



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 9027-3, FementationExperts USA, LLC.**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 9027-3, FermentationExperts USA, LLC., 1201 North Ellis Road, Sioux Falls SD 57107.

The Chief Engineer is recommending APPROVAL of Application No. 9027-3 as a TEMPORARY USE PERMIT pursuant to SDCL 46-5-39 because 1) water is available to be appropriated as a temporary use permit until the City of Sioux Falls, holder of a future use permit from the Southern Skunk Creek management unit of the Big Sioux Aquifer, fully develops water reserved from their future use permit, 2) the proposed diversion can be developed as a temporary use permit without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The city of Sioux Falls has priority right to this water under future use withdrawal permits. Permit No. 9027-3 is issued as a temporary use permit pursuant to SDCL 46-5-39 and is subject to this prior right if or when the City of Sioux Falls develops their reserve water supply. Permit No. 9027-3 may be subject to cancellation when the water reserved under the future use permit is put to beneficial use. The Chief Engineer must provide the permit holder six months' notice prior to cancellation of this temporary use permit.
2. The well approved under Permit No. 9027-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
3. The permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Southern Skunk Creek management unit of the Big Sioux Aquifer .

See report on application for additional information.

Adam Mathiowetz, PE
Acting Chief Engineer
April 24, 2026

Report to the Chief Engineer
On Temporary Water Permit Application No. 9027-3
Fermentation Experts USA

April 23th, 2026

Water Permit Application No. 9027-3 proposes to appropriate up to 46 acre-feet of water annually at a maximum pump rate of 0.064 cubic feet per second (cfs) from one well to be completed into the Big Sioux: Southern Skunk Creek aquifer (approximately 27 feet deep) located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ (Lot 1-Tract 1) Section 9 for industrial use in a hog feed production facility located in the E $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 9; all in T101N-R50W. This site is located in Minnehaha County, approximately one mile west of Sioux Falls, SD.

AQUIFER: Big Sioux: Southern Skunk Creek (BS:SSC)

HYDROGEOLOGY:

Lindgren and Niehus (1992) called the aquifer that this application proposes to appropriate water from the Skunk Creek aquifer. However, the aquifer will be referred to as the Big Sioux: Southern Skunk Creek aquifer in this report based on the naming convention and management units from Hedges and others (1982) and as adopted by the Water Rights Program and accepted by the Water Management Board.

The Big Sioux: Southern Skunk Creek aquifer is a Quaternary aged, surficial, glacial aquifer that underlies the Southern portion of the Skunk Creek floodplain (Hedges and others, 1982; Lindgren and Niehus, 1992). The aquifer underlies a total of 9,700 acres of Minnehaha County as seen in Figure 1 (Hedges and others, 1982). Iles and Frykman (1991) estimated the saturated thickness ranges between 4 to 74 feet. The aquifer is made up of fine to coarse sand and fine to medium gravel which can locally contain thin silty clay layers (Lindgren and Niehus, 1992). This aquifer is primarily under unconfined conditions (Lindgren and Niehus, 1992). The direction of ground water movement is generally towards and along Skunk Creek (Lindgren and Niehus, 1992).

Geologic information for a test hole was submitted with the application. The test hole was completed and plugged on January 6th, 2026, and located in the same approximate location as the proposed diversion point (Water Rights, 2026d). The test hole geology report and nearby well completion reports indicate the proposed diversion point is completed into the Big Sioux: Southern Skunk Creek aquifer with the top of aquifer bearing material (sand) at 12 feet below the ground surface, with a static water level of around 10 feet below ground surface, and a saturated aquifer thickness of approximately 10 feet (Water Rights, 2026d, SDGS, 2026). The geologic materials encountered above the sand at 12 feet below land surface appear to be relatively permeable which aligns with other nearby well completion reports and lithologic logs (SDGS, 2026; Water Rights, 2026d). Since other nearby water well completion reports also indicate unconfined conditions, the aquifer at the proposed diversion point for this application is expected to be unconfined.

