

WATER PERMIT NO. 8665-3

Name of Applicant: **Tri-R LLC**

Address: **PO Box 188, Pipestone MN 56164**

Phone: **507 825-4211**

Amount of Water Claimed: **0.223 cfs**

Total Acres: **NA**

Source of Water Supply: **groundwater (3 wells)**

Water to be used for: **commercial**

County: **Clark**

Type of Waste Disposal System:

Location: **16 miles northeast of Clark SD**

PRIORITY

Date Received: **8-19-22**

Application/License Fee: **\$950**

Corrected Application Received: **9-26-22**

Period of Annual Use: **Jan 1 – Dec 31**

Remarks:

Diversion Point: **NE 1/4 NE 1/4 Sec 33-T119N-R56W**

Facility Located: **NE 1/4 NE 1/4 Sec 33-T119N-R56W**

Depth of Well: **84 feet deep**

Well Driller:

Remarks:

Type of Map: **aerial**

Prepared by:

Reviewed and the Number Assigned on: **9-26-22**

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

				XX	
			33		

**SOUTH DAKOTA
WATER PERMIT NO. 8665-3**

Date of first receipt of application December 16, 2022.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 8665-3 to Tri-R, LLC, c/o Barry Kerkaert, PO Box 188, Pipestone MN 56164 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. 8665-3 authorizes up to 130 acre-feet of water annually at a maximum pump rate of 0.223 cubic feet of water per second from three wells to be completed into the Altamont Aquifer (approximately 400 feet deep) all located in the NE 1/4 NE 1/4 Section 33-T119N-R56W for commercial use in a swine production facility located in the same area described above. This site is located approximately 16 miles northeast of Clark SD.
2. The water appropriated shall be used for the purpose of commercial use and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 8665-3 is March 13, 2023.
5. The date from which applicant may claim right is December 16, 2022.
6. One-fifth of the construction is to be completed on or before September 13, 2025.
7. All construction is to be completed on or before March 13, 2028.
8. Water is to be put to beneficial use on or before March 13, 2032.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The wells approved under Water Permit No. 8665-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 8665-3 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. Water Permit No. 8665-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-36.2 or 34A-2-112 or 34A-2-124 for concentrated animal feeding operations.

4. Water Permit No. 8665-3 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 Altamont aquifer.
6. Water Permit No. 8665-3 authorizes a total annual diversion of up to 130 acre-feet of water from the Altamont aquifer.

WATER MANAGEMENT BOARD

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

MAR 28 2023
date



Mail to: DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>8665-3</u> (office use only) Hydrologic Unit <u>10160010</u>
	Basin <u>James River</u>
	Newspaper <u>Clark Co Courier</u>
	<u>Public Opinion</u>

RECEIVED
DEC 16 2022
OFFICE OF
WATER

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 Tri-R, LLC

Mailing Address PO Box 188 (Address) Pipestone (City) MN (State) 56164 (Zip Code)

Phone (507) 825-4211 Mobile _____ Email barry.kerkaert@pipestone.com

2. Amount of water claimed 0.223 *CFS or 100 **GPM and 130 ***AF or _____ Gallons
Flow rate and volume are both required. (*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use)

3. Source of water supply Altamont (3 wells)

4. Location of point of diversion NE 1/4 of the NE 1/4 of Section 33, T119N, R56W County Clark
(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? Facility location: NE 1/4 NE 1/4 Sec 33-T119N-R56W
(example - NW1/4 section 12-T104N-R53W)

5. County or counties where water will be used Clark

6. Annual period during which water is to be used January 1st thru December 31st

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 swine production facility.

Proposing up to 3 wells into the Altamont aquifer.

I, Barry Kerkaert Manager, 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.

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 3 Have test holes been drilled ☐ Yes ☒ No Drilled by _____
(if yes, please provide copies of logs)
- b) If existing wells, how many _____ Provide copy of log(s), if available. Drilled by _____

For either Existing or Proposed Wells:

- c) Well Depth (required) ~400 Depth to Top of Water Bearing Material ~365 Depth to Water from Surface ~215
- d) Distance to nearest domestic well on applicant's property N/A Property owned by others unknown

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

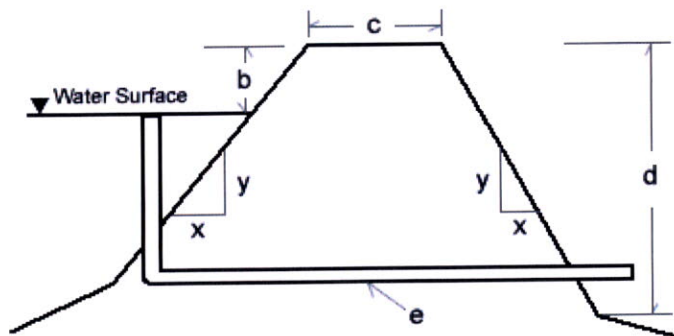
3. Dugout Information

- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

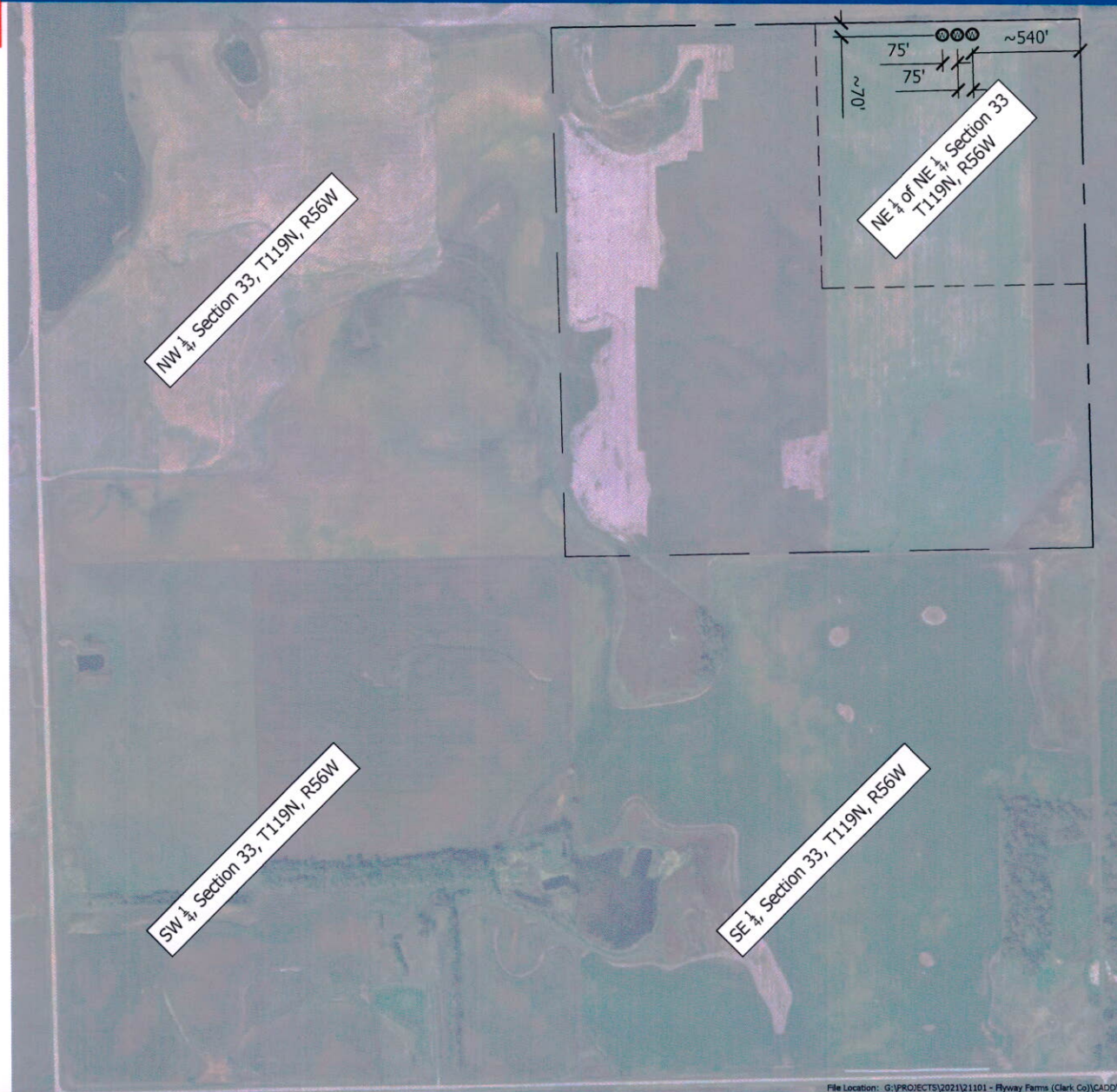
4. Water Storage Dams

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



Scale: 1" = 800'

File Location: G:\PROJECTS\2021\21101 - Flyway Farms (Clark Co)\CAADD\21101 - 0 Water Rights.dwg \ Plot Date: 8/17/2022 2:20 PM

Tri-R, LLC - Clark County, SD
NE $\frac{1}{4}$ of NE $\frac{1}{4}$ of Section 33, T119N, R56W



**Well Location
Map**

SOUTH DAKOTA WATER WELL COMPLETION REPORT

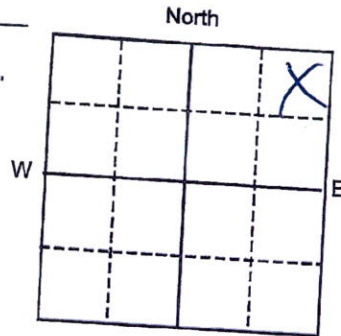
SD EForm - 1621LD V1

11-02

Location NE 1/4 NE 1/4 Sec 33 Twp 119 Rg 56

County CLARK

Please mark well location with an "X"



Well Completion Date

8-5-22

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
NONE ft. from (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Mud Rotary

CASING DATA:

If other describe ☐ Steel ☒ Plastic ☐ Other

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>200</u> LB/FT	<u>5</u> IN	<u>0</u> FT	<u>64</u> FT	<u>7 7/8</u> IN
<u>250</u> LB/FT	<u>5</u> IN	<u>64</u> FT	<u>84</u> FT	<u>7 7/8</u> IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>#20</u>	<u>4</u>	<u>0</u> Lb/gal	<u>0</u> Ft	<u>60</u> Ft

Describe grouting procedure

Tremie Pipe

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 5 Inches Length 20 Feet

Material PVC

Slot Size 1025 Set From 64 Feet to 84 Feet

Other information

WAS A PACKER OR SEAL USED?

☒ Yes ☐ No

If so, what material? Engine Plug

Describe packer(s) and location above screen

DISINFECTION:

Was well disinfected upon completion?

☒ Yes, How? Chlorine

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

Well Owner: Pipestone Management
Business Name: 1801 Forman Drive
Address: Pipestone MN 56164
City, State, Zip:

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Top Soil</u>	<u>0</u>	<u>1</u>
<u>Yellow Clay</u>	<u>1</u>	<u>18</u>
<u>Gravel</u>	<u>18</u>	<u>25</u>
<u>Blue Clay</u>	<u>25</u>	<u>67</u>
<u>Gravel & Peg Rock</u>	<u>67</u>	<u>84</u>

STATIC WATER LEVEL

70

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: Submersible

☐ Bailed

☐ Other

Pumping Level Below Land Surface

72 Ft. After 2 Hrs. pumped 23 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

THIS PRAIRIE-COTEAU WELL WAS SUBMITTED WITH APP. NO. 8665-3 BEFORE IT WAS AMENDED TO REQUEST WATER FROM THE ALTAMONT AQUIFER. -KCD 1/27/2023

This well was drilled under license # 722 and this report is true and accurate.

Drilling firm: Stretch's Well Service Inc.

Signature of License Representative:

[Signature]

Signature of Well Owner or Equitable Property Holder:

Date:

SOUTH DAKOTA WATER WELL COMPLETION REPORT

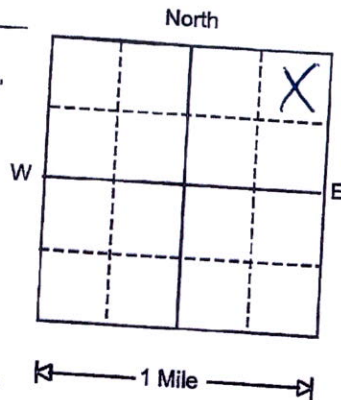
SD EForm - 1621LD V1

11-02

Location NE 1/4 NE 1/4 Sec 33 Twp 119 Rg 56

County Clark

Please mark well location with an "X"



Well Completion Date 8-9-22

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? NONE ft. from (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Mud Rotary

CASING DATA:

If other describe ☐ Steel ☐ Plastic ☐ Other

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>200</u> LB/FT	<u>5</u> IN	<u>0</u> FT	<u>64</u> FT	<u>7 7/8</u> IN
<u>250</u> LB/FT	<u>5</u> IN	<u>64</u> FT	<u>84</u> FT	<u>7 7/8</u> IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>#20</u>	<u>4</u>	<u>0</u> Lb/gal	<u>0</u> Ft	<u>60</u> Ft

Describe grouting procedure

Tremie Pipe

SCREEN:

☐ Perforated pipe ☒ Manufactured
 Diameter 5 Inches Length 20 Feet
 Material PVC
 Slot Size 1025 Set From 64 Feet to 84 Feet
 Other information

WAS A PACKER OR SEAL USED?

☒ Yes ☐ No
 If so, what material? Enviro Plug
 Describe packer(s) and location above screen

DISINFECTION:

Was well disinfected upon completion?

☒ Yes, How? Chlorine

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

Well Owner: Pipestone Management
 Business Name: 1801 Forman Drive
 Address: Pipestone MN 56164
 City, State, Zip:

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Top Soil</u>	<u>0</u>	<u>1</u>
<u>yellow clay</u>	<u>1</u>	<u>27</u>
<u>Blue clay</u>	<u>27</u>	<u>69</u>
<u>Sand & Gravel</u>	<u>69</u>	<u>84</u>

STATIC WATER LEVEL

68 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: Submersible
☐ Bailed
☐ Other
 Pumping Level Below Land Surface
76 Ft. After 2 Hrs. pumped 15 GPM
 _____ Ft. After _____ Hrs. pumped _____ GPM
 If pump installed, pump rate: _____ GPM

REMARKS

THIS PRAIRIE COTEAU WELL WAS SUBMITTED WITH APP. NO. 8665-3 BEFORE IT WAS AMENDED TO REQUEST WATER FROM THE ALTAMONT AQUIFER. -KCD 1/27/2023

This well was drilled under license # 722 and this report is true and accurate.

Drilling firm: Stretch's Well Service Inc

Signature of License Representative:

[Signature]

Signature of Well Owner or Equitable Property Holder:

Date:

Schlaak, Karen

From: Schlaak, Karen
Sent: Monday, September 19, 2022 4:29 PM
To: Marty Rost; Brad Woerner
Subject: RE: [EXT] Water Rights Application - Tri-R (Clark County)

Marty,

Our records indicate that the \$950 application/license fee has not been received for the water permit application submitted for Tri-R, LLC in Clark County on August 19, 2022.

Karen

From: Marty Rost <Marty.Rost@pipestone.com>
Sent: Friday, August 19, 2022 10:36 AM
To: Brad Woerner <bwoerner@stockwellengineers.com>; Schlaak, Karen <Karen.Schlaak@state.sd.us>
Subject: RE: [EXT] Water Rights Application - Tri-R (Clark County)

Thanks and I just submitted for payment.



Marty Rost
Environmental Management
Phone: 507-215-0482
Office: 507-825-7029
Address: 1209 South Highway 75
Pipestone, MN 56164
marty.rost@pipestone.com

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Friday, August 19, 2022 9:00 AM
To: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Cc: Marty Rost <Marty.Rost@pipestone.com>
Subject: Re: Water Rights Application - Tri-R (Clark County)

This email came from outside the organization

Do not open attachments or click links unless you recognize the sender's email address and know the contents are safe.

- Pipestone IT Helpdesk

Yes. Wells and facility in that description.

Marty will forward the check to the Department.

Thanks!

Sent from my iPhone

On Aug 19, 2022, at 08:47, Schlaak, Karen <Karen.Schlaak@state.sd.us> wrote:

Brad and Marty,

Just one question. Will the facility be located within the NE ¼ NE ¼ Sec 33-T119N-R56W also? We include that information in the public notice.

The application/license fee will be \$950.

Karen

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Friday, August 19, 2022 7:53 AM
To: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Subject: [EXT] Water Rights Application - Tri-R (Clark County)

Karen,

Here is the water rights application packet for a site in Clark County. Tri-R is a swine production facility that has started construction. Two wells have been drilled with a 3rd planned, pending the application/approval.

If you could forward the application fee amount to myself and Marty Rost (with Pipestone), that would be great.

Marty Rost

marty.rost@pipestone.com

(507) 825-7029

Marty will provide the application fee and will coordinate payment for the public notice, also.

If you need any further information, please let me know.

Thank you in advance for your assistance. Have a great weekend.

Brad Woerner, PE

Agricultural Engineer

Stockwell Engineers, Inc.

Cell / 605.660.1362

Office / 605.665.8092

Fax / 605.665.0523

bwoerner@stockwellengineers.com

201 Walnut Street / Yankton, SD 57078



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DEC 16 2022

OFFICE OF
WATER

December 16, 2022

21101 | SEI No.

SD DANR
Joe Foss Building
Water Rights Program
Attn: Eric Gronlund, PE
523 East Capitol Ave
Pierre, SD 57501-3182

RE: Tri-R, LLC – Water Rights Application
Clark County, South Dakota

Mr. Gronlund:

The applicant in the above-referenced facility has chosen to amend their current water rights application. The proposed amendment will change the proposed aquifer from the Prairie Coteau Aquifer to the Altamont Aquifer. The water quality within the Prairie Coteau Aquifer was not suitable for the intended use.

I have included a revised application identifying the Altamont as the source of water. The well/aquifer depth are approximate based on adjacent well data. The applicant will keep the same proposed diversion flowrate and volume.

If you have any questions or need clarification on any item within this submittal, please contact my office at your convenience. Thank you.

Sincerely,
STOCKWELL ENGINEERS, INC.



Bradley S. Woerner, PE
Project Manager



DL205045

ARTICLES OF ORGANIZATION

DOMESTIC LIMITED LIABILITY COMPANY
SDCL 47-34A-203, 212

Secretary of State
500 E. Capitol Ave
Pierre, SD 57501-5070
(605) 773-4845

Filing Fee: \$150

Total Fee: \$150

Please Type or Print Clearly in Ink
Please submit one Original
Make payable to the SECRETARY OF STATE

Article I

The name of the Company: **Tri-R, LLC**

Article II

The address of the initial designated office in or out of the State of South Dakota where the company conducts its business:

Actual Street Address

**304 S. SPLITROCK BLVD
SUITE 205
BRANDON, SD 57005**

Mailing Address

**304 S. SPLITROCK BLVD
SUITE 205
BRANDON, SD 57005**

Article III

SDCL 59-11-6

The South Dakota Registered Agent's Name:

South Dakota law permits the registered agent to be either (a) a noncommercial registered agent or (b) a commercial registered agent.

