

WATER PERMIT NO. 2035-1

Name of Applicant: **Dan Heck**

Address: **PO Box 607, Belle Fourche SD 57717**

Phone: **605-645-7694**

Amount of Water Claimed: **200 AF**

Total Acres: **N/A**

Source of Water Supply: **Surface**

Water to be used for: **Fish & Wildlife**

County: **Butte**

Type of Waste Disposal System:

Location: **Approx. 5 miles west of Belle Fourche SD**

PRIORITY Date Received: **02-23-24**

Application/License Fee: **\$950.00**

Corrected Application Received: **03-04-24**

Period of Annual Use: **April 1 – June 30**

Remarks: **See Supplement Memo for additional information**

Diversion Point: **NE 1/4 Sec 10, W 1/2 NW 1/4 Sec 11; all in T8N-R1E**

Land to be Irrigated: **N/A**

Depth of Well: **N/A**

Well Driller: **N/A**

Remarks:

Type of Map: **aerial**

10

11

Reviewed and the Number Assigned on: **03-04-24**

By: **Rachel Rodriguez**

Notice of Hearing - date to intervene: _____

**SOUTH DAKOTA
WATER PERMIT NO. 2035-1**

Date of first receipt of application February 23, 2024.

Date of return to applicant for corrections, amendments or changes February 27, 2024.

Date of receipt of corrected application March 4, 2024.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 2035-1 to Dan Heck, PO Box 607, 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. 2035-1 authorizes impoundment of up to 200 acre-feet of runoff water annually by plugging a ditch to restore a wetland. The project is known as the Sourdough Flats Wetland Restoration. The ditch plug and impounded water are to be located in the NE 1/4 SE 1/4, NE 1/4 Section 10; W 1/2 NW 1/4 Section 11; all in T8N-R1E. The water is for fish and wildlife propagation and development of a wetland mitigation bank. This site is located approximately 5 miles west of Belle Fourche SD.
2. The water appropriated shall be used for the purpose of fish and wildlife use and a wetland mitigation bank 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. 2035-1 is May 20, 2024.
5. The date from which applicant may claim right is February 23, 2024.
6. One-fifth of the construction is to be completed on or before November 20, 2026.
7. All construction is to be completed on or before May 20, 2029.
8. Water is to be put to beneficial use on or before May 20, 2033.
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. Water Permit No. 2035-1 appropriates up to 200 acre-feet of water annually.

WATER MANAGEMENT BOARD

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

JUN 17 2024

date



Mail to:

SD DANR, Water Rights
523 E Capitol Ave
Pierre, SD 57501-3182

ph. (605) 773-3352

No. 2035-1 Hydrologic Unit 10120202
Basin Lower Belle Fourche
Newspaper Spearfish Black Hills Pioneer
(office use only)

PAID

FEB 23 2024

Ck# 1797

Rec't#

Application for Permit to Appropriate Water in South Dakota

Check use(s) of water:

☐ Municipal	☐ Water Distribution System	☐ Recreational	☐ Institutional
☐ Rural Water System	☐ Commercial	☒ Fish & Wildlife	☐ Geothermal
☐ Domestic (over 18 gpm)	☐ Industrial	☒ Other <u>See Supplement Memo</u>	

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 Dan Heck

Mailing Address PO Box 607 BELLE FOURCHE SD 57717
(Address) (City) (State) (Zip Code)

Phone 605-892-2864 Mobile 605-645-7694 Email sourdoughdkh@gmail.com

2. Amount of water claimed _____ *CFS or _____ **GPM and 200 ***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 upland runoff generated by rainfall and snowmelt

4. Location of point of diversion NE 1/4 Sec 10-T8N-R1E & W1/2, NW1/4 Sec 11-T8N-R1E 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 when available (typically April - June)

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)

Attached is a Water rights Permit Application - Supplement Memo

RECEIVED

FEB 23 2024

OFFICE OF
WATER

I, DAN HECK

Name of Person

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.

Supplemental Information

(type or print)

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

a) If new wells, how many _____ Have test holes been drilled? ☐ Yes ☐ 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) _____ Depth to Top of Water Bearing Material _____ Depth to Water from Surface _____

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

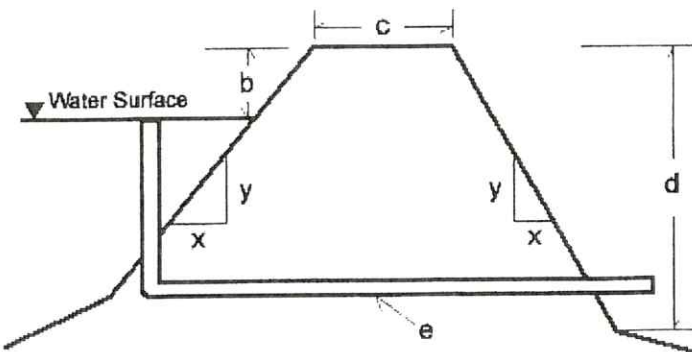
a) Surface Dimensions _____ Depth _____

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 2'

c) Crest Width 12'

Crest Length 52'

d) Height 4.5'

e) Primary Outlet Capacity 20' wide

If pipe, diameter _____

f) Secondary Spillway Capacity N/A

Spillway Width _____

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

Upstream 4:1

Downstream 50:1

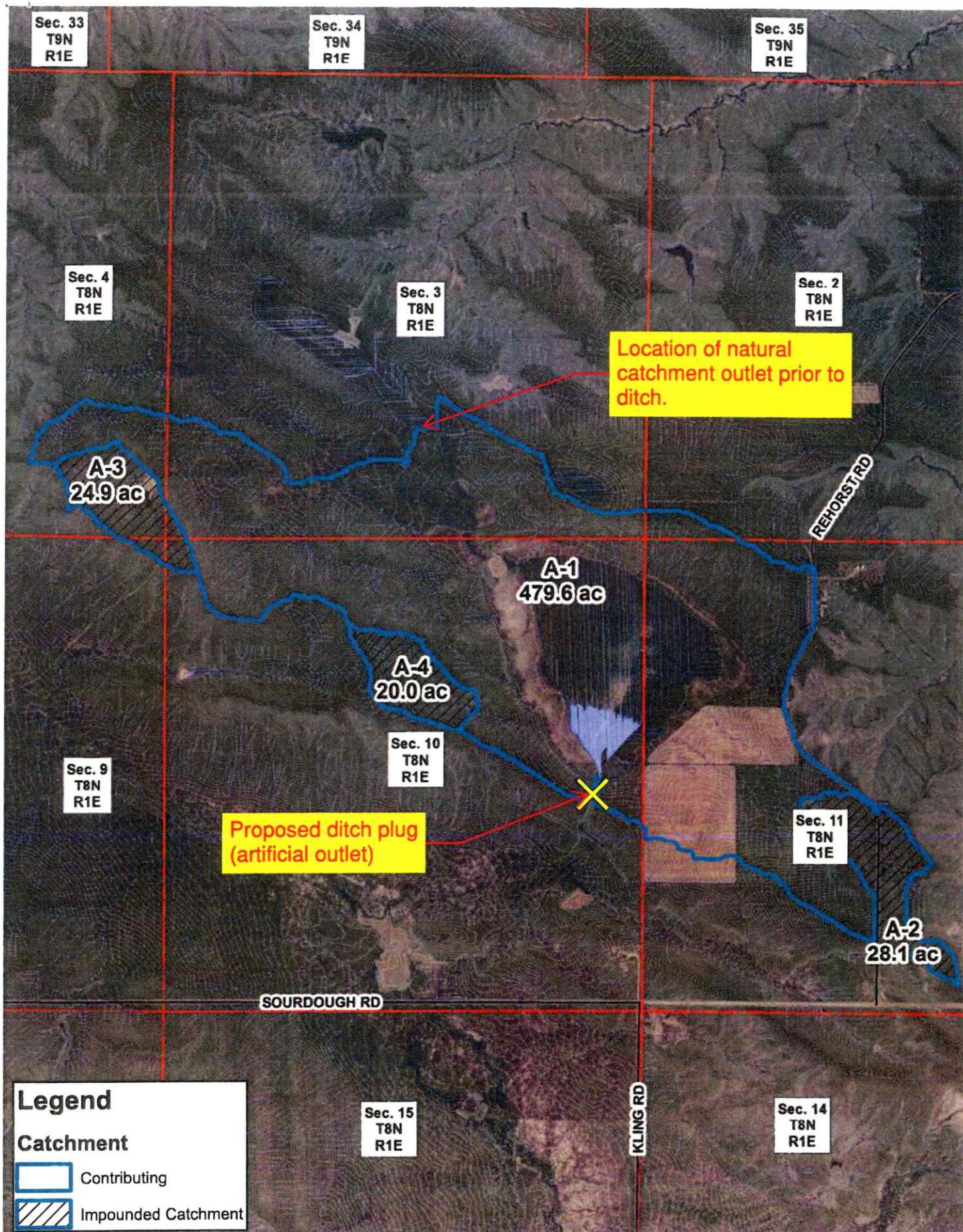
h) Area of Impoundment 125

i) Storage 230 Acre Feet

j) Drainage Area Above Dam 553 Acres

480 contributing acres (see supplemental memo)

~35.65 acre feet of storage currently exists (see supplemental memo)



**SOUR DOUGH FLATS
WATERSHED**

FIGURE 1



Water Rights Permit Application - Supplement

**Sourdough Flats Wetland
Restoration**

Butte County, South Dakota

February 2024

Prepared by:

Kendall Vande Kamp, Environmental Scientist
HDR Engineering
100 S. Phillips Avenue, STE 401
Sioux Falls, South Dakota, 57104

Prepared for:

Tetonka, LLP
401 E. 8th Street, Suite 211
Sioux Falls, South Dakota, 57103

1.0 Executive Summary

This memo provides a supplement to a water rights permit application due to the nuanced nature of the project being proposed. The memo provides evidence to support the approval of a Water Right Permit for a compensatory wetland mitigation bank project (i.e., wetland restoration) of a drained wetland within a once-terminal basin. During a due diligence review of the viability of developing a wetland bank on Sourdough Flats, it was discovered that a water rights application for restoring this same wetland basin had previously been submitted on May 31, 2002, by the landowner Dan Heck for a project proposed by Ducks Unlimited (Water Permit No 1771-1). File No. 1771-1 includes a recorded conversation between Mark Rath and Timothy Schaal (Water Rights Division – DENR) and Roger Smith (Ducks Unlimited) where DENR suggested withdrawing the permit application or they would recommend denial because the application was above the Belle Fourche Diversion Dam. The application was withdrawn on August 8, 2002. Ducks Unlimited either didn't have the benefit of the data we have now relating to Hay Creek or didn't provide it as part of their application.

After a brief review, it was determined that compelling data is available that supports the fact that no significant impact on existing water rights would result from the project. The data was reviewed and considered further and ultimately developed into the current analysis presented in this memo which clearly shows no significant impact on existing water rights. Reputable data sources were used to (mainly) provide the South Dakota Department of Agriculture and Natural Resources (DANR) assurances that the wetland restoration project will not impair existing water rights.

Support includes:

- At most, the annual yield of the catchment that drains into the proposed wetland restoration is 8.33 acre-feet to the mouth of Hay Creek (derived from USGS 2002 study).
- The existing residual water storage capacity of the drained wetland (35.65 acre-feet) in addition to an existing vested water right for using water from the drained basin to irrigate 20.1 acres (appropriation = 60.3 acre-feet) totals 95.95 acre-feet of water, an amount which the catchment would only infrequently produce, and certainly not during dry periods (2.3 inches of runoff across the approximately 500-acre Sourdough Flats catchment area)

2.0 Introduction

Tetonka LLP is seeking to develop a wetland mitigation bank that would offer wetland mitigation credits to fulfill the obligation that 404 permit applicants have to offset adverse impacts to wetlands as a condition of Clean Water Act, Section 404 permit authorization from the U.S. Army Corps of Engineers. The project involves the restoration of an artificially drained wetland basin located approximately ½ mile north of Sourdough Road and 5 miles west of its intersection with US 85 in Belle Fourche, South Dakota. A ditch was constructed through a hill in the SE ¼ of Section 10, Township 8N, Range 1E, Butte County, and artificially drains the basin to the south (Figure 1). For this report, the basin/catchment that contributes to the drained wetland will be referred to as Sourdough Flats.

The restoration project involves restoring original contours where a ditch was previously constructed and would not involve constructing a "dam" as defined in Administrative Rule 74:02:01:01, which is one of the triggering factors requiring a need for a water right. A "dam" which is defined as follows:

Dam: an artificial barrier, including appurtenant works, which impounds or diverts water;

However, an Attorney General Opinion (No 89-14) contends that the definition of “dam” is included in administrative rule for the purpose of dam safety regulations, and because “dam” is not defined by state statute, the word “dam” in its ordinary sense, SDCL 2-14-1, is defined to mean “a barrier preventing the flow of water; especially a barrier built across a water course for impounding water (Merriam Webster Dictionary).

Further, Attorney General Opinion (No 89-14) notes that a properly drained wetland becomes an established water course as defined in SDCL 46A-10A-1.

“Established water course,” a fixed and determinate route, either natural or man-made, by which water has flowed from one parcel of real property to another and by which water has been discharged upon a servient estate for a period of time, on such a regular basis and in such quantities as to make it a predictably continuous activity

These two contentions beginning with reliance on a Webster’s Dictionary definition built around the argument on the technicality of the word “dam” being defined within the SD Administrative Rules but not specifically within SDCL appear to be the basis for determining that wetland restoration projects are subject to water rights law in the same manner as irrigation projects.

3.0 Hydrology overview

The Sourdough Flats catchment totals 553 acres. Of that, approximately 480 acres is considered contributing drainage area. Noncontributing areas include those that are above existing dry draw impoundments. Before being ditched/drained, Sourdough Flats was a terminal basin that never discharged surface water based on its minor catchment size relative to its topographic capacity. Had water overtopped the natural outlet of the basin’s catchment, it would have overflowed into another depressional wetland basin to the northwest before overtopping and discharging into a natural watercourse to the north (see Figure 2). Attachment A includes a USGS StreamStats report which summarizes the basin characteristics and peak flow statistics of the Sourdough Flats catchment. Notably, USGS estimates the 50-percent annual exceedance probability flow to be just 3.83 cfs, meaning that over the long term, one can expect discharge from the ditch outletting from the basin to reach 3.83 cfs once every two years. Surface discharge from the ditched basin is ephemeral and occurs for brief periods following snow melt and precipitation events. The ditch could be considered a “losing” watercourse that is disconnected from the water table and constantly losing water into the ground¹.

