

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 25-14344

Exam Date: 12/6/2016

1. Current Owner:
KNIFE RIVER CORP 4055 PROFESSIONAL WAY IDAHO FALLS ID 83402 (208) 523-8282
2. Accompanied by: Joe Smith
Phone No: Office: 406-532-5220; cell: 406-876-4637
Relationship to Permit Holder: Regional Environmental Manager of the Intermountain Region for Knife River

3. SOURCE:
GROUND WATER

TRIBUTARY:

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 25-13979 is a community well that serves the on-site office building. 25-14351 is a mitigation right which was split from right 25-7310A as part of Transfer 77450 in order to mitigate for right 25-14344. The place of use is also within the boundary of Idaho Irrigation District, but the commercial and industrial operation does not receive water from the District.
2. Other water rights with the same point-of-diversion: 25-14351

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE¼SW¼ Sec. 36, Twp 02N, Rge 37E, B.M. BONNEVILLE County

Method of Determination: GPS and ArcMap

2.

PLACE OF USE: COMMERCIAL

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	37E	36							X	X	X	X							

PLACE OF USE: INDUSTRIAL

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	37E	36							X	X	X	X							

Method of Determination: Aerial photography and ArcMap

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X Aerial Photo Attached (required for irrigation of 10+ acres).

X Photo of Diversion and System Attached

4. WELL INFORMATION

A 7.5 HP submersed pump.

D. FLOW MEASUREMENTS

No direct measurement was possible, therefore a theoretical flow measurement is contemplated below and on an attached spreadsheet.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

The flow rate is based on the pump's horse power and the dynamic pumping level. Because the well driller did not explicitly indicate the drawdown as part of the pumping test, the dynamic pumping level is assumed to be the average of drawdown results (in feet per gpm) performed on other wells within a one mile radius, multiplied by the permitted discharge rate in gpm, then summed with the static water level reported by the well driller.

The static water level reported by the well driller was 94 feet.

Results from drawdown tests from wells within the vicinity varied widely. Of the 85 well logs within one mile of the point of diversion, eight wells* had pump tests performed on them, averaging 0.75 feet of drawdown per gpm yielded. The results are considered below.

Travis Waters Well: Static water level: 103 ft; Pumping level: 203 ft; gal/min yield: 50

$$(203 \text{ ft} - 103 \text{ ft}) / 50 \text{ gpm} = 2 \text{ ft drawdown} / \text{gpm yielded}$$

Hilbert Schneyder Well: Static water level 135 ft; Pumping level: 175 ft; gal/min yield: 25

$$(175 \text{ ft} - 135 \text{ ft}) / 25 \text{ gpm} = 1.6 \text{ ft drawdown} / \text{gpm yielded}$$

Triple G Excavating Well: Static water level 133 ft; Pumping level: 160 ft; gal/min yield: 30

$$(160 \text{ ft} - 133 \text{ ft}) / 30 \text{ gpm} = 0.9 \text{ ft drawdown} / \text{gpm yielded}$$

Camco Construction Well: Static water level: 130 ft; Pumping level: 131.5 ft; gal/min yield: 2300

$$(131.5 \text{ ft} - 130 \text{ ft}) / 2300 \text{ gpm} = 0 \text{ ft drawdown} / \text{gpm yielded}$$

GModelo Agriculture South Test Well: Static water level: 125 ft; Pumping level: 124 ft; gal/min yield: 85

Because of the reported rise in the water level upon pumping, draw down is assumed to be zero.

GModelo Agriculture North Test Well: Static water level: 125 ft; Pumping level: 124 ft; gal/min yield: 85

Because of the reported rise in the water level upon pumping, draw down is assumed to be zero.

$$\text{Average ft drawdown per gpm yielded: } (2 + 1.6 + 0.9 + 0 + 0 + 0) / 6 = 0.75 \text{ ft}$$

$$0.2 \text{ cfs} * 448.83 \text{ gpm/cfs} = 89.8 \text{ gpm} * 0.75 \text{ ft drawdown/gpm} = 67.35 \text{ ft drawdown}$$

$$94 \text{ ft static water level} + 67.4 \text{ ft drawdown} = 161.4 \text{ ft dynamic pumping level.}$$

Based on the attached spreadsheet, we see that the system could theoretically produce 0.29 cfs. However, the license will be limited to the **0.20 cfs** as listed on the permit.