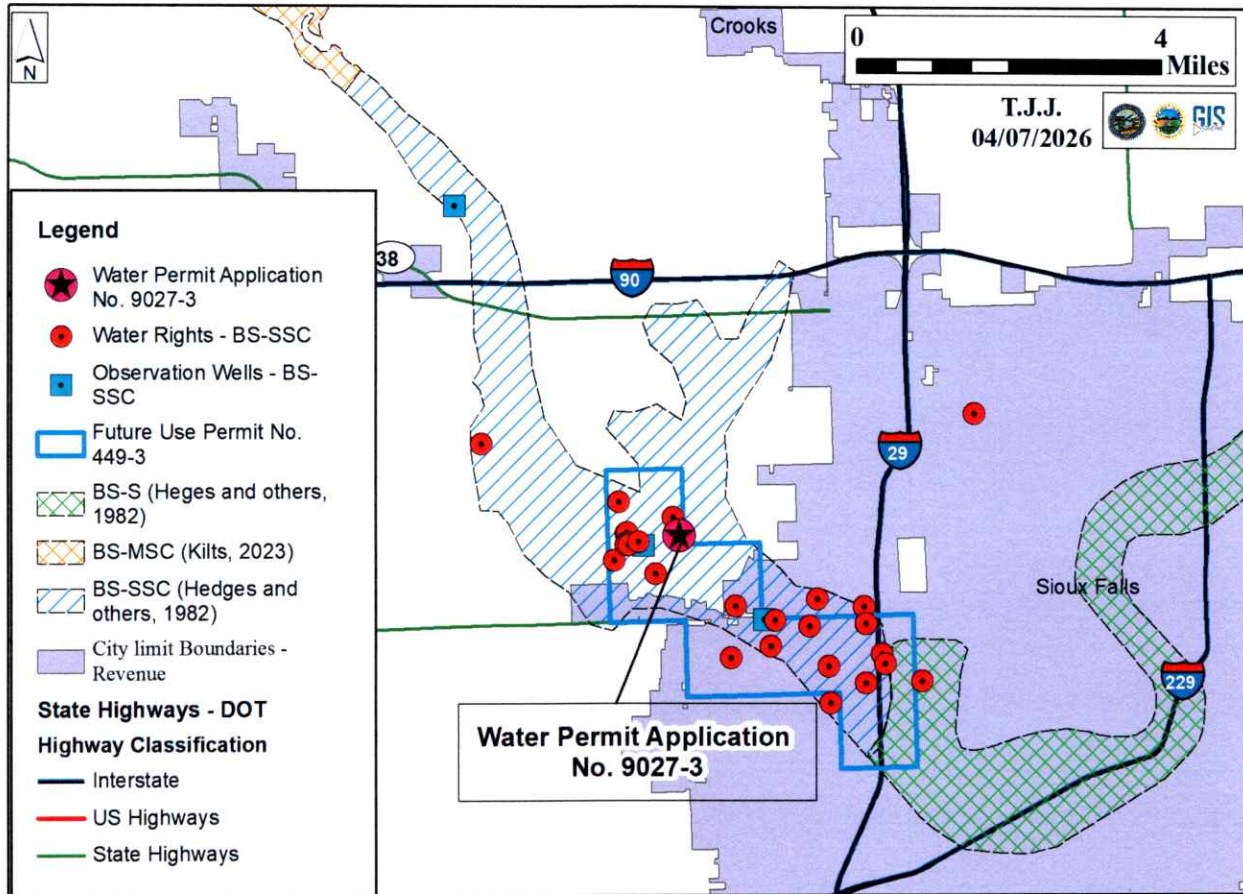


Figure 1. Map showing the approximate boundaries of the Big Sioux: Southern Skunk Creek (BS:SSC), Big Sioux: Middle Skunk Creek (BS:MSC), and Big Sioux: South (BS:S) aquifers (Hedges and others, 1982; Kilts, 2023), Big Sioux: Southern Skunk Creek observation wells/water rights (Water Rights, 2026b and 2026c), and the location of proposed diversion point for Water Permit Application No. 9027-3.

South Dakota Codified Law (SDCL)

SDCL 46-2A-9

Pursuant to SDCL 46-2A-9, “A permit to appropriate water may be issued only if there is a reasonable probability that unappropriated water is available for the applicant’s proposed use, the proposed diversion can be developed without unlawful impairment of existing domestic water uses and water rights, the proposed use is a beneficial use, and the permit is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board as defined by SDCL 46-2-9 and 46-2-11.” This report will address the availability of unappropriated water and the potential for unlawful impairment of existing domestic uses and water rights within the Big Sioux: Southern Skunk Creek aquifer.

SDCL 46-5-39 and SDCL 46-5-40

Pursuant to SDCL 46-5-39, temporary appropriations may be authorized from undeveloped future use permits using the permitting procedure of SDCL Chapter 46-2A. A future use permit is a permit reserving water for contemplated future needs upon a showing of availability of

unappropriated water and future need, which can be issued to entities identified in SDCL 46-5-38, such as municipalities or nonprofit rural water supply companies.

Pursuant to SDCL 46-5-40 the Chief Engineer must give at least six months' notice prior to the cancellation of a temporary use permit. The temporary use permit may not be cancelled prior to the time at which facilities are constructed and water put to beneficial use by the entity holding the future use permit.

WATER AVAILABILITY:

Water Permit Application No. 9027-3 proposes to appropriate water from the Big Sioux: Southern Skunk Creek aquifer management unit for industrial use. The probability of unappropriated water being available from the aquifer can be evaluated by considering SDCL 46-6-3.1, which requires,

“No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source. An application may be approved, however, for withdrawals of groundwater from any groundwater formation older than or stratigraphically lower than the Greenhorn Formation in excess of the average estimated annual recharge for use by water distribution systems.”

The Big Sioux: Southern Skunk Creek aquifer is not older than or stratigraphically lower than the Greenhorn Formation, and the applicant's proposed use is not for use in a water distribution system as defined by SDCL 46-1-6(17). Therefore, the average annual recharge and average annual withdrawal rates to and from the Big Sioux: Southern Skunk Creek aquifer must be considered.

