

Other Options

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Plot this site on a topographic map

Site Name: GREYCLIFF REST AREA*EAST BOUND

GWIC Id: 171555

DNRC Water Right: C104962-00

Section 1: Well Owner

Owner Name

MDOT

Mailing Address

PO BOX 20437

Zip Code City State **BILLINGS** MT 59104-0437

Section 2: Location

Township Range Section **Quarter Sections** 01S SW1/4 NW1/4 SW1/4 NE1/4 16E Geocode County

SWEET GRASS

Latitude Longitude Geomethod **Datum** 109.7567 **NAV-GPS** 45.734 Altitude Datum Date Method

Addition **Block** Lot

Section 3: Proposed Use of Water

IRRIGATION (1)

PUBLIC WATER SUPPLY (2)

Section 4: Type of Work Drilling Method: ROTARY

Section 5: Well Completion Date Date well completed: Friday, June 12, 1998

Section 6: Well Construction Details

Borehole dimensions

From	То	Diameter
0	101.5	6

Casing

From	То		Pressure Rating	Joint	Туре
-2	40	6			STEEL
11.5	101.5	4			STEEL

Completion (Perf/Screen)

			# of	Size of	
From	То	Diameter	Openings	Openings	Description
41.5	101.5	4.5			SCH40 .25 SLOT EAGLE SCREEN

Annular Space (Seal/Grout/Packer)

From	То	Description	Cont. Fed?
0	40	BENTONITE	

Section 7: Well Test Data

Total Depth: 101.5 Static Water Level: 58 Water Temperature:

Air Test *

46.5 gpm with drill stem set at _ feet for 3 hours.

Time of recovery <u>0</u> hours. Recovery water level 58 feet. Pumping water level 58 feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

Section 9: Well Log **Geologic Source**

Unassigned

From	То	Description
0	6	TOPSOIL
6	23	SANDY CLAY W/ SMALL GRAVEL
23	24.5	DAMP SILTY SAND/ GRAVEL
24.5	28	SMALL GRAVEL/ CLAY
28	30	GRAVEL SANDY
30	31	SANDSTONE RUBBLE
31	38	SOFT SAND STONE
38	42	SANDSTONE MED. HARD BROWN
42	56	HARD DARK GRAY S. STONE W/ CLAY LAYERS
56	58	HARD BROWN FRAC. S. STONE WATER
58	66	HARD BROWN S. STONE
66	70	SOFTER GRANITE LIKE ROCK GREEN
70	80	SOFTER BROWN S. STONE BLUEISH WATER
80	84	LESS GREEN COLOR NO FRACS
84	85	SOFT GREEN CLAY

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Company: PRO PUMP & EQUIPMENT INC

License No: WWC-508 Date Completed: 6/12/1998

Other Options

Plot this site on a topographic map
View water quality for this site

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Site Name: GREYCLIFF EASTBOUND REST AREA

GWIC Id: 92492

DNRC Water Right: W163908-00

Section 1: Well Owner

Owner Name

MT DEPT OF TRANSPORTATION

Mailing Address PO BOX 20437

 City
 State
 Zip Code

 BILLINGS
 MT
 59105

Section 2: Location

 Township
 Range
 Section
 Quarter Sections

 01S
 16E
 21
 SE½ NE½ SE½ NW½

 County
 Geocode

SWEET GRASS

LatitudeLongitudeGeomethodDatum45.7342109.757MAPNAD27AltitudeMethodDatumDate3919

Addition Block Lot

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CHURN

Section 5: Well Completion Date
Date well completed: Friday, May 29, 1970

Section 6: Well Construction Details

Borehole dimensions
From To Diameter

0 95.2

Casing

			Wall	Pressure		
From	То	Diameter	Thickness	Rating	Joint	Туре
0	95.2	6				19 LB STEEL

Completion (Perf/Screen)

Comp	Completion (i en/ocieen)							
			# of	Size of				
From	То	Diameter	Openings	Openings	Description			
93.4	99.3	6			SCREEN 100 SLOT			

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 99.7 Static Water Level: 57 Water Temperature:

Pump Test *

Depth pump set for test _ feet.

