

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9171

Exam Date: 7/15/2014

1. Current Owner: LOUISE A WOOD
482169 HWY 95
SANDPOINT ID 83864
(208)263-3080

Or

STEVEN A WOOD
482169 HWY 95
SANDPOINT ID 83864
(208)263-3080

2. Accompanied by: Steven Wood

3. SOURCE

COLBURN CREEK

TRIBUTARY

PACK RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 96-9156
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

COLBURN CREEK SW1/4SW1/4 Sec. 1, Twp 58N, Rge 02W, B.M. BONNER County

Method of Determination: GPS and Maps. POD location is WP 228 at 116° 32.808W, 48° 24.045N (A0003238)

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
58N	02W	1									25.0	29.0			6.0	22.0			82.0

Total Acres: 82

Method of Determination:

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

<u>Well or Diversion</u> <u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
--	-------------------	-----------	-------------------------	------------------	--

A0003238		10	JPM3312T		
----------	--	----	----------	--	--

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
N/A						

2. Measurements: 2 CENTER PIVOT IRRIGATION SYSTEMS AT 220GPM EACH. 1 IRRIGATION GUN AT 128GPM.

E. FLOW CALCULATIONS

_____Additional Computation Sheets Attached

Measured Method:

DIVERSION FROM STREAM IS BY 12" PIPE TO FIRST HOLDING TANK APROXIMATELY 400 GALLONS. = TO 8.12 CFS, SEE ATTACHED MANNING DATA SHEET.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 82\text{AC} \times 3\text{AF} = 246\text{AF}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 1.20 \times 214 \times 1.9835 = 509\text{AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 246\text{AF}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

2 PIVOT=220GPM EACH. 1 BIG GUN=128GPM. DELIVERY SYSTEM IS 12 INCH INTAKE 40 FEET LONG TO 400 GAL TANK TO SYSTEM. 10 INCH PIPE 12 FEET LONG TO 8 INCH PIPE 80 FEET TO 6 INCH PIPE 20 FOOT LONG TO PUMPS.

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>
IRRIGATION	04/01 to 10/31	1.200 CFS	246.00 AF
<u>Totals:</u>		1.200 CFS	246.00 AF

2. Recommended Amendments

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

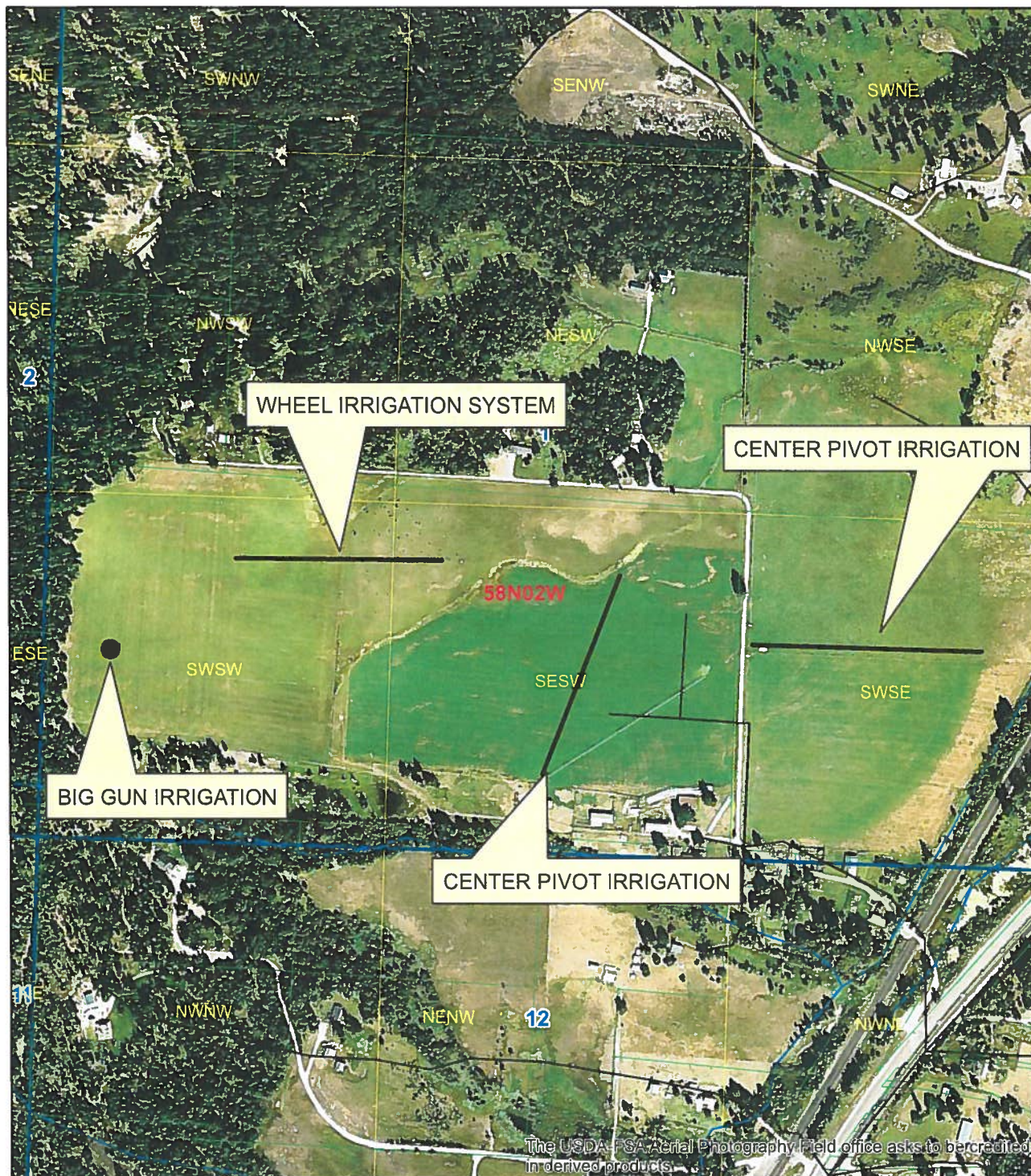
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Eric J. Davis Date 1-18-2015

