

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 85-15759

Exam Date: 06/11/2018

1. Current Owner:
GREGORY E PHILLIPS 800 TAMMANY RIDGE LEWISTON ID 83501
2. Accompanied by: Gregory Phillips
Phone No: (208) 816-0929
Address: Same as above
Relationship to permit Holder: Permit holder.

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap and GPS.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

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

GROUND WATER NW¼ SE¼, Sec. 20, Twp 35N, Rge 05W, B.M. NEZ PERCE County

Method of Determination: Arcmap and GPS. POD located at -116°59.475, 46°21.686.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
35N	05W	20													0.4	6.4	0.8		7.6

Total Acres: 7.6

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
35N	05W	20													X	X	X		

Method of Determination: Arcmap and Field Exam.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X 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.

X

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

X

Photo of Diversion and System Attached

X

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0061755	GOULDS	25			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform flow measurement due to piping from POD to 21,000 gallon storage tank being underground.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: See attached Theoretic Pumping Equation worksheet. Theoretic pump equation calculated 96.6 gpm, and measurements provided by applicant demonstrates he achieves 97.2 gpm filling his 21,000 gallon storage tank. Applicant measurement = 21,000 gallons / 3.6 hours = 5,833 gph / 60 min per hour = 97.2 gpm.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 7.6 \text{ acres} \times 4 \text{ af} = 30.4 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.22 \text{ cfs} \times 288 \text{ days} \times 1.9835 = 125.7 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 30.4 \text{ af}$$

2. Volume Calculations for Other Uses:

$$\text{STOCKWATER volume} = 40 \text{ head mixed stock} \times 12 \text{ gpd} \times 365 \text{ days} = 175,000 \text{ gpy} / 325,850 \text{ gp af} = 0.5 \text{ af}$$

$$\text{Maximum diversion volume} = 30.4 \text{ af (irrigation)} + 0.5 \text{ af (stockwater)} = 30.9 \text{ af.}$$

G. NARRATIVE/REMARKS/COMMENTS

Field exam with applicant, Gregory Phillips, showed a well being used for irrigation and stockwater uses. Water was diverted from the well to a 21,000 gallon holding tank to allow applicant to use water without having to continuously draw down the water table from well. Piping from well to holding tank was underground, resulting in no access for flow measurements. Theoretic pumping equation derived 0.22 cfs and 96.6 gpm. The applicant provided pumping data that

mirrored the theoretic pumping equation, showing he filled his 21,000 gallon holding tank from empty to full achieving 97.2 gpm (see flow calculations above). The theoretic pumping equation will be used to license this water right for a diversion rate of 0.22 cfs.

At time of exam, wide spread irrigation was observed. During licensing review irrigation was traced out using Arcmap, equaling 7.6 acres. As mentioned above, applicant uses a 21,000 gallon holding tank to reduce the continuous filling requirement from well. Property is in the Lewiston Plateau Ground Water Management Area (LPGWMA), and it is clear the applicant needs additional diversion to the storage tank to reduce the continuous amount of filling required. The applicant does not irrigate 24/7, and thus the greater diversion rate of 0.22 cfs is needed to efficiently fill the holding tank periodically in lieu of 24/7 operation diversion from well. Department Hydrogeologist, Daniel Sturgis, monitors this well and states applicant pumps for a 2-4 hour period and then has to turn off to allow the aquifer to recover. The greater diversion rate does not enable application to surpass the maximum diversion volume of 30.9 af, and periodic filling of holding tank reduces continuous draw down of the water table near POD. As a result, the greater diversion rate of 0.22 cfs was carried forward to licensing.

At time of exam, stock animals were present on property. Volume calculations derive a 0.5 af requirement for 40 head of cattle. Photographs taken during field exam show stockwater containment being used by stock down-hill from the large storage tank. At time of exam, applicant was not using water for DOMESTIC uses, and the domestic use component was removed from license.