(a) The South Dakota Noncommercial Registered Agent's name

Name **Luke W. Minion**

Actual Street Address in this State

**304 S SPLITROCK BLVD
SUITE 205
BRANDON, SD 57005**

Mailing Address in this State

**304 S SPLITROCK BLVD
SUITE 205
BRANDON, SD 57005**

Article IV

The name and address of each organizer

Name

Address

Lora Hopp-Hansen

1300 S. Hwy 75, Pipestone, MN 56164

Article V

The duration of the company if other than perpetual is: **Perpetual**

If the document is not to be effective upon filing by the Secretary of State, the delayed effective date is: _____

B0184-6613 06/21/2021 11:15AM Rec'd by SD SOS



Article VI

☐ Member-Managed ☒ Manager-Managed

Name

Address

Barry Kerkaert

1300 S. Hwy 75, Pipestone, MN 56164

Article VII

Beneficial Owners (optional): A beneficial owner is a person who has or in some manner controls an equity security. Please consult an attorney for legal advice if you have any questions concerning this entry. Any question under this heading is considered a request for legal advice and the secretary of state's office is, by statute, not permitted, to provide legal advice.

Signature/Authorization

The Articles of Organization must be executed by the organizers.

No person may execute this report knowing it is false in any material respect. Any violation may be subject to a criminal penalty (SDCL 22-39-36).

Lora Hopp-Hansen

Lora Hopp-Hansen

Organizer

06/21/2021

PRINTED NAME

SIGNATURE

TITLE

DATED

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Agriculture and Natural Resources

Date September 26, 2022

RECEIVED OF Tri-R, LLC PO Box 188 Pipestone MN 56164

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

Fee for Application for Permit No. <u>8665-3</u> to Appropriate Water, to construct and to put water to beneficial use	\$ <u>750.00</u>
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>8665-3</u>	\$ <u>200.00</u>
Fee for Filing Transfer Form _____	\$ _____
Fee for _____	\$ _____
Fee for Issuing New Well Driller's License No. _____	\$ _____
Fee for Renewal of Well Driller's License No. _____	\$ _____
Fee for Issuing Well Pump Installer's License No. _____	\$ _____
Fee for Renewal of Well Pump Installer's License No. _____	\$ _____
(Any Other Work Provided by Law) TOTAL	\$ <u>950.00</u>

By

Eric Gronlund

Chief Engineer

ANALYTICAL REPORT

October 05, 2022

Work Order: 1FI2251

Page 1 of 24

Report To	Work Order Information
Todd Williams Todd Williams, DVM 2830 North Court Ottumwa, IA 52501	Date Received: 9/23/2022 7:55:00AM Collector: Rost, Marty Phone: 000000000000 PO Number:

Project: Well Testing

Project Number: Well Testing

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1FI2251-01	Tri-R Farms			Matrix: Drink Wtr		Collected: 09/22/22 08:30	
Vinyl Chloride	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
1,1-Dichloroethylene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Dichloromethane	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
trans-1,2-Dichloroethylene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
cis-1,2-Dichloroethylene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
1,1,1-Trichloroethane	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Carbon Tetrachloride	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Benzene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
1,2-Dichloroethane	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Trichloroethylene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
1,2-Dichloropropane	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Toluene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
1,1,2-Trichloroethane	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Tetrachloroethylene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Monochlorobenzene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Ethylbenzene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Xylenes (total)	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Styrene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
o-Dichlorobenzene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
p-Dichlorobenzene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
1,2,4-Trichlorobenzene	<0.50 ug/L	0.50	1FI1299	524.2	AJM	09/26/22 16:19	
Surrogate: Dibromofluoromethane	101 %			71-131	AJM	09/26/22 16:19	
Surrogate: 1,2-Dichloroethane-d4	96.9 %			63-138	AJM	09/26/22 16:19	
Surrogate: Toluene-d8	101 %			90-111	AJM	09/26/22 16:19	
Surrogate: 4-Bromofluorobenzene	91.1 %			83-110	AJM	09/26/22 16:19	
Alkalinity, as CaCO3	665 mg/L	50	1FI1216	2320B	BSS	09/26/22 9:57	
Carbon Dioxide, Free, as CO2	248 mg/L	10.0	1FI1177	SM 4500-CO2 C	BLS	09/23/22 10:53	
Conductivity	6480 umho/cm	2.0	1FI1217	2510B	BSS	09/23/22 14:41	

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Work Order: 1FI2251

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1FI2251-01	Tri-R Farms			Matrix: Drink Wtr		Collected: 09/22/22 08:30	
Langlier Index	0.41 Lang		1FJ0148	203	SAA	10/04/22 19:53	
Nitrogen, Ammonia	<0.10 mg/L	0.10	1FI1430	TIMBERLINE	TJB	09/28/22 15:34	
pH	6.6 pH	0.5	1FI1245	EPA 150.1	BSS	09/26/22 8:38	I-03
Silica, total	24.7 mg/L	5.0	1FI1186	SM 4500-SIO2 E-2011	BLS	09/23/22 13:44	
Sulfide, total	<0.10 mg/L	0.10	1FI1293	SM 4500-S D	AKW	09/27/22 16:25	
Solids, total dissolved	4970 mg/L	5	1FI1323	2540C	MEAH	09/27/22 16:20	
Total Organic Carbon	21.4 mg/L	2.50	1FI1352	5310B	LNH	09/27/22 14:31	
Turbidity	1.7 NTU	1.0	1FI1199	2130B	BSS	09/23/22 16:17	
Chloride	40.2 mg/L	10.0	1FI1289	300.0	MID	09/23/22 17:38	
Fluoride	0.4 mg/L	0.1	1FI1289	300.0	MID	09/23/22 11:53	
Nitrogen, Nitrate+Nitrite	107 mg/L	10.0	1FI1289	300.0	MID	09/23/22 18:45	
Sulfate	2590 mg/L	50.0	1FI1289	300.0	MID	09/23/22 18:45	
Total Coliforms	Present		1FI1198	9223B-PA	LAE	09/23/22 12:30	
E. Coli	Absent		1FI1198	9223B-PA	LAE	09/23/22 12:30	
Heterotrophic Plate Count	<2.0 MPN/ml	2.0	1FI1192	SimPlate	IDD	09/23/22 12:30	I-02
Iron Related Bacteria	Present CFU	1	1FI1194	BART	LAE	09/23/22 12:30	
Sulfate Reducing Bacteria	Present CFU	1	1FI1195	BART	LAE	09/23/22 12:30	
Silver, total	<0.0020 mg/L	0.0020	1FI0951	200.8	RVV	09/25/22 3:04	
Aluminum, total	<0.050 mg/L	0.050	1FI1406	200.7	JAR	09/28/22 22:48	
Arsenic, total	0.0170 mg/L	0.0010	1FI0951	200.8	RVV	09/25/22 3:04	
Barium, total	0.0069 mg/L	0.0010	1FI0951	200.8	RVV	09/25/22 3:04	
Beryllium, total	<0.0004 mg/L	0.0004	1FI0951	200.8	RVV	09/25/22 3:04	
Boron, total	0.580 mg/L	0.100	1FI1406	EPA 200.7	JAR	09/28/22 22:48	
Calcium, total	584 mg/L	0.1	1FI1406	200.7	JAR	09/28/22 22:48	
Cadmium, total	<0.0004 mg/L	0.0004	1FI0951	200.8	RVV	09/25/22 3:04	
Chromium, total	<0.0020 mg/L	0.0020	1FI0951	200.8	RVV	09/25/22 3:04	
Copper, total	0.0077 mg/L	0.0010	1FI0951	200.8	RVV	09/25/22 3:04	
Iron, total	<0.100 mg/L	0.100	1FI1406	200.7	JAR	09/28/22 22:48	
Mercury, total	<0.00020 mg/L	0.00020	1FI1491	3112B	JAR	09/30/22 15:46	
Potassium, total	22.7 mg/L	1.00	1FI1406	200.7	JAR	09/28/22 22:48	
Magnesium, total	436 mg/L	0.10	1FI1406	200.7	JAR	09/28/22 22:48	
Manganese, total	0.0070 mg/L	0.0010	1FI0951	200.8	RVV	09/25/22 3:04	
Sodium, total	210 mg/L	1.00	1FI1406	200.7	JAR	09/28/22 22:48	
Nickel, total	0.0259 mg/L	0.0020	1FI0951	200.8	RVV	09/25/22 3:04	
Lead, total	<0.0004 mg/L	0.0004	1FI0951	200.8	RVV	09/25/22 3:04	
Antimony, total	<0.0010 mg/L	0.0010	1FI0951	200.8	RVV	09/25/22 3:04	
Selenium, total	0.321 mg/L	0.0010	1FI0951	200.8	RVV	09/25/22 3:04	
Strontium, total	4.94 mg/L	0.010	1FI1406	EPA 200.7	JAR	09/28/22 22:48	
Thallium, total	<0.0004 mg/L	0.0004	1FI0951	200.8	RVV	09/25/22 3:04	
Zinc, total	0.0062 mg/L	0.0040	1FI0951	200.8	RVV	09/25/22 3:04	

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Work Order: 1FI2251

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1FI2251-01RE1	Tri-R Farms			Matrix: Drink Wtr	Collected: 09/22/22 08:30
Hardness, Total as CaCO ₃	3310 mg/L	10	1FI1406	2340B	JAR 09/29/22 9:30

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Work Order: 1FI2251

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI1299 - EPA 5030B

Blank (1FI1299-BLK1)

Prepared & Analyzed: 09/26/22

Surrogate: Dibromofluoromethane	54.0		ug/L	50.1360		108	71-131			
Surrogate: 1,2-Dichloroethane-d4	53.3		"	50.2960		106	63-138			
Surrogate: Toluene-d8	50.6		"	50.4800		100	90-111			
Surrogate: 4-Bromofluorobenzene	45.4		"	50.2080		90.5	83-110			
Vinyl Chloride	ND	0.50	"							
1,1-Dichloroethylene	ND	0.50	"							
Dichloromethane	ND	0.50	"							
trans-1,2-Dichloroethylene	ND	0.50	"							
cis-1,2-Dichloroethylene	ND	0.50	"							
1,1,1-Trichloroethane	ND	0.50	"							
Carbon Tetrachloride	ND	0.50	"							
Benzene	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Trichloroethylene	ND	0.50	"							
1,2-Dichloropropane	ND	0.50	"							
Toluene	ND	0.50	"							
1,1,2-Trichloroethane	ND	0.50	"							
Tetrachloroethylene	ND	0.50	"							
Monochlorobenzene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Styrene	ND	0.50	"							
o-Dichlorobenzene	ND	0.50	"							
p-Dichlorobenzene	ND	0.50	"							
1,2,4-Trichlorobenzene	ND	0.50	"							

LCS (1FI1299-BS1)

Prepared & Analyzed: 09/26/22

Surrogate: Dibromofluoromethane	53.4		ug/L	50.1360		107	71-131			
Surrogate: 1,2-Dichloroethane-d4	51.2		"	50.2960		102	63-138			
Surrogate: Toluene-d8	52.7		"	50.4800		104	90-111			
Surrogate: 4-Bromofluorobenzene	50.1		"	50.2080		99.8	83-110			
Vinyl Chloride	30.83	0.50	"	30.0000		103	63-156			
1,1-Dichloroethylene	53.52	0.50	"	50.0000		107	68-150			
Dichloromethane	52.72	0.50	"	50.0000		105	64-137			
trans-1,2-Dichloroethylene	50.25	0.50	"	50.0000		100	59-137			
cis-1,2-Dichloroethylene	59.41	0.50	"	50.0000		119	73-141			
1,1,1-Trichloroethane	54.00	0.50	"	49.9750		108	61-127			
Carbon Tetrachloride	54.81	0.50	"	50.0000		110	65-134			
Benzene	55.85	0.50	"	50.0000		112	80-128			

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Work Order: 1FI2251

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI1299 - EPA 5030B

LCS (1FI1299-BS1)

Prepared & Analyzed: 09/26/22

1,2-Dichloroethane	56.15	0.50	ug/L	50.0000		112	70-137			
Trichloroethylene	46.14	0.50	"	50.0000		92.3	78-123			
1,2-Dichloropropane	50.42	0.50	"	50.0000		101	74-134			
Toluene	54.17	0.50	"	50.0000		108	81-126			
1,1,2-Trichloroethane	54.41	0.50	"	50.0000		109	78-125			
Tetrachloroethylene	42.86	0.50	"	50.0000		85.7	72-123			
Monochlorobenzene	50.19	0.50	"	50.0000		100	76-118			
Ethylbenzene	49.37	0.50	"	50.0000		98.7	77-121			
Xylenes (total)	151.2	0.50	"	150.000		101	78-119			
Styrene	48.27	0.50	"	50.0000		96.5	75-121			
o-Dichlorobenzene	50.56	0.50	"	50.0000		101	46-117			
p-Dichlorobenzene	51.43	0.50	"	50.0000		103	77-119			
1,2,4-Trichlorobenzene	46.80	0.50	"	50.0000		93.6	72-123			

LCS Dup (1FI1299-BSD1)

Prepared & Analyzed: 09/26/22

Surrogate: Dibromofluoromethane	53.4		ug/L	50.1360		106	71-131			
Surrogate: 1,2-Dichloroethane-d4	50.7		"	50.2960		101	63-138			
Surrogate: Toluene-d8	47.8		"	50.4800		94.7	90-111			
Surrogate: 4-Bromofluorobenzene	46.2		"	50.2080		92.0	83-110			
Vinyl Chloride	16.82	0.50	"	30.0000		56.1	63-156	58.8	24	QM-21
1,1-Dichloroethylene	36.81	0.50	"	50.0000		73.6	68-150	37.0	24	QR-02
Dichloromethane	48.72	0.50	"	50.0000		97.4	64-137	7.89	22	
trans-1,2-Dichloroethylene	43.88	0.50	"	50.0000		87.8	59-137	13.5	24	
cis-1,2-Dichloroethylene	50.44	0.50	"	50.0000		101	73-141	16.3	23	
1,1,1-Trichloroethane	44.40	0.50	"	49.9750		88.8	61-127	19.5	24	
Carbon Tetrachloride	43.85	0.50	"	50.0000		87.7	65-134	22.2	24	
Benzene	44.93	0.50	"	50.0000		89.9	80-128	21.7	23	
1,2-Dichloroethane	47.41	0.50	"	50.0000		94.8	70-137	16.9	22	
Trichloroethylene	35.15	0.50	"	50.0000		70.3	78-123	27.0	23	QM-21
1,2-Dichloropropane	42.37	0.50	"	50.0000		84.7	74-134	17.4	22	
Toluene	41.52	0.50	"	50.0000		83.0	81-126	26.4	23	QR-02
1,1,2-Trichloroethane	43.45	0.50	"	50.0000		86.9	78-125	22.4	24	
Tetrachloroethylene	35.65	0.50	"	50.0000		71.3	72-123	18.4	24	QM-21
Monochlorobenzene	43.61	0.50	"	50.0000		87.2	76-118	14.0	23	
Ethylbenzene	43.32	0.50	"	50.0000		86.6	77-121	13.1	23	
Xylenes (total)	131.0	0.50	"	150.000		87.3	78-119	14.3	21	
Styrene	42.51	0.50	"	50.0000		85.0	75-121	12.7	25	
o-Dichlorobenzene	49.13	0.50	"	50.0000		98.3	46-117	2.87	22	
p-Dichlorobenzene	50.17	0.50	"	50.0000		100	77-119	2.48	23	

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Work Order: 1FI2251

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FI1299 - EPA 5030B										
LCS Dup (1FI1299-BSD1)				Prepared & Analyzed: 09/26/22						
1,2,4-Trichlorobenzene	41.07	0.50	ug/L	50.0000		82.1	72-123	13.0	25	
Matrix Spike (1FI1299-MS1)				Source: 1FI1982-01 Prepared & Analyzed: 09/26/22						
Surrogate: Dibromofluoromethane	225		ug/L	200.544		112	71-131			
Surrogate: 1,2-Dichloroethane-d4	217		"	201.184		108	63-138			
Surrogate: Toluene-d8	194		"	201.920		95.9	90-111			
Surrogate: 4-Bromofluorobenzene	190		"	200.832		94.5	83-110			
Vinyl Chloride	146.9	2.00	"	120.000	ND	122	48-166			
1,1-Dichloroethylene	246.7	2.00	"	200.000	ND	123	50-161			
Dichloromethane	236.2	2.00	"	200.000	ND	118	54-136			
trans-1,2-Dichloroethylene	234.2	2.00	"	200.000	ND	117	60-120			
cis-1,2-Dichloroethylene	237.2	2.00	"	200.000	ND	119	65-143			
1,1,1-Trichloroethane	223.8	2.00	"	199.900	ND	112	60-116			
Carbon Tetrachloride	252.8	2.00	"	200.000	ND	126	49-142			
Benzene	202.2	2.00	"	200.000	ND	101	77-130			
1,2-Dichloroethane	206.7	2.00	"	200.000	ND	103	69-137			
Trichloroethylene	176.0	2.00	"	200.000	ND	88.0	72-127			
1,2-Dichloropropane	181.0	2.00	"	200.000	ND	90.5	74-134			
Toluene	196.2	2.00	"	200.000	ND	98.1	77-125			
1,1,2-Trichloroethane	185.4	2.00	"	200.000	ND	92.7	78-123			
Tetrachloroethylene	174.9	2.00	"	200.000	ND	87.4	80-109			
Monochlorobenzene	193.0	2.00	"	200.000	ND	96.5	76-114			
Ethylbenzene	193.6	2.00	"	200.000	ND	96.8	75-121			
Xylenes (total)	573.9	2.00	"	600.000	ND	95.6	78-110			
Styrene	179.5	2.00	"	200.000	ND	89.8	75-119			
o-Dichlorobenzene	197.2	2.00	"	200.000	ND	98.6	69-118			
p-Dichlorobenzene	198.0	2.00	"	200.000	ND	99.0	74-118			
1,2,4-Trichlorobenzene	148.0	2.00	"	200.000	ND	74.0	74-117			