The longest flow path of water before leaving the basin is 1.9 miles (Attachment A). When surface flow does leave the basin, it continues via an unnamed ephemeral waterway for approximately 2.76 stream miles, beginning by being diverted with an earthen berm that converts channelized flow into sheet flow to irrigate approximately 20 acres of land. Flow continues for another 14.08 miles along Hay Creek which has an intermittent flow regime (USGS Gage 06433500 Hay Creek at Belle Fourche SD – see Figure 3, Figure 4, and Figure 5). Hay Creek discharges into the Redwater River which flows just 0.16 miles before its confluence with the Belle Fourche River. Upon reaching the Belle Fourche River, flow

¹ <https://www.ag.ndsu.edu/publications/environment-natural-resources/riparian-complex-ecological-sites-of-north-dakota-a-pictorial-guide-of-riparian-complex-ecological-sites-common-in-north-dakota#section-4>

continues for 1.61 miles until reaching the Belle Fourche diversion and then the diversion canal is 7.49 stream miles before reaching the tail end of the Belle Fourche Reservoir. Hence, the total flow path distance is 26.1 "stream" miles as measured by the USGS National Hydrography Dataset (NHD). This is a conservative estimate as the NHD does not fully account for channel sinuosity. Photo 1 and Photo 2 below show the characteristics of the dense vegetation along Hay Creek and demonstrate its poorly defined channel and inefficient surface water conveyance.

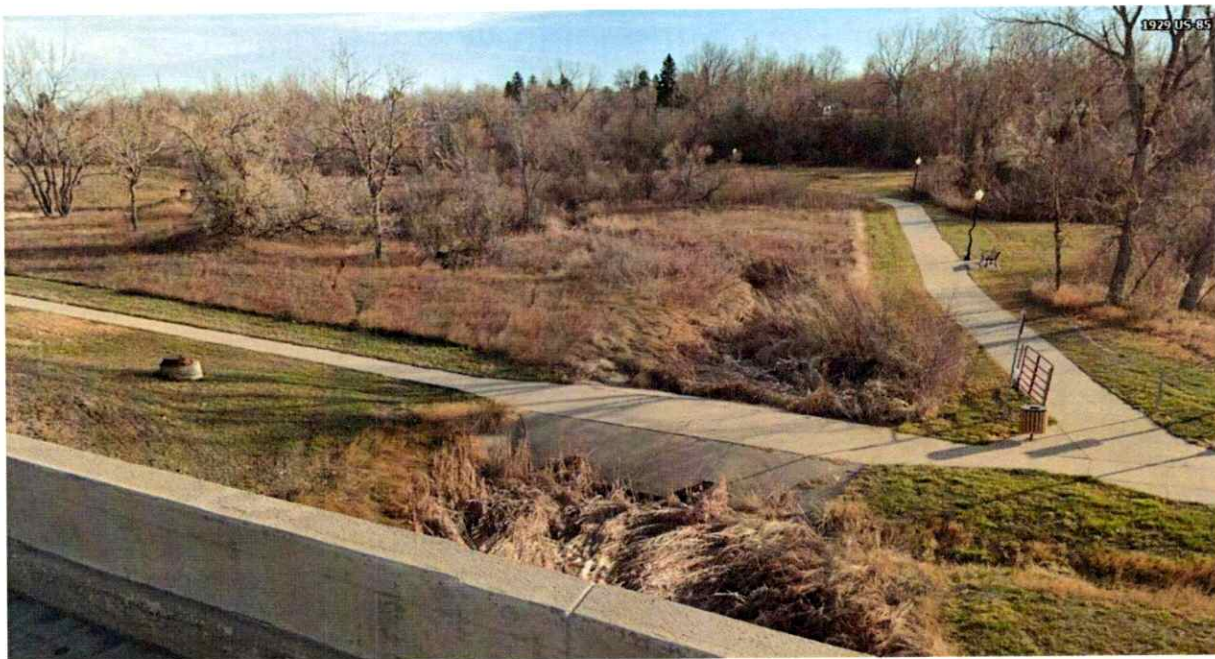


Photo 1. Google Earth street view image facing Hay Creek downstream of US85 in Belle Fourche, SD.



Photo 2. Google Earth street view image facing Hay Creek downstream of Highway 34 crossing located ~ 4 miles west of US85 (44.638864, -103.940966)

4.0 Support for Recommending Water Right Approval

The following criteria must be met for a water right to be issued:

- 1) There is a reasonable probability that unappropriated water is available.
- 2) The proposed diversion can be developed without unlawful impairment of existing rights.
- 3) The proposed use is a beneficial use.
- 4) **The proposed use is in the public's interest.**

The following sections offer support for approving this application.

4.1 Annual Yield

To picture any watershed as a completely impervious area of land that collects precipitation with no evaporation or evapotranspiration is overly simplistic and not at all like a real-world watershed. Many factors are universal in nature that determine how much water flows in a stream. Although universal, a wide range of variability exists, both temporally and spatially. These factors include:

Precipitation: The amount of precipitation that falls in the watershed as rain or snow explains the greatest amount of variation in streamflow. However, not all precipitation that falls in a watershed flows out (in some cases, little to none), and streams with intermittent to perennial flow regimes continue to flow where there is no direct runoff from recent precipitation.

Infiltration: Water infiltrates the soil and will remain in the shallow soil layer where it will gradually move downhill and eventually discharge into a stream by seepage into the stream bank. Some water may infiltrate much deeper, recharging groundwater aquifers. Infiltration depends on several characteristics of the watershed including soil type, soil saturation, land cover, and topographic relief.

Evaporation: Water from rainfall returns to the atmosphere largely through evaporation. The amount of evaporation depends on temperature, solar radiation, wind, atmospheric pressure, and other factors.

Transpiration/Evapotranspiration: Plants absorb water from soil and most of this water moves through the plant and is released into the atmosphere through the leaves. Transpiration varies based on the sun's heat, the characteristics and density of the vegetation, and plant available water within the soil.

Storage: Reservoirs store water and increase the amount of surface water that is lost to evaporation, infiltration, and even evapotranspiration.

4.1.1 Annual Yield: A Comparative Analysis of Hay Creek to Other Basins

The U.S. Geological Survey (USGS) published a report titled Hydrology of the Black Hills Area, South Dakota in 2022. It reports annual yield data throughout the study area, including several exterior basins of the Black Hills such as the Hay Creek watershed. Annual yield is the annual runoff per unit of area. The USGS 2022 study shows that annual yield characteristics vary widely among streams. For example, Hay Creek had an annual yield of just 0.2 inches/acre while Rhoads Fork near Rochford had an average annual yield of 9.34 inches/acre. Indian Creek near Arpan might be considered more comparable to Hay Creek from a hydrogeological perspective, but even it had more than four times

the annual yield of Hay Creek with 0.86 inches/acre (see Table 5 of USGS 2022 included in Attachment B). The key observation to note about Hay Creek is that it had the lowest annual yield among any streams in the USGS 2022 study – even when compared to streams that drain the exterior basins of the Black Hills (Hat Creek, Horsehead Creek, Indian Creek, Bear Butte Creek, and Hay Creek).

4.1.2 Posited Annual Yield of Sourdough Flats Basin

An average annual yield of 0.2 inch/acre over the ~500-acre Sourdough Flats catchment would yield on average just 8.33 acre-feet of water to the mouth of Hay Creek each year. Of that, water would continue to be lost as it flows further downstream.

Just like there is a wide range in variation in annual yield among basins as demonstrated within the USGS 2022 study, it's important to recognize the variability within the Hay Creek basin itself due to aforementioned factors that affect how much water reaches a point along a stream. Due to the relatively small size of Hay Creek (123 square miles), climatic conditions including precipitation and evaporation are unlikely to contribute to the variation. There are however two distinct differences in basin characteristics between Hay Creek as a whole and the Sourdough Flats catchment (topographic relief and storage) that are known factors in explaining variation in runoff. Table 1 presents parameters that describe key basin characteristics that are known to influence water yield and were taken from USGS StreamStats reports found in Attachment A. Sourdough Flats include just 0.7% of the overall Hay Creek basin. Sourdough Flats has a mean slope that is more than 4x less than that of Hay Creek and the percentage of the catchment with storage capacity is nearly 68x that of the overall Hay Creek basin. Although the Sourdough Flats basin has been ditched, it still retains the topographic capacity to store water and is further described in Section 4.1.3. These characteristics indicate that Sourdough Flats would generate less runoff (i.e., less annual yield) than the Hay Creek catchment as a whole.

Table 1. Hay Creek vs Sourdough Flats: A comparison of basin characteristic parameters which are known to influence water yield.

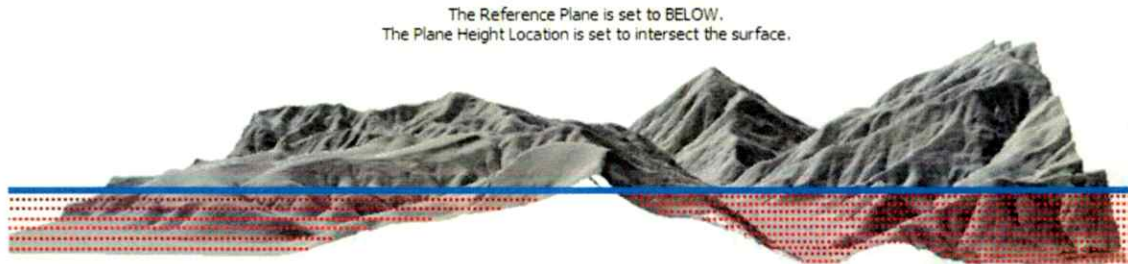
Basin Parameter	Unit	Hay Creek	Sourdough Flats
Drainage Area	square miles	122.95	0.87
Mean Basin Slope	Percent	16.2	3.7
Percentage of storage (combined water bodies and wetlands from the National Wetland Inventory)	percent	0.343	23.274

4.1.3 Existing topographic storage capacity of the Sourdough Flats Basin

Based on spatial analysis of a digital elevation model derived from a LiDAR dataset, the current pool depth of the basin reaches one foot before surface water outflow. Surface water discharges from the ditch for brief periods in some years when the snow melts and following large precipitation events or during wetter than normal periods. Evidence of the existing topographic water storage ability and seasonality/irregularity of water storage can be observed using a timelapse of Sentinel2 images (see attached mp4) ². The Sentinel image timelapse corroborates the landowner's anecdotal description of surface water ponding within the wetland.

² Created using <https://apps.sentinel-hub.com/eo-browser>

A 3D spatial analysis was performed in ArcGIS to quantify the water storage capacity of the Sourdough Flats basin based on current conditions. During the analysis, a reference plane was set at 3,283 feet above sea level, which is the elevation to which water would have to rise before being released from the ditch. A conceptual graphic of the 3D surface volume analysis is shown below. Surface volume was quantified in the area that fell between the existing ground and the reference plane. The surface volume was determined to be 35.65 acre-feet. Approximately 0.85 inches of surface runoff across the entire basin is required to fill the current capacity.



*Image produced by ESRI

4.2 Unappropriated Water Availability

The landowner, Dan Heck, has maintained Vested Water Right No 442-1 (See Attachment C). The Water Right appropriates 0.29 cfs to irrigate 20.1 acres of land just downstream of its diversion point. The water right has a priority date of June 1, 1946, and was most recently validated on September 27, 1989, upon the water right being transferred from its original owner to Dan Heck.

This priority date comes after the 1944 Belle Fourche River compact between Wyoming and South Dakota (1944) which split up unappropriated water between Wyoming and South Dakota. Thus, if the source of water being appropriated in 1946 was going to come from the outflow of ditching a terminal basin, practical logic would suggest there to be no real water to appropriate from this non-contributing "terminal" basin in 1944.

4.3 Abandoning an Existing Vested Water Right

The Validation of Vested Water Right Claim No. 442-1 For Irrigation appropriates 0.29 cfs "from the Belle Fourche River" and notes that the appropriation "may not exceed 3 acre-feet per year for each acre of irrigated land" (i.e., annual appropriation = 60.3 acre-feet) (See Attachment C). The vested water right states that it appropriates water "from the Belle Fourche River", suggesting that at the time, the Belle Fourche River had that much water to appropriate annually (60.3 acre-feet). As demonstrated above and knowing the true source of the irrigation water (the ditched wetland basin) it's clear that the Sourdough Flats basin yields nowhere close to 60.3 acre-feet of water into the Belle Fourche River. Thus, an argument could be made that there is now 60.3 acre-feet of water that was appropriated "from the Belle Fourche River" that was never really "used".

SDCL 46-5-34 does not allow transferring an irrigation water right to another use besides domestic use or use within a water distribution system. However, from a practical standpoint, the wetland restoration project would, in essence, abandon the vested irrigation water right because surface water that currently outlets from the Sourdough Flat wetland would no longer be released and dispersed to irrigate the land below.

5.0 Conclusions

Wetland restoration on Sourdough Flats would be conducted with the intent of creating wetland mitigation credit offsets to satisfy special conditions/requirements of projects subject to Section 404 Clean Water Act permits. The project would not be simply for the intent "to make a beneficial use of the water" (e.g., Fish and Wildlife Propagation). The intent of a wetland mitigation project is distinctly different from wetland restoration which has the sole purpose of conservation or fish and wildlife propagation.

As a summary, key data in this supplemental memo includes:

- Overall, the average annual water yield of Hay Creek is very low (0.2 inches/acre). Basin characteristics of Sourdough Flats suggest that its water yield would fall below the average water yield of Hay Creek as a whole. If, assuming Sourdough Flats yields the average annual yield of the Hay Creek basin, Sourdough Flats would annually contribute just 8.33 acre-feet of water to the mouth of Hay Creek (liberal estimate) under current drained conditions.
- The surface water storage capacity of the current basin was determined to be 35.65 acre-feet.
- The landowner would voluntarily abandon his vested water right for irrigation (appropriation = 60.3 acre-feet annually) because of the wetland restoration project.
- The existing water storage capacity of the wetland in addition to the irrigation water right totals 95.95 acre-feet.
- Supplying 95.95 acre-feet of water to the Sourdough Flats wetland would require 2.3 inches of runoff across its approximately 500-acre catchment area. Runoff events of that size occur infrequently and not during periods of sustained drought when water is needed most.
- Partially restoring original grades where a ditch had been cut through a hill (i.e., installing a ditch plug) would increase the existing topographic capacity, but even if indefinite, would result in a de minimis reduction in the total annual discharge of Hay Creek.

Reputable evidence demonstrates that the undertaking would certainly not exceed a de minimis impact on water supply and would not impair existing water rights. The proposed use is a beneficial use and is in the public's interest as it would provide compensatory mitigation to offset adverse wetland impacts as a requirement of Section 404 of the Clean Water Act. The compensatory mitigation project would provide an efficient means to offset wetland loss and provide 100% certainty for compliance to permit applicants. Therefore, upon completion, it would reduce the permitting approval timeframe and risks associated with receiving 404 permit authorization. This eliminates one barrier to investments in public and private infrastructure and therefore provides public benefits beyond the environmental benefits alone. Currently, no wetland bank is available west of the Missouri River in South Dakota and therefore the compensatory wetland mitigation burden falls on the permit applicant when seeking to build a project that results in filling a Water of the United States. The U.S. Army Corps of Engineers has been encouraging wetland bankers to develop wetland banks west of the Missouri River as they have been doing so for years east of the Missouri River.