*A well drilled for GModelo Agriculture in 2004 was not considered because of inconsistencies in the reported drawdown (six inches) and pumping level – static water level (190 feet – 133 feet)

F. VOLUME CALCULATIONS

Knife River's operations have demonstrated that they are capable of putting to use at least 8.3 acre feet per annum.

Submitted with the Application for Permit was a print out of a "Volume Calculations" spreadsheet, which is included as part of this report. It detailed that Knife River's concrete production requires 60 gallons of water to mix with each cubic yard of concrete mixture derived from quarried rock. The rock is quarried on site.

According to the spreadsheet, the facility would ideally produce 200 cubic yards of concrete mixture per day. 200 cubic yards of mixture/day * 60 gallons/cubic yard * 365 days/year = 4,380,000 gallons/year / 325,850 gallons/AF = 13.44 AF/year.

However, the permit was limited to 8.3 AF annually. 8.3 AF * 325,850 gallons/AF = 2,704,555 gallons/annually / 60 gallons/1 cubic yard of concrete mixture = 45,075 cubic yards of concrete mixture/annually at the facility, if the water is only used in concrete manufacturing.

The Regional Environmental Manager confirmed that the facility produces 45,000 cubic yards of concrete each year.

The water is also used for dust abatement at the on-site quarry, for washing quarried aggregate, and for rinsing out residual concrete mixture that remains in trucks after delivery. These operations contribute to the right's consumptive use, however, quantification of their use was elusive at the time the license was issued.

G. NARRATIVE/REMARKS/COMMENTS

This right is used in the manufacturing of ready mix concrete, washing quarried aggregate, and for dust abatement at the Knife River quarry and concrete-mixing facility. The office building located at the facility is served by a community well (water right 25-23979).

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
COMMERCIAL	01/01 to 12/31	0.20 CFS	8.3 AF
INDUSTRIAL	01/01 to 12/31	0.20 CFS	8.3 AF
<u>Totals:</u>		0.200 CFS	8.30 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

Field Examiner's Name _____ Cooper Fritz _____ Date _____ 12/29/2016 _____

Reviewer _____ Date _____

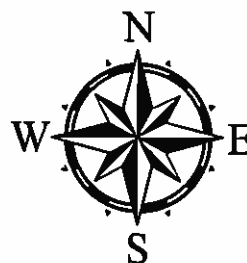
25-14344 Place of Use and Point of Diversion at Licensing



2015 Imagery

Legend

- Water Right POD
- Water Right POU
- Township/Range
- Sections
- QQ



0 0.075 0.15 0.3 Miles



KNIFE RIVER CORPORATION

Idaho Falls Concrete Plant

OPTIMAL WATER USE:

DAILY CONCRETE PRODUCTION	200	CY	(CY) CUBIC YARDS
WATER PER CUBIC YARDS	60.0	GAL	
DAILY WATER USE	12,000	GAL	(200 CY X 60 GAL/CY = 12,000 GAL)
ANNUAL USE @ 365 DAYS/YR	4,380,000	GAL	(12,000 GAS X 365 DAYS = 4,380,000 GAL/YR)
ACRE FEET PER YEAR	13.447	AF	(4,380,000 GAL/YR/1,000,000)X(3.07) = 13.4 AF
	13.4	AF	

PROPOSED ANNUAL WATER USEAGE:

Maximum Annual Production =	45,000	CY (Cubic Yard)
Maximum Daily Production =	200	CY
Water per Cubic Yard =	60	Gal
Maximum Daily Water Use =	12000	Gal/Day
@ 45,000 CY/Year Annual H2O =	2,700,000	Gal/Year
Annual Volume =	8.286	ac-ft/year (afa) = (2,700,000 GAL/YR/1,000,000)X(3.07)
	8.3	afa