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Work Order: 1FI2251

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FI1299 - EPA 5030B										
Matrix Spike Dup (1FI1299-MSD1)		Source: 1FI1982-01		Prepared & Analyzed: 09/26/22						
Surrogate: Dibromofluoromethane	219		ug/L	200.544		109	71-131			
Surrogate: 1,2-Dichloroethane-d4	204		"	201.184		101	63-138			
Surrogate: Toluene-d8	208		"	201.920		103	90-111			
Surrogate: 4-Bromofluorobenzene	196		"	200.832		97.8	83-110			
Vinyl Chloride	140.7	2.00	"	120.000	ND	117	48-166	4.34	18	
1,1-Dichloroethylene	226.2	2.00	"	200.000	ND	113	50-161	8.68	22	
Dichloromethane	220.4	2.00	"	200.000	ND	110	54-136	6.90	20	
trans-1,2-Dichloroethylene	221.8	2.00	"	200.000	ND	111	60-120	5.42	26	
cis-1,2-Dichloroethylene	229.6	2.00	"	200.000	ND	115	65-143	3.24	18	
1,1,1-Trichloroethane	237.6	2.00	"	199.900	ND	119	60-116	5.98	17	QM-19
Carbon Tetrachloride	245.7	2.00	"	200.000	ND	123	49-142	2.87	14	
Benzene	210.6	2.00	"	200.000	ND	105	77-130	4.05	14	
1,2-Dichloroethane	201.5	2.00	"	200.000	ND	101	69-137	2.55	18	
Trichloroethylene	177.7	2.00	"	200.000	ND	88.9	72-127	0.973	13	
1,2-Dichloropropane	179.6	2.00	"	200.000	ND	89.8	74-134	0.732	18	
Toluene	196.9	2.00	"	200.000	ND	98.5	77-125	0.366	12	
1,1,2-Trichloroethane	194.5	2.00	"	200.000	ND	97.2	78-123	4.76	11	
Tetrachloroethylene	185.5	2.00	"	200.000	ND	92.7	80-109	5.88	13	
Monochlorobenzene	193.4	2.00	"	200.000	ND	96.7	76-114	0.186	10	
Ethylbenzene	198.9	2.00	"	200.000	ND	99.4	75-121	2.69	12	
Xylenes (total)	587.8	2.00	"	600.000	ND	98.0	78-110	2.40	10	
Styrene	181.9	2.00	"	200.000	ND	91.0	75-119	1.33	12	
o-Dichlorobenzene	189.9	2.00	"	200.000	ND	95.0	69-118	3.78	22	
p-Dichlorobenzene	195.1	2.00	"	200.000	ND	97.5	74-118	1.49	19	
1,2,4-Trichlorobenzene	147.1	2.00	"	200.000	ND	73.5	74-117	0.597	20	QM-19

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Work Order: 1FI2251

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FI1177 - Wet Chem Preparation										
Blank (1FI1177-BLK1)					Prepared & Analyzed: 09/23/22					
Carbon Dioxide, Free, as CO ₂	ND	10.0	mg/L							
Batch 1FI1186 - Wet Chem Preparation										
Blank (1FI1186-BLK1)					Prepared & Analyzed: 09/23/22					
Silica, total	ND	5.0	mg/L							
LCS (1FI1186-BS1)					Prepared & Analyzed: 09/23/22					
Silica, total	4.46	5.0	mg/L	4.95000		90.2	75-117			
Matrix Spike (1FI1186-MS1)					Source: 1FI2251-01 Prepared & Analyzed: 09/23/22					
Silica, total	34.2	10.0	mg/L	9.90000	24.7	95.8	63-124			
Matrix Spike Dup (1FI1186-MSD1)					Source: 1FI2251-01 Prepared & Analyzed: 09/23/22					
Silica, total	33.5	10.0	mg/L	9.90000	24.7	88.5	63-124	2.12	10	
Batch 1FI1199 - Wet Chem Preparation										
Blank (1FI1199-BLK1)					Prepared & Analyzed: 09/23/22					
Turbidity	ND	1.0	NTU							
Duplicate (1FI1199-DUP1)					Source: 1FI2251-01 Prepared & Analyzed: 09/23/22					
Turbidity	1.70	1.0	NTU		1.70			0.00	14	
Reference (1FI1199-SRM1)					Prepared & Analyzed: 09/23/22					
Turbidity	1.75	1.0	NTU	1.67000		105	85-115			

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Work Order: 1FI2251

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FI1199 - Wet Chem Preparation										
Reference (1FI1199-SRM2)				Prepared & Analyzed: 09/23/22						
Turbidity	17.5	1.0	NTU	16.0000		109	85-115			
Batch 1FI1216 - Wet Chem Preparation										
Blank (1FI1216-BLK1)				Prepared: 09/23/22 Analyzed: 09/26/22						
Alkalinity, as CaCO ₃	ND	10	mg/L							
LCS (1FI1216-BS1)				Prepared: 09/23/22 Analyzed: 09/26/22						
Alkalinity, as CaCO ₃	48.5	10	mg/L	50.0000		97.0	90-114			
Matrix Spike (1FI1216-MS1)				Source: 1FI2251-01 Prepared: 09/23/22 Analyzed: 09/26/22						
Alkalinity, as CaCO ₃	882	50	mg/L	250.000	665	87.0	77-118			
Matrix Spike Dup (1FI1216-MSD1)				Source: 1FI2251-01 Prepared: 09/23/22 Analyzed: 09/26/22						
Alkalinity, as CaCO ₃	917	50	mg/L	250.000	665	101	77-118	3.83	10	
Batch 1FI1217 - Wet Chem Preparation										
Blank (1FI1217-BLK1)				Prepared & Analyzed: 09/23/22						
Conductivity	ND	2.0	umho/cm							
Duplicate (1FI1217-DUP1)				Source: 1FI2251-01 Prepared & Analyzed: 09/23/22						
Conductivity	6490	2.0	umho/cm		6480			0.0925	10	
Reference (1FI1217-SRM1)				Prepared & Analyzed: 09/23/22						
Conductivity	232	2.0	umho/cm	250.000		92.7	90-110			

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Work Order: 1FI2251

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FI1245 - Wet Chem Preparation										
Duplicate (1FI1245-DUP1)	Source: 1FI2251-01			Prepared & Analyzed: 09/26/22						
pH	6.6	0.5	pH		6.6			0.0604	10	
Reference (1FI1245-SRM1)				Prepared & Analyzed: 09/26/22						
pH	7.0	0.5	pH	7.00000		99.8	90-110			
Reference (1FI1245-SRM2)				Prepared & Analyzed: 09/26/22						
pH	7.0	0.5	pH	7.00000		101	90-110			
Batch 1FI1293 - Wet Chem Preparation										
Blank (1FI1293-BLK1)				Prepared: 09/26/22 Analyzed: 09/27/22						
Sulfide, total	ND	0.10	mg/L							
LCS (1FI1293-BS1)				Prepared: 09/26/22 Analyzed: 09/27/22						
Sulfide, total	0.170	0.10	mg/L	0.266667		63.8	59-110			
Matrix Spike (1FI1293-MS1)	Source: 1FI1861-01			Prepared: 09/26/22 Analyzed: 09/27/22						
Sulfide, total	0.285	0.10	mg/L	0.266667	0.122	60.8	50-150			
Matrix Spike Dup (1FI1293-MSD1)	Source: 1FI1861-01			Prepared: 09/26/22 Analyzed: 09/27/22						
Sulfide, total	0.301	0.10	mg/L	0.266667	0.122	67.0	50-150	5.62	30	
Batch 1FI1323 - Wet Chem Preparation										
Blank (1FI1323-BLK1)				Prepared & Analyzed: 09/27/22						
Solids, total dissolved	ND	5	mg/L							

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Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FI1323 - Wet Chem Preparation										
LCS (1FI1323-BS1)				Prepared & Analyzed: 09/27/22						
Solids, total dissolved	96.6	5	mg/L	100.000		96.6	71-114			
Duplicate (1FI1323-DUP1)				Source: 1FI2251-01		Prepared & Analyzed: 09/27/22				
Solids, total dissolved	4770	5	mg/L	4970				4.11	30	
Batch 1FI1352 - TOC/DOC										
Blank (1FI1352-BLK1)				Prepared & Analyzed: 09/27/22						
Total Organic Carbon	ND	0.50	mg/L							
LCS (1FI1352-BS1)				Prepared & Analyzed: 09/27/22						
Total Organic Carbon	5.24	0.50	mg/L	5.00000		105	86-120			
LCS Dup (1FI1352-BSD1)				Prepared & Analyzed: 09/27/22						
Total Organic Carbon	5.30	0.50	mg/L	5.00000		106	86-120	1.25	10	
Matrix Spike (1FI1352-MS1)				Source: 1FI2419-01		Prepared & Analyzed: 09/27/22				
Total Organic Carbon	62.72	5.00	mg/L	50.0000	6.46	113	81-128			
Matrix Spike Dup (1FI1352-MSD1)				Source: 1FI2419-01		Prepared & Analyzed: 09/27/22				
Total Organic Carbon	63.97	5.00	mg/L	50.0000	6.46	115	81-128	1.97	10	
Batch 1FI1430 - Wet Chem Preparation										
Blank (1FI1430-BLK1)				Prepared & Analyzed: 09/28/22						
Nitrogen, Ammonia	ND	0.10	mg/L							

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Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI1430 - Wet Chem Preparation

LCS (1FI1430-BS1)

Prepared & Analyzed: 09/28/22

Nitrogen, Ammonia	5.02	0.10	mg/L	5.00000		100	90-114			
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Matrix Spike (1FI1430-MS1)

Source: 1FI1867-01

Prepared & Analyzed: 09/28/22

Nitrogen, Ammonia	5.66	0.10	mg/L	5.00000	0.255	108	84-115			
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Matrix Spike Dup (1FI1430-MSD1)

Source: 1FI1867-01

Prepared & Analyzed: 09/28/22

Nitrogen, Ammonia	5.61	0.10	mg/L	5.00000	0.255	107	84-115	1.04	20	
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Work Order: 1FI2251

Determination of Inorganic Anions - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FI1289 - General Prep HPLC/IC										
Blank (1FI1289-BLK1)				Prepared & Analyzed: 09/23/22						
Fluoride	ND	0.1	mg/L							
Nitrogen, Nitrate+Nitrite	ND	0.2	"							
Chloride	ND	1.0	"							
Sulfate	ND	1.0	"							
LCS (1FI1289-BS1)				Prepared & Analyzed: 09/23/22						
Fluoride	1.22	0.1	mg/L	1.24195		98.2	90-110			
Nitrogen, Nitrate+Nitrite	4.06	0.2	"	4.16548		97.5	80-120			
Chloride	15.82	1.0	"	15.2778		104	90-110			
Sulfate	34.61	1.0	"	34.2430		101	90-110			
LCS Dup (1FI1289-BSD1)				Prepared & Analyzed: 09/23/22						
Nitrogen, Nitrate+Nitrite	4.06	0.2	mg/L	4.16548		97.4	80-120	0.123	10	
Fluoride	1.21	0.1	"	1.24195		97.7	90-110	0.411	10	
Chloride	15.82	1.0	"	15.2778		104	90-110	0.0253	10	
Sulfate	34.56	1.0	"	34.2430		101	90-110	0.119	10	
MRL Check (1FI1289-MRL1)				Prepared & Analyzed: 09/23/22						
Fluoride	0.06	0.1	mg/L	0.0477778		134	50-150			
Nitrogen, Nitrate+Nitrite	0.20	0.2	"	0.146930		137	0-200			
Chloride	0.71	1.0	"	0.613359		116	50-150			
Sulfate	1.36	1.0	"	1.11024		123	50-150			
Matrix Spike (1FI1289-MS1)				Source: 1FI2251-01		Prepared & Analyzed: 09/23/22				
Fluoride	11.99	1.0	mg/L	12.4195	0.37	93.5	80-120			
Nitrogen, Nitrate+Nitrite	153.0	2.0	"	41.6548	107.4	109	80-120			
Chloride	193.5	10.0	"	152.778	40.19	100	80-120			
Sulfate	2655	10.0	"	342.430	2594	17.8	80-120			QM-14

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Determination of Inorganic Anions - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI1289 - General Prep HPLC/IC

Matrix Spike Dup (1FI1289-MSD1)		Source: 1FI2251-01			Prepared & Analyzed: 09/23/22					
Nitrogen, Nitrate+Nitrite	153.4	2.0	mg/L	41.6548	107.4	110	80-120	0.281	10	
Fluoride	11.92	1.0	"	12.4195	0.37	93.0	80-120	0.586	10	
Chloride	194.0	10.0	"	152.778	40.19	101	80-120	0.268	10	
Sulfate	2664	10.0	"	342.430	2594	20.4	80-120	0.339	10	QM-14

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Determination of Microbiological Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI1192 - General Prep Micro

Blank (1FI1192-BLK1)

Prepared & Analyzed: 09/23/22

Heterotrophic Plate Count	ND	2.0	MPN/ml
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Work Order: 1FI2251

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI0951 - DW Metals Prep

Blank (1FI0951-BLK1)

Prepared: 09/20/22 Analyzed: 09/25/22

Antimony, total	ND	0.0005	mg/L
Arsenic, total	ND	0.0005	"
Barium, total	ND	0.0005	"
Beryllium, total	ND	0.0002	"
Cadmium, total	ND	0.0002	"
Chromium, total	ND	0.0010	"
Copper, total	ND	0.0005	"
Lead, total	ND	0.0002	"
Manganese, total	ND	0.0005	"
Nickel, total	ND	0.0010	"
Selenium, total	ND	0.0005	"
Silver, total	ND	0.0010	"
Thallium, total	ND	0.0002	"
Zinc, total	ND	0.0020	"

QB-11

LCS (1FI0951-BS1)

Prepared: 09/20/22 Analyzed: 09/25/22

Antimony, total	0.0183	0.0005	mg/L	0.0200000	91.6	85-115
Arsenic, total	0.0201	0.0005	"	0.0200000	100	85-115
Barium, total	0.0179	0.0005	"	0.0200000	89.4	85-115
Beryllium, total	0.0189	0.0002	"	0.0200000	94.7	85-115
Cadmium, total	0.0182	0.0002	"	0.0200000	91.2	85-115
Chromium, total	0.0206	0.0010	"	0.0200000	103	85-115
Copper, total	0.0196	0.0005	"	0.0200000	98.1	85-115
Lead, total	0.0196	0.0002	"	0.0200000	97.9	85-115
Manganese, total	0.0192	0.0005	"	0.0200000	95.9	85-115
Nickel, total	0.0199	0.0010	"	0.0200000	99.5	85-115
Selenium, total	0.0201	0.0005	"	0.0200000	100	85-115
Silver, total	0.0202	0.0010	"	0.0200000	101	85-115
Thallium, total	0.0187	0.0002	"	0.0200000	93.7	85-115
Zinc, total	0.0201	0.0020	"	0.0200000	100	85-115

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Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI0951 - DW Metals Prep

Matrix Spike (1FI0951-MS1)	Source: 1FI2251-01			Prepared: 09/20/22 Analyzed: 09/25/22						
Antimony, total	0.0400	0.0010	mg/L	0.0408163	ND	98.1	70-130			
Arsenic, total	0.0574	0.0010	"	0.0408163	0.0170	98.9	70-130			
Barium, total	0.0434	0.0010	"	0.0408163	0.0069	89.6	70-130			
Beryllium, total	0.0136	0.0004	"	0.0408163	ND	33.3	70-130			QM-07
Cadmium, total	0.0338	0.0004	"	0.0408163	ND	82.9	70-130			
Chromium, total	0.0353	0.0020	"	0.0408163	ND	86.4	70-130			
Copper, total	0.0412	0.0010	"	0.0408163	0.0077	82.2	70-130			
Lead, total	0.0354	0.0004	"	0.0408163	ND	86.8	70-130			
Manganese, total	0.0413	0.0010	"	0.0408163	0.0070	84.0	70-130			
Nickel, total	0.0613	0.0020	"	0.0408163	0.0259	86.8	70-130			
Selenium, total	0.354	0.0010	"	0.0408163	0.321	80.6	70-130			
Silver, total	0.0332	0.0020	"	0.0408163	ND	81.4	70-130			
Thallium, total	0.0308	0.0004	"	0.0408163	ND	75.4	70-130			
Zinc, total	0.0381	0.0040	"	0.0408163	0.0062	78.1	70-130			

Matrix Spike Dup (1FI0951-MSD1)	Source: 1FI2251-01			Prepared: 09/20/22 Analyzed: 09/25/22						
Antimony, total	0.0389	0.0010	mg/L	0.0408163	ND	95.4	70-130	2.76	20	
Arsenic, total	0.0568	0.0010	"	0.0408163	0.0170	97.6	70-130	0.913	20	
Barium, total	0.0425	0.0010	"	0.0408163	0.0069	87.4	70-130	2.09	20	
Beryllium, total	0.0135	0.0004	"	0.0408163	ND	33.0	70-130	0.906	20	QM-07
Cadmium, total	0.0331	0.0004	"	0.0408163	ND	81.1	70-130	2.19	20	
Chromium, total	0.0347	0.0020	"	0.0408163	ND	84.9	70-130	1.73	20	
Copper, total	0.0392	0.0010	"	0.0408163	0.0077	77.3	70-130	4.93	20	
Lead, total	0.0344	0.0004	"	0.0408163	ND	84.2	70-130	3.13	20	
Manganese, total	0.0402	0.0010	"	0.0408163	0.0070	81.2	70-130	2.81	20	
Nickel, total	0.0610	0.0020	"	0.0408163	0.0259	86.0	70-130	0.548	20	
Selenium, total	0.349	0.0010	"	0.0408163	0.321	66.8	70-130	1.60	20	QM-07
Silver, total	0.0329	0.0020	"	0.0408163	ND	80.6	70-130	1.04	20	
Thallium, total	0.0297	0.0004	"	0.0408163	ND	72.8	70-130	3.54	20	
Zinc, total	0.0366	0.0040	"	0.0408163	0.0062	74.4	70-130	4.06	20	

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Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI1406 - DW Metals Prep

Blank (1FI1406-BLK1)

Prepared & Analyzed: 09/28/22

Hardness, Total as CaCO ₃	ND	1	mg/L							
Aluminum, total	ND	0.050	"							
Boron, total	ND	0.100	"							
Calcium, total	ND	0.1	"							
Iron, total	ND	0.100	"							
Magnesium, total	ND	0.10	"							
Potassium, total	ND	1.00	"							
Sodium, total	ND	1.00	"							
Strontium, total	ND	0.010	"							

LCS (1FI1406-BS1)

Prepared & Analyzed: 09/28/22

Hardness, Total as CaCO ₃	15	1	mg/L	14.7111		102	80-120			
Aluminum, total	2.30	0.050	"	2.22222		103	85-115			
Boron, total	0.213	0.100	"	0.202020		105	85-115			
Calcium, total	2.25	0.1	"	2.22222		101	85-115			
Iron, total	2.38	0.100	"	2.22222		107	85-115			
Magnesium, total	2.28	0.10	"	2.22222		103	85-115			
Potassium, total	4.13	1.00	"	4.04040		102	85-115			
Sodium, total	2.40	1.00	"	2.22222		108	85-115			
Strontium, total	0.207	0.010	"	0.202020		102	75-125			

Matrix Spike (1FI1406-MS1)