6.0 Figures

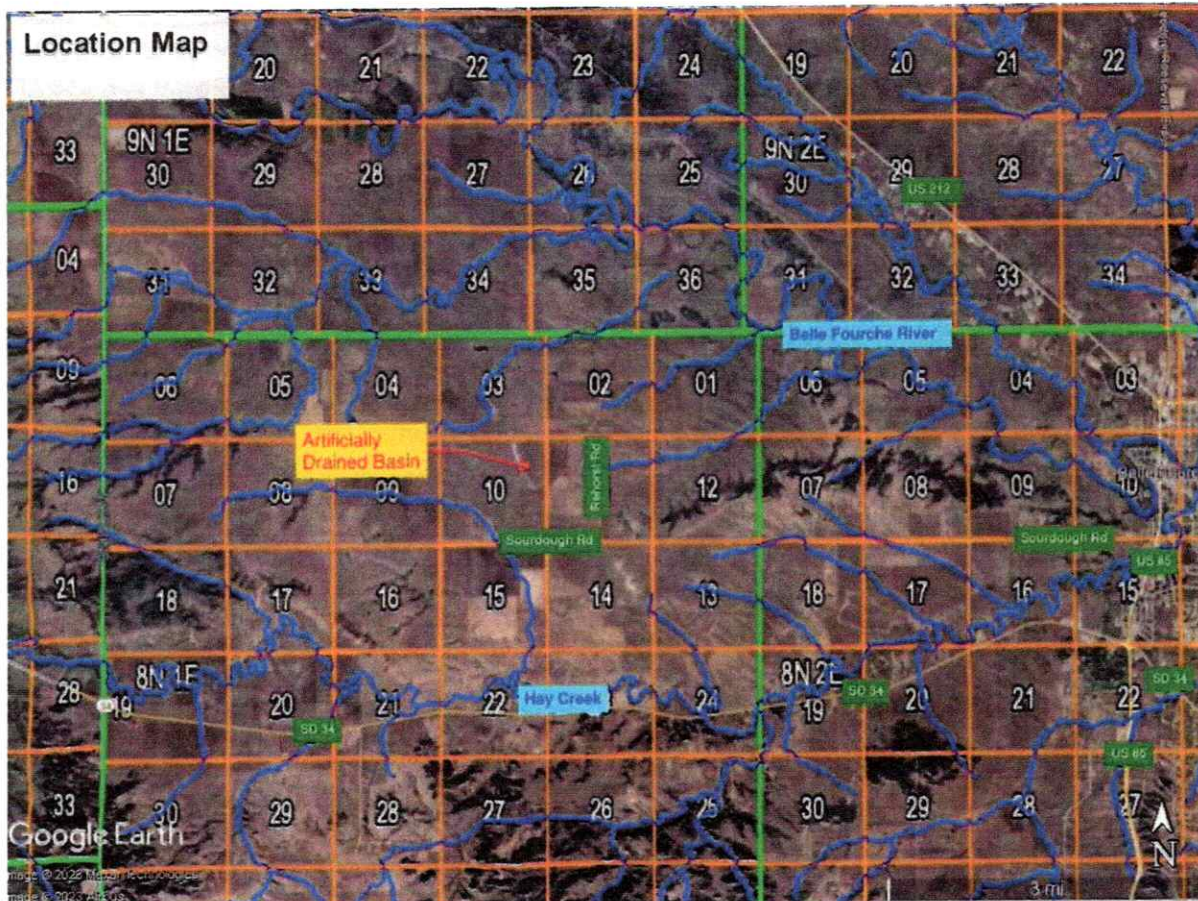


Figure 1. Project Location Map

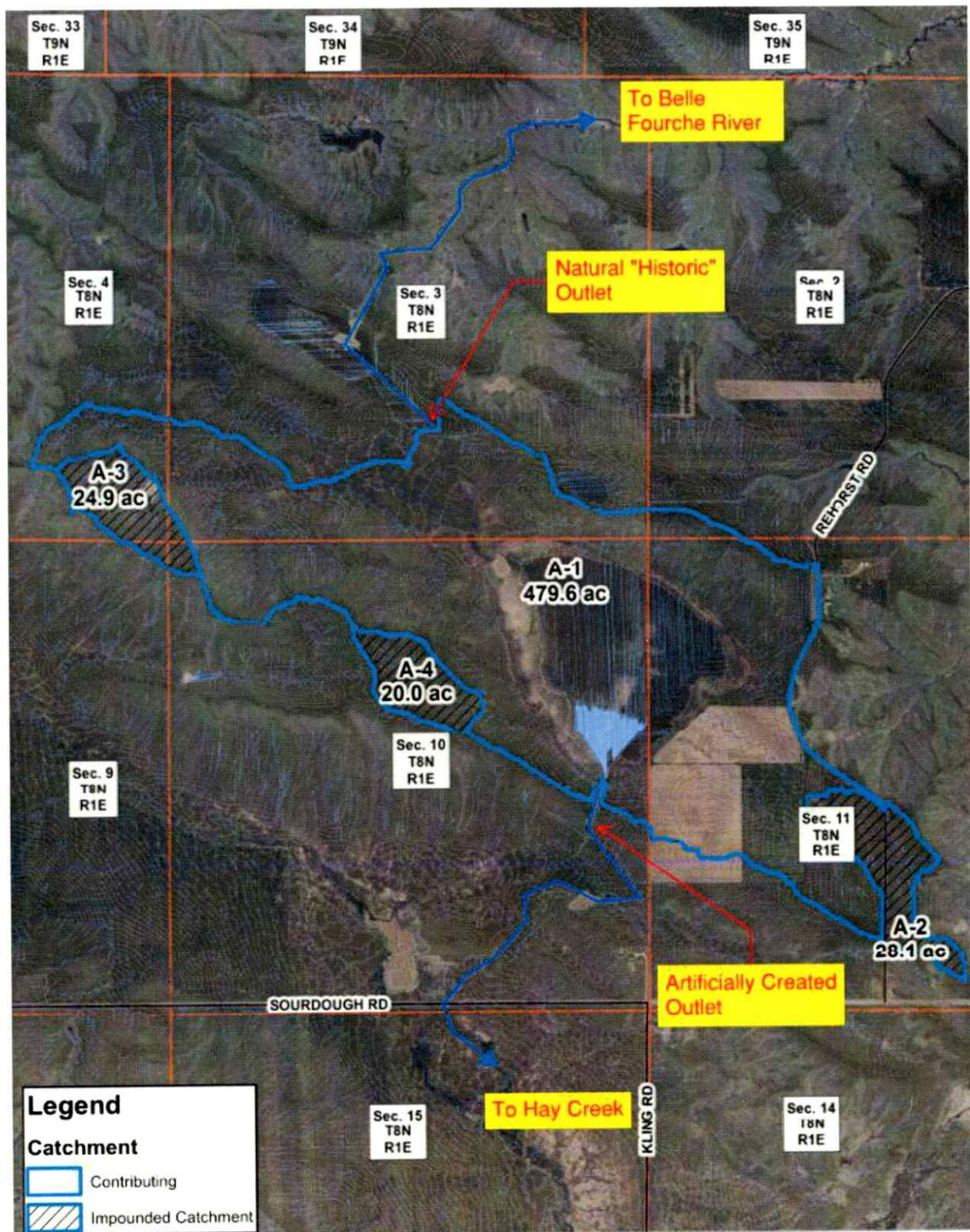


Figure 2. Wetland catchment and artificial and natural (historic) outlet. Catchment delineation based on LiDAR elevation data.

USGS 06433500 HAY CR AT BELLE FOURCHE SD
(19531001 - 19960929)

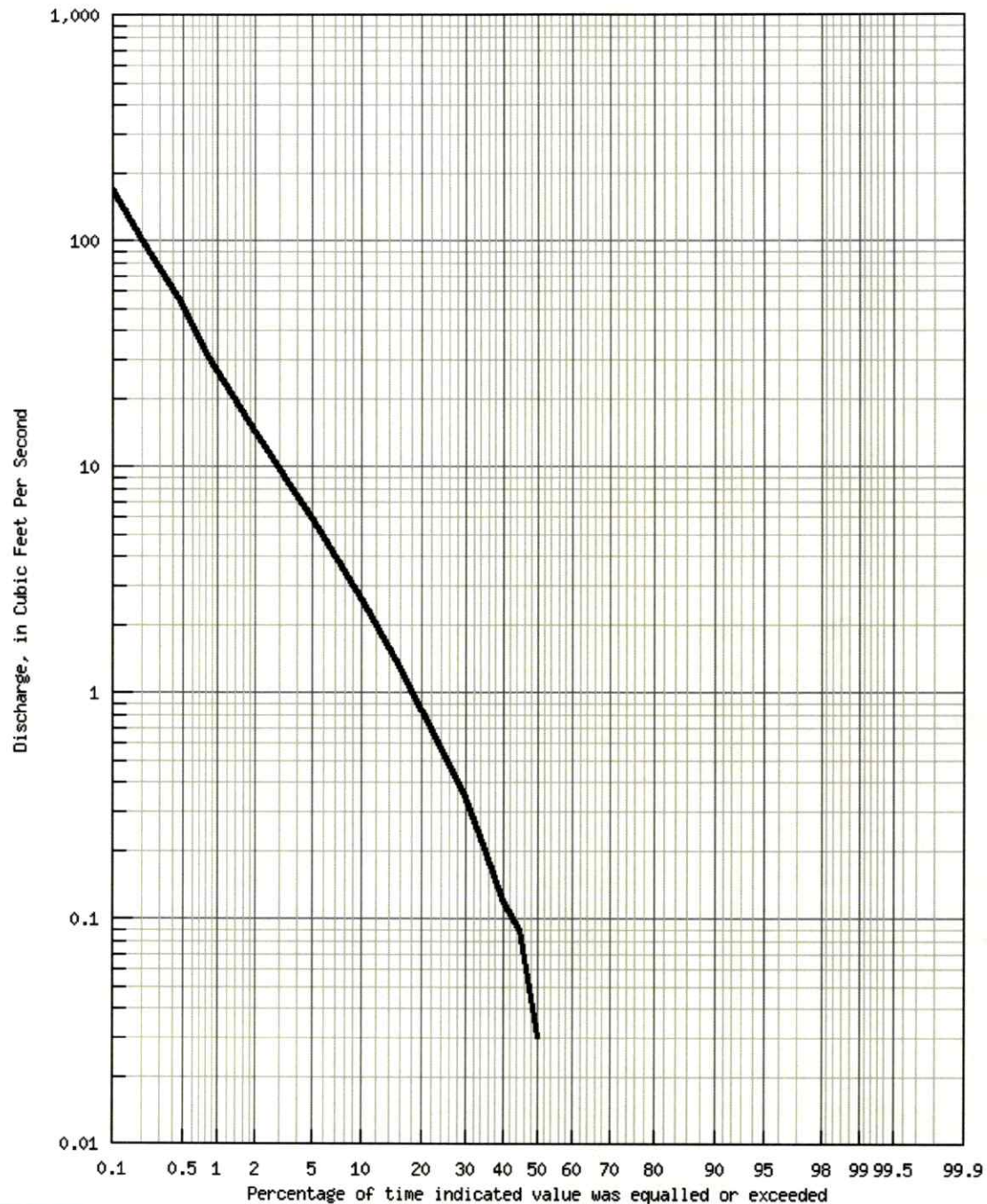


Figure 3. Flow Duration Curve of Hay Creek is indicative of an intermittent flow regime, with no flow 50% of the time.

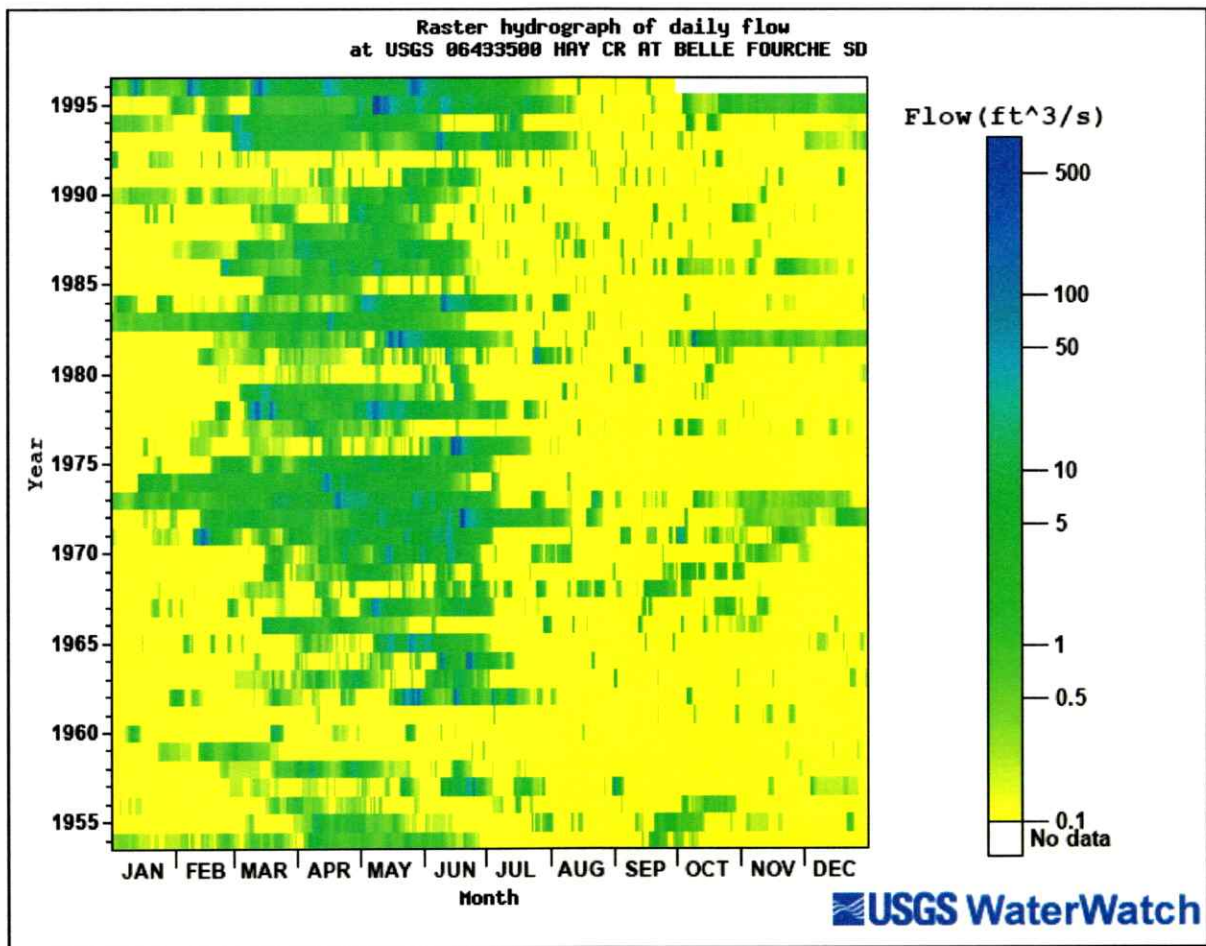
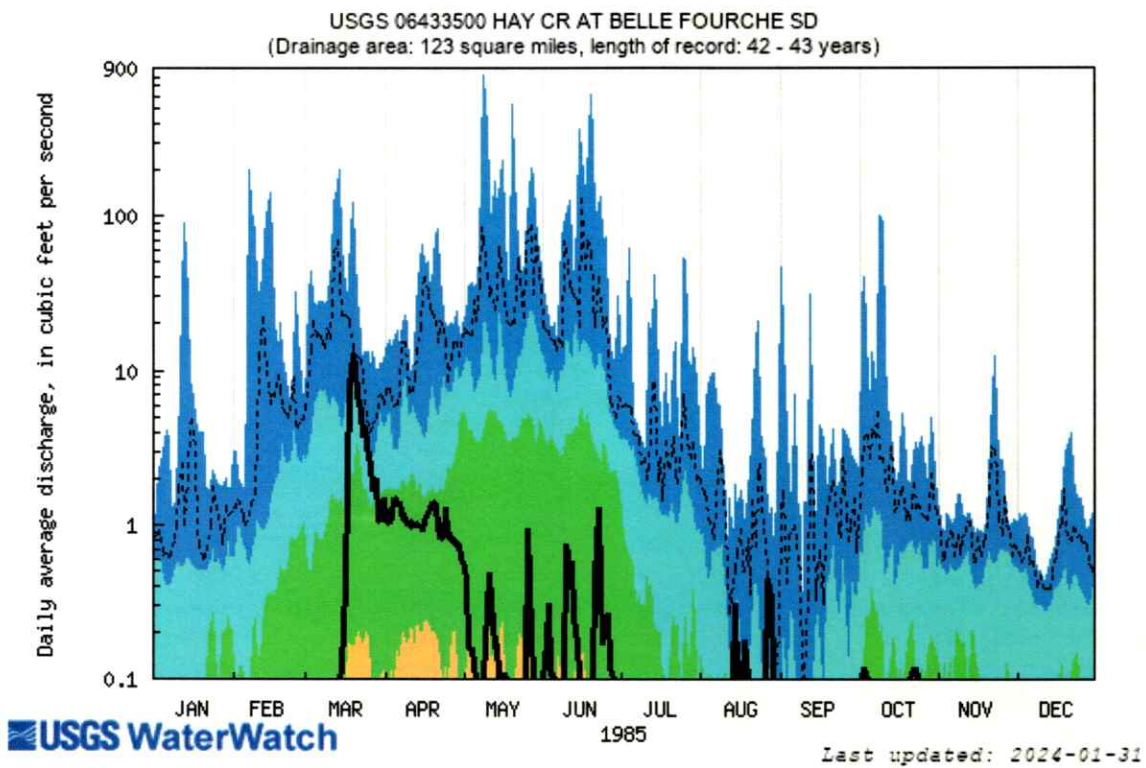


