

WATER PERMIT NO. 8216-3

Name of Applicant: **B & K Dairy Farms LLC**

Address: **PO Box 294, Farmington CA 95230**

Phone: **209 564-8218**

Amount of Water Claimed: **0.67 cfs**

Total Acres: **NA**

Source of Water Supply: **groundwater (2 wells)**

Water to be used for: **commercial**

County: **Turner**

Type of Waste Disposal System:

Location: **4 miles northwest of Viborg**

PRIORITY

Date Received: **2-1-16**

Application/License Fee: **\$ 1,150**

Corrected Application Received: **4-11-16**

Period of Annual Use: **January 1 – December 31**

Remarks:

Diversion Point: **SE 1/4 SW 1/4 Sec 24-T97N-R54W**

Land to be Irrigated: **NA**

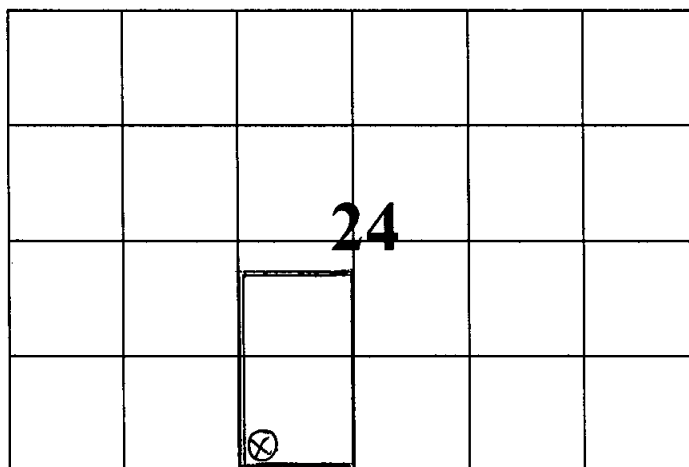
Depth of Well: **215 feet deep**

Well Driller:

Remarks:

Type of Map: **plat**

Prepared by:



Reviewed and the Number Assigned on: **4-11-16**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

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

Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8216-3</u> (office use only)	Hydrologic Unit <u>10170102</u>
	Basin <u>Nemadji River</u>	
	Newspaper <u>Valley Ent. 605-776-2827</u>	
	<u>Press & Dakota - Yankton 605-665-7811</u>	

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FEB 01 2016

WATER RIGHTS
PROGRAM

Application For Permit To Appropriate Water Within The State Of 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	

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 B & K Dairy Farms, LLCMailing Address P.O. Box 294 Farmington CA 95230
(Address) (City) (State) (Zip Code)Phone 209-564-8218 Mobile 209-564-8218 Email wgbylsma@aol.com2. Amount of water claimed 0.67 *CFS or 300 **GPM and 150 MG ***AF or 150 MG 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 Niobrara Marl4. Location of point of diversion 2 wells in SW1/4, SE1/4, SW1/4, Sec. 24 - T97N - R54W County Turner

(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 Turner6. Annual period during which water is to be used Continuously Jan 1 - Dec 31

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

Proposed 5,000 head mature dairy cow confinement operation.

Tom Koelhaas

I, Tom Koelhaas Owner, the applicant, certify under
Name of Person Title (if applicable)

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.

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

SOUTH DAKOTA
WATER PERMIT NO. 8216-3

Date of first receipt of application February 1, 2016.

Date of return to applicant for corrections, amendments or changes February 1, 2016.

Date of receipt of corrected application April 11, 2016.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8216-3 to B & K Dairy Farms LLC, c/o Tom Koolhaas, PO Box 294, Farmington CA 95230 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. 8216-3 appropriates up to 460 acre feet of water annually at a maximum diversion rate of 0.67 cubic feet of water per second from two wells to be completed into the Niobrara Aquifer (215 feet deep) located in the SE 1/4 SW 1/4 Section 24 for commercial use in a dairy operation located in the E 1/2 SW 1/4 Section 24; all in T97N-R54W.
2. The water appropriated shall be used for the purpose of commercial use in a dairy operation and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 8216-3 is July 11, 2016.
5. The date from which applicant may claim right is February 1, 2016.
6. One-fifth of the construction is to be completed on or before January 11, 2019.
7. All construction is to be completed on or before July 11, 2021.
8. Water is to be put to beneficial use on or before July 11, 2025.
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. The wells approved under this Permit 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 his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 8216-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Permit No. 8216-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-112 for concentrated animal feeding operations.

(continued)

4. Permit No. 8216-3 is subject to compliance with all existing and applicable Water Management Board Rules including but not limited to:
 - a) Chapter 74:54:01 Ground Water Quality Standards,
 - b) Chapter 74:54:02 Ground Water Discharge Permit,
 - c) Chapter 74:51:01 Surface Water Quality Standards,
 - d) Chapter 74:51:02 Uses Assigned to Lakes,
 - e) Chapter 74:51:03 Uses Assigned to Streams, and
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions
5. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Niobrara aquifer.
6. Water Permit No. 8216-3 authorizes a total annual diversion of 460 acre feet of water.

WATER MANAGEMENT BOARD

By: *Jeanne Goodman*
Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

JUL 27 2016
date



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 2 Have test holes been drilled ☒ Yes ☐ No Drilled by Sam Heine Well Co.
(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) 215' Depth to Top of Water Bearing Material 84' Depth to Water from Surface 10'

d) Distance to nearest domestic well on applicant's property None Property owned by others 3/4 mile

2. Wastewater Disposal System Information

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

b) System Capacity (gallons) Year Constructed

c) Connected to the City of Sanitary System

3. Dugout Information

a) Surface Dimensions Depth

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

4. Water Storage Dams

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

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

b) Freeboard

c) Crest Width

Crest Length

d) Height

e) Primary Outlet Capacity

If pipe, diameter

f) Secondary Spillway Capacity

Spillway Width

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

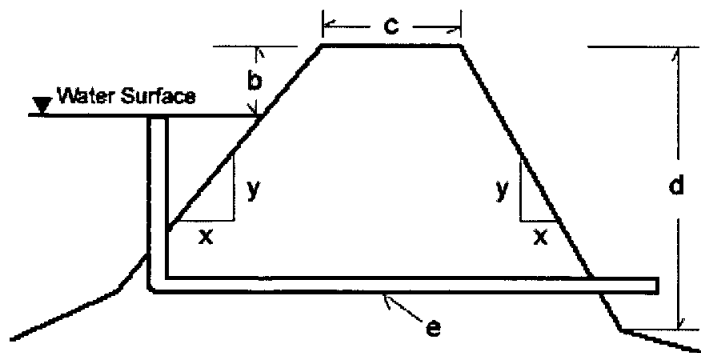
Upstream

Downstream

h) Surface Area of Impoundment

i) Storage Acre Feet

j) Drainage Area Above Dam Acres





Sam Heine Well Co.
Sam & Deanna Heine
3111 Shiptons Road
Yankton, SD 57078

GEOLOGIC MATERIALS LOGGED
CONTINUATION FORM FOR ITEM 12

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WATER RIGHTS PROGRAM

August 2011
DNR Form 145-3

[illegible]

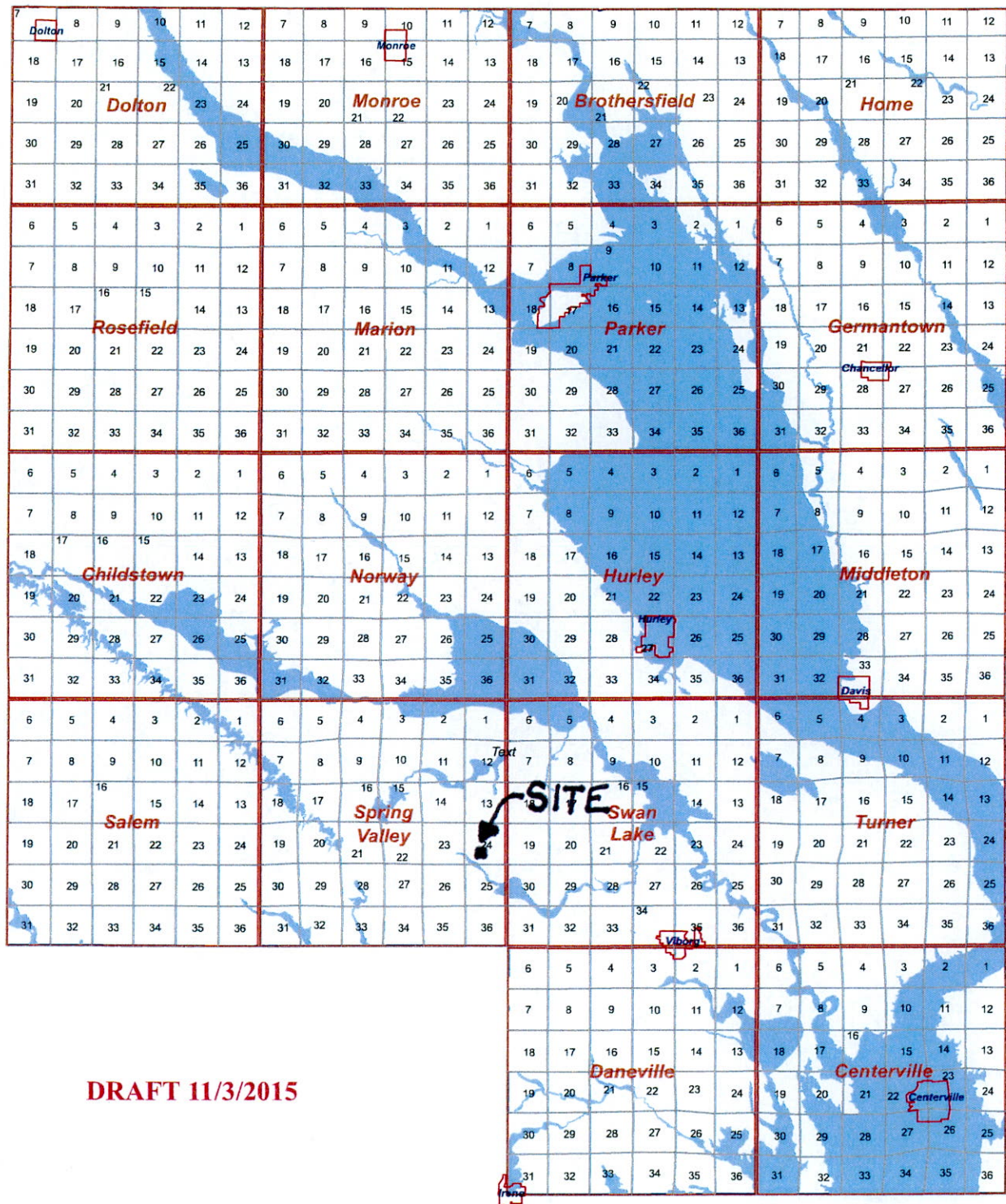
Type	Hardness	Color
Clay	Cemented	Black
Clay Stone	Consolidated	Blue
Cobbles	Dense/Stiff	Brown
Fine Sand	Hard	Gray
Gravel	Soft	Green
Limestone	Unconsolidated	Orange
Loss Circulation	Very Hard	
Ochre (weathered shale)	Top Soil	
Sandy Clay		Pepper
Sand with Clay/Silt		Red
		Tan
		White
		Yellow

Bred Farrar

CUSTOMER NAME

1-29-15

DATE _____



Legend

- Aquifer Protection Overlay
- Sections
- Townships
- City Limits (2015)