42 gpm pump rate with _ feet of drawdown after 3 hours of pumping.

Time of recovery _ hours.

Recovery water level _ feet.

Pumping water level _ 57.3 feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

Section 9: Well Log Geologic Source

211VLCC - VOLCANICS (UPPER CRETACEOUS)

From	То	Description
0	1.5	STIFF BROWN CLAYEY LOAM
1.5	1.8	LOOSE BROWN SANDY SILT W/ COARSE GRAVEL
1.8	18.5	MEDIUM DENSE BROWN SAND W/ COARSE GRAVEL
18.5	99.7	VERY DENSE LIVINGSTON VOLCANIC BEDROCK

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:

Company: MT DEPT OF HIGHWAYS

License No: -

Date Completed: 5/29/1970

Site Name GWIC Id: 1 Additional	71555	FF REST AREA*EAST BOUND Records
From	То	Description
85	101.5	HARD BROWN SAND STONE W/ GREEN LAYERS

Other Options

MONTANA WELL LOG REPORT

official record of work red. This report is

Plot this site on a topographic map
View water quality for this site

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Site Name: GREYCLIFF WESTBOUND REST AREA

GWIC Id: 92491 DNRC Water Right:

Section 1: Well Owner

Owner Name

MT DEPT OF TRANSPORTATION

Mailing Address PO BOX 20437

City State Zip Code

BILLINGS MT

Section 2: Location

 Township
 Range
 Section
 Quarter Sections

 01S
 16E
 21
 SW¼ SW¼ NW½ NE½

 County
 Geocode

SWEET GRASS

LatitudeLongitudeGeomethodDatum45.7357109.7561MAPNAD27AltitudeMethodDatumDate3888

Addition Block Lot

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CHURN DRILL

Section 5: Well Completion Date

Date well completed: Thursday, May 21, 1970

Section 6: Well Construction Details

Borehole dimensions
From To Diameter

0 53.7 8

Casing

			Wall	Pressure		
From	То	Diameter	Thickness	Rating	Joint	Туре
0	44.2	8				29 LB STEEL

Completion (Perf/Screen)

			# of	Size of	
From	То	Diameter	Openings	Openings	Description
42.8	53.7	7			100 SCREEN SLOT

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 53.7 Static Water Level: 32.5 Water Temperature:

Pump Test *

Depth pump set for test _ feet.

50 gpm pump rate with _ feet of drawdown after 3 hours of pumping.

Time of recovery _ hours.
Recovery water level _ feet.
Pumping water level _48_ feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

Section 9: Well Log Geologic Source

110ALVM - ALLUVIUM (QUATERNARY)

From	То	Description
0	24	SANDY SILT
24	27	SAND
27	43.4	VERY DENSE SANDY GRAVEL
43.4	44.2	CONTACT WATER VERY DENSE SANDY GRAVEL
44.2	53.7	LIVINGSTON FORMATION

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:

Company: MT DEPT OF HIGHWAYS

License No: -

Date Completed: 5/21/1970

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Quarter Sections

Lot

Plot this site on a topographic map View hydrograph for this site View water quality for this site

Other Options

Site Name: CUSTER REST AREA EASTBOUND

GWIC Id: 1327

DNRC Water Right: C002163-00

Section 1: Well Owner

Owner Name

DEPT OF HIGHWAYS

Mailing Address

424 MOREY BILLINGS

City State Zip Code

Range

Section 2: Location

Township

Addition

04N 32F 35 NW14 NE14 NE14 NW14 Geocode County YELLOWSTONE Latitude Longitude Geomethod **Datum** 46.063 107.7088 MAP NAD27 **Altitude** Method Date **Datum** 2940

Block

Section

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work

Drilling Method: FORWARD ROTARY

Section 5: Well Completion Date

Date well completed: Thursday, December 20, 1973

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.