Figure 4. Raster hydrograph of Hay Creek.



Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile-highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

Figure 5. Streamflow duration hydrograph.

A

Attachment A: USGS
StreamStats Reports
Sourdough Flats
Hay Creek

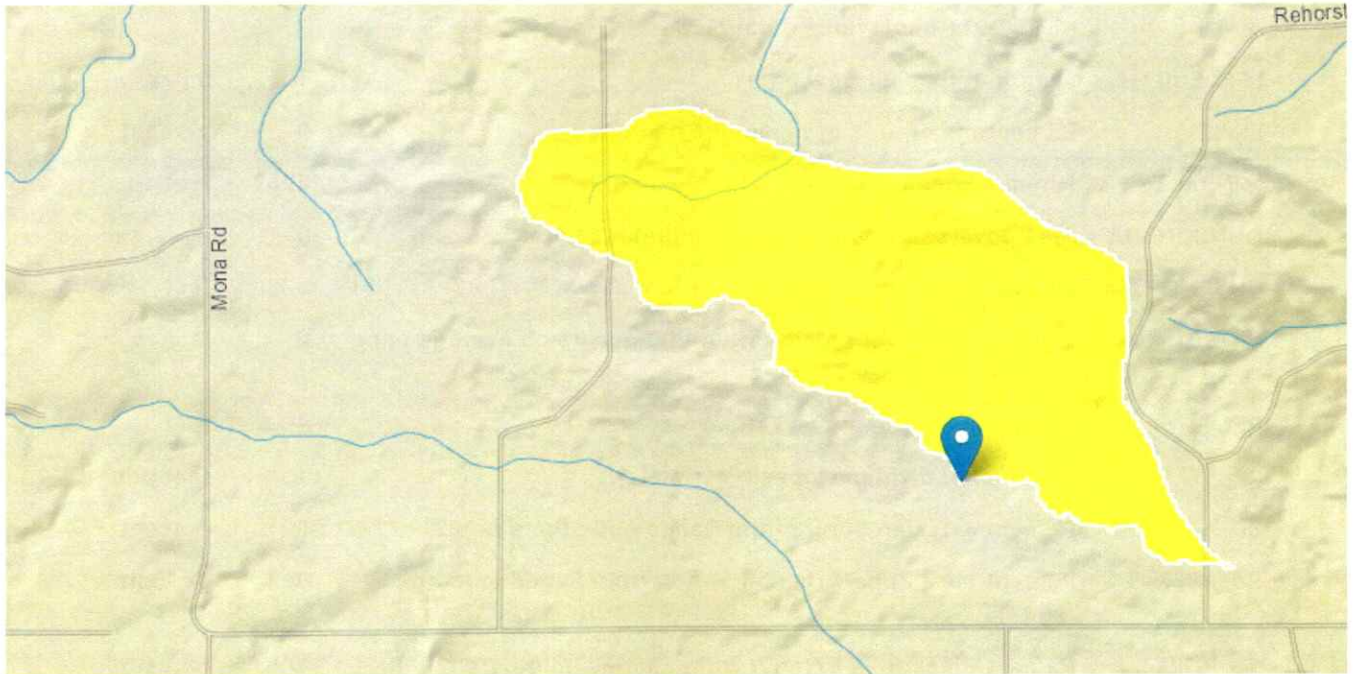
StreamStats Report - Sourdough Flats

Region ID: SD

Workspace ID: SD20240131153634694000

Clicked Point (Latitude, Longitude): 44.66804, -103.97354

Time: 2024-01-31 09:37:09 -0600



 Collapse All

➤ Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	6.24	miles
BSLDEM10M	Mean basin slope computed from 10 m DEM	3.7	percent
COMPRAT	A measure of basin shape related to basin perimeter and drainage area	1.89	dimensionless
CONTDATA	Area that contributes flow to a point on a stream	0.87	square miles
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	28.82	feet per mi
DRNAREA	Area that drains to a point on a stream	0.87	square miles
ELEV	Mean Basin Elevation	3298	feet
ELEVMAX	Maximum basin elevation	3359	feet

Parameter Code	Parameter Description	Value	Unit
LAKESNWI	Percent lakes and ponds as determined from the National Wetlands Inventory (2001)	0.142	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	0	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0.0268	percent
LFPLENGTH	Length of longest flow path	1.9	miles
LIME	Percentage of area of limestone geology	0	percent
MINBELEV	Minimum basin elevation	3263	feet
NONCONTDA	Area covered by noncontributing drainage area	0	square miles
OUTLETELEV	Elevation of the stream outlet in feet above NAVD88	3280	feet
PII_SD	Maximum 24-hour precipitation that occurs on average once in 2 years minus 1.5 inches	0	inches
RELIEF	Maximum - minimum elevation	96.8	feet
RELRELF	Basin relief divided by basin perimeter	15.51	feet per mi
SD_AS	Percent Artesian Spring from Sando and others (2008)	0	percent
SD_AS LZ	Percent Loss Zone/Artesian Spring from Sando and others (2008)	0	percent
SD_BHEXT	Percent Black Hills Exterior from Sando and others (2008)	100	percent
SD_CC	Percent Crystalline Core from Sando and others (2008)	0	percent
SD_LSTHW	Percent Limestone Headwaters from Sando and others (2008)	0	percent
SD_LSTLZ	Percent Limestone Loss Zone from Sando and others (2008)	0	percent
SD_SNDHLS	Percent Sand Hills setting from Sando and others (2008)	0	percent
SLOPERAT	Slope ratio computed as longest flow path (10-85) slope divided by basin slope	7.75	dimensionless
STORNWI	Percentage of storage (combined water bodies and wetlands) from the National Wetlands Inventory	23.274	percent
WETLNDNWI	Percent wetlands as determined from the National Wetlands Inventory (2001)	23.132	percent

➤ Peak-Flow Statistics

Peak-Flow Statistics Parameters [Subregion F]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
CONTDA	Contributing Drainage Area	0.87	square miles	0.63	920
CSL10_85	Stream Slope 10 and 85 Method	28.82	feet per mi	29.6	460

Peak-Flow Statistics Disclaimers [Subregion F]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [Subregion F]

Statistic	Value	Unit
50-percent AEP flood	3.83	ft ³ /s
20-percent AEP flood	6.49	ft ³ /s
10-percent AEP flood	8.84	ft ³ /s
4-percent AEP flood	12.7	ft ³ /s
2-percent AEP flood	16.5	ft ³ /s
1-percent AEP flood	20.6	ft ³ /s
0.2-percent AEP flood	29.4	ft ³ /s

Peak-Flow Statistics Citations

Sando, Steven K., 1998, A Method for Estimating Magnitude and Frequency of Floods in South Dakota: U.S. Geological Survey Water-Resources Investigations Report 98-4055, 48 p. (<http://pubs.water.usgs.gov/wri98-4055/>)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

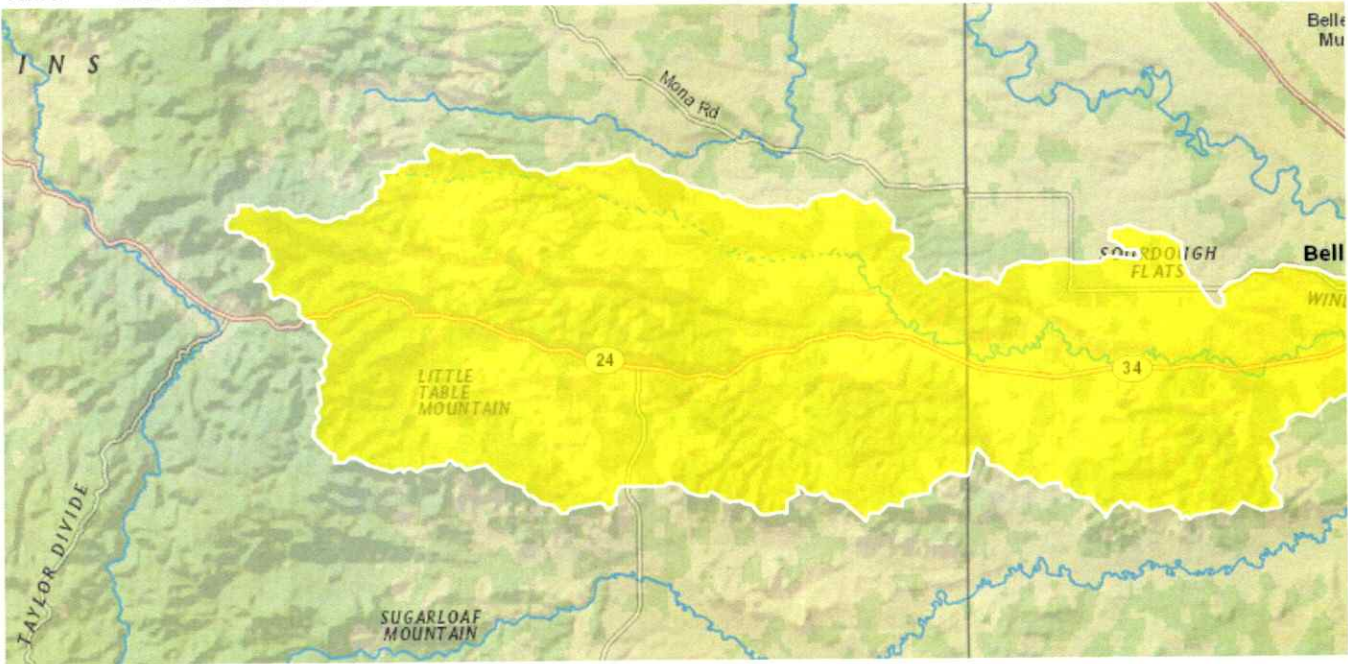
Application Version: 4.19.3

StreamStats Services Version: 1.2.22

NSS Services Version: 2.2.1

StreamStats Report - Hay Creek

Region ID: SD
Workspace ID: SD20240202143237834000
Clicked Point (Latitude, Longitude): 44.66664, -103.84711
Time: 2024-02-02 08:33:02 -0600



+ Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	94.9	miles
BSLDEM10M	Mean basin slope computed from 10 m DEM	16.2	percent
COMPRAT	A measure of basin shape related to basin perimeter and drainage area	2.41	dimensionless
CONTDATA	Area that contributes flow to a point on a stream	122.95	square miles
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known		feet per mi
DRNAREA	Area that drains to a point on a stream	122.95	square miles
ELEV	Mean Basin Elevation	3755	feet
ELEVMAX	Maximum basin elevation	4933	feet
LAKESNWI	Percent lakes and ponds as determined from the National Wetlands Inventory (2001)	0.132	percent

Parameter Code	Parameter Description	Value	Unit
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	1.49	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	0.4	percent
LFPLENGTH	Length of longest flow path		miles
LIME	Percentage of area of limestone geology	0	percent
MINBELEV	Minimum basin elevation	3020	feet
NONCONTDA	Area covered by noncontributing drainage area	0	square miles
OUTLETELEV	Elevation of the stream outlet in feet above NAVD88	3021	feet
PII_SD	Maximum 24-hour precipitation that occurs on average once in 2 years minus 1.5 inches	0	inches
RELIEF	Maximum - minimum elevation	1910	feet
RELRELF	Basin relief divided by basin perimeter	20.16	feet per mi
SD_AS	Percent Artesian Spring from Sando and others (2008)	23.426	percent
SD_ASLZ	Percent Loss Zone/Artesian Spring from Sando and others (2008)	23.426	percent
SD_BHEXT	Percent Black Hills Exterior from Sando and others (2008)	76.574	percent
SD_CC	Percent Crystalline Core from Sando and others (2008)	0	percent
SD_LSTHW	Percent Limestone Headwaters from Sando and others (2008)	0	percent
SD_LSTLZ	Percent Limestone Loss Zone from Sando and others (2008)	0	percent
SD_SNDHLS	Percent Sand Hills setting from Sando and others (2008)	0	percent
SLOPERAT	Slope ratio computed as longest flow path (10-85) slope divided by basin slope		dimensionless
STORNWI	Percentage of storage (combined water bodies and wetlands) from the National Wetlands Inventory	0.343	percent
WETLNDNWI	Percent wetlands as determined from the National Wetlands Inventory (2001)	0.212	percent

