WATER PERMIT NO. 2031-1

Name of Applicant: **City of Belle Fourche**

Address: **511 6th Avenue, Belle Fourche SD 57717** Phone: **605-893-3006**

Amount of Water Claimed: **2.22 cfs** Total Acres:

Source of Water Supply: **Groundwater**

Water to be used for: **Municipal** County: **Butte**

Type of Waste Disposal System:

Location: **South side of Belle Fourche**

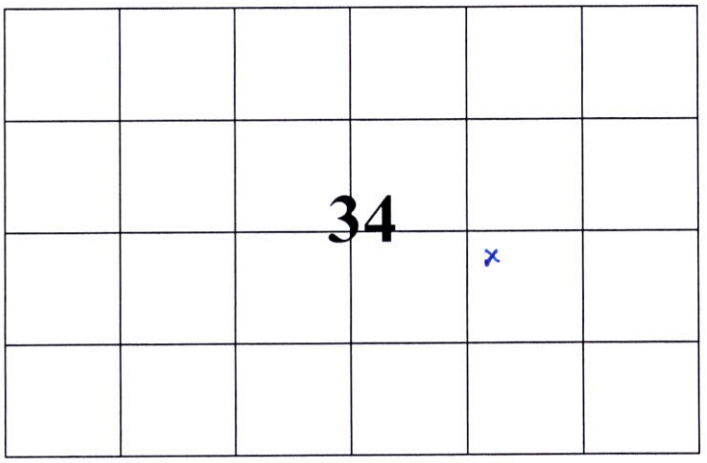
PRIORITY Date Received: **5-5-2023** Application/License Fee: **$1,550.00**

Corrected Application Received: Period of Annual Use: **January 1 – December 31**

Remarks: **Drill/construct Belle Fourche well # 3, including treatment building and distribution system connection.**

Diversion Point:

Land to be Irrigated:



Depth of Well: **2,600**

Well Driller:

Remarks:

Type of Map: **topo**

Reviewed and the Number Assigned on: **5-9-2023** By: **Rachel Rodriguez**

Notice of Hearing - date to intervene: _____

SOUTH DAKOTA
WATER PERMIT NO. 2031-1

Date of first receipt of application May 5, 2023.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2031-1 to City of Belle Fourche, c/o Brent Hardy, 511 6th Avenue, Belle Fourche SD 57717 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 2031-1 appropriates up to 960 acre-feet of water annually at a maximum pump rate of 2.22 cubic feet of water per second from one well to be completed into the Madison Aquifer (approximately 2,600 feet deep) located in the NE 1/4 SE 1/4 Section 34-T8N-R2E for municipal use. This site is located on the south side of Belle Fourche SD.

2. The water appropriated shall be used for the purpose of municipal use and may not exceed the amount of water needed for beneficial use.

3. The water is to be used during the following described annual period: January 1 – December 31.

4. The date of approval of Permit No. 2031-1 is July 28, 2023.

5. The date from which applicant may claim right is May 5, 2023.

6. One-fifth of the construction is to be completed on or before January 28, 2026.

7. All construction is to be completed on or before July 28, 2028.

8. Water is to be put to beneficial use on or before July 28, 2032.

9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2031-1 is issued for a twenty-year term. Pursuant to SDCL 46-2A-21, the twenty-year term may be deleted at any time during the twenty-year period or following its expiration. If the twenty-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2031-1 may also be cancelled for nonconstruction, forfeiture, abandonment or three permit violations pursuant to SDCL 46-1-12, 46-5-37.1 and ARSD 74:02:01:37.
2. The well will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
3. The well authorized by Permit No. 2031-1 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.

(continued)

4. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison aquifer.
5. Water Permit No. 2031-1 appropriates up to 960 acre-feet of water annually.

WATER MANAGEMENT BOARD

By: Eric Gronlund

AUG 3 1 2023

Eric Gronlund, Chief Engineer
Water Rights Program
Department of Agriculture and Natural Resources

date

FORM 2: Application for uses other than irrigation
(type or print)

Mail to:	No. 2031-1 Hydrologic Unit 10120203
SD DANR, Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	Basin Redwater Newspaper Black Hills Pioneer (office use only)

PAID
MAY 05 2023
Ck# 25091.00
Rec't# 51523

RECEIVED
MAY 05 2023
OFFICE OF WATER

Application for Permit to Appropriate Water in South Dakota

Check use(s) of water:

- [X] Municipal
- [ ] Rural Water System
- [ ] Domestic (over 18 gpm)
- [ ] Water Distribution System
- [ ] Commercial
- [ ] Industrial
- [ ] Recreational
- [ ] Fish & Wildlife
- [ ] Other
- [ ] Institutional
- [ ] Geothermal

Type of Application: **(check one)**

- [ ] **New**
- [ ] **Vested Right** (Use predates Mar 2, 1955)
- [ ] **Future Use Reservation**
- [ ] **Place to Beneficial Use Water Reserved by Future Use Permit No.** _____
- [ ] **Amendment/Correction to Permit No.** _____

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

1. Name to Appear on Water Permit City of Belle Fourche
   Mailing Address 511 6th Avenue (Address) Belle Fourche (City) SD (State) 57717 (Zip Code)
   Phone 605-893-3006 Mobile _____ Email brent@bellefourche.org
2. Amount of water claimed 2.22 *CFS or 1,000 **GPM and 960 ***AF or _____ Gallons
   Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (***Acre Feet - storage capacity of dam/dugout or annual use)
3. Source of water supply Madison Aquifer
4. Location of point of diversion 1 well in the NE1/4 of SE1/4, Section 34, T8N, R2E County Butte
   (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)
   If not a public water supply (e.g. municipal), will water be used outside of the area described above? ☐Yes ☐No
   If "Yes," where will water be used? _____
   (example - NW1/4 section 12-T104N-R53W)
5. County or counties where water will be used Butte
6. Annual period during which water is to be used January 1 through December 31
7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

   Drill and construct Belle Fourche Well #3, including treatment building and distribution system connection. See attached map for well location and attached Facility Plan dated June 2022. A well design and bid package for the well drilling and construction is being prepared by Advanced Engineering & Environmental Services, LLC and LRE Water.

I, Brent Hardy, PE (Name of Person) City Engineer (Title (if applicable)), the applicant, certify under penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

2021-08

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Also, attach map and any other technical information. (see instructions)

Form 2A
(Complete applicable portions only)

Supplemental Information

(type or print)

1. Well Information (check one or both as applicable) [X] Drilling new well(s) [ ] Using existing well(s)

a) If new wells, how many 1 Have test holes been drilled? [ ] Yes [X] No Drilled by _____
(if yes, please provide copies of logs)

b) If existing wells, how many _____ Provide copy of log(s), if available. Drilled by _____

For either existing or proposed wells:

c) Well Depth **(required)** 2,600 ft Depth to Top of Water Bearing Material 2,400 ft Depth to Water from Surface Will Flow

d) Distance to nearest domestic well on applicant's property _____ Property owned by others _____

2. Wastewater Disposal System Information

a) Type of System (i.e. septic tank, drain field) _____

b) System Capacity (gallons) _____ Year Constructed _____

c) Connected to the City of _____ Sanitary System

3. Dugout Information

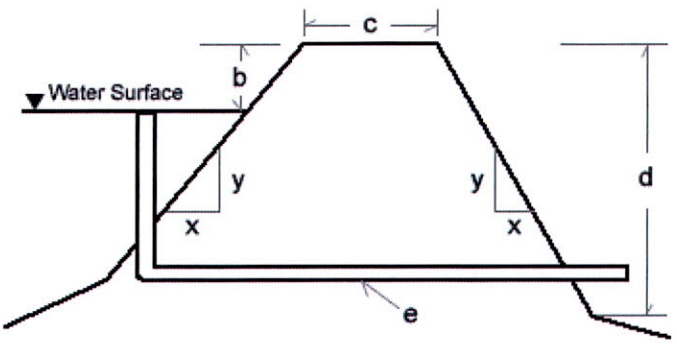
a) Surface Dimensions _____ Depth _____

b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:



b) Freeboard _____

c) Crest Width _____

Crest Length _____

d) Height _____

e) Primary Outlet Capacity _____

If pipe, diameter _____

f) Secondary Spillway Capacity _____

Spillway Width _____

g) X & Y Slope (e.g. 3 to 1 is a typical slope)

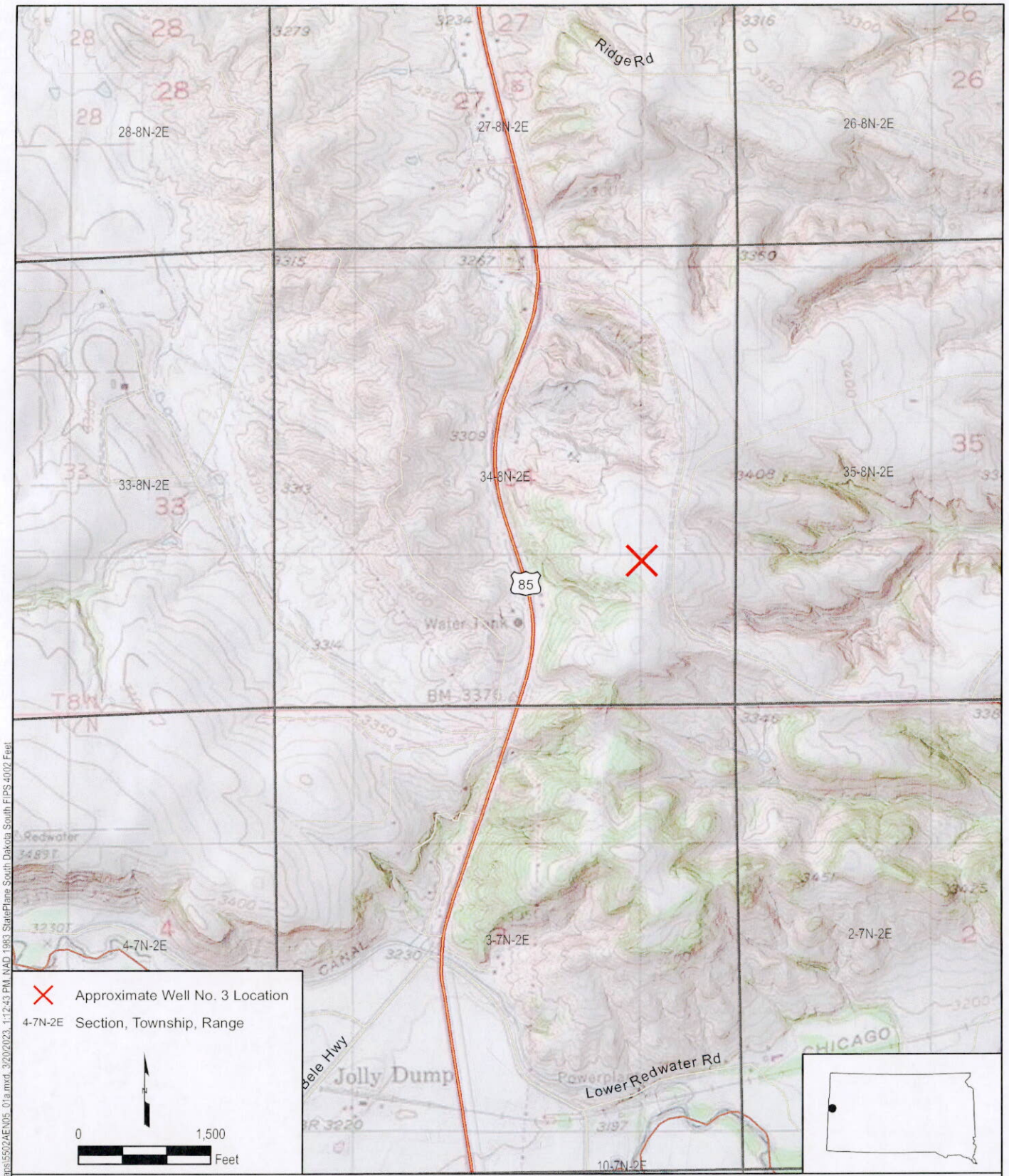
Upstream _____

Downstream _____

h) Area of Impoundment _____

i) Storage _____ Acre Feet

j) Drainage Area Above Dam _____ Acres



Service Layer Credits: Airbus,USGS,NGA,NASA,CGIAR,NCEAS,NLS,OS,NMA,Geodatastyrelsen,GSA,GSI and the GIS User Community
Copyright:© 2013 National Geographic Society, i-cubed

C:\GIS\GIS\AE2S Belle Fourche\maps\5502AEN05_01a.mxd 3/20/2023, 1:12:43 PM, NAD 1983 StatePlane South Dakota South FIPS 4002 Feet

LRE WATER
CONNECTING WATER TO LIFE

Prepared By:
LRE Water
Innovative Water Resource Solutions
South Dakota Office
Sioux Falls, South Dakota
(605) 310-1721

AE2S
BELLE FOURCHE WELL NO. 3
BELLE FOURCHE, SOUTH DAKOTA

APPROXIMATE LOCATION OF PROPOSED BELLE FOURCHE WELL NO. 3

FILE: 5502AEN05_01a.MXD	DATE: 3/20/2023	FIGURE: 1

CITY OF BELLE FOURCHE
WATER SUPPLY
FACILITY PLAN 2022

WELL #3 PROJECT
(HAT RANCH WELL)

Prepared for

City of Belle Fourche

Prepared by
Brent Hardy, P.E.
Belle Fourche City Engineer



JUNE 2022

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Section I. Well #3 Project (Hat Ranch Well)

I. Project Executive Summary

The three alternatives evaluated for the Well #3 Project are the No-Action Alternative, a New Well Alternative, and an Enlarged Hat Ranch Tank Alternative. The No-Action Alternative has been eliminated because it only postpones upgrades to the distribution system and does not address the issues of the lack of capacity and replacement supply from the springs gallery.

The two remaining alternatives were evaluated and the New Well #3 alternative was selected. Under the chosen Alternative, the proposed well would be drilled in the SE1/4 of Section 34, Township 8 North, Range 2 West, Black Hills Meridian. The proposed site is near an existing storage tank in the Hat Ranch Subdivision and could be connected to the city's distribution system with minimal additional infrastructure. The proposed alignment also allows for access from existing easements for maintenance access.

A well at the new site would be drilled approximately 2,000 feet into the Madison aquifer. The Madison aquifer currently supplies the city of Belle Fourche from two existing wells that already exist in the city.

The project completion is anticipated to take 3 to 6 months beginning in January 2023 and completed in July 2023. The total project cost is approximately $1,760,000. The area affected by the proposed well locations and extent of construction is shown in Figure 3.

The current water rate for a residential user is $27.29 per month for 5,000 gallons. The current water rate for residential use is $22.49 for the first 3,000 gallons. Water usage over 3,000 gallons is $2.40 per thousand. Sewer and water rate increases are not anticipated as a result of the capital improvement project. The existing rates and cash reserves are adequate for operation and maintenance.

II. Project Development

The City of Belle Fourche has identified the need for a new water well to increase the distribution system. The proposed well would provide an additional in town source to the city as well as help for planned or unplanned outages of the springs line.

A. Existing Conditions and Need for Proposed Project

i. System Age and Condition

The existing distribution system was installed in phases as the City developed. Segments of the existing springs line system are believed to be a part of the original system installed

during the 1920's, the most recent wells were installed during the 1980's and 1990's.

Currently, the majority of the supply for the city comes from the springs gallery located north of the city of Spearfish and is transmitted to the city of Belle Fourche through the springs line. The remainder of the supply comes from two wells located within the city of Belle Fourche. The well on the north side of town was completed in 1982 and the second well is located in the middle of Belle Fourche and was completed in 1991.

As the city developed, a majority of the new construction happened to the south. These areas of town are located uphill of the two in town wells and receive their entire water supply from the springs gallery.

The springs line was constructed in the 1920's and consist of approximately 10 miles of transmission line to transports water from the springs gallery north of Spearfish to the city of Belle Fourche. The springs line is primarily gravity fed with one booster station located at the Redwater River to help during peak times. The northern half of the springs line has been replaced in

ii. System Issues

System Capacity

Through the development of new construction and annexation of existing developments, the city of Belle Fourche has seen substantial growth along the south side of town. This development relies on water tanks that are fed by the springs line and because of topography can't be supplied by the in town wells.

Risks/Impacts of Springs Line Failure

If a failure occurs on the springs line a majority of the city's water supply would be eliminated until adequate repairs can be made. While a majority of Belle Fourche could be supplied at a reduced usage using the two in town wells, the areas in the southern part of town would not be able to be supplied by the in town system and other measures would need to be taken.

iii. Benefits of Installing the Proposed Improvements

Additional System Supply Capacity

The proposed well would increase the supply system capacity. The additional supply would be used to feed the Hat Ranch Tank and Redwater Hill Tank in addition to the springs line. Because of the topography, the new well would also be able to supply water to the remainder of Belle Fourche as the rest of the system lies downhill of the new well.

Springs Line Replacement

The existing springs line is used as the primary source of water to the city of Belle Fourche. When this system is down due to emergency repairs the city's water supply is strained as it has to rely only on the in town wells. In addition, the southern half of the line needs to be replace at some time due to parts of the line being close to 100 years old and the additional supply would be used during replacement.

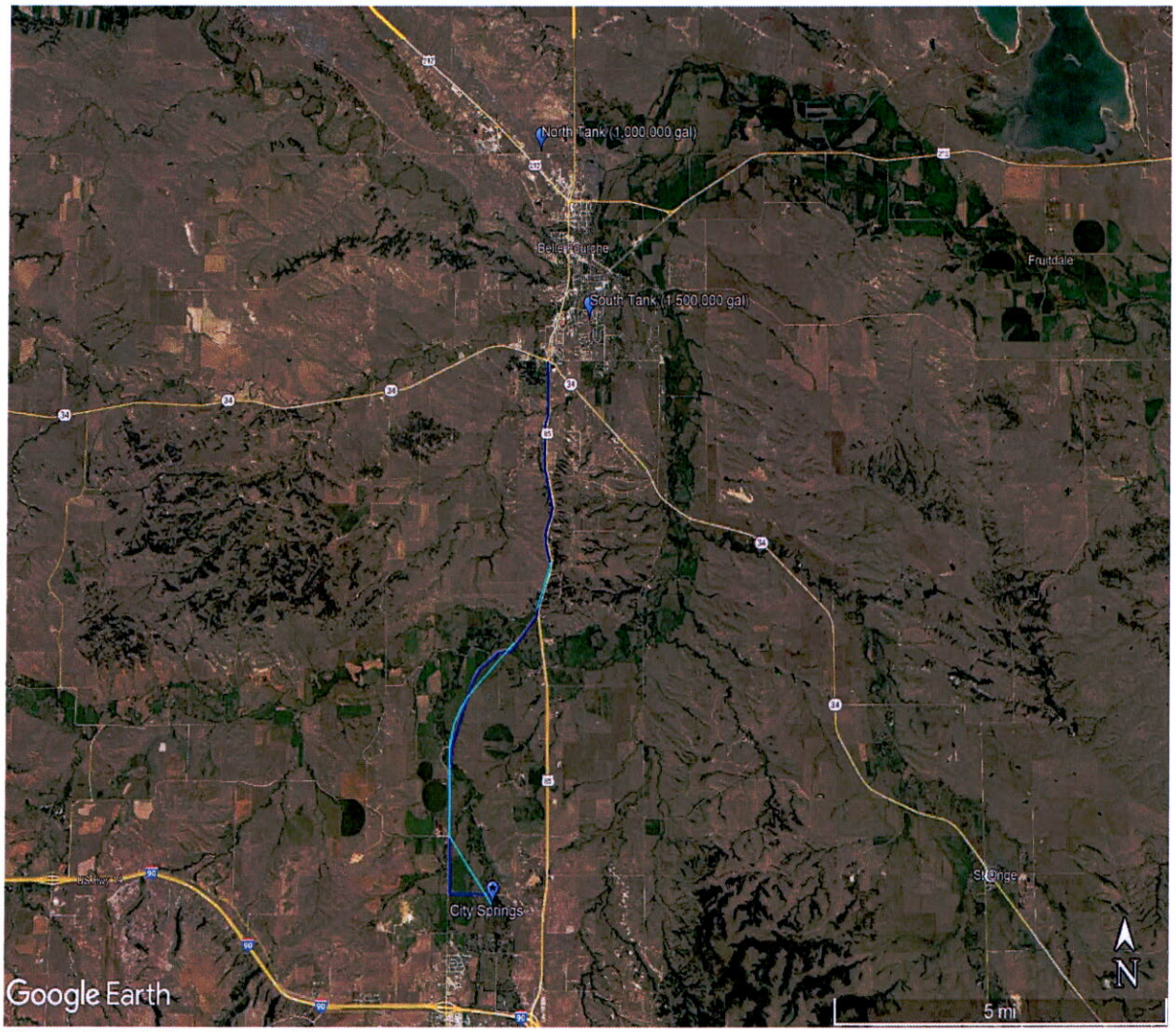


Figure 1. Existing Source Sites

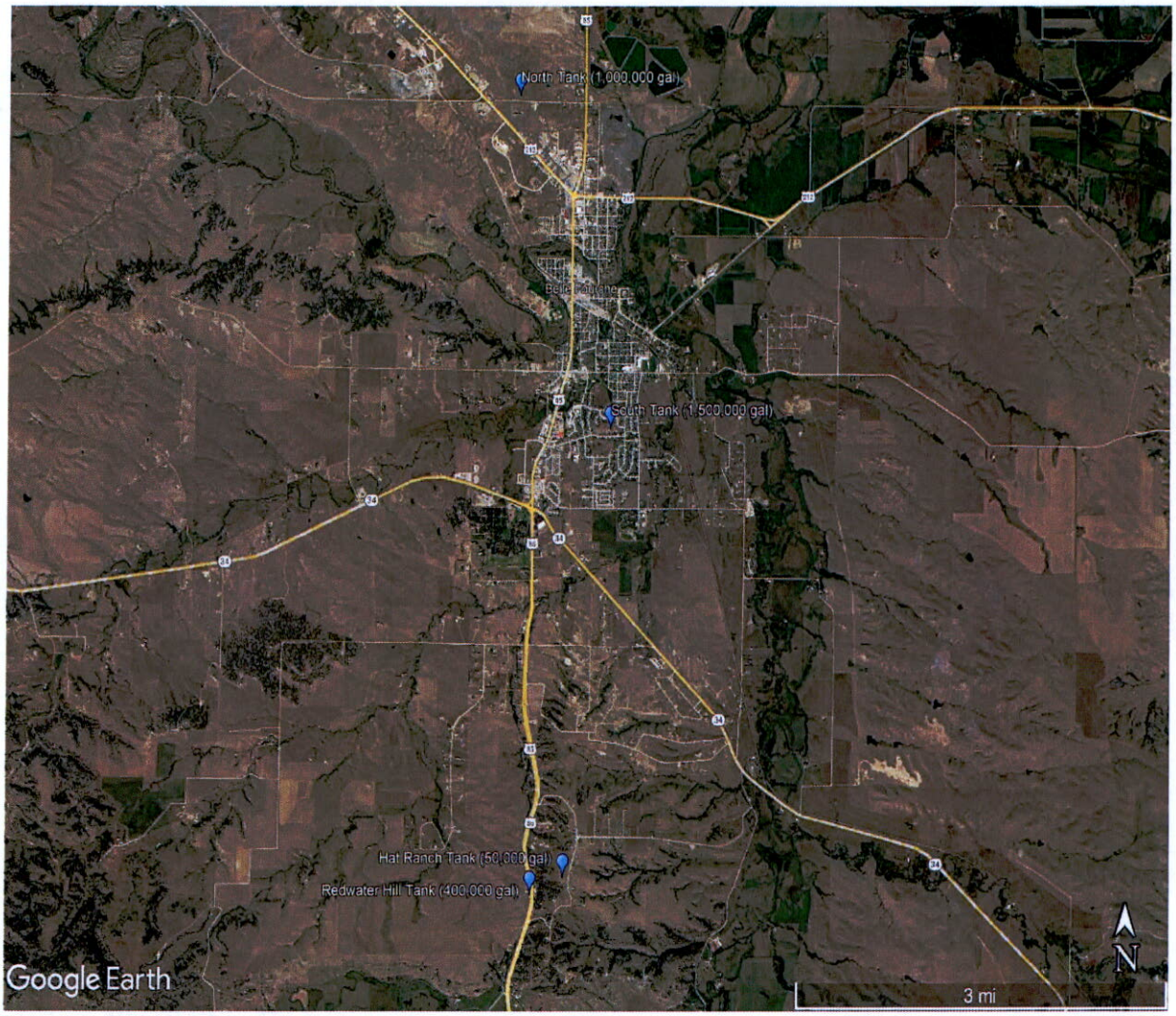


Figure 2. Existing Storage Tanks



Figure 3. Proposed Well Site Location

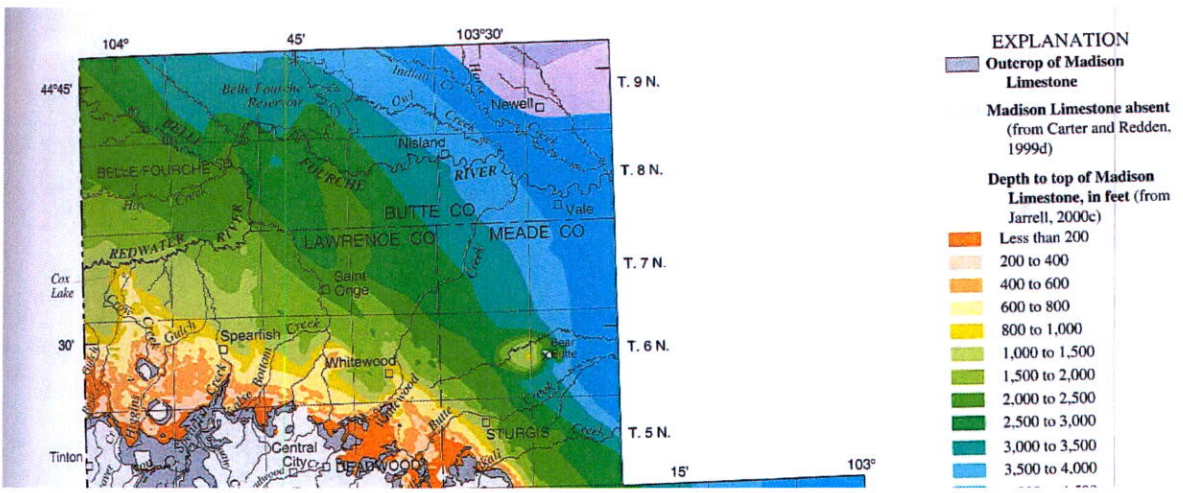


Figure 4. Madison Aquifer Map

III. Environmental Considerations

IV. Alternative Development and Selection

This section develops the no-action, New Well #3 and Enlarged Hat Ranch Tank alternatives for the New Well #3 Project. Once all alternatives have been developed and impacts evaluated, the best alternative would be selected for construction in a preliminary design phase.

