 797.00' EL: 3874.5-3863.0	CLST WC1:	WC2:	COM2: GASTROPODS AND LEAF	KEY: 59659
188	7.00' FORT UNION 804.00' EL: 3863.0-3856.0	SLST WC1:	WC2:	COM2:	KEY: 59660
189	4.50' FORT UNION 808.50' EL: 3856.0-3851.5	CLST WC1:	WC2:	COM2:	KEY: 59661
190	2.00' FORT UNION 810.50' EL: 3851.5-3849.5	SS WC1:	WC2:	COM2: VF	KEY: 59662
191	2.50' FORT UNION 813.00' EL: 3849.5-3847.0	CLST WC1:	WC2:	COM2:	KEY: 59663
192	2.50' FORT UNION 815.50' EL: 3847.0-3844.5	COAL WC1:	WC2:	COM2: GEOPHYS MEASUREMENT, =REHDER	KEY: 59664
193	0.20' FORT UNION 815.70' EL: 3844.5-3844.3	CLST WC1:	WC2:	COM2: =REHDER	KEY: 59665
194 E	0.70' FORT UNION 816.40' EL: 3844.3-3843.6	COAL WC1:	WC2:	COM2: E BS 3843.6, =REHDER	KEY: 59666
195	5.60' FORT UNION 822.00' EL: 3843.6-3838.0	CLST WC1:	WC2:	COM2:	KEY: 59667
196 E	9.50' FORT UNION 831.50' EL: 3838.0-3828.5	COAL WC1:	WC2:	COM2: GEOPHYS MEASUREMENT E BS 3828.5	KEY: 59668
197 EL	11.50' FORT UNION 843.00' EL: 3828.5-3817.0	NR WC1:	WC2:	COM2: E BS 3817, 1 BS CORF	KEY: 59669

DATA POINT ID: B5-79R
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 DATE: 830113
 CONFID: 20
 PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4140.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NE
 SECTION: 17.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 400.05' LATITUDE: 46 16 37 TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62717-9

DESCRIPTION
 LOG : 201 LONGITUDE: 108 22 1 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

										C F			
										O O			
										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	L		15.00' FORT UNION		ALUV								
			15.00' EL:	4140.0-4125.0	WC1:	WC2:	COM2: L TOP CORE				KEY:		59670
2	D		7.00' FORT UNION		SS								
			22.00' EL:	4125.0-4118.0	WC1:	WC2:	COM2: D SS CLST				KEY:		59671
3			1.50' FORT UNION		CLST								
			23.50' EL:	4118.0-4116.5	WC1:	WC2:	COM2:				KEY:		59672
4	D		1.00' FORT UNION		SS								
			24.50' EL:	4116.5-4115.5	WC1:	WC2:	COM2: D SS CLST				KEY:		59673
5			2.00' FORT UNION		CLST	CARB							
			26.50' EL:	4115.5-4113.5	WC1:	WC2:	COM2:				KEY:		59674
6			2.50' FORT UNION		NR								
			29.00' EL:	4113.5-4111.0	WC1:	WC2:	COM2:				KEY:		59675
7			2.00' FORT UNION		CLST	CARB							
			31.00' EL:	4111.0-4109.0	WC1:	WC2:	COM2: BURROWS				KEY:		59676
8			0.50' FORT UNION		COAL								
			31.50' EL:	4109.0-4108.5	WC1:	WC2:	COM2:				KEY:		59677
9			3.50' FORT UNION		CLST								
			35.00' EL:	4108.5-4105.0	WC1:	WC2:	COM2:				KEY:		59678
10	UE		1.20' FORT UNION	WESCOTT	COAL								
			36.20' EL:	4105.0-4103.8	WC1:	WC2:	COM2: E BS 4103.8				KEY:		59679
11	D		4.00' FORT UNION		SLST								
			40.20' EL:	4103.8-4099.8	WC1:	WC2:	COM2: D SLST SS				KEY:		59680
12			1.50' FORT UNION		NR								
			41.70' EL:	4099.8-4098.3	WC1:	WC2:	COM2:				KEY:		59681
13	D		1.00' FORT UNION		COAL								
			42.70' EL:	4098.3-4097.3	WC1:	WC2:	COM2: D COAL SH				KEY:		59682

14	3.00' FORT UNION	45.70' EL: 4097.3-4094.3	WC1: CLST	WC2:	COM2:	KEY: 59683
15	7.50' FORT UNION	53.20' EL: 4094.3-4086.8	WC1: SS	WC2:	COM2: F-M	KEY: 59684
16 D	1.50' FORT UNION	54.70' EL: 4086.8-4085.3	WC1: SLST	WC2:	COM2: D SLST CLST	KEY: 59685
17	3.00' FORT UNION	57.70' EL: 4085.3-4082.3	WC1: SS	WC2:	COM2:	KEY: 59686
18	5.00' FORT UNION	62.70' EL: 4082.3-4077.3	WC1: CLST	WC2:	COM2:	KEY: 59687
19 D	2.50' FORT UNION	65.20' EL: 4077.3-4074.8	WC1: CLST	WC2:	COM2: D CLST SLST	KEY: 59688
20	1.50' FORT UNION	66.70' EL: 4074.8-4073.3	WC1: CLST	WC2:	COM2:	KEY: 59689
21	1.00' FORT UNION	67.70' EL: 4073.3-4072.3	WC1: NR	WC2:	COM2:	KEY: 59690
22	6.00' FORT UNION	73.70' EL: 4072.3-4066.3	WC1: CLST	WC2:	COM2:	KEY: 59691
23	4.00' FORT UNION	77.70' EL: 4066.3-4062.3	WC1: SLST	WC2:	COM2: GY GN	KEY: 59692
24	2.00' FORT UNION	79.70' EL: 4062.3-4060.3	WC1: CLST	WC2:	COM2: VF-F	KEY: 59693
25	6.50' FORT UNION	86.20' EL: 4060.3-4053.8	WC1: SS	WC2:	COM2:	KEY: 59694
26	0.50' FORT UNION	86.70' EL: 4053.8-4053.3	WC1: CLST	WC2:	COM2:	KEY: 59695
27 UE	1.45' FORT UNION BULL MTN	88.15' EL: 4053.3-4051.9	WC1: COAL	WC2:	COM2: E BS 4051.9	KEY: 59696
28	1.90' FORT UNION	90.05' EL: 4051.9-4049.1	WC1: SS	WC2:	COM2:	KEY: 59697
29 D	3.00' FORT UNION	93.05' EL: 4049.1-4046.1	WC1: SLST	WC2:	COM2: D SLST SS	KEY: 59698
30	1.50' FORT UNION	94.55' EL: 4046.1-4045.5	WC1: SS	WC2:	COM2:	KEY: 59699
31 D	2.00' FORT UNION	96.55' EL: 4045.5-4043.5	WC1: SLST	WC2:	COM2: D SLST SS	KEY: 59700
32	0.50' FORT UNION	97.05' EL: 4043.5-4042.1	WC1: NR	WC2:	COM2:	KEY: 59701
33 D	12.00' FORT UNION	109.05' EL: 4042.1-4030.1	WC1: SLST	WC2:	COM2: D SLST SS CLST VF	KEY: 59702
34	1.50' FORT UNION	110.55' EL: 4030.1-4029.5	WC1: SS	WC2:	COM2:	KEY: 59703
35	0.50' FORT UNION	111.05' EL: 4029.5-4028.1	WC1: CLST	WC2:	COM2:	KEY: 59704
36 D	2.50' FORT UNION	113.55' EL: 4028.1-4026.5	WC1: SLST	WC2:	COM2: D SLST SS CLST	KEY: 59705

60	5.00' FORT UNION	183.55' EL: 3961.5-3956.5	WC1:	SLST	WC2:	GY GN COM2:	KEY: 59729
61	1.50' FORT UNION	185.05' EL: 3956.5-3954.1	WC1:	SS	WC2:	VF COM2:	KEY: 59730
62	1.50' FORT UNION	186.55' EL: 3954.1-3953.5	WC1:	SLST	WC2:	COM2:	KEY: 59731
63 D	3.00' FORT UNION	189.55' EL: 3953.5-3950.5	WC1:	SS	WC2:	COM2: D SS SLST	KEY: 59732
64	4.50' FORT UNION	194.05' EL: 3950.5-3945.1	WC1:	CLST	WC2:	COM2:	KEY: 59733
65	0.20' FORT UNION	194.25' EL: 3945.1-3945.8	WC1:	COAL	WC2:	COM2:	KEY: 59734
66	0.80' FORT UNION	195.05' EL: 3945.8-3944.1	WC1:	SLST	WC2:	COM2:	KEY: 59735
67 D	1.00' FORT UNION	196.05' EL: 3944.1-3943.1	WC1:	CLST	WC2:	COM2: D CLST SLST	KEY: 59736
68	2.00' FORT UNION	198.05' EL: 3943.1-3941.1	WC1:	SLST	WC2:	COM2:	KEY: 59737
69	1.00' FORT UNION	199.05' EL: 3941.1-3940.1	WC1:	CLST	WC2:	GY GN COM2:	KEY: 59738
70	1.00' FORT UNION	200.05' EL: 3940.1-3939.1	WC1:	SS	WC2:	GY GN VF COM2:	KEY: 59739
71	2.50' FORT UNION	202.55' EL: 3939.1-3937.5	WC1:	CLST	WC2:	COM2:	KEY: 59740
72	3.00' FORT UNION	205.55' EL: 3937.5-3934.5	WC1:	SLST	WC2:	COM2:	KEY: 59741
73 D	2.00' FORT UNION	207.55' EL: 3934.5-3932.5	WC1:	SS	WC2:	COM2: D SS SLST F-M	KEY: 59742
74	53.50' FORT UNION	261.05' EL: 3932.5-3878.1	WC1:	SS	WC2:	COM2:	KEY: 59743
75	2.00' FORT UNION	263.05' EL: 3878.1-3876.1	WC1:	SLST	WC2:	COM2:	KEY: 59744
76	10.50' FORT UNION	273.55' EL: 3876.1-3866.5	WC1:	SS	WC2:	F COM2:	KEY: 59745
77	1.00' FORT UNION	274.55' EL: 3866.5-3865.5	WC1:	SLST	WC2:	COM2:	KEY: 59746
78 D	2.50' FORT UNION	277.05' EL: 3865.5-3862.1	WC1:	SS	WC2:	COM2: D SS SLST	KEY: 59747
79	1.50' FORT UNION	278.55' EL: 3862.1-3861.5	WC1:	SLST	WC2:	COM2:	KEY: 59748
80	3.00' FORT UNION	281.55' EL: 3861.5-3858.5	WC1:	SS	WC2:	F COM2:	KEY: 59749
81	2.00' FORT UNION	283.55' EL: 3858.5-3856.5	WC1:	SLST	WC2:	COM2:	KEY: 59750
82	8.00' FORT UNION	291.55' EL: 3856.5-3848.5	WC1:	SS	WC2:	F COM2:	KEY: 59751

83	5.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59752
	296.55' EL: 3848.5-3843.5	SS	WC1:	WC2:			
84	3.50' FORT UNION		WC1:	WC2:	COM2:	KEY:	59753
85	0.40' FORT UNION	SLST	WC1:	WC2:	COM2:	KEY:	59754
86 E	2.50' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	59755
	300.45' EL: 3839.1-3839.6						
	ROCK MESA						
87	302.95' EL: 3839.6-3837.1	SLST	WC1:	WC2:	COM2: E BS 3837.1	KEY:	59756
	5.10' FORT UNION						
88	308.05' EL: 3837.1-3831.1	SS	WC1:	WC2:	COM2:	KEY:	59757
	9.50' FORT UNION						
89	317.55' EL: 3831.1-3822.5	SLST	WC1:	WC2:	COM2:	KEY:	59758
	3.50' FORT UNION						
90	321.05' EL: 3822.5-3818.1	SS	WC1:	WC2:	COM2:	KEY:	59759
	0.80' FORT UNION						
91	321.85' EL: 3818.1-3818.2	SLST	WC1:	WC2:	COM2:	KEY:	59760
	1.70' FORT UNION						
92	323.55' EL: 3818.2-3816.5	SS	WC1:	WC2:	COM2:	KEY:	59761
	1.00' FORT UNION						
93	324.55' EL: 3816.5-3815.5	SLST	WC1:	WC2:	COM2:	KEY:	59762
	4.00' FORT UNION						
94	328.55' EL: 3815.5-3811.5	SS	WC1:	WC2:	COM2:	KEY:	59763
	5.00' FORT UNION						
95	333.55' EL: 3811.5-3806.5	SLST	WC1:	WC2:	COM2:	KEY:	59764
	4.00' FORT UNION						
96	337.55' EL: 3806.5-3802.5	SS	WC1:	WC2:	COM2: BIOTURB	KEY:	59765
	4.00' FORT UNION						
97	341.55' EL: 3802.5-3798.5	SLST	WC1:	WC2:	COM2:	KEY:	59766
	3.00' FORT UNION						
98	344.55' EL: 3798.5-3795.5	SS	WC1:	WC2:	COM2: LEAVES	KEY:	59767
	2.00' FORT UNION						
99	346.55' EL: 3795.5-3793.5	SLST	WC1:	WC2:	COM2:	KEY:	59768
	1.50' FORT UNION						
100	348.05' EL: 3793.5-3791.1	SS	WC1:	WC2:	COM2:	KEY:	59769
	4.50' FORT UNION						
101	352.55' EL: 3791.1-3787.5	SLST	WC1:	WC2:	COM2:	KEY:	59770
	1.00' FORT UNION						
102	353.55' EL: 3787.5-3786.5	CLST	WC1:	WC2:	COM2:	KEY:	59771
	0.60' FORT UNION						
103 E	354.15' EL: 3786.5-3785.9	COAL	WC1:	WC2:	COM2:	KEY:	59772
	3.10' FORT UNION						
	MAMMOTH 3						
104	357.25' EL: 3785.9-3782.8	SLST	WC1:	WC2:	COM2: E BS 3782.8,=REHDER	KEY:	59773
	2.00' FORT UNION						
105	359.25' EL: 3782.8-3780.8	SS	WC1:	WC2:	COM2:	KEY:	59774
	8.30' FORT UNION						
	367.55' EL: 3780.8-3772.5						

106	2.50' FORT UNION 370.05' EL: 3772.5-3769.1	SLST WC1:	WC2:	COM2:	KEY:
107	4.60' FORT UNION 374.65' EL: 3769.1-3765.4	CLST WC1:	WC2:	GN GY COM2:	59775 KEY:
108	4.50' FORT UNION 379.15' EL: 3765.4-3760.9	COAL WC1:	WC2:	COM2:	59776 KEY:
109	0.20' FORT UNION 379.35' EL: 3760.9-3760.7	RK WC1:	WC2:	COM2:	59777 KEY:
110	1.00' FORT UNION 380.35' EL: 3760.7-3759.7	COAL WC1:	WC2:	COM2:	59778 KEY:
111	0.20' FORT UNION 380.55' EL: 3759.7-3759.5	RK WC1:	WC2:	COM2:	59779 KEY:
112	2.90' FORT UNION 383.45' EL: 3759.5-3756.6	COAL WC1:	WC2:	COM2:	59780 KEY:
113	0.10' FORT UNION 383.55' EL: 3756.6-3756.5	RK WC1:	WC2:	COM2:	59781 KEY:
114 E	1.50' FORT UNION 385.05' EL: 3756.5-3754.1	COAL WC1:	WC2:	COM2:	59782 KEY:
115	2.50' FORT UNION 387.55' EL: 3754.1-3752.5	SLST WC1:	WC2:	COM2: E BS 3755 GN GY COM2:	59783 KEY:
116	5.00' FORT UNION 392.55' EL: 3752.5-3747.5	SS WC1:	WC2:	F COM2:	59784 KEY:
117	0.30' FORT UNION 392.85' EL: 3747.5-3747.2	SLST WC1:	WC2:	COM2:	59785 KEY:
118	0.70' FORT UNION 393.55' EL: 3747.2-3746.5	SS WC1:	WC2:	COM2:	59786 KEY:
119	1.20' FORT UNION 394.75' EL: 3746.5-3745.3	SLST WC1:	WC2:	COM2:	59787 KEY:
120 EL	5.30' FORT UNION 400.05' EL: 3745.3-3739.1	SS WC1:	WC2:	COM2:	59788 KEY:
				COM2: E BS 3740, L BS CORE	59789 KEY:

 DATA POINT ID: H5-4/A
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62721-4
 HYDRO CD: 0
 FILEPOINTER:
 GLOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4220.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 435.50'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NW
 SECTION: 21.0
 TOWNSHIP: 6.00N
 RANGE: 27.00E
 DATE: 8/30/13
 PRIN MERIDIAN: 20
 CONFID: *****

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	125.00'		FORT UNION		RK							
				125.00' EL: 4220.0-4095.0	WC1:	WC2:	COM2:				KEY:	59790
2	UE		3.50' FORT UNION	BULL MTN	COAL							
				128.50' EL: 4095.0-4091.5	WC1:	WC2:	COM2: E BS 4091.5				KEY:	59791
3			239.00' FORT UNION		RK							
				367.50' EL: 4091.5-3852.5	WC1:	WC2:	COM2:				KEY:	59792
4	E		5.50' FORT UNION	MAMMOTH 3	COAL							
				373.00' EL: 3852.5-3847.0	WC1:	WC2:	COM2: E BS 3847,=REHDER				KEY:	59793
5			27.00' FORT UNION		RK							
				400.00' EL: 3847.0-3820.0	WC1:	WC2:	COM2:				KEY:	59794
6	E		9.50' FORT UNION	MAMMOTH 1+2	COAL							
				409.50' EL: 3820.0-3810.5	WC1:	WC2:	COM2: E BS 3810.5				KEY:	59795
7	E		26.00' FORT UNION		RK							
				435.50' EL: 3810.5-3784.5	WC1:	WC2:	COM2: E BS 3784.5				KEY:	59796

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DATA POINT ID: B5-84B

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: LOUISIANA LAND AND EXPL

DATE: 830113

PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4360.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NE