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B

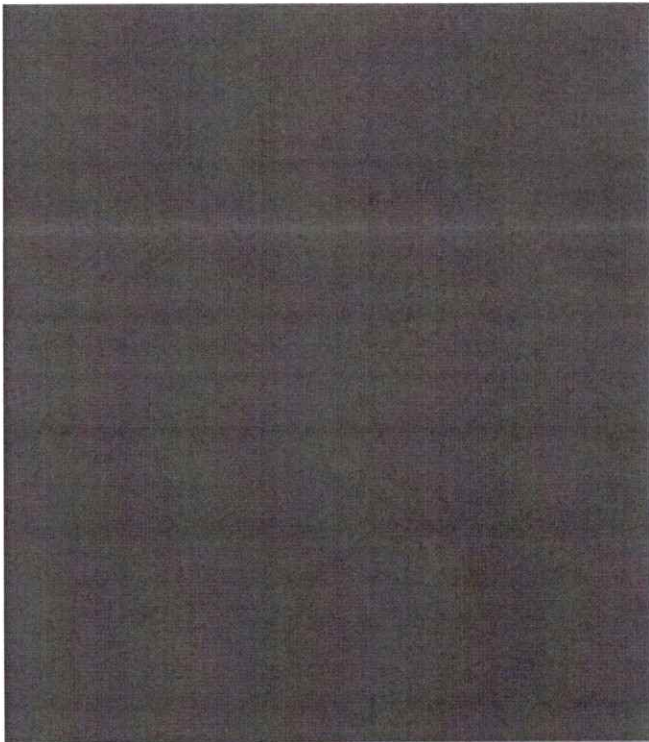
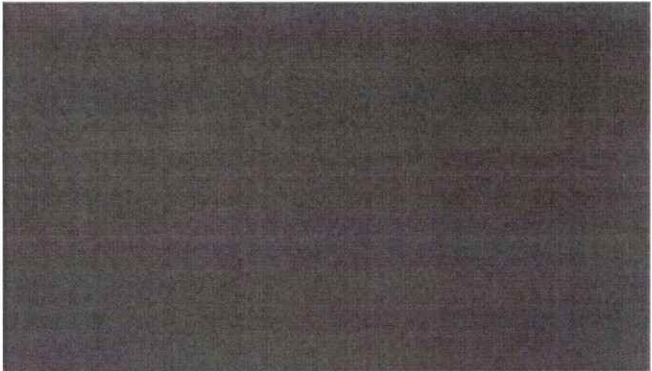
Attachment B: USGS
2022. Hydrology of the
Black Hills Area

Attachment B

USGS Hydrology of the Black Hills Study
can be downloaded at:

<https://pubs.usgs.gov/wri/wri024094/pdf/wri024094.pdf>.

The key information referenced in the memo
came from Table 5 and Figure 42.



C

Attachment C: Vested
Water Right 442-1



STATE OF SOUTH DAKOTA

WATER LICENSE No. 442-1

WHEREAS, On the 11th day of December A. D. 1959
Roward J. Rahorst

of Belle Fourche County of Butte Vested Right and State of
South Dakota duly made application (No. 442-1) to us for a permit to use .287
cubic feet per second of the waters of the Belle Fourche River
County of Butte, State of South Dakota, for irrigation
purposes; and

WHEREAS, On the 16th day of December A. D. 1959
Vested Right and recognizing
Permit No. 442-1 was issued to said applicant for the diversion of said water, ~~XXXXXXXXXX~~ for the
completion of the works of diversion therein described ~~XXXXXXXXXX~~ ~~XXXXXX~~
~~XXXXXX~~ and for the application to beneficial use of said
water ~~XXXXXXXXXX~~ ~~XXXXXX~~ ~~XXXXXX~~
and,

WHEREAS, On the 11th day of December A. D. 1959
Vested right
the holder of said permit made proof of the completion of adequate works for the diversion of .287
cubic feet per second of said waters, as evidenced by our Certificate No. 442-1
dated January 13, 1960 confirming the completion of works of sufficient capacity for
diverting and conveying to the place of intended use .287 cubic feet per second of water, with date of
priority of 1946 ~~XXXX~~ and,

WHEREAS, On the 11th day of December A. D. 1959
proof was duly made of the application to beneficial use of .287 cubic feet per second of said water;
for irrigation on portions of Section 10, T 8 N, R 1 E

NOW, THEREFORE, By the virtue of the authority vested in us by the laws of the State of South Dakota,
 We hereby grant and confirm to Howard J. Mahorat
 of Belle Fourche the holder and owner of vested Right permit No. 422-1
 a water right, dating from 1946 to the use of 287
 cubic feet per second of the waters of the Belle Fourche River
 in the County of Butte and State of South Dakota, or so much thereof as may be
 necessary for the purposes hereinafter mentioned, to be diverted at a point in the NE 1/4
Sec. 10, T. 8 N., R. 1 E.
 and conducted to and upon portions of the SE 1/4, Sec. 10, T. 8 N., R. 1 E.
more specifically described in the Certificate of Completion of Works
for the purpose of irrigation

subject, however, to the laws of the State of South Dakota applicable to a license for the use of the waters of the State, and subject, also to the local or community customs, rules and regulations which have been or may be adopted from time to time by a majority of the users from a common source of supply, canal or lateral from which such water may be taken, when such rules and regulations have for their object the economical use of such water.

WITNESS, My hand and seal of our office at Pierre, South Dakota,
 this 13th day of January A. D. Nineteen
 Hundred and Sixty

State Water Resources Commission

By:

J. W. GRIMES, Chief Engineer, Executive Officer

STATE OF SOUTH DAKOTA

Water License No. _____

To _____

Source of Supply _____

County _____

Ac't _____ C. F. S. _____

Point of Diversion _____

Place of Use _____

Purpose _____

Date of Priority _____

Recorded _____

In Book _____ of _____ Pages _____

Permit No. **442-1****Belle Fourche**Water Division No. **1** **River** Water District**Certificate of Completion of Works**

TO ALL WHOM IT MAY CONCERN:

This is to Certify, That **Howard J. Behorst**

of **Belle Fourche**, County of **Butte**, and State of **South Dakota**, the holder of **Vested Right** of Permit No. **442-1**, issued upon Application No. **442-1**, bearing date of priority of **1946**, authorizing the diversion of **.287** cu. ft. per second of the waters of **the Belle Fourche River** County of **Butte**, State of South Dakota, at **a point 172.0 rods N 169° 45' W of NE Corner, Sec. 10, T 9 N, R 1 E**

for **irrigation** purposes, has fully complied with the provisions of the laws of the State of South Dakota relating to proof of completion of the works of diversion set out and described in said Permit; that said works are **recognized as** ~~shown~~ in satisfactory ~~condition~~ for diverting and conveying to the place of intended use **.287** cu. ft. per second of water, and that the lands proposed to be irrigated by the use of said water are described as follows,

to-wit: **NE 1/4 Sec. 10, T 8 N, R 1 E 17.5 ac.**
SE 1/4 Sec. 10, T 8 N, R 1 E 2.6 ac.

Witness my hand this **13th** day of **January** A. D. 19**60**

State Water Resources Commission

By

J. W. GRIMES,

Chief Engineer, Executive Officer

Location No. 442-1Boya FwicheWater Division No. 1 Boya Water District**Proof of Application of Water to Beneficial Use****PETITION OF HOLDER**

Ques. 1. State your name, residence, occupation and postoffice address.

Ans. HOWARD T. HARRIS, JR., BOYA, BOYA DISTRICT, BOYA
DIVISION

Ques. 2. If acting in behalf of a corporation, state its name, principal place of business (if a foreign corporation, give name and postoffice of statutory agent,) your position with reference to same, and your authority for appearing in its behalf.

Ans. _____

Ques. 3. State date of posting and date of recording notice of appropriation.

Ans. JUNE, 1952

Ques. 4. State source of water supply and give exact location of point of diversion.

Ans. LATE BED, BOYA, BOYA DISTRICT, BOYADIVISION: 172.0 AC. N. 1/2 SEC. 10, T. 2 N., R. 1 E.

Ques. 5. Describe your works of diversion giving length and height of each dam and state amount of water they are capable of conveying from point of diversion to place of use, and give name of canal or ditch or other works by which water is conducted to such place of use, and date of completion of same.

Ans. GRANDDAM, BOYA, BOYA DISTRICT, BOYA
DIVISION: 172.0 AC. N. 1/2 SEC. 10, T. 2 N., R. 1 E.
PIPE WAS LAYED BY JOHN CHURCH AND JOHN CHURCH, BOYA
WERE CONSTRUCTED (4' DIAMETER, 15' DEPTH) WITH 4" DEEPS INSTALLED.

Ques. 6. State for what purpose water is used and describe place of use. (If for irrigation, name each subdivision in which used, and number of acres in each subdivision that have ACTUALLY been irrigated with said water.)

Ans. IRRIGATION
N. 1/2 SEC. 10, T. 2 N., R. 1 E. - 12.5 AC.
S. 1/2 SEC. 10, T. 2 N., R. 1 E. - 2.5 AC.

Ques. 7. If for other than irrigation purpose, state how applied, amount of horse power generated, etc.

Ans. _____

Ques. 8. What is the minimum amount of water required for the use specified above?

Ans. 100 GPM

Ques. 9. If you are not the person or representative of the corporation to whom above mentioned permit was originally issued, please state how ownership was acquired by present holder.

Ans. _____

Ques. 10. State when, how, in what amount and to what extent, the water diverted under above mentioned permit has been used.

Ans

(Sign)

I hereby certify that the foregoing testimony was read to the above subscriber before its signing, that I believe him to be the person he represents himself to be, and that said testimony was subscribed and sworn to before me, at my office in Belle Fourche, County of Butte, State of South Dakota, on this 30th day of November A. D. 1959

Witnesses.

I, the undersigned, do hereby certify that I am a duly qualified elector residing in the immediate vicinity of the diversion works designated in the foregoing testimony, that I have no interest in the works, water or land above described, that I have read the foregoing testimony and that I know of my own personal knowledge that the matters therein stated are true.

Location No.

PROOF OF APPLICATION OF
WATER TO BENEFICIAL USE

PETITION OF HOLDER

Amount of Water ----- C. & S.

Source -----

County -----

Purpose -----

Place of Use -----

Date of recording -----

Received and filed -----

NO. 442-1

NOTICE OF TRANSFER OF WATER PERMIT

TO: Water Rights
Foss Building
Pierre, SD 57501

Date: 11.15.1985

This is to notify you that the title to the lands described as follows:

20.1 acres - NW 1/4, SE 1/4 and SE 1/4 SE 1/4 Section 10, T8N, R1E

formerly owned by Howard J Rehorst

has been transferred to Dan Heck, Box 371, Belle Fourche SD 57717

(please include complete mailing address)

together with any rights to the beneficial use of water thereon as evidenced by

Water Right Permit No. 442-1 as provided for in SDCL 46-5-32 and 46-5-33.

You are therefore hereby requested to file this "Notice of Transfer of Water Permit" in its appropriate file at the Div. of Water Rights, Water Management Board as evidence of the change of ownership.

A fee of Two Dollars and Fifty Cents (\$2.50) is hereto attached to cover filing fees as required under SDCL 46-2-13.

STATE OF SOUTH DAKOTA)
County of Butte) ss.

I, Dan Heck being first duly sworn or my oath depose and say: That my relation to the above described undertaking is that of Owner, that I have read the above foregoing statement, and I know of my own personal knowledge that the information herein stated is true.

Dan Heck
(Signed)

Subscribed and sworn to before me this 15th Day of November, 1985

Annette L. Nelson
(Notary Public)

ANNETTE L. NELSON, Notary Public
My Commission Expires Mar. 24, 1988



WHR-820-9/83
Notice of Transfer of Water Permit

RECEIPT

Division of Water Rights

Nº 4 16243 •

South Dakota Department of Water and Natural Resources

Pierre, November 18, 1945

RECEIVED OF Van Neck, Box 271, Belle Fourche, SD 57717

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct works and to put water to beneficial use _____		
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. _____		
Fee for Filing Transfer Form <u>42-1</u>		2.50
Fee for Filing Extension Request _____		
Fee for Certified Copy of _____		
Fee for Print Copy of Map _____		
Fee for Certifying _____		
Fee for _____		
(Any Other Work Provided by Law)	Total	2.50

By John Hatch
Chief Engineer JOHN HATCH



**Department of
Water & Natural Resources**

Joe Foss Building Water Rights Division
Pierre, South Dakota 57501 Phone (605) 773-3352

November 13, 1985

No. _____

442-1

Dan Heck,
Box 371
Belle Fourche, South Dakota 57717

Dear Mr. Heck:

Enclosed is receipt No. 4 10243 in the amount of \$ 2.50 which you
paid for transfer of Water Right No. 442-1.

Our records now show you as the owner of this Water Right.

Sincerely,

Maxine Stirling
Staff Assistant

ms/
Enc.

 **Department of
Water & Natural Resources**
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

September 21, 1988

NOTICE

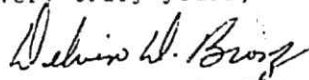
Dan Heck
Box 371
Belle Fourche SD 57717

Dear Mr. Heck:

I am writing to notify you that pursuant to the Notice of Intent to Validate Vested Water Right Claims dated June 20, 1988 that I intend to oppose validation of your water right claim No(s). 442-1 until a field inspection has been completed. The claim has either never been inspected or an inspection was conducted so long ago that a new inspection is needed. An inspection is needed to determine the current state of your vested water right claim.

A staff member from the Division of Water Rights will be contacting you and scheduling an inspection of your water project. If we can answer any questions, please contact us.

Very truly yours,


for JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352



Water Rights Division - DWR

File No. 442-1

Conversation or File Documentation

NAME OF PERSON OR FILE: Dan HeckADDRESS: Box 371, Bellvue, W.D. 57717 COUNTY ButteDATE: 5-22-89 TELEPHONE 892-7864RE: Vested Right Inspection

COMMENTS:

On Monday April 17, 1989, Vested Right No. 442-1was inspected. Accompanied by Mr. Heck the area was inspectedThe land and diversion point seemed to be the same as the mapfor VR #442-1 on our files.

File in Permit or other file as necessary. Use to document conversations and what the other party was told; why action or decision was made.

NAME: NR Anderson

South Dakota Department of
Water & Natural Resources

Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3181

March 28, 1991

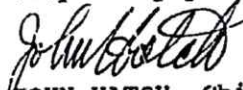
Dan Heck
Box 371
Belle Fourche SD 57717

Dear Mr. Heck:

The Water Management Board has validated the enclosed Vested Water Right No. 442-1. This validation gives legal status to the claim and is the final document for your vested right.

As long as you use the water beneficially, as stated in the validation, State Water Laws provide that you have a continuing right to use the water.

Very truly yours,



JOHN HATCH, Chief Engineer
Water Rights Division
605 773-3352

enclosure

SOUTH DAKOTA

VALIDATION OF VESTED WATER RIGHT CLAIM NO. 442-1 FOR IRRIGATION

Date Claim Accepted For Filing December 11, 1959.

Date of Validation September 27, 1989.