A. Development of Alternatives

The alternatives for the Well #3 Project were derived for this report and are as follows:

i. No-Action Alternative

With the No-Action Alternative the existing system would remain in place. If upgrades are not made to the system and the city of Belle Fourche continues to grow to the south the existing system would lack the capacity to supply the city..

If a failure occurs on the springs line, the existing supply would have a difficult time keeping up. Water restrictions would need to be implemented in order to keep the city from running out of water until repairs are made. In addition, the areas in the southern part of town would have no water as they are higher in elevation than the in town wells.

Due to these reasons, this alternative will not be examined any further for the Well #3 Project.

ii. New Well #3 Alternative

This alternative would drill a new well near the existing Hat Ranch Tank approximately 2,000' into the Madison aquifer. At the time of construction of the Hat Ranch Tank, the water supply lines were installed in order to tie the tank into the rest of the Belle Fourche water distribution system. This would also be able to supply water to the existing Redwater Hill Tank as well as the rest of the city of Belle Fourche.

Cultural resources, threatened or endangered species and wetland impacts would not be significantly impacted by the proposed well because the areas are considered to be previously disturbed.

iii. Enlarged Hat Ranch Tank Alternative

Currently, the subdivision of Hat Ranch has a 50,000 gallon tank that was constructed prior to the development being annex into the city. This tank is supplied by a pump station that ties into the springs line to provide water to the Hat Ranch area.

The Hat Ranch subdivision consist of large acreages and has seen several additions over the years. Currently the area sees large water usage in the summer months due to homeowners watering. In the winter months, water usage drops and there are issues with stagnation in the tank due to the low usage.

At this time, any increase to the tank that would help offset any shortfalls in the summer would only increase the problems in the winter. In addition, the larger tank wouldn't help at times when the springs line is unable to supply water to the city.

Evaluation of Monetary Cost

i. Project Cost

The following tables show the Conceptual Opinion of Probable Construction Costs for Well #3 Project. Table 2 provides sanitary sewer costs. The total project cost is estimated to approximately $1,760,000. The total project cost includes design, construction, and construction administration costs.

Table 2 – Conceptual Opinion of Probable Sanitary Sewer Construction Costs for Well #3 Project

ITEM DESCRIPTION	UNITS	TOTAL QUANTITY	UNIT PRICE	TOTAL PRICE
2,000' Deep Well	LS	1	$1,008,000	$1,008,000
Chlorination System	LS	1	$500,000	$500,000
Design Engineering (13%)	LS	1	$131,040	$131,040
Construction Engineering (12%)	LS	1	$120,960	$120,960
			Total	$1,760,000

C. Selected Alternative

The Selected Alternative is the New Well #3. The alternative discussed in this Facility Plan would allow the City of Belle Fourche to increase the in town water supply. These improvements would not only increase the supply in the southern part of the city, but also supply the remainder of the city using in town sources when the springs line is not available.

The No-Action Alternative was eliminated because it did not address any of the problems identified previously within this Facility Plan.

The total estimated cost to construct the proposed project is $1,760,000. The estimated cost includes construction costs, engineering design, and construction administration costs.

Financing Plan

The City of Belle Fourche's Capital Improvement Program (CIP) includes the Well #3 Project. The City has been planning for the Project for several years and has created a financing plan to fund the identified project.

The City's Water Enterprise is responsible for all revenues and expenditures associated with the collection and treatment of wastewater for the City. The proposed project would be incorporated into the debt services section of the water department expenditures. The Water Enterprise uses the following revenue resources to pay for the expenditures for the division:

- Licenses and Permit Fees
- Charges for Services
- Fines
- Investments
- Miscellaneous Revenue
- Transfers

The City plans on utilizing a State Revolving Fund (SRF) loan to fully fund the water portions of the project and use the division's revenue sources to pay the SRF loan back. The City anticipates receiving a $1,760,000 loan at the interest rate of 2.125% for 30 years from the SRF loan program.

The City does not anticipate rate increases for users. The City reviews user rates annually to ensure that the water and sewer funds are financially sound.

D. Arrangements for Implementation

The Selected Alternative would require the following arrangements to be made prior to construction of the project:

- New easements obtained
- Flood plain and flood way evaluation completed
- Coordination between the land owners and the design team
- NPDES permit including preparation of a SWPPP completed
- Notice of Intent (NOI) from DANR submitted
- Implementation of environmental BMP's as described in the Future Actions section of the Environmental Considerations

No additional operation and maintenance requirements would need to be implemented due to this project. The City of Belle Fourche has already established a maintenance program for the water distribution system. No additional time or resources would need to be added due to this project.

E. Project Schedule

The following is the anticipated project schedules of the 8th Avenue Sanitary Sewer Interceptor Line Project:

Design – Summer 2022
Bid Letting – Fall 2022
Construction – Winter-Spring 2023

V. Public Participation

This section discusses the public participation during the development of the Facility Plan. The public was encouraged to attend a public hearing on June 20, 2022 to receive more information on the proposed project identified within the facility plan and voice any concerns they might have with the project. The public hearing documents are attached in Appendix A.

A. Public Hearing Advertisement

An advertisement for the Wastewater Collection Facility Plan public hearing was published on May 25, 2022 in the Butte County Post newspaper (Appendix A).

B. Public Hearing Minutes

A public hearing was held on June 22, 2022 at 6:00pm in the Council Chambers of City Hall in Belle Fourche, SD. The purpose of the public hearing was to introduce the public to the Well #3 Project identified within the Water Supply Facility Plan.

The Engineering Department provided a presentation that identified the following information about the facility plan:

- Purpose for the Wastewater Collection Facility Plan
- Project needs
- Project alternatives
- Selected alternative
- Project funding

Several members of the public were present at the public hearing; however, no public comments were made about the facility plan.

A copy of the presentation slides can be found in Appendix A.

C. Resolution of Public Concerns

No concerns were raised from the public during the public hearing.

APPENDIX A
Public Hearing

To be published June 9th, 2022

PUBLIC NOTICE

NOTICE OF PUBLIC HEARING
for the
CITY OF BELLE FOURCHE HAT RANCH WELL WATER PROJECT

The City of Belle Fourche is seeking $1,760,000 of funding from the Board of Water and Natural Resources for construction of a new well and related improvements in the area of Hat Ranch Subdivision. The funds could be either a grant from the state Consolidated Water Facilities Construction Program or a loan from the Drinking Water State Revolving Fund (SRF) Program. The Drinking Water SRF loan terms are 2.125% for 30 years, and the Board of Water and Natural Resources may forgive all or a portion of loan principal. The amount, source of funds, and terms will be determined by the Board of Water and Natural Resources when the application is presented at a scheduled board meeting. The purpose of the public hearing is to discuss the proposed project, the proposed financing, and the source of repayment for the loan. The public is invited to attend and comment on the project. The public hearing will be held at Belle Fourche City Hall (511 6th Avenue, Belle Fourche, SD) on Monday, June 20, 2022, at 6:00 p.m.

To be published once

CITY OF BELLE FOURCHE
ENGINEERING DEPARTMENT

511 6TH AVENUE
BELLE FOURCHE, SD 57717
PHONE: (605) 892-3006
FAX: (605) 723-0897
WWW.BELLEFOURCHE.ORG

SRF Public Hearing Sign In Sheet

Project Number: 2022-21
Project Name: Well #3 Project (Hat Ranch Well)

NAME	PHONE #	E-MAIL or ADDRESS
Tammy Stearns	605-892-3052	tammy-stearns@yahoo.com
Laura Bennett	605-210-1305	laurabennett123@gmail.com
Rock Nelson	(605) 210-363	1845 Valley Dr. BFSD
Delayne Nutz	402 270 6006	2100-11th Ave Belle
Krystel Cazer	605-569-9092	KCazeros@Gmail.com 1116E Elkhorn St.
Gina Carpenter	307-660-8789	2458 Tumble Weed Trl
Ed Rose	605-210-3018	
Hollie Stalder	605 892 9065	director@bellefourchedevcorp.com
Robin Wilkins	915-525-4199	robinsky75@hotmail.com
Stephanie Hobbs-Vetter	605-390-3173	1805 10th Ave BF SD
Lysann Zeller	605-209-6797	LZeller@wrbsc.com
Alex Vanderau	605-390-7807	avvanderau@gmail.com
DIRK Hoffman	605 210-1192	pubworks@bellefourche.org
Ryan Chervenny	605 892 4240	Chervenny@Bellefourche.org
Kellen Willert	605 210.2011	on file
Ryan Stedillie	605 892-5287	stedillie@belleFourche.org
Kristi Thelen	605-545-0460	kristi@bellefourche.org
Steve Nafus	605-892-3006	snafus@bellefourche.org

Minutes for the City of Belle Fourche
511 6th Ave
Belle Fourche, SD 57717

The Common Council of the City of Belle Fourche met in Regular Session with Mayor Randy D. Schmidt presiding.

Members present were:
First Ward Council Members: Heidi Parker and Monte Talkington
Second Ward Council Members: Derrick Erhart and Clark Sowers
Third Ward Council Members: Larry Schmaltz and Randy Sowers
Fourth Ward Council Members: Rebecca Larson and Bob Somervold

Also present: City Attorney Kellen Willert, Police Chief Ryan Cherveny, City Engineer Brent Hardy, Public Works Director Dirk Hoffman, Assistant City Engineer Steve Nafus, Tri-State Museum Director Kristi Thielen, Human Resource Manager Gina Carpenter, Streets/Water/Sewer Foreman Ryan Stedillie, Maintenance Technician Rick Nelson, Officer Brandon Wolfe, Liquor Store Clerk Krystal Cazer, Finance Officer Bethany Estes, Assistant Finance Officer Jason LaFayette, Economic Development Director Hollie Stalder, Community Development Planner Lysann Zeller, Stephanie Hobbs-Vetter, and Katie Hoffman.

AGENDA

1. The meeting was opened with the Pledge of Allegiance.

2. Motion Talkington, second Erhart to adopt the agenda with changes to Next Meeting Date/Reports – Technology Advisory Board from June 28 to June 30, 2022, correction to Regular Agenda Item 6 – spelling of Nathan Schreier's name and the additions of Public Hearing Item 2 – the City of Belle Fourche Hat Ranch Well Water Project, and Regular Agenda Item 0.5 – Executive Session – Personnel – SDCL 1-25-2(1). Motion carried.

3. Motion Somervold, second Parker to approve the minutes for the Regular Meeting of June 6, 2022, and Special Meeting of June 15, 2022. Motion carried.

4. Mayor's Report.
   A. Oath of Office – Brandon Wolfe
   B. Thank you to the city employees for all their efforts in cleaning up after the devastating storm. Also, thank you to the people of Belle Fourche for coming together to help their neighbors.

5. Community Input – This section of the agenda permits a person to make comments regarding public business. Each speaker is allowed a maximum of three (3) minutes.
   A. Katie Hoffman questioned why Councilmembers and/or Mayor didn't communicate on Facebook after the storm. Furthermore, Ms. Hoffman informed council that she was unable to locate the City's Facebook page, nor does the Office of the Mayor and there is no communication outside City Hall.
   B. Stephanie Hobbs-Vetter questioned why Regular Agenda Item 7 – Confirmation of the Mayoral appointment of Ryan Stedillie as the City of Belle Fourche Public Work Director never went through committee, asked for clarity on why the streets on Consent Agenda Item 4 are needing closed, and thanked council for having the discussion in Regular Agenda Item 4 to help aide in city wide clean-up.

Next Meeting Date/Reports

City Council – Tuesday, July 5, 2022, at 6:00 P.M. – Council Chamber

Airport – Third Wednesday Quarterly, July 20, 2022, at 6:00 P.M. – Council Chambers

Ambulance – Thursday, June 23, 2022, at 5:30 P.M. – Belle Fourche Ambulance Hall

Chamber of Commerce – First Wednesday, July 6, 2022, at 7:00 A.M. – Chamber Office

CoNBA – First and Third Tuesday, July 12, 2022, at 5:30 P.M. – AmericInn Breakfast Room

***Economic Development** – Second Wednesday, July 13, 2022, at 7:00 A.M. – 5th & Grant Plaza – Grossenburg Implement Inc. is working on an expansion and plan to build a new state of the art John Deere dealership with completion in the fall of 2023. "Fuel the Growth – 2022: Advancing Economic Development in our Communities" will be September 14-16, 2022, at Black Hills State-Rapid City. All economic development professionals, board members, community leaders, businesspersons, and elected officials are invited to attend. There are four new customers utilizing the rail siding at the industrial park. An email pertaining to 2022-2023 Leadership Belle Fourche course nominations and sponsorships will be out soon. Albany Farms has hired 40+ employees, and the have ran several successful test runs. Their first shipments are due to leave the plant in mid to late July. The first Development Plan Committee meeting was held the week of July 12, 2022.

Legal-Finance – Second and Fourth Monday, June 27, 2022, at 6:00 P.M. – Council Chambers

***Library** – First Tuesday, July 5, 2022, at 5:00 P.M. – City Hall Conference Room – Circulation for May was 5,360. There were 248 students and teachers in the library for tours in the month of May. The summer reading program began June 6, 2022, and there are currently 383 people registered. The "Dragons are Too Seldom" puppet show was June 15, 2022, and there were 235 in attendance.

Museum & Visitor Center – Second Tuesday, July 12, 2022, at 5:00 P.M. – Council Chambers

Planning & Zoning – First Wednesday, July 6, 2022, at 4:00 P.M. – Council Chambers

Police – Second Tuesday, July 12, 2022, at 6:00 P.M. – Council Chambers

Public Works – Second and Fourth Monday, June 27, 2022, at 4:30 P.M. – Council Chambers

Rail Authority – Annual Meeting, Wednesday, January 11, 2023, at 3:00 P.M. – 5th & Grant Plaza

Rec Center – Wednesdays after the Second and Fourth Monday, July 29, 2022, at 5:30 P.M. – Council Chambers

***Roundup Committee** – ~~Thursday, June 23~~ Monday, June 27, 2022, at 5:00 P.M. Roundup Grounds (Workday – Volunteers Welcome) – The Black Hills Roundup is $9,400.00 ahead of 2021 tickets sales and there will be limited seating on July 2 and 3, 2022. Entries for the 2022 parade are currently up by 70 as compared to last year at this time. The completed schedule of events can be found at blackhillsroundup.com. The carnival is not moving and will be in the same location as it has been years previous. Since 2011, the Black Hills Roundup has received $228,000.00 in subsidies from the city, $10,000.00 of which is set aside for the fireworks, and have completed $239,000.00 in improvements at the rodeo grounds since that time.

Technology Advisory Board – ~~Tuesday, June 28~~ Thursday June 30, 2022, at 6:00 P.M. – Council Chambers

PUBLIC HEARINGS

1. Public Hearing for the Belle Fourche Chamber of Commerce's Special On-Sale Wine and Malt Beverage Licenses to serve at The Opry event on August 7, 2022, at Community Hall. No one present in support or against.
2. Public Hearing for the City of Belle Fourche Hat Ranch Well Water Project. Lysann Zeller, with Black Hills Council of Local Governments, gave a presentation outlining the Hat Ranch Well Water Project, the process of completion, and total financing of $1,760,000.00. No one present in support or against.

CONSENT AGENDA

The following items were discussed by the appropriate Council Appointed Committee or Board, with membership including at least one City Council Member, and recommended with a majority vote, by the quorum, for approval, and placed on the consent agenda for final action to be taken on all items by a single vote. Any item may be removed from the consent agenda by the Mayor or a Councilperson for separate consideration.

Airport Board

Nothing at this time.

Legal Finance Committee

1. Recommend approval of the revised City of Belle Fourche Volunteer Application. (This has been reviewed by Legal Counsel)

Library Board

Nothing at this time.

Museum Board

Nothing at this time.

Planning and Zoning Commission

2. Recommend approval to purchase a 2020 Dodge Durango from the Kansas Highway Patrol in the amount of $29,600.00. It is further recommended that all equipment to furnish this vehicle be purchased in an amount not to exceed $17,000.00. An officer will have to travel to Topeka, KS to pick up the vehicle. This purchase will be paid for with CARES funding.

Police Committee

Nothing at this time.

Public Works Committee

3. Recommend approval for authorization to close off designated areas in Belle Fourche from 2:00 P.M. to 4:00 P.M. for Cowboys Too to conduct the reenactment of the Butte County Bank Robbery on June 30, 2022. This request includes the use of twenty safety cones, flags, and signs to help direct traffic.
4. Recommend approval of Police Chief Ryan Cherveny's request to close Jackson Street at 5th Avenue and Indian Street at 5th Avenue. (Item pulled and placed on Regular Agenda as item 0.75)
5. Recommend approval for placement of a memorial sign on the Roundup Street Bridge.
6. Recommend approval to waive Community Hall rental fees for a Book Sale Fundraising event for the Belle Fourche Public Library on July 19 and 20, 2022. This event will be hosted by the Library Foundation Board.
7. Recommend approval to waive Community Hall rental fees for the "Dancing with the Stars" non-profit fundraising event hosted by the Shirley Speaks Foundation. The agreement has been signed and the deposit for Community Hall has been paid for.
8. Recommend approval of the Black Hills Roundup's Application for Public Display of Fireworks for Saturday, July 2, and Sunday, July 3, 2022, at the Belle Fourche Ballfield Complex.
9. Recommend approval of emergency repairs to the riverbank adjacent to Hay Creek on 10th Avenue between Elkhorn Street and the railroad bridge.
10. Recommend approval for HDR to provide an independent fee estimate of KLJ Engineering LLC's fee for AIP 3-46-0072-015-2022 in the amount of $4,000. This review is required by Federal Aviation Administration (FAA) for any project exceeding $100,000.
11. Recommend approval to hire Sacrison Paving for Project 2017-27 – 10th Avenue Asphalt Trench Patching.
12. Recommend approval to pay invoice number payment number 1 to Brosz Engineering, Inc. for Project 2022-10 – Landfill Progression Survey in the amount of $11,197.50.
13. Recommend approval to release retainage for Project 2017-27 – South Tank and 10th Avenue Water Improvement in the amount of $16,181.80.

Rec Center Committee

Nothing at this time.

Motion Talkington, second Larson to approve the Consent Agenda. Councilperson Sowers requested to move item 4 to the Regular Agenda. Motion carried.

REGULAR AGENDA

0.5. Motion Talkington, second Larson to go into Executive Session – Personnel – SDCL 1-25-2(1) at 6:51 P.M. Motion carried.

Mayor Schmidt declared to return to Regular Session at 7:19 P.M. with no action taken.

0.75. Motion R. Sowers, second Talkington to approve Police Chief Ryan Cherveny's request to close Jackson Street at 5th Avenue and Indian Street at 5th Avenue. Chief Cherveny advised that this closure is keep vehicles out of these areas during the fireworks on July 2 and 3, 2022 until heavy traffic subsides. Motion carried.

1. Motion Erhart, second Parker to approve the Belle Fourche Chamber of Commerce's Special On-Sale Wine and Malt Beverage Licenses to serve at The Opry event on August 7, 2022, at Community Hall. Motion carried.

2. First reading of Ordinance 8-2022 – An Ordinance Amending Belle Fourche City Ordinance Title 2 Administration and Personnel, Chapter 2.04 – Common Council 2.04.021 – No Smoking in Certain City-owned Facilities.

3. Motion Talkington, second Larson to approve Resolution 34-2022 – Possession and Discharge of Fireworks:

R E S O L U T I O N
Resolution No. 34-2022
RESOLUTION AUTHORIZING THE POSSESSION AND DISCHARGE OF FIREWORKS

WHEREAS, The Common Council for the City of Belle Fourche, pursuant to Belle Fourche City Ordinance 8.36.030, adopts this resolution to authorize the possession and discharge of fireworks;

THEREFORE, THEREFORE, BE IT RESOLVED by the City of Belle Fourche:

Fireworks may be possessed within the City and discharged upon privately owned land within the City between the hours of 11:00 A.M. and 11:00 P.M. on Saturday, July 2, Sunday, July 3, and Monday July 4, 2022.

Adopted by the City of Belle Fourche Common Council this 20th day of June 2022.

Motion carried.

4. A discussion regarding options for additional garbage pick up to help aid in clean-up from the recent storm was held. An option that is currently available to residents of the city are punch cards that provide four free dumps at the landfill. Although the punch card doesn't allow for construction debris, Public Works Director Dirk Hoffman advised that broken glass can be placed in with regular trash, and city crews will pick up carpet and household goods that are left beside the trash tote. No action taken.