HYDROLOGIC BUDGET:

Recharge

Recharge to the Big Sioux: Southern Skunk Creek aquifer is received primarily through infiltration of precipitation, seepage from surface water, and inflow from the Wall Lake & Big Sioux: Middle Skunk Creek aquifers (Iles and Frykman, 1991; Lindgren and Niehus, 1992). Using observation well analysis, Hedges and others (1985) estimated a recharge rate of 2.7 inches per year for the Big Sioux: Southern Skunk Creek aquifer. The Big Sioux: Southern Skunk Creek aquifer has an estimated areal extent of approximately 9,700 acres (Hedges and others, 1982). Therefore, the average annual recharge rate for the Big Sioux: Southern Skunk Creek aquifer (based on Hedges and others, 1985 & 1982) is estimated to be approximately 2,183 acre-feet/year.

Ohland (1990), while working for the United States Geological Survey (USGS), modeled the approximate areas of the Big Sioux: Southern Skunk Creek and Big Sioux: Middle Skunk Creek aquifers. As part of modeling efforts, Ohland (1990) estimated the recharge (from 1978 to 1985)

of the combined area to be 5.9 inches per year through observation well analysis and 11 inches per year through stream flow analysis. Ohland (1990) water levels and precipitation data were generally higher in the early to mid-1980s compared to data from the late 1970s.

Barari and others (1989) consulted with the USGS on what the estimated sustainable yield for the aquifer was under normal conditions. Based on modeling work by the USGS, the sustainable yield was estimated at 3.6 million gallons per day (4,032 acre-feet per year) (Barari and others, 1989). Sustainable yield is a general estimate of the amount for groundwater that can be withdrawn from an aquifer without causing negative impacts. While sustainable yield is not a direct estimate of average annual recharge, when taking into consideration the recharge analysis work by Ohland (1990), the average annual recharge to the aquifer could be closer to 4,032 acre-feet per year.

Discharge

Discharge from the Big Sioux: Southern Skunk Creek aquifer occurs primarily through seepage to Skunk Creek, well withdrawals, outflow to the Big Sioux: South aquifer and evapotranspiration in areas where the aquifer is at or near land surface (Lindgren and Niehus, 1992; Water Rights, 2026d). Currently, there are 20 water rights/permits authorized to appropriate water from the Big Sioux: Southern Skunk Creek aquifer (Water Rights, 2026c). There is one future use permit (Future Use Permit No. 449-3 held by the City of Sioux Falls) reserving 5,430 acre-feet/year of water from the Big Sioux: Southern Skunk Creek aquifer (Water Rights, 2026c). Future Use permits are assumed to be fully developable for the purpose of estimating withdrawals. While some parts of the future use area for Future Use Permit No. 449-3 fall outside of the currently mapped boundaries of the aquifer (Kilts, 2024), it is assumed that the future use permit will be developed entirely from the Big Sioux: Southern Skunk Creek aquifer.

Table 1 summarizes the 14 standard non-irrigation water rights/permits authorized to appropriate water from the Big Sioux: Southern Skunk Creek aquifer with the estimated annual use for each water right/permit as determined by their limiting diversion rate or annual volume. Withdrawals were estimated by assuming that water rights/permits limited by an annual volume will withdraw their entire appropriated volume every year. Water rights/permits limited only by a diversion rate are assumed to pump at their maximum permitted diversion rate for 60 percent of the time. These are standard methods used by the DANR-Water Rights Program for estimating annual withdrawals. Overall, the total estimated annual non-irrigation withdrawal rate from the Big Sioux: Southern Skunk Creek aquifer is approximately 1,881 acre-feet (Table 1) (Water Rights, 2026c). However, based on the following discussion, not all of the appropriated water is being used resulting in an estimated use of 558 acre-feet (Table 1) (Water Rights, 2026c).

The water source for Water Permit No. 7201-3 is a dugout/pond with a location and depth capable of receiving water from the aquifer (Water Rights, 2026c). This permit is for commercial use in a rock and sand washing operation, which implements recycling and reuse (Water Rights, 2026c). Due to the recycling and reuse of water, the actual consumptive use of water is likely less than the estimate.

Water Right Nos. 5142-3 and 5346-3, held by Magellan Pipeline Company, are likely subject to partial or full cancellation due to non-use. In 2008, it was determined that no additional remediation would be required for the spill these two water rights are associated with, so further pumping for groundwater remediation would not be required at the site by the regulatory agency overseeing spill cleanup (ICR, 2025). Additionally, the Water Rights Program has on file what appears to be plugging reports for several of the recovery wells for Water Right No. 5142-3 (Water Rights, 2026c). Therefore, average annual withdrawal for Water Right Nos. 5142-3 and 5346-3 is estimated to be zero acre-feet.

Water Right No. 6276-3 held by Dakota Aggregate Resource, is likely subject to partial or full cancellation due to nonuse. The last annual report for the operation filed with the DANR Minerals, Mining, and Superfund Program (MMS) indicates, the operator went bankrupt in 2016, was served a notice of violation in 2016, and the bond for the operation was released in 2022 (MMS, 2025; Kilts, 2024). MMS (2025) lists the sand and gravel operation as “inactive” and last use of the site was likely in 2016. Therefore, average annual withdrawal for Water Right No. 6276-3 is estimated to be zero acre-feet.