Turner County Aquifer Protection Overlay District



0 0.5 1 2 3 4 5 Miles

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**WATER RIGHTS
PROGRAM**

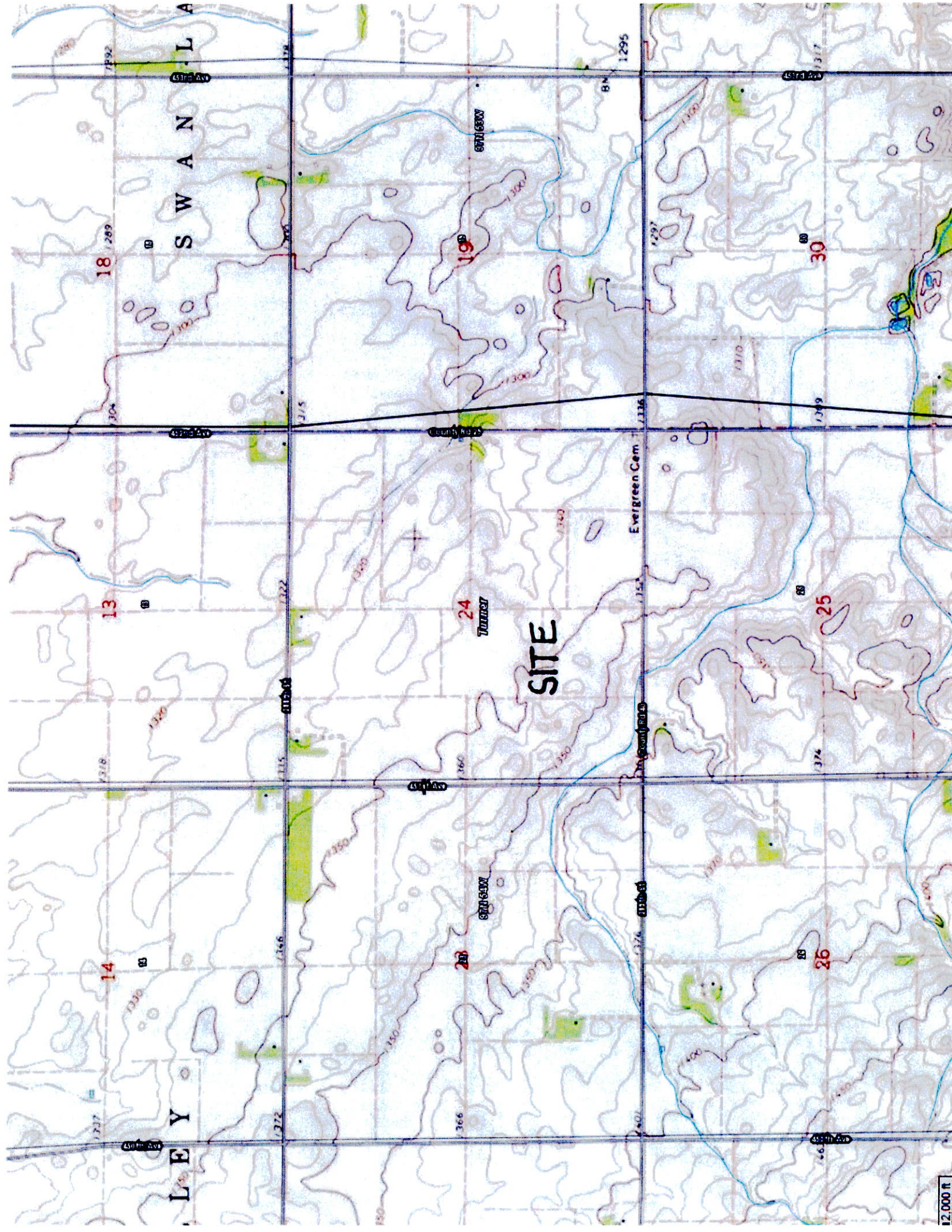
This is to certify that this is the Aquifer Protection Overlay District Map referred to in Article 11 of the 2015 Revised Zoning Ordinances of Turner County, South Dakota.

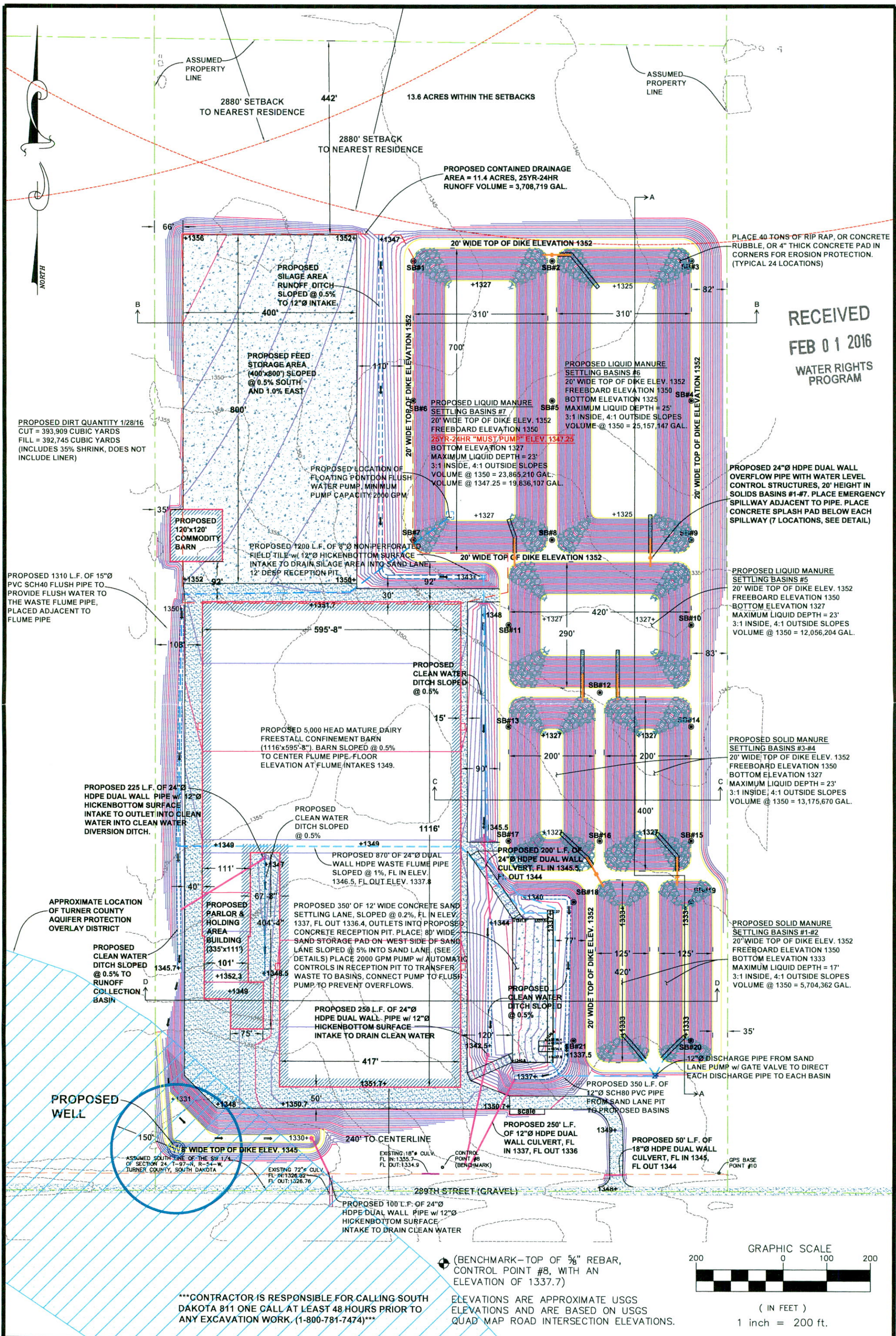
Signed: Chairman, Turner County Board of County Commissioners

Attest: Turner County Auditor



Limit on Liability: This information has been secured from sources we believe to be reliable. However, we do not guarantee the accuracy of the information contained herein. This map does not eliminate the need for an on-site investigation.





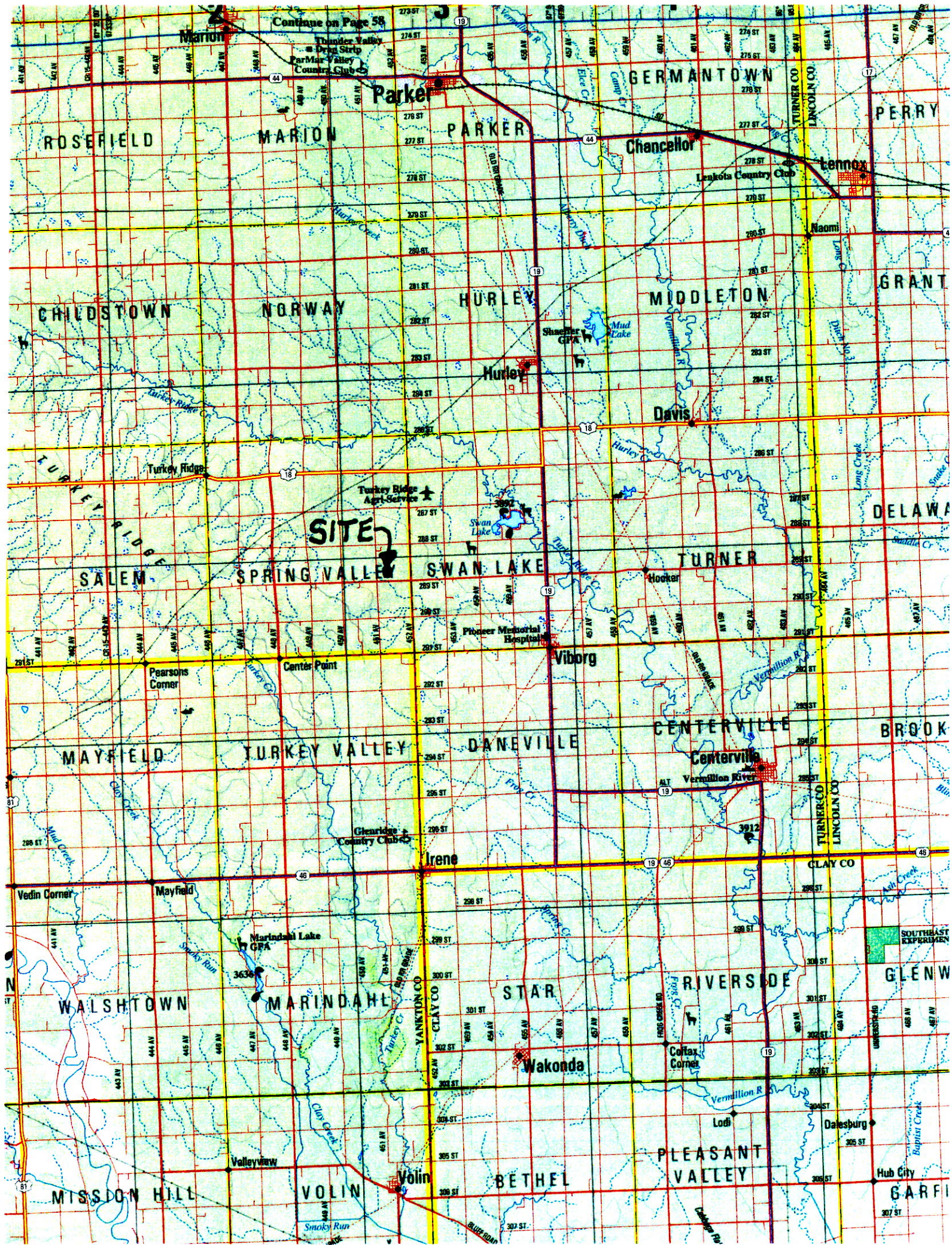
ProAg Engineering, Inc.