SECTION: 21.0

TOTAL DEPTH

LOGGED : 543.00'

DESCRIPTION

LATITUDE: 46 15 42

TOWNSHIP: 6.00N

LOG : 202

LONGITUDE: 108 21 1

WEATHERING: 0

LLPREC: 0

RANGE: 27.00E

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC	
1	261.00'		FORT UNION		RK								
	261.00'		EL: 4360.0-4099.0		WC1:		COM2:				KEY:	59797	
2	UE	4.00'	FORT UNION	BULL MTN	COAL								
	265.00'		EL: 4099.0-4095.0		WC1:		COM2: E BS 4095				KEY:	59798	
3	241.00'		FORT UNION		RK								
	506.00'		EL: 4095.0-3854.0		WC1:		COM2:				KEY:	59799	
4	E	3.00'	FORT UNION	MAMMOTH 3	COAL								
	509.00'		EL: 3854.0-3851.0		WC1:		COM2: E BS 3851,=REHDER				KEY:	59800	
5	10.50'		FORT UNION		RK								
	519.50'		EL: 3851.0-3840.5		WC1:		COM2:				KEY:	59801	
6	E	10.00'	FORT UNION	MAMMOTH 1+2	COAL								
	529.50'		EL: 3840.5-3830.5		WC1:		COM2: E BS 3830.5				KEY:	59802	
7	E	13.50'	FORT UNION		RK								
	543.00'		EL: 3830.5-3817.0		WC1:		COM2: E BS 3817				KEY:	59803	

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DATA POINT ID: B5-84C

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

SOURCE: LOUISIANA LAND AND EXPL

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4270.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW

SECTION: 21.0

PROVINCE: N GREAT PLAINS

LOGGED : 459.00'

LATITUDE: 46 15 35

TOWNSHIP: 6.00N

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

LOG : 202

LONGITUDE: 108 21 41

RANGE: 27.00E

COMMENT1: LL&E 62721-2

WEATHERING: 0

LLPREC: 0

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1	159.00' FORT UNION	159.00' EL: 4270.0-4111.0	RK	WC1:	WC2:	COM2:	KEY:	59804
2	UE 3.50' FORT UNION	BULL MTN	COAL	WC1:	WC2:	COM2: E BS 4107.5	KEY:	59805
3	201.50' FORT UNION	4111.0-4107.5	RK	WC1:	WC2:	COM2:	KEY:	59806
4	E 3.00' FORT UNION	4107.5-3906.0	COAL	WC1:	WC2:	COM2: E BS 3903	KEY:	59807
5	34.00' FORT UNION	3906.0-3903.0	RK	WC1:	WC2:	COM2:	KEY:	59808
6	E 3.50' FORT UNION	3903.0-3869.0	COAL	WC1:	WC2:	COM2: E BS 3865.5, =REHDER	KEY:	59809
7	29.50' FORT UNION	3869.0-3865.5	RK	WC1:	WC2:	COM2:	KEY:	59810
8	E 9.00' FORT UNION	3865.5-3836.0	COAL	WC1:	WC2:	COM2: E BS 3827	KEY:	59811
9	E 16.00' FORT UNION	3836.0-3827.0	RK	WC1:	WC2:	COM2: E BS 3811	KEY:	59812

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DATA POINT ID: B5-84D
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL

DATE: 830113
 PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SURFACE
 ELEVATION: 4368.00'
 ELVPREC: 2
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SW
 SECTION: 21.0

PROVINCE: N GREAT PLAINS

TOWNSHIP: 6.00N

REGION: POWDER RIVER

RANGE: 27.00E

FIELD: BULL MOUNTAIN

LLPREC: 0

COMMENT1: LL&E 62721-3

LONGITUDE: 108 21 25

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

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UNIT TL K FORMATION BED NAME

LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 245.00' FORT UNION

245.00' EL: 4368.0-4123.0

WC1: WC2: COM2: KEY: 59813

2 UE 3.50' FORT UNION

248.50' EL: 4123.0-4119.5

WC1: WC2: COM2: KEY: 59814

3 187.50' FORT UNION

436.00' EL: 4119.5-3932.0

WC1: WC2: COM2: KEY: 59815

4 E 2.50' FORT UNION

438.50' EL: 3932.0-3929.5

WC1: WC2: COM2: KEY: 59816

5 30.50' FORT UNION

469.00' EL: 3929.5-3899.0

WC1: WC2: COM2: KEY: 59817

6 E 2.50' FORT UNION

471.50' EL: 3899.0-3896.5

WC1: WC2: COM2: KEY: 59818

7 32.50' FORT UNION

504.00' EL: 3896.5-3864.0

WC1: WC2: COM2: KEY: 59819

8 E 9.50' FORT UNION

513.50' EL: 3864.0-3854.5

WC1: WC2: COM2: KEY: 59820

9 E 26.50' FORT UNION

540.00' EL: 3854.5-3828.0

WC1: WC2: COM2: KEY: 59821

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DATA POINT ID: B5-84E
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 DATE: 830113
 CONFID: 20
 PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 4457.00'
 ELVPREC: 2
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SE
 SECTION: 21.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 618.50'
 LATITUDE: 46 15 19
 TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

LONGITUDE: 108 20 34
 RANGE: 27.00E

COMMENT1: LL&E 62721-6

WEATHERING: 0
 LLPREC: 0

HYDRO CD: 0
 FILEPOINTER:

OWNERSHIP:

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										N S		
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1			43.50' FORT UNION		RK							
			43.50' EL: 4457.0-4413.5		WC1:	WC2:	COM2:				KEY:	59822
2 E			3.00' FORT UNION	FATTIG	COAL							
			46.50' EL: 4413.5-4410.5		WC1:	WC2:	COM2: E BS 4410.5				KEY:	59823
3			288.00' FORT UNION		RK							
			334.50' EL: 4410.5-4122.5		WC1:	WC2:	COM2:				KEY:	59824
4 UE			4.00' FORT UNION	BULL MTN	COAL							
			338.50' EL: 4122.5-4118.5		WC1:	WC2:	COM2: E BS 4118.5				KEY:	59825
5			168.00' FORT UNION		RK							
			506.50' EL: 4118.5-3950.5		WC1:	WC2:	COM2:				KEY:	59826
6 L			11.00' FORT UNION		SS							
			517.50' EL: 3950.5-3939.5		WC1:	WC2:	COM2: L TOP GEOPHYS				KEY:	59827
7			2.50' FORT UNION		SLST							
			520.00' EL: 3939.5-3937.0		WC1:	WC2:	COM2:				KEY:	59828
8 E			2.00' FORT UNION	ROCK MESA	COAL							
			522.00' EL: 3937.0-3935.0		WC1:	WC2:	COM2: E BS 3935				KEY:	59829
9			8.50' FORT UNION		SS							
			530.50' EL: 3935.0-3926.5		WC1:	WC2:	COM2:				KEY:	59830
10			0.50' FORT UNION		CLST							
			531.00' EL: 3926.5-3926.0		WC1:	WC2:	COM2: COAL?				KEY:	59831
11			31.50' FORT UNION		SS							
			562.50' EL: 3926.0-3894.5		WC1:	WC2:	COM2:				KEY:	59832
12			3.50' FORT UNION		SH	SDY						
			566.00' EL: 3894.5-3891.0		WC1:	WC2:	COM2:				KEY:	59833
13			0.50' FORT UNION		SS							
			566.50' EL: 3891.0-3890.5		WC1:	WC2:	COM2:				KEY:	59834

14	L	1.50' FORT UNION 568.00' EL: 3890.5-3889.0	SS	WC1:	WC2:	COM2: L TOP CORE	KEY: 59835
15		3.00' FORT UNION 571.00' EL: 3889.0-3886.0	SH	WC1:	WC2:	COM2:	KEY: 59836
16		5.80' FORT UNION 576.80' EL: 3886.0-3880.2	SS	WC1:	WC2:	COM2:	KEY: 59837
17		1.90' FORT UNION 578.70' EL: 3880.2-3878.3	SLST	WC1:	WC2:	COM2:	KEY: 59838
18		1.80' FORT UNION 580.50' EL: 3878.3-3876.5	MDST	WC1:	WC2:	COM2:	KEY: 59839
19		0.80' FORT UNION 581.30' EL: 3876.5-3875.7	SS	WC1:	WC2:	COM2:	KEY: 59840
20		2.50' FORT UNION 583.80' EL: 3875.7-3873.2	MDST	WC1:	WC2:	COM2:	KEY: 59841
21		2.90' FORT UNION 586.70' EL: 3873.2-3870.3	COAL	WC1:	WC2:	COM2:	KEY: 59842
22		1.00' FORT UNION 587.70' EL: 3870.3-3869.3	MDST	WC1:	WC2:	COM2:	KEY: 59843
23		7.50' FORT UNION 595.20' EL: 3869.3-3861.8	COAL	WC1:	WC2:	COM2:	KEY: 59844
24		0.15' FORT UNION 595.35' EL: 3861.8-3861.7	SH	WC1:	WC2: CARB	COM2:	KEY: 59845
25	E	3.15' FORT UNION 598.50' EL: 3861.7-3858.5	COAL	WC1:	WC2:	COM2: E BS 3858.4	KEY: 59846
26		1.00' FORT UNION 599.50' EL: 3858.5-3857.5	SLST	WC1:	WC2:	COM2:	KEY: 59847
27	L	6.50' FORT UNION 606.00' EL: 3857.5-3851.0	MDST	WC1:	WC2:	COM2: L BS CORE	KEY: 59848
28		12.50' FORT UNION 618.50' EL: 3851.0-3838.5	RK	WC1:	WC2:	COM2: E BS 3838.4	KEY: 59849

DATA POINT ID: B5-84F

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830113

CONFID: 20

SOURCE: LOUISIANA LAND AND EXPL

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: LL&E 62721-8

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

										C F			
										O O			
										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	157.00'		FORT UNION		RK								
			157.00' EL:	4570.0-4413.0	WC1:	WC2:	COM2:				KEY:	59850	
2	E		3.00' FORT UNION	FATTIG	COAL								
			160.00' EL:	4413.0-4410.0	WC1:	WC2:	COM2: E BS 4410				KEY:	59851	
3	L		3.00' FORT UNION		CLST								
			163.00' EL:	4410.0-4407.0	WC1:	WC2:	COM2: L TOP GAMMA AND RESISTIV				KEY:	59852	
4			17.00' FORT UNION		SS								
			180.00' EL:	4407.0-4390.0	WC1:	WC2:	COM2:				KEY:	59853	
5			1.00' FORT UNION		CLST								
			181.00' EL:	4390.0-4389.0	WC1:	WC2:	COM2:				KEY:	59854	
6			7.00' FORT UNION		SS								
			188.00' EL:	4389.0-4382.0	WC1:	WC2:	COM2:				KEY:	59855	
7			1.00' FORT UNION		CLST								
			189.00' EL:	4382.0-4381.0	WC1:	WC2:	COM2:				KEY:	59856	
8			11.00' FORT UNION		SS								
			200.00' EL:	4381.0-4370.0	WC1:	WC2:	COM2:				KEY:	59857	
9	E		2.00' FORT UNION	RED BUTTE	COAL								
			202.00' EL:	4370.0-4368.0	WC1:	WC2:	COM2: E BS 4368				KEY:	59858	
10			3.00' FORT UNION		CLST								
			205.00' EL:	4368.0-4365.0	WC1:	WC2:	COM2:				KEY:	59859	
11			4.00' FORT UNION		SLST								
			209.00' EL:	4365.0-4361.0	WC1:	WC2:	COM2:				KEY:	59860	
12			3.00' FORT UNION		SS								
			212.00' EL:	4361.0-4358.0	WC1:	WC2:	COM2:				KEY:	59861	
13			1.00' FORT UNION		CLST								
			213.00' EL:	4358.0-4357.0	WC1:	WC2:	COM2:				KEY:	59862	

14	4.00'FORT UNION 217.00' EL: 4357.0-4353.0	SS WC1:	WC2:	COM2:	KEY: 59863
15	3.00'FORT UNION 220.00' EL: 4353.0-4350.0	CLST WC1:	WC2:	COM2:	KEY: 59864
16	21.00'FORT UNION 241.00' EL: 4350.0-4329.0	SS WC1:	WC2:	COM2:	KEY: 59865
17	3.50'FORT UNION 244.50' EL: 4329.0-4325.5	CLST WC1:	WC2:	COM2:	KEY: 59866
18 UE	1.50'FORT UNION 246.00' EL: 4325.5-4324.0	COAL WC1:	WC2:	COM2: E BS 4324	KEY: 59867
19	4.00'FORT UNION 250.00' EL: 4324.0-4320.0	CLST WC1:	WC2:	COM2:	KEY: 59868
20	2.00'FORT UNION 252.00' EL: 4320.0-4318.0	SS WC1:	WC2:	COM2:	KEY: 59869
21 E	2.00'FORT UNION 254.00' EL: 4318.0-4316.0	COAL WC1:	WC2:	COM2: E BS 4316	KEY: 59870
22	1.00'FORT UNION 255.00' EL: 4316.0-4315.0	CLST WC1:	WC2:	COM2:	KEY: 59871
23	10.00'FORT UNION 265.00' EL: 4315.0-4305.0	SS WC1:	WC2:	COM2:	KEY: 59872
24	4.00'FORT UNION 269.00' EL: 4305.0-4301.0	CLST WC1:	WC2:	COM2:	KEY: 59873
25	3.00'FORT UNION 272.00' EL: 4301.0-4298.0	SS WC1:	WC2:	COM2:	KEY: 59874
26	4.00'FORT UNION 276.00' EL: 4298.0-4294.0	CLST WC1:	WC2:	COM2:	KEY: 59875
27	9.00'FORT UNION 285.00' EL: 4294.0-4285.0	SS WC1:	WC2:	COM2:	KEY: 59876
28	5.00'FORT UNION 290.00' EL: 4285.0-4280.0	CLST WC1:	WC2:	COM2:	KEY: 59877
29	15.00'FORT UNION 305.00' EL: 4280.0-4265.0	SS WC1:	WC2:	COM2:	KEY: 59878
30	3.00'FORT UNION 308.00' EL: 4265.0-4262.0	CLST WC1:	WC2:	COM2:	KEY: 59879
31	3.00'FORT UNION 311.00' EL: 4262.0-4259.0	SS WC1:	WC2:	COM2:	KEY: 59880
32	4.00'FORT UNION 315.00' EL: 4259.0-4255.0	CLST WC1:	WC2:	COM2:	KEY: 59881
33	5.50'FORT UNION 320.50' EL: 4255.0-4249.5	SS WC1:	WC2:	COM2:	KEY: 59882
34 E	1.50'FORT UNION 322.00' EL: 4249.5-4248.0	COAL WC1:	WC2:	COM2: E BS 4248	KEY: 59883
35	18.00'FORT UNION 340.00' EL: 4248.0-4230.0	SS WC1:	WC2:	COM2:	KEY: 59884
36	11.50'FORT UNION 351.50' EL: 4230.0-4218.5	CLST WC1:	WC2:	COM2:	KEY: 59885

60	17.00' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	59909
	547.50' EL: 4039.5-4022.5	WC1:	WC2:				
61	25.00' FORT UNION	SS				KEY:	59910
	572.50' EL: 4022.5-3997.5	WC1:	WC2:				
62	10.00' FORT UNION	CLST				KEY:	59911
	582.50' EL: 3997.5-3987.5	WC1:	WC2:				
63	12.00' FORT UNION	SS				KEY:	59912
	594.50' EL: 3987.5-3975.5	WC1:	WC2:				
64	3.00' FORT UNION	CLST				KEY:	59913
	597.50' EL: 3975.5-3972.5	WC1:	WC2:				
65	2.00' FORT UNION	SS				KEY:	59914
	599.50' EL: 3972.5-3970.5	WC1:	WC2:				
66	4.00' FORT UNION	CLST				KEY:	59915
	603.50' EL: 3970.5-3966.5	WC1:	WC2:				
67	7.00' FORT UNION	SS				KEY:	59916
	610.50' EL: 3966.5-3959.5	WC1:	WC2:				
68	3.00' FORT UNION	SLST				KEY:	59917
	613.50' EL: 3959.5-3956.5	WC1:	WC2:				
69	4.00' FORT UNION	CLST				KEY:	59918
	617.50' EL: 3956.5-3952.5	WC1:	WC2:				
70	10.00' FORT UNION	SS				KEY:	59919
	627.50' EL: 3952.5-3942.5	WC1:	WC2:				
71	3.00' FORT UNION	CLST				KEY:	59920
	630.50' EL: 3942.5-3939.5	WC1:	WC2:				
72	3.00' FORT UNION	SS				KEY:	59921
	633.50' EL: 3939.5-3936.5	WC1:	WC2:				
73	2.00' FORT UNION	CLST				KEY:	59922
	635.50' EL: 3936.5-3934.5	WC1:	WC2:				
74	3.00' FORT UNION	SS				KEY:	59923
	638.50' EL: 3934.5-3931.5	WC1:	WC2:				
75	2.00' FORT UNION	CLST				KEY:	59924
	640.50' EL: 3931.5-3929.5	WC1:	WC2:				
76	7.00' FORT UNION	SS				KEY:	59925
	647.50' EL: 3929.5-3922.5	WC1:	WC2:				
77	1.50' FORT UNION	CLST				KEY:	59926
	649.00' EL: 3922.5-3921.0	WC1:	WC2:				
78 UE	1.50' FORT UNION	COAL				KEY:	59927
	ROCK MESA						
	650.50' EL: 3921.0-3919.5	WC1:	WC2:				
79	7.00' FORT UNION	SLST			COM2: (OR DIRTY COAL), E BS 3919.5	KEY:	59928
	657.50' EL: 3919.5-3912.5	WC1:	WC2:				
80	4.00' FORT UNION	SS				KEY:	59929
	661.50' EL: 3912.5-3908.5	WC1:	WC2:				
81	1.00' FORT UNION	CLST				KEY:	59930
	662.50' EL: 3908.5-3907.5	WC1:	WC2:				
82	2.50' FORT UNION	SS				KEY:	59931
	665.00' EL: 3907.5-3905.0	WC1:	WC2:				