Casing

From	То	Diameter	Pressure Rating	Joint	Туре
-2.5	299	6			STEEL
		·- · · · ·			

Completion (Perf/Screen)

·		,	# of	Size of	
From	То	Diameter	Openings	Openings	Description
258	268	6			PERFORATED CASING
274	284	6			PERFORATED CASING

Annular Space (Seal/Grout/Packer)

			Cont.
From	То	Description	Fed?
0	0	CEMENT	

Section 7: Well Test Data

Total Depth: 299 Static Water Level: 150 Water Temperature:

Air Test *

<u>26</u> gpm with drill stem set at _ feet for <u>24</u> hours. Time of recovery _ hours. Recovery water level _ feet. Pumping water level <u>260</u> feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

CUSTER WEST REST AREA EAST BOUND LANE 194-1 (33) 35 CORE DRILL SECTION. 6" STEEL CASING WITH SUBMERSIBLE PUMP AND BOLT ON CAP. DIST. MGR. SAID WE COULD ONLY MONITOR WELL IN OFF SEASON (11-15 TO 4-15) DUE TO POTENTIAL CONTAMINATION. MAINTENANCE MAN -WALT RAFFELSON (856-4810) SAID HE MIGHT ALLOW MEASUREMENT IN SUMMER IF YOU CONTACT HIM. COULD NOT GET ENOUGH YIELD TO CASSE A LONG PUMPING CYCLE. QUARTERLY SITE.

Section 9: Well Log Geologic Source

211LNCE - LANCE FORMATION

From	То	Description
0	9	TOPSOIL-CLAY-LOOSE SANDSTONE
9	32	TAN & GRAY SANDY SHALE
32	40	SOFT TAN SANDSTONE
40	70	GRAY SANDSTONE
70	165	GRAY SHALE
165	170	BROWN SANDSTONE
170	190	GRAY SANDSTONE
190	223	GRAY SANDY SHALE
223	248	HARD GRAY SANDSTONE
248	262	GRAY SHALE
262	289	SOFT GRAY SANDSTONE
289	299	GRAY SHALE

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: Company: B & H License No: WWC-27 Date Completed: 12/20/1973

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Plot this site on a topographic map View hydrograph for this site View water quality for this site

Other Options

Site Name: CUSTER REST AREA WESTBOUND

GWIC Id: 1330

DNRC Water Right: C002162-00

Section 1: Well Owner

Owner Name

MT DEPT OF HIGHWAYS

Mailing Address

424 MOREY BILLINGS

City State Zip Code

Section 2: Location

2915

Township Quarter Sections Range Section 04N 33F 18 NW1/4 NE1/4 SW1/4 SE1/4 Geocode County YELLOWSTONE Latitude Longitude Geomethod Datum 46.090231 107.661926 TRS-SEC NAD83 Altitude Method **Datum** Date

Addition Block Lot

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work

Drilling Method: FORWARD ROTARY

Section 5: Well Completion Date

Date well completed: Wednesday, December 12, 1973

Section 6: Well Construction Details

Borehole dimensions				
From	То	Diameter		
0	445	7		

Cas	in	g

From	То		Wall Thickness	Pressure Rating	Joint	Туре
-2	445	6				19 LB STEEL

Completion (Perf/Screen)

OUILIP		(10011)		
				Size of	
From	То	Diameter	Openings	Openings	Description
404	414	6			PERFORATED CASING
414	429	6			PERFORATED CASING

Annular Space (Seal/Grout/Packer)

			Cont.
From	То	Description	Fed?
0	35	CEMENT	

Section 7: Well Test Data

Total Depth: 445 Static Water Level: 135 Water Temperature:

Pump Test *

Depth pump set for test _ feet.

50 gpm pump rate with _ feet of drawdown after 24 hours of

pumping.

Time of recovery _ hours.

Recovery water level _ feet.

Pumping water level _400_ feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

Section 9: Well Log Geologic Source

211LNCE - LANCE FORMATION

From	То	Description
0	2	TOPSOIL
2	7	GRAVEL AND CLAY
7	18	SOFT BROWN SANDSTONE
18	60	SOFT GRAY SANDY SHALE
60	103	GRAY SANDSTONE
103	127	SOFT GRAY SHALE
127	140	GRAY SANDSTONE
140	188	GRAY SHALE
188	195	GRAY SANDSTONE
195	200	HARD GRAY SANDSTONE
200	252	SOFT GRAY SANDSTONE
252	300	GRAY SHALE
300	320	GRAY SANDSTONE
320	370	HARD GRAY SANDSTONE
370	380	GRAY SHALE