77402 Highway 71
Jackson, MN 56143
(507) 849-7200

WES BYLESMA
PROPOSED DAIRY SITE
SW 1/4, SECTION 24, T-97-N, R-54-W
TURNER COUNTY, SOUTH DAKOTA

Date	1/29/16	Checked By	Project No.
Drawn	D.D.A.	N.J.R.	15-076

SHEET
1/1



Continue on Page 58

Thunder Valley
Dried Strip
Farmer Valley
Country Club

Parker

GERMANTOWN

PERRY

Chancellor

Lennox

Naomi

ROSEFIELD

MARION

PARKER

CHILDSTOWN

NORWAY

HURLEY

MIDDLETON

GRANT

Hurley

Davis

Turkey Ridge

Turkey Ridge
Agri-Service

SITE

SWAN LAKE

TURNER

DELAWARE

SALEM

SPRING VALLEY

Viborg

Pioneer Memorial
Hospital

Pearsons
Corner

Center Point

Viborg

CENTERVILLE

BROOK

MAYFIELD

TURKEY VALLEY

DANEVILLE

Centerville

Glenridge
Country Club

Irene

CLAY CO

CLAY CO

Vedin Corner

Mayfield

Marindaal Lake
GPA

MARINDAAL

STAR

RIVERSIDE

GLENW

WALSHTOWN

YANKTON CO

CLAY CO

Wakonda

Colfax
Corner

Lodi

Dalesburg

Hub City

MISSION HILL

VOLIN

Volin

BETHEL

PLEASANT
VALLEY

GARFI

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 2/1, 20 16

RECEIVED OF ProAg Eng for B & K Dairy Farms LLC PO Box 181 Jackson MN 56143

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

Fee for Application for Permit No. <u>8216-3</u> to Appropriate Water, to construct and to put water to beneficial use	950	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. <u>8216-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law) TOTAL	1,150	00

No. 07724

By James Holman Jr
Chief Engineer

ProAg Engineering, Inc.

Nicholaus J. Rowe, P.E.

77402 US Hwy 71

P.O. Box 181

Jackson, MN 56143

507-841-3269

nic@proageng.com

January 29, 2016

SD DENR – Water Rights
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501

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**WATER RIGHTS
PROGRAM**

RE: B&K Dairy Farms, LLC
Proposed Dairy Operation
Turner County, South Dakota
ProAg Project #15-076

On behalf of B&K Dairy Farms, LLC we are submitting the SD DENR Water Use Permit application for the construction of a proposed 5,000 head mature dairy cow confinement operation located in Turner County. All the cows will be housed in two confinement buildings. The dairy is proposing to drill two wells at the southwest corner of the site to the supply water. The well water may require extensive treatment through a reverse osmosis system that could potentially cause a large volume of wastewater. The dairy needs a minimum pumping capacity of 150 gallons per minute but the treatment system could require that rate to double. The site is located northwest of Viborg, South Dakota in the E ½, SW ¼, Section 24, T-97-N, R-54-W, Turner County. The land for the dairy is currently farmland and the site will require about 65 acres.

Enclosed please find a copy of the following:

1. Completed Water Permit for Nonirrigation Uses w/ \$1,150.00 check for permit fee
2. Site Maps
3. Site Plan Engineering Drawing

We trust the above information is adequate for your review and approval. Should you have any questions please do not hesitate to contact me at 507-849-7200.

Respectfully Submitted,



Nicholaus J. Rowe, P.E.
ProAg Engineering, Inc.

**WRITING IN LIEU OF MEETING
OF THE MEMBERS OF
B & K DAIRY FARMS, LLC**

The undersigned, being all of the members of B & K Dairy Farms, LLC, a South Dakota limited liability company (the "Company"), entitled to notice of the meeting of members, waive all requirements of notice of the meeting and consent to the adoption of this Writing in Lieu of Meeting of Members.

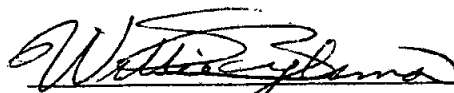
The actions set forth below are adopted and shall be of the same effect as if adopted at a meeting of the members of the Company duly called and held for the purposes of taking such actions. This Writing in Lieu of Meeting of Members is ordered filed with the minutes of the meetings of members.

WHEREAS, the Company is in the process of developing a dairy to be constructed, owned and operated in South Dakota.

WHEREAS, the Company desires to appoint and authorize Tom Koolhaas, a member of the Company, to sign any and all documents necessary or appropriate to develop the dairy, including without limitation all permit applications, and to take any and all further actions necessary or appropriate for the Company's development of the dairy.

Dated as of this 15th day of February, 2016.


Wes Bylsma, Member


Willie Bylsma, Member


Tom Koolhaas, Member

Schlaak, Karen

From: Nic Rowe <nic@proageng.com>
Sent: Monday, April 11, 2016 10:30 AM
To: Schlaak, Karen
Subject: RE: B&K Dairy Farms - Water Permit

Yes please include me on the notification and report.
Thanks, Nic Rowe

From: Schlaak, Karen [mailto:Karen.Schlaak@state.sd.us]
Sent: Monday, April 11, 2016 10:23 AM
To: 'Nic Rowe' <nic@proageng.com>
Subject: RE: B&K Dairy Farms - Water Permit

Based on that, we will proceed with the application. I'm assuming you, as well as the applicant, will want to be notified when the report, recommendation and public notice are prepared?

From: Nic Rowe [mailto:nic@proageng.com]
Sent: Monday, April 11, 2016 7:56 AM
To: Schlaak, Karen
Cc: wgbylsma@aol.com; 'Laura Koolhaas'
Subject: RE: B&K Dairy Farms - Water Permit

Hi Karen,
Attached is a statement of authority for Tom Koolhaas, who also signed the water permit application. Please review and let me know if this will work to proceed with the application.

Thanks, Nic Rowe, PE
ProAg Engineering, Inc.
77402 US Hwy 71
PO Box 181
Jackson, MN 56143
507-849-7200 (office)
507-841-3269 (cell)
nic@proageng.com

From: Schlaak, Karen [mailto:Karen.Schlaak@state.sd.us]
Sent: Wednesday, April 6, 2016 8:38 AM
To: nic@proageng.com
Cc: 'wgbylsma@aol.com' <wgbylsma@aol.com>
Subject: FW: B&K Dairy Farms - Water Permit

We are still waiting for the statement of authority that the person who signed the water permit application (not legible) as owner has the authority to act on behalf of B&K Dairy on all matters involving the permit application. As stated in pervious correspondence, whether that is drafted by an attorney or registered agent for the LLC is up to the company to decide. The registered agent for the LLC as listed on the Secretary of State's website is Daniel Harmelink, 300 S Phillips Avenue, Suite 300, Sioux Falls SD.

Once this information is received, we will proceed with the water permit application.

Karen

From: Schlaak, Karen
Sent: Tuesday, March 01, 2016 11:45 AM
To: nic@proageng.com
Subject: FW: B&K Dairy Farms - Water Permit

Nic,
Just a reminder that we have not heard back from B&K Dairy or you regarding the information requested in the email below regarding the statement of authority and the signature on the water permit application.

Karen

From: Schlaak, Karen
Sent: Wednesday, February 10, 2016 9:23 AM
To: 'nic@proageng.com'
Subject: FW: B&K Dairy Farms - Water Permit

Good morning,
The map you resubmitted will be fine and well as the additional information.

Regarding the signature on the application. I did review the Secretary of State website and B & K Dairy Farms LLC is listed, but there was no listing of officers for the LLC. What we need is a statement of authority that the person signing the application has the authority to act on behalf of B&K Dairy on all matters involving the permit application. Whether that is drafted by an attorney or registered agent for the LLC is up to the company to decide. The registered agent for the LLC as listed on the Secretary of State's website is Daniel Harmelink, 300 S Phillips Avenue, Suite 300, Sioux Falls SD.

Karen

From: Nic Rowe [<mailto:nic@proageng.com>]
Sent: Tuesday, February 09, 2016 10:43 AM
To: Schlaak, Karen
Subject: RE: B&K Dairy Farms - Water Permit

Hi Karen,
The owners replied to me that they have already filed with the Secretary of State? Maybe it is not on their website yet.
Thanks, Nic Rowe

From: Nic Rowe [<mailto:nic@proageng.com>]
Sent: Tuesday, February 9, 2016 9:12 AM
To: 'karen.schlaak@state.sd.us' <karen.schlaak@state.sd.us>
Cc: 'Wes Bylsma' <wgbylsma@aol.com>; 'Laura Koolhaas' <tlkoolhaas@sbcglobal.net>
Subject: B&K Dairy Farms - Water Permit

Hi Karen,
Thanks for the quick review and reply. Attached is the site plan referencing the quarter corner of dairy property (the SW corner of the E ½, SW ¼, Section 24, T97N, R54W, Turner County). Both wells will be directly adjacent to one another. The dairy will basically use the entire 80 acres except the north 15 acres of the 80 acres. The entire area of the dairy is shown on the plan.

As for the signature and LLC, B&K Dairy Farms LLC, I assume hasn't filed with the state yet as it hasn't received all the required permits yet to build in the state. What is needed for the statement of authority? Does that need to be written up by an attorney or is that something we can just write up and have the owners print and sign there names?

Please let me know if the attached plan meets your requirements for item 1 and please provide me with a little more info on the statement of authority.

Thanks, Nic Rowe, PE
ProAg Engineering, Inc.
77402 US Hwy 71
PO Box 181
Jackson, MN 56143
507-849-7200 (office)
507-841-3269 (cell)
nic@proageng.com

LIVESTOCK WATER REPORT

DAIRYLAND LABORATORIES, INC.
217 E. Main Street
Arcadia, WI 54612

SAM HEINE
214 Capitol
Yankton, SD 57078

1

REPORT DATE..... 3/ 6/2015

SAMPLED FOR: Brad Farer

SAMPLE #: 433

DESCRIPTION: open discharge #3

DATE SAMPLED: 3/ 3/2015 TIME SAMPLED:

	YOUR LEVELS	POSSIBLE PROBLEMS
NITRATE-N	1.61 ppm	> 50.00 ppm
pH	6.95	< 5.5 or > 8.3
CALCIUM	295.399 ppm*	> 200.000 ppm
MAGNESIUM	55.300 ppm	> 80.000 ppm
PHOSPHORUS	1.153 ppm*	> 0.700 ppm
POTASSIUM	11.374 ppm	> 20.000 ppm
COPPER	0.011 ppm	> 0.500 ppm
IRON	0.716 ppm*	> 0.300 ppm
ZINC	0.155 ppm	> 25.000 ppm
SODIUM	45.989 ppm	> 150.000 ppm
MANGANESE	0.113 ppm*	> 0.050 ppm
CHLORIDE	10.000 ppm	> 200.000 ppm
SULFATES	693.399 ppm*	> 300.000 ppm
TOTAL DISSOLVED SOLIDS	1670.000 ppm*	> 1000.000 ppm
WATER HARDNESS	965 ppm (EXTREMELY HARD WATER)	
	57 gpg (Grains Per Gallon)	

* Levels exceed the guidelines. Caution is advised as possible problems or reduced performance may occur.

-----BILLING INFORMATION-----

SAMPLED BY: SAM HEINE
SAMPLED FOR: Brad Farer
DESCRIPTION: open discharge #3

Reference: 193370
Date: 3/ 3/2015
Sample: 433

\$ 39.00 W3-LIVESTOCK WATER
\$ 39.00 TOTAL INVOICE



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

February 1, 2016

Nicholaus J Rowe
ProAg Engineering Inc.
PO Box 181
Jackson MN 56143

RE: B & K Dairy Farms LLC

Dear Mr. Rowe:

Thank you for submitting the *Application for a Permit to Appropriate Water* for commercial use in a dairy operation in Turner County. In order to complete the application, the following is required.