83	0.50' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:
	665.50' EL: 3905.0-3904.5					59932
84 E	4.00' FORT UNION	COAL?	WC1:	WC2:	COM2: (OR DIRTY SS), E BS 3900.5	KEY: 59933
85	1.00' FORT UNION	CLST	WC1:	WC2:		KEY: 59934
86	29.00' FORT UNION	SS	WC1:	WC2:		KEY: 59935
87	4.00' FORT UNION	CLST	WC1:	WC2:		KEY: 59936
88 E	2.00' FORT UNION	COAL	WC1:	WC2:		KEY: 59937
	703.50' EL: 3870.5-3866.5					
	MAMMOTH 3					
89	1.50' FORT UNION	CLST	WC1:	WC2:	COM2: E BS 3864.5, =REHDER	KEY: 59938
	705.50' EL: 3866.5-3864.5					
90	1.00' FORT UNION	SLST	WC1:	WC2:		KEY: 59939
	707.00' EL: 3864.5-3863.0					
91	2.00' FORT UNION	CLST	WC1:	WC2:		KEY: 59940
	708.00' EL: 3863.0-3862.0					
92	1.00' FORT UNION	SLST	WC1:	WC2:		KEY: 59941
	710.00' EL: 3862.0-3860.0					
93	1.50' FORT UNION	CLST	WC1:	WC2:		KEY: 59942
	711.00' EL: 3860.0-3859.0					
94	3.80' FORT UNION	COAL	WC1:	WC2:		KEY: 59943
	712.50' EL: 3859.0-3857.5					
	MAMMOTH 1+2					
95	0.20' FORT UNION	RK	WC1:	WC2:		KEY: 59944
	716.30' EL: 3857.5-3853.7					
	MAMMOTH 1+2					
96	3.50' FORT UNION	COAL	WC1:	WC2:		KEY: 59945
	716.50' EL: 3853.7-3853.5					
	MAMMOTH 1+2					
97	0.20' FORT UNION	RK	WC1:	WC2:		KEY: 59946
	720.00' EL: 3853.5-3850.0					
	MAMMOTH 1+2					
98 E	2.80' FORT UNION	COAL	WC1:	WC2:		KEY: 59947
	720.20' EL: 3850.0-3849.8					
	MAMMOTH 1+2					
99	8.50' FORT UNION	SS	WC1:	WC2:	COM2: E BS 3847	KEY: 59948
	723.00' EL: 3849.8-3847.0					
100	1.00' FORT UNION	CLST	WC1:	WC2:		KEY: 59949
	731.50' EL: 3847.0-3838.5					
101 L	4.00' FORT UNION	SS	WC1:	WC2:		KEY: 59950
	732.50' EL: 3838.5-3837.5					
	MAMMOTH 1+2					
102 E	3.50' FORT UNION	RK	WC1:	WC2:	COM2: L BS GAMMA AND RESISTIV.	KEY: 59951
	736.50' EL: 3837.5-3833.5					
	MAMMOTH 1+2					
	740.00' EL: 3833.5-3830.0					

DATA POINT ID: B5-84G
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

STATE: MONTANA
 COUNTY: MUSSELSHELL

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62722-2

HYDRO CD: 0 FILEPOINTER:

GEOLOGIST: USGD-CONNOR C W DATE: 830113 CONFID: 20
 SOURCE: LOUISIANA LAND AND EXPL PRIN MERIDIAN: 20

SURFACE
 ELEVATION: 4648.00' RANK: SUBBIT QUARTERS: NE
 ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 22.0

TOTAL DEPTH
 LOGGED : 808.00' LATITUDE: 46 15 25 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 202 LONGITUDE: 108 19 45 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	237.50'		FORT UNION		RK							
2	E		3.00' FORT UNION	FATTIG	WC1:	WC2:	COM2:				KEY:	59952
3			240.50' FORT UNION		WC1:	WC2:	COM2:	E BS 4407.5			KEY:	59953
4	E		71.50' FORT UNION		RK	WC2:	COM2:				KEY:	59954
5			312.00' FORT UNION	STRAIT	WC1:	WC2:	COM2:	E BS 4332			KEY:	59955
6	UE		4.00' FORT UNION		RK	WC2:	COM2:				KEY:	59956
7			316.00' FORT UNION		WC1:	WC2:	COM2:	E BS 4096.5			KEY:	59957
8	I		545.00' FORT UNION	BULL MTN	WC1:	WC2:	COM2:				KEY:	59958
9	I		551.50' FORT UNION		WC1:	WC2:	COM2:	E BS 3849			KEY:	59959
10			785.00' FORT UNION	MAMMOTH III 11213	WC1:	WC2:	COM2:				KEY:	59960
11			799.00' FORT UNION		WC1:	WC2:	COM2:	E BS 3849			KEY:	59961
12			808.00' FORT UNION		RK	WC2:	COM2:				KEY:	59962

DATA POINT ID: B5-86
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
DATE: 830113
CONFID: 20
PRIN MERIDIAN: 20

STATE: MONTANA
COUNTY: YELLOWSTONE
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-180
HYDRO CD: 0
FILEPOINTER:

SURFACE
ELEVATION: 4109.00'
ELVPREC: 2
LOGGED : 239.50'
DESCRIPTION
LOG : 202
WEATHERING: 0

RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
LATITUDE: 46 15 45
LONGITUDE: 108 18 5
LLPREC: 0

QUARTERS: NE
SECTION: 23.0
TOWNSHIP: 6.00N
RANGE: 27.00E

OWNERSHIP:

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UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	143.00'		FORT UNION		RK							
	143.00'		EL: 4109.0-3966.0		WC1:	WC2:	COM2:				KEY:	49439
2	E	3.30'	FORT UNION	ROCK MESA	COAL							
	146.30'		EL: 3966.0-3962.7		WC1:	WC2:	COM2: E BS 3962.7				KEY:	49440
3	60.00'		FORT UNION		RK							
	206.30'		EL: 3962.7-3902.7		WC1:	WC2:	COM2:				KEY:	49441
4	11.70'		FORT UNION	MAMMOTH 1+2+3	COAL							
	218.00'		EL: 3902.7-3891.0		WC1:	WC2:	COM2:				KEY:	49442
5	0.80'		FORT UNION	MAMMOTH 1+2+3	RK							
	218.80'		EL: 3891.0-3890.2		WC1:	WC2:	COM2:				KEY:	49443
6	E	2.70'	FORT UNION	MAMMOTH 1+2+3	COAL							
	221.50'		EL: 3890.2-3887.5		WC1:	WC2:	COM2: E BS 3887.5				KEY:	49444
7	E	18.00'	FORT UNION		RK							
	239.50'		EL: 3887.5-3869.5		WC1:	WC2:	COM2: E BS 3869.5				KEY:	49445

DATA POINT ID: B5-87

QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: LOUISIANA LAND AND EXPL

DATE: 830113

PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA

COUNTY: YELLOWSTONE

ELEVATION: 4117.00'

ELVPREC: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NE

SECTION: 23.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH

LOGGED : 260.50'

TOWNSHIP: 6.00N

REGION: POWDER RIVER

FIELD: RUII MOUNTAIN

COMMENT1: LL&E 62723-2

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UNIT		TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	E	161.00'		FORT UNION		RK							
		161.00'		EL: 4117.0-3956.0	ROCK MESA	WC2:		COM2:				KEY:	49464
2	E	2.50'		FORT UNION		COAL							
		163.50'		EL: 3956.0-3953.5		WC1:		COM2: E BS 3953.5				KEY:	49465
3	E	60.00'		FORT UNION		RK							
		223.50'		EL: 3953.5-3893.5		WC1:		COM2:				KEY:	49466
4	E	4.90'		FORT UNION	MAMMOTH 1+2+3	COAL							
		228.40'		EL: 3893.5-3888.6		WC1:		COM2:				KEY:	49467
5	E	0.10'		FORT UNION	MAMMOTH 1+2+3	RK							
		228.50'		EL: 3888.6-3888.5		WC1:		COM2:				KEY:	49468
6	E	1.00'		FORT UNION	MAMMOTH 1+2+3	COAL							
		229.50'		EL: 3888.5-3887.5		WC1:		COM2:				KEY:	49469
7	E	2.50'		FORT UNION	MAMMOTH 1+2+3	BONE							
		232.00'		EL: 3887.5-3885.0		WC1:		COM2:				KEY:	49470
8	E	2.50'		FORT UNION	MAMMOTH 1+2+3	COAL							
		234.50'		EL: 3885.0-3882.5		WC1:		COM2:				KEY:	49471
9	E	0.10'		FORT UNION	MAMMOTH 1+2+3	RK							
		234.60'		EL: 3882.5-3882.4		WC1:		COM2:				KEY:	49472
10	E	3.40'		FORT UNION	MAMMOTH 1+2+3	COAL							
		238.00'		EL: 3882.4-3879.0		WC1:		COM2: E BS 3879				KEY:	49473
11	E	22.50'		FORT UNION		RK							
		260.50'		EL: 3879.0-3856.5		WC1:		COM2: E BS 3856.5				KEY:	49474

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DATA POINT ID: B5-89
 QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
 STATE: MONTANA
 COUNTY: YELLOWSTONE
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: CONSOL BM-2210
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONSOLIDATION COAL CO
 SURFACE
 ELEVATION: 3986.00'
 ELVPREC: 1
 TOTAL DEPTH
 LOGGED : 99.90'
 DESCRIPTION
 LOG : 202
 WEATHERING: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: SE
 SECTION: 23.0
 TOWNSHIP: 6.00N
 RANGE: 27.00E
 DATE: 830113
 CONFID: 20
 PRIN MERIDIAN: 20
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	69.00'		FORT UNION	EL: 3986.0-3917.0	WC1:	WC2:	COM2:				KEY:	49446
2	11.00'		FORT UNION	MAMMOTH 1+2+3	WC1:	WC2:	COM2:				KEY:	49447
3	0.20'		FORT UNION	MAMMOTH 1+2+3	WC1:	WC2:	COM2:				KEY:	49448
4 E	3.70'		FORT UNION	MAMMOTH 1+2+3	WC1:	WC2:	COM2:	E BS 3902.1			KEY:	49449
5 E	16.00'		FORT UNION	EL: 3902.1-3886.1	WC1:	WC2:	COM2:	E BS 3886.1			KEY:	49450

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DATA POINT ID: B5-90
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: YELLOWSTONE
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-2211
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3990.00'
ELVPREC: 1
TOTAL DEPTH
LOGGED : 80.50'
DESCRIPTION
LOG : 202
WEATHERING: 0
DATE: 830113
PRIN MERIDIAN: 20
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SE
TOWNSHIP: 6.00N
RANGE: 27.00E
LLPREC: 0
OWNERSHIP:
FILEPOINTER:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 60.00' FORT UNION RK WC1: 3990.0-3930.0 WC2: COM2: KEY: 49451
2 11.00' FORT UNION MAMMOTH 1+2+3 WC1: COAL WC2: COM2: KEY: 49452
3 0.20' FORT UNION MAMMOTH 1+2+3 WC1: RK WC2: COM2: KEY: 49453
4 E 71.20' EL: 3919.0-3918.8 WC1: COAL WC2: COM2: E BS 3915.5 KEY: 49454
5 E 74.50' EL: 3918.8-3915.5 WC1: RK WC2: COM2: E BS 3909.5 KEY: 49455
6.00' FORT UNION 80.50' EL: 3915.5-3909.5 WC1: WC2: COM2: E BS 3909.5

DATA POINT ID: B5-91
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')
STATE: MONTANA
COUNTY: YELLOWSTONE
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-2126
HYDRO CD: 0
FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 3973.00'
ELVPREC: 1
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: NW
SECTION: 19.0
TOTAL DEPTH
LOGGED : 41.00'
LATITUDE: 46 15 31
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 16 4
RANGE: 28.00E
WEATHERING: 0
LLPREC: 0
OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 22.00' FORT UNION 22.00' EL: 3973.0-3951.0 MAMMOTH 1+2+3 WC1: WC2: COM2: KEY: 49456
2 E 14.00' FORT UNION 36.00' EL: 3951.0-3937.0 WC1: WC2: COM2: E BS 3937 KEY: 49457
3 E 5.00' FORT UNION 41.00' EL: 3937.0-3932.0 WC1: WC2: COM2: E BS 3932 KEY: 49458
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DATA POINT ID: B5-92
QUAD & SERIES: DUNN MOUNTAIN NORTH (7.5')

STATE: MONTANA
COUNTY: YELLOWSTONE

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM-183
HYDRO CD: 0

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 4077.00'
ELVPREC: 1
TOTAL DEPTH
LOGGED : 132.70'
DESCRIPTION
LOG : 202
WEATHERING: 0

DATE: 830113
PRIN MERIDIAN: 20
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
LATITUDE: 46 15 16
LONGITUDE: 108 16 9
LLPREC: 0
RANGE: 28.00E

OWNERSHIP:
FILEPOINTER:

UNIT TL K FORMATION BED NAME LITH LITHMOO COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 48.00' FORT UNION 48.00' EL: 4077.0-4029.0 RK WC1: WC2: COM2: KEY: 49459
2 3.70' FORT UNION ROCK MESA 51.70' EL: 4029.0-4025.3 COAL WC1: WC2: COM2: KEY: 49460
3 58.00' FORT UNION 109.70' EL: 4025.3-3967.3 RK WC1: WC2: COM2: KEY: 49461
4 E 14.00' FORT UNION MAMMOTH 1+2+3 123.70' EL: 3967.3-3953.3 COAL WC1: WC2: COM2: E BS 3953.3 KEY: 49462
5 E 9.00' FORT UNION 132.70' EL: 3953.3-3944.3 RK WC1: WC2: COM2: E BS 3944.3 KEY: 49463

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DATA POINT ID: 116 N+4
QUAD & SERIES: CHERRY SPRING (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0 FILEPINTER:
GEOLOGIST: USGS-CUNNOR C W
SOURCE: USGS BULL 647 (1917)
SURFACE
ELEVATION: 3940.00'
ELVPREC: 2
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: SE
TOWNSHIP: 7.00N
LOGGED : 5.90' LATITUDE: 46 19 32
LONGITUDE: 108 11 52
WEATHERING: 0
LLPREC: 0
RANGE: 28.00E
OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 1.90' FORT UNION MAMMOTH 1 COAL WC1: WC2: COM2: KEY: 58563
2 0.30' FORT UNION MAMMOTH 1 SH WC1: WC2: COM2: KEY: 58564
3 3.70' FORT UNION MAMMOTH 1 COAL WC1: WC2: COM2: E BS 3934.1 KEY: 58565
1.90' EL: 3940.0-3938.1
2.20' EL: 3938.1-3937.8
5.90' EL: 3937.8-3934.1
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DATA POINT ID: B6-B57
 QUAD & SERIES: CHERRY SPRING (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830117

CONFID: 20

SOURCE: USGS BULL 647 (1917)

PRIN MERIDIAN: 20

SURFACE

ELEVATION: 3970.00' RANK: SUBBIT QUARTERS: NW
 ELVPREC: 2 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 35.0

TOTAL DEPTH
 LOGGED : 7.60' LATITUDE: 46 19 1 TOWNSHIP: 7.00N
 DESCRIPTION
 LOG : 102 LONGITUDE: 108 11 21 RANGE: 28.00E
 WEATHERING: 0 LLPREC: 0

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

COMMENT1:

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC	C F
1	1.50'		FORT UNION	MAMMOTH 2+3	COAL								
				1.50' EL: 3970.0-3968.5	WC1:	WC2:	COM2:				KEY:	58566	
2	0.40'		FORT UNION	MAMMOTH 2+3	SH								
				1.90' EL: 3968.5-3968.1	WC1:	WC2:	COM2:				KEY:	58567	
3	3.70'		FORT UNION	MAMMOTH 2+3	COAL								
				5.60' EL: 3968.1-3964.4	WC1:	WC2:	COM2:				KEY:	58568	
4	0.20'		FORT UNION	MAMMOTH 2+3	RK								
				5.80' EL: 3964.4-3964.2	WC1:	WC2:	COM2:				KEY:	58569	
5	1.00'		FORT UNION	MAMMOTH 2+3	COAL								
				6.80' EL: 3964.2-3963.2	WC1:	WC2:	COM2:				KEY:	58570	
6	0.10'		FORT UNION	MAMMOTH 2+3	RK								
				6.90' EL: 3963.2-3963.1	WC1:	WC2:	COM2:				KEY:	58571	
7 E	0.70'		FORT UNION	MAMMOTH 2+3	COAL								
				7.60' EL: 3963.1-3962.4	WC1:	WC2:	COM2:	E BS 3962.4			KEY:	58572	

DATA POINT ID: B6-B70
QUAD & SERIES: CHERRY SPRING (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: USGS BULL 647 (1917)
DATE: 830117
CONFID: PRIN MERIDIAN: 20
STATE: MONTANA
COUNTY: MUSSELSHELL
SURFACE ELEVATION: 3985.00'
ELVPREC: 2
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: 2.0
SW
TOTAL DEPTH
LOGGED : 4.90'
LATITUDE: 46 17 37
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 102
LONGITUDE: 108 11 35
WEATHERING: 0
LLPREC: 0
RANGE: 28.00E
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0
FILEPOINTER:
OWNERSHIP:

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1					2.20' FORT UNION			MAMMOTH 1	3985.0-3982.8	WC1: COAL	WC2:	COM2:					KEY: 58573
2					0.20' FORT UNION			MAMMOTH 1	3982.8-3982.6	WC1: SH	WC2:	COM2:					KEY: 58574
3 E					2.50' FORT UNION			MAMMOTH 1	3982.6-3980.1	WC1: COAL	WC2:	COM2: E BS 3980.1					KEY: 58575