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Company: B & H License No: WWC-27 Date Completed: 12/12/1973

Name:

Site Name: CUSTER REST AREA WESTBOUND GWIC ld: 1330 Additional Lithology Records From То Description 380 435 GRAY SANDSTONE 435 445 GRAY SHALE

Plot this site on a topographic map View hydrograph for this site

Other Options

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Lot

Site Name: HYSHAM REST AREA EASTBOUND

GWIC Id: 163054

Section 1: Well Owner

Owner Name

Т

Addition

HYSHAM REST STOP EAST BOUND

Mailing Address

City State Zip Code

MT

Section 2: Location

Township	Range	Section	Quarter Sections	
05N	36E	5	NW1/4 SE1/4 NE1/4 NW1/4	
	County		Geoco	ode
TREASURE				
Latitude	Long	itude	Geomethod	Datum
46.2184	107.2	2493	NAV-GPS	NAD27
Altitude		Method	Datum	Date
2900				

Block

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work Drilling Method: AIR ROTARY

Section 5: Well Completion Date

Date well completed: Thursday, August 18, 1988

Section 6: Well Construction Details

Borehole dimensions				
From	То	Diameter		
0	35.5	10		
25	200	6		

Cas	in	g

From	То		Wall Thickness	Pressure Rating	Joint	Туре
-1.5	35.5	7				23LB STEEL
25	200	4		165.00		PVC

Completion (Perf/Screen)

From	То		 Size of Openings	Description
28	200	4	1/8	SLOTS

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 200

Static Water Level: 46.89 Water Temperature:

Air Test *

50 gpm with drill stem set at _ feet for 2 hours. Time of recovery 1 hours. Recovery water level 40 feet. Pumping water level feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

WELL IS EAST OF BUILDING RESTROOMS AT PICNIC TABLES USED UTILITY SINK FAUCET FOR CHEM NEED TO CONTACT CARETAKER FOR ACCESS NEWEST WELL AT REST AREAS 2 OLDER SHALLOW WELLS ON WEST SIDE IRRIGATION PIPES ACROSS TO THIS SIDE

Section 9: Well Log **Geologic Source**

2111 HUD - LANCE-HELL CREEK UNDIFFERENTIATED

211LHOD - LANCE-HELL CREEK UNDIFFERENTIATED							
From	То	Description					
0	28	SILT CLAY					
28	35	BROWN SANDSTONE					
35	50	LIGHT SHALE					
50	81	LIGHT SANDSTONE					
81	121	SHALE GREY SANDSTONE					
121	160						
160	173	GREY SHALE					
170	200	GREY SANDSTONE					

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Company: ROCK CREEK DRILLING INC

License No: WWC-300 Date Completed: 8/18/1988

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Plot this site on a topographic map View hydrograph for this site View water quality for this site

Other Options

Site Name: HYSHAM REST AREA WESTBOUND

GWIC Id: 17257

DNRC Water Right: W163867-00

Section 1: Well Owner

Owner Name

MT DEPT OF TRANSPORTATION

Mailing Address PO BOX 20437

City State Zip Code

BILLINGS MT

Section 2: Location

 Township
 Range
 Section
 Quarter Sections

 05N
 36E
 5
 SW½ NW½ NE½ NW½

 County
 Geocode

TREASURE

LatitudeLongitudeGeomethodDatum46.2197107.2513MAPNAD27AltitudeMethodDatumDate2865

Addition Block Lot

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CHURN

Section 5: Well Completion Date

Date well completed: Friday, January 28, 1966

Section 6: Well Construction Details

Borehole dimensions

From	То	Diameter
0	65	6

From	To	l	Wall Thickness	Pressure Rating	Joint	Type
-	63		111101111000	ramg		20 LB STEEL

Completion (Perf/Screen)

From	То		 Size of Openings	Description
63	65	0		OPEN HOLE

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 65
Static Water Level: 14
Water Temperature:

Pump Test *

Depth pump set for test _ feet.

28 gpm pump rate with _ feet of drawdown after 4 hours of pumping.

Time of recovery _ hours.