Source: 1FI1867-01

Prepared & Analyzed: 09/28/22

Hardness, Total as CaCO ₃	374	1	mg/L	14.7111	352	154	80-120			QM-4X
Aluminum, total	2.44	0.050	"	2.22222	ND	110	70-130			
Boron, total	0.272	0.100	"	0.202020	ND	135	70-130			QM-07
Calcium, total	98.1	0.1	"	2.22222	93.7	195	70-130			QM-4X
Iron, total	7.23	0.100	"	2.22222	4.77	111	70-130			
Magnesium, total	31.3	0.10	"	2.22222	28.5	129	70-130			
Potassium, total	5.67	1.00	"	4.04040	1.24	110	70-130			
Sodium, total	10.7	1.00	"	2.22222	8.17	115	70-130			
Strontium, total	0.437	0.010	"	0.202020	0.214	110	75-125			

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Work Order: 1FI2251

Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FI1406 - DW Metals Prep

Matrix Spike Dup (1FI1406-MSD1)		Source: 1FI1867-01		Prepared & Analyzed: 09/28/22						
Hardness, Total as CaCO ₃	365	1	mg/L	14.7111	352	91.1	80-120	2.49	20	
Aluminum, total	2.42	0.050	"	2.22222	ND	109	70-130	0.644	20	
Boron, total	0.258	0.100	"	0.202020	ND	128	70-130	5.40	20	
Calcium, total	95.1	0.1	"	2.22222	93.7	61.2	70-130	3.08	20	QM-4X
Iron, total	7.04	0.100	"	2.22222	4.77	102	70-130	2.70	20	
Magnesium, total	30.9	0.10	"	2.22222	28.5	109	70-130	1.38	20	
Potassium, total	5.66	1.00	"	4.04040	1.24	109	70-130	0.185	20	
Sodium, total	10.6	1.00	"	2.22222	8.17	111	70-130	0.877	20	
Strontium, total	0.434	0.010	"	0.202020	0.214	108	75-125	0.736	20	

Batch 1FI1491 - EPA 245.1 Hg Dig

Blank (1FI1491-BLK1)		Prepared: 09/29/22 Analyzed: 09/30/22								
Mercury, total	ND	0.00020	mg/L							
LCS (1FI1491-BS1)		Prepared: 09/29/22 Analyzed: 09/30/22								
Mercury, total	0.00252	0.00020	mg/L	0.00250000		101	85-123			
Matrix Spike (1FI1491-MS1)		Source: 1FI1867-01		Prepared: 09/29/22 Analyzed: 09/30/22						
Mercury, total	0.00249	0.00020	mg/L	0.00250000	ND	99.6	62-131			
Matrix Spike Dup (1FI1491-MSD1)		Source: 1FI1867-01		Prepared: 09/29/22 Analyzed: 09/30/22						
Mercury, total	0.00245	0.00020	mg/L	0.00250000	ND	97.9	62-131	1.65	16	

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

October 05, 2022
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Work Order: 1FI2251

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
200.7 in Drink Wtr	Calcium, total	SIA1X
	Iron, total	SIA1X
	Magnesium, total	SIA1X
	Potassium, total	SIA1X
	Sodium, total	SIA1X
200.8 in Drink Wtr	Antimony, total	SIA1X
	Arsenic, total	SIA1X
	Barium, total	SIA1X
	Beryllium, total	SIA1X
	Cadmium, total	SIA1X
	Chromium, total	SIA1X
	Copper, total	SIA1X
	Lead, total	SIA1X
	Manganese, total	SIA1X
	Nickel, total	SIA1X
	Selenium, total	SIA1X
	Silver, total	SIA1X
	Thallium, total	SIA1X
	Zinc, total	SIA1X
2130B in Drink Wtr	Turbidity	SIA1X
2320B in Drink Wtr	Alkalinity, as CaCO ₃	SIA1X
2340B in Drink Wtr	Hardness, Total as CaCO ₃	SIA1X
2510B in Drink Wtr	Conductivity	SIA1X
2540C in Drink Wtr	Solids, total dissolved	SIA1X
300.0 in Drink Wtr	Fluoride	SIA1X
	Chloride	SIA1X
	Sulfate	SIA1X
3112B in Drink Wtr	Mercury, total	SIA1X
524.2 in Drink Wtr	Vinyl Chloride	SIA1X
	1,1-Dichloroethylene	SIA1X
	Dichloromethane	SIA1X
	trans-1,2-Dichloroethylene	SIA1X
	cis-1,2-Dichloroethylene	SIA1X
	1,1,1-Trichloroethane	SIA1X
	Carbon Tetrachloride	SIA1X
	Benzene	SIA1X
	1,2-Dichloroethane	SIA1X

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

October 05, 2022

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Work Order: 1FI2251

	Trichloroethylene	SIA1X
	1,2-Dichloropropane	SIA1X
	Toluene	SIA1X
	1,1,2-Trichloroethane	SIA1X
	Tetrachloroethylene	SIA1X
	Monochlorobenzene	SIA1X
	Ethylbenzene	SIA1X
	Xylenes (total)	SIA1X
	Styrene	SIA1X
	o-Dichlorobenzene	SIA1X
	p-Dichlorobenzene	SIA1X
	1,2,4-Trichlorobenzene	SIA1X
5310B in Drink Wtr		
	Total Organic Carbon	SIA1X
5310B in Water		
	Total Organic Carbon	KS-NT,SIA1X
9223B-PA in Drink Wtr		
	Total Coliforms	SIA1X
	E. Coli	SIA1X
TIMBERLINE in Drink Wtr		
	Nitrogen, Ammonia	SIA1X

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2023
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2022
MO-KC	Missouri Department of Natural Resources	140	04/30/2023
SIA1X	Iowa Dept. of Natural Resources (updated certificate pending)	95	02/01/2024

Notes and Definitions

I-02	This result was analyzed outside of the EPA recommended holding time.
I-03	Analyte required to be analyzed within 15 minutes of sampling. Analysis performed upon receipt of sample at laboratory.
QB-11	The analyte was found in the blank at a concentration greater than 2.2 times the MDL. However, the concentration of the analyte in the blank was less than the reporting limit so the data was accepted.
QM-07	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-14	The spike recovery was outside acceptance limits for the MS and/or MSD. However, all other QC was acceptable.
QM-19	The MS or MSD recovery was outside acceptance limits. This resulted in an unacceptable RPD. All other QC was acceptable.
QM-21	The recovery for the blank spike was outside the established laboratory control limits. The batch was accepted based upon the acceptable recovery of the CCV.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

October 05, 2022

Work Order: 1FI2251

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End of Report

Dara Hanson

Keystone Laboratories

Dara Hanson

Project Manager I

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.



SITE INFORMATION

Sampler: Marty Rest
Project: Well Testing
Well Testing

SPECIAL INSTRUCTIONS

None

Turn Around Time

☒ Standard ☐ RUSH, need by / /

REPORT TO

Todd Williams
Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

INVOICE TO

Kim Steenstraw
Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

LAB USE ONLY

Work Order IFI2251
Temperature 0.0
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-00	Tri-R Farms	Drink Wtr	NR	/ /			524.2-101 ag-t-200.8 alk-caco3-2320 al-t-200.7 as-t-200.8 ba-t-200.8 be-t-200.8 b-t-200.7 ca-t-200.7 cd-t-200.8 ci-300.0 co2-4500 coli-t-9223-pa cond-2510 cr-t-200.8 cu-t-200.8 f-300.0 fe-t-200.7 hard-t-200.7 hg-t-3112-low hpc-simplate iron-related-bact k-t-200.7 lang-index-pkg mg-t-200.7 mn-t-200.8 na-t-200.7 nh3-timberline ni-t-200.8 nox-300.0 pb-t-200.8 ph-150.1 rad-gross-alpha rad-gross-beta rads-radium-226/228 sb-t-200.8	<u>01</u>

Keystone LABORATORIES, INC. (800) 858-5227 www.keystonelabs.com

SITE NAME Tri-R DATE 9/22/22 TIME 5:30 pm
 COLLECTOR Marty Rest
 SAMPLE ID

ANALYSES Drinking water
 Preservative: ☐ None ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH
☐ HCl ☐ Other:

Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____

Relinquished By _____ Date/Time _____

Whitney Cobb 9/23/22 7:55
 Received for Lab By _____ Date/Time _____
 Original - Lab Copy Yellow - Sampler Copy

Remarks:



SITE INFORMATION

Sampler: Marty Post
Project: Well Testing
Well Testing

SPECIAL INSTRUCTIONS

None

Turn Around Time

☒ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Todd Williams
Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

INVOICE TO

Kim Steenstraw
Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

LAB USE ONLY

Work Order IFI 2251
Temperature 0.0
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
	(800) 858-5227 www.keystonelabs.com SITE NAME <u>IFI R</u> DATE <u>9/24/22</u> TIME <u>8:30 am</u> SAMPLE ID COLLECTOR <u>Marty Post</u> ANALYSES <u>Drinking water</u> Preservative: ☐ None ☐ HNO₃ ☐ H₂SO₄ ☐ NaOH ☐ HCl ☐ Other: _____						se-t-200.8 so4-300.0 sulfate-reducing-bacteria tl-t-200.8 turbidity sio2-t-4500-AQ400 sr-t-200.7 sulfide-t-4500d-low toc-5310b zn-t-200.8	<u>02</u>

Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____

Relinquished By _____ Date/Time _____

Whitney Cobb 9/23/22 7:55
Received for Lab By _____ Date/Time _____
Original - Lab Copy Yellow - Sampler Copy

Remarks:

Gronlund, Eric

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Wednesday, November 16, 2022 3:54 PM
To: Gronlund, Eric; Mathiowetz, Adam (DENR); Steen, Nakaila
Subject: [EXT] Tri-R Follow-up

Eric / Adam / Nakaila,

I spoke with Marty Rost (Pipestone). He requested that the application/review be paused so that they can discuss their options and determine the best way to move forward.

Thank you for the time on the call. I know we will get the right path figured out eventually.

I will circle back with you once I hear back from the applicant.

Thank you!

Brad Woerner, PE
Agricultural Engineer

Stockwell Engineers, Inc.

Cell / 605.660.1362

Office / 605.665.8092

Fax / 605.665.0523

bwoerner@stockwellengineers.com

201 Walnut Street / Yankton, SD 57078



STOCKWELLENGINEERS.COM



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ANALYTICAL REPORT

December 09, 2022

Page 1 of 25

Work Order: 1FK2104

Report To

Todd Williams
Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

Work Order Information

Date Received: 11/22/2022 8:05:00AM
Collector: Rost, Marty
Phone: 000000000000
PO Number:

Project: Well Testing

Project Number: Well Testing

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1FK2104-01	Tri R/Flyway			Matrix: Drink Wtr		Collected: 11/21/22 09:00	
Vinyl Chloride	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
1,1-Dichloroethylene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Dichloromethane	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
trans-1,2-Dichloroethylene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
cis-1,2-Dichloroethylene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
1,1,1-Trichloroethane	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Carbon Tetrachloride	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Benzene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
1,2-Dichloroethane	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Trichloroethylene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
1,2-Dichloropropane	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Toluene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
1,1,2-Trichloroethane	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Tetrachloroethylene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Monochlorobenzene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Ethylbenzene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Xylenes (total)	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Styrene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
o-Dichlorobenzene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
p-Dichlorobenzene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
1,2,4-Trichlorobenzene	<0.50 ug/L	0.50	1FK1314	524.2	AJM	11/23/22 12:14	
Surrogate: Dibromofluoromethane	111 %			71-131	AJM	11/23/22 12:14	
Surrogate: 1,2-Dichloroethane-d4	117 %			63-138	AJM	11/23/22 12:14	
Surrogate: Toluene-d8	106 %			90-111	AJM	11/23/22 12:14	
Surrogate: 4-Bromofluorobenzene	111 %			83-110	AJM	11/23/22 12:14	S-GC
Alkalinity, as CaCO3	610 mg/L	50	1FK1212	2320B	BSS	11/22/22 12:42	
Carbon Dioxide, Free, as CO2	179 mg/L	40.0	1FK1255	SM 4500-CO2 C	SAA	11/23/22 8:55	
Conductivity	6480 umho/cm	2.0	1FK1203	2510B	BSS	11/22/22 11:55	

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022

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Work Order: 1FK2104

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1FK2104-01	Tri R/Flyway			Matrix: Drink Wtr		Collected: 11/21/22 09:00	
Langlier Index	0.46 Lang		1FL0346	203	SAA	12/07/22 17:06	
Nitrogen, Ammonia	<0.10 mg/L	0.10	1FL0204	TIMBERLINE	TJB	12/06/22 12:01	
pH	6.7 pH	0.5	1FK1202	150.1	BSS	11/22/22 16:32	I-03
Silica, total	24.0 mg/L	5.0	1FL0275	SM 4500-SIO2 E-2011	SAA	12/07/22 10:34	
Sulfide, total	<0.10 mg/L	0.10	1FK1239	SM 4500-S D	AKK	11/23/22 15:40	PH-5
Solids, total dissolved	4770 mg/L	5	1FK1344	2540C	MEAH	11/28/22 10:50	
Total Organic Carbon	17.8 mg/L	0.50	1FK1306	5310B	LNH	11/23/22 12:31	
Turbidity	<1.0 NTU	1.0	1FK1188	SM 2130 B	BSS	11/22/22 10:36	
Chloride	33.4 mg/L	1.0	1FK1280	300.0	MID	11/22/22 12:08	
Fluoride	0.6 mg/L	0.1	1FK1280	300.0	MID	11/22/22 12:08	
Nitrogen, Nitrite	0.11 mg/L	0.10	1FK1280	300.0	MID	11/22/22 0:00	
Nitrogen, Nitrate	89.0 mg/L	1.0	1FK1280	300.0	MID	11/22/22 18:19	
Nitrogen, Nitrate+Nitrite	89.0 mg/L	2.0	1FK1280	300.0	MID	11/22/22 18:19	
Sulfate	2580 mg/L	50.0	1FK1280	300.0	MID	11/22/22 22:33	
Total Coliforms	Present		1FK1181	9223B-PA	LAE	11/22/22 8:45	
E. Coli	Absent		1FK1181	9223B-PA	LAE	11/22/22 8:45	
Heterotrophic Plate Count	12 MPN/ml	2.0	1FK1180	SimPlate	LAE	11/22/22 8:45	
Iron Related Bacteria	Present CFU	1	1FK1182	BART	LAE	11/22/22 8:45	
Sulfate Reducing Bacteria	Present CFU	1	1FK1183	BART	LAE	11/22/22 8:45	
Silver, total	<0.0020 mg/L	0.0020	1FK1106	200.8	RVV	11/29/22 23:59	
Aluminum, total	<0.050 mg/L	0.050	1FK1261	200.7	JAR	11/23/22 19:46	
Arsenic, total	0.0086 mg/L	0.0010	1FK1106	200.8	RVV	11/29/22 23:59	
Barium, total	0.0065 mg/L	0.0010	1FK1106	200.8	RVV	11/29/22 23:59	
Beryllium, total	<0.0004 mg/L	0.0004	1FK1106	200.8	RVV	11/29/22 23:59	
Boron, total	0.561 mg/L	0.100	1FK1261	EPA 200.7	JAR	11/23/22 19:46	
Calcium, total	561 mg/L	0.1	1FK1261	200.7	JAR	11/23/22 19:46	
Cadmium, total	<0.0004 mg/L	0.0004	1FK1106	200.8	RVV	11/29/22 23:59	
Chromium, total	<0.0020 mg/L	0.0020	1FK1106	200.8	RVV	11/29/22 23:59	
Copper, total	0.0102 mg/L	0.0010	1FK1106	200.8	RVV	11/29/22 23:59	
Iron, total	<0.100 mg/L	0.100	1FK1261	200.7	JAR	11/23/22 19:46	
Mercury, total	<0.00020 mg/L	0.00020	1FK1389	3112B	RVV	11/30/22 15:34	
Potassium, total	22.6 mg/L	1.00	1FK1261	200.7	JAR	11/23/22 19:46	
Manganese, total	0.0029 mg/L	0.0010	1FK1106	200.8	RVV	11/29/22 23:59	
Sodium, total	205 mg/L	1.00	1FK1261	200.7	JAR	11/23/22 19:46	
Nickel, total	0.0242 mg/L	0.0020	1FK1106	200.8	RVV	11/29/22 23:59	
Lead, total	<0.0004 mg/L	0.0004	1FK1106	200.8	RVV	11/29/22 23:59	
Antimony, total	<0.0010 mg/L	0.0010	1FK1106	200.8	RVV	11/29/22 23:59	
Selenium, total	0.262 mg/L	0.0010	1FK1106	200.8	RVV	11/29/22 23:59	
Strontium, total	4.59 mg/L	0.010	1FK1261	EPA 200.7	JAR	11/23/22 19:46	
Thallium, total	<0.0004 mg/L	0.0004	1FK1106	200.8	RVV	11/29/22 23:59	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022

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Work Order: 1FK2104

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1FK2104-01	Tri R/Flyway			Matrix: Drink Wtr		Collected: 11/21/22 09:00	
Zinc, total	0.0174 mg/L	0.0040	1FK1106	200.8	RVV	11/29/22 23:59	
1FK2104-01RE1	Tri R/Flyway			Matrix: Drink Wtr		Collected: 11/21/22 09:00	
Hardness, Total as CaCO₃	3200 mg/L	10	1FK1261	2340B	JAR	11/28/22 9:55	
Magnesium, total	427 mg/L	1.00	1FK1261	200.7	JAR	11/28/22 9:55	

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022

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Work Order: 1FK2104

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1FK1314 - EPA 5030B

Blank (1FK1314-BLK1)

Prepared & Analyzed: 11/23/22

Surrogate: Dibromofluoromethane	54.4		ug/L	50.0440		109	71-131			
Surrogate: 1,2-Dichloroethane-d4	58.8		"	50.0720		117	63-138			
Surrogate: Toluene-d8	53.4		"	50.0640		107	90-111			
Surrogate: 4-Bromofluorobenzene	55.8		"	50.1200		111	83-110			S-GC
Vinyl Chloride	ND	0.50	"							
1,1-Dichloroethylene	ND	0.50	"							
Dichloromethane	ND	0.50	"							
trans-1,2-Dichloroethylene	ND	0.50	"							
cis-1,2-Dichloroethylene	ND	0.50	"							
1,1,1-Trichloroethane	ND	0.50	"							
Carbon Tetrachloride	ND	0.50	"							
Benzene	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Trichloroethylene	ND	0.50	"							
1,2-Dichloropropane	ND	0.50	"							
Toluene	ND	0.50	"							
1,1,2-Trichloroethane	ND	0.50	"							
Tetrachloroethylene	ND	0.50	"							
Monochlorobenzene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Styrene	ND	0.50	"							
o-Dichlorobenzene	ND	0.50	"							
p-Dichlorobenzene	ND	0.50	"							
1,2,4-Trichlorobenzene	ND	0.50	"							

LCS (1FK1314-BS1)