5. Motion R. Sowers, second Larson to approve the Legal Finance Committees recommendation to accept the City of Belle Fourche Purchasing Policy. Motion carried.

6. Motion Talkington, second R. Sowers to approve the ratification of the Mayor's updated committee listing as follows:

Technology Advisory Board – 3 Year Term
Meets monthly at 6:00 pm – City Hall – Council Chamber

Council Representative: Derrick Erhart
Members: Deb Elliot, Keenan Merrill, Jeremy Sampson, Nathan ~~Schrier~~ Schreier
City IT Representative: All Net Connect

Motion carried.

7. Motion Talkington, second Somervold to confirm the Mayoral appointment of Ryan Stedillie as the City of Belle Fourche Public Work Director. He will be hired at a starting wage of $67,063.79 (Grade D16, Step 10) annual salary as an exempt employee. A one-step increase is possible with a favorable six-month review. He will officially begin this position July 18, 2022. Motion carried.

8. Acknowledgement that Ryan Reeves, Landfill Equipment Operator IV/Foreman, received a wage adjustment following the successful completion of the Management of Landfill Operations (MOLO) certification. The possible increase with a favorable review was approved with his August 3, 2020, hire recommendation. This adjustment is from a $24.44 per hour (Grade 14, Step 11) to $25.68 per hour (Grade 14, Step 13). The wage adjustment is effective June 12, 2022.

9. Acknowledgement that Hayley Decker, Foreman for Public Works – Cemetery/Parks Division, received a wage adjustment following a positive six-month review. The possible increase with a favorable review was approved with her October 18, 2021, hire recommendation. This adjustment is from $20.56 per hour (Grade 14, Step 4) to $21.07 per hour (Grade 14, Step 5). The wage adjustment will be effective June 26, 2022.

10. Motion Parker, second Talkington to approve the Belle Fourche High School's 2022 Homecoming Parade on Friday, September 23, 2022. The route will be on 13th Avenue from the Belle Fourche Middle School to the Belle Fourche High School. Parade line-up will begin at 2:00 P.M. and the parade will start at 2:30 P.M. Roll Call: Larson; aye, R. Sowers; aye, Erhart; aye, Talkington; aye, Parker; aye; C. Sowers; nay, Schmaltz; aye, Somervold; aye. Motion carried.

11. Motion Parker, second Talkington to approve payment of invoice numbers 1224 and 1225 payment number 1 to AmWall, LLC for Project 2022-8 – Public Works Building and Community Hall Resurfacing in the amount of $71,386.42. Motion carried.

12. Motion Somervold, second Talkington to approve payment of pay estimate number 1 to Woelber Excavation, LLC for Project 2020-14 – Lawrence Street Rehabilitation – Phase 2 in the amount of $96,405.97. Motion carried.

13. Motion Erhart, second Parker to approve the bills as presented. Motion carried.

14. Informational.
    A. Councilperson Larson reported that the LEPC had their last meeting on June 15, 2022, and they are in search of an Emergency Coordinator. Training will be available for the selected applicant. The next LEPC meeting is scheduled for September 21, 2022, at 12:00 P.M. at the Butte County Courthouse.
    B. Councilperson Larson advised that she cannot speak for the City via Facebook and that is a commonality amongst many. In addition, Councilperson Larson said that she has had a conversation with Mayor Schmidt regarding being more engaged in using social media to communicate with the public. No definitive answer has been discussed and those involved are seeking details on how it could work.
    C. Councilperson R. Sowers publicly apologized to Kellen Willert and Dwight Gubbrud from Bennett, Main, Gubbrud, & Willert, P.C. In addition, Councilperson R. Sowers apologized to the community for not handing things in a professional manner at the last Council meeting.
    D. Councilperson Erhart requested excusal from the July 5, 2022, City Council meeting.

       Motion Talkington, second R. Sowers to approve Councilperson Erhart's request for excusal. Motion carried.
    E. Public Works Director Dirk Hoffman thanked the Council for giving Ryan Stedillie the opportunity as the new Public Works Director.
    F. Councilperson C. Sowers thanked the City Garbage Collector for dumping an extra load of trash last week.

15. Motion Somervold, second Larson to adjourn at 7:52 P.M. Motion carried.

Bills

A&B BUSINESS SOLUTIONS 70.24; ABC COALITION 250.00; ALL NET CONNCETIONS 153.36; ALLSTATE PETERBILT-RC 264.89; AMWALL LLC 71386.42; ANNIE'S 19.94; CHARLEE BACHMAN 30.00; BELLE FOURCHE BEACON 84.00; BELLE FOURCHE FLIGHT CENTER 594.00; BF VETERINARY CLINIC PC 37.45; BLACK HILLS ENERGY 15967.23; BLACK HILLS PIONEER 1001.39; BLACK HILLS PURE INC 18.25; BLUEPEAK 145.61; BOOK SYSTEMS INC 647.95; BROSZ ENGINEERING 11197.50; BSN SPORT LLC 38.00; BUTLER MACHINERY CO 1437.34; BUTTE CO REGISTER OF DEEDS 553.00; CARL'S TRAILER SALES INC 30.62; GINA CARPENTER 30.94; CASK & CORK 109.00; CBH COOPERATIVE 16107.00; CENGAGE LEARNING 383.96; CENTURY LINK 168.48; COCA-COLA BOTTLING 463.75; CORE & MAIN 952.36; COREAN CONSTRUCTION LLC 4000.00; GREG CORNETT 127.50; COTTRILL DISTRIBUTING 241.47; CWD CASH-WA 1786.14; DANR-FISCAL OFFICE 1850.00; JAMES DERANLEAU 3050.02; DERKSEN FLOORS INC 6200.00; DIAMOND LAKE BOOK CO 175.56; THE DUCK COMPANY 596.20; EMERY-PRATT 828.68; BETHANY ESTES 48.00; FIB MASTERCARD 8565.40; FISHER BEVERAGE COMPANY 15305.27; FOLKMANIS 96.51; LORI FOOS 200.00; FORTE PAYMENT SYSTEMS 884.58; FORUM COMMUNICAITONS CO 385.00; FRONTIER GLASS 459.81; GALLS 21.25; GARDNER MEDIA LLC 324.74; GLOBAL PAYMENTS INTEGRATED 572.50; GODFREY BRAKE SERVICE & SUPPLY 301.83; GOLDEN WEST TECHNOLOGIES 1384.90; GUIDEPOSTS 40.88; HAWKINS INC 2251.63; HILLYARD 33.76; SHANNON HOWARD 15.00; BRIDGET HOWELL 500.00; SAMANTHA HUNTER 100.00; INTERNAL REVENUE SERVICE 568.14; ASHLEY JACOBS 25.00; JEITZ LAWN SERVICE 75.00; JOHNSON BROS WESTERN WHOLESALE 23125.56; KANOPY 32.00; ELLEN M KOAN 200.00; KT CONNECTIONS 276.00; JASON LAFAYETTE 48.00; LIFE FITNESS 40.95; LIGHT AND SIREN 140.00; LPA RETAIL SYSTEMS INC 330.00; LUEDERS FOOD CENTER 8.98; LYNNS DAKOTAMART 332.18; MID-AMERICAN RESEARCH CHEMICAL 667.56; MASON'S 5TH AVENUE 167.76; LINDA MATTHEWS 96.76; MCKESSON MEDICAL-SURGICAL 187.95; MONTANA DAKOTA UTILITIES 4322.06; MERCHANT BANKCARD SVCS 3071.48; JAMIE MEZ 15.00; MIDCO BUSINESS 352.00; MIDCONTINENT COMMUNICATIONS 113.63; MIDCONTINENT TESTING LABS 302.00; MLM ASSET MANAGEMENT LLC 1800.00; MONEY MOVERS INC 10.00; MONTANA HISTORICAL SOCIETY 300.00; NORTHWEST PIPE FITTINGS 10529.06; O REILLY AUTOMOTIVE INC 315.73; OFFICE EMPORIUM 238.54; PEPSI COLA OF RAPID CITY 145.08; PORTERFIELD ELECTRICAL SPF INC 397.86; QUALITY BRANDS OF BLACK HILLS 11953.37; RANDY'S DISCOUNT TIRES 1350.00; RASAMUSSEM MECHANICAL SERVICES 1285.66; RECREATION SUPPLY CO INC 260.59; REPUBLIC NATIONAL DISTRIBUTING 9556.65; LARRY ROHLF 200.00; RUSHMORE PHOTO & GIFTS 3520.40; SAND CREEK PRINTING 2494.32; SANFORD HEALTH OCCMED 280.00; SANITATION PRODUCTS INC 3041.93; SANTA BARBARA CONTROL SYSTEMS 378.00; SOUTH DAKOTA 811 82.88; SD DENR 3194.34; SD DEPT OF REVENUE 19321.56; SERVALL UNIFORM & LINEN SUPPLY 540.25; SIERRA DESIGN SIGNS 866.50; SOUTHERN GLAZERS OF SD 8838.79; SOWERS & SON DIRTY LAUNDRY 41.00; STURDEVANT'S AUTO PARTS 794.99; SUPERIOR SANITATION 1838.00; TASTE OF HOME BOOKS 133.92; VERIZON 1740.75; WAGEWORKS 25.00; WHO LET THE DOGZ OUT 3000.00; WOELBER EXCAVATING LLC 96405.97; WOLFF'S PLUMBING & HEATING 5200.00

Approved _____
Randy D. Schmidt, Mayor

Attest: _____
Bethany Estes, Finance Officer

Published once at the approx. cost of _____

Public Hearing for Well #3
(Hat Ranch area well)
June 20,2022
City of Belle Fourche
Butte County, South Dakota

Brent Hardy, P.E.
City Engineer
605-892-3006
brent@bellefourche.org

1



2



3

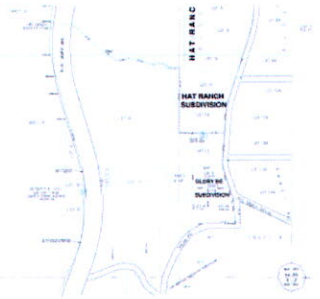


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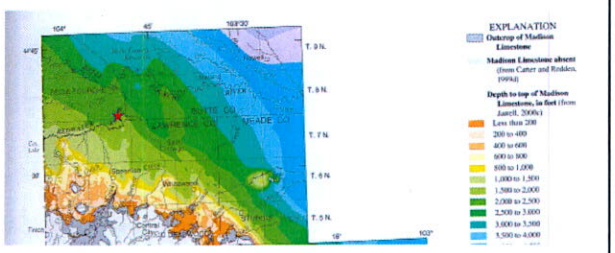
Project Alternatives

- New Well #3
- Enlarge Hat Ranch Tank
- No Action Alternative

5



6



7

Conceptual Opinion of Probable Construction Cost

• 2,000' deep well @ $504/l.f.	$1,008,000
• Chlorination System & Building	$500,000
• Design Engineering (13%)	$131,040
• Construction Engineering (12%)	$120,960
• **Total**	**$1,760,000**

8



9

Project Funding

- State Revolving Fund (SRF) loan $1,760,000
- Terms 2.125% for 30 Years
- Water Improvement Fund to pay off loan

10

Questions?/Comments

Brent Hardy, P.E.
City Engineer
605-892-3006
brent@bellefourche.org

11

RECEIPT

WATER RIGHTS PROGRAM
South Dakota Department of Agriculture and Natural Resources

Date May 5, 2023

RECEIVED OF City of Belle Fourche 511 6th Ave., Belle Fourche SD 57717

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. 2031-1 to Appropriate Water, to construct and to put water to beneficial use	$1350.00
Fee for Application for Permit No. _____ to Appropriate Water for Future use	$____
Fee to retain Future Use Permit No. _____ after period of seven years.	$____
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. 2031-1	$200.00
Fee for Filing Transfer Form _____	$____
Fee for _____	$
Fee for Issuing New Well Driller's License No. _____	$____
Fee for Renewal of Well Driller's License No. _____	$
Fee for Issuing Well Pump Installer's License No. _____	$
Fee for Renewal of Well Pump Installer's License No. _____	$
(Any Other Work Provided by Law) TOTAL	$1550.00

By Eric Gronlund
Chief Engineer
VM

DEPARTMENT of AGRICULTURE and NATURAL RESOURCES
JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT APPLICATION NO. 2031-1, City of Belle Fourche

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Agriculture and Natural Resources concerning Water Permit Application No. 2031-1, City of Belle Fourche, 511 6th Avenue, Belle Fourche SD 57717.

The Chief Engineer is recommending APPROVAL of Application No. 2031-1 with a twenty-year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, 3) the proposed use is a beneficial use and 4) it is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board with the following qualifications:

1. In accordance with SDCL 46-1-14 and 46-2A-20, Permit No. 2031-1 is issued for a twenty-year term. Pursuant to SDCL 46-2A-21, the twenty-year term may be deleted at any time during the twenty-year period or following its expiration. If the twenty-year term is not deleted at the end of the term, the permit may either be cancelled or amended with a new term limitation of up to twenty years. Permit No. 2031-1 may also be cancelled for nonconstruction, forfeiture, abandonment or three permit violations pursuant to SDCL 46-1-12, 46-5-37.1 and ARSD 74:02:01:37.
2. The well will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
3. The well authorized by Permit No. 2031-1 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
4. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Madison aquifer.
5. Water Permit No. 2031-1 appropriates up to 960 acre-feet of water annually.

See report on application for additional information.

Eric Gronlund

Eric Gronlund, Chief Engineer
July 6, 2023

Report to the Chief Engineer on
Water Permit Application No. 2031-1
City of Belle Fourche
28 June 2023

Water Permit Application No. 2031-1 proposes to appropriate 960 acre-feet of water annually (ac-ft/yr) at a maximum diversion rate of 2.22 cubic feet of water per second (cfs), which is equivalent to 1,000 gallons per minute, from one well to be completed into the Madison aquifer located in the NE ¼ SE ¼ Section 34-T8N-R2E Black Hills Meridian for municipal use. This site is located on the south side of Belle Fourche, South Dakota.

Aquifer: Madison Limestone (MDSN)

Hydrogeologic Characteristics

The Madison Group in South Dakota is a Lower Mississippian and Upper Devonian group of formations that in the Black Hills consists of the Englewood and Pahasapa Limestone formations [1]. The Pahasapa Limestone is a "white, light-gray to tan, fine- to medium-grained limestone and dolomite containing brown to gray chert" [2]. The Englewood Limestone is a "pink to lavender to light-gray, thin- to medium-bedded, fine- to medium-grained, argillaceous, dolomitic limestone" [2]. The Madison aquifer consists of the permeable and porous portions of the Madison Group that are sufficiently saturated to deliver useful quantities of water. The Madison aquifer extends over more than 210,000 square miles in Montana, Wyoming, North Dakota, South Dakota, and Nebraska [3], although it may not be suitable as a source of water in all of those areas due to extreme depth to the aquifer and poor water quality far from the outcrops [4]. It crops out in the Black Hills and is buried elsewhere in South Dakota [3]. The Madison aquifer may be hydrologically connected to the underlying Deadwood aquifer. It is also hydrologically connected to the overlying Minnelusa aquifer [5]. The Minnelusa aquifer overlies the Madison unconformably [1], which means there was a period of erosion or weathering between when the Madison Group and the Minnelusa Formation were deposited. Transmissivity in the Madison aquifer mainly comes from secondary porosity features such as solution cavities, faults, and fractures [5]. Because most of the transmissivity in the Madison aquifer comes from secondary porosity features, aquifer characteristics in the Madison aquifer vary greatly from location to location [5].

The applicant did not submit a well completion report but indicated the target aquifer was the Madison, but sufficient information is available to determine the availability of water and possibility of unlawful impairment of existing water rights. In the area of this application, the top of the Madison Group is likely to occur at 1,350 feet above NGVD29 [6] and the top of the Deadwood Formation is likely to occur at 450 feet above NGVD29 [7], giving an estimated thickness of the Madison Group of 900 feet. The potentiometric surface can be linearly interpolated from contours to be an estimated 3,440 feet above NGVD29 [8]. Land surface at the proposed diversion point is 1,060.4 meters above NAVD88 [9], or approximately 3,477 feet above NGVD29 [10]. There is also a well completion report on file with the Water Rights Program for a well located in the SE ¼ NE ¼ Section 33-T8N-R2E associated with Water Right No. 1311-1. The land elevation at the site of that well completion report is approximately 1,001.8

meters above NAVD88, or approximately 3,284 feet above NGVD29 [10]. The driller indicated encountering limestone from 2,110 to 2,220 feet below grade and that fractures produced water from 2,150 to 2,175 feet below grade. The well flowed at 375 gallons per minute at the time the well was completed on March 11, 1980. The driller did not indicate where the top of the Madison Group is for this well, but Water Rights Staff Engineer James Goodman indicated no disagreement during analysis of the application that the well was completed into the Madison aquifer [11]. Based on well completion reports near this application, it is possible that the well for this application will flow at land surface.

Applicable South Dakota Codified Law (SDCL)

Pursuant to SDCL 46-2A-9, a permit to appropriate water may be issued if there is reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, and that the proposed use is a beneficial use and in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board. This report will only assess the availability of water and possibility of developing this application without unlawful impairment of existing domestic water uses and water rights.

Pursuant to SDCL 46-6-3.1, no application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of the water to the groundwater source. An exception allows water distribution systems to withdraw from groundwater sources older or stratigraphically lower than the Greenhorn Formation regardless of the results of a hydrologic budget. The Madison aquifer is older and stratigraphically lower than the Greenhorn Formation and the applicant is a water distribution system as defined in SDCL 46-1-6(17). Therefore, the Water Management Board's authority to approve this application is not restricted by whether recharge exceeds withdrawals. However, a statewide and local hydrologic budget is included in this report for the information of the Chief Engineer and the Water Management Board.

Pursuant to SDCL 46-2A-20:

> *Notwithstanding §§ 46-1-14 and 46-2A-7, no water permit for construction of works to withdraw water from the Madison formation in Butte, Fall River, Custer, Lawrence, Meade and Pennington counties may be issued for a term of more than twenty years, unless the Water Management Board determines, based upon the evidence presented at a hearing that:*
>
> *(1) Sufficient information is available to determine whether any significant adverse hydrologic effects on the supply of water in the Madison formation would result if the proposed withdrawal were approved; and*
>
> *(2) The information, whether provided by the applicant or by other means, shows that there is a reasonable probability that issuance of the proposed permit would not have a significant adverse effect on nearby Madison formation wells and springs.*

This application proposes to withdraw water from the Madison aquifer in one of the counties listed above. Therefore, in addition to the other requirements, the Water Management Board must consider the effect this application may have on nearby Madison aquifer wells and springs and this application is subject to a 20-year term limit.

Availability of Water

Statewide Hydrologic Budget

Statewide Recharge

The Madison aquifer receives recharge from infiltration of precipitation and streamflow on the outcrop area and may also receive inflow from the underlying Deadwood aquifer [12]. There are several reports available estimating recharge to the Madison aquifer which have been referenced by Water Rights Staff in previous reports to the Chief Engineer.

Woodward-Clyde Consultants [13] estimated recharge to the outcrop of the Madison aquifer in the Black Hills as part of an environmental impact statement for the ETSI Coal Slurry Pipeline Project. The upper-bound estimate of recharge in the Woodward-Clyde Consultants report is approximately 400,000 ac-ft/yr, assuming almost all of the precipitation that falls on the outcrop infiltrates into the aquifer [13]. Woodward-Clyde Consultants produced a lower-bound recharge estimate of 140,000 ac-ft/yr based on the Rahn and Gries [14] report [13]. However, the Rahn and Gries report estimated recharge for all Paleozoic limestone in the Black Hills, which includes the Madison Group, the Minnelusa Formation, and the Minnekahta Formation [14]. Rahn and Gries [14, p. 15] reported that 146.14 cfs was their minimum estimated recharge rate for the Paleozoic limestone from infiltration of precipitation, which converts to approximately 106,000 ac-ft/yr for all Paleozoic formations. The Woodward-Clyde Consultants report did not acknowledge the fact that the Rahn and Gries [14] report estimated minimum recharge for a larger group of formations than the Woodward-Clyde Consultants report covers, and therefore was likely to overestimate recharge to the Madison aquifer under the assumptions made [13].

Carter, Driscoll, and Hamade [12] analyzed streamflow and precipitation data from water years 1931 to 1998 in the Black Hills area in South Dakota and Wyoming to determine the average annual recharge to the Madison and Minnelusa aquifers. They estimated a combined average annual recharge to both aquifers to be 344 cfs, or approximately 249,000 ac-ft/yr, not including possible flow from the Deadwood aquifer [12]. Carter, Driscoll, and Hamade [12] estimated that approximately 55% of the recharge goes to the Madison aquifer, so the total estimated average recharge to the Madison aquifer from the outcrop in the Black Hills is 137,000 ac-ft/yr, not including possible inflow from adjacent aquifers or from the Madison aquifer outside of South Dakota. The Carter, Driscoll, and Hamade [12] report uses more years of data, more recent data, and better assumptions than the Woodward-Clyde Consultants [13] and Rahn and Gries [14] reports. Therefore, the best estimate of recharge to the Madison aquifer is based on the Carter, Driscoll, and Hamade [12] report.

Statewide Discharge

Discharge from the Madison aquifer in South Dakota is mainly by outflow to other aquifers when the hydraulic head in the Madison aquifer is higher than the other aquifers, outflow to

springs and seeps, and withdrawals by domestic and appropriative wells [15]. Due to the presence of overlying aquifers and water distribution systems in many areas of the aquifer, domestic well withdrawals are a negligible portion of the hydrologic budget of the Madison aquifer. There are 166 water rights/permits currently authorized to withdraw from the Madison aquifer and 11 future use water rights/permits reserving water from the Madison aquifer. Table 1 shows the future use permits reserving water from the Madison aquifer [11].

Of the 166 active water rights/permits, 101 are primarily for some type of water distribution system (rural water system, municipal, etc), 31 primarily for irrigation, 14 for commercial use, 11 for industrial use, 4 for domestic use, 2 for geothermal use, 2 for institutional use, and one for recreation [11]. Estimated withdrawals for irrigation use are shown in Table 2. When there were more than 10 years of irrigation reports available, the average reported irrigation was used to estimate irrigation withdrawals. When there were fewer than 10 years of irrigation reports available, withdrawals are assumed to equal two acre-feet per acre, although actual usage is likely less for non-turf irrigation. Non-irrigation withdrawals from permit holders with irrigation also being a permitted use are assumed to withdraw at their maximum instantaneous diversion rate 60% of the time. In the case of Water Right No. 1885-1, that would have caused the total estimated withdrawal to exceed the rate they were physically capable of withdrawing, so their total estimated withdrawal is 100% of their maximum instantaneous diversion rate.