Reviewer Adam Franklin Date 1/14/2015

IRRIGATION DIAGRAM FOR LICENSE 96-9171



Legend

-  Taxlots
-  Sections
-  QQ

0 0.0475 0.095 0.19 Miles



MANNING'S EQUATION FOR WATER LICENSE 96-9171

Manning's Flow Calculator v3 [Read-Only] - Microsoft Excel

Manning's Equation Calculator for Flow Rate in a Circular Conduit Flowing Full

READ ME

S = 0.0250 ft/ft
n = 0.009 manning's coefficient
d = 12.0 pipe diameter (inches)
D = 1.00 pipe diameter (feet)
r = 0.50 pipe radius (feet)
A = 0.79 area (ft²)
WP = 3.14 wetted perimeter (ft)
R = 0.25 hydraulic radius (ft)

Q = 8.12 flow rate (CFS)

Channel Slope ☐ Slope Options
☐ Manual Entry ☒ Slope Calculator

Slope Calculator
Rise = 1 feet
Run = 40 feet
Slope, S = 0.0250 ft/ft

Pipe Material, (n): plastic (pvc, abs)
Pipe Diameter (Inches) 12.0 inches

Manning's Equation (1), is an empirical formula that solves for velocity (v) in a open channel under uniform flow. The continuity equation (2) when combined with equation (1) allows for the computation of the flow rate (Q) in an open channel under uniform flow.

In equations (1) and (3), η refers to Manning's Coefficient of Roughness and can be found in tabulated form for many open channel types. R is the hydraulic radius of the open channel and is equal to the area of the open channel divided by the wetted perimeter, $R = A/P$. S is the slope of the energy grade line which is often assumed to be equal to the slope of the channel.

Because Manning's Equation is empirical the units are not arbitrary. To obtain a velocity in ft/s and a flow rate in ft³/s, area must be reported in ft², hydraulic radius must be reported in ft, and S must be reported in ft/ft. Manning's Coefficient of

(1)
$$v = 1.49 \left(\frac{1}{\eta} \right) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

(2)
$$Q = vA$$

(3)
$$Q = 1.49 \left(\frac{1}{\eta} \right) (A) \left(R^{\frac{2}{3}} \right) \sqrt{S}$$