Prepared & Analyzed: 11/23/22

Surrogate: Dibromofluoromethane	53.6		ug/L	50.0440		107	71-131			
Surrogate: 1,2-Dichloroethane-d4	55.3		"	50.0720		110	63-138			
Surrogate: Toluene-d8	54.0		"	50.0640		108	90-111			
Surrogate: 4-Bromofluorobenzene	54.2		"	50.1200		108	83-110			
Vinyl Chloride	28.94	0.50	"	30.0000		96.5	63-156			
1,1-Dichloroethylene	64.15	0.50	"	50.0000		128	68-150			
Dichloromethane	59.52	0.50	"	50.0000		119	64-137			
trans-1,2-Dichloroethylene	60.58	0.50	"	50.0000		121	59-137			
cis-1,2-Dichloroethylene	63.30	0.50	"	50.0000		127	73-141			
1,1,1-Trichloroethane	57.40	0.50	"	49.9750		115	61-127			
Carbon Tetrachloride	62.64	0.50	"	50.0000		125	65-134			
Benzene	55.03	0.50	"	50.0000		110	80-128			

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022

Page 5 of 25

Work Order: 1FK2104

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1FK1314 - EPA 5030B

LCS (1FK1314-BS1)										
Prepared & Analyzed: 11/23/22										
1,2-Dichloroethane	57.95	0.50	ug/L	50.0000		116	70-137			
Trichloroethylene	53.55	0.50	"	50.0000		107	78-123			
1,2-Dichloropropane	55.46	0.50	"	50.0000		111	74-134			
Toluene	55.26	0.50	"	50.0000		111	81-126			
1,1,2-Trichloroethane	56.09	0.50	"	50.0000		112	78-125			
Tetrachloroethylene	37.01	0.50	"	50.0000		74.0	72-123			
Monochlorobenzene	42.52	0.50	"	50.0000		85.0	76-118			
Ethylbenzene	43.44	0.50	"	50.0000		86.9	77-121			
Xylenes (total)	132.7	0.50	"	150.000		88.4	78-119			
Styrene	44.20	0.50	"	50.0000		88.4	75-121			
o-Dichlorobenzene	40.14	0.50	"	50.0000		80.3	46-117			
p-Dichlorobenzene	41.61	0.50	"	50.0000		83.2	77-119			
1,2,4-Trichlorobenzene	37.03	0.50	"	50.0000		74.1	72-123			

LCS Dup (1FK1314-BSD1)										
Prepared & Analyzed: 11/23/22										
Surrogate: Dibromofluoromethane	52.3		ug/L	50.0440		105	71-131			
Surrogate: 1,2-Dichloroethane-d4	54.4		"	50.0720		109	63-138			
Surrogate: Toluene-d8	53.5		"	50.0640		107	90-111			
Surrogate: 4-Bromofluorobenzene	54.2		"	50.1200		108	83-110			
Vinyl Chloride	26.83	0.50	"	30.0000		89.4	63-156	7.57	24	
1,1-Dichloroethylene	61.11	0.50	"	50.0000		122	68-150	4.85	24	
Dichloromethane	58.76	0.50	"	50.0000		118	64-137	1.29	22	
trans-1,2-Dichloroethylene	59.03	0.50	"	50.0000		118	59-137	2.59	24	
cis-1,2-Dichloroethylene	58.53	0.50	"	50.0000		117	73-141	7.83	23	
1,1,1-Trichloroethane	55.16	0.50	"	49.9750		110	61-127	3.98	24	
Carbon Tetrachloride	59.92	0.50	"	50.0000		120	65-134	4.44	24	
Benzene	53.91	0.50	"	50.0000		108	80-128	2.06	23	
1,2-Dichloroethane	59.08	0.50	"	50.0000		118	70-137	1.93	22	
Trichloroethylene	51.42	0.50	"	50.0000		103	78-123	4.06	23	
1,2-Dichloropropane	55.87	0.50	"	50.0000		112	74-134	0.737	22	
Toluene	54.11	0.50	"	50.0000		108	81-126	2.10	23	
1,1,2-Trichloroethane	56.36	0.50	"	50.0000		113	78-125	0.480	24	
Tetrachloroethylene	37.08	0.50	"	50.0000		74.2	72-123	0.189	24	
Monochlorobenzene	42.39	0.50	"	50.0000		84.8	76-118	0.306	23	
Ethylbenzene	43.06	0.50	"	50.0000		86.1	77-121	0.879	23	
Xylenes (total)	131.8	0.50	"	150.000		87.9	78-119	0.650	21	
Styrene	43.95	0.50	"	50.0000		87.9	75-121	0.567	25	
o-Dichlorobenzene	40.01	0.50	"	50.0000		80.0	46-117	0.324	22	
p-Dichlorobenzene	41.64	0.50	"	50.0000		83.3	77-119	0.0721	23	

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Work Order: 1FK2104

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FK1314 - EPA 5030B

LCS Dup (1FK1314-BSD1)

Prepared & Analyzed: 11/23/22

1,2,4-Trichlorobenzene	36.12	0.50	ug/L	50.0000		72.2	72-123	2.49	25	
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Matrix Spike (1FK1314-MS1)

Source: 1FK1962-02

Prepared & Analyzed: 11/23/22

Surrogate: Dibromofluoromethane	222		ug/L	200.176		111	71-131			
Surrogate: 1,2-Dichloroethane-d4	235		"	200.288		117	63-138			
Surrogate: Toluene-d8	220		"	200.256		110	90-111			
Surrogate: 4-Bromofluorobenzene	220		"	200.480		110	83-110			
Vinyl Chloride	128.2	2.00	"	120.000	ND	107	48-166			
1,1-Dichloroethylene	271.6	2.00	"	200.000	ND	136	50-161			
Dichloromethane	251.7	2.00	"	200.000	ND	126	54-136			
trans-1,2-Dichloroethylene	257.4	2.00	"	200.000	ND	129	60-120			QM-05
cis-1,2-Dichloroethylene	253.4	2.00	"	200.000	ND	127	65-143			
1,1,1-Trichloroethane	245.6	2.00	"	199.900	ND	123	60-116			QM-05
Carbon Tetrachloride	250.9	2.00	"	200.000	ND	125	49-142			
Benzene	224.1	2.00	"	200.000	ND	112	77-130			
1,2-Dichloroethane	241.3	2.00	"	200.000	ND	121	69-137			
Trichloroethylene	217.0	2.00	"	200.000	3.49	107	72-127			
1,2-Dichloropropane	226.0	2.00	"	200.000	ND	113	74-134			
Toluene	220.4	2.00	"	200.000	ND	110	77-125			
1,1,2-Trichloroethane	224.1	2.00	"	200.000	ND	112	78-123			
Tetrachloroethylene	149.4	2.00	"	200.000	ND	74.7	80-109			QM-05
Monochlorobenzene	167.9	2.00	"	200.000	ND	84.0	76-114			
Ethylbenzene	174.5	2.00	"	200.000	ND	87.3	75-121			
Xylenes (total)	529.3	2.00	"	600.000	ND	88.2	78-110			
Styrene	170.1	2.00	"	200.000	ND	85.1	75-119			
o-Dichlorobenzene	152.8	2.00	"	200.000	ND	76.4	69-118			
p-Dichlorobenzene	153.2	2.00	"	200.000	ND	76.6	74-118			
1,2,4-Trichlorobenzene	141.9	2.00	"	200.000	ND	70.9	74-117			QM-05

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Work Order: 1FK2104

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FK1314 - EPA 5030B										
Matrix Spike Dup (1FK1314-MSD1)		Source: 1FK1962-02			Prepared & Analyzed: 11/23/22					
Surrogate: Dibromofluoromethane	227		ug/L	200.176		114	71-131			
Surrogate: 1,2-Dichloroethane-d4	235		"	200.288		117	63-138			
Surrogate: Toluene-d8	216		"	200.256		108	90-111			
Surrogate: 4-Bromofluorobenzene	219		"	200.480		109	83-110			
Vinyl Chloride	115.4	2.00	"	120.000	ND	96.1	48-166	10.5	18	
1,1-Dichloroethylene	265.8	2.00	"	200.000	ND	133	50-161	2.16	22	
Dichloromethane	248.2	2.00	"	200.000	ND	124	54-136	1.41	20	
trans-1,2-Dichloroethylene	247.9	2.00	"	200.000	ND	124	60-120	3.78	26	QM-05
cis-1,2-Dichloroethylene	247.2	2.00	"	200.000	ND	124	65-143	2.45	18	
1,1,1-Trichloroethane	239.8	2.00	"	199.900	ND	120	60-116	2.37	17	QM-05
Carbon Tetrachloride	249.0	2.00	"	200.000	ND	124	49-142	0.768	14	
Benzene	218.9	2.00	"	200.000	ND	109	77-130	2.35	14	
1,2-Dichloroethane	239.8	2.00	"	200.000	ND	120	69-137	0.632	18	
Trichloroethylene	210.9	2.00	"	200.000	3.49	104	72-127	2.88	13	
1,2-Dichloropropane	223.5	2.00	"	200.000	ND	112	74-134	1.10	18	
Toluene	215.6	2.00	"	200.000	ND	108	77-125	2.22	12	
1,1,2-Trichloroethane	230.0	2.00	"	200.000	ND	115	78-123	2.59	11	
Tetrachloroethylene	141.1	2.00	"	200.000	ND	70.5	80-109	5.76	13	QM-05
Monochlorobenzene	161.9	2.00	"	200.000	ND	80.9	76-114	3.66	10	
Ethylbenzene	167.7	2.00	"	200.000	ND	83.8	75-121	4.00	12	
Xylenes (total)	512.1	2.00	"	600.000	ND	85.4	78-110	3.30	10	
Styrene	167.6	2.00	"	200.000	ND	83.8	75-119	1.52	12	
o-Dichlorobenzene	153.0	2.00	"	200.000	ND	76.5	69-118	0.157	22	
p-Dichlorobenzene	157.6	2.00	"	200.000	ND	78.8	74-118	2.83	19	
1,2,4-Trichlorobenzene	138.5	2.00	"	200.000	ND	69.3	74-117	2.40	20	QM-05

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Work Order: 1FK2104

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FK1188 - Wet Chem Preparation										
Blank (1FK1188-BLK1)					Prepared & Analyzed: 11/22/22					
Turbidity	ND	1.0	NTU							
Duplicate (1FK1188-DUP1)					Source: 1FK2104-01 Prepared & Analyzed: 11/22/22					
Turbidity	0.315	1.0	NTU		0.318			0.948	14	
Reference (1FK1188-SRM1)					Prepared & Analyzed: 11/22/22					
Turbidity	1.65	1.0	NTU		1.67000	98.8	85-115			
Reference (1FK1188-SRM2)					Prepared & Analyzed: 11/22/22					
Turbidity	15.3	1.0	NTU		16.0000	95.6	85-115			
Batch 1FK1202 - Wet Chem Preparation										
Duplicate (1FK1202-DUP1)					Source: 1FK2104-01 Prepared & Analyzed: 11/22/22					
pH	6.69	0.5	pH		6.68			0.120	10	
Reference (1FK1202-SRM1)					Prepared & Analyzed: 11/22/22					
pH	7.05	0.5	pH		7.00000	101	90-110			
Reference (1FK1202-SRM2)					Prepared & Analyzed: 11/22/22					
pH	7.10	0.5	pH		7.00000	101	90-110			
Batch 1FK1203 - Wet Chem Preparation										
Blank (1FK1203-BLK1)					Prepared & Analyzed: 11/22/22					
Conductivity	ND	2.0	umho/cm							

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Work Order: 1FK2104

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FK1203 - Wet Chem Preparation										
Duplicate (1FK1203-DUP1)	Source: 1FK2104-01			Prepared & Analyzed: 11/22/22						
Conductivity	6470	2.0	umho/cm		6480			0.0926	10	
Reference (1FK1203-SRM1)				Prepared & Analyzed: 11/22/22						
Conductivity	9.9	2.0	umho/cm	10.0000		99.3	90-110			
Batch 1FK1212 - Wet Chem Preparation										
Blank (1FK1212-BLK1)				Prepared & Analyzed: 11/22/22						
Alkalinity, as CaCO ₃	ND	10	mg/L							
LCS (1FK1212-BS1)				Prepared & Analyzed: 11/22/22						
Alkalinity, as CaCO ₃	48.9	10	mg/L	50.0000		97.9	90-114			
Matrix Spike (1FK1212-MS1)	Source: 1FK2104-01			Prepared & Analyzed: 11/22/22						
Alkalinity, as CaCO ₃	931	50	mg/L	250.000	610	128	77-118			QM-07
Matrix Spike Dup (1FK1212-MSD1)	Source: 1FK2104-01			Prepared & Analyzed: 11/22/22						
Alkalinity, as CaCO ₃	930	50	mg/L	250.000	610	128	77-118	0.0537	10	QM-07
Batch 1FK1239 - Wet Chem Preparation										
Blank (1FK1239-BLK1)				Prepared: 11/22/22 Analyzed: 11/23/22						
Sulfide, total	ND	0.10	mg/L							
LCS (1FK1239-BS1)				Prepared: 11/22/22 Analyzed: 11/23/22						
Sulfide, total	0.158	0.10	mg/L	0.266667		59.2	59-110			

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Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FK1239 - Wet Chem Preparation										
Matrix Spike (1FK1239-MS1)		Source: 1FK2153-02		Prepared: 11/22/22 Analyzed: 11/23/22						
Sulfide, total	0.171	0.10	mg/L	0.266667	ND	64.1	50-150			
Matrix Spike Dup (1FK1239-MSD1)		Source: 1FK2153-02		Prepared: 11/22/22 Analyzed: 11/23/22						
Sulfide, total	0.154	0.10	mg/L	0.266667	ND	57.7	50-150	10.6	30	
Batch 1FK1255 - Wet Chem Preparation										
Blank (1FK1255-BLK1)		Prepared & Analyzed: 11/23/22								
Carbon Dioxide, Free, as CO ₂	ND	40.0	mg/L							
Batch 1FK1306 - TOC/DOC										
Blank (1FK1306-BLK1)		Prepared & Analyzed: 11/23/22								
Total Organic Carbon	ND	0.50	mg/L							
LCS (1FK1306-BS1)		Prepared & Analyzed: 11/23/22								
Total Organic Carbon	4.98	0.50	mg/L	5.00000		99.5	86-120			
LCS Dup (1FK1306-BSD1)		Prepared & Analyzed: 11/23/22								
Total Organic Carbon	5.14	0.50	mg/L	5.00000		103	86-120	3.18	10	
Matrix Spike (1FK1306-MS1)		Source: 1FK2104-01		Prepared & Analyzed: 11/23/22						
Total Organic Carbon	68.20	5.00	mg/L	50.0000	17.85	101	81-128			
Matrix Spike Dup (1FK1306-MSD1)		Source: 1FK2104-01		Prepared & Analyzed: 11/23/22						
Total Organic Carbon	70.07	5.00	mg/L	50.0000	17.85	104	81-128	2.70	10	

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Work Order: 1FK2104

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FK1344 - Wet Chem Preparation

Blank (1FK1344-BLK1)				Prepared & Analyzed: 11/28/22						
Solids, total dissolved	ND	5	mg/L							
LCS (1FK1344-BS1)				Prepared & Analyzed: 11/28/22						
Solids, total dissolved	92.5	5	mg/L	100.000		92.5	71-114			
Duplicate (1FK1344-DUP1)				Source: 1FK2104-01		Prepared & Analyzed: 11/28/22				
Solids, total dissolved	4810	5	mg/L		4770			0.724	30	

Batch 1FL0204 - Wet Chem Preparation

Blank (1FL0204-BLK1)				Prepared & Analyzed: 12/06/22						
Nitrogen, Ammonia	ND	0.10	mg/L							
LCS (1FL0204-BS1)				Prepared & Analyzed: 12/06/22						
Nitrogen, Ammonia	4.88	0.10	mg/L	5.00000		97.6	90-114			
Matrix Spike (1FL0204-MS1)				Source: 1FK2104-01		Prepared & Analyzed: 12/06/22				
Nitrogen, Ammonia	4.83	0.10	mg/L	5.00000	ND	96.7	84-115			
Matrix Spike Dup (1FL0204-MSD1)				Source: 1FK2104-01		Prepared & Analyzed: 12/06/22				
Nitrogen, Ammonia	4.84	0.10	mg/L	5.00000	ND	96.9	84-115	0.211	20	

Batch 1FL0275 - Wet Chem Preparation

Blank (1FL0275-BLK1)				Prepared & Analyzed: 12/07/22						
Silica, total	ND	5.0	mg/L							

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Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FL0275 - Wet Chem Preparation										
LCS (1FL0275-BS1)				Prepared & Analyzed: 12/07/22						
Silica, total	4.51	5.0	mg/L	4.95000		91.1	75-117			
MRL Check (1FL0275-MRL1)				Prepared & Analyzed: 12/07/22						
Silica, total	ND	5.0	mg/L	0.198000			0-200			
Matrix Spike (1FL0275-MS1)				Source: 1FK2104-01		Prepared & Analyzed: 12/07/22				
Silica, total	33.5	10.0	mg/L	9.90000	24.0	96.1	63-124			
Matrix Spike Dup (1FL0275-MSD1)				Source: 1FK2104-01		Prepared & Analyzed: 12/07/22				
Silica, total	33.5	10.0	mg/L	9.90000	24.0	95.6	63-124	0.143	10	

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Work Order: 1FK2104

Determination of Inorganic Anions - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FK1280 - General Prep HPLC/IC

Blank (1FK1280-BLK1)

Prepared & Analyzed: 11/22/22

Nitrogen, Nitrate+Nitrite	ND	0.2	mg/L							
Fluoride	ND	0.1	"							
Chloride	ND	1.0	"							
Nitrogen, Nitrite	ND	0.10	"							
Nitrogen, Nitrate	ND	0.1	"							
Sulfate	ND	1.0	"							

LCS (1FK1280-BS1)

Prepared & Analyzed: 11/22/22

Fluoride	1.44	0.1	mg/L	1.32339		109	90-110			
Nitrogen, Nitrate+Nitrite	3.66	0.2	"	3.71858		98.6	80-120			
Chloride	14.57	1.0	"	15.1702		96.0	90-110			
Nitrogen, Nitrite	1.02	0.10	"	1.03680		98.9	90-110			
Nitrogen, Nitrate	2.64	0.1	"	2.68178		98.4	90-110			
Sulfate	33.64	1.0	"	34.2618		98.2	90-110			

LCS Dup (1FK1280-BSD1)

Prepared & Analyzed: 11/22/22

Fluoride	1.45	0.1	mg/L	1.32339		110	90-110	0.415	10	
Nitrogen, Nitrate+Nitrite	3.67	0.2	"	3.71858		98.6	80-120	0.0273	10	
Chloride	14.48	1.0	"	15.1702		95.4	90-110	0.613	10	
Nitrogen, Nitrite	1.02	0.10	"	1.03680		98.0	90-110	0.882	10	
Nitrogen, Nitrate	2.65	0.1	"	2.68178		98.8	90-110	0.378	10	
Sulfate	33.72	1.0	"	34.2618		98.4	90-110	0.241	10	

MRL Check (1FK1280-MRL1)