Table 1: Future Use Permits from the Madison aquifer [11]

Permit No.	Name/Business	County	Use	Priority Date	Amount Reserved (ac-ft/yr)
2028-1	Bear Butte Valley Water, Inc	MD	RWS, WDS	3/23/2023	440
369-1	City of Belle Fourche	LA	MUN	12/10/1958	620
2086-2	City of Rapid City	PE	MUN	05/18/1989	4,075
439-2	City of Rapid City	PE	MUN	09/22/1956	3,367
1872-1	City of Spearfish	LA	MUN	11/13/2006	1,599
2560-2	Fall River Water Users District	FR	RWS	05/16/2005	358
2560A-2	Fall River Water Users District	FR	RWS	05/16/2005	0
2560B-2	Fall River Water Users District	FR	RWS	05/16/2005	0
2580-2	Southern Black Hills Water System	FR	RWS	03/02/2006	1,474
1833-2	Weston Heights Home Owners	MD	RWS	02/18/1983	211
1995-1	Black Hawk Water User District	MD	RWS	04/15/2020	1,300
Total					13,444
FR – Fall River, LA – Lawrence, MD – Meade, PE – Pennington MUN – Municipal, RWS – Rural Water System					

Water Right/Permit Nos. 1096-1, 1096A-1, 1496-1, and 1670-1 are all authorized to withdraw from the same well and one dam. Water Right Nos. 1096-1, 1096A-1, 1670-1 authorize diversion of water for irrigation use and Water Right No. 1096A-1 and Water Permit No. 1496-1 authorize diversion of water for rural water system use. Documentation in the administrative file for Water Right No. 1670-1 indicates that the well is not valved such that it can be shut off when not in use

for the beneficial uses listed on the permits. A letter dated September 9, 1998 indicates that when the water for that well is not being used for the beneficial uses described in the permits, it is used for fish and wildlife propagation. The person writing the letter indicated they would prefer the Water Management Board not order the well to be shut off when not used for irrigation or rural water system withdrawals. It is likely the well continues to flow uncontrolled; thus, at the flow rate listed in Water Right No. 1096A-1 of 1.33 cfs, that well withdraws approximately 964 ac-ft/yr from the Madison aquifer.

Table 2: Permits with irrigation listed as one beneficial use, or are connected to an irrigation permit [11] [17]

Permit No.	Name/Business	Diversion rate (cfs)	Acres Licensed/ Permitted	Average Report (ac-ft/yr)	Years of Irrigation Reports	Estimated average irrigation (ac-ft/yr)	Est. Non-irr. Use (ac-ft/yr)	Total Est. Withdrawal (ac-ft/yr)
2773-2	Arrowhead Country Club	1.110	100.00	0	4	200.0	0.0	200.0
1635-1	Black Hills National Cemetery	0.820	54.50	94.8	26	94.8	356.4	451.2
1452-1	Black Hills State College	3.330	25.44	20.3	33	20.3	1,447.5	1,467.8
1670-1	Buddy L, Peggy A, Kami S Ireland	3.610	253.00	47.5	24	*	*	*963.5
1096A-1	Butte Meade Sanitary Dist	1.330	0.00	N/A	0	*	*	*
2458-2	City of Rapid City	0.800	107.00	104.4	21	104.4	0.0	104.4
2002-1	City of Spearfish	1.330	40.00	0.0	1	80.0	0.0	80.0
2313-2	Coca-Cola Bottling	0.330	3.00	7.3	27	7.3	143.4	150.7
1899-1	Davis Ranches Inc	1.430	100.00	0.0	13	0.0	0.0	0.0
2673-2	Diocese of Rapid City	0.120	7.00	8.0	9	14.0	0.0	14.0
1009-1	Donald F/Ann J Brady	0.780	53.73	30.4	40	30.4	0.0	30.4
1185-1		0.380	22.52	110.3	40	110.3	***	110.3
2286-2	Donald Konechne	0.100	38.50	10.2	28	10.2	0.0	10.2
1707A-1	Elkhorn Ridge @ Frawley Ranches LLC	3.705	100.00	0.0	4	0.0	1,610.5	1,610.5
1707E-1		0.000	0.00	9.1	15	9.1	**	9.1
1931-1		0.170	3.30	3.2	9	6.6	73.9	80.5
1650-1	Foothill Land & Cattle LLC	0.890	0.00	N/A	0	*	*	*55.9
1945-1	Frawley Ranches LLC	1.110	265.00	50.7	8	530.0	0.0	530.0
1858-1	Glencoe Camp Resort II LLC	0.860	34.00	0.0	16	0.0	373.8	373.8
2593-2	Hart Ranch Development	0.490	72.50	19.9	15	19.9	213.0	232.9
1911-2	Hart Ranch Development Co	0.880	124.00	120.1	28	120.1	382.5	502.6
1725-2	Janice R Crowser	1.070	75.10	1.0	23	1.0	0.0	1.0
2012-1	Jesse Horstmann	0.500	43.50	N/A	0	87.0	0.0	87.0
1923-1	Jim Montieth	0.110	3.00	1.0	10	6.0	47.8	53.8
858-2	John & Heidi Mcbride	9.360	655.75	6.7	38	6.7	0.0	6.7
1885-1	John T & Veronica Widdoss	0.110	22.00	16.8	5	44.0	35.7	79.7
1223-1	Montana Dakota Land LLC	0.670	263.00	195.4	40	195.4	0.0	195.4
1960-1	One Diamond Inc	1.280	150.00	148.9	6	300.0	556.4	856.4
2013-1	Santa Maria Land and Cattle Corp.	2.220	460.00	N/A	0	920.0	0.0	920.0
1363-1	Spearfish Canyon Country Club	0.900	80.10	63.3	35	63.3	0.0	63.3
2106-2	Stuart Rice	0.080	2.80	0.8	30	0.8	34.8	35.6
1842-1	Tom C Davis	0.440	330.00	0.0	17	0.0	0.0	0.0
2741-2	Tubbs Land & Cattle LLC	3.340	567.00	149.5	3	1,134.0	0.0	1,134.0
419-2	Wind Cave National Park	0.150	6.00	N/A	0	12.0	65.2	77.2
Total		43.805	4,061.7	1,327.8	-	4,136.7	5,340.9	10,497.0

* Discussed in text. **gives additional time to develop 1707A-1. *** Reports all use types in irrigation report

Water Right No. 1650-1 does not require the water right holder to report annual withdrawals and allocates no acreage. It provides supplemental water supply from a flowing well for Water Right No. 1231-1. Water Right No. 1231-1 permits a 110 acre-ft dam to provide water for a

commercial livestock operation and irrigation of 134 acres. Water Right No. 1650-1 allows for direct irrigation from a Madison aquifer well of up to 2 acre-ft per acre for the land permitted by Water Right No. 1231-1. Kilts estimated that Water Right No. 1650-1 withdraws 55.9 ac-ft/yr [16].

There are 43 water rights/permits that have a volume limit listed in their permit or have had their total withdrawal limited by a subsequent water right/permit held by the same person/entity. While many of those water rights/permits are required to report their withdrawals, they may develop their permits further to withdraw up to the limit on their permit, so the volume limit listed on their permits is assumed to be their total appropriation. The total volume limit listed by such permits is 24,536 ac-ft/yr.

There are 89 non-irrigation water rights/permits that do not have a volume limit listed in their permit and are not discussed above. They are estimated to withdraw their maximum instantaneous diversion rate 60% of the time, for a total estimated withdrawal of 16,897 ac-ft/yr. Based on Water Rights Staff experience, this estimate is likely to be higher than the actual withdrawals by those water rights/permits.

In addition to the potential withdrawals by future use permits described above, four other applications are deferred, held in abeyance, or pending review. Water Permit Application No. 2585-2 for Southern Black Hills Water System proposes to appropriate 1,600 ac-ft/yr but is deferred for further study. Water Permit Application No. 2685-2 for Powertech, Inc is held in abeyance pending federal permitting and proposes to appropriate 889 ac-ft/yr. Water Permit Application No. 2850-2 proposes to appropriate up to 145 ac-ft/yr and is pending approval following the Water Management Board adopting the Findings of Facts, Conclusions of Law, and Final Decision on the matter of that application in the July 12, 2023 meeting. Water Permit Application Nos. 2029-1 and 2030-1 propose to place to beneficial use 426 and 679 ac-ft/yr, respectively, for the City of Spearfish. The amount the City of Spearfish intends to place to beneficial use has been removed from the amount reserved for future use in the hydrologic budget.

Summary of Statewide Hydrologic Budget

The best available estimate of recharge to the Madison aquifer in South Dakota is approximately 137,000 ac-ft/yr. The estimated withdrawals as described in the Statewide Discharge section are summarized in **Error! Reference source not found.**. The total estimated withdrawal, including withdrawals reserved for future use and held, or deferred applications is approximately 69,113 ac-ft/yr. This application may withdraw up to 960 ac-ft/yr, if approved. Therefore, based on the statewide hydrologic budget, there is reasonable probability unappropriated water is available for this application.

Table 3: Summary of estimated average annual withdrawals and appropriations

Estimation Type	Count	Est. Use (ac-ft/yr)
Irrigation	34	10,497
Volume Limit	43	24,536
Diversion Rate Limit	89	16,897
Subtotal (authorized to withdraw)	*166*	*51,930*
Future Use	11	13,444
Pending/Deferred/held	5	3,739
Grand total	**182**	**69,113**

Local Hydrologic Budget

Carter, et al [15] used streamflow, precipitation, spring flow, estimated ground water flow, and well withdrawal data from 1987 to 1996 for the hydrologic budgets. This application is in Subarea 1 of their report. The boundaries of the Carter et al. [15] subareas were designed to minimize flow across subarea boundaries. Carter et al. [15] estimated the total recharge to the Madison and Minnelusa aquifers in Subarea 1 was 130.7 cfs. Assuming 55% of the recharge goes to the Madison aquifer, the estimated recharge to the Madison aquifer in Subarea 1 is 71.9 cfs, or approximately 52,100 ac-ft/yr [12] [15]. Carter, et al. [15] do not provide values for the recharge area of the Madison and Minnelusa formations for each subarea in their report, so it is possible the proportion of recharge area to those two aquifers is different within each subarea. There are 34 water rights/permits authorized to withdraw from Subarea 1 and two future use permits reserving water from Subarea 1. Domestic well withdrawals are negligible on the scale of this hydrologic budget. Using the same methods as described in the Statewide Discharge section, the total estimated withdrawal from Subarea 1 is 16,720 ac-ft/yr. This application may withdraw up to 960 ac-ft/yr, if approved. Therefore, based on the local hydrologic budget in combination with other information available, there is reasonable probability unappropriated water is available for this application.

Observation Wells

Administrative Rule of South Dakota 74:02:05:07 requires that the Water Management Board rely upon the record of observation wells, in addition to other information, to determine that recharge exceeds withdrawals to approve an application. The Water Rights Program maintains 25 observation wells completed into the Madison aquifer [18]. The nearest observation well to this application is LA-88C, located approximately 9 miles south of this application [18]. Figure 1 shows depth to water levels from top of casing in LA-88C [18]. Water level data in Observation Well LA-88C is representative of the fluctuations in the Madison aquifer in the area of this application. Water level data in the observation well shows a rising trend, on average. In general, water levels rise during periods of higher-than-average rainfall and decline during periods of lower-than-average rainfall, as well as seasonal declines from nearby water rights/permits. This means that recharge and natural discharge are the dominant effects in the aquifer and natural discharge is available for capture. Therefore, based on observation well analysis, there is reasonable probability unappropriated water is available for this application.

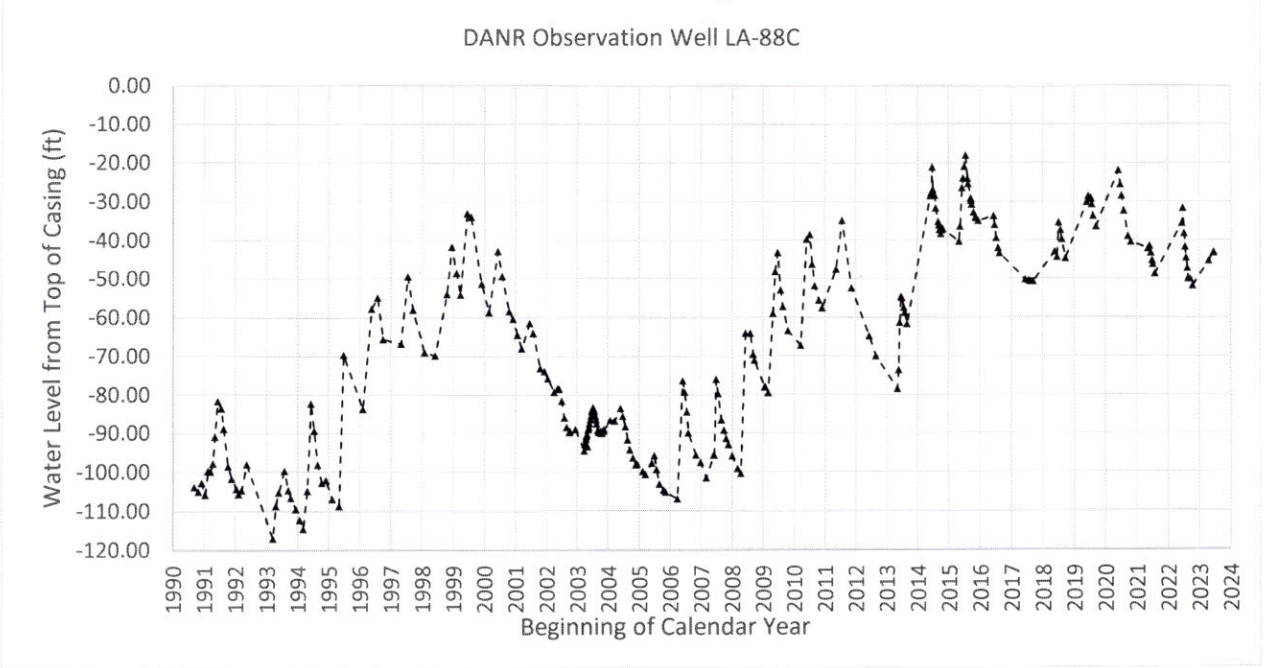


Figure 1: Water levels in Observation Well LA-88C [18]

Possibility of Unlawful Impairment of Existing Water Rights

The nearest water right/permit to this application is Water Right No. 1311-1 held by Cody Kloeckl, located approximately 0.9 miles west of this application, as described in the Hydrogeologic Characteristics section of this report. The nearest domestic well that is likely to be completed into the Madison aquifer on file with the Water Rights Program is located approximately 3.1 miles south of this application. The location of domestic wells is provided by the well driller on the well completion report. The Water Rights Program has historically interpreted an unlawful impairment of existing water rights to occur if a junior water right/permit causes a nearby adequate well with a senior water right/permit to become unable to withdraw at the rate it is entitled to or, if a domestic well is impacted, a water right/permit causes an adequate domestic well to be unable to withdraw at the rate needed to supply reasonable domestic use of water. Administrative Rule of South Dakota 74:02:04:20(6) defines an adequate well as:

> *...a well constructed or rehabilitated to allow various withdrawal methods to be used, to allow the inlet to the pump to be placed not less than 20 feet into the saturated aquifer or formation material when the well is constructed, or to allow the pump to be placed as near to the bottom of the aquifer as is practical if the aquifer thickness is less than 20 feet*

In the hearing for Water Permit Application No. 2313-2 for Coca-Cola Bottling Company, the Water Management Board determined that to put the waters of the state to maximum beneficial use, hydraulic head would not be protected as a means of water delivery [19]. Some drawdown from this application is likely to occur and nearby well owners may need to lower their pumps or install pumps to access the water in the aquifer. Exact aquifer behavior cannot be known without an aquifer performance test. The applicant must control their withdrawals so that nearby water

rights/permits and adequate domestic wells are able to withdraw necessary water. There is no record of well interference complaints from the Madison aquifer in Butte County [20]. Observation wells completed into this aquifer near larger appropriative wells show limited drawdown when the large appropriative wells are in use [18]. Given the lack of well interference complaints in this aquifer in Butte County and limited drawdown shown in observation wells completed near larger appropriations, there is reasonable probability this application can be developed without unlawful impairment of existing water rights with adequate wells and adequate domestic wells.

Springs

The nearest major spring supplied by the Madison aquifer is the Old Spearfish Hatchery Spring, located approximately 4.5 miles south of this application. [21]. Upon considering the deferral of Water Permit Application No. 2585-2 for Southern Black Hills Water System, the Water Management Board adopted a conclusion of law stating in part, "… The only protection South Dakota law provides when considering an application for an underground water permit for flow from an artesian spring is under the public interest criteria" [22]. Given the distance between the proposed well site and the nearest springs, there is reasonable probability this application can be developed without noticeably impacting spring flow from the Madison aquifer.

Special Consideration: Flowing Wells

The well for this application is likely to flow at land surface. Administrative Rule of South Dakota 74:02:04:76 provides that any well that may flow shall be constructed to allow the completed well to be completely shut off. The rule allows the flow to be reduced to no more than 5 gallons per minute to prevent freezing when not in use.

Conclusions

1. Water Permit Application No. 2031-1 proposes to appropriate 960 ac-ft/yr at a maximum diversion rate of 2.22 cfs, from one well to be completed into the Madison aquifer located in the NE ¼ SE ¼ Section 34-T8N-R2E Black Hills Meridian for municipal use.
2. Based on the hydrologic budget and observation well analysis, there is reasonable probability unappropriated water is available for this application.
3. There is reasonable probability this application can be developed without unlawful impairment of existing water rights with adequate wells and adequate domestic wells.
4. There is reasonable probability this application can be developed without noticeably impacting springs supplied by the Madison aquifer.
5. This application is subject to a 20-year term limitation.

Kimberly C. Drennon, E.I.
Natural Resources Engineer II – DANR Water Rights Program

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DEPARTMENT of AGRICULTURE and NATURAL RESOURCES
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NOTE: TO BE SURE OF PUBLICATION ON THE CORRECT DATES, CONTACT THE NEWSPAPER RIGHT AWAY.

July 7, 2023

City of Belle Fourche
c/o Brent Hardy
511 6th Avenue
Belle Fourche SD 57717

Dear Mr. Hardy:

Water Permit Application No. 2031-1 for municipal use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Black Hills Pioneer printed at Spearfish SD (Ph # 605 642-2761). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the application.

Sincerely,

Rachel Rodriguez

Rachel Rodriguez
Water Rights Program
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper - Publish the Notice on July 18, 2023. The applicant is responsible for payment.

NOTICE OF APPLICATION NO. 2031-1 to Appropriate Water

Notice is given that the City of Belle Fourche, c/o Brent Hardy, 511 6th Avenue, Belle Fourche SD 57717 has filed an application for a water permit to appropriate 960 acre-feet of water annually at a maximum pump rate of 2.22 cubic feet of water per second from one well to be completed into the Madison Aquifer (approximately 2,600 feet deep) located in the NE 1/4 SE 1/4 Section 34 -T8N-R2E for municipal use. This site is located on the south side of Belle Fourche SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2031-1 with a twenty-year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, 3) the proposed use is a beneficial use and 4) it is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board The Chief Engineer's recommendation with qualifications, the application, and staff report are available at https://danr.sd.gov/public or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at https://danr.sd.gov/public or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by July 28, 2023.

The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at https://danr.sd.gov/public or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by July 28, 2023.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled, and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Published once at the total approximate cost of_

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Friday, July 7, 2023 1:59 PM
To: legals@bhpioneer.com
Subject: 2031-1 City of Belle Fourche - Public Notice
Attachments: 2031-1 public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on July 18, 2023.

City of Belle Fourche, c/o Brent Hardy, 511 6th Avenue, Belle Fourche SD 57717, (605 893-3006) has been notified to contact you to authorize publication and arrange for payment.

Please send the affidavit or return the attached Proof of Publication form ASAP to the Water Rights Program, 523 E Capitol Ave, Pierre SD 57501.

Let me know if you have questions. Please acknowledge receipt of this email.

Thank you,

Rachel Rodriguez
DANR | Program Assistant
Rachel.Rodriguez@state.sd.us

RECEIVED
JUL 24 2023
OFFICE OF
WATER

Affidavit of Publication

STATE OF SOUTH DAKOTA:
COUNTY OF LAWRENCE:

Letitia Lister of said County and State being first duly sworn, on her oath says: That the BLACK HILLS PIONEER is a legal daily newspaper of general circulation, printed and published in the City of Spearfish, in said County and State by Letitia Lister, and has been such a newspaper during the times hereinafter mentioned; and that said newspaper has a bonafide circulation of at least 200 copies weekly, and has been published within said County in the English language for at least one year prior to the first publication of the notice herein mentioned, and is printed in whole or in part in an office maintained at the place of publication; and that I, Letitia Lister, the undersigned, am the Publisher of said newspaper and have personal knowledge of all the facts stated in this affidavit; and that the advertisement headed:

Notice Of Application
No. 2031-1

a printed copy of which is hereto attached, was printed and published in said newspaper for 1 successive and consecutive weeks, the first publication being made on the 18th day of July, 2023, and the last publication on the _____ day of _____, _____, that the full amount of fees charged for publishing same, to-wit: The sum of $41.25, insures solely to the benefit of the publisher of the BLACK HILLS PIONEER, that no agreement or understanding for a division thereof has been made with any person and that no part thereof has been agreed to be paid to any other person whomsoever.

Subscribed and sworn to before me this 20th day of July, 2023

Notary Public, Lawrence County, South Dakota
My commission expires: 7-18-2025

NOTICE OF APPLICATION NO. 2031-1 to Appropriate Water

Notice is given that the City of Belle Fourche, c/o Brent Hardy, 511 6th Avenue, Belle Fourche SD 57717 has filed an application for a water permit to appropriate 960 acre-

feet of water annually at a maximum pump rate of 2.22 cubic feet of water per second from one well to be completed into the Madison Aquifer (approximately 2,600 feet deep) located in the NE 1/4 SE 1/4 Section 34 -T8N-R2E for municipal use. This site is located on the south side of Belle Fourche SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2031-1 with a twenty-year term pursuant to SDCL 46-1-14 and 46-2A-20 because 1) although evidence is not available to justify issuing this permit without a 20 year term limitation, there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, 3) the proposed use is a beneficial use and 4) it is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board The Chief Engineer's recommendation with qualifications, the application, and staff report are available at https://danr.sd.gov/public or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's reasons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at https://danr.sd.gov/public or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by July 28, 2023.

If the applicant does not contest the recommendation of the Chief Engineer and no petition to oppose the application is received, the Chief Engineer shall act on the application pursuant to the recommendation with no hearing held before the Water Management Board. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled, and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Published once at the total approximate cost of $42.70 and can be viewed free of charge at www.sdpublicnotices.com.

#671
Jul 18

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at https://danr.sd.gov/public or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. **A petition filed by either an interested person or the applicant must be filed by July 28, 2023.**

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Friday, July 7, 2023 2:10 PM
To: brent@bellefourche.org
Subject: 2031-1 City of Belle Fourche - Public Notice
Attachments: 2031-1_rec.pdf; 2031-1_Ltr.pdf; 2031-1_Pub.pdf

Attached is a copy of the report, chief engineer recommendation and information regarding the public notice for your water permit application. As stated in the letter, please contact the paper(s) as soon as possible to authorize publication and arrange for payment. This information is being mailed to you today.

Thank you,

Rachel Rodriguez
DANR | Program Assistant
Rachel.Rodriguez@state.sd.us

DEPARTMENT of AGRICULTURE and NATURAL RESOURCES
JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

AUG 3 1 2023

City of Belle Fourche
c/o Brent Hardy
511 6th Avenue
Belle Fourche SD 57717

Dear Mr. Hardy:

Enclosed is Water Permit No. 2031-1 authorizing construction of the water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit.

Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *?Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Eric Gronlund

Eric Gronlund, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

DEPARTMENT of AGRICULTURE and NATURAL RESOURCES
JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Affidavit of Public Notice
Posting on DANR Website

Pursuant to SDCL § 46-2A-4, public notice of the following application was posted on the DANR web site at https://danr.sd.gov/public. The posted public notice is the same notice as published in the pertinent newspaper(s) and a copy of the public notice is maintained in the application file. If the application is contested, the posting is moved to the DANR contested case website at https://danr.sd.gov/public/ContestedCase.aspx until final action is taken on the application pursuant to SDCL § 46-2A-4.

