

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-16554

Exam Date: 5/14/2012

1. Current Owner: JEFFREY L CONNAWAY
727 W MILL AVE
COEUR D ALENE ID 83814
(208)765-3635

And/Or

ANNEKE CONNAWAY
727 W MILL AVE
COEUR D ALENE ID 83814
(208)765-3635

2. Accompanied by: Owner (Jeffrey)

Phone No:

Address:

Relationship to Permit Holder:

3. SOURCE

UNNAMED STREAM

TRIBUTARY

LIBERTY CREEK

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: 95-16553

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

UNNAMED STREAM L3 NE1/4SW1/4 Sec. 12, Twp 49N, Rge 06W, B.M. KOOTENAI County

Method of Determination: Map and GPS

2.

PLACE OF USE: POWER

Twp Rge Sec	NE				NW				SW				SE				Totals
49N 06W 12	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
									X								
									L 3								

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>
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Gravity

D. FLOW MEASUREMENTS

1.

Surveyed the slope and Manning's Equation Calculator for the flow.

2. Measurements:

The 4 inch line max volume ^{0.57}~~5.7~~ cfs or 255 gpm. 1330 ft of head

Power : (2) 1 ½ inlet ports to power that is off a 2 inch line that is connected to 4 inch line with 1330 ft of head (0.20 CFS)

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses: **Power : (2) 1 ½ inlet ports, 60PSI 0.20cfs= (0.20 cfs per year= 144.7 AFA)**

G. NARRATIVE/REMARKS/COMMENTS The main line is 4 inch dia and 1330 length with a head of 184feet and the capacity of 0.57 cfs.

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>
POWER	01/01 to 12/31	0.200 CFS	144.70 AF
		<u>Totals:</u>	
		~~1.300 CFS~~	144.70 AF

0.20 cfs, 1.300 cfs, 5-7-14

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 [Signature] Date 5-7-2013

Reviewer _____ Date _____

State of Idaho
Department of Water Resources

95-16554



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

0 0.0475 0.095 0.19 Miles



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

S = 0.0926 ft/ft
 n = 0.009 manning's coefficient
 d = 4.0 pipe diameter (inches)
 D = 0.33 pipe diameter (feet)
 r = 0.17 pipe radius (feet)
 A = 0.09 area (ft²)
 WP = 1.05 wetted perimeter (ft)
 R = 0.08 hydraulic radius (ft)

Q = 0.83 flow rate (CFS)

Channel Slope

Slope Options

☐ Manual Entry
 ☒ Slope Calculator

Slope Calculator

Rise = 10 feet
 Run = 108 feet
 Slope, S = 0.0926 ft/ft

Pipe Material, (n):

plastic (pvc, abs)

Pipe Diameter (inches)

4.0 inches

READ ME

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 Roughness is a

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

$$(2) \ Q = vA$$

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



POWER.JPG



POWER GEN.JPG



POWER PSI.JPG



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IMG_0836.JPG



IMG_0826.JPG



POD.JPG