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DATA POINT ID: B6-B71
QUAD & SERIES: CHERRY SPRING (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0 FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: USGS BULL 647 (1917)
DATE: 830117
CONFID: PRIN MERIDIAN: 20
SURFACE
ELEVATION: 3955.00'
ELVPREC: 2
TOTAL DEPTH
LOGGED : 5.50'
DESCRIPTION
LOG : 102
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
TOWNSHIP: 6.00N
RANGE: 28.00E
LLPREC: 0
OWNERSHIP:
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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 2.50' FORT UNION MAMMOTH 1 COAL WC1: WC2: COM2: KEY: 58576
2 0.20' FORT UNION MAMMOTH 1 SH WC1: WC2: COM2: KEY: 58577
3 E 2.80' FORT UNION MAMMOTH 1 COAL WC1: WC2: COM2: E BS 3949.5 KEY: 58578
5.50' EL: 3952.3-3949.5

DATA POINT ID: 86-B72
QUAD & SERIES: CHERRY SPRING (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0 FILE POINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: USGS BULL 647 (1917)
SURFACE
ELEVATION: 3943.00'
ELVPREC: 2
TOTAL DEPTH
LOGGED : 8.00'
DESCRIPTION
LOG : 102
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
LATITUDE: 46 17 17
LONGITUDE: 108 12 51
LLPREC: 0
QUARTERS: NW
SECTION: 10.0
TOWNSHIP: 6.00N
RANGE: 28.00E
OWNERSHIP:
UNIT TL K FORMATION BED NAME
1 8.00' FORT UNION MAMMOTH 2+3
8.00' EL: 3943.0-3935.0
LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
COAL WC1: WC2: COM2: E BS 3935
KEY: 58579
C F
O O
N S

 DATA POINT ID: B6-B73
 QUAD & SERIES: CHERRY SPRING (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1:
 HYDRO CD: 0 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W DATE: 830117 CONFID: 20
 SOURCE: USGS BULL 647 (1917) PRIN MERIDIAN: 20
 SURFACE ELEVATION: 3963.00' RANK: SUBBIT QUARTERS: NW
 ELVPREC: 2 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 10.0
 TOTAL DEPTH
 LOGGED : 27.70' LATITUDE: 46 17 12 TOWNSHIP: 6.00N
 DESCRIPTION LOG : 102 LONGITUDE: 108 12 51 RANGE: 28.00E
 WEATHERING: 0 LLPREC: 0
 OWNERSHIP:
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 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 8.50' FORT UNION MAMMOTH 2+3 COAL WC1: WC2: COM2: KEY: 58580
 2 0.20' FORT UNION 8.50' EL: 3963.0-3954.5 SH WC1: WC2: COM2: KEY: 58581
 3 2.00' FORT UNION 8.70' EL: 3954.5-3954.3 SS WC1: WC2: COM2: KEY: 58582
 4 0.50' FORT UNION 10.70' EL: 3954.3-3952.3 SH WC1: WC2: COM2: KEY: 58583
 5 10.00' FORT UNION 11.20' EL: 3952.3-3951.8 SS WC1: WC2: COM2: KEY: 58584
 6 0.50' FORT UNION 21.20' EL: 3951.8-3941.8 SH WC1: WC2: COM2: KEY: 58585
 7 2.00' FORT UNION 21.70' EL: 3941.8-3941.3 MAMMOTH 1 COAL WC1: WC2: COM2: KEY: 58586
 8 1.00' FORT UNION 23.70' EL: 3941.3-3939.3 MAMMOTH 1 SH WC1: WC2: COM2: KEY: 58587
 9 E 3.00' FORT UNION 24.70' EL: 3939.3-3938.3 MAMMOTH 1 COAL WC1: WC2: COM2: KEY: 58588
 27.70' EL: 3938.3-3935.3 COM2: E BS 3935.3

DATA POINT ID: 86-875

QUAD & SERIES: CHERRY SPRING (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830117

CONFID:

SOURCE: USGS BULL 647 (1917)

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

SURFACE ELEVATION: 3956.00'

RANK: SUBBIT

QUARTERS:

NE

ELVPREC: 2

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 17.0

TOTAL DEPTH

LOGGED : 16.20'

TOWNSHIP: 6.00N

PROVINCE: N GREAT PLAINS

DESCRIPTION

LATITUDE: 46 16 32

REGION: POWDER RIVER

LOG : 102

LONGITUDE: 108 14 8

RANGE: 28.00E

FIELD: BULL MOUNTAIN

WEATHERING: 0

LLPREC: 0

COMMENT1:

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UQ

NU T

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1

8.30' FORT UNION

MAMMOTH 1+2+3

COAL

COM2:

KEY:

58589

2

1.40' FORT UNION

MAMMOTH 1+2+3

SLST

COM2:

KEY:

58590

3

2.50' FORT UNION

MAMMOTH 1+2+3

COAL

COM2:

KEY:

58591

4

0.20' FORT UNION

MAMMOTH 1+2+3

SH

COM2:

KEY:

58592

5

3.80' FORT UNION

MAMMOTH 1+2+3

COAL

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

16.20' EL: 3943.6-3939.8

WC1:

COM2:

KEY:

58593

DATA POINT ID: B6-B76
QUAD & SERIES: CHERRY SPRING (7.5')

GEOLOGIST: USGD-CONNOR C W DATE: 830117 CONFID: 20
SOURCE: USGS BULL 647 (1917) PRIN MERIDIAN: 20

STATE: MONTANA
COUNTY: MUSSELSHELL
ELEVATION: 3970.00' RANK: SUBBIT QUARTERS: SE
ELVPREC: 2 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 17.0

TOTAL DEPTH
LOGGED : 4.80' LATITUDE: 46 16 8 TOWNSHIP: 6.00N
DESCRIPTION
LOG : 102 LONGITUDE: 108 14 33 RANGE: 28.00E
WEATHERING: 0 LLPREC: 0

PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0 FILEPOINTER: OWNERSHIP:

UQ	NU	T	IA	H	UNIT	TL	K	FORMATION	BED	NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	1.60'	FORT UNION	MAMMOTH	1	1.60'	EL: 3970.0-3968.4	WC1:	WC2:	COM2:	KEY:	58594									
2	0.20'	FORT UNION	MAMMOTH	1	1.80'	EL: 3968.4-3968.2	WC1:	WC2:	COM2:	KEY:	58595									
3	3.00'	FORT UNION	MAMMOTH	1	4.80'	EL: 3968.2-3965.2	WC1:	WC2:	COM2:	E BS 3965.2	KEY:	58596								

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N S

DATA POINT ID: B6-B77
 QUAD & SERIES: CHERRY SPRING (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1:
 HYDRO CD: 0 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W DATE: 830117
 SOURCE: USGS BULL 647 (1917)
 SURFACE
 ELEVATION: 3945.00' RANK: SUBBIT
 ELVPREC: 1 LOCAL STRIKE/DIP/ANGLE: 0 0 0 QUARTERS: NW
 TOTAL DEPTH
 LOGGED : 8.20' LATITUDE: 46 16 20 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 102 LONGITUDE: 108 14 53 RANGE: 28.00E
 WEATHERING: 0 LLPREC: 0
 OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	F	J	C
1	IX		0.20' FORT UNION	MAMMOTH 1+2+3	SH											
			0.20' EL: 3945.0-3944.8		WC1:	WC2:	COM2: PROBABLY MORE COAL ABOVE				KEY:					58597
2	X		1.80' FORT UNION	MAMMOTH 1+2+3	COAL											
			2.00' EL: 3944.8-3943.0		WC1:	WC2:	COM2:				KEY:					58598
3	X		0.70' FORT UNION	MAMMOTH 1+2+3	SH											
			2.70' EL: 3943.0-3942.3		WC1:	WC2:	COM2:				KEY:					58599
4	X		2.20' FORT UNION	MAMMOTH 1+2+3	COAL											
			4.90' EL: 3942.3-3940.1		WC1:	WC2:	COM2:				KEY:					58600
5	X		0.20' FORT UNION	MAMMOTH 1+2+3	SH											
			5.10' EL: 3940.1-3939.9		WC1:	WC2:	COM2:				KEY:					58601
6	EX		3.10' FORT UNION	MAMMOTH 1+2+3	COAL											
			8.20' EL: 3939.9-3936.8		WC1:	WC2:	COM2: E BS 3936.8				KEY:					58602

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DATA POINT ID: B6-C4
QUAD & SERIES: CHERRY SPRING (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0 FILE POINTER:
GEOLOGIST: USGD-CONNOR C W DATE: 830117
SOURCE: CONNOR C W
SURFACE
ELEVATION: 3995.00' RANK: SUBBIT LOCAL STRIKE/DIP/ANGLE: 0 0 0 QUARTERS: SE
ELVPREC: 0
TOTAL DEPTH
LOGGED : 5.10' LATITUDE: 46 17 49 TOWNSHIP: 6.00N
DESCRIPTION
LOG : 102 LONGITUDE: 108 11 53 RANGE: 28.00E
WEATHERING: 0
OWNERSHIP:
UNIT TL K FORMATION BED NAME LITH LITHMOO COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 IC 5.10' FORT UNION MAMMOTH 2+3 COAL WC1: WC2: COM2: GOT TOP, NOT BASE, C 90 IN KEY: 58520
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DATA POINT ID: B6-C17
 QUAD & SERIES: CHERRY SPRING (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONNOR C W AND BULL 647

DATE: 830117
 PRIN MERIDIAN: 20

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

SURFACE ELEVATION: 3980.00'
 ELVPREC: 0

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW
 SECTION: 16.0

TOTAL DEPTH
 LOGGED : 21.00' LATITUDE: 46 16 25 TOWNSHIP: 6.00N

DESCRIPTION
 LOG : 102 LONGITUDE: 108 13 33 RANGE: 28.00E

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

WEATHERING: 0
 LLPREC: 0

COMMENT1: ALSO HAVE GENERAL DESCR NEXT 100' ABOVE
 HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UQ NU T C F

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 I 5.00'FORT UNION 5.00' EL: 3980.0-3975.0 WC1: SS WC2: KEY: 58521

2 8.00'FORT UNION MAMMOTH 1+2+3 WC1: COAL WC2: KEY: 58522

3 13.00' EL: 3975.0-3967.0 WC1: SS WC2: KEY: 58523

4 1.00'FORT UNION MAMMOTH 1+2+3 WC1: COAL WC2: KEY: 58524

14.00' EL: 3967.0-3966.0 WC1: CLST WC2: KEY: 58525

16.20' EL: 3966.0-3963.8 WC1: COAL WC2: KEY: 58526

0.20'FORT UNION MAMMOTH 1+2+3 WC1: CLST WC2: KEY: 58527

16.40' EL: 3963.8-3963.6 WC1: COAL WC2: KEY: 58527

3.60'FORT UNION MAMMOTH 1+2+3 WC1: SS WC2: KEY: 58527

20.00' EL: 3963.6-3960.0 WC1: SS WC2: KEY: 58527

1.00'FORT UNION 21.00' EL: 3960.0-3959.0 WC1: SS WC2: KEY: 58527

DATA POINT ID: B6-C22
QUAD & SERIES: CHERRY SPRING (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONNOR C W

DATE: 830117
PRIN MERIDIAN: 20

STATE: MONTANA
COUNTY: MUSSELSHELL

ELEVATION: 3981.00'
ELVPREC: 0

RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW
SECTION: 10.0

PROVINCE: N GREAT PLAINS

LOGGED : 57.45' LATITUDE: 46 17 9 TOWNSHIP: 6.00N

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN

LOG : 102 LONGITUDE: 108 12 31 RANGE: 28.00E
WEATHERING: 0 LLPREC: 0

COMMENT1: OLD DOUGLAS CAMP LOCALITY
HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

										C F		
										O O		
										N S		
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	I		15.00' FORT UNION	15.00' EL: 3981.0-3966.0	SS							
					WC1:	WC2:	COM2:				KEY:	58528
2			6.40' FORT UNION	MAMMOTH 2+3	COAL							
				21.40' EL: 3966.0-3959.6	WC1:	WC2:	COM2:				KEY:	58529
3			0.20' FORT UNION	MAMMOTH 2+3	CLST							
				21.60' EL: 3959.6-3959.4	WC1:	WC2:	COM2:				KEY:	58530
4			0.60' FORT UNION	MAMMOTH 2+3	COAL							
				22.20' EL: 3959.4-3958.8	WC1:	WC2:	COM2:				KEY:	58531
5			0.10' FORT UNION	MAMMOTH 2+3	CLST							
				22.30' EL: 3958.8-3958.7	WC1:	WC2:	COM2:	RANGE 0.04-0.1			KEY:	58532
6	E		0.80' FORT UNION	MAMMOTH 2+3	COAL							
				23.10' EL: 3958.7-3957.9	WC1:	WC2:	COM2:	E BS 3957.9			KEY:	58533
7			11.00' FORT UNION		SS							
				34.10' EL: 3957.9-3946.9	WC1:	WC2:	COM2:				KEY:	58534
8			2.80' FORT UNION		SLST							
				36.90' EL: 3946.9-3944.1	WC1:	WC2:	COM2:				KEY:	58535
9			2.30' FORT UNION	MAMMOTH 1	COAL							
				39.20' EL: 3944.1-3941.8	WC1:	WC2:	COM2:				KEY:	58536
10			0.25' FORT UNION	MAMMOTH 1	CLST							
				39.45' EL: 3941.8-3941.6	WC1:	WC2:	COM2:				KEY:	58537
11	E		3.00' FORT UNION	MAMMOTH 1	COAL							
				42.45' EL: 3941.6-3938.6	WC1:	WC2:	COM2:	E BS 3938.5			KEY:	58538
12	1E		15.00' FORT UNION		SS							
				57.45' EL: 3938.6-3923.6	WC1:	WC2:	COM2:	E BS 3923.5			KEY:	58539

DATA POINT ID: B6-C23

QUAD & SERIES: CHERRY SPRING (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830117

CONFID:

SOURCE: CONNOR C W AND BULL 647

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 3980.00'

RANK: SUBBIT

QUARTERS:

SE

ELVPREC: 0

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 32.0

TOTAL DEPTH

LOGGED : 26.20'

LATITUDE: 46 18 41

TOWNSHIP: 7.00N

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

DESCRIPTION

LOG : 102

LONGITUDE: 108 14 23

RANGE: 28.00E

WEATHERING: 0

LLPREC: 0

COMMENT1:

HYDRO CD: 0

FILE POINTER:

OWNERSHIP:

UQ

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UNIT TL K

FORMATION

BED NAME

LITH

LITHMOO

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1 I

5.00' FORT UNION

5.00' EL: 3980.0-3975.0

SS

WC1:

WC2:

COM2:

KEY:

58540

KEY:

58541

2

3.10' FORT UNION

8.10' EL: 3975.0-3971.9

CLST

WC1:

WC2:

COM2:

KEY:

58542

KEY:

58543

3

2.20' FORT UNION

10.30' EL: 3971.9-3969.7

COAL

WC1:

WC2:

COM2:

KEY:

58544

KEY:

58545

4

0.20' FORT UNION

10.50' EL: 3969.7-3969.5

CLST

WC1:

WC2:

COM2:

KEY:

58546

KEY:

58547

5

5.70' FORT UNION

16.20' EL: 3969.5-3963.8

COAL

WC1:

WC2:

COM2:

KEY:

58548

KEY:

58549

6

0.20' FORT UNION

16.40' EL: 3963.8-3963.6

RK

WC1:

WC2:

COM2:

KEY:

58549

KEY:

58549

7

1.00' FORT UNION

17.40' EL: 3963.6-3962.6

COAL

WC1:

WC2:

COM2:

KEY:

58549

KEY:

58549

8

0.10' FORT UNION

17.50' EL: 3962.6-3962.5

RK

WC1:

WC2:

COM2:

KEY:

58549

KEY:

58549

9 E

0.70' FORT UNION

18.20' EL: 3962.5-3961.8

COAL

WC1:

WC2:

COM2:

KEY:

58549

KEY:

58549

10 I

8.00' FORT UNION

26.20' EL: 3961.8-3953.8

SLST

WC1:

WC2:

COM2:

KEY:

58549

KEY:

58549

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 DATA POINT ID: B6-US15
 QUAD & SERIES: CHERRY SPRING (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: USGS & MONT BU MINES HOLE 79-7
 HYDRO CD: 0
 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: USGS & MONT BU MINES
 SURFACE
 ELEVATION: 4079.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NW
 TOTAL DEPTH
 LOGGED : 260.00'
 LATITUDE: 46 17 31
 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 230
 LONGITUDE: 108 12 47
 WEATHERING: 0
 LLPREC: 0
 RANGE: 28.00E
 DATE: 830117
 CONFID:
 PRIN MERIDIAN: 20
 OWNERSHIP:
 UQ
 NU T
 IA H
 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 37.00' FORT UNION RK WC1: WC2: COM2: KEY: 58550
 2 E 3.00' FORT UNION ROCK MESA COAL WC1: WC2: COM2: E BS 4039 KEY: 58551
 3 73.00' FORT UNION RK WC1: WC2: COM2: KEY: 58552
 4 4.00' FORT UNION SS WC1: WC2: COM2: KEY: 58553
 5 2.00' FORT UNION SH WC1: WC2: COM2: KEY: 58554
 6 E 8.00' FORT UNION MAMMOTH 2+3 COAL WC1: WC2: COM2: E BS 3952 KEY: 58555
 7 11.00' FORT UNION SS WC1: WC2: COM2: KEY: 58556
 8 5.00' FORT UNION SH WC1: WC2: COM2: KEY: 58557
 9 2.00' FORT UNION MAMMOTH 1 COAL WC1: WC2: COM2: KEY: 58558
 10 1.00' FORT UNION MAMMOTH 1 SH WC1: WC2: COM2: KEY: 58559
 11 E 3.00' FORT UNION MAMMOTH 1 COAL WC1: WC2: COM2: E BS 3930 KEY: 58560
 12 18.00' FORT UNION SS WC1: WC2: COM2: KEY: 58561
 13 E 93.00' FORT UNION RK WC1: WC2: COM2: E BS 3819 KEY: 58562
 260.00' EL: 3912.0-3819.0