Application No.: 2031-1

Name of Applicant: City of Belle Fourche, c/o Brent Hardy

Date of Posting: 7/18/2023

Date of Removal: 8/31/2023

Ron Duvall, Engineer III

8/31/2023
Date

Subscribed and sworn to before me, a notary public, this 31 day of August, 2023.

Notary Public - South Dakota
My commission expires: Rachel Rodriguez
My Commission Expires
May 15, 2029

(SEAL)

RACHEL RODRIGUEZ NOTARY Seal PUBLIC STATE OF SOUTH DAKOTA

DEPARTMENT of AGRICULTURE and NATURAL RESOURCES
JOE FOSS BUILDING
523 E CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

November 21, 2024

ALBERT KELLER JR
KELLER DRILLING
17876 110TH ST
LEMMON SD 57638

Mr. Keller:

Enclosed is a variance from the SD Well Construction Standards for the City of Belle Fourche well project. Upon completion of the project please note on the well completion report you submit to the DANR-Water Rights Program that this well required a variance for construction.

If you have any questions, please contact Adam Mathiowetz at (605) 773-3352.

Sincerely,

Eric Gronlund

Eric Gronlund, Chief Engineer
Water Rights Program
(605) 773-3352

Enclosure

CC:

Jason LaFayette
City of Belle Fourche
511 6th Ave
Belle Fourche SD 57717

Erin Fagnan, DANR-Drinking Water Program

REQUEST FOR A VARIANCE FROM CHAPTER 74:02:04
SOUTH DAKOTA WELL CONSTRUCTION STANDARDS

Pursuant to Section 74:02:04:75 of the South Dakota Well Construction Standards, the following is the decision of the Chief Engineer, Water Rights Program, Department of Agriculture and Natural Resources concerning the request for a well construction variance by Keller Drilling South Dakota Water Well Driller's License No. 814, by licensed representative Albert Keller, Jr.

The Chief Engineer grants APPROVAL of the request for a variance for a well to be constructed for the City of Belle Fourche authorized by Water Permit No. 2031-1 as follows:

1. This is a request for a variance from SD Well Construction Standard 74:02:04:20(18) which defines cement grout as "a mixture consisting of a high-sulfate-resistant type Portland cement and no more than 6 gallons of water for each 94-pound sack of cement". That cement grout mixture has a density of 14.6 lb./gal of cement grout.

2. The reason for this request is to construct a water well to supply municipal use with a cement grout mix with a density of 11.8 lb./gal, more than 6 gallons of water per 94 lb. sack of cement. This grout mix is to be used for approximately the uppermost 1,230 ft of the borehole. The intent is for the lower density cement grout to minimize fracturing of and losses to formations, particularly the Spearfish Formation, and ensure a better overall quality well seal while minimizing risks for cavities or voids in the well seal. Below the approximate 1,230 ft depth, the intent is to use a cement grout with a density at or greater than, less than 6 gallons of water per 94 lb. sack of cement, than the cement grout density as defined in 74:02:04:20(18).

3. The well will be completed into the Madison aquifer with an estimated total well depth between 2,000 and 2,600 feet. And is to be located at:

   NE ¼ SE ¼ Section 34-T08N-R02E of the Black Hills Meridian in Butte County

4. This variance allows the well to be constructed using the lower density cement grout mix under the following conditions: 1) the grouting mix and plan submitted by Rock Hard Cementing to Keller Drilling on 11/18/2024 (see attached) is followed; 2) a cement bond log of the well is performed to detect cavities or voids; 3) if cavities or voids are detected by the cement bond log, efforts are made to seal the cavities or voids to ensure there is minimal potential for movement of water or contaminants between formations along the borehole; and 4) the well is constructed to all other standards within Chapter 74:02:04 excluding the requested variance to 74:02:04:24(18).

5. This variance does not relieve you of the responsibility of complying with any local requirements that may be applicable to the drilling, construction and operation of the water well.

Prepared by: Adam Mathiowetz, Engineer IV
Dept. of Agriculture and Natural Resources
(605)-773-4061
523 E. Capitol Ave
Pierre, SD 57501

Approved by:

Eric Gronlund

Eric Gronlund, Chief Engineer
Water Rights Program
November 21, 2024

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 21st day of November 2024

Rachel Rodriguez
Notary Public
My Commission expires May 16, 2029

Variance No. 06-2024

CC:

Jason LaFayette
City of Belle Fourche
511 6th Ave
Belle Fourche SD 57717

Erin Fagnan, DANR-Drinking Water Program

Received by DANR-Water Rights Program
Nov. 20, 2024
A.W. Mathiowetz

KELLER DRILLING LLC
17876 110TH ST
LEMMON, SD 57638

605 374 4182

November 20, 2024

Adam Mathiowitz
Water Rights Division
South Dakota DANR
Pierre, SD

Appeal for variance of well cementing lead slurry density for casing cementing on Belle Fourche well #3. Intermediate casing will be run from surface to 1530'.

Formation tops are as follows:

Surface	**Inyan Kara**
Lakota	**172**
Morrison	**200**
Spearfish	**631**
Minnekahta	**1411**
Opeche	**1460**

Permit Number 2031-1

Location: NE/SE S34 T8N R2E
Hole Size: 17.5"
Casing Size: 13 3/8" 54.5#
Hole Depth 1530'

VTY
Albert Keller
Keller Drilling LLC
AK

Mathiowetz, Adam (DENR)

From: Mark Husman <mhusman@rockhardcementing.com>
Sent: Wednesday, November 20, 2024 1:43 PM
To: Mathiowetz, Adam (DENR)
Cc: peter@drillfast.net; William Cedeno
Subject: [EXT] Belle Fourche Well #3

Adam,

Thank you for your call this morning. As requested, please find below the information regarding the cement density for the Belle Fourche Well #3.

During drilling operations, losses were observed in the Spearfish formation at approximately 631'. The primary objective for cementing the Belle Fourche Well #3 is to ensure full coverage of the wellbore and achieve zonal isolation. However, due to the losses observed in the Spearfish formation, using high-density cement (6 gallons of water per sack) presents challenges due to the additional hydrostatic pressure exerted on the formation. These factors were carefully considered when developing the cementing program for this well.

Formation	Estimated Formation Top
Lakota	172-ft
Morrison	200-ft
Spearfish	631-ft
Minnekahta	1,411-ft
Opeche	1,460-ft

The proposed cementing program includes 15.8 ppg Class G cement for the bottom 300 feet of the well to provide adequate coverage of the Minnekahta and Opeche formations. This approach also stabilizes and supports the casing while utilizing a lighter-weight cement in the upper section to reduce hydrostatic pressure on the weaker formations, ensuring cement placement to surface.

As discussed during our call, it appears that the regulations in South Dakota, as well as in other states, primarily refer to neat cement mixed at an optimal density to control free water. The 11.8 ppg cement proposed in our cementing program contains lightweight additives to absorb the extra water required to mix the cement at lower densities. These additives help prevent settling and water migration to the top of the cement column allowing for a homogeneous cement column throughout.

Please do not hesitate to contact me if further information or clarification is needed.

Thank you for your attention to this matter.

Rock Hard CEMENTING
Mark Husman Engineer
Cell: 307-554-0812
mhusman@rockhardcementing.com

Received by DANR-Water Rights Program
Nov. 20, 2024
A.W. Mathiowetz

Rock Hard CEMENTING

11/18/2024
Version 3

Keller Drilling

17876 110th St
Lemmon, SD 57638

Well Name and Information: Belle Fourche Water Well #3
Butte County, South Dakota

Surface Casing Cement (1,530 – 0 ft)

Prepared For:	Peter Waldon
Phone:	605-939-5560
Email:	Peter@drillfast.net

For Coordination of Services:
Mike Johnson
Phone: 307-554-0777
Email: mjohnson@rockhardcementing.com

For Engineering:
Mark Husman
Phone: 307-554-0812
Email: mhusman@rockhardcementing.com

Service Location
Miles City, MT
307-554-0777

Wellbore Information

TYPE	OD (in)	Weight (lb/ft)	Grade	Depth (ft)
Open Hole	17-1/2			0 – 1,530
Production Casing	13-3/8	54.5	N-80	0 – 1,530

Surface Casing Cement Data

Cement Production Casing LEAD (1,230 - 0 ft): (475.0 sacks) Estimated BHCT: 71^{0}F

Blends	Details	Values	Units
RH-Set 1L	Density	11.8	$^{lb}/_{gal}$
0.25 lb/sk Pol-E-Flake	Water Requirements	15.97	$^{gal}/_{sk}$
0.125 lb/sk 6-mm WelFiber	Yield	2.70	$^{ft^3}/_{sk}$
	Thickening Time	3:41	$hh{:}min$

Calculated LEAD Excess: 50.0%

Production Casing Cement TAIL (1,530 – 1,230 ft): (200.0 sacks) Estimated BHCT: 87°F

Blends	Details	Values	Units
Class G	Density	15.8	$^{lb}/_{gal}$
2.00% BWOC $CaCl_2$	Water Requirements	4.99	$^{gal}/_{sk}$
0.250 lb/sk Pol-E-Flake	Yield	1.17	$^{ft^3}/_{sk}$
	Thickening Time	1:36	$hh{:}min$

Calculated TAIL Excess: 10.0%

NOTE: Water Requirements for Fresh Water Spacers, Cement Hydration and Final Displacement is estimated to Be **480.0 bbls** and will be verified on location by the company representative.

Surface Casing Cement Work Scope

1. MIRU Cementing Equipment. location.

2. Conduct Pre-Job Safety Meeting going over job specific roles and responsibilities outlining job goals and objectives.

3. Pressure test surface treating lines to 3,000 psi.

4. Establish circulation by pumping 20.0 bbls Fresh Water Spacer ahead of cement at a rate determined by the company representative on location.

5. **Lead Cement:** Mix and Pump 475.0 sks (228.4 bbls), 11.8 lb/gal, 2.70 yield, RH-Set 1L Cement with additives.

6. **Tail Cement:** Mix and Pump 200.0 sks (41.6 bbls), 15.8 lb/gal, 1.17 yield, Class G Cement with additives.

7. Shut down, drop 13-3/8-in Top Wiper Plug and displace with Fresh Water.

8. Pump a Calculated Displacement of **236.0 bbls**, at a 5.0 bpm, decrease rate to 1.0 bpm for last 10.0 bbls of Final Displacement. Bump the Top Wiper Plug with a **Minimum of 500 psi over final pumping pressure**.

9. Hold pressure for 5 minutes, then bleed back casing pressure to ensure float is holding.

10. Shut down and clean up cement pumping equipment

11. RDMO cement equipment.

Surface Casing Price Sheet

SKU	Item		Cost
CM 4195	Base Depth Charge: 0 – 2,000 ft.		6,039.00
CM 3005	Service Equipment Travel	(348 miles Round Trip)	2,686.56
CM 4310	Light Duty Vehicle Travel	(348 miles Round Trip)	2,157.60
CM 2110	Handling		2,814.45
CM 3020	Delivery		18,180.98
CM 7045 CM 5180 CM 5260	Cement - RH-Set 1L – 11.8 lb/gal Pol-E-Flake 6-mm WelFiber	(475.0 sks)	60,027.06 718.44 1,656.56
CM 8010 CM 5210 CM 5180	Cement - Class G - 15.8 lb/gal CaCL2 Pol-E-Flake	(200.0 sks)	15,750.00 1,165.60 302.50
CM 6005	Envirobag		225.00
CM 1400	Data Acquisition System		1,890.00
CM 1330	High Pressure Iron		650.00
		Subtotal	$114,263.75
		Discount 65%	$74,271.44
		Discounted Total	**$39,992.31**

CM 4310	Light Duty Vehicle Travel	(348 miles Round Trip)	$1,402.44
CM 4330	*Cementing Head (Plug Container)		$1,188.00
CM 6015	*13 3/8-in Top Wiper Plug		$682.50
CM 6124	*13 3/8-in Float Shoe		$1,365.00
CM 6128	*13 3/8-in Centralizers (9)		$877.50
		Total	**$5,515.44**

Job Total	**$45,507.75**

Surface Casing Price Sheet

Proposal Conditions and Stipulations:

Items Indicated with an (*) are subject to no discount.

Price valid for 7 days.

All payments must be received within 30 days of service.

Pricing may increase on cement and additives due to market fluctuation and availability.

Actual depth charge will be based on current day depth and is subject to change.

Additional Days on Location will be subject to change and dependent upon completion progression of the well; as well Stand-By Charges can and will be applied under circumstances that deem necessary and warrant such charges.

After an initial 4 hours on location a standby/pump time charge of $792.00 per unit per hour will apply. (Non-Discount Item).

Units left on location are subject to a charge of $1,825.00.

A fuel surcharge of $100.00 per power unit per day will apply.

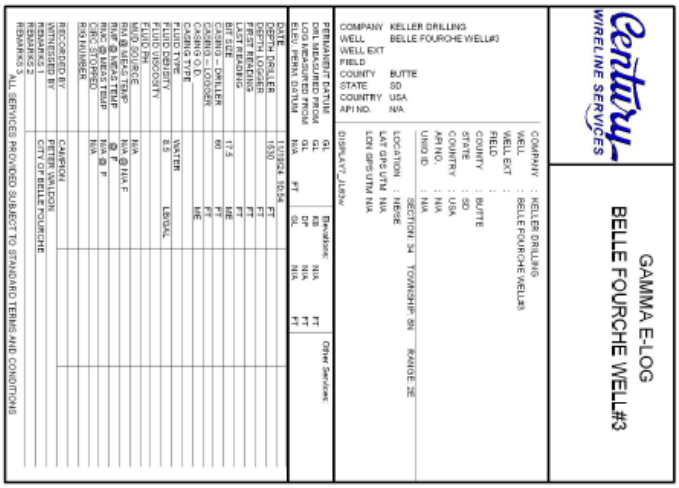
Sugar to retard cement as needed is $4.50 per pound.
Liquid Defoamer as needed is $76.33 per gallon.

Disclaimer: The info portrayed in this document is to be used as a guide. Calculations will be verified on location to ensure accuracy.

Disclaimer: Any and all associated 3rd party fee's and costs associated with the completion of a well will be directly charged to the customer at a 0% discount. If any and all final 3rd party fee's and costs are higher than the original quoted price a second ticket will be created and submitted to the customer for payment of the remaining costs.

Disclaimer: Final Proposal Discounted Total does not reflect any Local, State or Federal Fee's or Tax's applied.

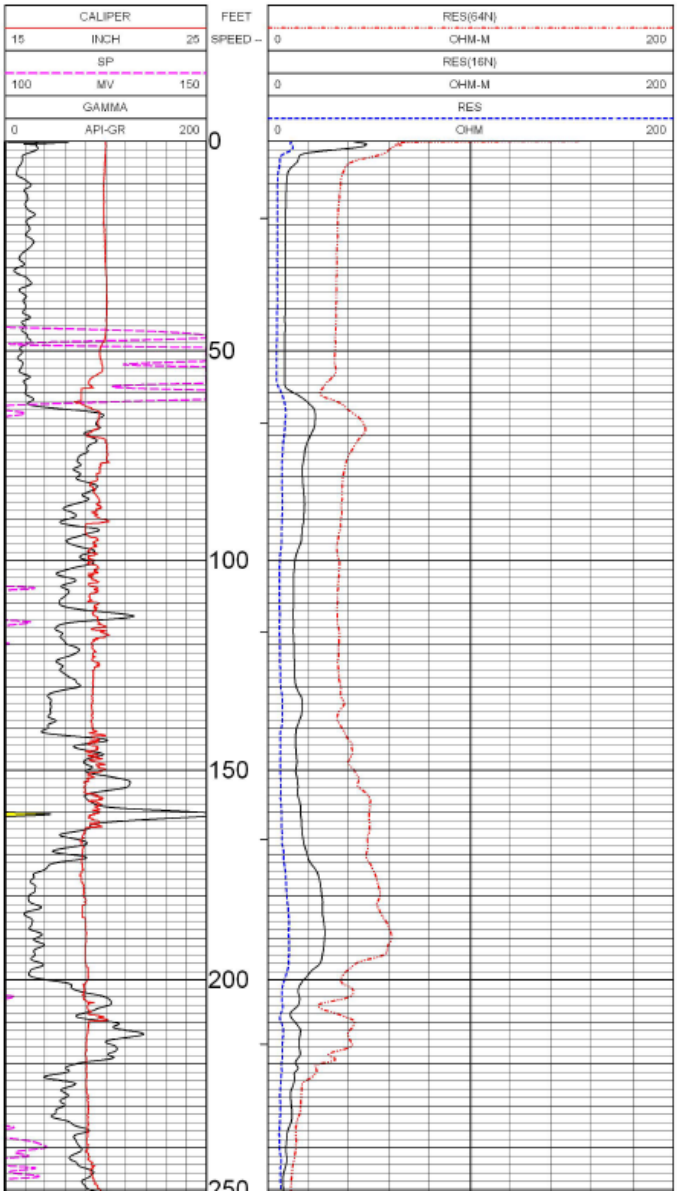
Received by DANR-Water Rights Program
Nov. 20, 2024
A.W. Mathiowetz

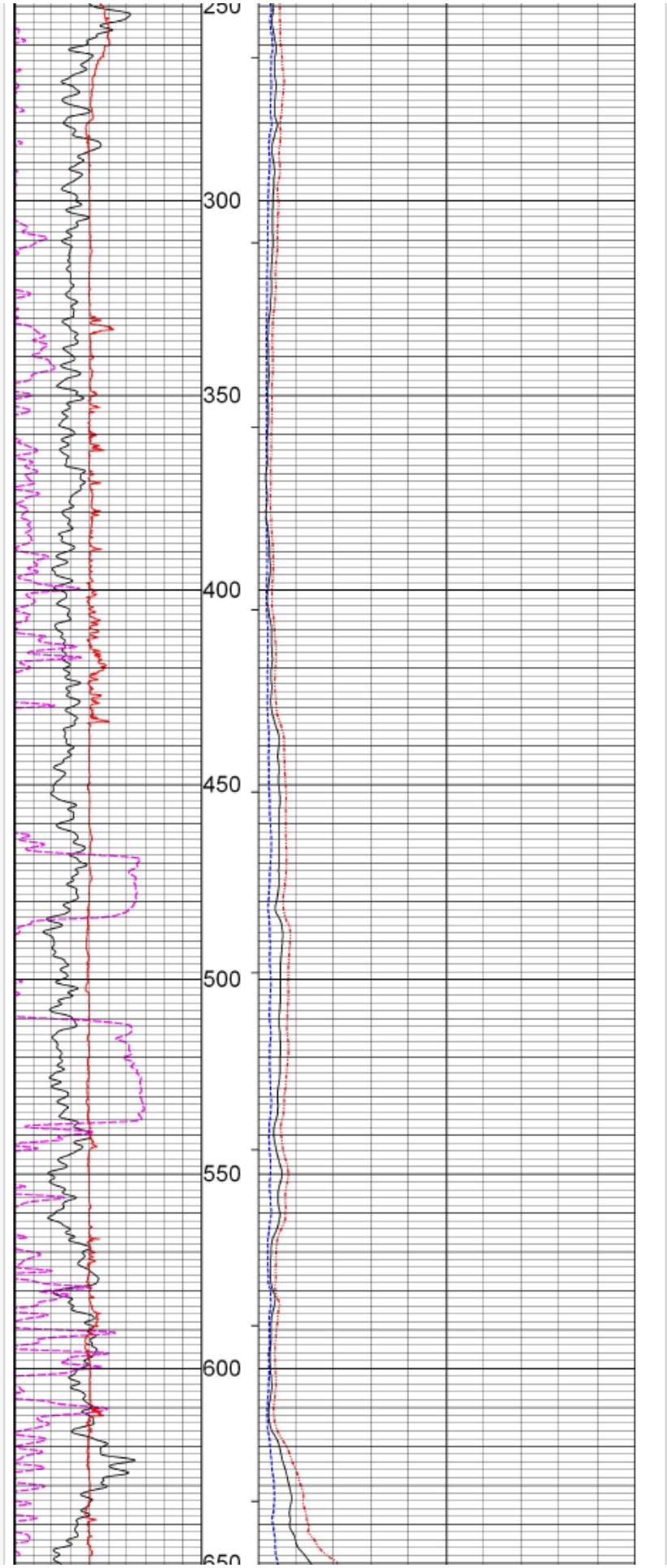


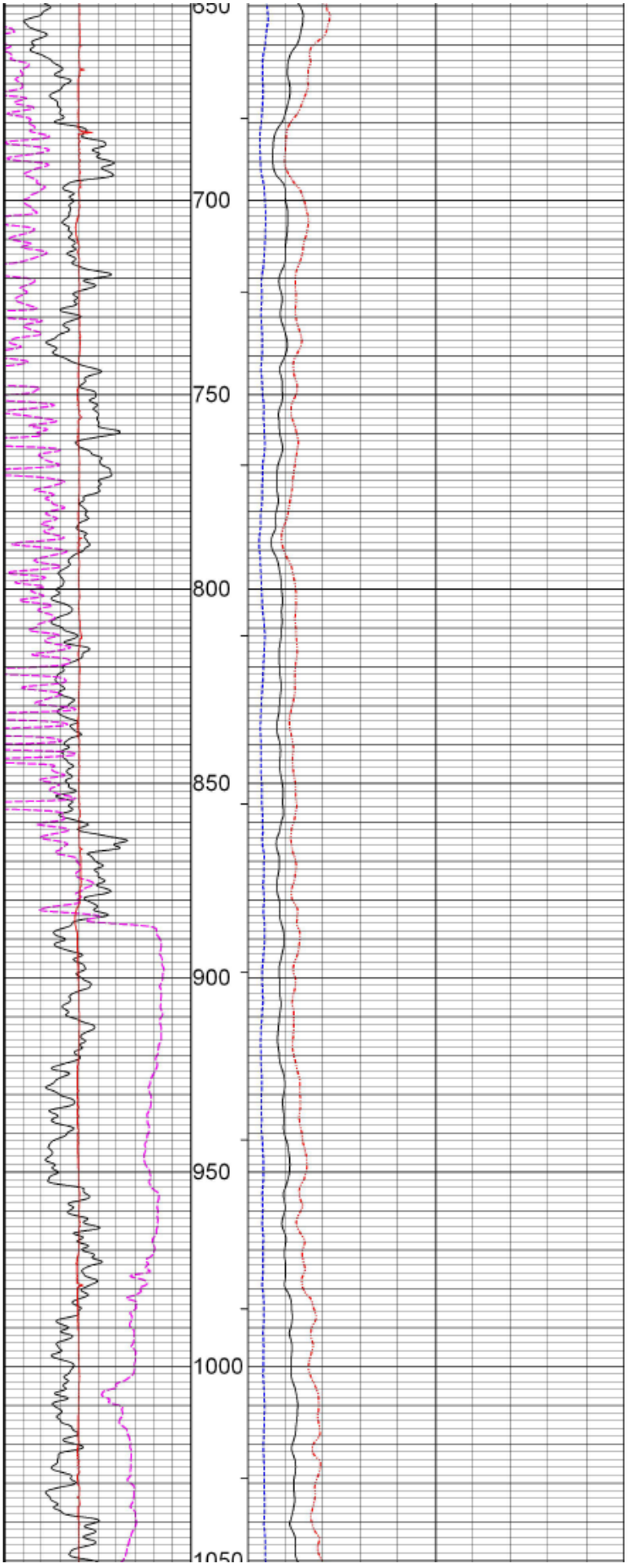
5 INCH LOG, ELOG-CALIPER BELLE FOURCHE WELL#3 11/19/24