Water Right Nos. 2304-3, 4159-3, 4463-3, 5210-3, and 5713-3 were all associated with supplying water to mobile home parks under the same ownership at the time of licensing (Water Rights, 2026c). These mobile home parks were all inactivated as public water systems in the 1990s, when they connected to city water (Kilts, 2024; Water Rights, 2026c). If these wells are being maintained as backup water, use from the wells is likely limited. Therefore, average annual withdrawal for Water Right Nos. 2304-3, 4159-3, 4463-3, 5210-3, and 5713-3 is estimated to be zero acre-feet.

Water Right No. 4913-3 is held by Tower Tourist Camp. The campground was inactivated as a public water system in the 1990s, when they connected to city water (Kilts, 2024; Water Rights, 2026c). The file for Water Right No. 4913-3 notes that in 2000 some lawn watering was occurring at the time (Water Rights, 2026c). Although it is likely an overestimate, average annual withdrawal for Water Right No. 4913-3 is estimated to be pumping 60% of the time at the permitted diversion rate.

Water Right No. 5729-3 is held by Holiday Mobile Home Park. This mobile home park was inactivated as a public water system in the 1990s, when they connected to city water (Kilts, 2024; Water Rights, 2026c). If these wells are being maintained as backup water, use from the wells is likely limited. Therefore, average annual withdrawal for Water Right Nos. 5729-3 is estimated to be zero acre-feet.

Table 1. Estimated annual use for non-irrigation water rights/permits authorized to divert water from the Big Sioux: Southern Skunk Creek aquifer (Water Rights, 2026c)

Permit No.	Name	Status	Uses	Authorized Diversion Rate (cfs)	Authorized Annual Volume (ac-ft)	60% Pumpage (ac-ft)	Estimated Withdrawal (ac-ft)
746A-3	CHS Inc.	LC	IND, DOM, LCO	0.330	N/A	143	143
2304-3	Weeg Trailer Park	LC	COM	0.020	N/A	9	0
4159-3	Don Weeg	LC	COM	0.670	N/A	291	0
4463-3	Pine Knoll Inc.	LC	COM	0.020	N/A	9	0
4913-3	Tower Tourist Camp	LC	COM, DOM	0.070	N/A	30	30
5142-3	Magellan Pipe Line Co. LLC	LC	IND	0.130	N/A	56	0
5210-3	Pinecrest Inc.	LC	SHD	0.220	N/A	96	0
5346-3	Magellan Pipe Line Co. LLC	LC	IND	0.223	N/A	97	0
5713-3	Pinecrest Inc.	LC	SHD	0.830	N/A	361	0
5729-3	Holiday Mobile Park	LC	COM	0.330	N/A	143	0
5916-3	Natural Beauty Growers LLC	LC	COM	0.460	N/A	200	200
6116-3	Falls Homes	LC	COM	0.011	N/A	5	5
6276-3	Dakota Aggregate Resource	LC	COM	0.600	N/A	261	0
7201-3*	LG Everist Inc.	PE	COM	2.230	180	180	180
PE Permit, LC License, COM Commercial, IND Industrial, DOM Domestic, SHD Suburban Housing Development, LCO Livestock Confinement Operation *Permit indicates recycling and reuse of water, so the actual use is likely less than estimated.					Total:	1,881	558

Currently, there are three irrigation water rights/permits appropriating water from the Big Sioux: Southern Skunk Creek aquifer (Water Rights, 2026c). These irrigation water rights/permits have been authorized to irrigate a total of 490 acres. All three irrigation water rights have been active since 2004. The average annual reported withdrawal rate for the Big Sioux: Southern Skunk Creek aquifer active irrigation water rights/permits from 2015 to 2023 is approximately 186 acre-feet per year (Table 2) (Water Rights, 2026a).

Table 2. Reported historic irrigation use from the Big Sioux: Southern Skunk Creek aquifer (Water Rights, 2026a)

Year	Number of Permits	Reported Pumpage (ac-ft)	Year	Number of Permits	Reported Pumpage (ac-ft)
1982	1	47	2004	3	261
1983	1	24	2005	3	243
1984	1	27	2006	3	266
1985	1	32	2007	3	204
1986	1	55	2008	3	201
1987	1	173	2009	3	140
1988	1	73	2010	3	96
1989	1	0	2011	3	141
1990	2	0	2012	3	229
1991	2	25	2013	3	211
1992	2	16	2014	3	149
1993	2	11	2015	3	175
1994	2	25	2016	3	181
1995	2	70	2017	3	172
1996	2	199	2018	3	92
1997	2	68	2019	3	63
1998	2	97	2020	3	258
1999	2	37	2021	3	224
2000	2	59	2022	3	185
2001	2	58	2023	3	313
2002	2	53	2024	3	196
2003	2	50	Average (1982-2024)	2	121
			Average (2015-2024)	3	186

There are domestic wells completed into the Big Sioux: Southern Skunk Creek aquifer that do not require a water right/permit, so the withdrawal amount from those wells is unknown (Water Rights, 2026d). Due to their relatively low diversion rates and prevalence of water distribution systems, withdrawals from domestic wells are not considered to be a significant portion of the hydrologic budget. Additionally, with the development of rural water systems in areas where the Big Sioux: Southern Skunk Creek aquifer is present; it is likely some domestic users may have transitioned to rural water. Therefore, the quantity of water withdrawn by domestic wells is estimated to be negligible to the hydrologic budget for the Big Sioux: Southern Skunk Creek aquifer.