Pursuant to SDCL 46-2A-17 the Water Management Board validated Vested Water Right Claim Permit No. 442-1 for irrigation purposes for Dan Heck, Box 371, Belle Fourche, South Dakota 57717 with the following limitations, conditions and qualifications:

1. Vested Water Right No. 442-1 appropriates 0.29 cubic feet of water per second from the Belle Fourche River to irrigate 20.1 acres. The diversion point is located in the NE 1/4 SE 1/4 and the irrigated acres are located in the NW 1/4 SE 1/4 and SE 1/4 SE 1/4; all in Section 10, T8N, R1E.
2. The appropriation may not exceed the amount of water needed for beneficial use for irrigation. The appropriation may not exceed 3 acre feet per year for each acre of irrigated land. The water is to be used during the following annual period: April 1 - October 31.
3. The priority date of the Vested Water Right is June 1, 1946.
4. The water use system has been constructed and water has been applied to beneficial use.
5. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

WATER MANAGEMENT BOARD

By: _____

John H. Hattis
Chief Engineer
Division of Water Rights
Dept. of Water and Natural Resources

MAR 28 1991

date _____

Rodriguez, Rachel

From: DANRnoreply <DANRnoreply@state.sd.us>
Sent: Monday, March 4, 2024 9:33 AM
To: Maberry, Vickie; Duvall, Ron; Rodriguez, Rachel; Dewell, Amanda
Subject: [EXT] Check Arrival - Water Permit Application Fee

Please use caution in opening any attachments or clicking on any links.

This message was received from an external mail system, but has been made to appear as though originating from an internal State email address. If you are not expecting this message or are concerned about its content, please forward it to the reportspam@state.sd.us mailbox.

FROM: Tetonka LLP
AMOUNT: \$200.00
FOR: Water Permit Application Fee
CK DATE: 2/28/2024
CK RECD: 3/4/2024
CK NUM: 1798.00

COMMENTS (if any):
Dan Heck's Sourdough Flats

[DANR Check Registry](#)

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date February 23, 2024

RECEIVED OF Dan Heck PO Box 607 Belle Fourche SD 57717

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

Fee for Application for Permit No. <u>2035-1</u> to Appropriate Water, to construct and to put water to beneficial use	\$750.00
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. _____	\$ _____
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	\$750.00

By Eric Ironlund
Chief Engineer
vm

RECEIPT

WATER RIGHTS PROGRAM South Dakota Department of Agriculture and Natural Resources

Date March 4, 2024

RECEIVED OF Tetonka LLP for Dan Heck PO Box 607 Belle Fourche SD 57717

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

Fee for Application for Permit No. _____ to Appropriate Water, to construct and to put water to beneficial use	\$ _____
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. <u>2035-1</u>	<u>\$200.00</u>
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	<u>\$200.00</u>

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

June 7, 2024

442-1
2035-1

Dan Heck
PO Box 607
Belle Fourche SD 57717

Dear Mr. Heck:

I am writing concerning the Notice of Cancellation you received for Vested Water Right No. 442-1 authorizing the irrigation of 20.1 acres within the NW ¼ SE ¼ & SE ¼ SE ¼ Section 10, T8N-R1E, Butte County.

Kendall Vande Kamp with HDR Engineering contacted me concerning postponing the cancellation consideration of No. 442-1 until after development of the wetlands mitigation project authorized by Water Permit No. 2035-1. In light of details to be worked out to complete works under Permit No. 2035-1, cancellation consideration of No. 442-1 is being withdrawn.

Vested Water Right No. 442-1 has been removed from the Water Management Board's July 2024 agenda and will NOT be reconsidered for cancellation pending the outcome of construction of works authorized by Permit No. 2035-1.

Please let me know if you have any questions. I can be reached at 605.773.5670. or by email at ron.duvall@state.sd.us.

Sincerely,

Ron Duvall, Engineer
SD DANR, Water Rights Program

c. Kendall Vande Kamp, HDR Engineering, 100 S. Phillips Ave, STE 401, Sioux Falls SD 57104

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Tuesday, February 27, 2024 11:15 AM
To: sourdoughdkh@gmail.com
Subject: Application for Water Permit

Good morning,

I am in receipt of your application for a water permit. Everything looks good, I just need the fee which is:

- \$750 application fee + \$200 inspection fee = \$950.00
- For the "annual period" water is to be used, the dates will be April 1 – June 30, please confirm that you agree.

Thank you,

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



Rodriguez, Rachel

From: Gronlund, Eric
Sent: Thursday, February 22, 2024 4:41 PM
To: Rodriguez, Rachel; Dewell, Amanda
Cc: Rath, Mark; Steen, Nakaila; Hullinger, Brittan; Duvall, Ron
Subject: FW: [EXT] Sourdough Flats - Water Rights Permit Application for wetland restoration / wetland mitigation bank project (email 2 of 2)
Attachments: Attachment B. USGS 2002 - Hydrology of the Black Hills Area.pdf

Mark has talked an attorney on this and I've talked with Mr. Vande Kamp

The Heck's are submitting the application for this. Mr. Vande Kamp sent this supplemental information. Should be coming in the mail.

This was initially described as a wetland restoration project and the inquiry was whether a water permit is required to restore a wetland. There is an Attorney General's opinion that as I recall says yes a water permit is required if it will cause the impoundment of more than 25 acre feet of water. Which this will impound greater than 25 acre feet. I shared that AG's opinion with the consultant.

When Mr. Vande Kamp called today he informed me that this water in the Belle Fourche watershed. Also that he would be providing a document that he prepared showing that very little water impounded would make it to the Belle Fourche River.

For everyone's information (and Mark can correct me if I am wrong) anything in the Belle Fourche watershed upstream of the diversion into the Orman dam for the Belle Fourche Irrigation District is considered a closed basin (aka fully appropriated). However, if the water captured wouldn't make it the Belle Fourche this is what is water rights is known as a "futile" call. So whoever reviews this application once it gets assigned will need to keep that in mind.

But for now we need to get the application in the mail with appropriate fee and let Rachel review for completeness.

This was unique enough that thought should loop everyone in.

From: Vande Kamp, Kendall <Kendall.VandeKamp@hdrinc.com>
Sent: Thursday, February 22, 2024 2:04 PM
To: Gronlund, Eric <Eric.Gronlund@state.sd.us>
Cc: Jeff Oyen <Jeff@TetonkaMitigation.com>; Paul Heiberger <Paul@TetonkaMitigation.com>; 'jhieb@rwwsh.com' <jhieb@rwwsh.com>; SourdoughDKH@gmail.com
Subject: RE: [EXT] Sourdough Flats - Water Rights Permit Application for wetland restoration / wetland mitigation bank project (email 2 of 2)

Eric - Attachment B is attached. Please confirm upon receipt.

Thanks!

Kendall Vande Kamp
D 605.782.8115 M 507.360.4186

hdrinc.com/follow-us

From: Vande Kamp, Kendall <Kendall.VandeKamp@hdrinc.com>
Sent: Thursday, February 22, 2024 2:02 PM
To: Gronlund, Eric <Eric.Gronlund@state.sd.us>

Cc: Jeff Oyen <Jeff@TetonkaMitigation.com>; Paul Heiberger <Paul@TetonkaMitigation.com>; 'jhieb@rwwsh.com' <jhieb@rwwsh.com>; SourdoughDKH@gmail.com

Subject: Sourdough Flats - Water Rights Permit Application for wetland restoration / wetland mitigation bank project (email 1 of 2)

Eric,

Good afternoon. As discussed earlier today, Dan and Kay Heck will be mailing a signed copy of the attached water rights permit application for this project. It may be in the mail already so I would expect DANR to receive it early next week.

On behalf of Dan and Kay Heck and Tetonka Mitigation LLP (copied), I'm providing a memo and attachments that augment the application. The memo summarizes our due diligence regarding the water rights. It presents factual evidence we found that supports the case that no significant impact on existing water rights would result from the project.

Because of the attachment size, I will follow this email up with another that includes the report referenced in the memo as *Attachment B. USGS 2002. Hydrology of the Black Hills Area*

Please let me know if you have questions.

Thank you!

Kendall Vande Kamp

Environmental Scientist

HDR

101 South Phillips Avenue, Suite 401

Sioux Falls, SD 57104-6735

D 605.782.8115 **M** 507.360.4186

kendall.vandekamp@hdrinc.com

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**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. 2035-1, Dan Heck**

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. 2035-1, Dan Heck, PO Box 607, Belle Fourche SD 57717.

The Chief Engineer is recommending APPROVAL of Application No. 2035-1 because 1) 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 qualification:

1. Water Permit No. 2035-1 appropriates up to 200 acre-feet of water annually.

See report on application for additional information.

Eric Gronlund, Chief Engineer

April 29, 2024

NOTE: As set forth in the applications supporting documentation you are willing to abandon Vested Water Right No. 442-1. Therefore, the Water Rights Program will schedule cancellation of Vested Water Right No. 442-1. You will received notice of hearing scheduling cancellation in the near future.

Report to the Chief Engineer
On Water Permit Application No. 2035-1

Dan Heck

April 29, 2024

Water Permit Application No. 2035-1 proposes to impound up to 200 acre-feet of runoff water annually by plugging a ditch to restore a wetland. The project is known as the Sourdough Flats Wetland Restoration. The ditch plug and impounded water is to be located in the NE $\frac{1}{4}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ of Section 10; W $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 11; all in T8N-R1E. The water is requested to be for fish and wildlife propagation and to develop a wetland mitigation bank. The site of interest is located in Butte County approximately five miles west of Belle Fourche, SD.

South Dakota Codified Law SDCL 46-2A-2 directs the Chief Engineer to make a recommendation to the Water Management Board on a water permit application. The Chief Engineer needs to consider four criteria when making a recommendation on whether a permit should be approved, approved with qualifications, denied, or deferred. They are: 1) 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 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.

This report will analyze the best available information and make a recommendation to the Chief Engineer on the first two criteria the Chief Engineer needs to consider in making an official recommendation to the Water Management Board.

Review of Water Source and Availability

Water Permit Application No. 2035-1 proposes to impound up to 200 acre-feet of upland runoff water annually by plugging a ditch to restore a wetland. The upland runoff is located within the Sourdough Flats catchment on the edge of the northeast corner of the Hay Creek Watershed (USGS, 2004).

An analysis was submitted with Water Permit Application No. 2035-1 completed in February 2024 by Kendall Vande Kamp with HDR Engineering analyzing the impact to existing water right/permit holders if this application were approved. Conclusions from the engineering analysis include the average annual water yield of Hay Creek is approximately 0.2 inches per acre (utilized Driscoll et al., 2002). Assuming the Sourdough Flats catchment (500 acres used in engineering analysis) yields the same average annual water yield of Hay Creek (0.2 inches per acre), results in the catchment to contribute approximately 8.3 acre-feet of water to the Hay Creek watershed under the current culvert conditions.

A separate analysis was performed for this report. The watershed area above the Sourdough Flats catchment was delineated using NRCS Engineering Tools for ArcGIS 10.3 (USDA-NRCS, 2024a). The elevation data used is a Light Detection and Ranging radar (LiDAR) DEM (Digital

Elevation Model) dataset with 1-meter grid spacing (SDGS, 2024). A DEM is a representation of the bare ground (bare earth) topographic surface of the Earth excluding trees, buildings, and any other surface objects. Within the Hay Creek watershed, the contributing watershed to the Sourdough Flats catchment area was delineated to be 0.87 square miles, or approximately 558 acres. Figure 1 displays a delineation of the contributing watershed area above the Sourdough Flats catchment within the Hay Creek watershed.

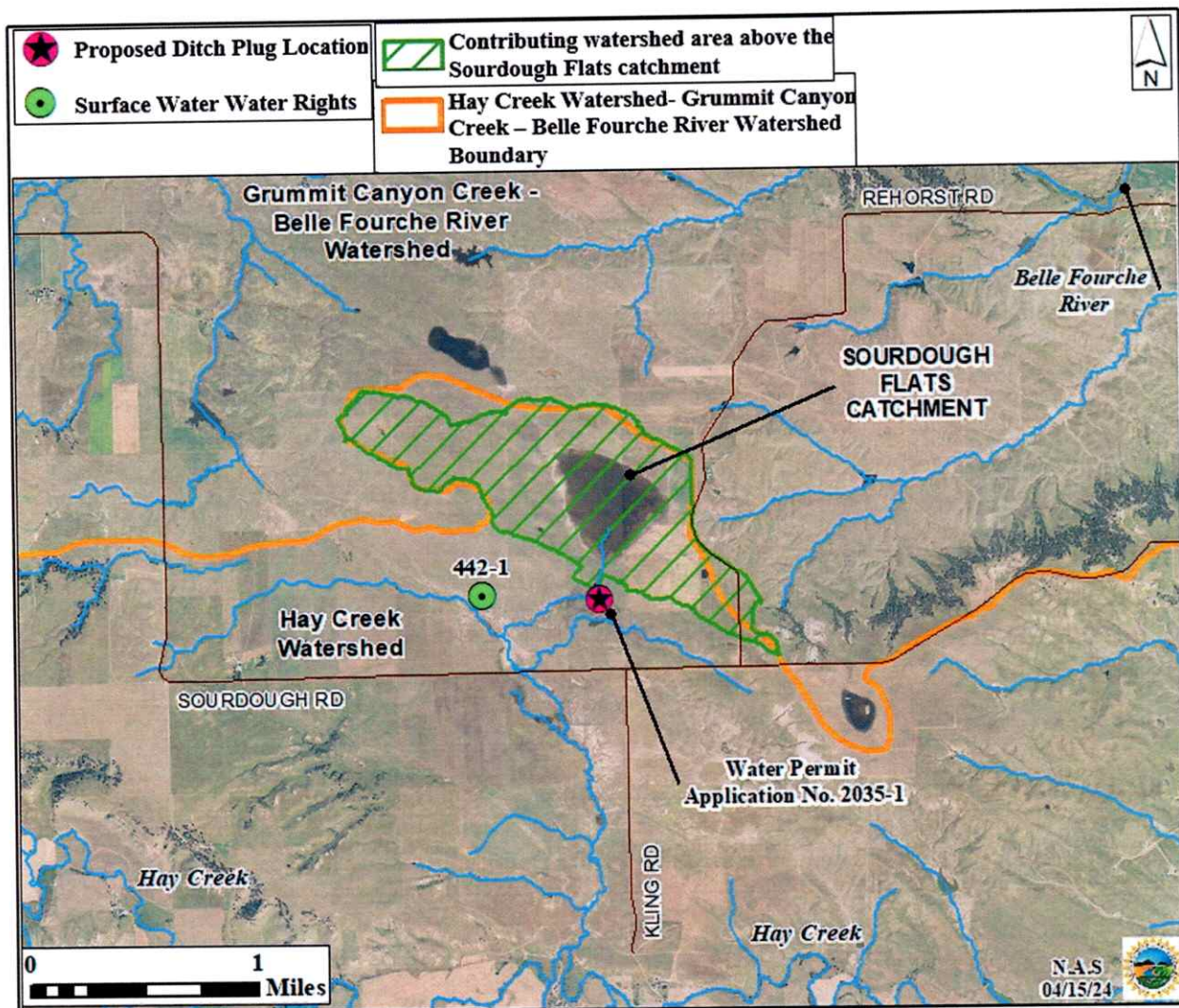


Figure 1: Map of the approximate watershed delineation above the proposed Sourdough Flats catchment within the Hay Creek watershed made using the LiDAR 1-meter spaced dataset (SDGS, 2024; USGS, 2004)

The NRCS annual surface yield method for South Dakota was used to estimate annual surface yield for the drainage area upstream of the Sourdough Flats catchment (USDA-NRCS, 1984). This NRCS method estimates the volume of runoff which can be expected for a twelve-month period at certain annual probabilities using contributing drainage area, soil cover complex number (runoff curve number, CN), and watershed location on an isogram map (USDA-NRCS, 1984).