Recovery water level _ feet.

Pumping water level 43 feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

WELL NE OF RESTROOMS NEAR PICNIC TABLE SAMPLING PT -FAUCET ON FRONT OF RESTROOM BLDG OR UNDERGROUND SPRINKLER SYSTEM OUTLETS WESTBOUND REST AREA ACCESSED UTILITY ROOM WITH CARETAKER HYSHAM RESTAREA 194 WEST

Section 9: Well Log

Geologic Source

111ALVM - ALLUVIUM (HOLOCENE)

From	То	Description					
0	5	GRAYISH TAN SANDY SILT					
5	15	CHANGES TO GRAY SANDY CLAY					
15	20	TRACES OF GRAVEL					
20	25	GRAY SANDY CLAY SOME SURFACE WATER					
25	35	GRAY SHALE					
35	55	BLUISH GRAY CLAY					
55	63	SOME TRACES GRAVEL. INCREASING AMOUNTS OF SAND TO COARSE ROCK AT 63 FT.					
63	65	BOTTOMED HOLE IN GRAVEL AND DARK GRAY SAND					
	<u> </u>						

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: Company: FOX License No: -

Date Completed: 1/28/1966

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Lot

Plot this site on a topographic map View hydrograph for this site View water quality for this site

Other Options

Site Name: MONTANA HIGHWAY COMMISSION - HYSHAM WESTBOUND IRRIGATION

GWIC Id: 17256

Section 1: Well Owner

Owner Name

MONTANA HIGHWAY COMMISSION

Mailing Address

HELENA

Addition

City State Zip Code

Section 2: Location

Township	Range	Section	Quarter Sections		
05N	36E	5	NW¼ SW¼ NE	E¼ NW¼	
	County		Geoco	ode	
TREASURE					
Latitude	Long	itude	Geomethod	Datum	
46.2186	107.	2513	MAP	NAD27	
Altitude		Method	Datum	Date	
2870					

Block

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work
Drilling Method: CHURN

Section 5: Well Completion Date

Date well completed: Thursday, February 03, 1966

Section 6: Well Construction Details

There are no borehole dimensions assigned to this well.

Casing

ú	Casing						
				Wall	Pressure		
I	From	То	Diameter	Thickness	Rating	Joint	Туре
ı	0	61.5	6				STEEL

There are no completion records assigned to this well.

Annular Space (Seal/Grout/Packer)

There are no annular space records assigned to this well.

Section 7: Well Test Data

Total Depth: 75 Static Water Level: 24 Water Temperature:

Pump Test *

Section 8: Remarks

IRRIGATION ONLY WELL BOTH REST AREAS PUMP RUNNING ALL NIGHT

Section 9: Well Log Geologic Source

111ALVM - ALLUVIUM (HOLOCENE)

From	То	Description
0	10	TAN TO GRAY SANDY SILT WITH SOME CLAY
10	34	GRAY SANDY REWORKED SHALE WITH SOME GRAVEL
34	60	GRAY CLAY
60	61.5	GRAY SANDY SHALE
61.5	70	BOTTOM OF CASING SHOE. SOFT GRAY SANDSTONE
70	75	GRAY SANDY GRAVEL

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:
Company: FOX
License No: Date Completed: 2/3/1966

^{*} During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Other Options

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Plot this site on a topographic map

Site Name: FORSYTH - HATHAWAY EASTBOUND REST AREA

GWIC Id: 18914

DNRC Water Right: W163870-00

Section 1: Well Owner

Owner Name

MT DEPT OF TRANSPORTATION

Mailing Address PO BOX 460

City

City MILES CITY State MT Zip Code 59301

Section 2: Location

Township Range 06N 43E

Range Section 43E 24 County Quarter Sections SW1/4 NE1/4 SE1/4 NE1/4 Geocode

ROSEBUD

LatitudeLongitudeGeomethodDatum46.2621106.2815MAPNAD27AltitudeMethodDatumDate

Addition Block Lot

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work Drilling Method: ROTARY

Section 5: Well Completion Date

Date well completed: Monday, December 20, 1971

Section 6: Well Construction Details

Borehole dimensions

From	То	Diameter
0	56	11
56	260	8

Casing

			Wall	Pressure		
From	То	Diameter	Thickness	Rating	Joint	Туре
0	56	8				22 LB STEEL
0	260	6				18 LB STEFL

Completion (Perf/Screen)

From	То		 Size of Openings	Description
235	260	6		3/8X2 SLOTS

Annular Space (Seal/Grout/Packer)

From	То		Cont. Fed?
145	145	PACKER AND CEMENT	

Section 7: Well Test Data

Total Depth: 260 Static Water Level: 60 Water Temperature:

Pump Test *

Depth pump set for test _ feet.