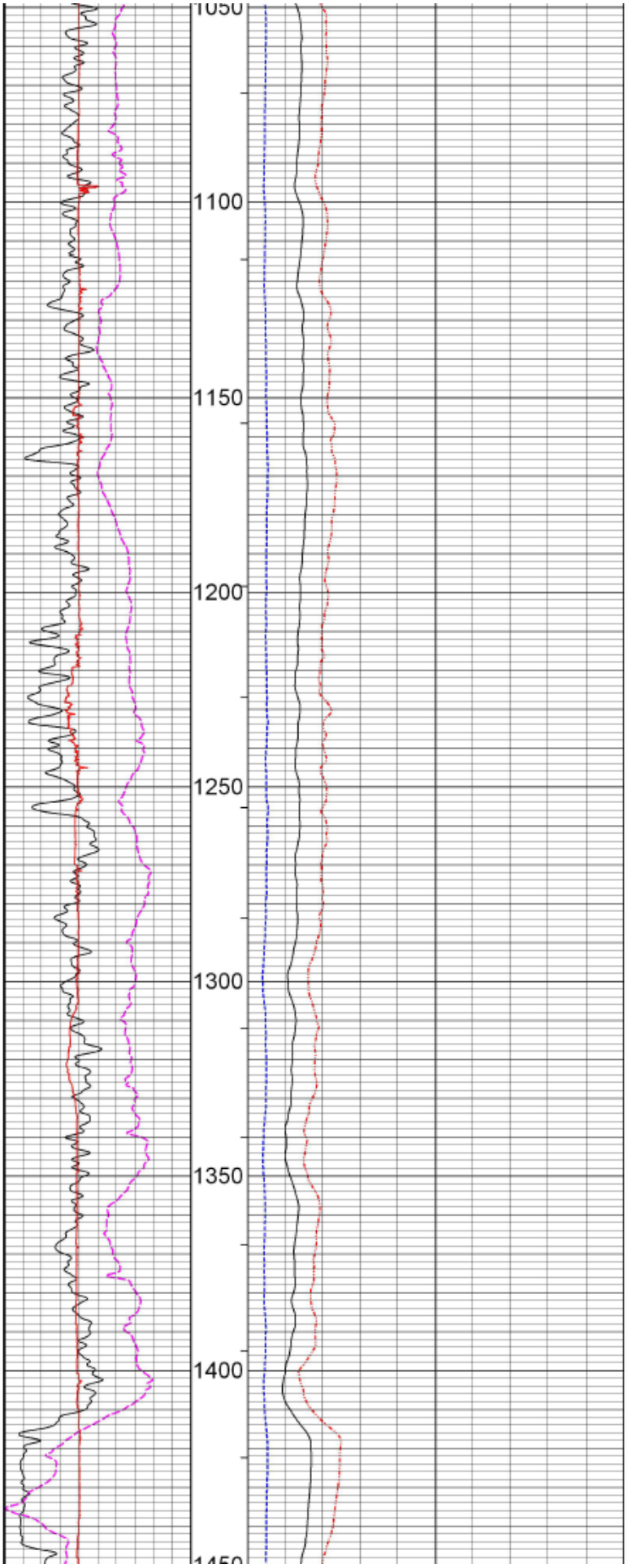
LOG PARAMETERS

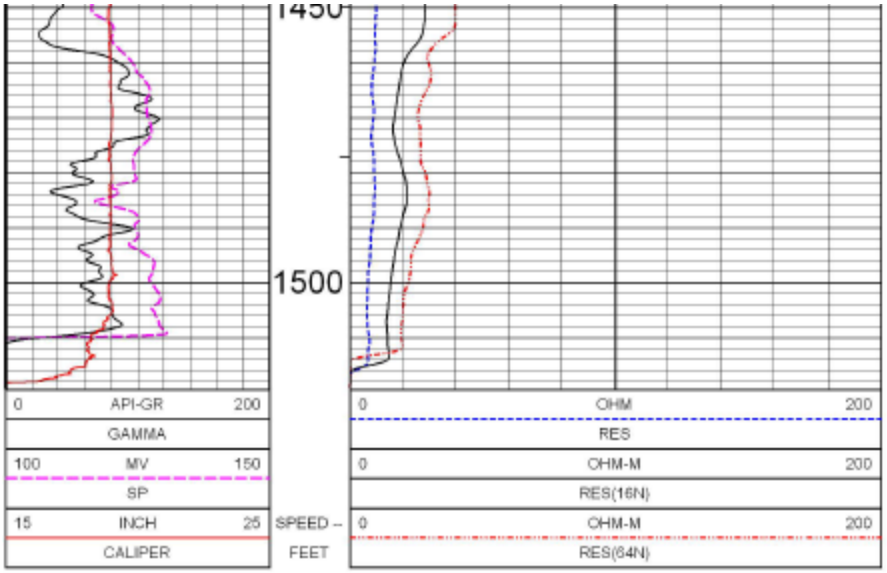
MATRIX DENSITY : 2.65 **NEUTRON MATRIX : SANDSTONE** **MATRIX DELTA T : 54**
MAGNETIC DECL : 0 **ELECT. CUTOFF : 99999** **BIT SIZE : 17.5 IN**
PRESENTATION : 9057 5 INCH KELLER DRILLING 6-6-24.0 -- 11/19/20DISPLAY7_JL63w




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5 INCH LOG, ELOG-CALIPER BELLE FOURCHE WELL#3 11/19/24

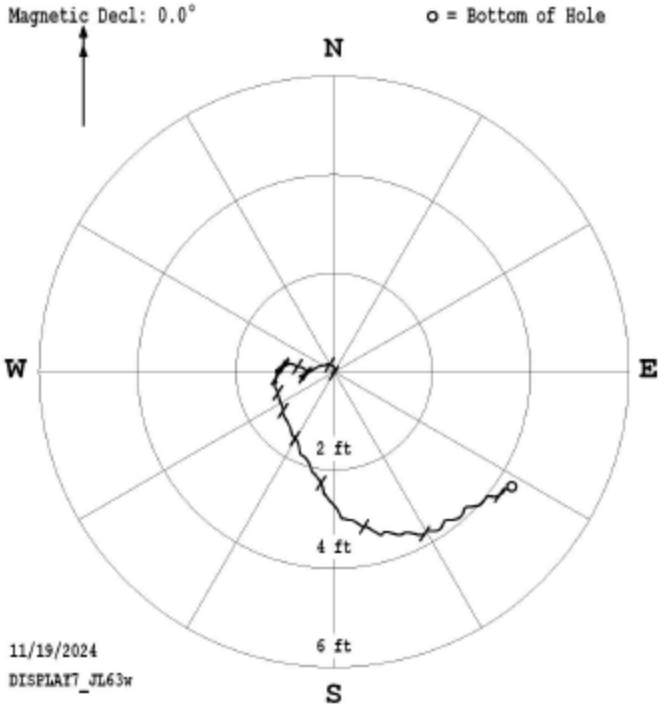
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PRESENTATION : 9057 5 INCH KELLER DRILLING 6-6-24.0 -- 11/19/20DISPLAY7_JL63w

PLAN VIEW
COMPU-LOG DEVIATION

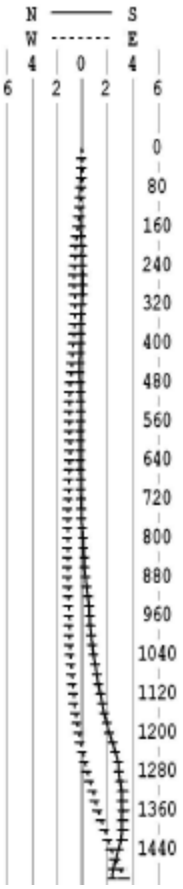
Client: KELLER DRILLING
Location:
Hole ID: BELLE FOURCHE WELL#3
Date of Log: 11/19/24
Probe: 9057A 2420
Magnetic Decl: 0.0°

Distance: 4.29 ft
Azimuth: 122.82 °
True Depth: 1516.64 ft
Scale: 2 ft/Division
+ = 100 ft Incr
o = Bottom of Hole



11/19/2024
DISPLAY7_JL63w

BELLEFOURCHEWELL#3_11-19-24_10-54_9057A_.10_-13.90_1516.70_DEVI



DEPARTMENT of AGRICULTURE and NATURAL RESOURCES
JOE FOSS BUILDING
523 E CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

December 10, 2024

ALBERT KELLER JR
KELLER DRILLING
17876 110TH ST
LEMMON SD 57638

Mr. Keller:

Enclosed is a variance from the SD Well Construction Standards for the City of Belle Fourche well project. Upon completion of the project please note on the well completion report you submit to the DANR-Water Rights Program that this well was constructed under variances 06-2024 and 07-2024.

If you have any questions, please contact Adam Mathiowetz at (605) 773-3352.

Sincerely,

Eric Gronlund, Chief Engineer
Water Rights Program
(605) 773-3352

Enclosure

CC:

Jason LaFayette
City of Belle Fourche
511 6th Ave
Belle Fourche SD 57717

Erin Fagnan, DANR-Drinking Water Program

REQUEST FOR A VARIANCE FROM CHAPTER 74:02:04
SOUTH DAKOTA WELL CONSTRUCTION STANDARDS

Pursuant to Section 74:02:04:75 of the South Dakota Well Construction Standards, the following is the decision of the Chief Engineer, Water Rights Program, Department of Agriculture and Natural Resources concerning the request for a well construction variance by Keller Drilling South Dakota Water Well Driller's License No. 814, by licensed representative Albert Keller, Jr.

The Chief Engineer grants APPROVAL of the request for a variance for a well to be constructed for the City of Belle Fourche as follows:

1. This is a request for a variance from SD Well Construction Standard (ARSD) 74:02:04:48 which requires use of schedule 40 steel casing meeting or exceeding ASTM Standard A53-90b "Standard Specification for Pipe, Steel, Black and Hot-dipped, Zinc-coated, Welded, and Seamless" with a minimum wall thickness of 0.250 inches.

2. The reason for this request is to use "Oil Country Size" also known as "Oil Country Tubular Goods", dependent on manufacturer and wholesaler, 8" (inch) nominal (8 5/8" actual) outside diameter, 28 pound per foot (lb./ft) American Petroleum Institute (API) J55 steel well casing which has a wall thickness of 0.304" from an approximate depth of 1,500 ft to 2,100 ft.. The formations that will be cased by the API J55 well casing are the bottom of the Opeche, the Minnelusa, and a portion of the upper Madison.

3. API J55 steel well casing is manufactured under the standard API 5CT. The requirements for manufacture and inspection of API J55 8" nominal 28 lb./ft under that standard is equivalent to or exceeds the strength collapse and burst strength of equivalent nominal diameter schedule 40 steel casing as described in ASTM Standard A53-90b, while maintaining the minimum wall thickness of 0.250 inches as required in ARSD 74:02:04:48. Based on available information regarding depth, water level, and likely cement grout mixture, API J55 steel casing is of sufficient strength to withstand the pressures that would be exerted upon it during construction and use of the well without compromising the integrity and longevity of the well.

4. The well will be completed into the Madison aquifer with an estimated total well depth between 2,000 and 2,600 feet. And is to be located at:

   NE ¼ SE ¼ Section 34-T08N-R02E of the Black Hills Meridian in Butte County

5. This variance allows the construction of the well to use API J55 steel well casing, manufactured under standard API 5CT under the conditions the casing has a minimum wall thickness of 0.25 inches and the well is constructed to all other standards within ARSD 74:02:04 excluding the requested variance to 74:02:04:48.

6. The well completion report for this well must be noted with this variance, 07-2024, and the previous variance, 06-2024, when filed with the SD DANR-Water Rights Program.

7. This variance does not relieve you of the responsibility of complying with any local requirements that may be applicable to the drilling, construction and operation of the water well.

Prepared by: Adam Mathiowetz, Engineer IV
Dept. of Agriculture and Natural Resources
(605)-773-4061
523 E. Capitol Ave
Pierre, SD 57501

Approved by:

Eric Gronlund, Chief Engineer
Water Rights Program
December 10, 2024

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

Sworn to, before me, this 10th day of December 2024

Rachel Rodriguez
Notary Public
My Commission expires May 16, 2029

RACHEL RODRIGUEZ NOTARY Seal PUBLIC STATE OF SOUTH DAKOTA

Variance No. 07-2024

CC:

Jason LaFayette
City of Belle Fourche
511 6th Ave
Belle Fourche SD 57717

Erin Fagnan, DANR-Drinking Water Program

2031-1

SD EForm - 1621LD V1

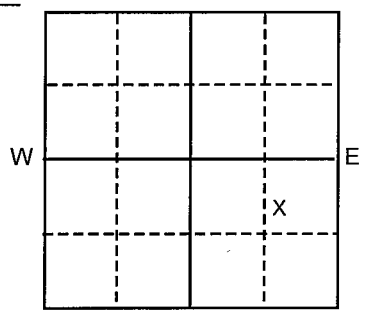
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11- 02

Location NE ¼ SE ¼ Sec 34 Twp 8N Rg 2E

County BUTTE

Please mark well location with an "X"



Well Completion Date

DRILL TD 3-2-2025

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?

1,900.0 ft. from HORSE CORRAL (identify source)

PROPOSED USE:

☐ Domestic/Stock ☑ Municipal ☐ Business ☐ Test holes
☐ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

FWD ROTARY

CASING DATA: ☑ Steel ☐ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
94.0 LB/FT	20.00 IN	0.0 FT	60.0 FT	26.00 IN
54.5 LB/FT	13.32 IN	0.0 FT	1,518 FT	17.50 IN
28.0 LB/FT	8.62 IN	1,090 FT	2,119 FT	12.25 IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
NEAT CMT	72	15.1 Lb/gal	0.0 Ft	60.0 Ft
NEAT CMT	195	15.8 Lb/gal	1,518.0 Ft	1,218.0 Ft

Describe grouting procedure

805 SX 11.8 # from 1218 to sfc, 535 SX 15.8# 2120 to 1090

SCREEN: ☐ Perforated pipe ☑ Manufactured

Diameter _____ Inches Length _____ Feet

Material _____

Slot Size _____ Set From _____ Feet to _____ Feet

Other information open hole completion 2120' to 2430'

WAS A PACKER OR SEAL USED? ☐ Yes ☑ No

If so, what material? _____

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☐ Yes, How? _____

☑ No, Why Not? Flowing well

Lab to which water quality sample sent for analysis

Well Owner: City of Belle Fourche

Business Name: _____

Address: 511 6th Ave.

City, State, Zip: Belle Fourche SD 57717

WELL LOG:

FORMATION	DEPTH FROM	DEPTH TO
INYAN KARA	0	164
LAKOTA	164	200
MORRISON	200	631
SPEARFISH	631	1411
MINNEKAHTA	1411	1458
OPECHE	1458	1561
MINNELUSA	1561	2090
MADISON	2090	2430

STATIC WATER LEVEL _____ FEET

If flowing: closed in pressure 82.50 PSI

GPM flow 355.0 through 13.32 Inch pipe

Controlled by ☑ Valve ☐ Reducers ☐ Other _____

Reduced flow rate _____ GPM

Can well be completely shut in? YES

WELL TEST DATA:

☐ Pumped Describe: FLOW METER 355 GPM after 24 Hrs.
☐ Bailed
☑ Other

Pumping Level Below Land Surface

_____ Ft. After _____ Hrs. pumped _____ GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS

RECEIVED
OCT 27 2025
OFFICE OF WATER

This well was drilled under license # 814 and this report is true and accurate.

Drilling firm: KELLER DRILLING LLC

Signature of License Representative:

Albert P. Keller Jr.

Digitally signed by Albert P. Keller Jr.
DN: cn=Albert P. Keller Jr., o=Keller Drilling LLC, ou, email=Kellerdrilling15@hotmail.com, c=US
Date: 2022.06.09 14:01:34 -06'00'

Signature of Well Owner or Equitable Property Holder:

Date: _____

HYDROLOGIC LOG

FOR

CITY OF Belle Fourche SOUTH DAKOTA

SERVICES PROVIDED BY

KELLER DRILLING

NORSEMAN DRILLING SUPPLY

INDUSTRIAL DRILLING PRODUCTS BAROID HALLIBURTON

INDUSTRIAL DRILLING PRODUCTS BAROID HALLIBURTON

SOLUTIONS + SERVICE = SUCCESS

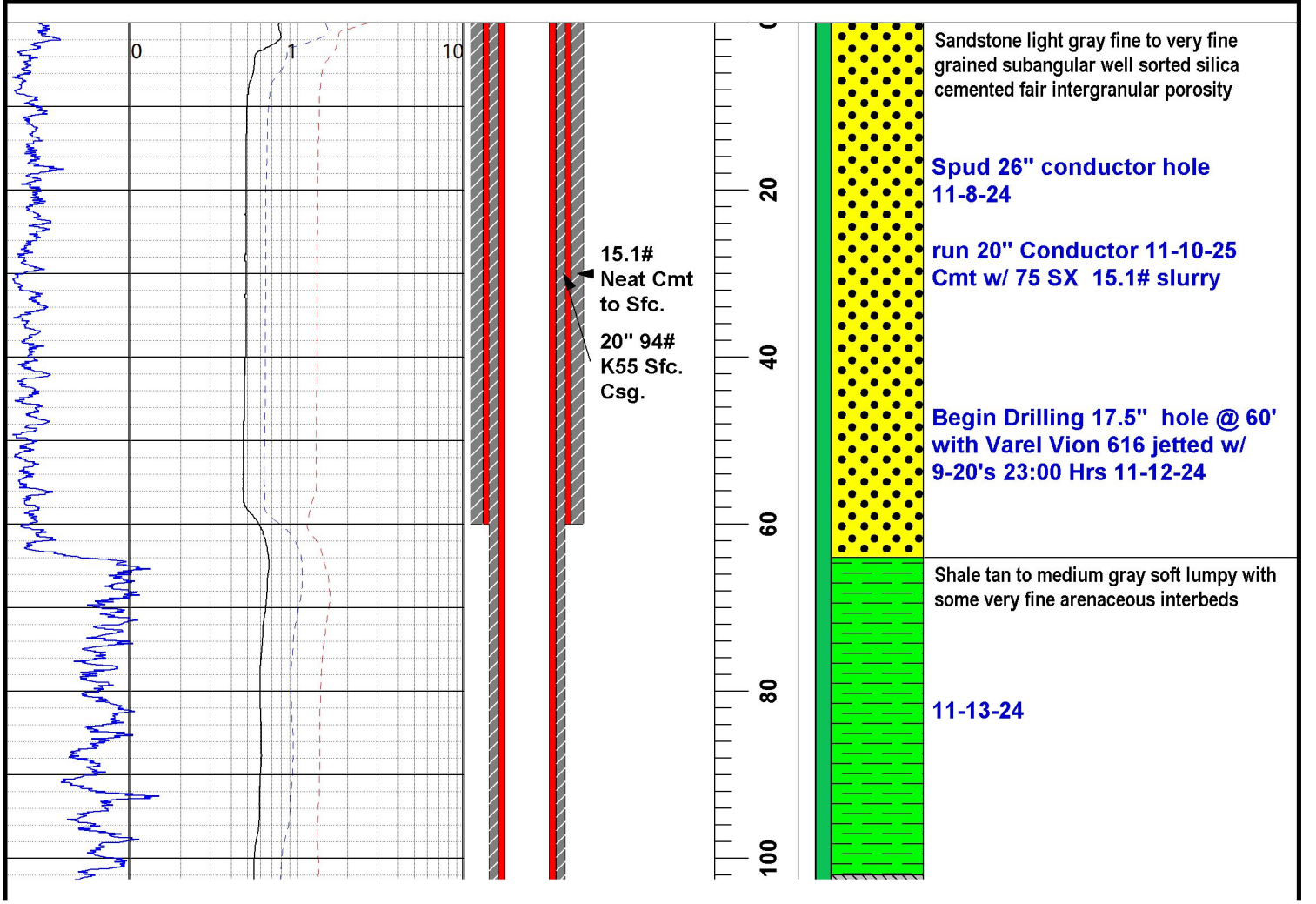
AE2S

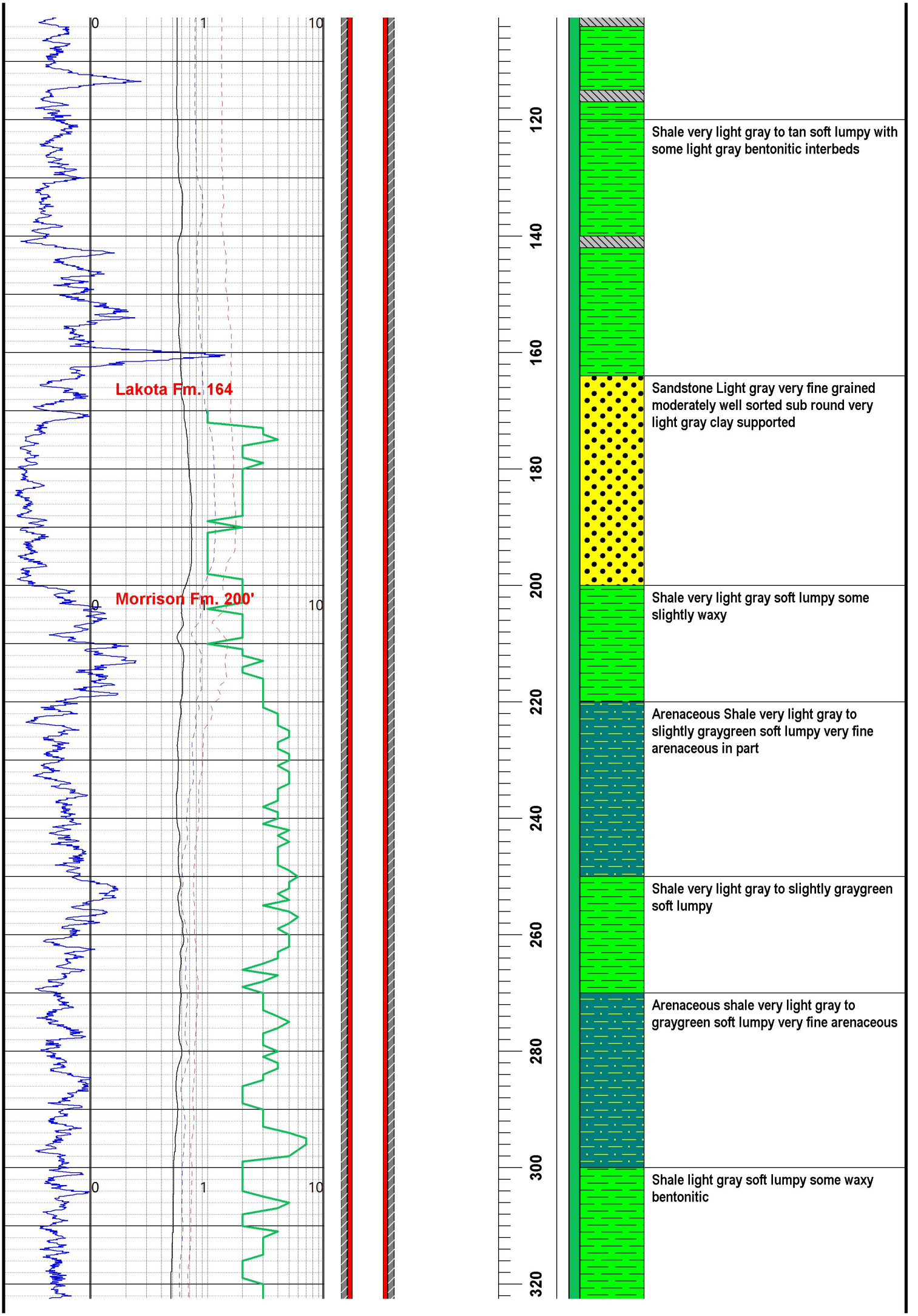
Advanced Engineering and Environmental Services, LLC