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JUL 28 2011

Department of Water Resources
Eastern Region

25 - 14344

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

25

1. WELL TAG NO. D 0058755

Drilling Permit No. _____

Water right or Injection well # _____

2. OWNER:

Name Knife RiverAddress 4055 Professional WayCity Idaho Falls State ID Zip 83402

3. WELL LOCATION:

Twp. 2 North ☒ or South ☐ Rge. 37 East ☒ or West ☐Sec. 36 1/4 NE 1/4 SW 1/4Gov't Lot _____ County BonnevilleLat. 43° 27.646 (Deg. and Decimal minutes)Long. 112° 03.498 (Deg. and Decimal minutes)Address of Well Site 4055 Professional WayCity Idaho Falls

(Give at least name of road + distance to road or landmark)

Lot _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation ☐ Thermal ☐ Injection☒ Other Industrial

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>Bentonite</u>	<u>0</u>	<u>50</u>	<u>1350</u>	<u># Temporary Casing</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
<u>8"</u>	<u>+2'</u>	<u>198'</u>	<u>25</u>	<u>steel</u>	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) _____

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☐ N Method _____Manufactured screen ☐ Y ☐ N Type _____

Method of installation _____

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☐ N Type _____

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☐ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 94' Static water level (ft) 94'

Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port _____

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
<u>-</u>	<u>100+</u>	<u>30</u>

Test method:

Pump	Bailer	Air	Flowing artesian
☐	☐	☒	☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
12"	0'	7'	<u>Gravel & Clay</u>		
	7'	38'	<u>Basalt Fractured w/cinders</u>		
10"	38'	127'	<u>Basalt</u>		
	127'	150'	<u>Clay w/broken layers of rock</u>		
	150'	155'	<u>Cinders</u>		
	155'	159'	<u>Basalt</u>		
	159'	170'	<u>Cinders & Clay</u>		
	170'	173'	<u>Basalt</u>		
	173'	182'	<u>Cinders & Clay</u>		
	182'	186'	<u>Broken basalt</u>		
	186'	208'	<u>Basalt</u>		
8"	208'	203'	<u>Basalt</u>		
	203'	224'	<u>Cinders</u>		
	224'	230'	<u>Basalt</u>		
	230'	243'	<u>Cinders</u>		

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MAR 08 2012

Department of Water Resources
Eastern RegionCompleted Depth (Measurable): 240'Date Started: 1/16/11Date Completed: 1/25/11

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Jody Dennis Drilling Co. No. 519Principal Driller Jody Dennis Date 1/26/11Driller Jody Dennis Date 1/26/11Operator II Jody Dennis Date 1/26/11

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.



CERTIFICATE OF ASSUMED BUSINESS NAME

Pursuant to Section 53-504, Idaho Code, the undersigned
submits for filing a certificate of Assumed Business Name.

Please type or print legibly.

NOTE: See instructions on reverse before filing.

FILED EFFECTIVE

10 JAN 14 PM 3:39

SECRETARY OF STATE
STATE OF IDAHO

1. The assumed business name which the undersigned use(s) in the transaction of business is:

Hap Taylor & Sons, Inc.

2. The true name(s) and business address(es) of the entity or individual(s) doing business under the assumed business name:

Name

Complete Address

Knife River Corporation - Northwest

32260 Old Highway 34

C104875

Tangent, OR 97389

3. The general type of business transacted under the assumed business name is:

- | | |
|--|--|
| ☐ Retail Trade | ☐ Transportation and Public Utilities |
| ☐ Wholesale Trade | ☒ Construction |
| ☐ Services | ☐ Agriculture |
| ☐ Manufacturing | ☐ Mining |
| ☐ Finance, Insurance, and Real Estate | |

4. The name and address to which future correspondence should be addressed:

MDU Resources Group, Inc.

1200 West Century Avenue

Blain, ND 58503

Submit Certificate of
Assumed Business
Name and \$25.00 fee to:

Secretary of State
700 West Jefferson
Basement West
PO Box 83720
Boise ID 83720-0080
208 334-2301

5. Name and address for this acknowledgment copy is (if other than #4 above):

Phone number (optional):

Secretary of State use only

Signature: Karl A. Lepke

(signature required)

Printed Name: Karl A. Lepke

Capacity/Title: Assistant Secretary

(see instruction # 8 on back of form)

IDAHO SECRETARY OF STATE
01/14/2010 05:00
EX: 17938 CT: 20160 BH: 1203578
10 25.00 = 25.00 ASSUM NAME # 3

D136175

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 25-14344
 Examiner: Cooper Fritz
 Date of Field Exam: 12/6/2016

Option 1

P/D No.:

PUMP HORSEPOWER 7.5
 BOOSTER HORSEPOWER 0

PUMPING LEVEL 161.4

DISCHARGE PRESSURE 0

FRICTION 0

RATE OF FLOW (cfs) 0.29
 (gpm) 128.5

The above calculates the formula =
$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.