60 gpm pump rate with _ feet of drawdown after 4 hours of pumping.

Time of recovery _ hours.

Recovery water level _ feet.

Pumping water level _ 125_ feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

Section 9: Well Log Geologic Source

125TLCK - TULLOCK MEMBER (OF FT UNION FM.)

From	То	Description
0	55	SAND AND GRAVEL
55	60	ROCK
60	70	FINE SAND
70	132	SHALE
132	145	ROCK
145	195	GREY SHALE
195	198	ROCK
198	215	WHITE SHALE
215	260	WATER SAND

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:

Company: HIGGINS DRILLNG COMPANY

License No: WWC-12

Date Completed: 12/20/1971

Other Options

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is complied electronically from the contents of the Ground-Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Plot this site on a topographic map

Site Name: FORSYTH - HATHAWAY WEST REST AREA

GWIC Id: 18908

DNRC Water Right: C075532-00

Section 1: Well Owner

Owner Name

MT DEPT OF TRANSPORTATION

Mailing Address PO BOX 460

 City
 State
 Zip Code

 MILES CITY
 MT
 59301

Section 2: Location

 Township
 Range
 Section
 Quarter Sections

 06N
 43E
 14
 SE½ NE½ SW½ SE½

 County
 Geocode

ROSEBUD

LatitudeLongitudeGeomethodDatum46.2692106.3065MAPNAD27AltitudeMethodDatumDate2590

Addition Block Lot

7

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work

Drilling Method: FORWARD ROTAY

Section 5: Well Completion Date
Date well completed: Friday, May 11, 1990

Section 6: Well Construction Details

Borehole dimensions

From	То	Diameter
0	16	11
16	355	8
355	510	5

Casing

				Pressure		_
From	То	Diameter	Thickness	Rating	Joint	Туре
0	16	8				22 LB STEEL
16	355	6				18 LB STEEL
90	510	4				STEEL

Completion (Perf/Screen)

From	То		_	Size of Openings	Description
320	355	6			3/8 X 2 INCH SLOTS
450	510	4		1/4X1/4	TORCH CUTS

Annular Space (Seal/Grout/Packer)

			Cont.
From	То	Description	Fed?
0	320	CEMENT	

Section 7: Well Test Data

Total Depth: 510 Static Water Level: 180 Water Temperature:

Air Test *

16 gpm with drill stem set at _ feet for 72 hours.

Time of recovery _ hours.

Recovery water level _ feet.

Pumping water level _ 370 feet.

* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.

Section 8: Remarks

Section 9: Well Log Geologic Source

211LHUD - LANCE-HELL CREEK UNDIFFERENTIATED

From	То	Description
0	17	GRAVEL
17	26	SANDROCK
26	95	GREY SHALE
95	102	COAL
102	118	BLUE CLAY
118	121	ROCK
121	130	SAND
130	195	SHALE
195	200	ROCK
200	320	CLAY
320	323	ROCK
323	355	SAND (WATER) ORIGINAL WELL DRILLED BY FLOYD HIGGIN
355	416	BLUE CLAY
417	419	COAL
420	452	BLUE CLAY

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name:

Company: HIGGINS DRILLNG COMPANY

License No: WWC-376

Date Completed: 5/11/1990

GWIC Id: 1	Site Name: FORSYTH - HATHAWAY WEST REST AREA GWIC Id: 18908 Additional Lithology Records					
From	То	Description				
453	472	SAND COARSE DARK BLUE				
473	476	ROCK				
477	504	SAND COARSE DARK BLUE				
505	510	CLAY				