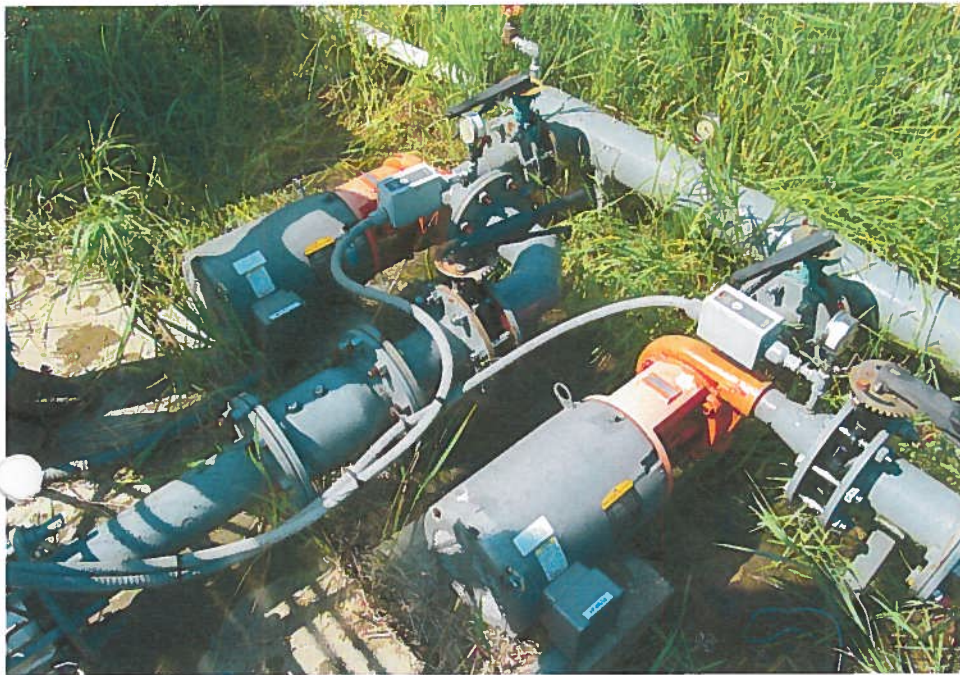
State of Idaho
Department of Water Resources
Water Right License
96-9171



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.1 0.2 0.4 Miles





96-9171



96-9171



96-9171



96-9171





96-9171

greenfield CENTER PIVOT APPLICATION CHART
For Colburn Ranch

Dealer Name: DICKERSON PUMP Serial No. or B No: 333504		GROSS APPLICATION (INCHES)	MAIN PANEL TIMER (PERCENT)	REVOLUTION TIME (HOURS)
Last Tower Tire Size: 26 x 12		0.11	100.0	14.0
Last Tower Motor Speed: 43.0	RPM	0.11	100.0	14.0
Feet per Minute @ 100%: 6.00	rpm	0.20	56.8	24.6
Flowrate: 220	gpm	0.30	37.8	37.0
Pivot Pressure: 47	psi	0.40	28.4	49.3
% of Pivot Revolution: 100%		0.50	22.7	61.6
Length to Last Tower: 801	ft	0.60	18.9	73.9
Total System Length: 822	ft	0.70	16.2	86.2
Range of End Gun: 90	ft	0.80	14.2	98.6
Total Length w/Endgun: 911	ft	0.90	12.6	110.9
Date: 04/29/10		1.00	11.4	123.2
		1.10	10.3	135.5
		1.20	9.5	147.9
		1.30	8.7	160.2
		1.40	8.1	172.5
		1.50	7.6	184.8
		1.60	7.1	197.1
		1.70	6.7	209.5
		1.80	6.3	221.8
		1.90	6.0	234.1
		2.00	5.7	246.4

This chart is an estimate of the performance of your Zimmatic center pivot system.
The speed (rpm) is based on average operation.
Tire inflation, soil conditions, flow fluctuations, and other conditions can cause application and time deviations.
Time the rotation of your center pivot to verify accuracy.
Any questions should be directed to the Sprinkler Team at Lindsay. Phone No. (402) 428-2131.

LINDSAY




greenfield CENTER PIVOT APPLICATION CHART
For Colburn Ranch

Dealer Name: DICKERSON PUMP Serial No. or B No: 333504		GROSS APPLICATION (INCHES)	MAIN PANEL TIMER (PERCENT)	REVOLUTION TIME (HOURS)
Last Tower Tire Size: 26 x 12		0.11	100.0	14.0
Last Tower Motor Speed: 43.0	RPM	0.11	100.0	14.0
Feet per Minute @ 100%: 6.00	rpm	0.20	56.8	24.6
Flowrate: 220	gpm	0.30	37.8	37.0
Pivot Pressure: 47	psi	0.40	28.4	49.3
% of Pivot Revolution: 100%		0.50	22.7	61.6
Length to Last Tower: 801	ft	0.60	18.9	73.9
Total System Length: 822	ft	0.70	16.2	86.2
Range of End Gun: 90	ft	0.80	14.2	98.6
Total Length w/Endgun: 911	ft	0.90	12.6	110.9
Date: 04/29/10		1.00	11.4	123.2
		1.10	10.3	135.5
		1.20	9.5	147.9
		1.30	8.7	160.2
		1.40	8.1	172.5
		1.50	7.6	184.8
		1.60	7.1	197.1
		1.70	6.7	209.5
		1.80	6.3	221.8
		1.90	6.0	234.1
		2.00	5.7	246.4