Examiners Notes:

Pumping level was contemplated in the "Flow Calculations" portion of the field examination. HP was found during the site visit. A discharge pressure of 0 was used because the system is primarily open discharge into a concrete mixing facility.

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

56226

1. DRILLING PERMIT NO. 25 - 94 - E - 177-000

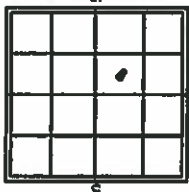
Other IDWR No. _____

2. OWNER:

Name Travis Waters
Address P.O. Box 52056
City Idaho Falls State ID Zip 83405

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.



T. 1N
R. 37E
Sec. 2 NW 1/4, NE 1/4
Gov't Lot _____ County Bonneville

Address of Well Site Approx 5000 So Yellowstone

(Give at least Direction + Distance to Road or Landmark)

Lot No. _____ Block No. _____ Subd. Name _____

4. PROPOSED USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK

☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD

☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	
Material	From	To	Sacks or Pounds	Method
Bentonite	0	20	800#	Overbore

Was drive shoe seal tested? Y ☐ N ☒ How? _____

8. CASING/LINER

No	From	To	Depth	casing	liner	fluid	fluid	fluid	fluid
8"	+2	38	.250	X		X		X	
6"	30	170	.250	X		X		X	

Final location of shoes 38 ft
Top Packer or Headpipe _____ Bottom Tailpipe _____

9. PERFORATIONS/SCREENS:

Perforations		Method		Material	
Screen	Size	Type	Material	Screen	Size

10. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Depth	Time
50		203	1.5 hr

Temperature of water _____ Was a water analysis done? Yes ☐ No ☒

By Whom? _____

Water (odor, etc) _____

Bottom Hole Temperature _____

11. STATIC WATER LEVEL:

103ft. below surface. Depth artesian flow found _____
Artesian pressure _____ lb. Describe access port San Well Seal
Describe Controlling Devices: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Core Dia.	From	To	Remarks/Lithology, Water Quality & Temperature	QW	SW
12	0	4	Soil		
	4	20	Gravel and Sand		
6	20	35	Gravel and Sand		
	35	38	Clay and Gravel		
	38	76	Gray Firm Basalt		
	76	97	Gray Broken Basalt		
	97	98	Gravel		
	98	115	Gray Firm Basalt		
	115	117	Red Cinders WATER		
	117	140	Gray Broken Basalt WATER		
	140	160	Gray Broken Basalt w/clay		
	160	169	Gray Firm Basalt		
6	169	180	Gray Firm Basalt		
	180	183	Gray Broken Basalt WATER		
	183	187	Cinders WATER		
	187	193	Gray Broken Basalt WATER		
	193	194	Cinders WATER		
	194	197	Gray Broken Basalt		
	197	199	Cinders WATER		
	199	204	Gray Firm Basalt	50	103

NOV 09 1994

Department of Water Resources
Eastern District Office

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NOV 16 1994

Date Started: 10/18/94 Completed: 10/25/94

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm: Andrew Well Drilling Services, Inc. Firm # 5

Firm Official: [Signature] Date: 11-8-94
and Supervisor/Operator: [Signature] Date: _____

WELL DRILLER'S REPORT

Inspected by _____ or
Ball Point Pen

Department of Water Resources

Department of Water Resources 25-95-C-0036-000
1. DRILLING PERMIT NO. 35-95-E-0044-
Other IDWR No.