Prepared & Analyzed: 11/22/22

Fluoride	0.04	0.1	mg/L	0.0466467		94.3	50-150			
Nitrogen, Nitrate+Nitrite	ND	0.2	"	0.147513			0-200			
Chloride	0.66	1.0	"	0.610872		108	50-150			
Nitrogen, Nitrite	0.04	0.10	"	0.0415938		96.2	50-150			
Nitrogen, Nitrate	0.10	0.1	"	0.105920		93.5	50-150			
Sulfate	1.11	1.0	"	1.11459		99.7	50-150			

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Determination of Inorganic Anions - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FK1280 - General Prep HPLC/IC

Matrix Spike (1FK1280-MS1)		Source: 1FK2047-04		Prepared & Analyzed: 11/22/22						
Nitrogen, Nitrate+Nitrite	5.11	0.2	mg/L	3.71858	1.65	92.9	80-120			
Fluoride	2.10	0.1	"	1.32339	0.80	98.1	80-120			
Chloride	34.90	1.0	"	15.1702	21.73	86.8	80-120			
Nitrogen, Nitrite	1.00	0.10	"	1.03680	ND	96.1	80-120			
Nitrogen, Nitrate	4.16	0.1	"	2.68178	1.65	93.6	80-120			
Sulfate	57.84	1.0	"	34.2618	25.72	93.8	80-120			
Matrix Spike Dup (1FK1280-MSD1)		Source: 1FK2047-04		Prepared & Analyzed: 11/22/22						
Fluoride	2.10	0.1	mg/L	1.32339	0.80	98.1	80-120	0.00	10	
Nitrogen, Nitrate+Nitrite	5.14	0.2	"	3.71858	1.65	93.7	80-120	0.625	10	
Chloride	34.90	1.0	"	15.1702	21.73	86.8	80-120	0.00	10	
Nitrogen, Nitrite	0.97	0.10	"	1.03680	ND	93.8	80-120	2.44	10	
Nitrogen, Nitrate	4.16	0.1	"	2.68178	1.65	93.6	80-120	0.00	10	
Sulfate	57.84	1.0	"	34.2618	25.72	93.8	80-120	0.00	10	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022
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Work Order: 1FK2104

Determination of Microbiological Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 1FK1180 - General Prep Micro									
Blank (1FK1180-BLK1)					Prepared & Analyzed: 11/22/22				
Heterotrophic Plate Count	ND	2.0	MPN/ml						
Duplicate (1FK1180-DUP1)					Source: 1FK2104-01 Prepared & Analyzed: 11/22/22				
Heterotrophic Plate Count	8.00	2.0	MPN/ml		12.0		40.0	20	QR-04

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022

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Work Order: 1FK2104

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FK1106 - DW Metals Prep

Blank (1FK1106-BLK1)

Prepared: 11/21/22 Analyzed: 11/29/22

Antimony, total	ND	0.0005	mg/L
Arsenic, total	ND	0.0005	"
Barium, total	ND	0.0005	"
Beryllium, total	ND	0.0002	"
Cadmium, total	ND	0.0002	"
Chromium, total	ND	0.0010	"
Copper, total	ND	0.0005	"
Lead, total	ND	0.0002	"
Manganese, total	ND	0.0005	"
Nickel, total	ND	0.0010	"
Selenium, total	ND	0.0005	"
Silver, total	ND	0.0010	"
Thallium, total	ND	0.0002	"
Zinc, total	ND	0.0020	"

LCS (1FK1106-BS1)

Prepared: 11/21/22 Analyzed: 11/29/22

Antimony, total	0.0189	0.0005	mg/L	0.0200000	94.5	85-115
Arsenic, total	0.0178	0.0005	"	0.0200000	89.0	85-115
Barium, total	0.0190	0.0005	"	0.0200000	94.8	85-115
Beryllium, total	0.0194	0.0002	"	0.0200000	97.0	85-115
Cadmium, total	0.0183	0.0002	"	0.0200000	91.4	85-115
Chromium, total	0.0174	0.0010	"	0.0200000	86.8	85-115
Copper, total	0.0180	0.0005	"	0.0200000	89.8	85-115
Lead, total	0.0182	0.0002	"	0.0200000	91.1	85-115
Manganese, total	0.0184	0.0005	"	0.0200000	92.0	85-115
Nickel, total	0.0182	0.0010	"	0.0200000	91.0	85-115
Selenium, total	0.0181	0.0005	"	0.0200000	90.7	85-115
Silver, total	0.0196	0.0010	"	0.0200000	98.1	85-115
Thallium, total	0.0178	0.0002	"	0.0200000	89.0	85-115
Zinc, total	0.0193	0.0020	"	0.0200000	96.6	85-115

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022
Page 17 of 25

Work Order: 1FK2104

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FK1106 - DW Metals Prep

Matrix Spike (1FK1106-MS1)	Source: 1FK2081-01			Prepared: 11/21/22		Analyzed: 11/29/22	
Antimony, total	0.0423	0.0010	mg/L	0.0408163	ND	104	70-130
Arsenic, total	0.0420	0.0010	"	0.0408163	ND	103	70-130
Barium, total	0.0561	0.0010	"	0.0408163	0.0143	102	70-130
Beryllium, total	0.0398	0.0004	"	0.0408163	ND	97.5	70-130
Cadmium, total	0.0383	0.0004	"	0.0408163	ND	93.9	70-130
Chromium, total	0.0378	0.0020	"	0.0408163	ND	92.5	70-130
Copper, total	0.0371	0.0010	"	0.0408163	0.0013	87.8	70-130
Lead, total	0.0370	0.0004	"	0.0408163	0.00003	90.6	70-130
Manganese, total	0.0976	0.0010	"	0.0408163	0.0520	112	70-130
Nickel, total	0.0451	0.0020	"	0.0408163	0.0059	96.2	70-130
Selenium, total	0.0411	0.0010	"	0.0408163	ND	101	70-130
Silver, total	0.0405	0.0020	"	0.0408163	ND	99.2	70-130
Thallium, total	0.0415	0.0004	"	0.0408163	ND	102	70-130
Zinc, total	0.0386	0.0040	"	0.0408163	ND	94.7	70-130

Matrix Spike Dup (1FK1106-MSD1)	Source: 1FK2081-01			Prepared: 11/21/22		Analyzed: 11/29/22			
Antimony, total	0.0409	0.0010	mg/L	0.0408163	ND	100	70-130	3.57	20
Arsenic, total	0.0398	0.0010	"	0.0408163	ND	97.5	70-130	5.47	20
Barium, total	0.0538	0.0010	"	0.0408163	0.0143	96.6	70-130	4.29	20
Beryllium, total	0.0378	0.0004	"	0.0408163	ND	92.5	70-130	5.32	20
Cadmium, total	0.0364	0.0004	"	0.0408163	ND	89.2	70-130	5.08	20
Chromium, total	0.0359	0.0020	"	0.0408163	ND	87.9	70-130	5.11	20
Copper, total	0.0351	0.0010	"	0.0408163	0.0013	83.0	70-130	5.51	20
Lead, total	0.0352	0.0004	"	0.0408163	0.00003	86.1	70-130	5.11	20
Manganese, total	0.0931	0.0010	"	0.0408163	0.0520	101	70-130	4.71	20
Nickel, total	0.0424	0.0020	"	0.0408163	0.0059	89.6	70-130	6.17	20
Selenium, total	0.0391	0.0010	"	0.0408163	ND	95.8	70-130	5.06	20
Silver, total	0.0386	0.0020	"	0.0408163	ND	94.5	70-130	4.90	20
Thallium, total	0.0394	0.0004	"	0.0408163	ND	96.6	70-130	5.03	20
Zinc, total	0.0355	0.0040	"	0.0408163	ND	87.0	70-130	8.45	20

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022

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Work Order: 1FK2104

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FK1261 - DW Metals Prep

Blank (1FK1261-BLK1)

Prepared & Analyzed: 11/23/22

Hardness, Total as CaCO ₃	ND	1	mg/L							
Aluminum, total	ND	0.050	"							
Boron, total	ND	0.100	"							
Calcium, total	ND	0.1	"							
Iron, total	ND	0.100	"							
Magnesium, total	ND	0.10	"							
Potassium, total	ND	1.00	"							
Sodium, total	ND	1.00	"							
Strontium, total	ND	0.010	"							

LCS (1FK1261-BS1)

Prepared & Analyzed: 11/23/22

Hardness, Total as CaCO ₃	15	1	mg/L	14.7111		103	80-120			
Aluminum, total	2.30	0.050	"	2.22222		104	85-115			
Boron, total	0.199	0.100	"	0.202020		98.5	85-115			
Calcium, total	2.29	0.1	"	2.22222		103	85-115			
Iron, total	2.39	0.100	"	2.22222		108	85-115			
Magnesium, total	2.29	0.10	"	2.22222		103	85-115			
Potassium, total	4.08	1.00	"	4.04040		101	85-115			
Sodium, total	2.32	1.00	"	2.22222		104	85-115			
Strontium, total	0.196	0.010	"	0.202020		97.3	75-125			

LCS Dup (1FK1261-BSD1)

Prepared & Analyzed: 11/23/22

Hardness, Total as CaCO ₃	15	1	mg/L	14.7111		102	80-120	1.28	20	
Aluminum, total	2.27	0.050	"	2.22222		102	85-115	1.55	200	
Boron, total	0.196	0.100	"	0.202020		96.9	85-115	1.61	200	
Calcium, total	2.27	0.1	"	2.22222		102	85-115	1.26	200	
Iron, total	2.37	0.100	"	2.22222		107	85-115	0.656	200	
Magnesium, total	2.26	0.10	"	2.22222		102	85-115	1.29	200	
Potassium, total	4.05	1.00	"	4.04040		100	85-115	0.562	200	
Sodium, total	2.31	1.00	"	2.22222		104	85-115	0.320	200	
Strontium, total	0.194	0.010	"	0.202020		96.2	75-125	1.13	20	

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022
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Work Order: 1FK2104

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1FK1261 - DW Metals Prep

Matrix Spike (1FK1261-MS1)		Source: 1FK1702-01		Prepared & Analyzed: 11/23/22						
Hardness, Total as CaCO ₃	597	1	mg/L	14.7111	580	112	80-120			
Aluminum, total	2.34	0.050	"	2.22222	0.0384	105	70-130			
Boron, total	0.420	0.100	"	0.202020	0.217	101	70-130			
Calcium, total	152	0.1	"	2.22222	149	110	70-130			
Iron, total	3.29	0.100	"	2.22222	0.913	107	70-130			
Magnesium, total	52.9	0.10	"	2.22222	50.4	112	70-130			
Potassium, total	10.7	1.00	"	4.04040	6.57	103	70-130			
Sodium, total	63.6	1.00	"	2.22222	61.1	112	70-130			
Strontium, total	0.926	0.010	"	0.202020	0.723	100	75-125			
Matrix Spike Dup (1FK1261-MSD1)		Source: 1FK1702-01		Prepared & Analyzed: 11/23/22						
Hardness, Total as CaCO ₃	624	1	mg/L	14.7111	580	293	80-120	4.38	20	QM-4X
Aluminum, total	2.44	0.050	"	2.22222	0.0384	110	70-130	4.32	20	
Boron, total	0.441	0.100	"	0.202020	0.217	111	70-130	4.68	20	
Calcium, total	158	0.1	"	2.22222	149	397	70-130	4.12	20	QM-4X
Iron, total	3.47	0.100	"	2.22222	0.913	115	70-130	5.27	20	
Magnesium, total	55.5	0.10	"	2.22222	50.4	230	70-130	4.82	20	QM-4X
Potassium, total	11.4	1.00	"	4.04040	6.57	120	70-130	5.99	20	
Sodium, total	66.7	1.00	"	2.22222	61.1	255	70-130	4.86	20	QM-4X
Strontium, total	0.957	0.010	"	0.202020	0.723	115	75-125	3.26	20	

Batch 1FK1389 - EPA 245.1 Hg Dig

Blank (1FK1389-BLK1)		Prepared: 11/28/22 Analyzed: 11/30/22								
Mercury, total	ND	0.00020	mg/L							
LCS (1FK1389-BS1)		Prepared: 11/28/22 Analyzed: 11/30/22								
Mercury, total	0.00267	0.00020	mg/L	0.00250000		107	85-123			

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022
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Work Order: 1FK2104

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1FK1389 - EPA 245.1 Hg Dig										
Matrix Spike (1FK1389-MS1)		Source: 1FK1702-01		Prepared: 11/28/22 Analyzed: 11/30/22						
Mercury, total	0.00268	0.00020	mg/L	0.00250000	ND	107	62-131			
Matrix Spike Dup (1FK1389-MSD1)		Source: 1FK1702-01		Prepared: 11/28/22 Analyzed: 11/30/22						
Mercury, total	0.00239	0.00020	mg/L	0.00250000	ND	95.5	62-131	11.5	16	

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022
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Work Order: 1FK2104

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
150.1 in Drink Wtr	pH	SIA1X
200.7 in Drink Wtr	Calcium, total	SIA1X
	Iron, total	SIA1X
	Magnesium, total	SIA1X
	Potassium, total	SIA1X
	Sodium, total	SIA1X
200.8 in Drink Wtr	Antimony, total	SIA1X
	Arsenic, total	SIA1X
	Barium, total	SIA1X
	Beryllium, total	SIA1X
	Cadmium, total	SIA1X
	Chromium, total	SIA1X
	Copper, total	SIA1X
	Lead, total	SIA1X
	Manganese, total	SIA1X
	Nickel, total	SIA1X
	Selenium, total	SIA1X
	Silver, total	SIA1X
	Thallium, total	SIA1X
	Zinc, total	SIA1X
2320B in Drink Wtr	Alkalinity, as CaCO ₃	SIA1X
2340B in Drink Wtr	Hardness, Total as CaCO ₃	SIA1X
2510B in Drink Wtr	Conductivity	SIA1X
2540C in Drink Wtr	Solids, total dissolved	SIA1X
300.0 in Drink Wtr	Fluoride	SIA1X
	Chloride	SIA1X
	Nitrogen, Nitrite	SIA1X
	Nitrogen, Nitrate	SIA1X
	Sulfate	SIA1X
3112B in Drink Wtr	Mercury, total	SIA1X
524.2 in Drink Wtr	Vinyl Chloride	SIA1X
	1,1-Dichloroethylene	SIA1X
	Dichloromethane	SIA1X
	trans-1,2-Dichloroethylene	SIA1X
	cis-1,2-Dichloroethylene	SIA1X
	1,1,1-Trichloroethane	SIA1X
	Carbon Tetrachloride	SIA1X

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Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022
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Work Order: 1FK2104

	Benzene	SIA1X
	1,2-Dichloroethane	SIA1X
	Trichloroethylene	SIA1X
	1,2-Dichloropropane	SIA1X
	Toluene	SIA1X
	1,1,2-Trichloroethane	SIA1X
	Tetrachloroethylene	SIA1X
	Monochlorobenzene	SIA1X
	Ethylbenzene	SIA1X
	Xylenes (total)	SIA1X
	Styrene	SIA1X
	o-Dichlorobenzene	SIA1X
	p-Dichlorobenzene	SIA1X
	1,2,4-Trichlorobenzene	SIA1X
5310B in Water		
	Total Organic Carbon	KS-NT,SIA1X
9223B-PA in Drink Wtr		
	Total Coliforms	SIA1X
	E. Coli	SIA1X
SM 2130 B in Water		
	Turbidity	KS-NT,SIA1X
TIMBERLINE in Drink Wtr		
	Nitrogen, Ammonia	SIA1X

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2023
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources	140	04/30/2023
SIA1X	Iowa Dept. of Natural Resources (updated certificate pending)	95	02/01/2024

Notes and Definitions

I-03	Analyte required to be analyzed within 15 minutes of sampling. Analysis performed upon receipt of sample at laboratory.
PH-5	Insufficient preservative to adjust the sample pH to greater than 12, value measured at 10 pH units.
QM-05	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
QM-07	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QR-04	The Duplicate RPD for this analyte exceeded acceptance limits.
S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

December 09, 2022

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Work Order: 1FK2104

End of Report

Sue Thompson

Keystone Laboratories
Sue Thompson For Dara Hanson
Project Manager I

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.



1 F K 2 1 0 4

Todd Williams, DVM

PM: Dara Hanson

SITE INFORMATION

Sampler:

Marty Rost

Project:

Well TestingWell Testing

SPECIAL INSTRUCTIONS

None

Turn Around Time

☒ Standard☐ RUSH, need by 1/1/

REPORT TO

Todd Williams

Todd Williams, DVM

2830 North Court

Ottumwa, IA 52501

INVOICE TO

Tricia Tinklenberg

Todd Williams, DVM

2830 North Court

Ottumwa, IA 52501

LAB USE ONLY

Work Order

IFK2104

Temperature

0.0

Turn-Cooler:

No



Custody Seal

Containers Intact

COC/Labels Agree

Preservation Confirmed

Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-001	<u>Tri R / Flyway</u>	Drink Wtr	NR	<u>11/21/22</u>	<u>9:00 am</u>	<u>22</u>	524.2-101 alk-caco3-2320 as-t-200.8 be-t-200.8 ca-t-200.7 cl-300.0 coli-t-9223-pa cr-t-200.8 f-300.0 hard-t-200.7 hpc-simplate k-t-200.7 mg-t-200.7 na-t-200.7 ni-t-200.8 pb-t-200.8 rad-gross-alpha rads-radium-226/228 ag-t-200.8 al-t-200.7 ba-t-200.8 b-t-200.7 cd-t-200.8 co2-4500 cond-2510 cu-t-200.8 fe-t-200.7 hg-t-3112-low iron-related-bact lang-index-pkg mn-t-200.8 nh3-timberline nox-300.0 ph-150.1 rad-gross-beta sb-t-200.8	<u>01</u>

Relinquished By

Date/Time

Relinquished By

Date/Time

Amy Hester 11/22/22 8:05

Received for Lab By

Date/Time

Original - Lab Copy Yellow - Sampler Copy

Remarks:



600 East 17th Street South
Newton, IA 50208
641-792-8451



1 F K 2 1 0 4

Todd Williams, DVM

PM: Dara Hanson

Page 2 of 2

Printed: 11/7/2022 10:28:25AM

www.keystonelabs.cc

SITE INFORMATION

Sampler:

Marty Host

Project:

Well Testing

Well Testing

SPECIAL INSTRUCTIONS

None

Turn Around Time

☒ Standard☐ RUSH, need by ___/___/___

REPORT TO

Todd Williams
Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

Tricia Tinklenberg
Todd Williams, DVM
2830 North Court
Ottumwa, IA 52501

LAB USE ONLY

Work Order

IFK2104

Temperature

0.0

Turn-Cooler:

No

- ☐ Custody Seal
☒ Containers Intact
☒ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
							se-t-200.8 sio2-t-4500-AQ400 so4-300.0 sr-t-200.7 sulfate-reducing-bacteria sulfide-t-4500d-low ti-t-200.8 toc-5310b turbidity zn-t-200.8	

Relinquished By

Date/Time

Relinquished By

Date/Time

Amie Hester 11/22/22 8:05

Received By

Date/Time

Received for Lab By

Date/Time

Original - Lab Copy Yellow - Sampler Copy

Remarks:

Schlaak, Karen

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Friday, August 19, 2022 9:00 AM
To: Schlaak, Karen
Cc: Marty Rost
Subject: Re: [EXT] Water Rights Application - Tri-R (Clark County)

Yes. Wells and facility in that description.