Temporary Use Permits

SDCL 46-5-39 allows for the issuance of temporary use permits for the temporary use of water reserved by future use permits. Currently, there are three active temporary use permits (Nos. 8427-3, 8853-3, & 8916-3). Temporary Use Permit No. 8427-3 appropriates up to 589 acre-feet of water annually from a pond/dugout for commercial use in a sand and gravel operation (Water Right, 2026c). The water is to be recycled by discharge to a settling pond and then diverted back to the pond for reuse (Water Right, 2026c). Due to the recycling, the consumptive use of water will likely be much lower than the permitted maximum volume. Although the permit has reported zero acre-feet use in 2021 to 2024, the permit is still within the five-year construction period. The maximum annual volume of 589 acre-feet will be used as an estimate, until sufficient

reporting data is available to more accurately estimate the average annual use. Temporary Use Permit No. 8853-3 appropriates up to 6 acre-feet of water annually for dewatering a gravel pit for industrial use (Water Right, 2026c). Temporary Use Permit No. 8853-3 was approved in 2024, so the maximum annual volume of 6 acre-feet will be assumed, until sufficient reporting data is available to more accurately estimate the average annual use. Temporary Use Permit No. 8916-3 appropriates up to 0.024 acre-feet of water annually for municipal use (Water Right, 2026c). Temporary Use Permit No. 8916-3 was approved in 2024, so the maximum annual volume of 0.024 acre-feet will be assumed, until sufficient reporting data is available to more accurately estimate the average annual use.

This application, if approved, proposes to appropriate up to 46 acre-feet of water annually for industrial use. Together, this application and Temporary Use Permit Nos. 8427-3, 8853-3, & 8916-3 appropriate 641.024 acre-feet annually for temporary use. That volume estimate is much less than the amount of water reserved by Future Use Permit No. 449-3. Currently, there is not a method in South Dakota codified law or administrative rule for turning a temporary use permit issued from water reserved by future use under SDCL 46-5-39 into a regular water right.

Hydrologic Budget Summary

The average annual recharge rate to the Big Sioux: Southern Skunk Creek aquifer is an estimated range from about 2,183 to 4,032 acre-feet/year (Table 3) (Hedges and others, 1985 & 1982; Barari and others, 1989). Average annual appropriative withdrawals (excluding temporary use permits) are estimated at approximately 6,174 acre-feet/year (Table 3) (non-irrigation: 558 acre-feet per year, irrigation: 186 acre-feet per year, and future use: 5,430 acre-feet per year). Therefore, water is not available to issue a new regular water permit from the aquifer.

Pursuant to SDCL 46-5-39, temporary use permits may be authorized from undeveloped future use permits. Based on the currently available information on the water rights/permits, estimated average annual appropriative pumpage from the aquifer is 1,385.024 acre-feet (non-irrigation: 558 acre-feet per year, irrigation: 186 acre-feet per year, temporary use water permits and this application: 641.024 acre-feet per year). In addition, 5,430 acre-feet of water per year is reserved in existing future use permits. Given the best information currently available, there is a reasonable probability that water is available to issue this application only as a temporary use water permit out of undeveloped future use (Future Use Permit No. 449-3) pursuant to SDCL 46-5-39. Temporary use permits are subject to cancellation upon six months notice to the permit holder when water permits are approved which authorize construction and placing reserved water to beneficial use from existing future use permits that results in withdrawals exceeding recharge to the Big Sioux: Southern Skunk Creek aquifer.

The priority date for Future Use Permit No. 449-3 is April 8, 1957 (Water Rights, 2026c). The reserved volume for future use exceeds all estimates of average annual recharge for the Big Sioux: Southern Skunk Creek aquifer. Only Water Right No. 4463-3 has a priority date senior to Future Use Permit No. 449-3. If Future Use Permit No. 449-3 is developed, annual reporting of water use for all water rights/permits in the aquifer will be necessary to maintain a balance of recharge and discharge, while putting the water in the aquifer to maximum beneficial use.

Table 3. List of water rights/permits withdrawals (Water Rights, 2026a & 2026c), estimated use of temporary use permits, future use permit, this application (if approved), and recharge to the Big Sioux: Southern Skunk Creek aquifer (Hedges and others, 1985 & 1982; Barari and others, 1989)

	Hydrologic Budget for the Big Sioux: Southern Skunk Creek Aquifer (ac-ft/yr)
Non-Irrigation Estimated Use	558
Irrigation Reported Use (2015-2024)	186
Temporary Use Permits (Nos. 8427-3, 8853-3, & 8916-3)	595.024
Current Estimated Withdrawal	1,339.024
Future Use Permit No. 449-3	5,430
Pending Application (9027-3)	46
Estimated Recharge	2,183 – 4,032

OBSERVATION WELL DATA:

Administrative Rule of South Dakota (ARSD) 74:02:05:07 requires that the Water Management Board shall rely upon the record of observation well measurements in addition to other data to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge of the aquifer.