2. OWNER:

Name Hubert F. Schneider
Address 4816 Cornish
City Indianapolis State IN Zip 83406

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

Twp. 1 North ☒ or South ☐
 Rge. 37 East ☒ or West ☐
 Sec. 2 NE 1/4 NE 1/4 1/4
 Gov't Lot _____ County Barnstable

Address of Well Site

City _____

Lt. 37 Bk. 1 Sub. Name Hayward Ind
Past

4. PROPOSED USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK

☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD

☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	21	4	Overlure

Was drive shoe used? Y ☐ N ☒

Was drive shoe seal tested? Y ☐ N ☒ How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	160	350	ctw	☒	☐	☒	☐
4"	140	180	350	PVC	☐	☒	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method None
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Line
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

135 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 175 ft. Describe access port or
control devices:

53130
11. WELL TESTS:

53130

☐ Pump ☐ Baiter ☒ Air ☒ Moving Antennae

Yield gal./min.	Drawdown	Pumping Level	Time
2.5	175	175	2 Hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: Clean

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

[illegible]

18. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Leton Water Works Firm No. 506

Firm Official _____ Date _____

and

Supervisor or Operator: Richard Shue Date: 2-27-98

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

11/97

10/01

Andrew

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint pen

Office Use Only

Inspected by _____

Twp _____ Rge _____ Sec _____

1/4 _____ 1/4 _____ 1/4 _____

Lat: _____ Long: _____

1 WELL TAG NO.

DRILLING PERMIT N

Other IDWR NO.

#D0024535

2 OWNER:

Name: Triple G Excavating

Address: 4221 Professional Way

City: Idaho Falls State: ID Zip 83402

3 LOCATION OF WELL by legal description.

Twp 2 ☒ North ☐ South
 Rge 37 ☒ East ☐ West
 Sec 36 ☐ 1/4 NW ☐ 1/4 SW ☐ 1/4
 Gov't Lot _____ County Bonneville
 Lat: _____ Long: _____

Address of Well Site: 4221 Professional Way

City: Idaho Falls

(Give at least name of Road + Distance to Road or Landmark)

Lot No. _____ Blk No. _____ Subd. Name: _____

4 USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5 TYPE OF WORK:

☐ New Well ☐ Modify ☐ Abandonment ☒ Other Replacement

6 DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7 SEALING PROCEDURES:

SEAL/FILTER PACK			AMOUNT		Method
Material	From	To	Sacks/Pounds		
Bentonite	0	36.9	500 lbs		Overbore

Was drive shoe used? ☒ Yes ☐ No Shoe Depth(s) 8"Was drive shoe seal tested? ☐ Yes ☒ No How? _____

8 CASING/LINER:

Dia.	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	1.5	36.9	0.25	Steel	☒	☐	☒	☐
6"	29	198	0.25	Steel	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe: _____

Length of Tailpipe: _____

9 PERFORATIONS/SCREENS:

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
159'	178'	6x1/4"	67	6"	Steel	☐	☒
178'	198'	6x1/4"	38	6"	Steel	☐	☒
						☐	☐

STATIC WATER LEVEL OR ARTESIAN PRESSURE:

133 ft below ground

Artesian Pressure: _____ lb

Depth flow encountered: _____ ft

Describe access port or control devices: Sanitary Well Cap

11 WELL TESTS:

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Flowing Artesian

Yield	Drawdown	Pumping Level	Time
30+		160'	1 3/4 hr

Water Temp _____

Bottom hole temp _____

Water Quality test or comments: _____

Depth first water encountered: _____

12 LITHOLOGIC LOG:

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10"	0	37	Sand & gravel		X
8"	37	47	Basalt		X
	47	55	Broken red rhyolite		X
	55	56	Fractured basalt		X
	56	63	Gray basalt		X
	63	65	Fractured		X
	65	71	Basalt broken in spots		X
	71	85	Fractured		X
	85	104	Firm basalt		X
	104	122	Hard broken		X
	122	145	Firm basalt		X
	145	161	hHard broken		X
	161	166	Firm basalt	X	
	166	178	Fractured		X
	178	198	Firm	X	