- The application is requesting two wells. Several maps were submitted with the application. On one of the maps, a proposed well location is circled. Please submit a map that shows the proposed location of each of the wells. The map needs to reference a government section corner or quarter corner including section, township and range. Also, please outline the entire area the dairy will cover.
- The signature on the application is not legible. I conducted a corporation search on the Secretary of State's website and there is no listing of officers for this LLC. DENR will need a statement of authority that the person signing the application has authority to act on behalf of B & K Dairy Farms LLC. on all matters involving the water permit application.

If you have any questions, please contact me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

Entity Detail File Annual Report Statement of Change Forms

Name **B & K DAIRY FARMS, LLC** [Obtain a Certificate of Good Standing](#)
Corporate ID **DL043702**
Incorporation/Qualification Date **5/14/2015**

Home State **SOUTH DAKOTA**
Status **Good Standing**
Last Annual Report **2015**
Corporation Type **Domestic LLC**
Stock Info

Registered Agent Documents Officers

Year	Director	Officer Type	First	Middle	Last	Address	City	State	Zip	Country
No records to display.										



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8216-3, B & K Dairy Farms 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. 8216-3, B & K Dairy Farms LLC, c/o Tom Koolhaas, PO Box 294, Farmington CA 95230.

The Chief Engineer is recommending APPROVAL of Application No. 8216-3-3 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 rights, 3) the proposed use is a beneficial use, 4) it is in the public interest with the following qualifications:

1. The wells approved under this Permit 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 his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 8216-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
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 - b) Chapter 74:54:02 Ground Water Discharge Permit,
 - c) Chapter 74:51:01 Surface Water Quality Standards,
 - d) Chapter 74:51:02 Uses Assigned to Lakes,
 - e) Chapter 74:51:03 Uses Assigned to Streams, and
 - f) Chapter 74:52:01 through 74:52:11 Surface Water Discharge Provisions
5. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Niobrara aquifer.
6. Water Permit No. 8216-3 authorizes a total annual diversion of 460 acre feet of water.

See report on application for additional information.

Jeanne Goodman, Chief Engineer

June 21, 2016

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NO. 8216-3
B&K DAIRY FARMS LLC
C/O TOM KOOLHAAS
JUNE 20, 2016

Water Permit Application No. 8216-3 proposes to authorize the diversion of water from the Niobrara aquifer at a maximum diversion rate of 0.67 cubic feet of water per second (cfs) for commercial use in a dairy operation. This application proposes to appropriate up to 460 acre-feet annually (ac-ft/yr.) from two wells (approximately 215 feet deep). The wells are to be located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 24; T97N-R54W. The dairy operation is to be located in the E $\frac{1}{2}$ SW $\frac{1}{4}$ Section 24; T97N-R54W in Turner County.

AQUIFER: Niobrara aquifer (NBRR)

Aquifer Characteristics:

The Niobrara aquifer is, “composed of a fractured, calcareous marl, interbedded with calcareous claystone and is referred to as “chalk rock” by local drillers” (Lindgren and Hansen, 1993). The Niobrara aquifer is the permeable and porous portion of the Niobrara Formation. The Niobrara Formation can be found underlying a large portion of eastern South Dakota (Tomhave and Schulz, 2004). Water production from the Niobrara Formation is controlled by secondary porosity (i.e. fractures, solution cavities, faults, etc.) and weathering (Hedges et. al, 1982). Areas where there is enough permeability and porosity in the Niobrara Formation are the hydraulically productive areas known as the Niobrara aquifer. However, the Niobrara aquifer is not contiguous and different portions are not hydraulically connected to each other. The Niobrara Formation has been incised. This portion of the Niobrara Formation lies between the Vermillion and James Rivers.

This application proposes to withdraw water from a portion of the Niobrara aquifer that underlies portions of Clay, Hutchinson, McCook, Turner, and Yankton Counties (see Figure 1) (Tomhave and Schulz, 2004). This portion of the Niobrara aquifer underlies approximately 340,550 acres and can be found under both confined and unconfined conditions (Bugliosi, 1983; Lindgren and Hansen, 1993; Water Rights, 2016a and 2016c).

The Niobrara aquifer is under confined conditions at the proposed well sites (Water Rights, 2016c). A test hole log submitted with the application indicated the top of the aquifer material was encountered at 84 feet below grade and is 126 feet thick. The static water level is likely within 30 feet of ground surface at the proposed well sites (Lindgren and Hansen, 1990; Water Rights, 2016c). The reported static water level from the application was 10 feet below grade. However, the test hole was not cased, and the water level may not be representative.

South Dakota Codified Law (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 there is unappropriated water available for this applicant’s proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights

and that the proposed use is a beneficial use and in the public interest. This report will address the availability of unappropriated water and effects on existing rights from the aquifer that are pertinent to this application.

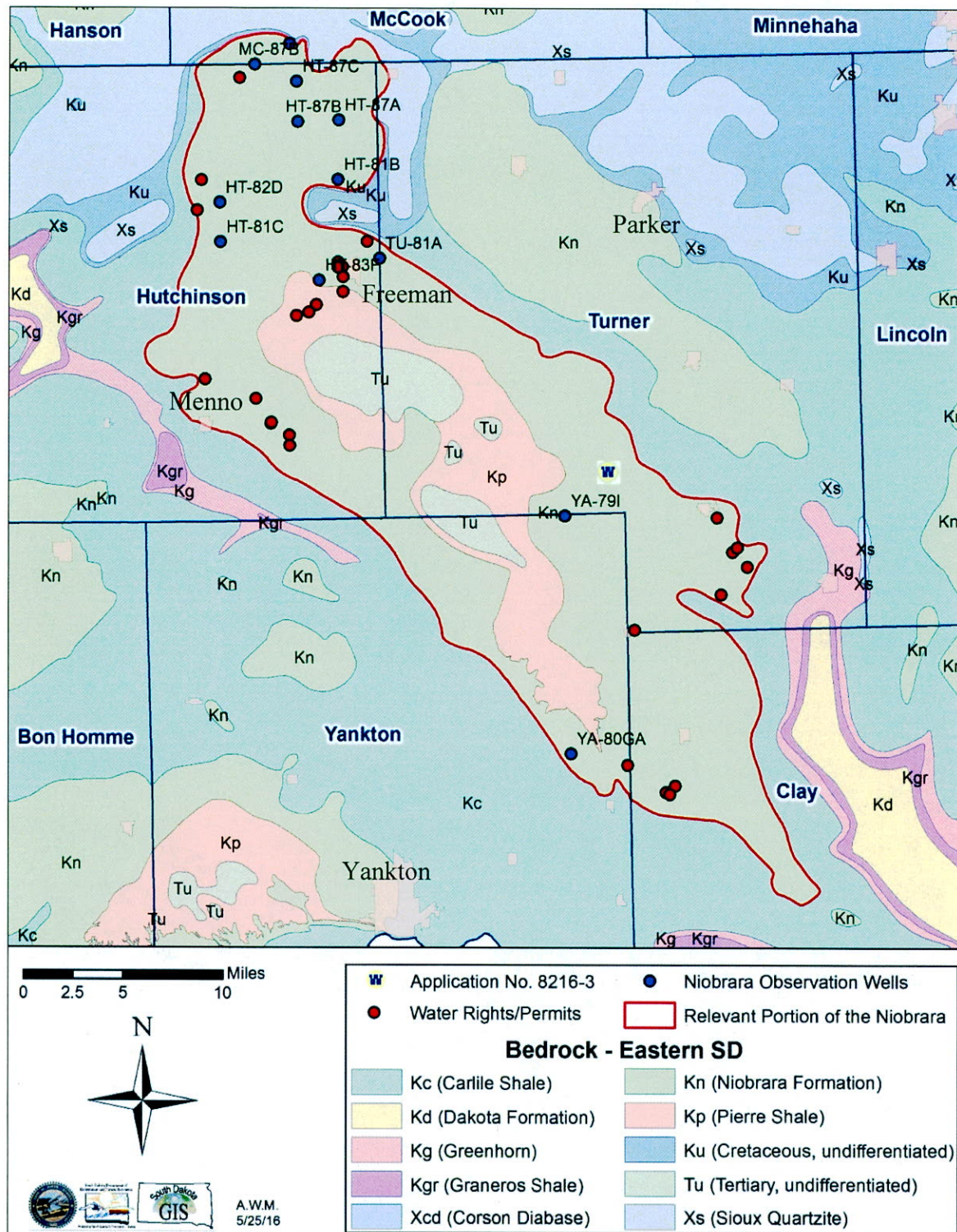


Figure 1- Bedrock map (Tomhave and Schulz, 2004) with Niobrara aquifer observation wells (Water Rights, 2016a) and water rights/permits (Water Rights 2016b)

WATER AVAILABILITY:

This application proposes to appropriate water from the Niobrara aquifer. 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.” If the source of the water is older or lower than the Greenhorn Formation and a water distribution system has applied for a permit, the Board need not consider the recharge/withdrawal issue. In this case, the aquifer is not stratigraphically lower than the Greenhorn Formation and this application is not for a water distribution system.

This portion of the Niobrara aquifer discharges to adjacent glacial aquifers, and through well withdrawals. There are 24 water rights/permits authorizing the withdrawal of water from the portion of the Niobrara aquifer this application proposes to use (Water Rights, 2016b). The non-irrigation water rights/permits are listed in Table 1. The City of Freeman and Town of Irene are both connected to B-Y Rural Water (Friedeman, 2016). Thus it is assumed they use their water rights for standby purposes only. Use by non-irrigation water rights/permits that are only limited by diversion rate, such as Water Right No. 6524-3 and Water Permit No. 6706-3, is estimated by assuming pumping at the maximum permitted diversion rate for 60 percent of the time.

Permit No.	Name	County	Status	Use	CFS	Est. Pumpage (ac-ft/yr.)
810-3	City of Freeman	HT	LC	MUN	1.26	
1229-3	Town of Irene	TU	LC	MUN	0.56	
5239-3	City of Freeman	HT	LC	MUN	0.33	
6524-3	Freeman JR College & Freeman Academy	HT	LC	INS	0.07	30.4
6706-3	Pheasant Run Farm	HT	PE	COM	0.1	43.4
Estimated Annual Pumpage (ac-ft/yr.)						73.8

Table 1- Estimated Annual Non-irrigation Pumpage from the Niobrara Aquifer (Water Rights, 2016b)

Historically, there has been very little irrigation from this portion of the Niobrara aquifer until 2013 (see Table 2). The historic annual average pumpage is 124.17 ac-ft/yr. However, that average is biased downward by all of the years prior to the glut of new irrigation in 2013. Using the historical average would mean that irrigation would be significantly underestimated. It would be more appropriate to estimate annual pumpage by multiplying the permitted acres by an estimate of annual application rate. In general, irrigators in this area are likely to put on less than 12 inches of irrigation water per acre. Currently, there are 19 water rights/permits authorizing the irrigation of 3,338.15 acres using water from this portion of the Niobrara Aquifer (Water Rights, 2016b). For that reason, the estimated annual irrigation pumpage is expected to be less than 3,338.15 ac-ft/yr. Therefore, the estimated average annual pumpage from this portion of the Niobrara aquifer is expected to be less than 3,872 ac-ft/yr.