The soil cover complex number, or the runoff curve number (CN) is necessary to determine the annual surface yield using the NRCS method (USDA-NRCS, 1984). The determination of the runoff curve number depends on the delineated watershed's soil and cover conditions (accessed from USDA-NRCS, 2024b), represented as hydrologic soil group, cover type, treatment, and hydrologic condition (USDA-NRCS, 1986). The general cover type for the delineated watershed is pasture or range (natural – fair conditions) (USDA-NRCS, 1984). Using USDA-NRCS Soil Survey, a shapefile of the delineated watershed using 1-meter LiDAR data was imported to determine hydrologic soil groups for regions of the watershed (Figure 2) (SDGS, 2024; USDA-NRCS, 2024b). Using cover type and hydrologic soil group, a runoff curve number was determined by calculating the weighted average of hydrologic soil groups and their respective curve numbers and rounding to the nearest whole number. This method is shown on Table 1. Runoff curve numbers range from 40 to 100 - and a higher curve number means that more runoff occurs in the watershed (USDA-NRCS, 1986).

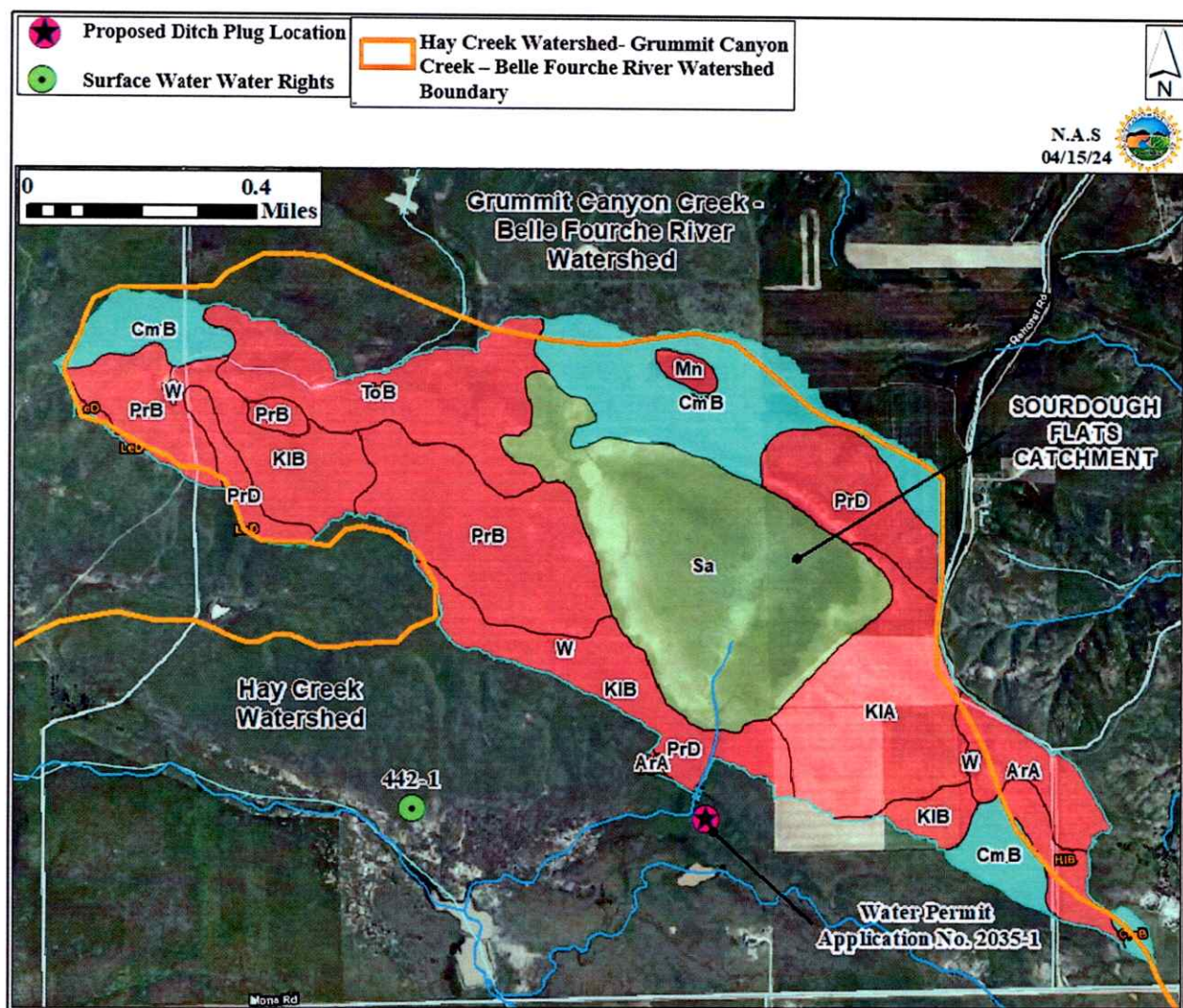


Figure 2: Shapefile of the Sourdough Flats Catchment within the Hay Creek watershed delineated from 1-meter spaced LiDAR data to determine hydrologic soil groups as determined by soil map units (SDGS, 2024; USDA-NRCS, 2024b; USGS, 2004)

Table 1: Weighted average of hydrologic soil group ratios for pasture/range land (fair condition) used to determine curve number (USDA-NRCS, 1984 and 2024b)

Soil Group	CN	Map Unit Symbol	Map Unit Name	Weight	Weighted Values
C	79	CmB, ToB	Nunn Loam, Two Top Clay	0.261	20.62
D	84	Sa, PrB, KIB, KIA	Sage, Pierre Clay, Kyle Clay	0.739	62.08
				Weighted Average CN	82.7
				CN	83

Table 2: Estimated Total Annual Yield of Surface Runoff (USDA-NRCS, 1984) using an estimated watershed area of approximately 558 acres using the 1-meter LiDAR dataset and runoff curve number of 83 (SDGS, 2024; USDA-NRCS, 1984)

Probability of Occurrence	Inches of Annual Yield per Acre	Annual Yield (acre-feet)
0.8	0.27	12.6
0.5	0.64	29.8
0.2	1.6	74.4
0.1	2.5	116.3

Water Permit Application No. 2035-1 proposes to impound 200 acre-feet in the Sourdough Flats catchment. To determine the probability of occurrence for 200 acre-feet of water in the catchment, the total runoff from Table 2 was plotted against the probability of occurrence, shown in Figure 3. The closer an r square value is to 1, the data is better correlated, and there is more reliability in a trendline. Solving the trendline for a volume of 200 acre-feet, results in the estimated annual probability of the availability of annual yield fulfilling the proposed volume occurring less than 10% of the time.

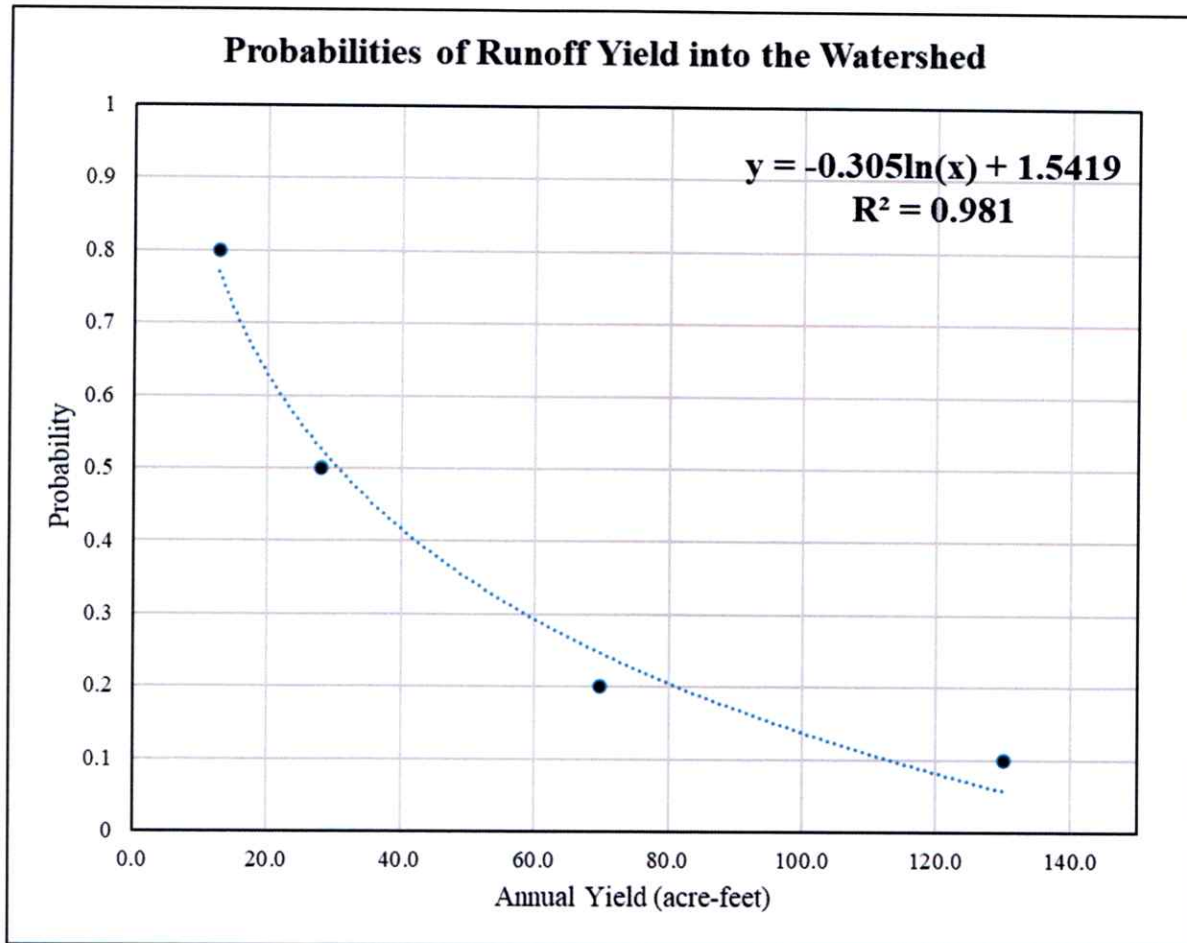


Figure 3: Plot of annual yield for the Sourdough Flats Watershed against the probability of occurrence. Note that this plot and trendline is only applicable for this specific watershed location and area.

For annual basin yield comparison, historical daily flow data (from 1953 to 1996) from discontinued USGS Stream Gage #06433500 on Hay Creek at Belle Fourche, SD (approximately six miles southeast of the Sourdough Flats catchment) was analyzed (USGS, 2024; Driscoll et al., 2002). The average daily streamflow measured at this gage over the period of record (from 1953 to 1996) was 1.73 cubic feet of water per second (cfs). The mean annual basin yield based on the surface water drainage for the period of measured record was 0.2 inches (Driscoll et al., 2002). By multiplying the mean annual basin yield by the 558 acres in the contributing watershed area above the Sourdough Flats catchment, yields approximately 9.3 acre-feet per year. This value agrees with the probability curve, that between 80% to 100% of the time, the basin has an annual yield anywhere between zero to 12.6 acre-feet per year. A hydrograph was constructed using the 10th, 25th, and 50th percentile flow level data measured at this stream gage (Figure 4).

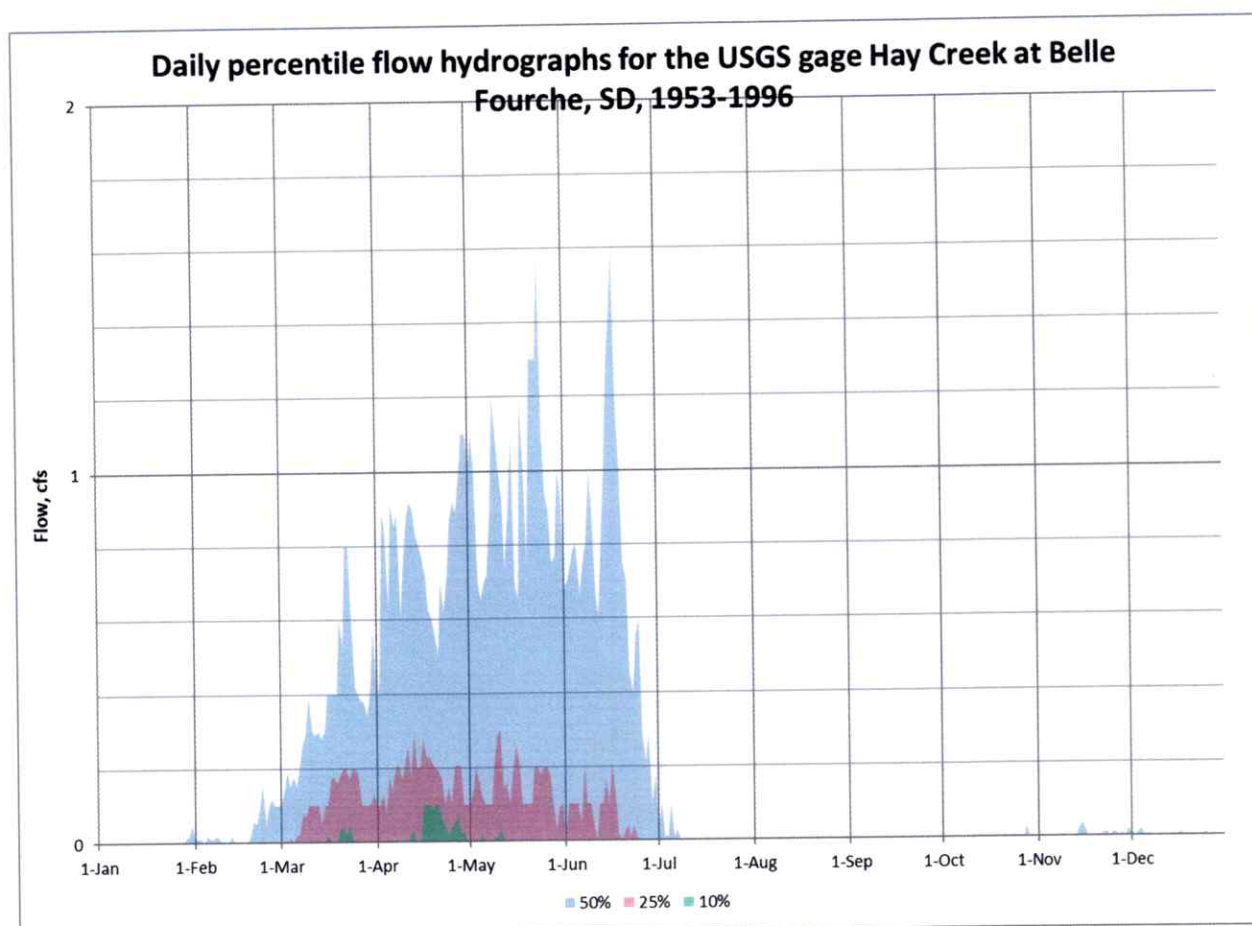


Figure 4. Daily percentile flow hydrographs for the USGS gage Hay Creek at Belle Fourche, SD, 1953-1996, contributing drainage area: 121 to 123 sq. miles (Driscoll; 2002; USGS, 2024)

The median (50th percentile) hydrograph curve exhibits the daily flow values at or below the indicated level on average one out of two years. The hydrograph displays flow beginning in the creek in late February to early March, due to spring snowmelt, then flow values slowly increase (approximately 0.3 cfs to 1.6 cfs) with peaks during spring/summer rain events through June. Flow values decrease by July and Hay Creek is dry for the remainder of the year.