Completed Depth: 198 ft

Date Started: 06/07/02

Date Completed: 06/11/02

13 DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm: ANDREW WELL DRILLING SERVICES, INC. Firm: #5

Firm Official: Roger Buckley Date: 6/21/02

and

Supervisor/Operator: John E. [Signature] Date: 6/21/02

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint pen

Office Use Only

Inspected by: _____

Twp _____ Rge _____ Sec _____

1/4 _____ 1/4 _____ 1/4 _____

Lat: _____ Long: _____

1 WELL TAG NO.

DRILLING PERMIT NC

Other IDWR NO

#D0024284

2 OWNER:

Name: Camco Construction Company

Address: 1106 E 6600 S

City: Salt Lake City State: UT Zip 84121

3 LOCATION OF WELL by legal description.

N			
S			

Twp 2 ☒ North ☐ South
Rge 37 ☒ East ☐ West
Sec 36 1/4 NE 1/4 NW 1/4Gov't Lot _____ County Bonneville

Lat: _____ Long: _____

Address of Well Site: 1/2 Mile SE intersection

Sunnyside & Yellowstone Hwy City: Idaho Falls

(Give at least name of Road + Distance to Road or Landmark)

Lot No. 3,4,5,6 Blk No. 3 Subd. Name: Industrial & Professional Park

4 USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other ☐ Fire Protection

5 TYPE OF WORK:

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6 DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7 SEALING PROCEDURES:

SEAL/FILTER PACK			AMOUNT	Method
Material	From	To	Sacks/Pounds	
Cement	0	140	30.5 yds	Overbore

Was drive shoe used? ☐ Yes ☒ No Shoe Depth(s) _____Was drive shoe seal tested? ☐ Yes ☒ No How? _____

8 CASING/LINER:

Dia.	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16"	+1	218	0.25	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe: _____ Length of Tailpipe: _____

9 PERFORATIONS/SCREENS:

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
218	273	1/4x2.75	2640			☐	☒
						☐	☐
						☐	☐

STATIC WATER LEVEL OR ARTESIAN PRESSURE:

130 ft below ground Artesian Pressure: _____ lb

Depth flow encountered: _____ ft

Describe access port or control devices: Sanitary Well Cap

11 WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Flowing Artesian

Yield	Drawdown	Pumping Level	Time
2300	1.5'	131.5	8 hrs

Water Temp _____ Bottom hole temp _____

Water Quality test or comments: _____

Depth first water encountered: _____

12 LITHOLOGIC LOG:

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
20"	0	1	Topsoil		X
	1	37	Gravel & cobblestones		X
	37	73	Basalt, black, hard		X
	73	78	Brown clay		X
	78	83	Brown clay & broken rock		X
	83	90	Basalt, black, hard		X
	90	97	Broken basalt, black		X
	97	130	Firm basalt, black	X	
18"	130	136	Firm basalt, black	X	
	130	150	Basalt, black, broken		X
	150	158	Basalt firm		X
	158	171	Cinders & tan clay, silt, very broken	X	
	171	187	Basalt firm		X
	187	196	Broken clay	X	
	196	202	Hard blind		X
	202	208	Broken, loose & caving	X	
CONTINUED					

Completed Depth: 275 ftDate Started: 04/12/02Date Completed: 06/19/02

13 DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm: ANDREW WELL DRILLING SERVICES, INC Firm: #5Firm Official: Andrew B. Baker Date: 10/3/2002

and _____

Supervisor/Operator: Andrew B. Baker Date: 10/3/2002

Andrew

Page 2 of 2

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint pen

1 DRILLING PERMIT NO.

Other IDWR NO. #D0024284

12 LITHOLOGIC LOG:

[illegible]

Completed Depth: 275 ft

RECEIVED
JAN 10 1964

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Inspected by _____			
Twp _____	Rge _____	Sec _____	
1/4 _____		1/4 _____	
Lat: _____		Long: _____	

1. WELL TAG NO. D 0027994

DRILLING PERMIT NO. D0027994

Other IDWR No. _____

2. OWNER:

Name GMODELO AGRICULTURE, INC. NORTH OBSERVATIONAddress P.O. BOX 1505City IDAHO FALLS State ID Zip 83403

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N	
W	E
S	

Twp. 1 North ☒ or South ☐
Rge. 37 East ☒ or West ☐
Sec. 1 1/4 NW 1/4 NW 1/4
Gov't Lot _____ County BONNEVILLE
Lat: _____ Long: _____
Address of Well Site JAMESTOWN RD.
City IDAHO FALLS
(Give at least name of road - Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other OBSERVATION WELL