Marty will forward the check to the Department.

Thanks!

Sent from my iPhone

On Aug 19, 2022, at 08:47, Schlaak, Karen <Karen.Schlaak@state.sd.us> wrote:

Brad and Marty,
Just one question. Will the facility be located within the NE ¼ NE ¼ Sec 33-T119N-R56W also? We include that information in the public notice.

The application/license fee will be \$950.

Karen

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Friday, August 19, 2022 7:53 AM
To: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Subject: [EXT] Water Rights Application - Tri-R (Clark County)

Karen,

Here is the water rights application packet for a site in Clark County. Tri-R is a swine production facility that has started construction. Two wells have been drilled with a 3rd planned, pending the application/approval.

If you could forward the application fee amount to myself and Marty Rost (with Pipestone), that would be great.

Marty Rost

marty.rost@pipestone.com

(507) 825-7029

Marty will provide the application fee and will coordinate payment for the public notice, also.

If you need any further information, please let me know.

Thank you in advance for your assistance. Have a great weekend.

Brad Woerner, PE
Agricultural Engineer

Stockwell Engineers, Inc.

Cell / 605.660.1362

Office / 605.665.8092

Fax / 605.665.0523

bwoerner@stockwellengineers.com

201 Walnut Street / Yankton, SD 57078



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**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 8665-3, Tri-R LLC**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Agriculture and Natural Resources concerning Water Permit Application No. 8665-3, Tri-R LLC, c/o Barry Kerkaert, PO Box 188, Pipestone MN 56164.

The Chief Engineer is recommending APPROVAL of Application No. 8665-3 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 domestic water uses and water rights, 3) the proposed use is a beneficial use and 4) it is in the public interest as it pertains to matters of public interest within the regulatory authority of the Water Management Board with the following qualifications:

1. The wells approved under Water Permit No. 8665-3 will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner, under these Permits shall control withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The wells authorized by Permit No. 8665-3 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. Water Permit No. 8665-3 is subject to compliance with requirements of the Department's Water Pollution Control Permit issued pursuant to SDCL 34A-2-36 or 34A-2-36.2 or 34A-2-112 or 34A-2-124 for concentrated animal feeding operations.
4. Water Permit No. 8665-3 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

(continued)

5. The Permit holder shall report to the Chief Engineer annually the amount of water withdrawn from the Altamont aquifer.
6. Water Permit No. 8665-3 authorizes a total annual diversion of up to 130 acre-feet of water from the Altamont aquifer.

See report on application for additional information.



Eric Gronlund, Chief Engineer
February 16, 2023

**Report to the Chief Engineer on
Water Permit Application No. 8665-3**

Tri-R, LLC
15 February 2023

Water Permit Application No. 8665-3 seeks to appropriate up to 130 acre-feet of water annually (ac-ft/yr) at a maximum instantaneous diversion rate of 0.223 cubic feet of water per second (cfs), equivalent to 100 gallons per minute, from up to three wells approximately 400 feet deep completed into the Altamont aquifer, all located in the NE ¼ NE ¼ Section 33-T119N-R56W for commercial use in a swine production facility located in the same area described above. This site is located approximately 16 miles northeast of Clark, South Dakota.

Aquifer: Altamont (A)

Hydrogeologic Characteristics

The Altamont aquifer is composed of multiple bodies of sand and gravel outwash deposited on or near the bedrock and below or near the Prairie Coteau during the Quaternary geological period. Hedges et al. [1] estimated that the Altamont aquifer underlies approximately 1,672,800 acres in Beadle, Brookings, Brown, Clark, Codington, Day, Deuel, Grant, Hamlin, Kingsbury, Marshall, Roberts, and Spink Counties and stores approximately 7,197,360 ac-ft of recoverable water. The Water Rights Program treats the Altamont aquifer as a catch-all category for glacial aquifers directly above bedrock that are not part of another named aquifer in the area of the Prairie Coteau. In Clark County, the Altamont aquifer can be divided into three units based on elevation and proximity to bedrock [2]. Altamont 1 is between elevations of 1,450 and 1,500 feet above NGVD29 and only in east-central Clark County, the Altamont 2 is between 1,360 and 1,500 feet above NGVD29 and extensive throughout the county, and the Altamont 3 is between 1,260 and 1,360 feet above NGVD29 [2]. If this application is developed, it would be completed into the Altamont 2. The Altamont aquifer underlies the Prairie Coteau aquifer in the area of this application [2].

The applicant initially submitted well completion reports completed into the Prairie Coteau aquifer and later amended their application to request water from the Altamont aquifer but did not submit any well completion reports completed into the Altamont aquifer. There is a well completion report located approximately 0.8 miles southeast of the site for this application of a well completed on June 13, 1979, which reported encountering sand from 365 to 373 feet below grade [3]. A lithologic log on file with DANR Geologic Survey Program indicates a domestic well completed on May 20, 1983, is located approximately 1.2 miles northwest of the site for this application [4]. The lithologic log indicates the driller of that domestic well encountered sand from 435 to 441 feet below grade, or 1,390 to 1,384 feet above NGVD29 [4]. Those elevations are consistent with the Hamilton [2] delineation of the Altamont 2 in Clark County. The Hamilton [2] map of the Altamont 2 indicates based on their limited data of the aquifer at that location, the Altamont 2 would be between 75 and 100 feet thick at the location of this application. However, the nearby well completion reports [3] indicate the aquifer may either be thinner than expected or the driller for those domestic wells did not complete the wells through

the entire thickness of the aquifer. The Altamont 2 underlies approximately 630 square miles (403,200 acres) in Clark County [2].

Applicable South Dakota Codified Law (SDCL)

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

Pursuant to SDCL 46-6-3.1, no application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of the water to the groundwater source. An exception allows water distribution systems to withdraw from groundwater sources older or stratigraphically lower than the Greenhorn Formation regardless of the results of a hydrologic budget. The applicant is not a water distribution system as defined in SDCL 46-1-6(17). The Altamont aquifer is younger and stratigraphically higher than the Greenhorn Formation. Therefore, it is necessary to find that recharge exceeds withdrawals to approve this application.

Availability of Water

Hydrologic Budget of Altamont 2

The Water Rights Program administers the Altamont aquifer as a single body, but since information is available to determine a hydrologic budget for specific bodies of the Altamont in Clark County, a hydrologic budget of the Altamont 2 will be performed.

Recharge to Altamont 2

Recharge to the Altamont aquifer is likely by infiltration of precipitation where the aquifer is at or near land surface and by groundwater inflow from glacial till when the hydraulic head of the glacial till is higher than the hydraulic head of the Altamont aquifer. Hamilton [2] indicates the recharge rate of the Altamont 2 and 3 combined is approximately 1.5 to 1.6 inches per year. Hedges, Allen, and Holly [5] used observation well water levels to calculate recharge to unconfined portions of mostly confined aquifers and estimated that the recharge rate to unconfined portions of the Altamont aquifer was 2.2 inches per year, but they did not delineate the area they considered to be unconfined. For buried and confined aquifers, Hedges, Allen, and Holly [5] recommend using a recharge rate ranging between 0.15 and 0.6 inches per year, for water management purposes. Most of the Altamont aquifer is under buried, confined conditions [6] [3], so without additional information, the Hedges, Allen, and Holly [5] recharge rates are appropriate to use as an estimate of recharge in the aquifer. Over the 403,200 acres of delineated Altamont 2 aquifer in Clark County [2], estimates of recharge to the aquifer range from approximately 5,040 to 20,160 ac-ft/yr, using the Hedges, Allen, and Holly [5] recommended recharge values.

Discharge from Altamont 2

Discharge from the Altamont aquifer is likely by groundwater outflow to aquifers in contact with the Altamont, flow to surface water features where the Altamont aquifer is near land surface, and by domestic and appropriative well withdrawals. There are 58 water rights/permits authorized to withdraw from the Altamont 2, 45 of which are for irrigation [7]. An average annual withdrawal was calculated for each permit, over the period of record for each permit [8] [9]. Table 2 in the Appendix (page 6) shows each irrigation license/permit in the Altamont 2, the status of the permit number, the number of years of irrigation reports available, the average report over that period of record, the licensed or permitted acres, and the estimated use [7] [8] [9]. Permits reporting for nine or fewer years are estimated to apply 10 inches per permitted acre per year. Three permits, Nos. 7965-3, 7967-3, and 8026-3, reported no irrigation over their period of record and indicated their systems were not constructed when they should have been constructed by 2019, so they may be subject to cancellation [9]. The estimated average annual withdrawal by irrigation from the Altamont 2, excluding the three permits which may be subject to cancellation, is 3,076 ac-ft/yr.

Of the non-irrigation permits in the Altamont 2, four have a volume limit listed in their permits and are assumed to withdraw the full volume of their permits, for a total withdrawal of 210 ac-ft/yr [7]. All other non-irrigation permits are assumed to withdraw at their maximum pump rate 60 percent of the time, for a total estimated withdrawal of 823 ac-ft/yr [7]. There are no future use permits reserving water from the Altamont 2 [7].

Summary of Hydrologic Budget

Recharge to the Altamont 2 is estimated to range between 5,040 ac-ft/yr and 20,160 ac-ft/yr [2] [5]. The total estimated average annual use from the Altamont 2 is 4,109 ac-ft/yr. A breakdown of the various estimates is summarized in Table 1. This application seeks to withdraw up to 130 ac-ft/yr. Therefore, based on the hydrologic budget, there is reasonable probability unappropriated water is available.

Table 1: Summary of estimated withdrawals from the Altamont 2

Estimation Type	Number	Estimated Use (ac-ft/yr)
Irrigation	45	3,076
Non-irrigation volume limit	4	210
All others	9	823
Total	58	4,109

Observation Wells

Administrative Rule of South Dakota (ARSD) 74:02:05:07 requires that the Water Management Board rely upon the record of observation wells, in addition to other information, to determine whether unappropriated water is available. The nearest observation well completed into the Altamont aquifer is Observation Well CK-78I, which is located approximately 13 miles southwest of the proposed wells for this application [6]. Observation Well CK-78I has iron-eating bacteria in the casing, which affects readings and makes water levels measured in that

well not likely to be reflective of the aquifer [6]. The next-nearest observation well completed into the Altamont aquifer is Observation Well CK-78A, which is located approximately 18 miles west of the proposed wells for this application [6]. Given the distance between Observation Well CK-78A and the proposed wells, water levels in Observation Well CK-78A are not reflective of specific conditions near the proposed wells for this application, but they are reflective of general behavior of the Altamont aquifer. Figure 1 shows water levels measured in Observation Well CK-78A [6]. In general, water levels rise during periods of higher-than-average precipitation and decline during periods of lower-than-average precipitation [6] [10]. Water levels in the Altamont aquifer generally show a level trend or a slight increase with time [6]. The fluctuation with precipitation patterns means that water is naturally discharging from the Altamont aquifer. The Water Management Board considers natural discharge to be available for capture. Therefore, based on observation well analysis, there is reasonable probability unappropriated water is available for this application.

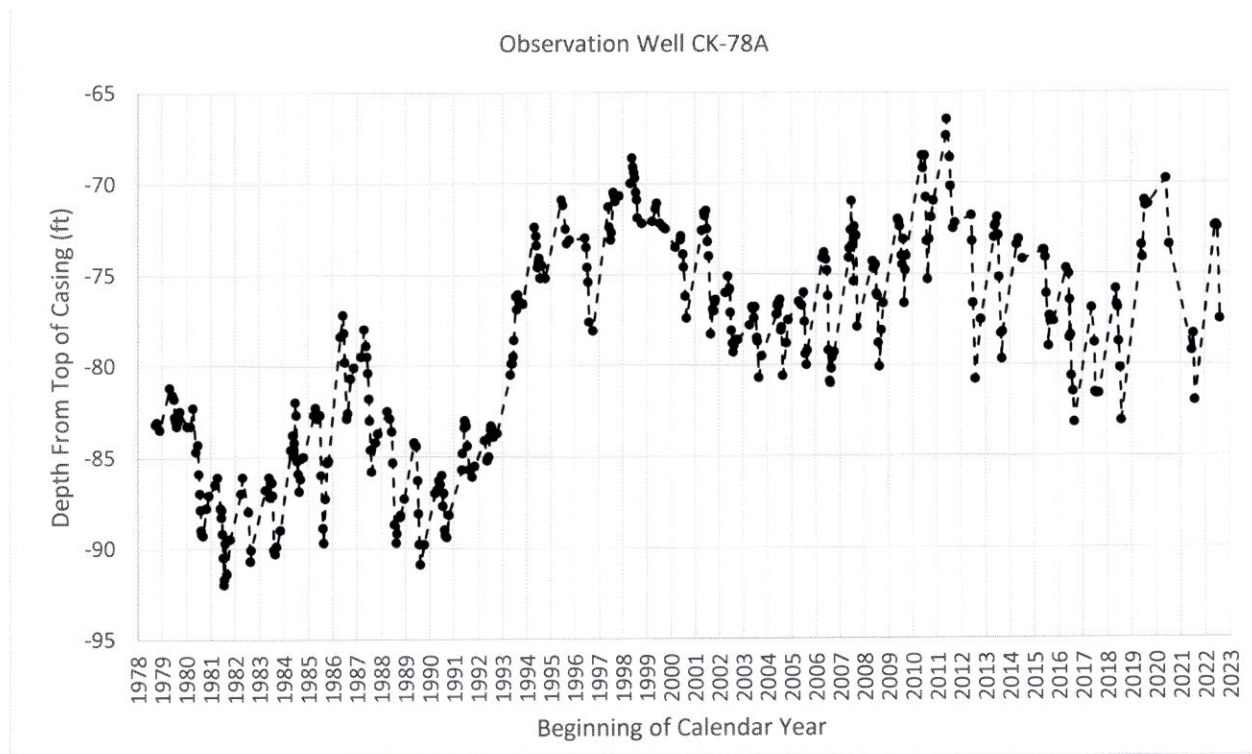


Figure 1: Water levels in Observation Well CK-78A [6]

Possibility of Unlawful Impairment of Existing Water Rights

The nearest water right/permit to this application is Water Permit No. 8570-3, located approximately 1.8 miles southwest of this application [7]. The nearest domestic well on file with the Water Rights Program is the well mentioned in the Hydrogeologic Characteristics section (page 1) which is located approximately 0.8 miles southeast of the proposed wells for this application [3]. The Water Rights Program has historically interpreted an unlawful impairment of existing water rights to occur if a junior water right/permit causes a nearby adequate well with a senior water right/permit to become unable to withdraw at the rate it is entitled to or, if a

domestic well is impacted, a water right/permit causes an adequate domestic well to be unable to withdraw at the rate needed to supply reasonable domestic use of water. Administrative Rule of South Dakota (ARSD) 74:02:04:20(6) defines an adequate well as:

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

Exact drawdown behavior in an aquifer cannot be known without an aquifer performance test. In the hearing for Water Permit Application No. 2313-2 for Coca-Cola Bottling Company, the Water Management Board determined that to put waters of the state to maximum beneficial use, hydraulic head would not be protected as a means of water delivery [11]. Some drawdown is likely to occur, so nearby water right owners may need to lower their pumps to access needed water. However, out of an abundance of caution, the applicant should control their withdrawals so that nearby water users with adequate wells can withdraw needed water. In 1980 and 1983, Water Rights Staff investigated whether irrigation wells in northwestern Clark County could be causing unlawful impairment of another water right and of some dugouts that may be connected to the Altamont aquifer [12]. They concluded that no unlawful impairment occurred. There have been no subsequent complaints of well interference in Clark County [12]. Based on the lack of substantiated complaints of well interference, there is reasonable probability this application can be developed without unlawful impairment of existing water rights or domestic users.

Conclusions

1. Water Permit Application No. 8665-3 seeks to appropriate up to 130 ac-ft/yr at a maximum instantaneous diversion rate of 0.223 cfs from up to three wells completed into the Altamont aquifer, all located in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 33-T119N-R56W for commercial use.
2. Based on the hydrologic budget and observation well analysis, there is reasonable probability unappropriated water is available for this application.
3. There is reasonable probability this application can be developed without unlawful impairment of existing water rights.