The 25th percentile hydrograph curve exhibits the daily flow values at or below the indicated level on average one out of four years. The hydrograph displays flow beginning in the creek in early March, due to spring snowmelt, with flow values remaining steady around 0.1 to 0.3 cfs through mid-June.

The 10th percentile hydrograph curve exhibits the daily flow values at or below the indicated level on average one out of ten years. Minimal to no flow occurs in Hay Creek during these years.

Annual water losses from the reservoir are mainly due to evaporation and seepage. It has been found that evaporation from a shallow lake, wet soil, or other moist natural surfaces is roughly 70% of the evaporation from a Class A pan for the same conditions (Farnsworth and Thompson, 1982). Near the Sourdough Flats catchment, the estimated average pan evaporation rate for April

through October is 47 inches/year, and for November through March is 12 inches/year, for a total of 59 inches/year (4.92 feet/year) in pan evaporation (Poudyal, 2006). To account for evaporation from natural surfaces, 70% of that rate is approximately 41.3 inches/year (3.44 feet/year). While evaporation is not constant throughout the year, approximately 3.44 inches of evaporation occurs each month. Estimated loss due to seepage is not available since this is not known until after years of operation and is typically not measured (Kilts, 2022).

Butte County receives approximately 15.6 inches of precipitation per year (1.3 feet/year) on average (NOAA, 2024). While precipitation is not constant throughout the year, approximately 1.3 inches of precipitation occurs each month in Butte County. To satisfy a pool volume of 200 acre-feet (122.3 acres in size) in a month, approximately 21.74 inches of precipitation would need to occur (while taking evaporative losses into account). When applying these conditions to a three-month scale, approximately 26 inches of precipitation over that time frame would be required to satisfy a pool volume of 200 acre-feet (122.3 acres in size). These conditions are not expected to occur more than one out of every ten years and likely would only occur during periods of extremely wet conditions, at that time water use by existing senior downstream water rights would already be met.

The application indicated the intent is to place a ditch plug where a culvert is currently located on the southern end of Sourdough Flats catchment (location shown in Figure 1). Table 3 lists the approximate pool size, volume, and depth, and flow rate from the culvert (at current conditions) (obtained from HDR engineering analysis) based on a range of pool elevations (in feet above NGVD29), and the approximate probability of occurrence. At the current conditions, a pool elevation of 3,283 feet above NGVD29 would be required for water to be released from the culvert at approximately 0.6 cfs to the Hay Creek watershed, which has the probability of occurring 4 to 5 years out of every 10 years. A pool elevation greater than 3,284 feet above NGVD29 occurs less than one out of every ten years, releasing 2 to 4 cfs from the culvert, to be contributed to the Hay Creek watershed.

Table 3. Approximate pool size, volume, and depth, and flow rate from culvert (at current conditions) based on range of pool elevations (in feet above NGVD29) and the approximate probability of occurrence

Pool Elevation (feet above NGVD29)	Pool Size (acres)	Pool Volume (acre-feet)	Approx. Depth of Pool (ft)	Flow Rate from Culvert* (cfs)	Probability of Occurrence	Comments
3,281	0.5	0.1	0.2	0.0016	8 to 10 yrs out of 10	considered no outflow from culvert
3,281.5	0.8	0.5	0.63	0.008		
3,282	1.8	1	0.56	0.016	8 to 10 yrs out of 10	considered no outflow from culvert
3,282.5	34.9	6.7	0.19	0.11		
3,283	78.3	36.9	0.47	0.61	4 to 5 yrs out of 10	elevation when outflow begins at culvert
3,283.5	101.3	82.5	0.81	1.35	2 yrs out of 10	
3,284	114	136.8	1.2	2.24	<1 year out of 10	
3,284.5	122.3	195.8	1.6	3.21	<1 year out of 10	Near proposed volume
3,285	131	259.2	1.98	4.25	<1 year out of 10	Exceeds proposed volume
*assumed 0.0164 af to cfs conversion factor based on average # of seconds of each month						

Review of Existing Water Rights, Discussion, and Recommendation

There are two water rights located between the proposed culvert location and the inlet canal to the Belle Fourche River Reservoir – Water Right Nos. US0377-1 and 442-1. Water Right No. 442-1, held by Dan Heck authorizing 0.29 cfs from the Belle Fourche River basin for the irrigation of 20.1 acres (Figure 1) is located between the Sourdough Flats catchment and Hay Creek (Water Rights, 2024). In the HDR engineering analysis submitted with the application, it was indicated if Water Permit Application No. 2035-1 was approved, applicant Dan Heck would voluntarily abandon Vested Water Right No. 442-1.

The Bureau of Reclamation holds Water Right No. US0377-1 for the Belle Fourche Reservoir Project, with a priority date of August 5, 1904, and the inlet canal to the dam is located approximately eleven miles downstream from the culvert (Water Rights, 2024).

In 2002, a Water Management Board ruling on Water Permit Application No. 1348-1 noted the Spearfish Creek, Redwater River, and Belle Fourche River watersheds should be treated as a single complex. With this board ruling, it was determined water was not available in the Spearfish Creek watershed for the proposed use and it is unlikely the Water Rights Program and Water Management Board would be able to recommend favorably on any new appropriations from these watersheds.

However, for this application, a pool elevation greater than 3,284 feet above NGVD29 is expected to occur less than one out of every ten years, releasing 2 to 4 cfs from the culvert to the Hay Creek watershed. It is likely during these abnormally wet years that other users will have already received their authorized use of water. Around 4 to 5 years out of every 10 years, approximately 0.6 cfs is being released from the culvert (Table 3). That flow is not a significant amount of water to the Belle Fourche River watershed and given the travel distance, that flow would not survive to make it to Hay Creek's confluence with the Redwater River, and therefore, to the inlet canal for the Belle Fourche Reservoir Project located approximately eleven miles downstream from culvert.

From a water rights perspective, this is essentially a futile call. A futile call is a situation in which a junior (more recent) priority right is allowed to continue diverting water despite the presence of downstream senior rights when shutting down the junior right will not result in additional water being available for downstream senior rights. Approval of this application will likely have no discernable effect on whether the downstream existing water rights/permits, location notices, or domestic uses have sufficient water in Hay Creek or the Belle Fourche River to satisfy their authorized use of water. The intent of this application is to plug the ditch and remove the culvert to restore the wetland to its original condition. Under natural conditions, any captured water historically would have not been available downstream water users.

Conclusions

1. Water Permit Application No. 2035-1 proposes to impound up to 200 acre-feet of runoff water annually by plugging a ditch to restore a wetland. The project is known as the

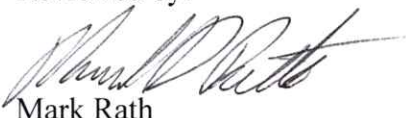
Sourdough Flats Wetland Restoration. The water is requested to be for fish and wildlife propagation and to develop a wetland mitigation bank. The site of interest is located in Butte County approximately five miles west of Belle Fourche, SD.

2. At the current conditions, a pool elevation of 3,283 feet above NGVD29 would be required for water to be released from the culvert at 0.6 cfs, which has the probability of occurring 4 to 5 years out of 10. That flow of water is generally not expected to make it to the inlet canal (approximately eleven miles downstream from culvert) for the Belle Fourche Reservoir Project on these years. Approval of this application will likely have no discernable effect on whether the downstream existing rights have sufficient water in Hay Creek or the Belle Fourche River to satisfy their authorized use of water.
3. The NRCS surface runoff yield method estimates the amount of runoff needed to satisfy the proposed 200 acre-feet impoundment has a less than 10% chance of occurrence annually. A pool elevation near 3,284.5 feet above NGVD29 would be required to satisfy the proposed 200 acre-feet impoundment, which would result in approximately 3.2 cfs to be released from the culvert at the current elevation conditions.
4. Approval of this application is not expected to unlawfully impair existing water rights/permits, location notices, or domestic uses.

Nakaila Steen

Nakaila Steen
Natural Resources Engineer II
SD DANR - Water Rights Program

Reviewed by:


Mark Rath

Natural Resources Engineer III
SD DANR - Water Rights Program

References

- Driscoll, D.G, Carter, J.M., Williamson, J.E., and Putnam, L.D., 2002. Hydrology of the Black Hills Area, South Dakota. Hydrologic Investigations Report 02-4094. United States Geological Survey. Rapid City, SD.
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- NOAA, 2024. NOAA National Centers for Environmental information, Climate at a Glance: County Time Series, published April 2024, retrieved on April 15, 2024 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>
- Poudyal, Sudarshan. 2006. Annual, Monthly and Daily Pan Evaporation Maps for the State of South Dakota. Master's Thesis. South Dakota State University.
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- Water Rights, 2024. Water Right/Permit Files, SD DANR-Water Rights Program, Joe Foss Bldg, Pierre, South Dakota.



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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PIERRE SD 57501-3182
danr.sd.gov

**NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATES, CONTACT
THE NEWSPAPER RIGHT AWAY.**

April 30, 2024

HDR Engineering
c/o Kendall Vande Kamp
100 S Phillips Avenue, Suite 401
Sioux Falls SD 57104

Dear Mr. Vande Kamp:

Water Permit Application No. 2035-1 for fish and wildlife 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 in 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.



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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PIERRE SD 57501-3182
danr.sd.gov

**NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATES, CONTACT
THE NEWSPAPER RIGHT AWAY.**

April 30, 2024

Dan Heck
PO Box 607
Belle Fourche SD 57717

Dear Mr. Heck:

Water Permit Application No. 2035-1 for fish and wildlife 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 in 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.

NOTICE OF APPLICATION NO. 2035-1 to Appropriate Water

Notice is given that Dan Heck, PO Box 607, Belle Fourche SD 57717 has filed an application for a water permit to impound up to 200 acre-feet of runoff water annually by plugging a ditch to restore a wetland. The project is known as the Sourdough Flats Wetland Restoration. The ditch plug and impounded water is to be located in the NE 1/4 SE 1/4, NE 1/4 Section 10; W 1/2 NW 1/4 Section 11; all in T8N-R1E. The water is for fish and wildlife propagation and to develop a wetland mitigation bank. This site is located approximately 5 miles west of Belle Fourche SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2035-1 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters 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 May 20, 2024.

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 May 2024.

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: Monday, April 29, 2024 2:31 PM
To: legals@bhpioneer.com
Subject: 2035-1 Dan Heck - Public Notice
Attachments: 2035-1 public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on May 8, 2024.

Dan Heck, PO Box 607, Belle Fourche SD 57717, 605-645-7694, 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



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 2035-1

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 8th day of May, 2024, and the last publication on the _____ day of _____, _____, that the full amount of fees charged for publishing same, to-wit: The sum of \$ 39.31, 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.

[Signature]
Subscribed and sworn to before me this 15th day of May, 2024

[Signature]

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

RECEIVED

MAY 17 2024

OFFICE OF
WATER

**NOTICE OF
APPLICATION
NO. 2035-1 to
Appropriate Water**

Notice is given that Dan Heck, PO Box 607, Belle Fourche SD 57717 has filed an application for a water permit to impound up to 200 acre-feet of runoff water annually by plugging a ditch to restore a wetland. The project is known as the Sourdough Flats Wetland Restoration. The ditch plug and impounded water is to be located in the NE 1/4 SE 1/4, NE 1/4 Section 10; W 1/2 NW 1/4 Section 11; all in T8N-R1E. The water is for fish and wildlife propagation and to develop a wetland mitigation bank. This site is located approximately 5 miles west of Belle Fourche SD.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 2035-1 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters 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 May 20, 2024.

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 May 2024.

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 \$40.76 and can be viewed free of charge at www.sd-publicnotices.com.

**#325
May 8**

Rodriguez, Rachel

From: Rodriguez, Rachel
Sent: Monday, April 29, 2024 2:34 PM
To: sourdoughdkh@gmail.com
Subject: 2035-1 Dan Heck - Public Notice
Attachments: 2035-1 Rec.pdf; 2035-1 Ltr.pdf; 2035-1 PubNotice.pdf

Good afternoon,

Attached is a copy of the report, chief engineer's 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 also being mailed to you tomorrow since our last mail drop was at 1:30pm.

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





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

JUN 17 2024

Dan Heck
PO Box 607
Belle Fourche SD 57717

Dear Mr. Heck:

Enclosed is Water Permit No. 2035-1 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, 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.: 2035-1

Name of Applicant: Dan Heck

Date of Posting: 5/6/2024

Date of Removal: 6/17/2024



Ron Duvall, Engineer III

6/17/2024

Date

Subscribed and sworn to before me, a notary public, this 17th day of June, 2024.



Notary Public - South Dakota

My commission expires:

Rachel Rodriguez
My Commission Expires
May 16, 2029

(SEAL)





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

June 7, 2024

442-1
2035-1

Dan Heck
PO Box 607
Belle Fourche SD 57717

Dear Mr. Heck:

I am writing concerning the Notice of Cancellation you received for Vested Water Right No. 442-1 authorizing the irrigation of 20.1 acres within the NW ¼ SE ¼ & SE ¼ SE ¼ Section 10, T8N-R1E, Butte County.

Kendall Vande Kamp with HDR Engineering contacted me concerning postponing the cancellation consideration of No. 442-1 until after development of the wetlands mitigation project authorized by Water Permit No. 2035-1. In light of details to be worked out to complete works under Permit No. 2035-1, cancellation consideration of No. 442-1 is being withdrawn.

Vested Water Right No. 442-1 has been removed from the Water Management Board's July 2024 agenda and will NOT be reconsidered for cancellation pending the outcome of construction of works authorized by Permit No. 2035-1.

Please let me know if you have any questions. I can be reached at 605.773.5670. or by email at ron.duvall@state.sd.us.

Sincerely,

Ron Duvall, Engineer
SD DANR, Water Rights Program

c. Kendall Vande Kamp, HDR Engineering, 100 S. Phillips Ave, STE 401, Sioux Falls SD 57104