5. TYPE OF WORK: check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES:

Seal/Filter Pack			AMOUNT Sacks or Pounds	METHOD
Material	From	To		

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 50 & 130Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8	+1	50	.250	STEEL	☒	☐	☒	☐
6	+1	130	.250	STEEL	☒	☐	☒	☐
5	120	225	.250	STEEL	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS:

☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

125 ft. below ground Artesian pressure _____ lb.Depth flow encountered 229-250 ft. Describe access port or controldevices: WELL CAP

11. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
85	0	124	4-HOURS

Water Temp. 50 Bottom hole temp. 50Water Quality test or comments: GOODDepth first Water Encounter 140

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Water	
				Y	N
10	0	5	DRY BROWN CLAY		
	5	15	SAND & GRAVEL		
	15	35	LARGE GRAVEL		
	35	46	SMALL GRAVEL & SAND		
	46	50	BROWN CLAY		
	50	75	GRAY BASALT		
	75	85	BASALT & CINDERS, CREVISES		
	85	105	BROWN SAND & CLAY		
	105	110	BROWN CLAY & SOME GRAVEL		
	110	130	GRAY BASALT		
	130	145	BASALT		
	145	170	BASALT & CINDERS		
	170	171	SAND		
	171	185	BASALT, CINDERS & SAND	X	
	185	200	FIRM BASALT		
	200	205	CINDERS	X	
	205	225	BROWN CHALK, SAND & CINDERS	X	
	225	229	BASALT		
	229		CINDERS, BROKEN BASALT,		
		250	SOME CLAY & SAND	X	

AFTER WELL WAS TEST PUMPED, CASING WAS
REMOVED AND ABANDONED.

RECEIVED

AUG 19 2004

Department of Water Resources
Eastern RegionCompleted Depth 250 (Measurable)Date: Started 11/4/2003 Completed 11/12/2003

13. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name JACK CUSHMAN DRILLING, INC. Firm No. 94Firm Official Bob Cushman Date 1/19/04

and

Driller or Operator Monte Staples Date 1/19/04

(Sign once if Firm Official & Operator)

State of Idaho
Department of Water Resources

Permit to Appropriate Water

NO. 25-14344

Priority: June 09, 2011

Maximum Diversion Rate: 0.20 CFS
Maximum Diversion Volume: 8.3 AF

This is to certify, that **KNIFE RIVER CORPORATION**
4055 PROFESSIONAL WAY
IDAHO FALLS ID 83402

has applied for a permit to appropriate water from:

Source: GROUNDWATER

and a permit is APPROVED for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
COMMERCIAL	01/01 to 12/31	0.20 CFS	8.3 AF
INDUSTRIAL	01/01 to 12/31	0.20 CFS	8.3 AF

LOCATION OF POINT(S) OF DIVERSION:

GROUNDWATER NE¼SW¼ Sec. 36 Twp 02N Rge 37E, B.M. BONNEVILLE County

PLACE OF USE: COMMERCIAL and INDUSTRIAL

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE					
02N	37E	36							X	X		X	X						

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **November 01, 2016**.
2. Subject to all prior water rights.
3. Right 25-14351 mitigates for the depletion of water caused by the diversion and use of water under Right 25-14344. To prevent injury to other water rights, the right holder shall cease diverting water under Right 25-14351, which shall remain un-diverted.
4. If Right 25-14351, or a portion thereof, is sold, transferred, leased, used on any place of use, or is not deliverable due to a shortage of water or a priority call, then the amount of water authorized for diversion under Right 25-14344 shall be reduced by the same proportion as the reduction to Right 25-14351.
5. Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 120.
6. Prior to diversion of water under this right, the right holder shall install and maintain a measuring device and lockable controlling works of a type acceptable to the Department as part of the diverting works.
7. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
8. Noncompliance with any condition of this right, including the requirement for mitigation, is cause for the director to issue a notice of violation, cancel or revoke the right, or, if the right is included in a water district, request that the watermaster curtail diversion and use of water.

State of Idaho
Department of Water Resources
Permit to Appropriate Water

NO. 25-14344

9. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Boise, this 25th day of October, 20 11.


for GARY SPACKMAN, Interim Director