Conditions 26A, 046, and 132 were removed from license. Condition R62 was replaced with R64 to properly identify diversion rates of 0.02 cfs and 4.0 af of volume for irrigation. At the time of permitting, the R62 condition describing head gate requirements was incorrectly used. At time of licensing, the diversion was changed from 0.02 cfs and 3.0 af, to the diversion rate of 0.02 cfs and 4.0 af volume, which is the standard rate at the applicant's property. There are no water right overlap concerns.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	02/15 to 11/30	0.22 CFS	30.4 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.5 AF

Totals: 0.22 CFS 30.9 AF

2. Recommended Amendments

Change P.D. as reflected above Add P.D. as reflected above X None

Change P.U. as reflected above Add P.U. as reflected above X None






I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name Adam Fink Date 4/6/2020
 Reviewer JAB Date 4/2/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
85-15759

IRRIGATION system diagram.



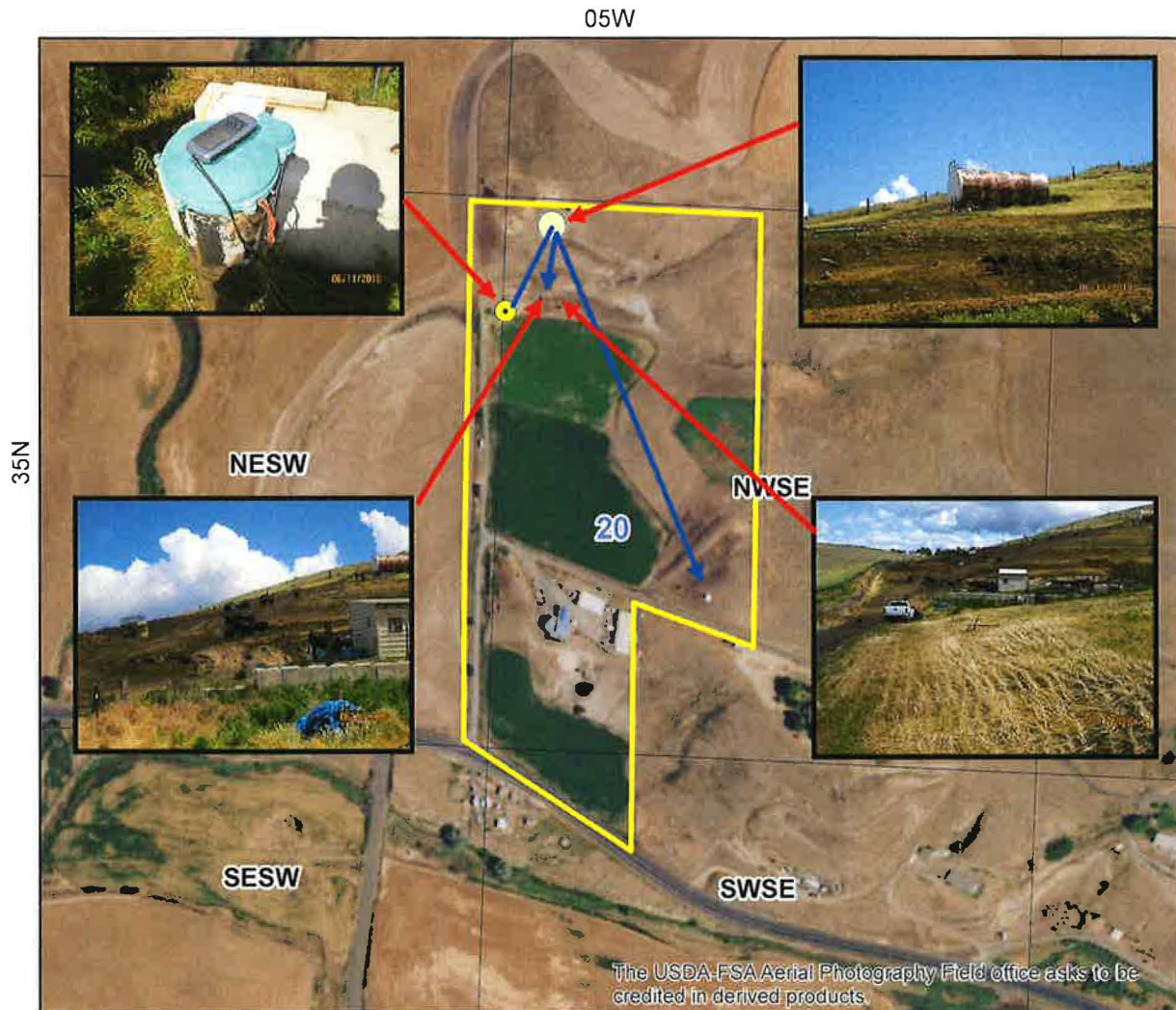
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.0425 0.085 0.17 Miles



State of Idaho
Department of Water Resources
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STOCKWATER system diagram.