Year	No. of Permits Reporting	Volume Pumped (ac-ft)
1981	1	0
1982	1	64.70
1983	2	35.57
1984	2	41.76
1985	2	49.72
1986	2	49.72
1987	2	116.67
1988	2	72.92
1989	2	136.55
1990	2	109.37
1991	2	125.95
1992	2	6.63
1993	1	0
1994	1	38.67
1995	1	29.39
1996	3	6.63
1997	3	18.56
1998	3	0
1999	3	0
2000	2	0
2001	2	0
2002	2	25.19
2003	2	7.73
2004	2	0
2005	2	0
2006	3	84.85
2007	2	23.26
2008	2	49.49
2009	2	28.28
2010	2	0
2011	2	141.41
2012	3	418.06
2013	15	972.05
2014	16	1002.41
2015	18	690.27
Avg.	3.26	124.17

Table 2- Historic Irrigation Pumpage from the Niobrara Aquifer (Water Rights, 1981-2016)

Data is not available to estimate recharge to this portion of the Niobrara aquifer. Lindgren and Hansen (1990) created a potentiometric surface map of this portion of the Niobrara aquifer (see Area C in Figure 2) for 1986. A potentiometric surface for May 2016 was created using observation well data (Water Rights, 2016a) and water well completion reports (Water Rights, 2016c). The water level listed at the time of drilling on the water well completion reports were approximated to May 2016 levels by adjusting the water level of the wells based on the water level of nearby observation wells.

The potentiometric surface maps indicate recharge to the Niobrara occurs in the Turkey Ridge area. Water moves away from Turkey Ridge radially toward the edge of this portion of the Niobrara aquifer. This natural discharge from the Niobrara aquifer can be captured for pumping. Figure 2 is Lindgren and Hansen's (1990) potentiometric surface map. Figure 3 is the May 2016 approximate potentiometric surface map.

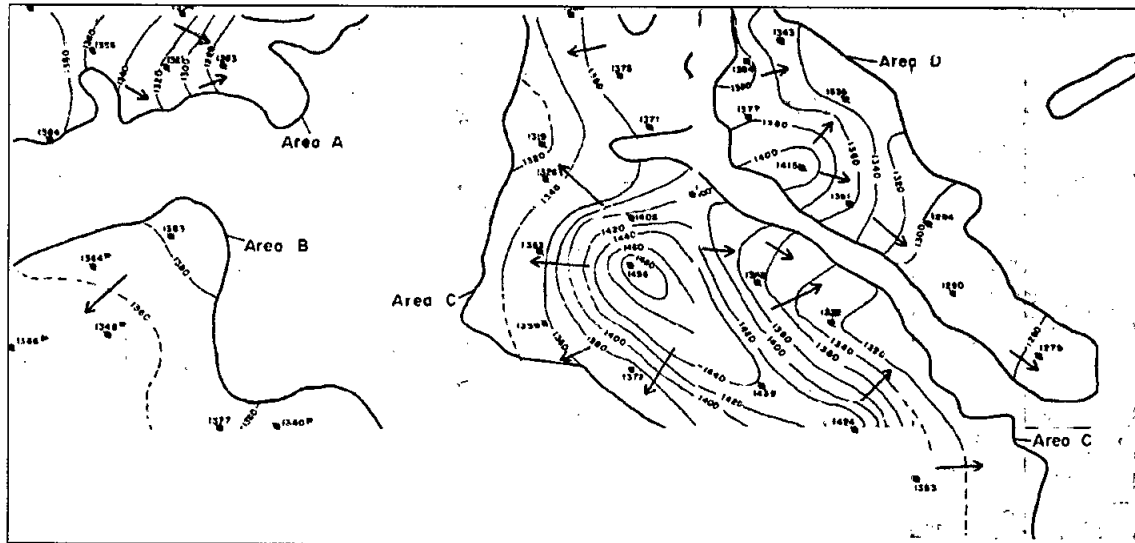


Figure 2- 1986 Potentiometric surface map of Niobrara aquifer (Lindgren and Hansen, 1990)

The general configuration of the potentiometric surfaces is the same. Lindgren and Hansen's (1990) potentiometric surface may be slightly higher in places, but this is likely caused by different interpretation, amount, and location of data. Lindgren and Hansen (1990) used 16 water level data points from 1986 to create their contours. The 2016 potentiometric surface was created using 41 water level data points. The 2016 potentiometric surface was created using more data points and provides a more detailed view of the water levels throughout this portion of the Niobrara aquifer, especially near the edges, than the 1986 potentiometric surface from Lindgren and Hansen (1990).

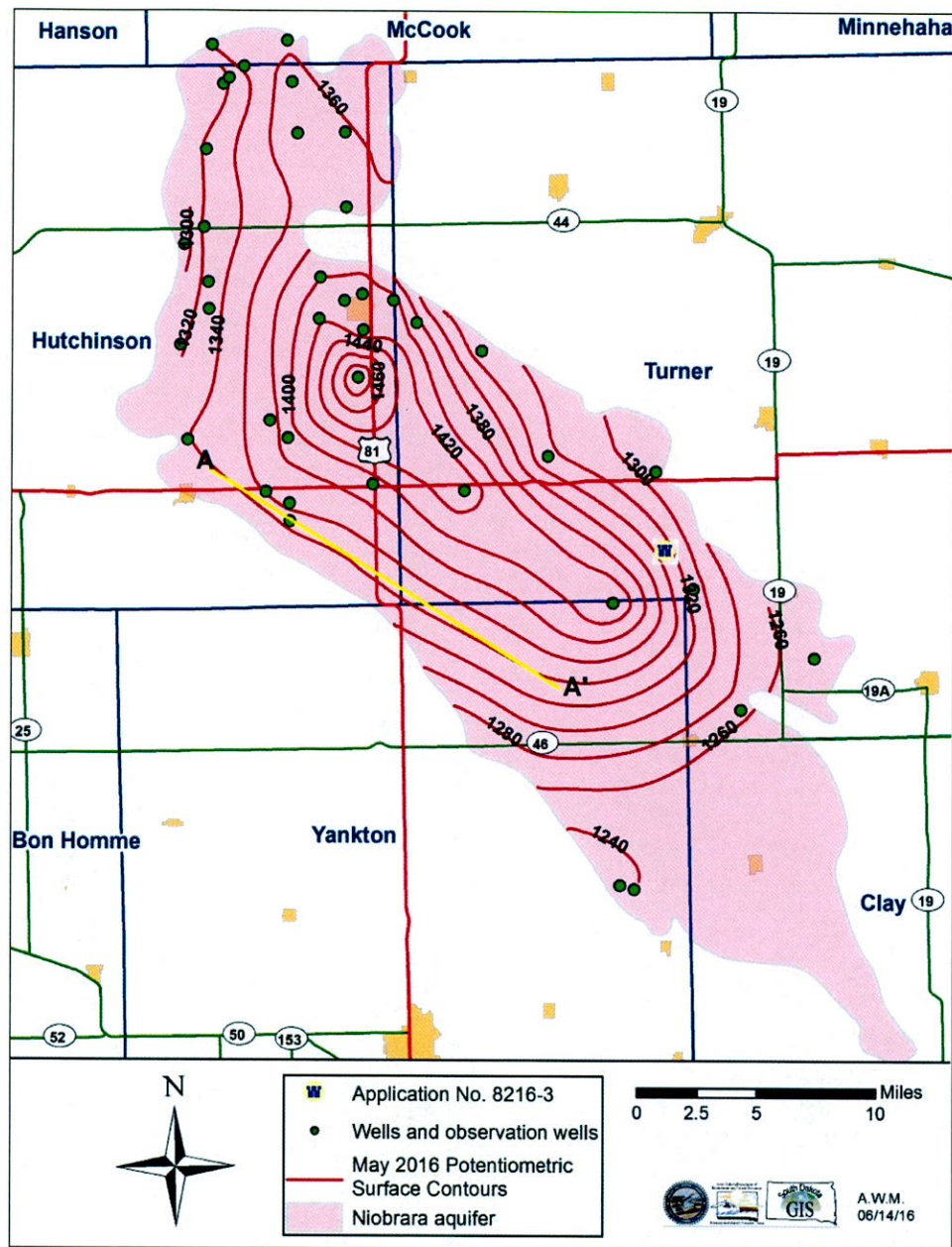


Figure 3- May 2016 approximate potentiometric surface contours (Water Rights, 2016a and 2016c)

Review of well completion reports (Water Rights, 2016c), lithologic logs (SDGS, 2016), Bugliosi's (1983) report on water resources in Yankton County, and the City of Menno water supply study (Bruce, 1962) indicates the Lower James Missouri aquifer is adjacent to the Niobrara aquifer along its western side with the Lower James Missouri aquifer directly overlying the Niobrara aquifer in places. The natural discharge from the Niobrara aquifer toward the Lower James Missouri aquifer can be estimated using the gradient from the 2016 potentiometric surface and a transmissivity calculated from several high capacity wells throughout the aquifer. The flow rate is calculated using Equation 1.

Equation 1-

$$Q = T * I * L * c$$

Where:

Q = Flow Rate, acre-feet per year (ac-ft/yr.)

T = Transmissivity, Gallons per day per foot (gpd/ft)

I = Gradient, feet per mile (ft/mi)

L = Length, miles (mi)

c = conversion factor equal to 365 days per year divided by 325,851.429 gallons per ac-ft
 $365 / 325851.429 = 0.00112$

The yellow line labeled A-A' in Figure 3 is 17.5 miles long. It is the approximate length through which water flows out of the Niobrara aquifer and into the Lower James Missouri aquifer. This length, 17.5 miles, is used for "L" in Equation 1. The average gradient, I, across line A-A' is 20 ft/mi. The average transmissivity for wells authorized by water rights/permits is 25,092 gpd/ft. Table 4 lists the wells and the transmissivities estimated from the specific capacity for each well.

Permit No.	Comment	Specific Capacity (gpm/ft drawdown) (Water Rights, 2016b)	Transmissivity (gpd/ft) (Aqtesolv, 2016)
5239-3		2.30	4,600
5764-3		2.27	4,540
6524-3		0.9	1,800
6706-3		0.30	609
7344-3	Well 1	7.69	15,380
	Well 2	3.16	6,320
7526-3	Middle well	11.84	23,680
	North well	41.67	83,340
7617-3	650 gpm test	13.27	26,540
	725 gpm test	12.95	25,900
7654-3		0.71	1,429
7683-3		81.25	162,500
7814-3	850 gpm test	12.5	25,000
	950 gpm test	8.48	16,960
8067-3	Well 1	5.45	10,920
	Well 2	6.98	13,960
8162-3		1.54	3,080
Average		12.55	25,092

Table 4- Transmissivity estimates using specific capacity of wells authorized by water rights/permits

Although the potentiometric surface suggests discharge in all directions, assuming discharge only to the Lower James Missouri aquifer is a conservative estimate of the amount of natural discharge from this portion of the Niobrara aquifer. Across line A-A' there is approximately 9,837 ac-ft/yr. flowing from the Niobrara aquifer to the Lower James Missouri aquifer. Recharge exceeds withdrawal by at least natural discharge. Natural discharge can be captured for pumping.

The estimated average annual pumpage is expected to be less than 3,872 ac-ft/yr. The estimated natural discharge toward just the Lower James Missouri aquifer is 9,837 ac-ft/yr. That amount of natural discharge is likely only a portion of the total natural discharge from this portion of the Niobrara aquifer. Therefore, there is a reasonable probability that unappropriated water is

available for this proposed appropriation, because natural discharge from the aquifer is available for pumping.

Administrative Rule of South Dakota Section 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 DENR-Water Rights Program monitors 60 observation wells completed into the Niobrara aquifer with 12 completed into the portion of the Niobrara aquifer this application proposes to use (Water Rights, 2016a). The nearest observation well to the proposed well site is YA-79I, approximately three miles south west. The hydrograph for YA-79I is shown in Figure 4.