DATA POINT ID: C4-B9
QUAD & SERIES: PARK COULEE (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: USGS BULL 647 (1917)
DATE: 830117
CONFID: 830117
PRIN MERIDIAN: 20
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0
FILE POINTER:
SURFACE
ELEVATION: 3998.00'
ELVPREC: 0
TOTAL DEPTH
LOGGED : 8.30'
DESCRIPTION
LOG : 102
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: SE
TOWNSHIP: 6.00N
RANGE: 27.00E
LLPREC: 0
OWNERSHIP:

UQ
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IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1 0.70' FORT UNION MAMMOTH 1+2 WC1: BONE WC2: COM2: KEY: 58513
2 0.20' FORT UNION MAMMOTH 1+2 WC1: SH WC2: COM2: KEY: 58514
3 0.70' FORT UNION MAMMOTH 1+2 WC1: COAL WC2: COM2: KEY: 58515
4 0.10' FORT UNION MAMMOTH 1+2 WC1: SH WC2: COM2: KEY: 58516
5 3.70' FORT UNION MAMMOTH 1+2 WC1: COAL WC2: COM2: KEY: 58517
6 0.20' FORT UNION MAMMOTH 1+2 WC1: SH WC2: COM2: KEY: 58518
7 E 2.70' FORT UNION MAMMOTH 1+2 WC1: COAL WC2: COM2: E BS 3989.7 KEY: 58519
8.30' EL: 3992.4-3989.7

DATA POINT ID: C4-C1
 QUAD & SERIES: PARK COULEE (7.5')

GEOLOGIST: USGD-CONNOR C W DATE: 830117 CONFID: PRIN MERIDIAN: 20
 SOURCE: CONNOR C W

SURFACE

ELEVATION: 4026.00' RANK: SUBBIT QUARTERS: SW
 ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 22.0

TOTAL DEPTH

LOGGED : 26.60' LATITUDE: 46 14 59 TOWNSHIP: 6.00N

DESCRIPTION

LOG : 101 LONGITUDE: 108 27 38 RANGE: 26.00E

WEATHERING: 0 LLPREC: 0

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1: CONTINUES ABOVE AT B4-C15

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

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UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

1			1.00' FORT UNION	LOCAL	COAL	WC1:	WC2:	COM2: SECTION ABOVE, SEE B4-C15	KEY:	58462
2	D		5.00' FORT UNION		SS	WC1:	WC2:	COM2: D SS, SLST	KEY:	58463
3			12.00' FORT UNION		SLST	WC1:	WC2:	COM2:	THN, WY	58464
4			0.70' FORT UNION		CLY	WC1:	WC2:	COM2:	KEY:	58465
5			0.20' FORT UNION		LIG	WC1:	WC2:	COM2:	KEY:	58466
6			6.00' FORT UNION		SLST	WC1:	WC2:	COM2:	FIS	58467
7	UE		1.70' FORT UNION	POMPEY	COAL	WC1:	WC2:	COM2: GEOTIMES COVER, JAN 80, E BS 3999.4	DSTD	58468
			26.60' EL: 4001.1-3999.4			WC1:	WC2:		KEY:	58468

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DATA POINT ID: C4-C16

QUAD & SERIES: PARK COULEE (7.5')

GEOLOGIST: USGD-CONNOR C W

SOURCE: CONNOR C W

DATE: 830117

CONFID:

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

SURFACE

ELEVATION: 4120.00'

RANK: SUBBIT

QUARTERS: SW

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 30.0

TOTAL DEPTH

LOGGED : 129.20'

LATITUDE: 46 14 28

TOWNSHIP: 6.00N

DESCRIPTION

LOG : 102

LONGITUDE: 108 23 43

RANGE: 27.00E

WEATHERING: 0

LLPREC: 0

COMMENT1:

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	3.00'		FORT UNION	3.00' EL: 4120.0-4117.0	SS	WC2: CALC	COM2: HIGEST POINT ON RIDGE	VF			KEY: 58469	C F
2	2.00'		FORT UNION	5.00' EL: 4117.0-4115.0	SLST	WC2:	COM2:				KEY: 58470	O O
3	1.50'		FORT UNION	6.50' EL: 4115.0-4113.5	LS	WC2:	COM2: LEAVES, EXCELL PRESERV				KEY: 58471	N S
4	2.00'		FORT UNION	8.50' EL: 4113.5-4111.5	CLY	WC2:	COM2:				KEY: 58472	
5	5.00'		FORT UNION	13.50' EL: 4111.5-4106.5	SLST	WC2:	COM2:			ROOT	KEY: 58473	
6	1.00'		FORT UNION	14.50' EL: 4106.5-4105.5	CLY	WC2: SLTY	COM2:				KEY: 58474	F
7	1.00'		FORT UNION	15.50' EL: 4105.5-4104.5	CLY	WC2: SLTY	COM2:				KEY: 58475	
8	4.00'		FORT UNION	19.50' EL: 4104.5-4100.5	SS	WC2:	COM2: COALY STRKS, PLANTS	VF			KEY: 58476	
9 D	8.00'		FORT UNION	27.50' EL: 4100.5-4092.5	CLY	WC2: SLTY	COM2:				KEY: 58477	
10	0.20'		FORT UNION	27.70' EL: 4092.5-4092.3	BLOOM	WC2:	COM2: D SLTY CLY&SLST				KEY: 58478	
11 D	3.00'		FORT UNION	30.70' EL: 4092.3-4089.3	SLST	WC2:	COM2: AND WEATH COAL				KEY: 58479	
12	23.00'		FORT UNION	53.70' EL: 4089.3-4066.3	SS	WC2:	COM2: D SLST SLTY CLY			MASS	KEY: 58480	
13	2.00'		FORT UNION	55.70' EL: 4066.3-4064.3	SS	WC2: CALC	COM2: TOP ROOTED	VF			KEY: 58481	

14	21.00' FORT UNION	NR	WC1:	WC2:	COM2: SLTY CLY?	KEY:	58482
15	76.70' EL: 4064.3-4043.3 0.10' FORT UNION	COAL	WC1:	WC2:		KEY:	58483
16	76.80' EL: 4043.3-4043.2 3.00' FORT UNION	CLY	WC1:	WC2: SLTY		KEY:	58484
17 EU	79.80' EL: 4043.2-4040.2 0.10' FORT UNION	COAL	WC1:	WC2:		KEY:	58485
18	79.90' EL: 4040.2-4040.1 19.00' FORT UNION	NR	WC1:	WC2:	COM2: E BS 4040.1, =REHDER?	KEY:	58486
19	98.90' EL: 4040.1-4021.1 12.40' FORT UNION	SS	WC1:	WC2:	COM2: VF	XBD I	58487
20	111.30' EL: 4021.1-4008.7 0.50' FORT UNION	CLY	WC1:	WC2:	COM2: NEARBY (N) CUTS 7 FT LOWER	KEY:	58488
21	111.80' EL: 4008.7-4008.2 0.10' FORT UNION	CLY	WC1:	WC2:	COM2: PNK-TAN	KEY:	58489
22	111.90' EL: 4008.2-4008.1 0.10' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	58490
23	112.00' EL: 4008.1-4008.0 0.10' FORT UNION	CLY	WC1:	WC2: SLTY		KEY:	58491
24 E	112.10' EL: 4008.0-4007.9 0.40' FORT UNION	COAL	WC1:	WC2:	COM2:	KEY:	58492
25	112.50' EL: 4007.9-4007.5 0.20' FORT UNION	SH	WC1:	WC2: CARB	COM2: E BS 4007.5	KEY:	58493
26	112.70' EL: 4007.5-4007.3 7.10' FORT UNION	SS	WC1:	WC2:	COM2: VF	KEY:	58494
27	119.80' EL: 4007.3-4000.2 0.60' FORT UNION	COAL	WC1:	WC2:	COM2: NEARBY (N) CUTS OUT MORE THAN 6 FT COAL	KEY:	58495
28	120.40' EL: 4000.2-3999.6 0.10' FORT UNION	CLST	WC1:	WC2:	COM2: BLK	KEY:	58496
29	120.50' EL: 3999.6-3999.5 0.80' FORT UNION	COAL	WC1:	WC2:	COM2: VERY HARD	KEY:	58497
30	121.30' EL: 3999.5-3998.7 0.20' FORT UNION	CLST	WC1:	WC2:	COM2: BLK	KEY:	58498
31	121.50' EL: 3998.7-3998.5 4.40' FORT UNION	COAL	WC1:	WC2:	COM2: VERY HARD	KEY:	58499
32	125.90' EL: 3998.5-3994.1 0.20' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	58500
33 E	126.10' EL: 3994.1-3993.9 3.00' FORT UNION	COAL	WC1:	WC2:	COM2: HARD	KEY:	58501
34 IE	129.10' EL: 3993.9-3990.9 0.10' FORT UNION	CLST	WC1:	WC2:	COM2: EXTREMELY HARD, CONCHOIDAL FRAC BLK	KEY:	58502
	129.20' EL: 3990.9-3990.8		WC1:	WC2:	COM2: VERY HARD, E BS 3990.8	KEY:	58502

DATA POINT ID: C4-C17
 QUAD & SERIES: PARK COULEE (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONNOR C W
 DATE: 830117
 PRIN MERIDIAN: 20
 CONFID:

STATE: MONTANA
 COUNTY: MUSSELSHELL

ELEVATION: 3953.00'
 ELVPREC: 0
 RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NW
 SECTION: 25.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 12.50'
 LATITUDE: 46 14 50
 TOWNSHIP: 6.00N

REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN

DESCRIPTION
 LOG : 102
 LONGITUDE: 108 24 55
 RANGE: 26.00E
 WEATHERING: 0
 LLPREC: 0

COMMENT1: SEE ALSO BULL 647 LOC 77 IN 6-26

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

										C F		
										O O		
										N S		
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	I		1.00'FORT UNION		SS							
			1.00' EL: 3953.0-3952.0		WC1:	WC2:	COM2:				KEY:	58503
2			0.30'FORT UNION		CLST	SLTY						
			1.30' EL: 3952.0-3951.7		WC1:	WC2:	COM2:				KEY:	58504
3			0.40'FORT UNION	LOCAL	COAL							
			1.70' EL: 3951.7-3951.3		WC1:	WC2:	COM2:				KEY:	58505
4			3.20'FORT UNION		SLST	LAV-GY					ROOT	
			4.90' EL: 3951.3-3948.1		WC1:	WC2:	COM2:	COLOR IS FOR UPPER FEW INCHES			KEY:	58506
5			0.30'FORT UNION		SH	COALY						
			5.20' EL: 3948.1-3947.8		WC1:	WC2:	COM2:				KEY:	58507
6			0.70'FORT UNION	MAMMOTH 1+2	COAL							
			5.90' EL: 3947.8-3947.1		WC1:	WC2:	COM2:				KEY:	58508
7			0.40'FORT UNION	MAMMOTH 1+2	SH	COALY						
			6.30' EL: 3947.1-3946.7		WC1:	WC2:	COM2:				KEY:	58509
8			0.40'FORT UNION	MAMMOTH 1+2	COAL							
			6.70' EL: 3946.7-3946.3		WC1:	WC2:	COM2:				KEY:	58510
9			0.30'FORT UNION	MAMMOTH 1+2	SH	CARB						
			7.00' EL: 3946.3-3946.0		WC1:	WC2:	COM2:				KEY:	58511
10	IC		5.50'FORT UNION	MAMMOTH 1+2	COAL							
			12.50' EL: 3946.0-3940.5		WC1:	WC2:	COM2:	TO ROAD LEVEL,E BS 3940.5,C 84 IN			KEY:	58512

DATA POINT ID: C4-93
QUAD & SERIES: PARK COULEE (7.5')
STATE: MONTANA
COUNTY: MUSSELSHELL
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM3124
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 4082.00'
ELVPREC: 2
TOTAL DEPTH
LOGGED : 60.90'
LOG : 202
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
SECTION: 25.0
TOWNSHIP: 6.00N
RANGE: 26.00E
DATE: 830117
PRIN MERIDIAN: 20
CONFID:
FILEPOINTER:
OWNERSHIP:

UQ
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 40.00' FORT UNION RK WC1: 4082.0-4042.0 WC2: COM2: KEY: 58337
40.00' EL: 4082.0-4042.0 LOCAL
2 0.80' FORT UNION LOCAL WC1: 4042.0-4041.2 WC2: COM2: KEY: 58338
40.80' EL: 4042.0-4041.2
3 2.50' FORT UNION RK WC1: 4041.2-4038.7 WC2: COM2: KEY: 58339
43.30' EL: 4041.2-4038.7 MAMMOTH 1+2
4 E 8.10' FORT UNION COAL WC1: 4038.7-4030.6 WC2: COM2: E BS 4030.6 KEY: 58340
51.40' EL: 4038.7-4030.6
5 E 9.50' FORT UNION RK WC1: 60.90' EL: 4030.6-4021.1 WC2: COM2: E BS 4021.1 KEY: 58341
60.90' EL: 4030.6-4021.1

DATA POINT ID: C4-93A
 QUAD & SERIES: PARK COULEE (7.5')

GEOLOGIST: USGD-CONNOR C W DATE: 830117 CONFID: 20

SOURCE: LOUISIANA LAND AND EXPL
 SURFACE

ELEVATION: 4131.00' RANK: SUBBIT QUARTERS: NE
 ELVPREC: 0 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 25.0

TOTAL DEPTH

LOGGED : 210.10' LATITUDE: 46 14 51 TOWNSHIP: 6.00N

DESCRIPTION

LOG : 225 LONGITUDE: 108 24 16 RANGE: 26.00E

WEATHERING: 0 LLPREC: 0

COMMENT1: LL&E 62625-1

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

										C F			
										O O			
										N S			
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S FJC
1	15.00'		FORT UNION	EL: 4131.0-4116.0	SS	WC2:	COM2:		VF		KEY:	58342	
2	2.00'		FORT UNION	EL: 4116.0-4114.0	SH	WC2:	COM2:				KEY:	58343	
3 D	4.00'		FORT UNION	EL: 4114.0-4110.0	SH	WC2:	COM2: D SH SS				KEY:	58344	
4	1.00'		FORT UNION	EL: 4110.0-4109.0	SH	WC2:	COM2:				KEY:	58345	
5	1.00'		FORT UNION	EL: 4109.0-4108.0	CLINKER	WC2:	COM2:				KEY:	58346	
6	8.00'		FORT UNION	EL: 4108.0-4100.0	SS	WC2:	COM2:				KEY:	58347	
7	9.00'		FORT UNION	EL: 4100.0-4091.0	SH	WC2: SDY	COM2:				KEY:	58348	
8	3.00'		FORT UNION	EL: 4091.0-4088.0	SS	WC2:	COM2:		VF		KEY:	58349	
9 D	22.00'		FORT UNION	EL: 4088.0-4066.0	SS	WC2:	COM2: D SS SH				KEY:	58350	
10	31.00'		FORT UNION	EL: 4066.0-4035.0	SS	WC2:	COM2:		VF		KEY:	58351	
11	9.00'		FORT UNION	EL: 4035.0-4026.0	SH	WC2:	COM2:				KEY:	58352	
12	0.50'		FORT UNION	EL: 4026.0-4025.5	COAL	WC2:	COM2:				KEY:	58353	
13	7.00'		FORT UNION	EL: 4025.5-4018.5	SH	WC2:	COM2:				KEY:	58354	

14	E	3.60' FORT UNION	ROCK MESA	WC1: COAL	WC2:	COM2: E BS 4014.9	KEY: 58355
15		116.10' EL: 4018.5-4014.9		SH			
16		3.00' FORT UNION		WC1: SH	WC2:	COM2:	KEY: 58356
17		119.10' EL: 4014.9-4011.9		COAL			
18		0.90' FORT UNION		WC1: COAL	WC2:	COM2:	KEY: 58357
19		120.00' EL: 4011.9-4011.0		SH			
20		5.00' FORT UNION		WC1: SH	WC2:	COM2:	KEY: 58358
21		125.00' EL: 4011.0-4006.0		SH	SDY		
22		2.00' FORT UNION		WC1: SH	WC2:	COM2:	KEY: 58359
23		127.00' EL: 4006.0-4004.0		SS			
24		13.00' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 58360
25		140.00' EL: 4004.0-3991.0		COAL			
26		0.20' FORT UNION		WC1: COAL	WC2:	COM2:	KEY: 58361
27		140.20' EL: 3991.0-3990.8		SS		M-F	
28		5.80' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 58362
29		146.00' EL: 3990.8-3985.0		COAL			
30	E	1.50' FORT UNION	MAMMOTH 3	WC1: COAL	WC2:	COM2: E BS 3983.5,=REHDER	KEY: 58363
31		147.50' EL: 3985.0-3983.5		SH	SDY		
32		2.80' FORT UNION		WC1: SH	WC2:	COM2:	KEY: 58364
33		150.30' EL: 3983.5-3980.7		COAL			
34		0.60' FORT UNION		WC1: COAL	WC2:	COM2:	KEY: 58365
35		150.90' EL: 3980.7-3980.1		SS			
36		2.10' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 58366
37		153.00' EL: 3980.1-3978.0		SH	SDY		
38		2.00' FORT UNION		WC1: SH	WC2:	COM2:	KEY: 58367
39		155.00' EL: 3978.0-3976.0		SS	CALC		
40		11.00' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 58368
41		166.00' EL: 3976.0-3965.0		SH			
42		1.50' FORT UNION		WC1: SH	WC2:	COM2:	KEY: 58369
43		167.50' EL: 3965.0-3963.5		SS		F	
44		4.50' FORT UNION		WC1: SS	WC2:	COM2:	KEY: 58370
45	L	172.00' EL: 3963.5-3959.0		SS			
46		19.00' FORT UNION		WC1: SS	WC2:	COM2: L TOP CORE	KEY: 58371
47		191.00' EL: 3959.0-3940.0		COAL			
48		0.80' FORT UNION	LOCAL	WC1: COAL	WC2:	COM2: LOCAL,NOT REHDER	KEY: 58372
49		191.80' EL: 3940.0-3939.2		SH			
50		1.20' FORT UNION		WC1: SH	WC2:	COM2:	KEY: 58373
51		193.00' EL: 3939.2-3938.0		COAL			
52		0.50' FORT UNION	MAMMOTH 1+2	WC1: COAL	WC2:	COM2:	KEY: 58374
53		193.50' EL: 3938.0-3937.5		RK			
54		0.10' FORT UNION	MAMMOTH 1+2	WC1: RK	WC2:	COM2:	KEY: 58375
55		193.60' EL: 3937.5-3937.4		COAL			
56		5.00' FORT UNION	MAMMOTH 1+2	WC1: COAL	WC2:	COM2:	KEY: 58376
57		198.60' EL: 3937.4-3932.4		RK			
58		0.20' FORT UNION	MAMMOTH 1+2	WC1: RK	WC2:	COM2:	KEY: 58377
59		198.80' EL: 3932.4-3932.2					