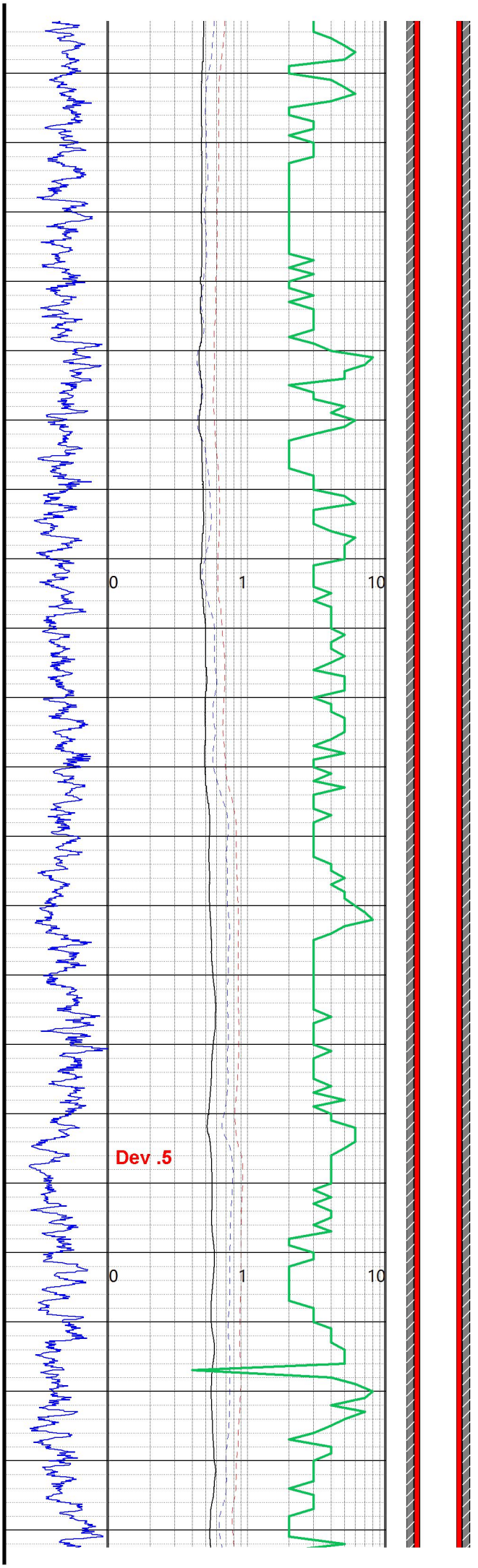
WELL OWNER:	City of Belle Fourche, South Dakota
WELL NAME:	Belle Fourche Well #3 AE2S Project No. P05070-2023-001
STATE:	South Dakota
COUNTY:	Butte
LOCATION:	NE/SE S34 T8N R2E
ELEVATION:	ELEVATIONS GL 3473 KB 3486 Datum for Log Depths = GL
INTERVAL:	Surface to 2430' DATES: Nov 8, 2024 to Mar 2, 2025
GEOLOGIST:	Peter J. Waldon

Pattern Legend

- Sandstone
- Shale
- Arenaceous Shale
- Anhydrite
- Siltstone
- Calcareous Arenaceous Dolomite
- Siltaceous Shale
- Screen
- Sand Pack
- Dolomite
- Gypsum
- Dolomitic Sandstone
- Cement
- Casing
- Pump
- Limestone
- Arenaceous Dolomite




0
1
10
Lakota Fm. 164
Morrison Fm. 200'
120
140
160
180
200
220
240
260
280
300
320
Shale very light gray to tan soft lumpy with some light gray bentonitic interbeds
Sandstone Light gray very fine grained moderately well sorted sub round very light gray clay supported
Shale very light gray soft lumpy some slightly waxy
Arenaceous Shale very light gray to slightly graygreen soft lumpy very fine arenaceous in part
Shale very light gray to slightly graygreen soft lumpy
Arenaceous shale very light gray to graygreen soft lumpy very fine arenaceous
Shale light gray soft lumpy some waxy bentonitic



340
360
380
400
420
440
460
480
500
520
540

Shale light gray soft lumpy to sub blocky some waxy bentonitic

11-14-24

Arenaceous Shale sample missing lithology inferred

Arenaceous Shale light gray some salt and pepper very fine grained moderately well sorted clear subangular to subround clay cemented

Repair Shale Shaker

11-15-24

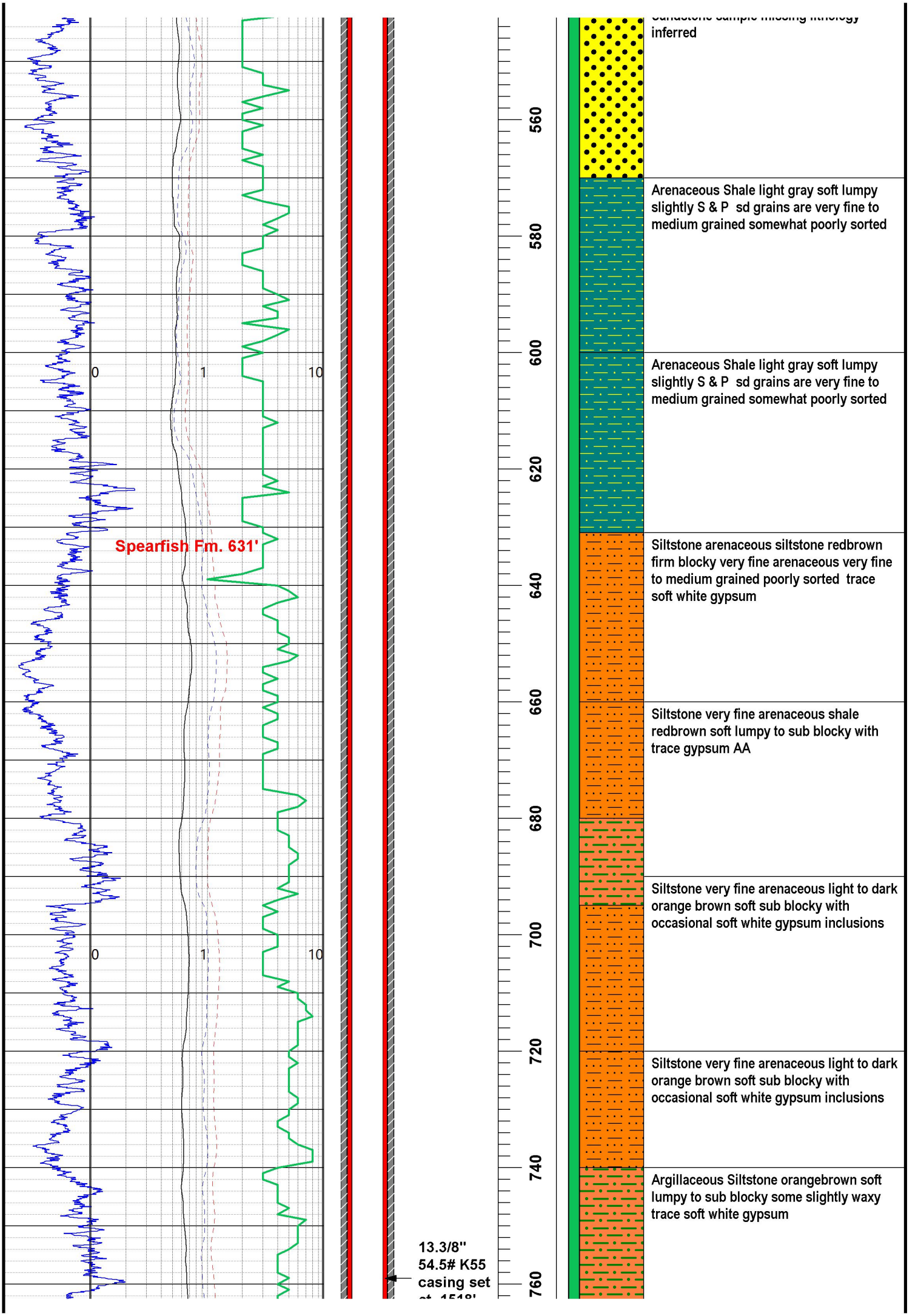
Sandstone light orange very fine to medium grained clusters somewhat poorly sorted clay cemented

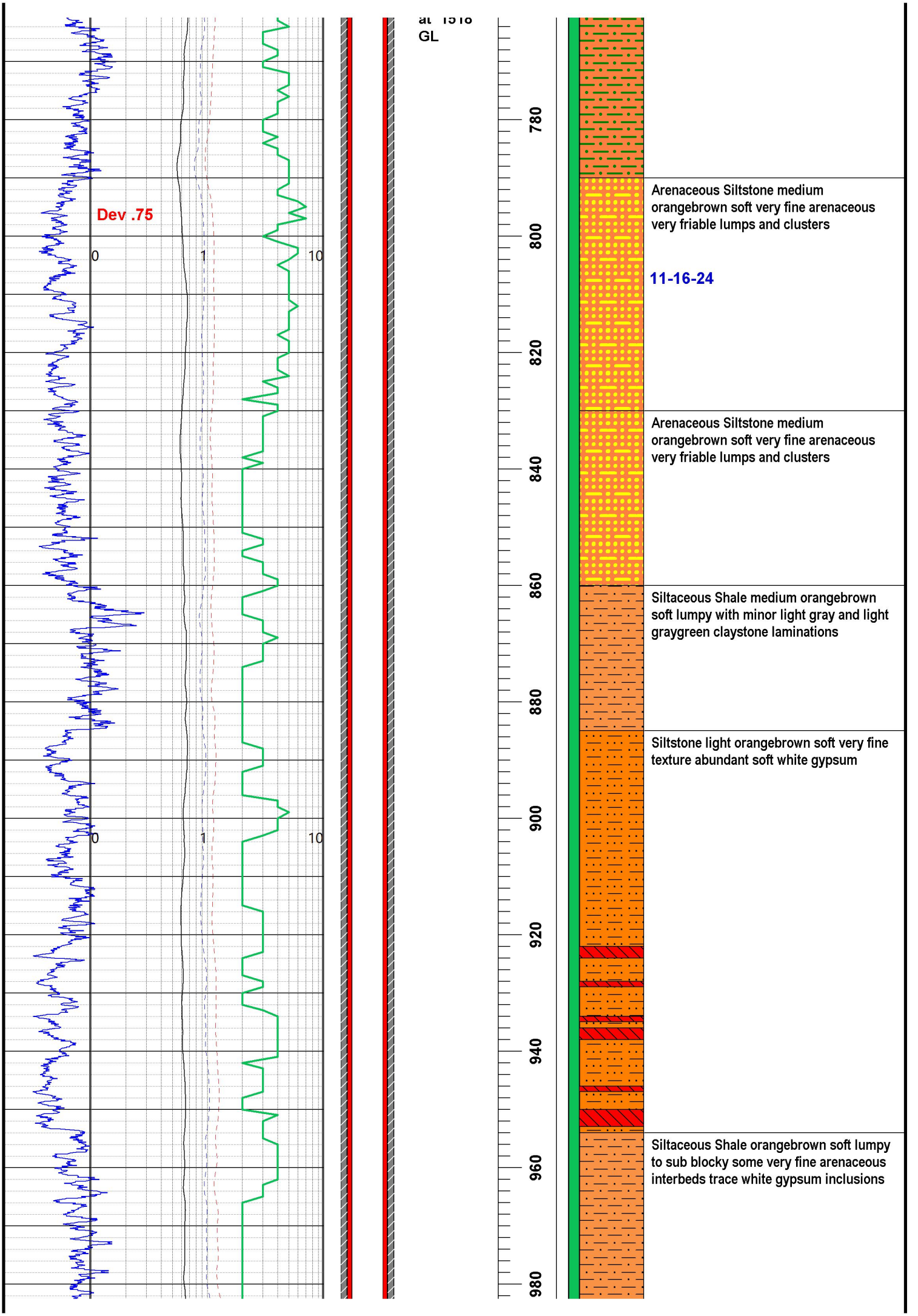
Arenaceous Shale light gray some salt and pepper very fine grained moderately well sorted clear subangular to subround clay cemented

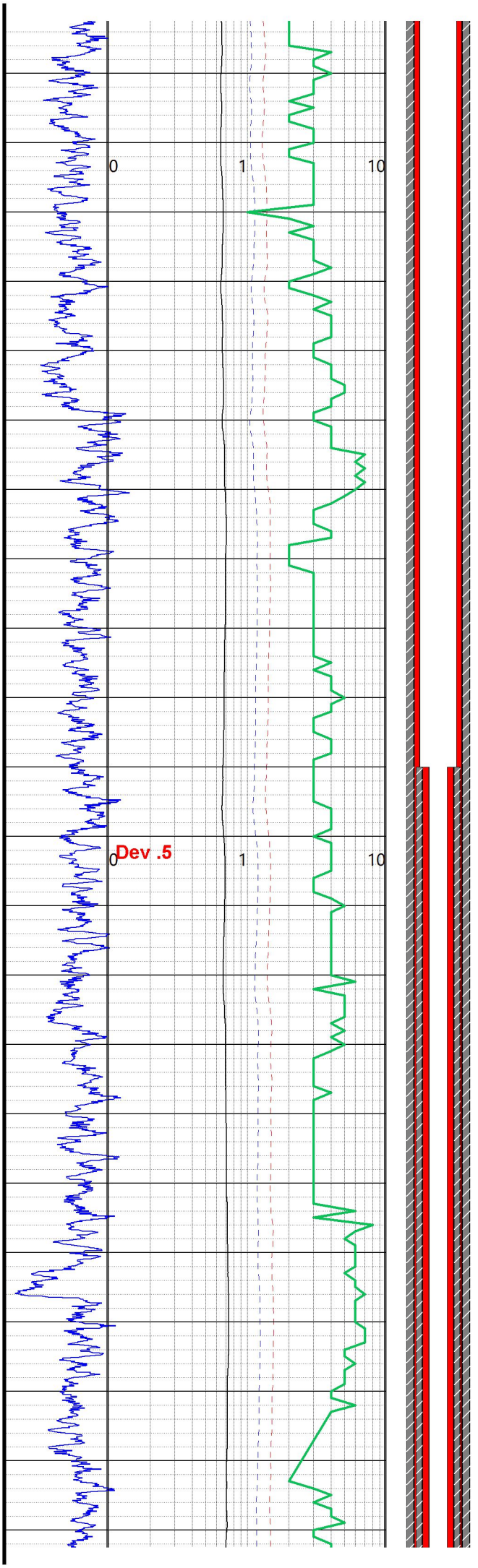
Argillaceous Sandstone white to very light gray very fine grained moderately well sorted subround clay cemented

Sandstone very light gray soft clusters very fine grained well sorted sub round clear grains clay cemented

Sandstone sample missing lithology


0
1
10
0
1
10
Spearfish Fm. 631'
560
580
600
620
640
660
680
700
720
740
760
13.3/8"
54.5# K55
casing set
inferred
Arenaceous Shale light gray soft lumpy slightly S & P sd grains are very fine to medium grained somewhat poorly sorted
Arenaceous Shale light gray soft lumpy slightly S & P sd grains are very fine to medium grained somewhat poorly sorted
Siltstone arenaceous siltstone redbrown firm blocky very fine arenaceous very fine to medium grained poorly sorted trace soft white gypsum
Siltstone very fine arenaceous shale redbrown soft lumpy to sub blocky with trace gypsum AA
Siltstone very fine arenaceous light to dark orange brown soft sub blocky with occasional soft white gypsum inclusions
Siltstone very fine arenaceous light to dark orange brown soft sub blocky with occasional soft white gypsum inclusions
Argillaceous Siltstone orangebrown soft lumpy to sub blocky some slightly waxy trace soft white gypsum


at 1518
GL
Dev .75
0
1
10
0
1
10
780
800
820
840
860
880
900
920
940
960
980
Arenaceous Siltstone medium orangebrown soft very fine arenaceous very friable lumps and clusters
11-16-24
Arenaceous Siltstone medium orangebrown soft very fine arenaceous very friable lumps and clusters
Siltaceous Shale medium orangebrown soft lumpy with minor light gray and light graygreen claystone laminations
Siltstone light orangebrown soft very fine texture abundant soft white gypsum
Siltaceous Shale orangebrown soft lumpy to sub blocky some very fine arenaceous interbeds trace white gypsum inclusions



1000
1020
1040
1060
1080
1100
1120
1140
1160
1180
1200

Siltaceous Shale orangebrown soft lumpy to sub blocky some very fine arenaceous interbeds trace white gypsum inclusions

Siltstone light orangebrownsoft very argillaceous abundant soft white gypsum inclusions

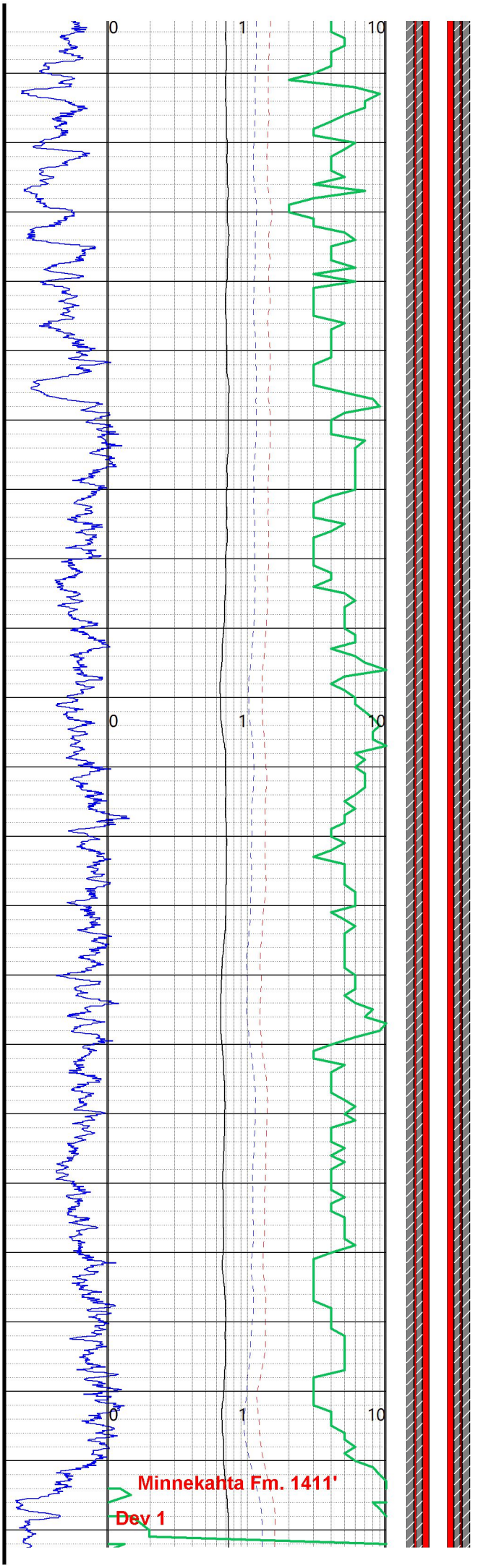
Siltstone light orangebrownsoft very argillaceous abundant soft white gypsum inclusions

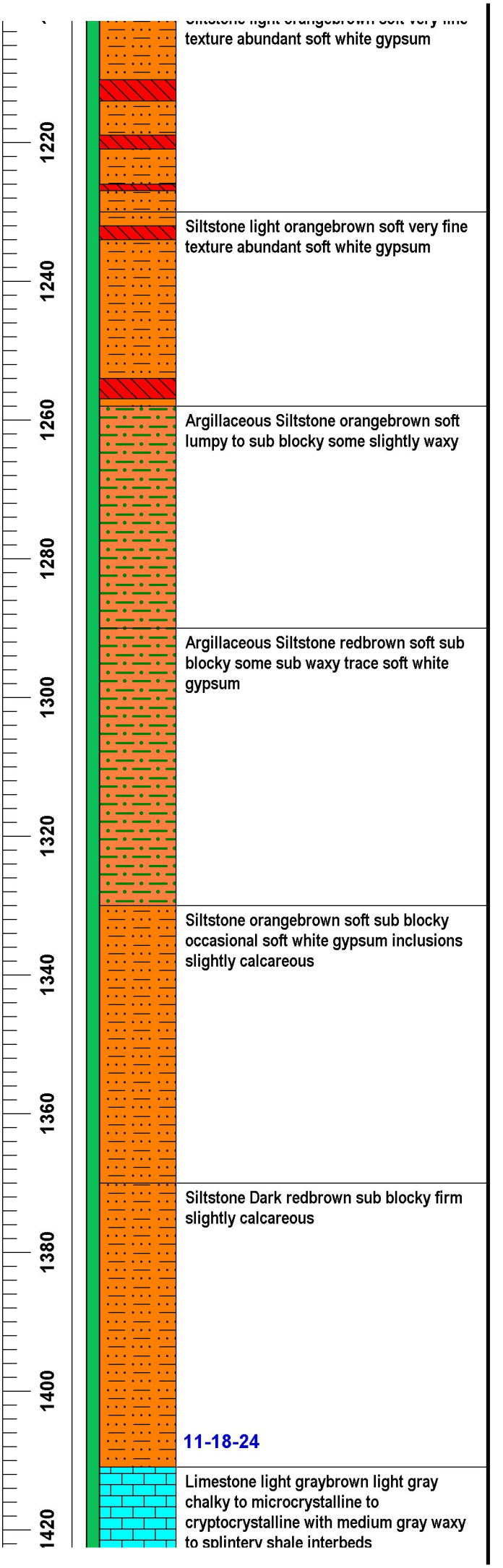
Siltaceous Shale orangebrown soft lumpy to sub blocky some very fine arenaceous interbeds trace white gypsum inclusions