This chart is an estimate of the performance of your Zimmatic center pivot system.
The speed (rpm) is based on average operation.
Tire inflation, soil conditions, flow fluctuations, and other conditions can cause application and time deviations.
Time the rotation of your center pivot to verify accuracy.

LINDSAY



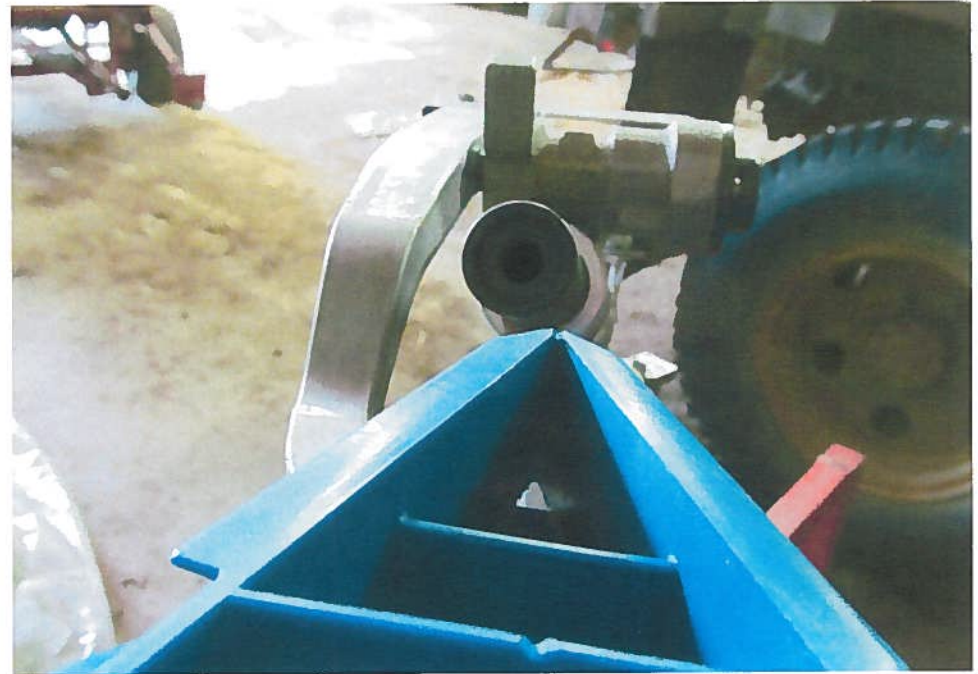

96-9171



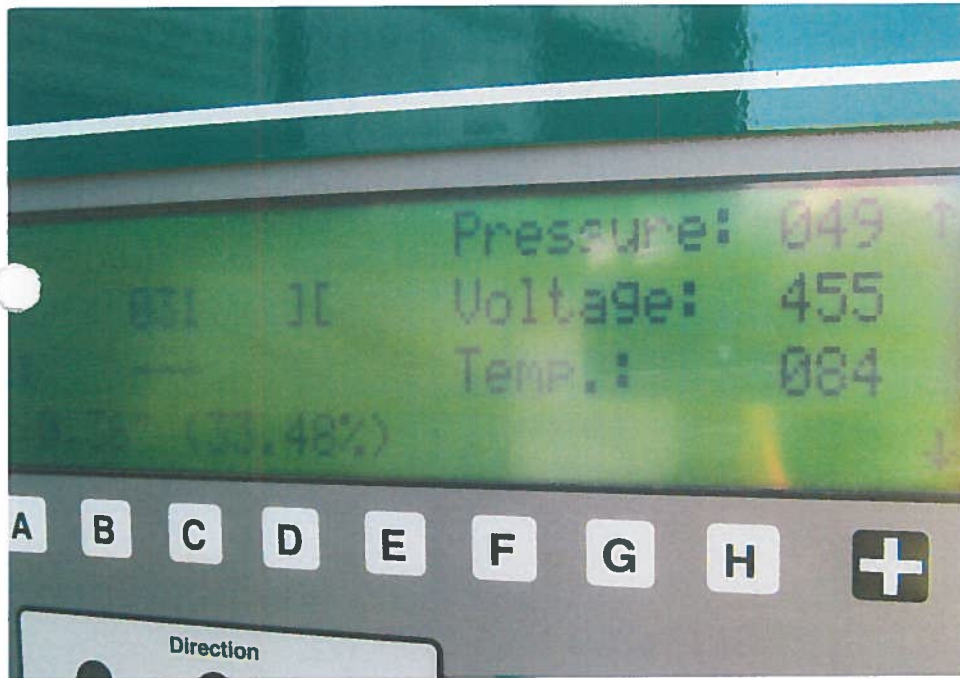
For Colburn

Dealer Name : DICKERSON PUMP		GROSS
Serial No. or B No. : 333504		APPLICA
Last Tower Tire Size : 26 x 12		(INCH
Last Tower Motor Speed :	43.0	0.11
Feel per Minute @ 100% :	6.00	0.20
Flowrate :	220	0.30
Pivot Pressure :	47	0.40
% of Pivot Revolution:	100%	0.50
Length to Last Tower :	801	0.60
Total System Length :	822	0.70
Range of End Gun :	90	0.80
Total Length w/Endgun:	911	0.90
Date:	04/29/10	1.00
		1.10
		1.20





91-9171



01-0171

greenfield CENTER PIVOT APPLICATION CHART
For Bailey Road Ranch

Dealer Name	DICKERSON PUMP	GROSS APPLICATION (INCHES)	MAIN PANEL TIMER (PERCENT)	REVOLUTION TIME (HOURS)
Serial No. or B No.	304207			
Last Tower Tire Size	26 x 1	0.12	100.0	12.6
Last Tower Motor Speed	43.0	0.12	100.0	12.6
Feet per Minute @ 100%	6.00	0.20	60.1	21.0
Flowrate	210	0.30	40.0	31.4
Pivot Pressure	44	0.40	30.0	41.9
% of Pivot Revolution	100%	0.50	24.0	52.4
Length to Last Tower	721	0.60	20.0	62.9
Total System Length	742	0.70	17.2	73.4
Range of End Gun	79	0.80	15.0	83.9