The DANR-Water Rights Program monitors three observation wells completed into the Big Sioux: Southern Skunk Creek aquifer (Water Rights, 2026b). These observation wells provide data on how the aquifer reacts to regional climatic conditions and local pumping. The three closest observation wells to the proposed diversion point are MA-80X (approximately 0.5 miles west), MA-80Y (approximately 1.6 miles southeast), and MA-78F (approximately 5.2 miles northwest) (Water Rights, 2026b). The hydrographs for these observation wells are displayed in Figure 2 (Water Rights, 2026b). The data points utilized to construct the hydrographs are measurements of the static water level in the observation wells from the top of the well casing. It should be noted that observation well MA-80Y has no recorded measurements after 2018. The well has not been located since 2019 and was likely destroyed between September 2018 and June 2019. Although MA-80Y has no recent data, the historic data can still be analyzed. In this case, review of MA-80Y is used because of the limited number of observation wells completed into the aquifer and the water levels in MA-80Y were representative of the water levels in the aquifer in general. The data from the hydrographs in Figure 2 show a stable trend.

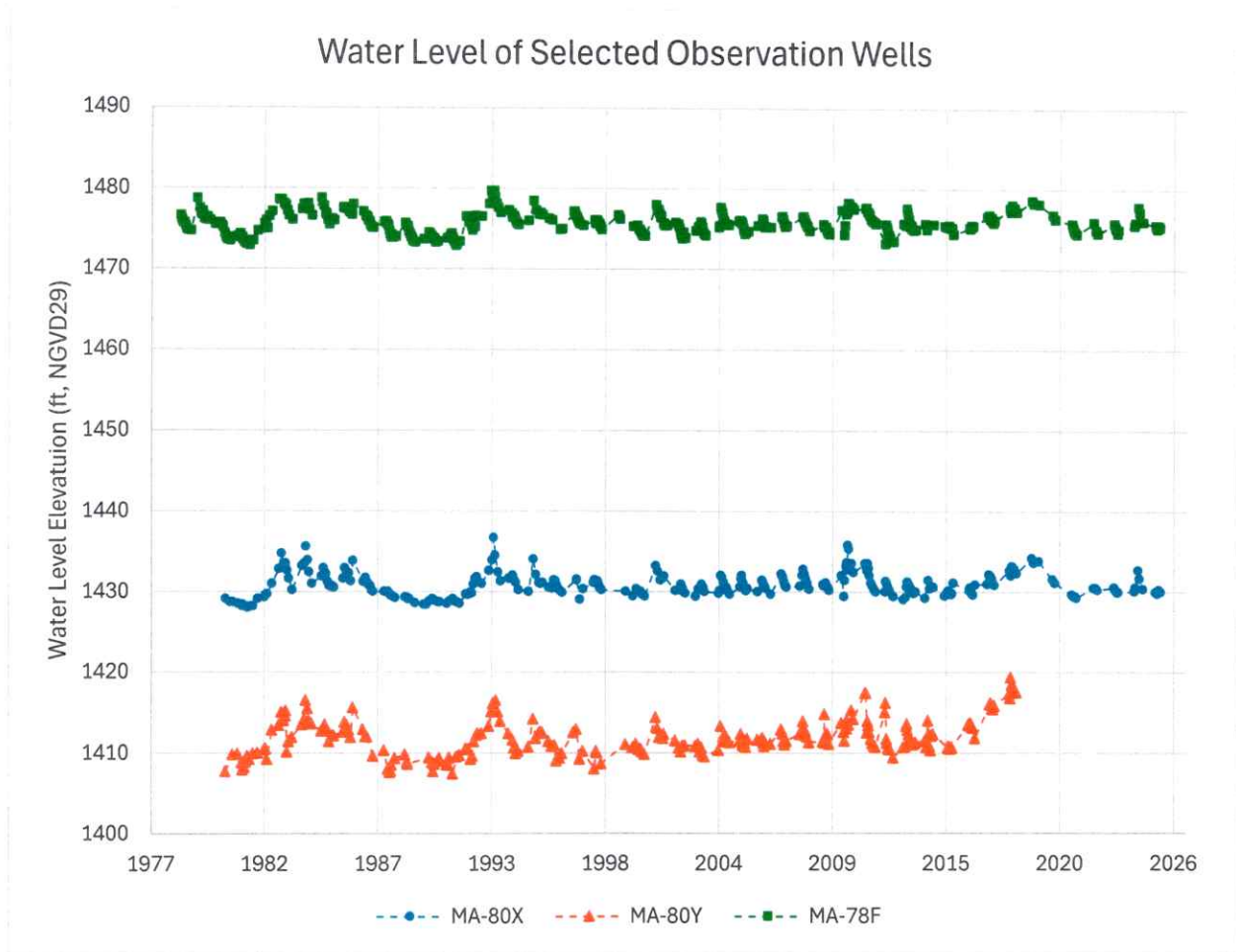


Figure 2. Hydrograph for observation wells MA-80X, MA-80Y, and MA-78F (Water Rights, 2026b)