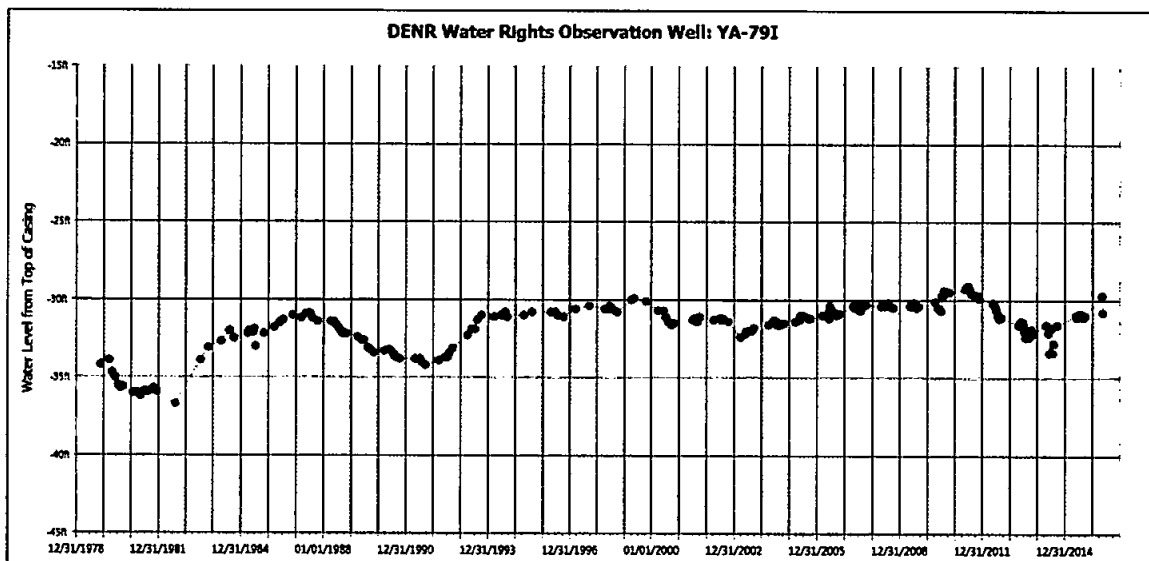


Figure 4- Hydrograph for observation well YA-79I (Water Rights, 2016a)

The hydrographs for YA-79I and HT-83F (see Figure 6) are representative of the hydrographs for the other 10 observation wells completed into the same portion of the Niobrara this application proposes to use. All twelve observation wells (see Figure 1) have hydrographs that show stable or rising water levels over the period of record (Water Rights, 2016a).

The water levels in the observation wells rise (recharge) during wet periods and gradually decline during dry periods. Some of the hydrographs, such as the hydrograph for HT-83F (see Figure 6), show the effect of pumping on artesian head pressure during the irrigation season. However, the effect is minor, and the water level in the observation wells readily recovers after the end of irrigation season.

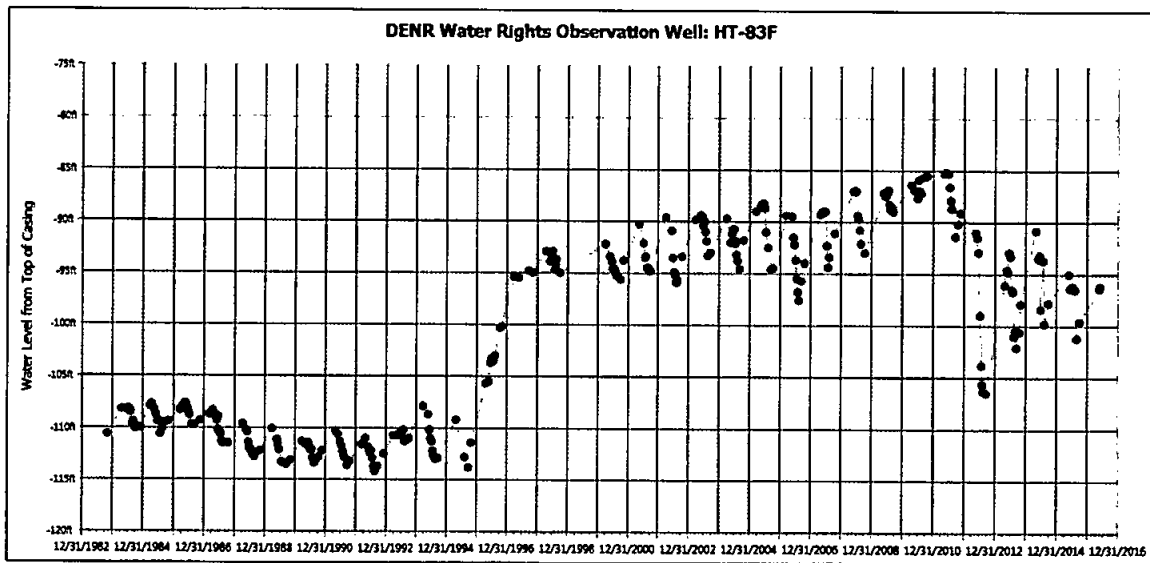


Figure 6- Hydrograph for observation well HT-83F (Water Rights, 2016a)

While some of the hydrographs do show the temporary impacts of well withdrawal on water level, the long term effects of climate still dominate. Thus, recharge to and natural discharge from the aquifer significantly exceeds pumping. Natural discharge from the aquifer can be captured for pumping. Recognizing that, the hydrographs for the observation wells document there is unappropriated water available for this proposed appropriation.

EXISTING WATER RIGHTS:

There are no existing water rights/permits authorizing the withdrawal of water from this portion of the Niobrara aquifer within five miles of the proposed well sites (Water Rights, 2016b). There is one domestic well that appears to be completed into the Niobrara aquifer on file with the DENR-Water Rights Program within two miles of the proposed well sites (Water Rights, 2016c). However, water well completion reports were not required to be submitted to the DENR-Water Rights Program prior to 1983. That means there are likely more wells than just the one well on file with the DENR-Water Rights Program completed into the Niobrara aquifer within two miles of the proposed well sites.

Well interference has not been an issue from this portion of the Niobrara aquifer in the past. This aquifer is under confined conditions and that means drawdown created by pumping a well may be measurable some distance from the pumping well. Drawdown created by pumping this proposed diversion can be estimated using the Theis Equation. The values used for the Theis Equation are shown in Table 5. The drawdown calculated using the values in Table 5 at various distances from the proposed well are shown in Table 6. These drawdown values are estimates. The only way to ascertain precise measurements for drawdown and radius of influence is through localized aquifer testing.

Q (cfs)	T (ft ² /d)*	Days since beginning pumping	Storativity
0.67	3354.5	365	0.0001
* = converted from 25,092 gpd/ft			

Table 5- Values used for the Theis Equation

Distance from well (miles)	0.1	0.25	0.5	1	1.5	2
Drawdown (ft)	15.79	13.27	11.37	9.47	8.36	7.57

Table 6- Estimated drawdown at various distances from the proposed well site after one year of continuous pumping at the proposed diversion rate (Utah, 2016)

Based on the Theis Equation (Utah, 2016), drawdown would extend beyond two miles. Tomhave and Schulz (2004) mapped an approximate formation and thus aquifer boundary approximately 1.6 miles east of the proposed well site. That means drawdown would increase in the other directions from the proposed well site as pumping continues. This application proposes to use two wells, and those wells would impact each other before impacting other wells.

The water level at the proposed wells sites is expected to be between 10 and 25 feet below grade. The top of the Niobrara Formation is 84 feet below ground surface at the proposed well sites. That means there is expected to be between 59 and 74 feet of artesian head in the Niobrara aquifer at the proposed well sites.

The Water Management Board has previously considered the effects of pumping on artesian head pressure and has promulgated rules to place water to maximum beneficial use. The Water Management Board has 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”

In the past, the Water Management Board has recognized to place water to maximum beneficial use, a certain amount of drawdown may occur. Since the aquifer is primarily under confined conditions, drawdown due to pumping may extend some distance from the well sites. The Water Management Board considered the delivery of water by artesian head pressure versus maximum beneficial use of water issue for Water Right No. 2313-2 for Coca-Cola Bottling Company of the Black Hills. The Water Management Board adopted Findings of Facts and Conclusions of Law that noted reservation of artesian head pressure for delivery of water would be inconsistent with SDCL 46-1-4 which states, “general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable...” (Water Rights, 1995). Furthermore, the Water Management Board found if increased cost or decreased production as a result of impacts on artesian head pressure by legitimate users is to be considered an adverse impact it would also be in conflict with SDCL 46-1-4 (Water Rights, 1995). With that in mind, some existing well owners may need to lower their pumps to accommodate for deeper water levels depending on the specific characteristics of the Niobrara aquifer at the proposed well sites. However when considering the statute (SDCL 46-6-6.1), rule (ARSD 74:02:04:20(7)), and the artesian head pressure, well interference from this proposed diversion is not expected to cause an adverse impact. Therefore, there is a reasonable probability that any interference created by pumping this proposed diversion will not be adverse.

SPECIAL CONSIDERATION

The predominant chemical constituents in the water from the Niobrara aquifer are total dissolved solids, calcium sodium, and sulfate (Lindgren and Hansen, 1993). Water quality sample test results along with a letter from the consulting engineer (Nicholaus Rowe of ProAg Engineering, Inc) were included with this application. Both the letter and the sample test results indicate the water from the Niobrara aquifer may require extensive treatment for use in this proposed dairy operation (Water Rights, 2016d). The letter stated the dairy required at least 150 gpm and extensive treatment could double that rate. This application was filed for 300 gpm (0.67 cfs) in anticipation of treating the water.

CONCLUSIONS:

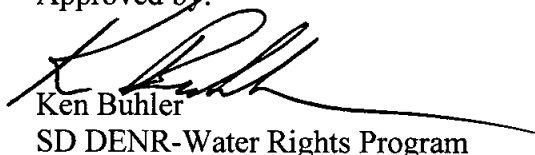
1. Application No. 8216-3 proposes to divert water from the Niobrara aquifer at a maximum diversion rate of 0.67 cfs using up to two wells for commercial use in a dairy operation.
2. A potentiometric surface of the aquifer for May 2016 shows the water in this portion of the Niobrara aquifer moves away from Turkey Ridge in a radial pattern toward the edges of the aquifer. This and the gradient of the potentiometric surface indicate there is natural discharge from the aquifer.
3. For there to be natural discharge, recharge must exceed withdrawals by at least natural discharge.
4. Using existing appropriative wells to estimate average aquifer transmissivity, the potentiometric surface to measure gradient, and an approximate length of contact between the Lower James Missouri and the Niobrara aquifers, natural discharge from the Niobrara to the Lower James Missouri aquifer can be estimated.
5. There is approximately 9,837 ac-ft/yr. subsurface flow from the Niobrara aquifer toward the Lower James Missouri aquifer. This is only a portion of the total potential natural discharge from this portion of the Niobrara aquifer.
6. Comparing the natural discharge from this portion of the Niobrara aquifer with the withdrawals, there is a reasonable probability that unappropriated water is available for this proposed appropriation.
7. The observation well hydrographs show stable to rising water levels over the period of record. Therefore, there is a reasonable probability that unappropriated water is available for this proposed appropriation based on the observation well data.
8. When considering the statute (SDCL 46-6-6.1), the rule (ARSD 74:02:04:20(7)), the estimated drawdown from the Theis Equation, there is a reasonable probability this proposed diversion can be made without adversely impacting existing appropriative or domestic users.

9. The water quality from the Niobrara aquifer may require extensive treatment to use for this proposed dairy operation. The applicant has applied for the diversion rate required to supply the dairy and treat the water.