37 E	2.80' FORT UNION	MAMMOTH 1+2	COAL						
	201.60' EL:	3932.2-3929.4	WC1:	WC2:	COM2: E BS 3929.4	KEY:	58378		
38	7.50' FORT UNION		SH	SLTY	GY GN		F		
	209.10' EL:	3929.4-3921.9	WC1:	WC2:	COM2: BIVALVES	KEY:	58379		
39 EL	1.00' FORT UNION		SS		F				
	210.10' EL:	3921.9-3920.9	WC1:	WC2:	COM2: E BS 3920.9, L BS CORE	KEY:	58380		

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*****
DATA POINT ID: C4-93B
QUAD & SERIES: PARK COULEE (7.5')

GEOLOGIST: USGD-CONNOR C W      DATE: 830117      CONFID:
SOURCE: LOUISIANA LAND AND EXPL  PRIN MERIDIAN: 20

SURFACE
ELEVATION: 4213.00'      RANK: SUBBIT      QUARTERS: NW
ELVPREC: 0      LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 29.0
TOTAL DEPTH
LOGGED : 340.00'      LATITUDE: 46 14 57      TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202      LONGITUDE: 108 22 41      RANGE: 27.00E
WEATHERING: 0      LLPREC: 0

PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62729-5
HYDRO CD: 0      FILEPOINTER:

OWNERSHIP:

-----
UQ      C F
NU      O O
TA      N S
IT      N S

UNIT  TL  K  FORMATION  BED NAME  LITH  LITHMOD  COLOR  GRNSIZE  GRNSHAPE  MINERALOGY  BEDDING  T  S  FJC
-----
1      41.00' FORT UNION  41.00' EL: 4213.0-4172.0  WC1:  WC2:  COM2:  KEY:  58381
2 EU    4.50' FORT UNION  45.50' EL: 4172.0-4167.5  WC1:  WC2:  COM2: E BS 4167.5  KEY:  58382
3      176.50' FORT UNION  222.00' EL: 4167.5-3991.0  WC1:  WC2:  COM2:  KEY:  58383
4 E     3.00' FORT UNION  225.00' EL: 3991.0-3988.0  WC1:  WC2:  COM2: E BS 3988  KEY:  58384
5      38.00' FORT UNION  263.00' EL: 3988.0-3950.0  WC1:  WC2:  COM2:  KEY:  58385
6 E     2.00' FORT UNION  265.00' EL: 3950.0-3948.0  WC1:  WC2:  COM2: E BS 3948  KEY:  58386
7      49.00' FORT UNION  314.00' EL: 3948.0-3899.0  WC1:  WC2:  COM2:  KEY:  58387
8 E     8.50' FORT UNION  322.50' EL: 3899.0-3890.5  WC1:  WC2:  COM2: E BS 3890.5  KEY:  58388
9 E     17.50' FORT UNION  340.00' EL: 3890.5-3873.0  WC1:  WC2:  COM2: E BS 3873  KEY:  58389

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DATA POINT ID: C4-93C
QUAD & SERIES: PARK COULEE (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL
DATE: 830117
CONFID:
PRIN MERIDIAN: 20

STATE: MONTANA
COUNTY: MUSSELSHELL

SURFACE
ELEVATION: 4296.00'
ELVPREC: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NW
TOTAL DEPTH
LOGGED : 400.50'
LATITUDE: 46 14 39
TOWNSHIP: 6.00N
DESCRIPTION
LOG : 202
LONGITUDE: 108 22 50
WEATHERING: 0
LLPREC: 0
RANGE: 27.00E

PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: LL&E 62729-6
HYDRO CD: 0
FILEPOINTER:

OWNERSHIP:

UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
-----
1 91.50' FORT UNION 91.50' EL: 4296.0-4204.5 BULL MTN WC1: WC2: COM2: KEY: 58390
2 EU 4.00' FORT UNION 95.50' EL: 4204.5-4200.5 WC1: WC2: COM2: E BS 4200.5 KEY: 58391
3 188.00' FORT UNION 283.50' EL: 4200.5-4012.5 ROCK MESA WC1: WC2: COM2: KEY: 58392
4 E 3.00' FORT UNION 286.50' EL: 4012.5-4009.5 ROCK MESA WC1: WC2: COM2: E BS 4009.5 KEY: 58393
5 36.50' FORT UNION 323.00' EL: 4009.5-3973.0 MAMMOTH 3 WC1: WC2: COM2: KEY: 58394
6 2.50' FORT UNION 325.50' EL: 3973.0-3970.5 MAMMOTH 3 WC1: WC2: COM2: KEY: 58395
7 52.50' FORT UNION 378.00' EL: 3970.5-3918.0 MAMMOTH 1+2 WC1: WC2: COM2: KEY: 58396
8 E 8.50' FORT UNION 386.50' EL: 3918.0-3909.5 MAMMOTH 1+2 WC1: WC2: COM2: E BS 3909.5 KEY: 58397
9 E 14.00' FORT UNION 400.50' EL: 3909.5-3895.5 MAMMOTH 1+2 WC1: WC2: COM2: E BS 3895.5 KEY: 58398

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DATA POINT ID: C4-930
QUAD & SERIES: PARK COULEE (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: LOUISIANA LAND AND EXPL

DATE: 830117
PRIN MERIDIAN: 20

STATE: MONTANA
COUNTY: MUSSELSHELL

SURFACE
ELEVATION: 4137.00'
ELVPREC: 0

RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SW

TOTAL DEPTH

SECTION: 29.0

PROVINCE: N GREAT PLAINS

LOGGED : 200.50'

TOWNSHIP: 6.00N

REGION: POWDER RIVER

LONGITUDE: 108 22 57

RANGE: 27.00E

FIELD: BULL MOUNTAIN

WEATHERING: 0

COMMENT1: LL&E 62729-2

LLPREC: 0

HYDRO CD: 0

FILE POINTER:

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	100.00'		FORT UNION		RK							
2	E		100.00' EL: 4137.0-4037.0	ROCK MESA	WC1:	WC2:	COM2:				KEY:	58399
3			2.50' FORT UNION		COAL							
4			102.50' EL: 4037.0-4034.5		WC1:	WC2:	COM2: E BS 4034.5				KEY:	58400
5			6.50' FORT UNION		SLST						KEY:	58401
6			109.00' EL: 4034.5-4028.0		WC1:	WC2:	COM2:				KEY:	58402
7			110.00' EL: 4028.0-4027.0		COAL						KEY:	58403
8			22.00' FORT UNION		SS						KEY:	58404
9			132.00' EL: 4027.0-4005.0		WC1:	WC2:	COM2:				KEY:	58405
10			4.00' FORT UNION		CLST						KEY:	58406
11			136.00' EL: 4005.0-4001.0		WC1:	WC2:	COM2:				KEY:	58407
12			2.00' FORT UNION	MAMMOTH 3	COAL						KEY:	58408
13			138.00' EL: 4001.0-3999.0		WC1:	WC2:	COM2: E BS 3999,-REHDER				KEY:	58409
			7.50' FORT UNION		SLST						KEY:	58410
			145.50' EL: 3999.0-3991.5		WC1:	WC2:	COM2:				KEY:	58411
			2.00' FORT UNION		CLST						KEY:	58412
			147.50' EL: 3991.5-3989.5		WC1:	WC2:	COM2:				KEY:	58413
			5.00' FORT UNION		SLST						KEY:	58414
			152.50' EL: 3989.5-3984.5		WC1:	WC2:	COM2:				KEY:	58415
			1.00' FORT UNION		CLST						KEY:	58416
			153.50' EL: 3984.5-3983.5		WC1:	WC2:	COM2:				KEY:	58417
			6.50' FORT UNION		SS						KEY:	58418
			160.00' EL: 3983.5-3977.0		WC1:	WC2:	COM2:				KEY:	58419
			23.50' FORT UNION		SS						KEY:	58420
			183.50' EL: 3977.0-3953.5		WC1:	WC2:	COM2: L TOP CORE				KEY:	58421

C F
O O
N S

14	0.10' FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:	58412
	183.60' EL: 3953.5-3953.4	SH		CARB			
15	1.90' FORT UNION		WC1:	WC2:	COM2:	KEY:	58413
16	1.50' FORT UNION	MAMMOTH 1+2	WC1:	WC2:	COM2:	KEY:	58414
17	0.20' FORT UNION	MAMMOTH 1+2	WC1:	WC2:	COM2:	KEY:	58415
18	4.20' FORT UNION	MAMMOTH 1+2	WC1:	WC2:	COM2:	KEY:	58416
19	0.10' FORT UNION	MAMMOTH 1+2	WC1:	WC2:	COM2:	KEY:	58417
20	2.50' FORT UNION	MAMMOTH 1+2	WC1:	WC2:	COM2:	KEY:	58418
21	1.50' FORT UNION	MDST	WC1:	WC2:	COM2: E BS 3943	KEY:	58419
22	1.50' FORT UNION	SS	WC1:	WC2:	COM2:	KEY:	58420
23	3.00' FORT UNION	MDST	WC1:	WC2:	COM2:	KEY:	58421
24 LE	0.50' FORT UNION	SS	WC1:	WC2:	COM2: L BS CORE, E BS 3936.5	KEY:	58422

 DATA POINT ID: C4-93F
 QUAD & SERIES: PARK COULEE (7.5')
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62729-4
 HYDRO CD: 0
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL
 SURFACE
 ELEVATION: 4105.00'
 ELVPREC: 0
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: SW
 SECTION: 29.0
 TOTAL DEPTH
 LOGGED : 334.50'
 LATITUDE: 46 14 13
 TOWNSHIP: 6.00N
 DESCRIPTION
 LOG : 230
 LONGITUDE: 108 22 55
 WEATHERING: 0
 LLPREC: 0
 RANGE: 27.00E
 DATE: 830117
 CONFID: 20
 PRIN MERIDIAN: 20
 OWNERSHIP:
 FILEPOINTER:
 UQ
 NU T
 IA H
 UNIT TL K FORMATION BED NAME LITH LITHMOO COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 51.00' FORT UNION RK WC2: COM2: KEY: 58423
 2 E 51.00' EL: 4105.0-4054.0 WC1: COAL WC2: COM2: KEY: 58424
 3 53.50' EL: 4054.0-4051.5 WC1: CLST WC2: COM2: E BS 4051.5 KEY: 58425
 4 57.50' EL: 4051.5-4047.5 WC1: COAL WC2: COM2: KEY: 58426
 5 58.50' EL: 4047.5-4046.5 WC1: SS WC2: COM2: KEY: 58427
 6 67.00' EL: 4046.5-4038.0 WC1: CLST WC2: COM2: KEY: 58428
 7 69.00' EL: 4038.0-4036.0 WC1: SS WC2: COM2: KEY: 58429
 8 78.00' EL: 4036.0-4027.0 WC1: CLST WC2: COM2: KEY: 58430
 9 80.50' EL: 4027.0-4024.5 WC1: SS WC2: COM2: KEY: 58431
 10 82.50' EL: 4024.5-4022.5 WC1: CLST WC2: COM2: KEY: 58432
 11 83.50' EL: 4022.5-4021.5 WC1: SS WC2: COM2: KEY: 58433
 12 89.50' EL: 4021.5-4015.5 WC1: CLST WC2: COM2: KEY: 58434
 13 E 91.00' EL: 4015.5-4014.0 WC1: COAL WC2: COM2: KEY: 58435
 93.50' EL: 4014.0-4011.5 WC1: COM2: E BS 4011.5

14	3.00'FORT UNION	CLST	WC1:	WC2:	COM2:	KEY:
	96.50' EL: 4011.5-4008.5	SS				58436
15 D	11.50'FORT UNION	SS	WC1:	WC2:	COM2: D SS SLST	KEY: 58437
16	32.00'FORT UNION	SS	WC1:	WC2:		KEY: 58438
17	1.00'FORT UNION	COAL	WC1:	WC2:		KEY: 58439
	141.00' EL: 3965.0-3964.0	MAMMOTH 1+2				
18	0.20'FORT UNION	RK	WC1:	WC2:		KEY: 58440
	141.20' EL: 3964.0-3963.8	MAMMOTH 1+2				
19	1.00'FORT UNION	COAL	WC1:	WC2:		KEY: 58441
	142.20' EL: 3963.8-3962.8	MAMMOTH 1+2				
20	0.10'FORT UNION	RK	WC1:	WC2:		KEY: 58442
	142.30' EL: 3962.8-3962.7	MAMMOTH 1+2				
21	3.50'FORT UNION	COAL	WC1:	WC2:		KEY: 58443
	145.80' EL: 3962.7-3959.2	MAMMOTH 1+2				
22	0.20'FORT UNION	RK	WC1:	WC2:		KEY: 58444
	146.00' EL: 3959.2-3959.0	MAMMOTH 1+2				
23 E	2.50'FORT UNION	COAL	WC1:	WC2:		KEY: 58445
	148.50' EL: 3959.0-3956.5	MAMMOTH 1+2			COM2: E BS 3956.5	
24	0.50'FORT UNION	SS	WC1:	WC2: CALC		KEY: 58446
	149.00' EL: 3956.5-3956.0					
25	29.50'FORT UNION	SH	WC1:	WC2:		KEY: 58447
	178.50' EL: 3956.0-3926.5					
26	8.00'FORT UNION	SS	WC1:	WC2: CALC		KEY: 58448
	186.50' EL: 3926.5-3918.5					
27	7.00'FORT UNION	SH	WC1:	WC2:		KEY: 58449
	193.50' EL: 3918.5-3911.5					
28 E	1.00'FORT UNION	COAL	WC1:	WC2:		KEY: 58450
	194.50' EL: 3911.5-3910.5				COM2: E BS 3910.5	
29	17.00'FORT UNION	SH	WC1:	WC2:		KEY: 58451
	211.50' EL: 3910.5-3893.5					
30	1.00'FORT UNION	SS	WC1:	WC2: CALC		KEY: 58452
	212.50' EL: 3893.5-3892.5					
31	32.00'FORT UNION	SH	WC1:	WC2:		KEY: 58453
	244.50' EL: 3892.5-3860.5					
32	5.00'FORT UNION	SS	WC1:	WC2:		KEY: 58454
	249.50' EL: 3860.5-3855.5					
33	0.50'FORT UNION	COAL	WC1:	WC2:		KEY: 58455
	250.00' EL: 3855.5-3855.0					
34	34.50'FORT UNION	SH	WC1:	WC2:		KEY: 58456
	284.50' EL: 3855.0-3820.5					
35 D	5.00'FORT UNION	SS	WC1:	WC2:		KEY: 58457
	289.50' EL: 3820.5-3815.5				COM2: D SS SH	
36	1.00'FORT UNION	COAL	WC1:	WC2:		KEY: 58458
	290.50' EL: 3815.5-3814.5				COM2:	

37	4.00' FORT UNION	SH	WC1:	WC2:	COM2:	KEY:	58459
	294.50' EL: 3814.5-3810.5						
38 E	3.00' FORT UNION	COAL	WC1:	WC2:	COM2: E BS 3807.5	KEY:	58460
	297.50' EL: 3810.5-3807.5						
39 E	37.00' FORT UNION	SH	WC1:	WC2:	COM2: E BS 3770.5	KEY:	58461
	334.50' EL: 3807.5-3770.5						

DATA POINT ID: C4-96
QUAD & SERIES: PARK COULEE (7.5')
STATE: MONTANA
COUNTY: YELLOWSTONE
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1: CONSOL BM194
HYDRO CD: 0
GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO
SURFACE
ELEVATION: 4089.00'
ELVPREC: 0
LOCAL STRIKE/DIP/ANGLE: 0 0 0
RANK: SUBBIT
QUARTERS: NW
SECTION: 32.0
TOWNSHIP: 6.00N
RANGE: 27.00E
LOGGED : 135.10' LATITUDE: 46 14 8
LONGITUDE: 108 22 56
LOG : 202
LLPREC: 0
WEATHERING: 0
FILEPOINTER:
OWNERSHIP:

-----										C F		
-----										O O		
-----										N S		
UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
-----										-----		
1	111.50'		FORT UNION		RK							
			111.50' EL: 4089.0-3977.5		WC1:	WC2:	COM2:				KEY:	49436
2	E	9.10'	FORT UNION	MAMMOTH 1+2	COAL							
			120.60' EL: 3977.5-3968.4		WC1:	WC2:	COM2: E BS 3968.4				KEY:	49437
3	E	14.50'	FORT UNION		RK							
			135.10' EL: 3968.4-3953.9		WC1:	WC2:	COM2: E BS 3953.9				KEY:	49438

DATA POINT ID: C5-B12

QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830117

CONFID: 20

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: YELLOWSTONE

PROVINCE: N GREAT PLAINS

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

COMMENT1:

HYDRO CD: 0 FILEPOINTER:

SURFACE

ELEVATION: 4020.00'

ELVPREC: 1

LOGGED : 9.50'

TOTAL DEPTH

DESCRIPTION

LOG : 102

WEATHERING: 0

RANK: SUBBIT

LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: SE

LATITUDE: 46 13 29

TOWNSHIP: 6.00N

LONGITUDE: 108 22 20

RANGE: 27.00E

LLPREC: 0

OWNERSHIP:

UQ

NU T

IA H

UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRN SIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1