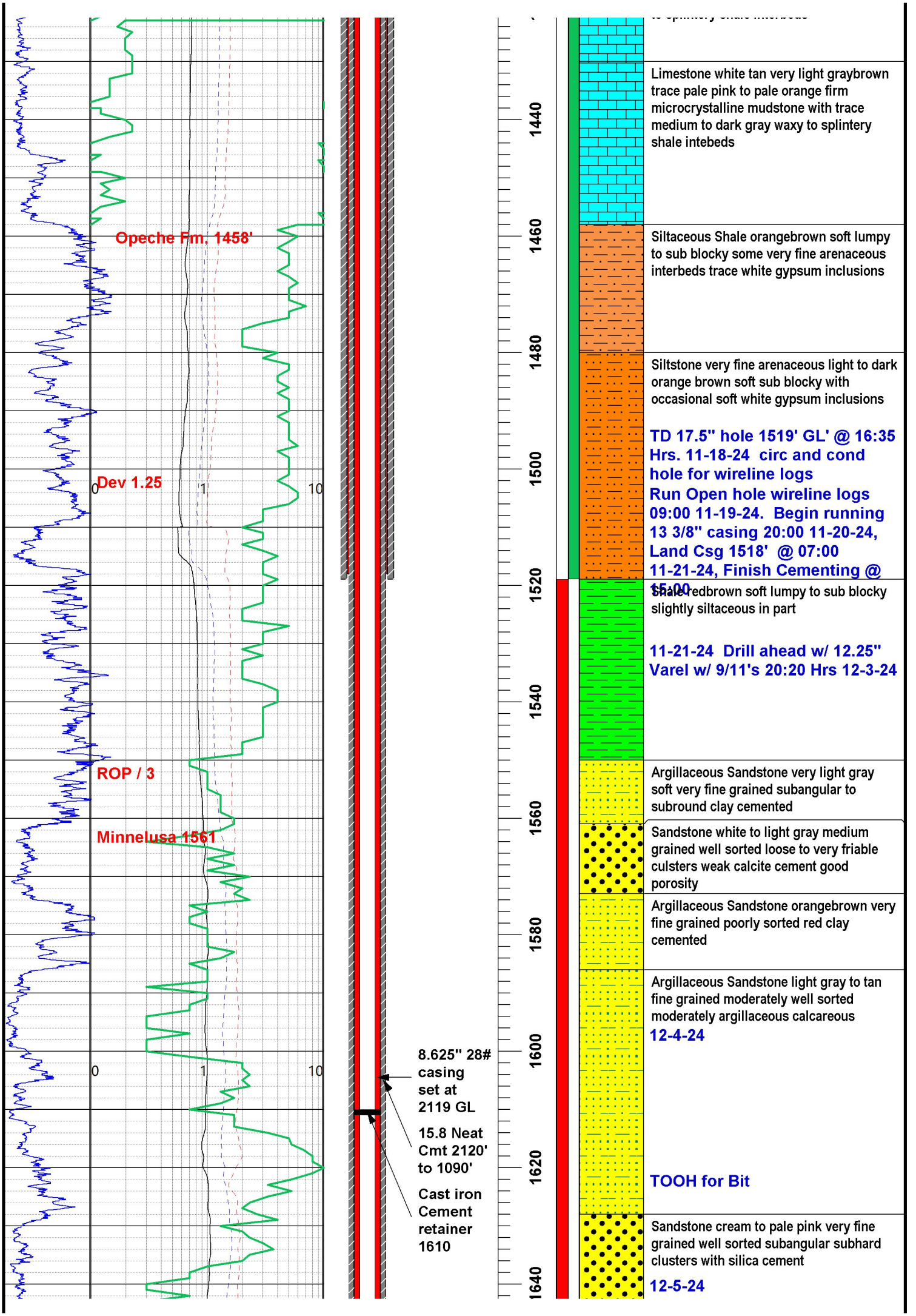
11-17-24

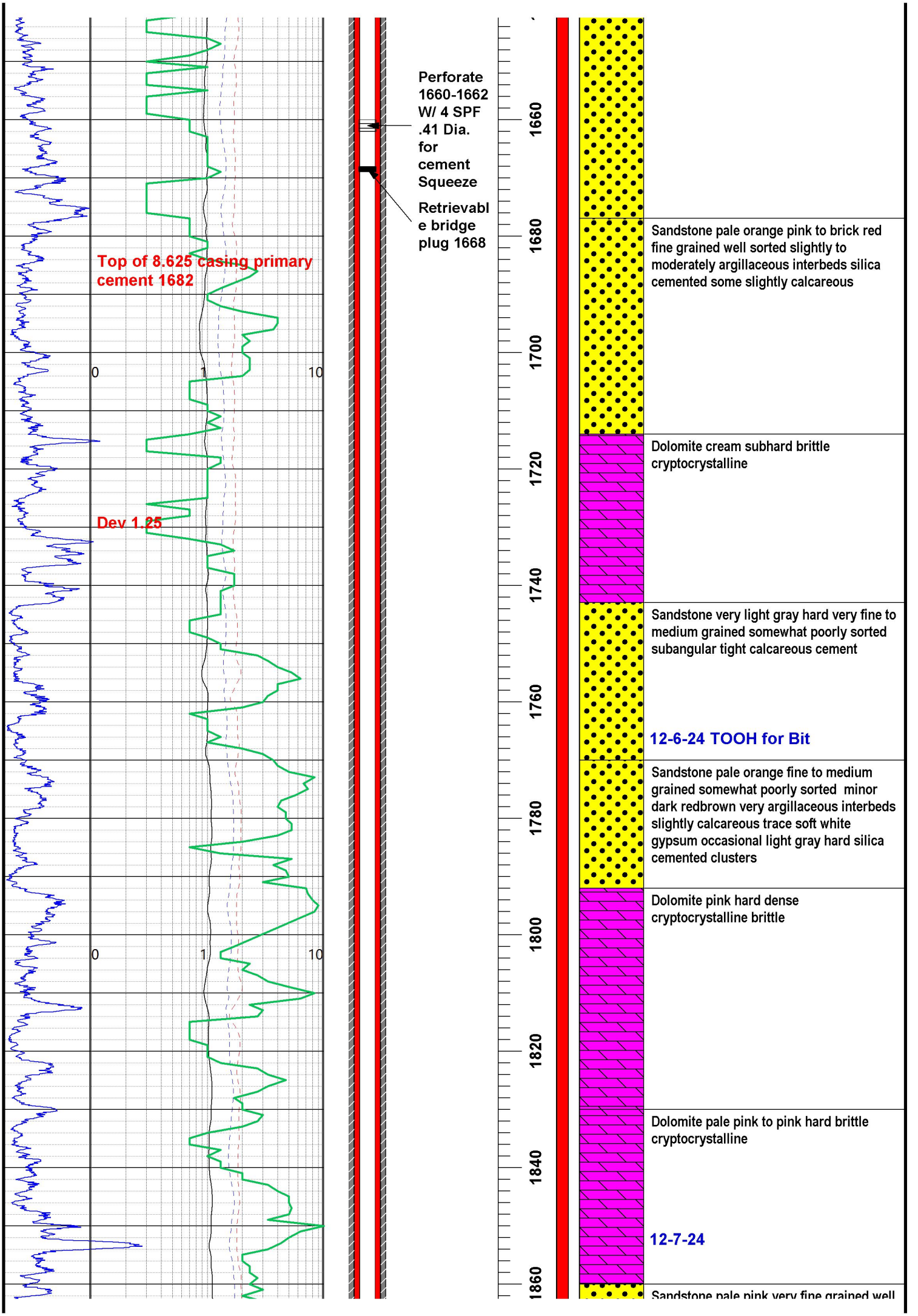
Siltaceous Shale orangebrown soft lumpy to sub blocky some very fine arenaceous interbeds trace white gypsum inclusions

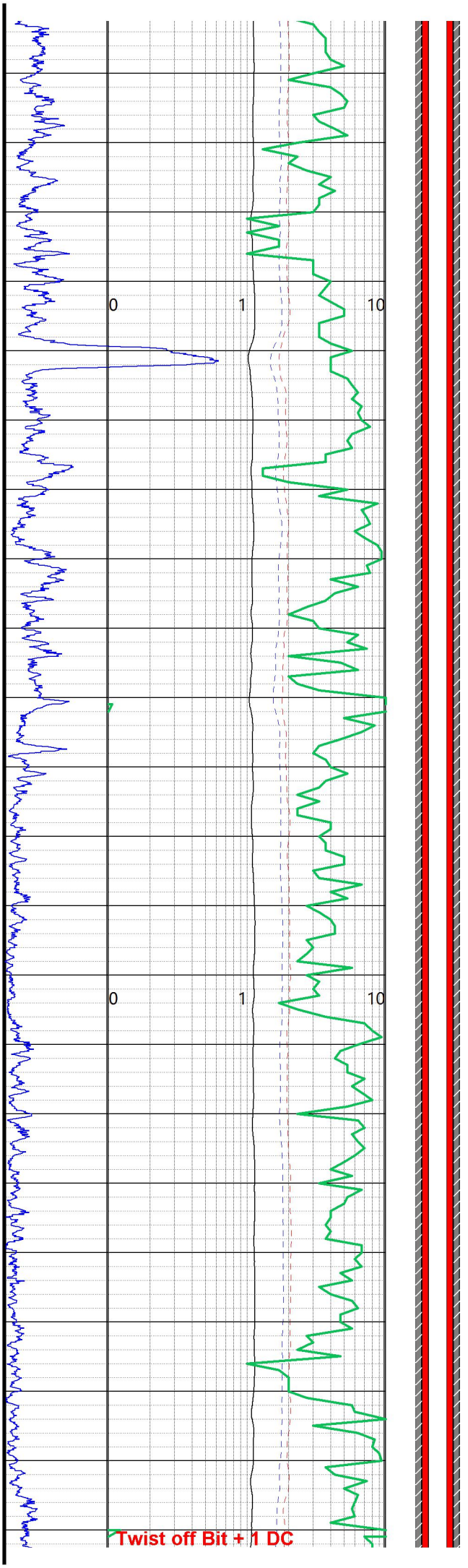
Siltstone light orangebrown soft very fine


0
1
10
0
1
10
0
1
10
Minnekahta Fm. 1411'
Dev 1


1220
1240
1260
1280
1300
1320
1340
1360
1380
1400
1420
texture abundant soft white gypsum
Siltstone light orangebrown soft very fine texture abundant soft white gypsum
Argillaceous Siltstone orangebrown soft lumpy to sub blocky some slightly waxy
Argillaceous Siltstone redbrown soft sub blocky some sub waxy trace soft white gypsum
Siltstone orangebrown soft sub blocky occasional soft white gypsum inclusions slightly calcareous
Siltstone Dark redbrown sub blocky firm slightly calcareous
11-18-24
Limestone light graybrown light gray chalky to microcrystalline to cryptocrystalline with medium gray waxy to splintery shale interbeds


Opeche Fm. 1458'
Dev 1.25
0
1
10
ROP / 3
Minnelusa 1561
0
1
10
8.625" 28# casing set at 2119 GL
15.8 Neat Cmt 2120' to 1090'
Cast iron Cement retainer 1610
1440
1460
1480
1500
1520
1540
1560
1580
1600
1620
1640
Limestone white tan very light graybrown trace pale pink to pale orange firm microcrystalline mudstone with trace medium to dark gray waxy to splintery shale intebeds
Siltaceous Shale orangebrown soft lumpy to sub blocky some very fine arenaceous interbeds trace white gypsum inclusions
Siltstone very fine arenaceous light to dark orange brown soft sub blocky with occasional soft white gypsum inclusions
TD 17.5" hole 1519' GL' @ 16:35 Hrs. 11-18-24 circ and cond hole for wireline logs
Run Open hole wireline logs 09:00 11-19-24. Begin running 13 3/8" casing 20:00 11-20-24, Land Csg 1518' @ 07:00 11-21-24, Finish Cementing @ 15:00
Shale redbrown soft lumpy to sub blocky slightly siltaceous in part
11-21-24 Drill ahead w/ 12.25" Varel w/ 9/11's 20:20 Hrs 12-3-24
Argillaceous Sandstone very light gray soft very fine grained subangular to subround clay cemented
Sandstone white to light gray medium grained well sorted loose to very friable culsters weak calcite cement good porosity
Argillaceous Sandstone orangebrown very fine grained poorly sorted red clay cemented
Argillaceous Sandstone light gray to tan fine grained moderately well sorted moderately argillaceous calcareous
12-4-24
TOOH for Bit
Sandstone cream to pale pink very fine grained well sorted subangular subhard clusters with silica cement
12-5-24


Top of 8.625 casing primary cement 1682
Dev 1.25
0
1
10
0
1
10
Perforate 1660-1662 W/ 4 SPF .41 Dia. for cement Squeeze
Retrievable bridge plug 1668
1660
1680
1700
1720
1740
1760
1780
1800
1820
1840
1860
Sandstone pale orange pink to brick red fine grained well sorted slightly to moderately argillaceous interbeds silica cemented some slightly calcareous
Dolomite cream subhard brittle cryptocrystalline
Sandstone very light gray hard very fine to medium grained somewhat poorly sorted subangular tight calcareous cement
12-6-24 TOOH for Bit
Sandstone pale orange fine to medium grained somewhat poorly sorted minor dark redbrown very argillaceous interbeds slightly calcareous trace soft white gypsum occasional light gray hard silica cemented clusters
Dolomite pink hard dense cryptocrystalline brittle
Dolomite pale pink to pink hard brittle cryptocrystalline
12-7-24
Sandstone pale pink very fine grained well



1880
1900
1920
1940
1960
1980
2000
2020
2040
2060
2080

sorted sub angular hard clusters with pink slightly calcareous dolomitic cement

Sandstone pale pink hard clusters A/A with minor pink to pale orange hard brittle cryptocrystalline dolomite

12-8-24

Dolomite pale pink to medium orange-pink hard brittle cryptocrystalline trace with dark redbrown Fe stain on fracture faces

Dolomitic Mudstone gray to graygreen firm fissile to blocky slightly calcareous with trace dolomite pink to light gray hard brittle cryptocrystalline slightly silicic

Dolomite pink white rose hard brittle cryptocrystalline with chert light gray opaque hard brittle

Dolomite very light gray to white subhard microsucrosic to hd crpxln tr ltgy cht

Dolomite very pale pink to pink-orange cream hard brittle cryptocrystalline sli calc

Dolomite very light gray hard cryptocrystalline

Dolomite very pale pink hard brittle cryptocrystalline

Dolomite very light tan hard dense brittle cryptocrystalline sli calcareous

Dolomite cream hard brittle cryptocrystalline

Dolomite pale pink to cream hard brittle cryptocrystalline

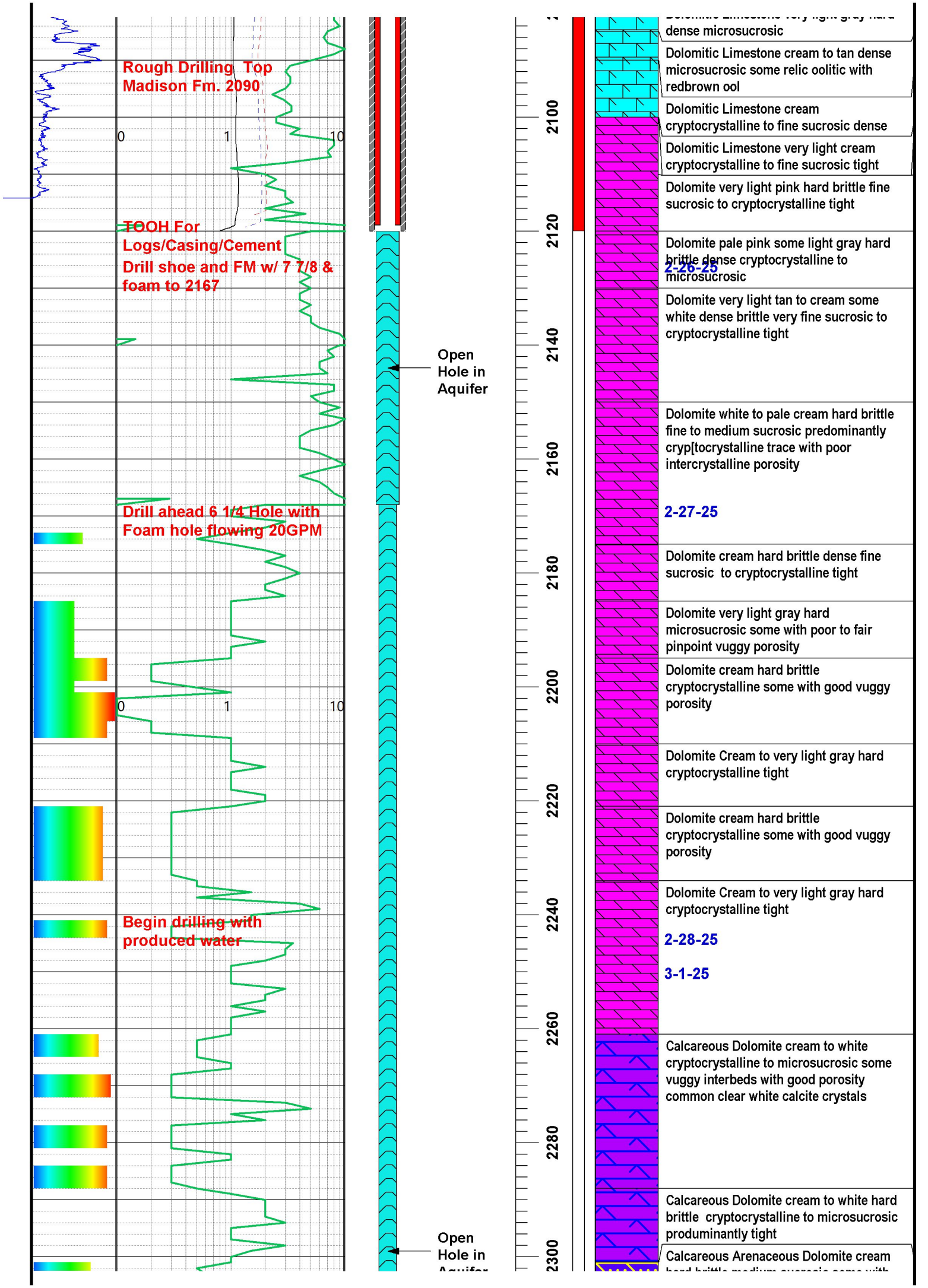
Dolomite very pale pink to pale orange-pink hard brittle fine sucrosic to cryptocrystalline

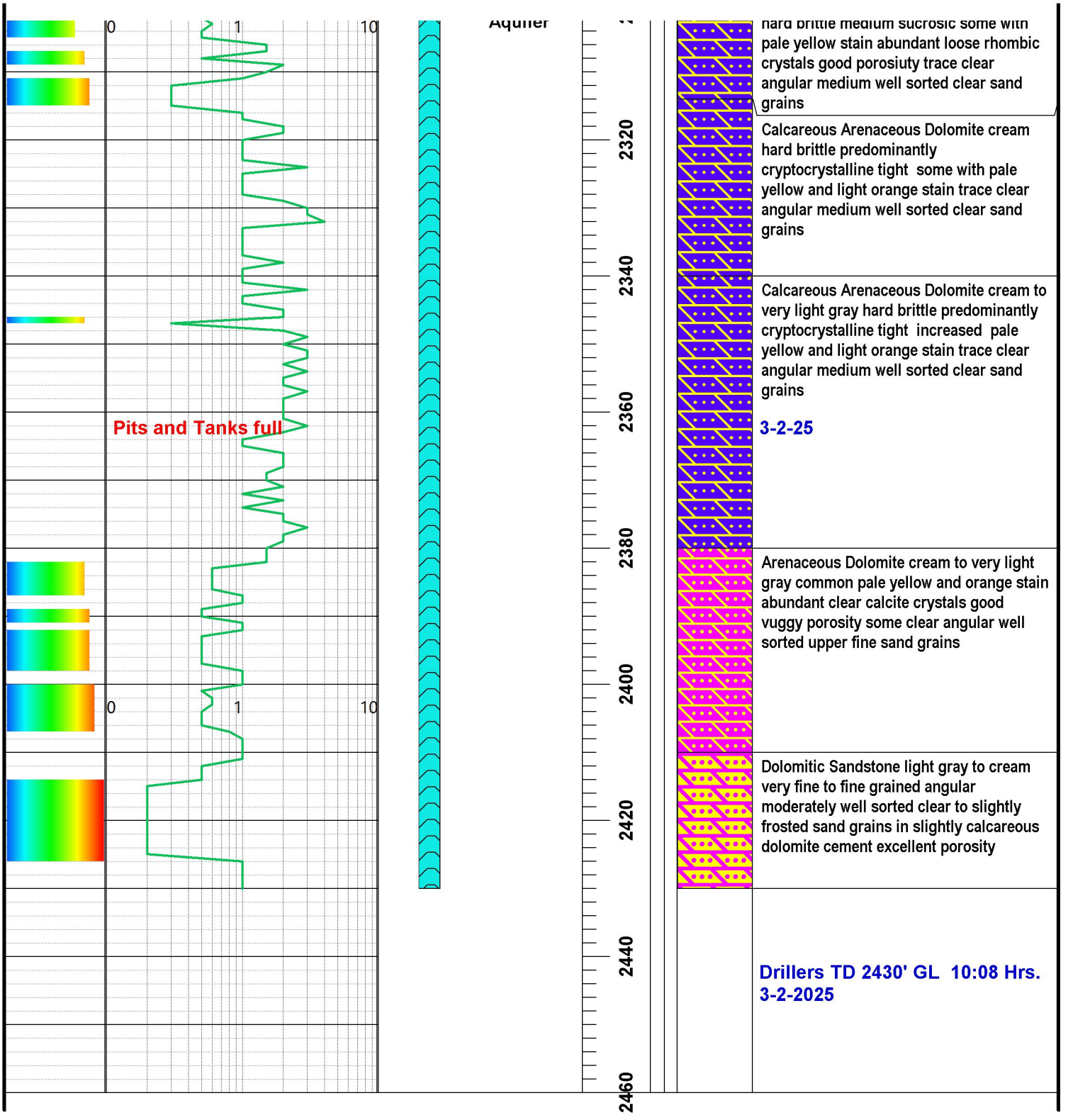
Calcareous Dolomite white to pale pink hard cryptocrystralline -microsucrosic tight moderately calcareous

Dolomite cream to very pale pink hard brittle cryptocrystalline

Dolomite cream to very light pink trace light gray cherty cryptocrystalline to fine sucrosic slightly calc

Dolomitic Limestone very light gray hard


Rough Drilling Top Madison Fm. 2090
0
1
10
TOOH For Logs/Casing/Cement Drill shoe and FM w/ 7 7/8 & foam to 2167
Drill ahead 6 1/4 Hole with Foam hole flowing 20GPM
0
1
10
Begin drilling with produced water
Open Hole in Aquifer
Open Hole in
2100
2120
2140
2160
2180
2200
2220
2240
2260
2280
2300
dense microsucrosic
Dolomitic Limestone cream to tan dense microsucrosic some relic oolitic with redbrown ool
Dolomitic Limestone cream cryptocrystalline to fine sucrosic dense
Dolomitic Limestone very light cream cryptocrystalline to fine sucrosic tight
Dolomite very light pink hard brittle fine sucrosic to cryptocrystalline tight
Dolomite pale pink some light gray hard brittle dense cryptocrystalline to microsucrosic
2-26-25
Dolomite very light tan to cream some white dense brittle very fine sucrosic to cryptocrystalline tight
Dolomite white to pale cream hard brittle fine to medium sucrosic predominantly cryp[tocrystalline trace with poor intercrystalline porosity
2-27-25
Dolomite cream hard brittle dense fine sucrosic to cryptocrystalline tight
Dolomite very light gray hard microsucrosic some with poor to fair pinpoint vuggy porosity
Dolomite cream hard brittle cryptocrystalline some with good vuggy porosity
Dolomite Cream to very light gray hard cryptocrystalline tight
Dolomite cream hard brittle cryptocrystalline some with good vuggy porosity
Dolomite Cream to very light gray hard cryptocrystalline tight
2-28-25
3-1-25
Calcareous Dolomite cream to white cryptocrystalline to microsucrosic some vuggy interbeds with good porosity common clear white calcite crystals
Calcareous Dolomite cream to white hard brittle cryptocrystalline to microsucrosic produminantly tight
Calcareous Arenaceous Dolomite cream


0
1
10
Pits and Tanks full
0
1
10
Aquifer
2320
2340
2360
2380
2400
2420
2440
2460
hard brittle medium sucrosic some with pale yellow stain abundant loose rhombic crystals good porosiuty trace clear angular medium well sorted clear sand grains
Calcareous Arenaceous Dolomite cream hard brittle predominantly cryptocrystalline tight some with pale yellow and light orange stain trace clear angular medium well sorted clear sand grains
Calcareous Arenaceous Dolomite cream to very light gray hard brittle predominantly cryptocrystalline tight increased pale yellow and light orange stain trace clear angular medium well sorted clear sand grains
3-2-25
Arenaceous Dolomite cream to very light gray common pale yellow and orange stain abundant clear calcite crystals good vuggy porosity some clear angular well sorted upper fine sand grains
Dolomitic Sandstone light gray to cream very fine to fine grained angular moderately well sorted clear to slightly frosted sand grains in slightly calcareous dolomite cement excellent porosity
Drillers TD 2430' GL 10:08 Hrs. 3-2-2025