The hydrographs for the Big Sioux: Southern Skunk Creek aquifer indicate that the aquifer responds well to climatic conditions because water levels are rising during wetter periods (early spring snowmelt and precipitation) and declining to a stable water level during drier periods (NOAA, 2026). Additionally, the water levels in the observation wells display that the amount of recharge to and natural discharge from the aquifer greatly exceeds pumping with the aquifer returning to pre-pumping conditions between irrigation seasons. Aquifer recovery indicates that climatic conditions and therefore, the effects of recharge to and natural discharges from the aquifer govern the long-term fluctuations of waters levels in the aquifer rather than the impacts of pumping from the Big Sioux: Southern Skunk Creek aquifer. It should be noted, water levels in observation wells are representative of recharge to, natural discharge from, and active withdrawals from the aquifer. They do not represent future withdrawals of water reserved by future use permits. By recognizing that both recharge to and natural discharge from an aquifer can be captured for pumping, the observation well hydrographs demonstrate water is available for appropriation as a temporary use permit.

POTENTIAL FOR UNLAWFUL IMPAIRMENT OF EXISTING WATER RIGHTS:

Water rights/permits in the general vicinity of the proposed diversion point for this application are shown in Figure 3 and summarized in Table 4 (Water Rights, 2026c). The proposed Diversion point for this application is located with the future use area for Future Use Permit No. 449-3. The closest water right/permit to the proposed diversion point, not held by the applicant, is Water Right No. 746A-3 held by CHS Inc. as shown on Figure 3. The diversion point for Water Right No. 746A-3 is located approximately 0.3 miles north of the proposed diversion points for this application (Water Rights, 2026c). There are domestic wells on file with the DANR-Water Rights Program that are completed into the Big Sioux: Southern Skunk Creek aquifer, with the closest domestic well on file (not held by the applicant) located approximately 0.3 miles west of the proposed diversion point based on the well completion report submitted by the driller (Water Rights, 2026d). There could potentially be other domestic wells completed into the Big Sioux: Southern Skunk Creek aquifer near the proposed diversion point that are not on file with the DANR-Water Rights Program. The location of the domestic wells in the well completion report database maintained by the Water Rights Program is based on the location listed by the driller on the well completion report.