1.40' FORT UNION

MAMMOTH 1+2

COAL

WC1:

WC2:

COM2:

KEY:

49411

2

0.10' FORT UNION

MAMMOTH 1+2

SH

WC1:

WC2:

COM2:

KEY:

49412

3

1.00' FORT UNION

MAMMOTH 1+2

COAL

WC1:

WC2:

COM2:

KEY:

49413

4

0.10' FORT UNION

MAMMOTH 1+2

SH

WC1:

WC2:

COM2:

KEY:

49414

5

3.60' FORT UNION

MAMMOTH 1+2

COAL

WC1:

WC2:

COM2:

KEY:

49415

6

0.20' FORT UNION

MAMMOTH 1+2

SH

WC1:

WC2:

COM2:

KEY:

49416

7 E

3.10' FORT UNION

MAMMOTH 1+2

COAL

WC1:

WC2:

COM2:

KEY:

49417

KEY:

49417

C F

O O

N S

T S FJC

DATA POINT ID: CS-814
QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')
STATE: MONTANA
COUNTY: YELLOWSTONE
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0 FILE POINTER:
GEOLOGIST: USGD-CONNOR C W
SOURCE: USGS BULL 647 (1917)
SURFACE
ELEVATION: 3997.00'
ELVPREC: 1
TOTAL DEPTH
LOGGED : 7.00'
DESCRIPTION
LOG : 102
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NE
SECTION: 34.0
TOWNSHIP: 6.00N
RANGE: 27.00E
LLPREC: 0
DATE: 830117
CONFID:
PRIN MERIDIAN: 20
OWNERSHIP:
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 IEC 7.00' FORT UNION MAMMOTH 1+2+3 COAL WC1: 7.00' EL: 3997.0-3990.0 WC2: COM2: E BS 3990,C 180 IN KEY: 49418

DATA POINT ID: C5-B16
QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')
STATE: MONTANA
COUNTY: YELLOWSTONE
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0 FILEPOINTER:
GEOLOGIST: USGD-CONNOR C W DATE: 830117
SOURCE: USGS BULL 647 (1917)
SURFACE
ELEVATION: 3950.00' RANK: SUBBIT
ELVPREC: 1 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTIONS: 25.0 NW
TOTAL DEPTH
LOGGED : 12.00' LATITUDE: 46 14 39 TOWNSHIP: 6.00N
DESCRIPTION
LOG : 102 LONGITUDE: 108 17 56 RANGE: 27.00E
WEATHERING: 0 LLPREC: 0
OWNERSHIP:
UNIT TL K FORMATION BED NAME
1 IEC 12.00' FORT UNION MAMMOTH 1+2+3
12.00' EL: 3950.0-3938.0
WC1: WC2: COM2: E BS 3938,C 158 IN KEY: 49419
C F
O O
N S
T S FJC
BEDDING

DATA POINT ID: C5-889
QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')
GEOLOGIST: USGD-CONNOR C W
SOURCE: USGS BULL 647 (1917)
DATE: 830117
CONFID: 20
PRIN MERIDIAN: 20
STATE: MONTANA
COUNTY: YELLOWSTONE
PROVINCE: N GREAT PLAINS
REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
COMMENT1:
HYDRO CD: 0
FILEPOINTER:
SURFACE
ELEVATION: 4049.00'
ELVPREC: 1
TOTAL DEPTH
LOGGED : 8.90'
DESCRIPTION
LOG : 102
WEATHERING: 0
RANK: SUBBIT
LOCAL STRIKE/DIP/ANGLE: 0 0 0
QUARTERS: NW
SECTION: 4.0
TOWNSHIP: 5.00N
RANGE: 27.00E
LLPREC: 0
OWNERSHIP:
UQ
NU T
IA H
UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
1 E 8.90'FORT UNION 8.90' EL: 4049.0-4040.1 MAMMOTH 1+2 COAL WC1: WC2: COM2: E BS 4040.1 KEY: 49420

 DATA POINT ID: C5-892
 QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')
 STATE: MONTANA
 COUNTY: YELLOWSTONE
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1:
 HYDRO CD: 0 FILEPOINTER:
 GEOLOGIST: USGD-CONNOR C W
 SOURCE: USGS BULL 647 (1917)
 SURFACE
 ELEVATION: 4065.00'
 ELVPREC: 2
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 RANK: SUBBIT
 QUARTERS: NW
 SECTION: 3.0
 TOTAL DEPTH
 LOGGED : 15.90'
 LATITUDE: 46 13 8
 TOWNSHIP: 5.00N
 DESCRIPTION
 LOG : 102
 LONGITUDE: 108 20 20
 RANGE: 27.00E
 WEATHERING: 0
 LLPREC: 0
 OWNERSHIP:

 UQ
 NU T
 IA H
 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC

 1 0.50' FORT UNION MAMMOTH 1+2+3 COAL WC2: COM2: KEY: 49421
 0.50' EL: 4065.0-4064.5 WC1: SH
 2 0.10' FORT UNION MAMMOTH 1+2+3 WC1: WC2: COM2: KEY: 49422
 0.60' EL: 4064.5-4064.4 WC1: COAL
 3 1.20' FORT UNION MAMMOTH 1+2+3 WC1: WC2: COM2: KEY: 49423
 1.80' EL: 4064.4-4063.2 WC1: SH
 4 0.10' FORT UNION MAMMOTH 1+2+3 WC1: WC2: COM2: KEY: 49424
 1.90' EL: 4063.2-4063.1 WC1: COAL
 5 1.20' FORT UNION MAMMOTH 1+2+3 WC1: SH WC2: COM2: KEY: 49425
 3.10' EL: 4063.1-4061.9 WC1: COAL
 6 0.10' FORT UNION MAMMOTH 1+2+3 WC1: WC2: COM2: KEY: 49426
 3.20' EL: 4061.9-4061.8 WC1: COAL
 7 3.80' FORT UNION MAMMOTH 1+2+3 WC1: BONE WC2: COM2: KEY: 49427
 7.00' EL: 4061.8-4058.0 WC1: COAL
 8 0.10' FORT UNION MAMMOTH 1+2+3 WC1: BONE WC2: COM2: KEY: 49428
 7.10' EL: 4058.0-4057.9 WC1: COAL
 9 0.90' FORT UNION MAMMOTH 1+2+3 WC1: BONE WC2: COM2: KEY: 49429
 8.00' EL: 4057.9-4057.0 WC1: COAL
 10 0.20' FORT UNION MAMMOTH 1+2+3 WC1: BONE WC2: COM2: KEY: 49430
 8.20' EL: 4057.0-4056.8 WC1: COAL
 11 3.70' FORT UNION MAMMOTH 1+2+3 WC1: SH WC2: COM2: KEY: 49431
 11.90' EL: 4056.8-4053.1 WC1: COAL
 12 0.20' FORT UNION MAMMOTH 1+2+3 WC1: SH WC2: COM2: KEY: 49432
 12.10' EL: 4053.1-4052.9 WC1: COAL
 13 3.00' FORT UNION MAMMOTH 1+2+3 WC1: COAL WC2: COM2: KEY: 49433
 15.10' EL: 4052.9-4049.9 WC1: COAL

DATA POINT ID: C5-C13

QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830117

CONFID: 20
PRIN MERIDIAN:

STATE: MONTANA

COUNTY: MUSSELSHELL

SOURCE: CONNOR C W

RANK: SUBBIT

QUARTERS:

SE

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 32.0

TOTAL DEPTH

PROVINCE: N GREAT PLAINS

LATITUDE: 46 13 32

TOWNSHIP: 6.00N

REGION: POWDER RIVER

LONGITUDE: 108 22 13

RANGE: 27.00E

FIELD: BULL MOUNTAIN

LLPREC: 0

COMMENT1: ABD MINE

HYDRO CD: 0 FILEPOINTER:

OWNERSHIP:

UQ

NU T

IA H

UNIT TL K

FORMATION

BED NAME

LITH

LITHMOO

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1 UE

0.20'FORT UNION

MAMMOTH 3

0.20' EL: 4032.0-4031.8

WC1:

WC2:

COM2: E BS 4031.8,-REHDER

KEY: 58324

2

10.60'FORT UNION

WC1:

WC2:

COM2:

KEY: 58325

3

1.00'FORT UNION

11.80' EL: 4021.2-4020.2

WC1:

WC2:

COM2:

KEY: 58326

4

0.50'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2:

KEY: 58327

5

0.02'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2:

KEY: 58328

6

1.20'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2:

KEY: 58329

7

0.10'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2:

KEY: 58330

8

0.80'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2:

KEY: 58331

9

0.10'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2:

KEY: 58332

10

6.90'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2:

KEY: 58333

11

0.10'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2: SILICEOUS ? VERY HARD

KEY: 58334

12 E

0.10'FORT UNION

MAMMOTH 1+2

WC1:

WC2:

COM2: E BS 4010.3

KEY: 58335

13 IE

0.50'FORT UNION

22.12' EL: 4010.4-4009.9

WC1:

WC2:

COM2: E BS 4009.8

ROOT

KEY: 58336

C F

O O

N S

DATA POINT ID: C5-C16
 QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: CONNOR C W

CONFID: 830117
 PRIN MERIDIAN: 20

STATE: MONTANA
 COUNTY: YELLOWSTONE

ELEVATION: 4042.00'
 ELVPREC: 0

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0

QUARTERS: NW
 SECTION: 4.0

PROVINCE: N GREAT PLAINS

TOTAL DEPTH
 LOGGED : 11.61' LATITUDE: 46 13 4 TOWNSHIP: 5.00N

REGION: POWDER RIVER

DESCRIPTION
 LOG : 102 LONGITUDE: 108 21 20 RANGE: 27.00E

FIELD: BULL MOUNTAIN

WEATHERING: 0 LLPREC: 0

COMMENT1:

HYDRO CD: 0 FILEPOINTER: OWNERSHIP:

UQ		T	H		K		FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	C F	
UNIT	TL	IA	NU	TA	TH	TK										T	S
1	3.10'						FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:			KEY:		49401
2	0.10'						FORT UNION	MAMMOTH 1+2	RK	WC1:	WC2:	COM2: BLK			KEY:		49402
3	0.70'						FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:			KEY:		49403
4	0.06'						FORT UNION	MAMMOTH 1+2	SLST	WC1:	WC2:	COM2: BRN			KEY:		49404
5	3.95'						FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:			KEY:		49405
6	0.20'						FORT UNION	MAMMOTH 1+2	CLST	WC1:	WC2:	COM2: GY			KEY:		49406
7	2.65'						FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2:			KEY:		49407
8	0.10'						FORT UNION	MAMMOTH 1+2	RK	WC1:	WC2:	COM2: LOWER FOOT V			KEY:		49408
9 E	0.55'						FORT UNION	MAMMOTH 1+2	COAL	WC1:	WC2:	COM2: BLK			KEY:		49409
10 I	0.20'						FORT UNION	MAMMOTH 1+2	SS	WC1:	WC2:	COM2: E BS 4030.5			KEY:		49410
										WC1:	WC2:	COM2: BRN			KEY:		49410

 DATA POINT ID: C5-94
 QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')
 GEOLOGIST: USGD-CONNOR C W DATE: 830117 CONFID: 20
 SOURCE: LOUISIANA LAND AND EXPL PRIN MERIDIAN: 20
 STATE: MONTANA
 COUNTY: MUSSELSHELL
 SURFACE ELEVATION: 4161.00' RANK: SUBBIT QUARTERS: SE
 ELVPREC: 1 LOCAL STRIKE/DIP/ANGLE: 0 0 0 SECTION: 29.0
 TOTAL DEPTH
 LOGGED : 441.20' LATITUDE: 46 14 14 TOWNSHIP: 6.00N
 DESCRIPTION LOG : 202 LONGITUDE: 108 22 16 RANGE: 27.00E
 WEATHERING: 0 LLPREC: 0
 PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62729-1
 HYDRO CD: 0 FILEPOINTER:
 OWNERSHIP:
 UQ
 NU T
 IA H
 UNIT TL K FORMATION BED NAME LITH LITHMOD COLOR GRNSIZE GRNSHAPE MINERALOGY BEDDING T S FJC
 1 128.00' FORT UNION RK WC1: 4161.0-4033.0 WC2: COM2: KEY: 58177
 2 E 4.00' FORT UNION ROCK MESA COAL WC1: 4033.0-4029.0 WC2: COM2: E BS 4029 KEY: 58178
 3 27.00' FORT UNION RK WC1: 4029.0-4002.0 WC2: COM2: KEY: 58179
 4 E 3.00' FORT UNION MAMMOTH 3 COAL WC1: 4002.0-3999.0 WC2: COM2: E BS 3999,=REHDER KEY: 58180
 5 55.00' FORT UNION RK WC1: 3999.0-3944.0 WC2: COM2: KEY: 58181
 6 E 9.20' FORT UNION MAMMOTH 1+2 COAL WC1: 3944.0-3934.8 WC2: COM2: E BS 3934.8 KEY: 58182
 7 152.00' FORT UNION RK WC1: 3934.8-3782.8 WC2: COM2: KEY: 58183
 8 EU 3.00' FORT UNION OSTRANDER COAL WC1: 3782.8-3779.8 WC2: COM2: E BS 3779.8 KEY: 58184
 9 E 60.00' FORT UNION RK WC1: 3779.8-3719.8 WC2: COM2: E BS 3719.8 KEY: 58185

DATA POINT ID: C5-94A

QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830117

CONFID:

SOURCE: LOUISIANA LAND AND EXPL

PRIN MERIDIAN: 20

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4204.00'

RANK: SUBBIT

QUARTERS: NW

ELVPREC: 0

LOCAL STRIKE/DIP/ANGLE: 0 0 0

SECTION: 29.0

TOTAL DEPTH

LOGGED : 400.50'

LATITUDE: 46 14 54

TOWNSHIP: 6.00N

PROVINCE: N GREAT PLAINS

DESCRIPTION

LONGITUDE: 108 22 22

RANGE: 27.00E

REGION: POWDER RIVER

FIELD: BULL MOUNTAIN

LOG : 230

LLPREC: 0

COMMENT1: LL&E 62729-9

WEATHERING: 0

HYDRO CD: 0

FILEPOINTER:

OWNERSHIP:

UQ

NU T

IA H

UNIT TL K

FORMATION

BED NAME

LITH

LITHMOD

COLOR

GRNSIZE

GRNSHAPE

MINERALOGY

BEDDING

T S FJC

1	20.00' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	58186
2	EU 20.00' EL: 4204.0-4184.0	COAL	WC1:	WC2:	COM2: E BS 4180.5	KEY:	58187
3	188.50' FORT UNION	RK	WC1:	WC2:	COM2:	KEY:	58188
4	E 212.00' EL: 4180.5-3992.0	COAL	WC1:	WC2:	COM2: E BS 3990	KEY:	58189
5	L 214.00' EL: 3992.0-3990.0	SS	WC1:	WC2:	COM2: L TOP GEOPHYS (AVAIL ABOVE)	KEY:	58190
6	219.00' EL: 3990.0-3985.0	CLST	WC1:	WC2:	COM2:	KEY:	58191
7	221.00' EL: 3985.0-3983.0	SS	WC1:	WC2:	COM2:	KEY:	58192
8	232.50' EL: 3983.0-3971.5	CLST	WC1:	WC2:	COM2:	KEY:	58193
9	234.50' EL: 3971.5-3969.5	SS	WC1:	WC2:	COM2:	KEY:	58194
10	241.50' EL: 3969.5-3962.5	CLST	WC1:	WC2:	COM2:	KEY:	58195
11	243.50' EL: 3962.5-3960.5	SS	WC1:	WC2:	COM2:	KEY:	58196
12	246.50' EL: 3960.5-3957.5	CLST	WC1:	WC2:	COM2:	KEY:	58197
13	E 249.50' EL: 3957.5-3954.5	COAL	WC1:	WC2:	COM2: E BS 3952,=RENDER	KEY:	58198
	252.00' EL: 3954.5-3952.0		WC1:	WC2:			

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14	1.00'FORT UNION	WC1:	WC2:	COM2:	KEY:	58199
	253.00' EL: 3952.0-3951.0					
15	5.00'FORT UNION	SLST			KEY:	58200
	258.00' EL: 3951.0-3946.0					
16	2.00'FORT UNION	CLST			KEY:	58201
	260.00' EL: 3946.0-3944.0					
17	2.00'FORT UNION	SLST			KEY:	58202
	262.00' EL: 3944.0-3942.0					
18	40.00'FORT UNION	SS			KEY:	58203
	302.00' EL: 3942.0-3902.0					
19	1.40'FORT UNION	COAL			KEY:	58204
	303.40' EL: 3902.0-3900.6					
20	0.10'FORT UNION	RK			KEY:	58205
	303.50' EL: 3900.6-3900.5					
21	2.60'FORT UNION	COAL			KEY:	58206
	306.10' EL: 3900.5-3897.9					
22	0.10'FORT UNION	RK			KEY:	58207
	306.20' EL: 3897.9-3897.8					
23	2.30'FORT UNION	COAL			KEY:	58208
	308.50' EL: 3897.8-3895.5					
24	0.20'FORT UNION	RK			KEY:	58209
	308.70' EL: 3895.5-3895.3					
25 LE	2.80'FORT UNION	COAL			KEY:	58210
	311.50' EL: 3895.3-3892.5			COM2: L BS GEOPHYS,E BS 3892.5		
26 E	89.00'FORT UNION	RK			KEY:	58211
	400.50' EL: 3892.5-3803.5	WC1:	WC2:	COM2: E BS 3803.5		

DATA POINT ID: C5-948

QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')

GEOLOGIST: USGD-CONNOR C W

DATE: 830117

PRIN MERIDIAN: 20

CONFID: *****

STATE: MONTANA

COUNTY: MUSSELSHELL

ELEVATION: 4318.00'

RANK: SUBBIT

NE

ELVPREC: 0

QUARTERS: 29.0

TOTAL DEPTH

LOGGED : 459.50'