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

Report on Water Permit App. No. 8665-3

Appendix

Table 2: Irrigation permits reporting in the Altamont 2 [7] [8] [9]

Permit Number	Status	Years Reported	Avg. Report (ac-ft)	Acres	Est. Use (ac-ft/yr)
1776-3	License	44	78.87	135.0	78.87
2417-3	License	44	44.79	268.0	44.79
2489-3	License	44	31.83	264.0	31.83
2851-3	License	43	70.02	164.0	70.02
3000-3	License	43	48.13	133.0	48.13
3028-3	License	44	36.91	132.0	36.91
3059-3	License	44	130.66	269.0	130.66
3198A-3	License	44	50.07	261.0	50.07
4292-3	License	43	84.36	264.0	84.36
4391-3	License	44	80.52	264.0	80.52
4399-3	License	43	60.15	270.0	60.15
4643-3	License	42	64.73	132.0	64.73
4658-3	License	42	63.49	125.4	63.49
4955-3	License	39	219.97	404.9	219.97
5697-3	License	30	64.30	132.0	64.30
5812-3	License	29	2.99	262.0	2.99
6356-3	License	21	43.47	90.0	43.47
6426-3	Permit	19	147.46	299.6	147.46
6442-3	License	19	129.51	268.0	129.51
6501-3	License	18	40.39	112.0	40.39
6507-3	Permit	19	59.12	153.0	59.12
6560-3	Permit	17	42.64	160.0	42.64
6578-3	Permit	17	61.04	160.0	61.04
6761A-3	Permit	16	16.56	120.0	16.56
6774-3	Permit	16	89.63	272.0	89.63
6799-3	Permit	16	42.62	160.0	42.62
6882-3	Permit	15	36.49	160.0	36.49
6883-3	Permit	15	0.00	132.0	0.00
6990-3	Permit	15	101.51	280.0	101.51
6992-3	Permit	15	34.53	136.0	34.53
7097-3	Permit	14	53.50	150.0	53.50
7105-3	Permit	14	90.45	364.0	90.45
7271-3	Permit	11	52.43	160.0	52.43
7345-3	Permit	11	20.62	300.0	20.62
7371-3	Permit	9	49.69	90.0	75.00
7419-3	Permit	10	156.26	520.0	156.26
7462-3*	Permit	10	0.00	0.0	0.00
7709-3	Permit	10	25.89	320.0	25.89
7965-3	<i>Permit</i>	9	<i>0.00</i>	<i>160.0</i>	<i>133.33</i>
7966-3	Permit	9	35.15	160.0	133.33
7967-3	<i>Permit</i>	9	<i>0.00</i>	<i>320.0</i>	<i>266.67</i>
7968-3	Permit	9	34.90	160.0	133.33
8026-3	<i>Permit</i>	8	<i>0.00</i>	<i>98.0</i>	<i>81.67</i>
8365-3	Permit	4	27.14	80.0	66.67
8549-3	Permit	1	0.00	350.0	291.67
Total			2,522.78	9,214.9	3,557.56
Total excluding Permits which may be subject to cancellation			2,522.78	8,636.9	3,075.90
<i>Permits in italics may be subject to cancellation.</i>					
* Reports with Permit No. 6761A-3					

References

- [1] L. S. Hedges, S. L. Burch, D. L. Iles, R. A. Barari and R. A. Schoon, "Evaluation of ground-water resources eastern South Dakota and upper Big Sioux River, South Dakota and Iowa, Tasks 1-4," U.S. Army Corps of Engineers, Omaha, Nebraska, 1982.
- [2] L. J. Hamilton, "Major aquifers in Clark County, South Dakota," DANR Geological Survey Program, Vermillion, South Dakota, 1978.
- [3] SD DANR Water Rights Program, "Well completion reports," Pierre, South Dakota, 2023.
- [4] SD DANR Geological Survey Program, "Lithologic Logs," Vermillion, South Dakota, 2022.
- [5] L. S. Hedges, J. Allen and D. E. Holly, "Evaluation of ground-water resources eastern South Dakota and upper Big Sioux River - South Dakota and Iowa: Task 7: Ground water recharge," U.S. Army Corps of Engineers, Omaha, Nebraska, 1985.
- [6] SD DANR Water Rights Program, "Observation wells," Pierre, South Dakota, 2022.
- [7] SD DANR Water Rights Program, "Water Right Permit Files," Joe Foss Bldg., Pierre, South Dakota, 2023.
- [8] SD DANR Water Rights Program, "Irrigation Questionnaire Summaries," Joe Foss Bldg, Pierre, South Dakota, 2022.
- [9] SD DANR Water Rights Program, "Irrigation reports," Joe Foss Bldg., Pierre, South Dakota, 2022.
- [10] NOAA, "Climate at a Glance: Divisional Time Series," NOAA National Centers for Environmental Information, 1 February 2023. [Online]. Available: <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/time-series/3903/phdi/1/1/1978-2023>. [Accessed 15 February 2023].
- [11] SD Water Management Board, "In the Matter of Water Permit Application No. 2313-2, Coca-Cola Bottling Company of the Black Hills. Findings of Facts, Conclusions of Law, and Final Decision," SD DANR Water Rights Program, Joe Foss Bldg., Pierre, South Dakota, 1995.
- [12] SD DANR Water Rights Program, "County Files," Joe Foss Bldg., Pierre, South Dakota, 2023.

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, February 21, 2023 12:57 PM
To: barry.kerkaert@pipestone.com
Cc: Marty Rost
Subject: Water Permit Application 8665-3, Tri-R LLC
Attachments: 0063.pdf

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

Karen Schlaak

DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>



Affidavit of Publication

State of South Dakota

§

County of Clark

Karli J. Paulson of said county, being first duly sworn, on oath says that he is the publisher of the **Clark County Courier**, a weekly newspaper printed and published in Clark in said County of Clark and has a full and personal knowledge of all the facts therein stated; that said newspaper is a legal newspaper and has a bona-fide circulation of at least two hundred copies weekly, and has been published within said County for fifty-two successive weeks 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 the

Water Rights Program

a printed copy of which taken from the paper in which same was published, is attached to this sheet, and is made a part of this Affidavit, was published in said newspaper at least once in each week for

One

successive week(s), on the day of each week on which said newspaper was regularly published, to wit:

March 1, 2023

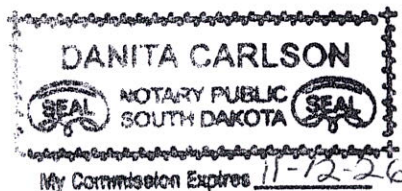
that the full amount of the fees for the publication of the annexed notice is

\$42.41

Karli Paulson

Subscribed and sworn to before me this

14th day of March, 2023



Notary Public
Clark County, South Dakota

My Commission expires: 11-12-2026

NOTICE OF APPLICATION NO. 8665-3 to Appropriate Water

Notice is given that Tri-R LLC, c/o Barry Kerkaert, P.O. Box 188, Pipestone Minn. 56164 has filed an application for a water permit to appropriate up to 130 acre-feet of water annually at a maximum pump rate of 0.223 cubic feet of water per second from three wells to be completed into the Altamont Aquifer (approximately 400 feet deep) all located in the NE 1/4 NE 1/4 Section 33-T119N-R56W for commercial use in a swine production facility located in the same area described above. This site is located approximately 16 miles northeast of Clark, S.D.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8665-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at <https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation

shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre, S.D. 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by March 13, 2023.

The petition shall include a statement describing the unique injury upon approval of the application on the petitioner, the petitioner's rea-

sons for opposing the application, and the name and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained.

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at <https://danr.sd.gov/public> or by calling (605) 773-3352 or writing the Chief Engineer at the address provided above. Filing a comment does not make the commenter a party of record or a participant in any hearing that may be held. Any comment must be filed by March 13, 2023.

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

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PROOF OF PUBLICATION

Barry Kerkaert
TriR LLC
Po Box 188
Pipestone MN 56164-0188

RECEIVED

MAR 13 2023

**OFFICE OF
WATER**

STATE OF SOUTH DAKOTA, COUNTY OF CODINGTON

The Watertown Public Opinion is, and during all the times hereafter mentioned was, a daily legal newspaper as defined in SDCL 17-2-2.1 through 17-2-2.4, as amended, published at Watertown, Codington County, South Dakota, by Watertown Public Opinion; that the notice, order or advertisement, a printed copy of which is attached, was published in said newspaper in the issue dated:

03/01/2023

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MARIAH VERHAGEN
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State of Wisconsin

NOTICE OF
APPLICATION NO. 8665-3
to Appropriate Water

Notice is given that Tri-R LLC, c/o Barry Kerkaert, PO Box 188, Pipestone MN 56164 has filed an application for a water permit to appropriate up to 130 acre-feet of water annually at a maximum pump rate of 0.223 cubic feet of water per second from three wells to be completed into the Altamont Aquifer (approximately 400 feet deep) all located in the NE 1/4 NE 1/4 Section 33-T119N-R56W for commercial use in a swine production facility located in the same area described above. This site is located approximately 16 miles northeast of Clark SD. Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 8665-3 with qualifications because 1) unappropriated water is available, 2) existing domestic water uses and water rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest as it pertains to matters within the regulatory authority of the Water Management Board. The Chief Engineer's recommendation with qualifications, the application, and staff report are available at

<https://danr.sd.gov/public> or contact Ron Duvall for this information, or other information, at the Water Rights Program address provided below.

Any person interested in opposing this application or recommendation shall allege that the application, upon approval, will cause injury to the person that is unique from any injury suffered by the public in general. The injury must concern a matter either within the regulatory authority found in SDCL 46-2A-9 for approval or denial of the application, or other matter concerning the application within the regulatory authority of the board to act upon as defined by SDCL 46-2-9 and 46-2-11, or both. Any person meeting the petitioner requirements and wishing to be a party of record in a contested case hearing shall file a written petition to oppose the application with BOTH the applicant and Chief Engineer. A petition opposing the application shall be filed on a form provided by the Chief Engineer. The petition form is available online at <https://danr.sd.gov/public> or by contacting the Chief Engineer. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501" or call (605) 773-3352. The applicant's mailing address is given above. If contesting the Chief Engineer's recommendation, the applicant shall also file a petition. A petition filed by either an interested person or the applicant must be filed by March 13, 2023.

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

Any interested person may file a comment on the application with the Chief Engineer. The comment shall be filed on a form provided by the Chief Engineer and is available online at

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Published at the total approximate cost of \$49.24 and may be viewed free of charge at www.sdpublicnotices.com.

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, February 21, 2023 11:27 AM
To: Watertown Public Opinon (legals@thepublicopinion.com)
Subject: 8665-3, Tri-R LLC
Attachments: 8665-3public.short_final.docx; FORM8.FRM.doc

Attached is a notice to be published on March 1, 2023.

TriR LLC, c/o Barry Kerkaert, PO Box 188, Pipestone MN 56164 (507 825-4211) has been notified to contact you to authorize publication and arrange for payment.

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

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

Karen Schlaak

DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>



Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, February 21, 2023 11:26 AM
To: Clark Co. Courier (courier@itctel.com)
Subject: 8665-3, Tri-R LLC
Attachments: 8665-3public.short_final.docx; FORM8.FRM.doc

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Karen Schlaak

DANR - Water Rights Program
(605) 773-3352
Website: <https://danr.sd.gov>





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

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

February 21, 2023

Tri-R LLC
c/o Barry Kerkaert
PO Box 188
Pipestone MN 56164

Dear Mr. Kerkaert:

Water Permit Application No. 8665-3 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 Clark County Courier printed at Clark SD (Ph # 605 532-3654) and the Public Opinion printed at Watertown SD (see attachment for contact number). You will need to contact the newspapers 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 newspapers to authorize publication of your Notice and to arrange for payment. Early contact with the papers can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspapers have 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,

Karen Schlaak
Water Rights Program
(605) 773-3352

enclosures

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

NOTICE OF APPLICATION NO. 8665-3 to Appropriate Water

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Published once at the total approximate cost of__

Schlaak, Karen

From: Schlaak, Karen
Sent: Tuesday, March 28, 2023 1:03 PM
To: Brad Woerner
Cc: Gronlund, Eric
Subject: RE: [EXT] TRI-R (Clark County)
Attachments: 0258.pdf

Brad,
As requested, attached is a copy of Water Permit No. 8665-3, Tri-R LLC.
Karen

From: Gronlund, Eric <Eric.Gronlund@state.sd.us>
Sent: Monday, March 27, 2023 4:53 PM
To: Brad Woerner <bwoerner@stockwellengineers.com>
Cc: Schlaak, Karen <Karen.Schlaak@state.sd.us>
Subject: RE: [EXT] TRI-R (Clark County)

Last day to petition was March 13th. No petitions were received. Needed affidavit of publication to move to issuance. Received affidavit on March 17th. Will sign permit tomorrow and send out. We will scan and email you the permit once signed.

From: Brad Woerner <bwoerner@stockwellengineers.com>
Sent: Monday, March 27, 2023 4:46 PM
To: Gronlund, Eric <Eric.Gronlund@state.sd.us>
Subject: RE: [EXT] TRI-R (Clark County)

Thanks.
I tried to download the approved permit but it looks like it is a dead link on the website.

Did it just get approved? I could give it a few days, if needed.

Thanks again for your help.



Brad Woerner, PE
Agricultural Engineer
Stockwell Engineers, Inc.
Cell / 605.660.1362
Office / 605.665.8092

From: Gronlund, Eric <Eric.Gronlund@state.sd.us>
Sent: Monday, March 27, 2023 16:42
To: Brad Woerner <bwoerner@stockwellengineers.com>
Subject: RE: TRI-R (Clark County)

Yes – they changed to the deeper Altamont aquifer (400 feet deep) and now have Permit No. 8665-3 in place for their water supply. Eric

From: Brad Woerner <bwoerner@stockwellengineers.com>

Sent: Monday, March 27, 2023 4:35 PM

To: Gronlund, Eric <Eric.Gronlund@state.sd.us>

Subject: [EXT] TRI-R (Clark County)

Eric,

We originally had an application for this site for the Prairie Coteau Aquifer.
Water quality was not suitable.

I sent over the water test results in December. I received the attached report this afternoon. The applicant asked that I forward to the Department for their use, as needed.

The results are for the Prairie Coteau Aquifer and show poor quality from a radionuclide standpoint.

If you have any questions, please feel free to reach out.

The poor results from December and attached reinforce the decision to go to a different water source.

Thank you!

Brad Woerner, PE
Agricultural Engineer

Stockwell Engineers, Inc.

Cell / 605.660.1362

Office / 605.665.8092

Fax / 605.665.0523

bwoerner@stockwellengineers.com

201 Walnut Street / Yankton, SD 57078



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If you are not the intended recipient (or have received this e-mail in error) please notify the sender immediately and destroy this e-mail.
Any unauthorized copying, disclosure or distribution of the material in this e-mail is strictly forbidden.***



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

MAR 28 2023

Tri-R, LLC
c/o Barry Kerkaert
PO Box 188
Pipestone MN 56164

Dear Mr. Kerkaert:

Enclosed is Water Permit No. 8665-3 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,

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

enclosures



**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**

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

STATE OF SOUTH DAKOTA)
) SS
COUNTY OF HUGHES)

**Affidavit of Public Notice
on DANR Website**

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

Application No.: 8665-3

Name of Applicant: Tri-R LLC, c/o Barry Kerkaert

Date of Posting: 2/28/2023

Date of Removal: 3/28/2023



Ron Duvall, Water Rights Permitting Administrator

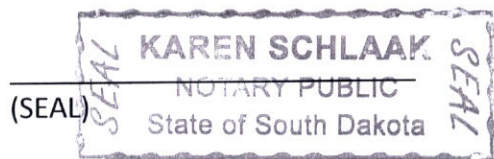
3/28/23

Date

Subscribed and sworn to before me, a notary public, this 28th day of March, 2023.



Notary Public - South Dakota
My commission expires: 4/1/2015



8665-3

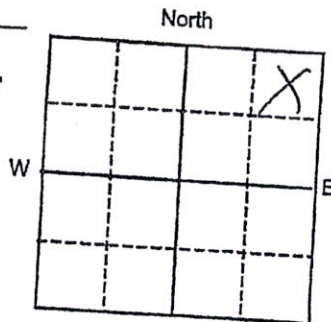
SOUTH DAKOTA WATER WELL COMPLETION REPORT

SD EForm - 1621LD V1

11-02

Location NE 1/4 NE 1/4 Sec 33 Twp 119 Rg 56County CLARK

Please mark well location with an "X"



Well Completion Date

4-21-23Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
ft. from _____ (Identify source)

PROPOSED USE:

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

METHOD OF DRILLING:

Mud Rotary

CASING DATA:

If other describe Stainless Steel ☐ Steel ☒ Plastic ☒ Other

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>2.50</u> LB/FT	<u>5</u> IN	<u>0</u> FT	<u>445</u> FT	<u>7 1/8</u> IN
<u>3.5</u> LB/FT	<u>2</u> IN	<u>440</u> FT	<u>480</u> FT	<u>4 1/2</u> IN

GROUTING DATA:

Grout Type Portland No. of Sacks 70 Grout Weight 15 Lb/gal 0 Ft 445 Ft 480 Ft

Describe grouting procedure

Pumped Through 5" Pipe

SCREEN:

☐ Perforated pipe ☒ Manufactured

Diameter 2 Inches Length 40 Feet

Material Stainless Steel

Slot Size 1025 Set From 440 Feet to 480 Feet

Other information _____

WAS A PACKER OR SEAL USED?

☒ Yes ☐ No

If so, what material? Cement

Describe packer(s) and location 445'

DISINFECTION:

Was well disinfected upon completion?

☒ Yes, How? Chlorine

☐ No, Why Not? _____

Lab to which water quality sample sent for analysis _____

Well Owner:

Business Name:

Address:

City, State, Zip:

Pipestone SystemsTri R. Site1801 Foreman Dr.Pipestone MN 56164

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>Top Soil</u>	<u>0</u>	<u>1</u>
<u>Yellow Clay</u>	<u>1</u>	<u>50</u>
<u>Blue Clay</u>	<u>50</u>	<u>420</u>
<u>Stratified</u>	<u>420</u>	<u>448</u>
<u>Gravel Sand</u>	<u>448</u>	<u>475</u>

STATIC WATER LEVEL

155

FEET

If flowing: closed in pressure

GPM flow

through

PSI

Inch pipe

Controlled by

☐ Valve☐ Reducers☐ Other

Reduced flow rate

GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe: Air☐ Bailed☐ Other

Pumping Level Below Land Surface

155 Ft. After12 Hrs. pumped12 GPM12 Ft. After12 Hrs. pumped12 GPM

If pump installed, pump rate:

GPM

REMARKS

This well was drilled under license # 722 and this report is true and accurate.

Drilling firm:

Stretch's Well Service Inc.

Signature of License Representative:

Tom Grathen

Signature of Well Owner or Equitable Property Holder:

Date:

5/16/23

RECEIVED

MAY 17 2023

OFFICE OF WATER

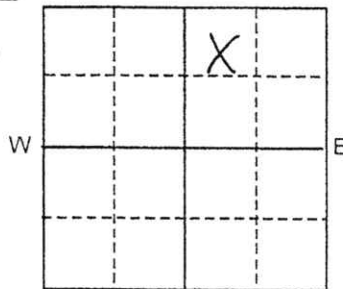
8665-3

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location NW 1/4 NE 1/4 Sec 33 Twp 119 Rg 56County Clark

Please mark well location with an "X"



Well Completion Date

4-14-24

1 Mile

Distance to nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)?
200 ft. from Barn (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
<u>250</u> LB/FT	<u>5</u> IN	<u>0</u> FT	<u>450</u> FT	<u>7 1/8</u> IN
<u>Sch 40</u> LB/FT	<u>2</u> IN	<u>450</u> FT	<u>490</u> FT	<u>4 3/4</u> IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>	<u>76</u>	Lb/gal	<u>0</u> Ft	<u>450</u> Ft
		Lb/gal	Ft	Ft

Describe grouting procedure

Tremmie Pipe

SCREEN:

☐ Perforated pipe ☒ Manufactured
 Diameter 2 Inches Length 40 Feet
 Material SS
 Slot Size .025 Set From 450 Feet to 490 Feet
 Other information
WAS A PACKER OR SEAL USED? ☒ Yes ☐ NoIf so, what material? Cement

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How? Chlorine
☐ No, Why Not?
 Lab to which water quality sample sent for analysis
Well Owner: Tri R, LLCBusiness Name: Flyway Farms, LLCAddress: 1801 Forman DriveCity, State, Zip: Pipestone MN 56164

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
Top Soil	0	5
Yellow Clay w/ Rocks	5	70
Yellow Gravel	70	80
Blue Clay	80	200
Yellow Clay w/ Rocks	200	280
Blue Clay	280	290
Yellow Clay w/ Rocks	290	355
Blue Clay	355	382
Blue Clay w/ sand streaks	382	453

STATIC WATER LEVEL 150 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: Air
☐ Bailed
☐ Other

Pumping Level Below Land Surface

200 Ft. After 12 Hrs. pumped 15 GPM

_____ Ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate: _____ GPM

REMARKS fine Sand 453-490This well was drilled under license # 722 and this report is true and accurate.Drilling firm: Stretch's Well Service Inc

Signature of License Representative

Signature of Well Owner or Equitable Property Holder:

RECEIVED

MAY 10 2024

Date: 5/7/24OFFICE OF
WATER