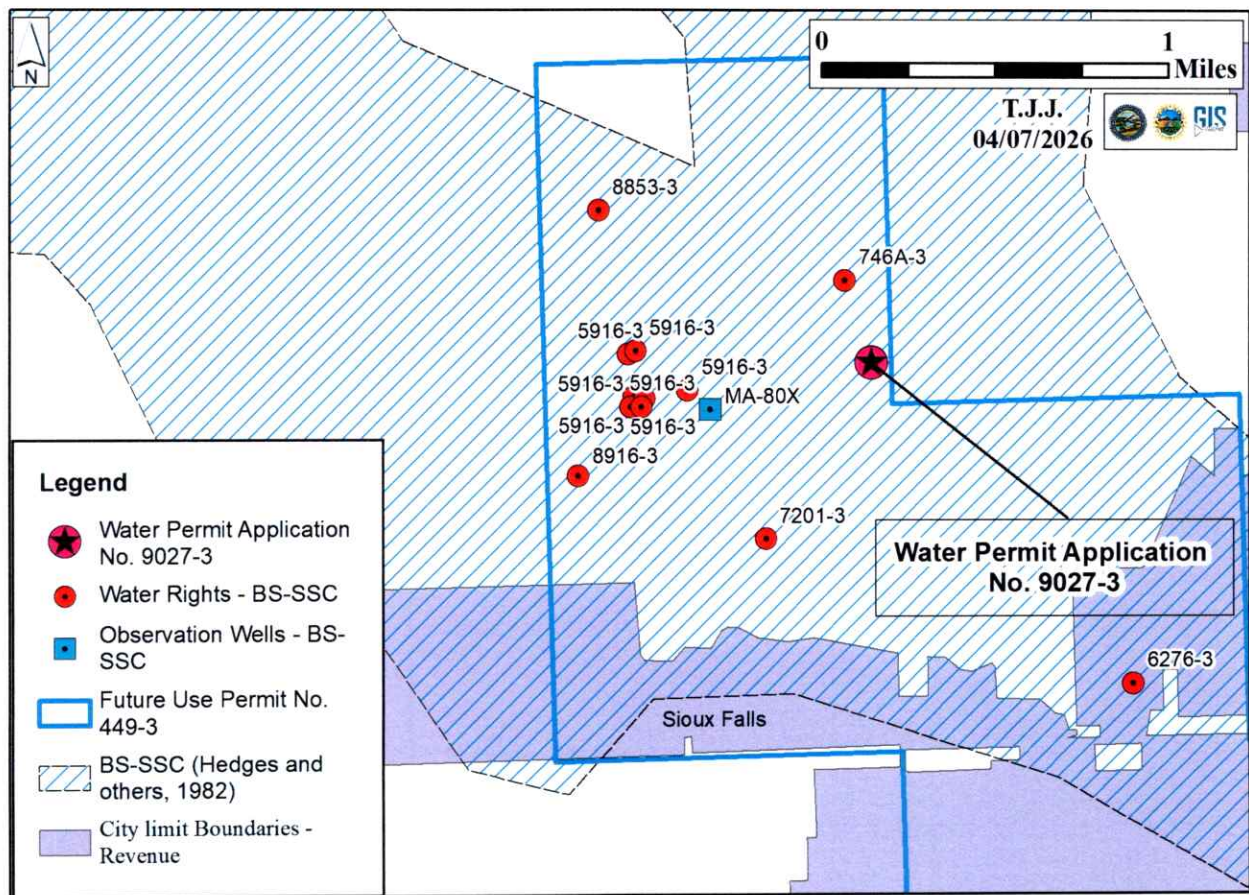


Figure 3. Map of the approximate Big Sioux: Southern Skunk Creek aquifer boundary (modified from Hedges et al, 1982), Water Permit Application No. 9027-3, and nearby Big Sioux: Southern Skunk Creek aquifer water rights/permits and observation wells (Water Rights, 2026b and 2026c).

Table 4. List of water rights/permits shown in Figure 3.

Permit	Name/Business	Priority	Status	Use Type	CFS
449-3	City of Sioux Falls	04/08/1957	Future Use	Municipal	N/A
5916-3	Natural Beauty Growers LLC	03/18/1996	License	Commercial	0.46
6276-3	Dakota Aggregate Resource	07/30/2001	License	Commercial	0.6
7201-3	L G Everist Inc.	05/26/2010	Permit	Commercial	2.23
746A-3	CHS Inc	10/22/1960	License	Industrial, Domestic	0.33
8853-3*	Darby Parson – Prairie States Pit	04/05/2024	Permit	Industrial	0.67
8916-3*	City of Sioux Falls	12/04/2024	Permit	Municipal	0.033
*These permits are temporary use permits					

The Big Sioux: Southern Skunk Creek aquifer is primarily under unconfined conditions and drawdown as the result of pumping in an unconfined aquifer typically does not extend far from the pumping well. The Water Management Board recognizes that putting water to beneficial use requires a certain amount of drawdown to occur. The Board has developed rules to allow water to be placed to maximum beneficial use without the necessity of maintaining artesian head pressure for domestic use. The Water Management Board defined an “adversely impacted domestic well” in ARSD 74:02:04:20(7) as:

“A well in which the pump intake was set at least 20 feet below the top of the aquifer at the time of construction or, if the aquifer is less than 20 feet thick, is as near to the bottom of the aquifer as is practical and the water level of the aquifer has declined to a level that the pump will no longer deliver sufficient water for the well owner’s needs.”

Due to the thinner saturated thickness of the aquifer in some locations, conditions can occur where withdrawals in the aquifer exceed recharge for a period of time, such as late summer and early fall or extended drought conditions. Situations may occur where pumping from a thicker part of an unconfined aquifer could cause drawdown impacting adequate wells in a thinner part of the aquifer. Under such conditions an unlawful impairment of senior water rights/permits or adequate domestic wells may occur. Therefore, the applicant should control their withdrawals so that nearby adequate domestic wells and senior water rights/permits are able to access needed water. There are two complaints of well interference on file with the Water Rights Program for this aquifer both from the late 1980s within the city limits of Sioux Falls, but neither complaint was substantiated as unlawful impairment (Water Rights, 2026d). This area of the aquifer also has a history of sand and gravel mining in the aquifer materials of this aquifer without a history of complaints of well interference (Water Rights, 2026c & 2026d; MMS, 2025). Ultimately, when considering the statutes (SDCL 46-1-4 and 46-6-6.1), rules (ARSD 74:02:04:20 (6) and (7)), the saturated aquifer thickness at the proposed diversion point, the lack of recent well interference complaints for adequate wells completed into the Big Sioux: Southern Skunk Creek aquifer in Minnehaha County (Water Rights, 2026e), there is a reasonable probability that any drawdown created from the proposed diversion is not expected to cause an unlawful impairment on proposed water right/permit holders or domestic users with adequate wells.

CONCLUSIONS:

1. Water Permit Application No. 9027-3 proposes to appropriate up to 46 acre-feet of water annually at a maximum pump rate of 0.064 cfs from one well to be completed into the Big Sioux: Southern Skunk Creek aquifer (approximately 27 feet deep) located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ (Lot 1-Tract 1) Section 9 for industrial use in a hog food production facility located in the E $\frac{1}{2}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 9; all in T101N-R50W. This site is located in Minnehaha County, approximately one mile west of Sioux Falls, SD.
2. Future Use Permit No. 449-3 is held by the City of Sioux Falls and reserves 5,430 acre-feet per year.
3. Based on the hydrologic budget and observation well data, there is a reasonable probability that sufficient water is available at the current level of average annual appropriative pumping for this application to be approved as a temporary use water permit out of the undeveloped future use reservation pursuant to SDCL 46-5-39.
4. There is a reasonable probability that the diversion by Water Permit Application No. 9027-3 will not unlawfully impair adequate wells for existing water rights/permits and domestic uses.



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