TOWNSHIP: 6.00N

DESCRIPTION

LATITUDE: 46 14 59

REGION: POWDER RIVER

LOG : 230

LONGITUDE: 108 21 43

RANGE: 27.00E

FIELD: BULL MOUNTAIN

WEATHERING: 0

LLPREC: 0

COMMENT1: LL&E 62729-7

HYDRO CD: 0

OWNERSHIP: *****

FILEPOINTER: *****

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T S FJC
1	151.00'		FORT UNION		RK							
	151.00'		EL: 4318.0-4167.0		WC1:	WC2:	COM2:				KEY:	58212
2	EU		4.00' FORT UNION	BULL MTN	COAL							
	155.00'		EL: 4167.0-4163.0		WC1:	WC2:	COM2: E BS 4163				KEY:	58213
3	197.50'		FORT UNION		RK							
	352.50'		EL: 4163.0-3965.5		WC1:	WC2:	COM2:				KEY:	58214
4	LE		1.50' FORT UNION	ROCK MESA	COAL							
	354.00'		EL: 3965.5-3964.0		WC1:	WC2:	COM2: L TOP GEOPHYS,E BS 3964				KEY:	58215
5	7.00'		FORT UNION		SLST							
	361.00'		EL: 3964.0-3957.0		WC1:	WC2:	COM2:				KEY:	58216
6	0.50'		FORT UNION		COAL							
	361.50'		EL: 3957.0-3956.5		WC1:	WC2:	COM2:				KEY:	58217
7	5.50'		FORT UNION		SLST							
	367.00'		EL: 3956.5-3951.0		WC1:	WC2:	COM2:				KEY:	58218
8	5.00'		FORT UNION		SS							
	372.00'		EL: 3951.0-3946.0		WC1:	WC2:	COM2:				KEY:	58219
9	3.00'		FORT UNION		CLST							
	375.00'		EL: 3946.0-3943.0		WC1:	WC2:	COM2:				KEY:	58220
10	7.00'		FORT UNION		SS							
	382.00'		EL: 3943.0-3936.0		WC1:	WC2:	COM2:				KEY:	58221
11	2.00'		FORT UNION		CLST							
	384.00'		EL: 3936.0-3934.0		WC1:	WC2:	COM2:				KEY:	58222
12	5.00'		FORT UNION		SS							
	389.00'		EL: 3934.0-3929.0		WC1:	WC2:	COM2:				KEY:	58223
13	E		2.50' FORT UNION	MAMMOTH 3	COAL							
	391.50'		EL: 3929.0-3926.5		WC1:	WC2:	COM2: E BS 3926.5,=RENDER				KEY:	58224

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14	3.00' FORT UNION 394.50' EL: 3926.5-3923.5	WC1: CLST	WC2:	COM2:	KEY: 58225
15	5.00' FORT UNION 399.50' EL: 3923.5-3918.5	WC1: SS	WC2:	COM2:	KEY: 58226
16	1.00' FORT UNION 400.50' EL: 3918.5-3917.5	WC1: CLST	WC2:	COM2:	KEY: 58227
17	5.00' FORT UNION 405.50' EL: 3917.5-3912.5	WC1: SS	WC2:	COM2:	KEY: 58228
18	2.00' FORT UNION 407.50' EL: 3912.5-3910.5	WC1: CLST	WC2:	COM2:	KEY: 58229
19	24.00' FORT UNION 431.50' EL: 3910.5-3886.5	WC1: SS	WC2:	COM2:	KEY: 58230
20	2.70' FORT UNION 434.20' EL: 3886.5-3883.8	WC1: COAL	WC2:	COM2:	KEY: 58231
21	0.20' FORT UNION 434.40' EL: 3883.8-3883.6	WC1: RK	WC2:	COM2:	KEY: 58232
22	3.30' FORT UNION 437.70' EL: 3883.6-3880.3	WC1: COAL	WC2:	COM2:	KEY: 58233
23	0.30' FORT UNION 438.00' EL: 3880.3-3880.0	WC1: RK	WC2:	COM2:	KEY: 58234
24 E	2.50' FORT UNION 440.50' EL: 3880.0-3877.5	WC1: COAL	WC2:	COM2: E BS 3877.5	KEY: 58235
25	5.00' FORT UNION 445.50' EL: 3877.5-3872.5	WC1: CLST	WC2:	COM2:	KEY: 58236
26	6.00' FORT UNION 451.50' EL: 3872.5-3866.5	WC1: SS	WC2:	COM2:	KEY: 58237
27 LE	8.00' FORT UNION 459.50' EL: 3866.5-3858.5	WC1: SLST	WC2:	COM2: L BS GEOPHYS, E BS 3858.5	KEY: 58238

DATA POINT ID: C5-94D
 QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')

GEOLOGIST: USGD-CONNOR C W
 SOURCE: LOUISIANA LAND AND EXPL

DATE: 830117

CONFID: 20

STATE: MONTANA
 COUNTY: MUSSELSHELL

PRIN MERIDIAN: 20

PROVINCE: N GREAT PLAINS
 REGION: POWDER RIVER
 FIELD: BULL MOUNTAIN
 COMMENT1: LL&E 62729-10
 HYDRO CD: 0

ELEVATION: 4225.00'
 ELVPREC: 0
 TOTAL DEPTH
 LOGGED : 362.00'
 LOG : 201
 WEATHERING: 0

RANK: SUBBIT
 LOCAL STRIKE/DIP/ANGLE: 0 0 0
 QUARTERS: NE
 SECTION: 29.0

LONGITUDE: 108 22 0
 LLPREC: 0

TOWNSHIP: 6.00N

RANGE: 27.00E

FILEPOINTER: 0

OWNERSHIP:

UNIT	TL	K	FORMATION	BED NAME	LITH	LITHMOD	COLOR	GRNSIZE	GRNSHAPE	MINERALOGY	BEDDING	T	S	FJC
1	15.00'		FORT UNION		NR									
				15.00' EL: 4225.0-4210.0	WC1:	WC2:	COM2:					KEY:	58248	
2	2.50'		FORT UNION		CLST									
				17.50' EL: 4210.0-4207.5	WC1:	WC2:	COM2:					KEY:	58249	
3	0.90'		FORT UNION		COAL									
				18.40' EL: 4207.5-4206.6	WC1:	WC2:	COM2:					KEY:	58250	
4	2.10'		FORT UNION		CLST									
				20.50' EL: 4206.6-4204.5	WC1:	WC2:	COM2:					KEY:	58251	
5 D	1.50'		FORT UNION		SS									
				22.00' EL: 4204.5-4203.0	WC1:	WC2:	COM2: D SS SLST					KEY:	58252	
6	0.50'		FORT UNION		CLST									
				22.50' EL: 4203.0-4202.5	WC1:	WC2:	COM2:					KEY:	58253	
7	3.00'		FORT UNION		NR									
				25.50' EL: 4202.5-4199.5	WC1:	WC2:	COM2:					KEY:	58254	
8	5.00'		FORT UNION		CLST									
				30.50' EL: 4199.5-4194.5	WC1:	WC2:	COM2:					KEY:	58255	
9	7.50'		FORT UNION		SLST									
				38.00' EL: 4194.5-4187.0	WC1:	WC2:	COM2:					KEY:	58256	
10	2.00'		FORT UNION		SS									
				40.00' EL: 4187.0-4185.0	WC1:	WC2:	COM2:					KEY:	58257	
11 D	1.00'		FORT UNION		CLST									
				41.00' EL: 4185.0-4184.0	WC1:	WC2:	COM2: D CLST SLST					KEY:	58258	
12	4.50'		FORT UNION		SS									
				45.50' EL: 4184.0-4179.5	WC1:	WC2:	COM2:					KEY:	58259	
13	1.20'		FORT UNION		SH									
				46.70' EL: 4179.5-4178.3	WC1:	WC2:	COM2:					KEY:	58260	

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14	0.80' FORT UNION	47.50' EL: 4178.3-4177.5	COAL	WC1:	WC2:	COM2:	KEY: 58261
15	3.70' FORT UNION	51.20' EL: 4177.5-4173.8	CLST	WC1:	WC2:	COM2:	KEY: 58262
16	1.00' FORT UNION	52.20' EL: 4173.8-4172.8	SS	WC1:	WC2:	COM2:	KEY: 58263
17	2.00' FORT UNION	54.20' EL: 4172.8-4170.8	CLST	WC1:	WC2:	COM2:	KEY: 58264
18 EU	3.90' FORT UNION	BULL MTN	COAL	WC1:	WC2:	COM2: E BS 4166.9	KEY: 58265
19	5.80' FORT UNION	58.10' EL: 4170.8-4166.9	SS	WC1:	WC2:	COM2:	KEY: 58266
20	0.70' FORT UNION	63.90' EL: 4166.9-4161.1	SLST	WC1:	WC2:	COM2:	KEY: 58267
21 D	2.00' FORT UNION	64.60' EL: 4161.1-4160.4	SS	WC1:	WC2:	COM2: D SS SLST	KEY: 58268
22	3.00' FORT UNION	66.60' EL: 4160.4-4158.4	SLST	WC1:	WC2:	COM2:	KEY: 58269
23	3.50' FORT UNION	69.60' EL: 4158.4-4155.4	CLST	WC1:	WC2:	COM2: VF	KEY: 58270
24	4.00' FORT UNION	73.10' EL: 4155.4-4151.9	SS	WC1:	WC2:	COM2:	KEY: 58271
25 D	16.50' FORT UNION	77.10' EL: 4151.9-4147.9	SS	WC1:	WC2:	COM2: D SS SLST F	KEY: 58272
26	41.90' FORT UNION	93.60' EL: 4147.9-4131.4	SS	WC1:	WC2:	COM2:	KEY: 58273
27	3.50' FORT UNION	135.50' EL: 4131.4-4089.5	CLST	WC1:	WC2:	COM2:	KEY: 58274
28	0.50' FORT UNION	139.00' EL: 4089.5-4086.0	CLST	WC1:	WC2:	COM2:	KEY: 58275
29 D	0.50' FORT UNION	139.50' EL: 4086.0-4085.5	COAL	WC1:	WC2:	COM2: D COAL CARB SH	KEY: 58276
30 D	3.50' FORT UNION	140.00' EL: 4085.5-4085.0	CLST	WC1:	WC2:	COM2: D CLST SLST BRN GY	KEY: 58277
31	4.00' FORT UNION	143.50' EL: 4085.0-4081.5	CLST	WC1:	WC2:	COM2:	KEY: 58278
32 D	3.00' FORT UNION	147.50' EL: 4081.5-4077.5	SS	WC1:	WC2:	COM2: D SS SLST	KEY: 58279
33	91.00' FORT UNION	150.50' EL: 4077.5-4074.5	SS	WC1:	WC2:	COM2: AT LEAST 4 UNITS SS, SOME LOSS F-VF	KEY: 58280
34	3.00' FORT UNION	241.50' EL: 4074.5-3983.5	CLST	WC1:	WC2:	COM2:	KEY: 58281
35	1.00' FORT UNION	244.50' EL: 3983.5-3980.5	SLST	WC1:	WC2:	COM2:	KEY: 58282
36	1.00' FORT UNION	245.50' EL: 3980.5-3979.5	CLST	WC1:	WC2:	COM2:	KEY: 58283
		246.50' EL: 3979.5-3978.5	CLST	WC1:	WC2:	COM2:	KEY: 58283

37	7.50'FORT UNION	SS	WC1:	VF	COM2:	KEY:	58284
	254.00' EL: 3978.5-3971.0						
38	0.90'FORT UNION	SLST	WC2:		COM2:	KEY:	58285
	254.90' EL: 3971.0-3970.1						
39	0.10'FORT UNION	COAL	WC2:		COM2:	KEY:	58286
	255.00' EL: 3970.1-3970.0						
40 D	2.00'FORT UNION	SLST	WC2:		COM2:	KEY:	58287
	257.00' EL: 3970.0-3968.0						
41	1.50'FORT UNION	CLST	WC2:		COM2:	KEY:	58288
	258.50' EL: 3968.0-3966.5						
42	1.50'FORT UNION	COAL	WC2:		COM2:	KEY:	58289
	260.00' EL: 3966.5-3965.0						
43	0.10'FORT UNION	RK	WC2:		COM2:	KEY:	58290
	260.10' EL: 3965.0-3964.9						
44 E	0.70'FORT UNION	COAL	WC2:		COM2:	KEY:	58291
	260.80' EL: 3964.9-3964.2						
45	3.70'FORT UNION	CLST	WC2:		COM2:	KEY:	58292
	264.50' EL: 3964.2-3960.5						
46	3.20'FORT UNION	SS	WC2:		COM2:	KEY:	58293
	267.70' EL: 3960.5-3957.3						
47	1.00'FORT UNION	CLST	WC2:		COM2:	KEY:	58294
	268.70' EL: 3957.3-3956.3						
48 E	1.00'FORT UNION	COAL	WC2:		COM2:	KEY:	58295
	269.70' EL: 3956.3-3955.3						
49	5.80'FORT UNION	CLST	WC2:		COM2:	KEY:	58296
	275.50' EL: 3955.3-3949.5						
50	4.00'FORT UNION	SS	WC2:		COM2:	KEY:	58297
	279.50' EL: 3949.5-3945.5						
51	7.50'FORT UNION	CLST	WC2:		COM2:	KEY:	58298
	287.00' EL: 3945.5-3938.0						
52 D	2.30'FORT UNION	SS	WC2:		COM2:	KEY:	58299
	289.30' EL: 3938.0-3935.7						
53	1.20'FORT UNION	SLST	WC2:		COM2:	KEY:	58300
	290.50' EL: 3935.7-3934.5						
54	2.00'FORT UNION	SS	WC2:		COM2:	KEY:	58301
	292.50' EL: 3934.5-3932.5						
55	2.40'FORT UNION	CLST	WC2:		COM2:	KEY:	58302
	294.90' EL: 3932.5-3930.1						
56 E	2.40'FORT UNION	COAL	WC2:		COM2:	KEY:	58303
	297.30' EL: 3930.1-3927.7						
57	5.70'FORT UNION	CLST	WC2:		COM2:	KEY:	58304
	303.00' EL: 3927.7-3922.0						
58	1.00'FORT UNION	SLST	WC2:		COM2:	KEY:	58305
	304.00' EL: 3922.0-3921.0						
59	1.50'FORT UNION	SS	WC2:		COM2:	KEY:	58306
	305.50' EL: 3921.0-3919.5						

60	1.00'FORT UNION 306.50' EL: 3919.5-3918.5	CLST WC1:	GY BRN COM2:	KEY: 58307
61	4.60'FORT UNION 311.10' EL: 3918.5-3913.9	SS WC1:	VF COM2:	KEY: 58308
62 D	1.40'FORT UNION 312.50' EL: 3913.9-3912.5	CLST WC1:	COM2: D CLST SS	KEY: 58309
63	29.80'FORT UNION 342.30' EL: 3912.5-3882.7	SS WC1:	F COM2:	KEY: 58310
64	0.20'FORT UNION 342.50' EL: 3882.7-3882.5	CLST WC1:	COM2:	KEY: 58311
65	4.35'FORT UNION 346.85' EL: 3882.5-3878.2	COAL WC1:	COM2:	KEY: 58312
66	0.30'FORT UNION 347.15' EL: 3878.2-3877.9	NR WC1:	COM2:	KEY: 58313
67	1.90'FORT UNION 349.05' EL: 3877.9-3875.1	COAL WC1:	COM2:	KEY: 58314
68	0.20'FORT UNION 349.25' EL: 3875.1-3875.8	RK WC1:	COM2:	KEY: 58315
69 E	2.65'FORT UNION 351.90' EL: 3875.8-3873.1	COAL WC1:	COM2: E BS 3873.1	KEY: 58316
70	0.50'FORT UNION 352.40' EL: 3873.1-3872.6	CLST WC1:	COM2:	KEY: 58317
71	2.20'FORT UNION 354.60' EL: 3872.6-3870.4	SLST WC1:	COM2:	KEY: 58318
72	1.00'FORT UNION 355.60' EL: 3870.4-3869.4	CLST WC1:	COM2:	KEY: 58319
73	2.20'FORT UNION 357.80' EL: 3869.4-3867.2	SS WC1:	VF COM2:	KEY: 58320
74	1.40'FORT UNION 359.20' EL: 3867.2-3865.8	SLST WC1:	COM2:	KEY: 58321
75	2.00'FORT UNION 361.20' EL: 3865.8-3863.8	SS WC1:	F COM2:	KEY: 58322
76 E	0.80'FORT UNION 362.00' EL: 3863.8-3863.0	NR WC1:	COM2: E BS 3863	KEY: 58323

DATA POINT ID: C5-95
QUAD & SERIES: DUNN MOUNTAIN SOUTH (7.5')

GEOLOGIST: USGD-CONNOR C W
SOURCE: CONSOLIDATION COAL CO

DATE: 830117
PRIN MERIDIAN: 20

CONFID:

STATE: MONTANA	ELEVATION: 4122.00'	RANK: SUBBIT	QUARTERS:	SE
COUNTY: YELLOWSTONE	ELVPREC: 2	LOCAL STRIKE/DIP/ANGLE: 0 0 0	SECTION: 27.0	

PROVINCE:	N GREAT PLAINS
LOGGED :	194.70'
LATITUDE:	46 14 18
TOWNSHIP:	6.00N

REGION: POWDER RIVER
FIELD: BULL MOUNTAIN
LOG : 202
WEATHERING: 0
LONGITUDE: 108 19 18
LLPREC: 0
RANGE: 27.00E

HYDRO CD: 0 FILE POINTER: OWNERSHIP:

on CF

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[illegible]

1	105.00	FORT UNION	RK		
	105.00	51.7122	0.0017	0	0001
					REV. 1030

2 E	3.80'	FORT UNION	ROCK MESA	COAL	MCT.	MCT.	COMPL.	REL.
102.00'	EL: 4122.0'	4017.0'						4755'
400.00'	EL: 4047.0'	4047.0'						4700'

3	57.00	FORT UNION	RK	WCI:	WCI2:	COM2:	E BS	4013.2	KEY:
3	108.80	EL: 4017.0-4013.2							4955