Adam Mathiowetz, PE
SD DENR-Water Rights Program

Approved by:



Ken Buhler
SD DENR-Water Rights Program

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RECEIVED

JUL 22 2016

WATER RIGHTS
PROGRAM

AFFIDAVIT OF PUBLICATION

STATE OF SOUTH DAKOTA)

:SS

COUNTY OF TURNER)

Allyson M. Hill, being first duly sworn, on oath says the VIBORG ENTERPRISE is a WEEKLY newspaper published in VIBORG in said county of TURNER, State of South Dakota; and that she is authorized to and does make this affidavit on behalf of said VIBORG ENTERPRISE; that affiant has personal knowledge of all facts stated in this affidavit; that said newspaper is a legal newspaper as defined by SDCL 17-2-2.1 through 17-2-2.4 inclusive as amended, has a bona fide circulation of at least two hundred copies WEEKLY, has been published in the English language within said county and has been admitted to the United States mail under the second class mailing privilege, for at last one year continuously next prior to the publication of the notice herein mentioned and was and is printed wholly or in part in an office maintained at said place of publication; that said notice, a printed copy of which taken from the paper in which the same was published is hereto attached and is made part of this affidavit, was published in said newspaper

1 time(s) as follows: that the first publication of said

notice in said newspaper aforesaid was on Thursday

the 30 day of June, 2016,

and that the succeeding publications were severally

on Thursday, the ____ day of _____, 2016;

on Thursday, the ____ day of _____, 2016;

on Thursday, the ____ day of _____, 2016;

on Thursday, the ____ day of _____, 2016;

Affiant further says that the full amount of the fees charged for the publication of said notice inures to the benefit of the publishers of said newspaper; that no agreement of understanding for the division thereof has been made with any other person, that no part therefore has been agreed to be paid to any person whomsoever; and that the fees charged for the publication thereof are:

DOLLARS (\$ 22.56)

Allyson M. Hill, Allyson M. Hill

Subscribed and sworn to before me this 20 day of

July, 2016

Notary Public

My commission expires 11/14/2018.

**NOTICE OF APPLICATION NO. 8216-3 to
Appropriate Water**

Notice is given that B & K Dairy Farms LLC, c/o Tom Koolhaas, PO Box 294, Farmington CA 95230 has filed an application for a water permit to appropriate up to 460 acre feet of water annually at a maximum diversion rate of 0.67 cubic feet of water per second from two wells to be completed into the Niobrara Aquifer (215 feet deep) located in the SE 1/4 SW 1/4 Section 24 for commercial use in a dairy operation located in the E 1/2 SW 1/4 Section 24; all in T97N-R54W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8216-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605-773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by July 11, 2016.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

SHANE HILL



NOTARY PUBLIC
SOUTH DAKOTA



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.

Steven M. Pirner, Secretary,
Department of Environment and
Natural Resources.

Published once at the total
approximate cost of \$22.56

AFFIDAVIT OF PUBLICATION

YANKTON DAILY PRESS AND DAKOTAN

RECEIVED

JUL - 5 2016

WATER RIGHTS
PROGRAM

B&K DAIRY FARMS INC
PO BOX 294
FARMINGTON CA 95230

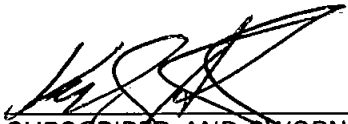
STATE OF SOUTH DAKOTA
COUNTY OF YANKTON

KELLY HERTZ, BEING FIRST DULY SWORN ON OATH DEPOSES
AND SAYS THAT (S)HE IS THE MANAGING EDITOR OF YANKTON
MEDIA INC, A CORPORATION, THE PRINTER AND THE PUBLISHER OF THE
YANKTON DAILY PRESS AND DAKOTAN, A LEGAL DAILY NEWSPAPER
PUBLISHED AND CIRCULATED IN THE CITY OF YANKTON, SAID COUNTY
AND STATE, AND ONE OF THE OFFICIAL NEWSPAPERS OF THE SAID
COUNTY OF FACTS STATED IN THIS AFFIDAVIT; THAT THE ANNEXED
6 + 30 NOTICE OF APPLICATI

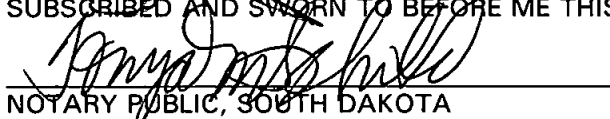
TAKEN FROM THE PAPER, IN WHICH IT WAS LAST PUBLISHED IN THE
NEWSPAPER ON THE 30th DAY OF June, 2016
THAT THE FULL AMOUNT OF THE FEE CHARGED FOR THE PUBLICATION
OF SAID NOTICE TO WIT \$26.34 ENSURES TO THE
BENEFITS OF THE PUBLISHER OF SAID NEWSPAPER AND THAT NO
AGREEMENT AND UNDERSTANDING FOR THE DIVISION THEREOF HAS
BEEN MADE WITH ANY OTHER PERSON, AND THAT NO PART THEREOF
HAS BEEN AGREED TO BE PAID TO ANY PERSON WHOMSOEVER.

PUBLISHED ON: 06/30/2016

FILED ON: 07/01/2016



SUBSCRIBED AND SWORN TO BEFORE ME THIS 1st DAY OF July, 2016



NOTARY PUBLIC, SOUTH DAKOTA
MY COMMISSION EXPIRES 08/19/2021

NOTICE OF APPLICATION NO. 8216-3 to Appropriate Water

Notice is given that B & K Dairy Farms LLC, c/o Tom Koolhaas, PO Box 294, Farmington CA 95230 has filed an application for a water permit to appropriate up to 460 acre feet of water annually at a maximum diversion rate of 0.67 cubic feet of water per second from two wells to be completed into the Niobrara Aquifer (215 feet deep) located in the SE 1/4 SW 1/4 Section 24 for commercial use in a dairy operation located in the E 1/2 SW 1/4 Section 24; all in T97N-R54W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8216-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605-773-3352) and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by July 11, 2016.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

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.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources.
Published once at the total approximate cost of \$26.34.

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, June 21, 2016 11:04 AM
To: enterprise@iw.net
Subject: 8216-3, B & K Dairy Farms, Inc.
Attachments: 8216-3publicnov2015.short1.docx; FORM8.FRM.doc

Attached is a notice to be published on June 30, 2016.

B & K Dairy Farms, Inc., c/oTom Koolhaas, PO Box 294, Farmington CA 95230 (209 564-8218) 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.

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

Karen Schlaak

Water Rights Program
523 E Capitol Ave
Pierre SD 57501
Phone: 605 773-3352

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, June 21, 2016 11:03 AM
To: 'Tera Schmidt'
Subject: 8216-3, B & K Dairy Farms, Inc.
Attachments: 8216-3publicnov2015.short1.docx; FORM8.FRM.doc

Attached is a notice to be published on June 30, 2016.

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Karen Schlaak

Water Rights Program
523 E Capitol Ave
Pierre SD 57501
Phone: 605 773-3352



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

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

June 21, 2016

B & K Dairy Farms LLC
Tom Koolhaas
PO Box 294
Farmington CA 95230

Dear Mr. Koolhaas:

Water Permit Application No. 8216-3 for commercial use has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Viborg Enterprise printed at Viborg SD (Ph # 605-776-7827) and the Press & Dakotan printed at Yankton SD (Ph # 605-665-7811). You will need to contact the newspaper(s) 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(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) 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,


Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

cc: Nic Rowe, ProAg Engineering Inc, PO Box 181, Jackson MN 56143

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. 8216-3 to Appropriate Water

Notice is given that B & K Dairy Farms LLC, c/o Tom Koolhaas, PO Box 294, Farmington CA 95230 has filed an application for a water permit to appropriate up to 460 acre feet of water annually at a maximum diversion rate of 0.67 cubic feet of water per second from two wells to be completed into the Niobrara Aquifer (215 feet deep) located in the SE 1/4 SW 1/4 Section 24 for commercial use in a dairy operation located in the E 1/2 SW 1/4 Section 24; all in T97N-R54W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8216-3 with qualifications because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <http://denr.sd.gov/public> or contact Eric Gronlund for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605-773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by July 11, 2016.

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

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.

Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published once at the total approximate cost of _____.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

JUL 27 2016

B & K Dairy Farms LLC
Tom Koolhaas
PO Box 294
Farmington CA 95230

Dear Mr. Koolhaas:

Enclosed is Water Permit No. 8216-3 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,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

cc: ProAg Engineering, Nic Rowe, PO Box 181, Jackson MN 56143

enclosures

8216-3

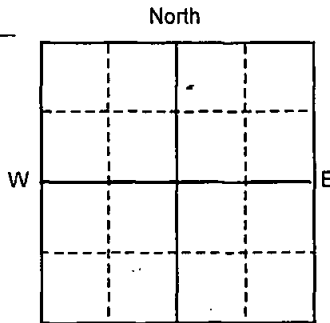
SD EForm - 1621LD V1

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE ¼ SW ¼ Sec 24 Twp 97N Rg 54W

County TURNER

Please mark well
location with an "X"

Well Completion Date

9/14/17

1 Mile

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

PROPOSED USE:

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

METHOD OF DRILLING:

Mud Rotary

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
LB/FT	12.00 IN	0.0 FT	57.0 FT	17.50 IN
LB/FT	12.00 IN	197.0 FT	200.0 FT	17.50 IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
Quick Grout	57	Lb/gal	0.0 Ft	50.0 Ft
Red Flint	270	Lb/gal	50.0 Ft	200.0 Ft

Describe grouting procedure
Drill Rod

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 12.00 Inches Length 140.0 Feet

Material Stainless Steel

Slot Size 80 Set From 57.0 Feet to 197.0 Feet

Other information

WAS A PACKER OR SEAL USED?

☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How?

☐ No, Why Not?
Lab to which water
quality sample sent for analysis

Well Owner: Tom Koolhaas

Business Name: TriCross Dairy

Address: 45144 289th St

City, State, Zip: Viborg SD 57070

WELL LOG:

			DEPTH	
FORMATION			FROM	TO
Clay	Tan	M	0	25
Sandy/Clay	Tan	M/H	25	35
Clay	Brown	M	35	37
Clay	Blue	M	37	40
Clay	Wht	M	40	43
Clay	Wht/Grey	M	43	186
Sandy/Clay	Wht	M	186	196
Clay	Blue/Blk	M/H	196	200

STATIC WATER LEVEL 27 FEET

If flowing: closed in pressure PSI

GPM flow through Inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe: With Submersible

☐ Bailed

☐ Other

Pumping Level Below Land Surface

105' 4" Ft. After 14 Hrs. pumped 205 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: 200 GPM

REMARKS

West Well #3 55 hours Air Development

GPS: 43 11 58.1N

97 10 32.3W

Drilled by Kris VanHeuveln

Date: 11/21/2017

This well was drilled under license # 463 and this report is true and accurate.

Drilling firm: Steffl Drilling & Pump Inc

Signature of License Representative:

Signature of Well Owner or Equitable Property Holder:

RECEIVED

Date:

DEC 18 2018

WATER RIGHTS
PROGRAM

Dewell, Amanda

From: Mathiowetz, Adam (DENR)
Sent: Tuesday, July 2, 2024 10:56 AM
To: Gronlund, Eric; Duvall, Ron; Dewell, Amanda
Subject: RE: [EXT] B & K Dairy Well Permits

Its Niobrara as long as that gravelly junk at the top is grouted off.

Looking a bit further east in the same section, Brad Farrar put in 3 test holes. While none mentioned gravel, those test holes and an SDGS lithog just south of the test hole in these emails for B&K indicate there may be a very small extension off the UVM:W in that area. It is unlikely that we would consider the brief mention gravel in the log Eric attached as part of the UVM since there is no real supporting data, it is something we need to be aware of.