Total Length w/Endgun	821	0.90	13.3	94.3
Date: 06/22/09		1.00	12.0	104.8
		1.10	10.9	115.3
		1.20	10.0	125.8
		1.30	9.2	136.3
		1.40	8.6	146.7
		1.50	8.0	157.2
		1.60	7.5	167.7
		1.70	7.1	178.2
		1.80	6.7	188.7
		1.90	6.3	199.1
		2.00	6.0	209.6

This chart is an estimate of the performance of your Zimatic center pivot system.
The speed (fpm) is based on average operation.
Tire inflation, soil conditions, flow fluctuations, and other conditions can cause application and time deviations.
Time the rotation of your center pivot to verify accuracy.
Any questions should be directed to the Sprinkler Team at Lindsay, Phone No. (402) 426-2131.

LINDSAY

Manual
Position: 031
SUC Stop: ---
Reverse, 0.36" (33.48%)

Pressure: 6
Voltage: 4
Temp: 1

Menu

A B C D E F G H

Auto
Reverse Restart

Direction
Rev Off Fwd

1 2 3
4 5 6

VOLTS 480 MAIN RATING 30 AMPS
PHASE 3 HZ 60 PANEL NO.
MAX. FUSE 30 ENCL. 3 R DATE
SYSTEM AMPS 3.61 FUSE SIZE
SHORT CIRCUIT SYM. RMS CURRENT: 5KA, 500V. MAX.
INTERRUPT RATING 10,000 AMPS
LINDSAY MFG. CO., USA

Dealer Name : DICKERSON PUMP
Serial No. or B No. : 304207

Last Tower Tire Size : 26 x 1
Last Tower Motor Speed : 43.0 RPM
Feet per Minute @ 100% : 6.00 fpm
Flowrate : 210 gpm
Pivot Pressure : 44 psi
% of Pivot Revolution: 100%
Length to Last Tower : 721 ft
Total System Length : 742 ft
Range of End Gun : 79 ft
Total Length w/Endgun: 821 ft
Date: 06/22/09