Adam Mathiowetz, PE
Engineer, Water Rights Program
 Department of Agriculture and Natural Resources
 523 E. Capitol Ave. Pierre SD, 57501
 605.773.3352
danr.sd.gov

From: Gronlund, Eric <Eric.Gronlund@state.sd.us>
Sent: Tuesday, July 2, 2024 10:40 AM
To: Mathiowetz, Adam (DENR) <Adam.Mathiowetz@state.sd.us>; Duvall, Ron <Ron.Duvall@state.sd.us>; Dewell, Amanda <Amanda.Dewell@state.sd.us>
Subject: FW: [EXT] B & K Dairy Well Permits

Think we are in agreement that we proceed with this as a request for an additional well under 46-5-13.1 as long as the source remain the Niobrara aquifer. Test hole log certainly confirms it being in the Niobrara but Adam please confirm.

From: Gronlund, Eric
Sent: Thursday, June 27, 2024 2:22 PM
To: Duvall, Ron <Ron.Duvall@state.sd.us>; Mathiowetz, Adam (DENR) <Adam.Mathiowetz@state.sd.us>
Cc: Dewell, Amanda <Amanda.Dewell@state.sd.us>
Subject: FW: [EXT] B & K Dairy Well Permits

Based on the log this appears to be in Niobrara aquifer.

B & K Dairy holds WP No. 8216-3 for 0.67 cfs (460 ac-ft annually) from the Niobrara aquifer. The time to complete construction was July 11, 2021 and the time to put water to beneficial use July 11, 2025. I think we would allow this under 46-5-13.1 if it truly is not more water and in the Niobrara aquifer. Adam – please confirm that this is the Niobrara.

B& K Dairy also have an application that was deferred in March to be from the UVM:W aquifer.

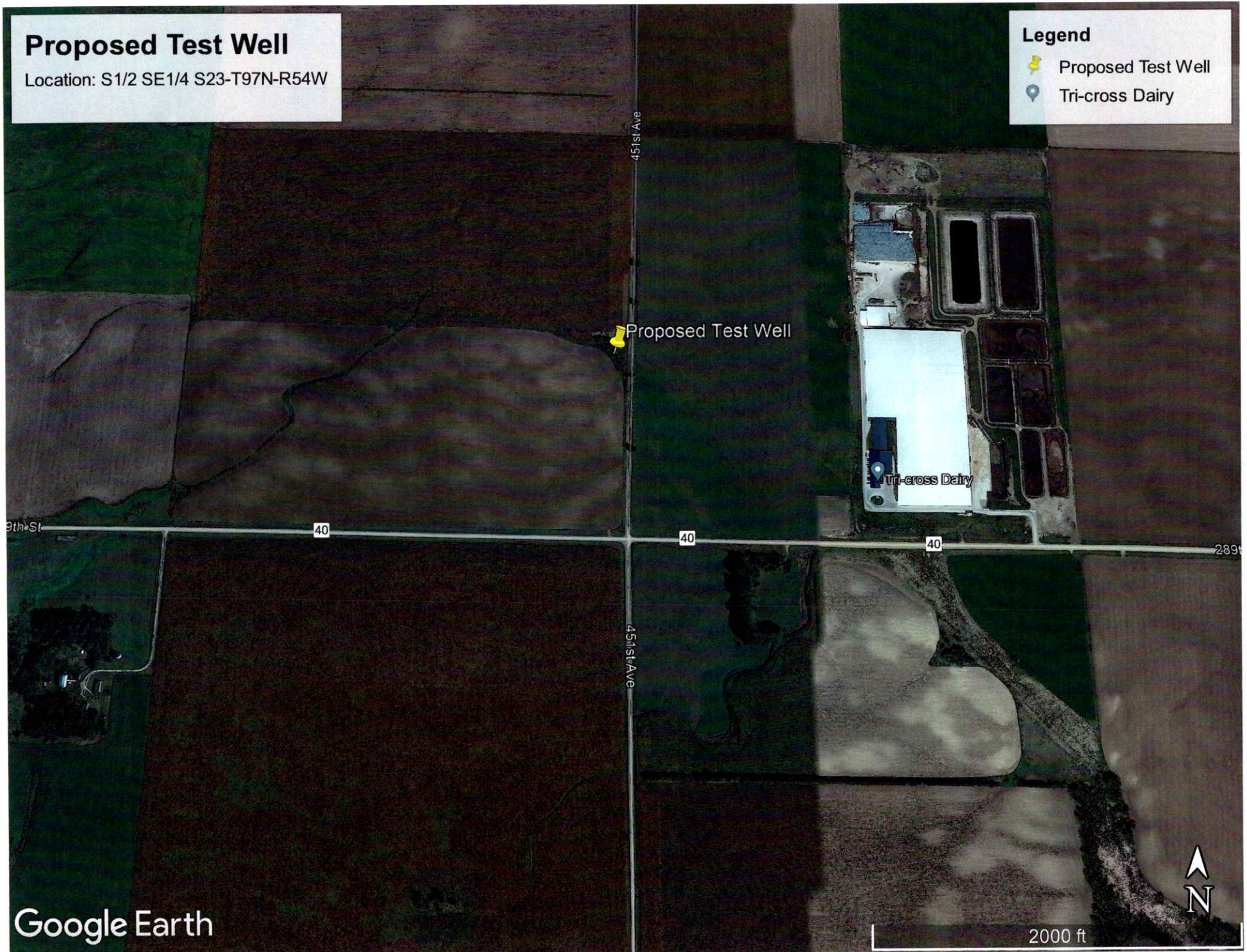
Thoughts?

Proposed Test Well

Location: S1/2 SE1/4 S23-T97N-R54W

Legend

-  Proposed Test Well
-  Tri-cross Dairy



Tri Cross Dairy Viborg SD

220' Test Hole GPS N 43 12.1480 W 97 10.8650

<i>Formation</i>	<i>From</i>	<i>To</i>
Top soil	0	4
Clay brown	4	16
Chalk and gravel	16	21
Chalk white hard	21	31
Chalk yellow soft	31	34
Chalk gray hard	34	51
Chalk gray firm	51	62
Chalk w/ hard layers	62	113
Chalk hard	113	216
Shale	216	220

Gronlund, Eric

From: Tricross Dairy <tricrossdairy@gmail.com>
Sent: Tuesday, July 9, 2024 2:14 PM
To: Gronlund, Eric
Subject: Re: [EXT] B & K Dairy Well Permits - 8216-3

Both wells are still in place and being used, we are requesting to add a 3rd well to the permit. We are looking for redundancy in the event of a pump failure or other well maintenance that may need to be done periodically.

Steven

On Tue, Jul 9, 2024 at 1:33 PM Gronlund, Eric <Eric.Gronlund@state.sd.us> wrote:

Steven:

Hopefully this is the last question on the path to getting an additional Niobrara aquifer well under Water Permit No. 8216-3 authorized for B & K Dairy.

Water Permit No. 8216-3 as issued was for two wells completed to be completed into the Niobrara aquifer. There are two well completion reports on file drilled in 2017. So my question is are both of these original wells still in place and being used so the request is for an additional third well OR did one of these wells not produce and this request is only to change the diversion point location for one of the wells authorized by the water permit.

Thanks – Eric

Eric Gronlund

Water Rights Program, DANR

605 773-3352

From: Tricross Dairy <tricrossdairy@gmail.com>
Sent: Thursday, June 27, 2024 1:52 PM
To: Duvall, Ron <Ron.Duvall@state.sd.us>
Cc: Mathiowetz, Adam (DENR) <Adam.Mathiowetz@state.sd.us>; Gronlund, Eric <Eric.Gronlund@state.sd.us>
Subject: [EXT] B & K Dairy Well Permits

Good afternoon,

We drilled another test well for B & K Dairy two weeks ago. We would like to develop it and add it to our current permit. I've attached the log from the test hole and a map with the location.

Please let me know what we need to do to get this approved. We are not asking for extra water allocation, only to drill another well and use the same total amount of water that we are currently permitted for.

Thank you,

Steven

B&K Dairy

Approval of Location Change and/or Additional Diversion Point(s)

NAME: **B & K DAIRY FARMS LLC**COUNTY: **Jerauld**ADDRESS: **PO BOX 294, Farmington CA 95230**DATE: **July 7, 2024****GENERAL DESCRIPTION OF AUTHORIZED PROJECT:**

The permit holder was authorized to construct two wells into the Niobrara Aquifer in the SE ¼ SW ¼ Section 24, T97N-R54W, to appropriate 460 acre-feet of water at a maximum rate of 0.67 cubic feet of water per second (cfs) for commercial use in a dairy operation located in the E ½ SW ¼ Section 24, T97N-R54W.

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed, or additional diversion points may be added, provided the following conditions are met and the potential for interference with other existing diversions is not increased:

Developed water source same as permitted source and no additional water appropriated

The permit holder has requested to construct a third well to supplement the original wells, with hopes that the three wells would produce the full diversion authority/appropriation afforded under Permit No. 8216-3. The third well is to be located in the SE ¼ SE ¼ Section 23, T97N-R54W, with no increase to the diversion rate. The third well must be completed into the Niobrara Aquifer (approximately 215 feet deep).

If irrigation, no new land is irrigated

Water Permit No. 8216-3 is for commercial use. No irrigation is authorized.

Review of Existing Diversions

There is one existing water permit/right located within approximately 0.4 miles NE of where the third well is to be developed, also authorizing diversion from the Niobrara Aquifer, held by Tri Cross Renewable Energy LLC Energy (8626-3). The next nearest water right/permit completed into the Niobrara is held by Nelsen Brothers (8326-3) and is located 4.5 miles SE of the newly proposed well site. It was determined during the review of both previously mentioned permit applications that there was reasonable probability any well interference due to pumping would not adversely or unlawfully impair existing rights. The same would be expected for the well constructed in the new location.

There is one domestic wells in Section 28, T97N, R54W, that based on the Turner County plat book, is on land owned by Timothy & Tamera Sorenson, located approximately 2.3 miles SW of the new well site. 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.

RECOMMENDED ACTION

Based on the above criteria, it is recommended that the request for the additional diversion point be approved.



Amanda Dewell, Permitting Administrator
Water Rights Program

The Chief Engineer makes a finding pursuant SDCL 46-5-13.1 and ARSD 74:02:01:14.01 that:

This change in location and/or additional diversion point(s) does not increase the potential for adverse effects to existing diversions.



Eric Gronlund, Chief Engineer
Water Rights Program



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

July 9, 2024

8216-3

B & K Dairy Farms LLC
c/o Tom Koolhaas
PO Box 294
Farmington CA 95230

Dear Mr. Koolhaas:

B & K Dairy Farms LLC has filed a request to add an additional diversion point to Water Permit No. 8216-3.

Water Permit No. 8216-3 appropriates 460 acre-feet of water at a maximum rate of 0.67 cubic feet of water per second, from two wells, completed into the Niobrara Aquifer (approx. 215 feet deep), located in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 24, for commercial use at a dairy operation, located in the E $\frac{1}{2}$ SW $\frac{1}{4}$ Section 24; all in T97N-R54W.

Upon review of the request, and pursuant to SDCL 46-5-13.1, the third well, to be located in the SE $\frac{1}{4}$ SE $\frac{1}{4}$ Section 23, T97N-R54W, is authorized without application or publication of notice of hearing, pursuant to SDCL 46-2A-4. No increase in the authorized rate of diversion from the Niobrara Aquifer is authorized.

If you have any questions, please contact Amanda Dewell at (605) 910-5187.

Sincerely,

Eric Gronlund, Chief Engineer
Water Rights Program