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

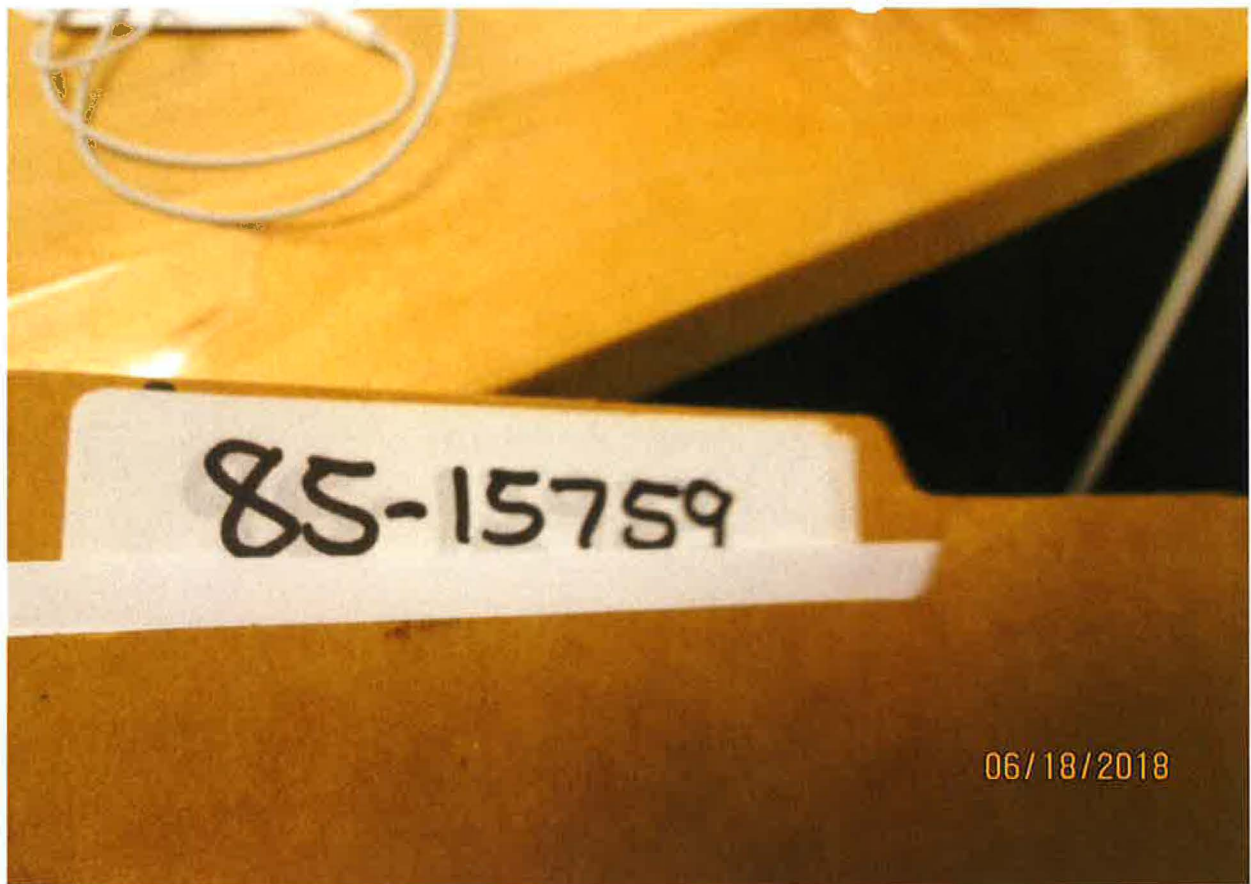
0 0.05 0.1 0.2 Miles



THEORETICAL PUMPING EQUATION FOR WR# 85-15759

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 750 ft, and running at 30 psi.

<u>PUMP EQUATIONS</u>						
WATER RIGHT No.			85-15759			
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	25	819.3878	0.8	750	30
Q =		0.215 cfs		96.6 gpm		



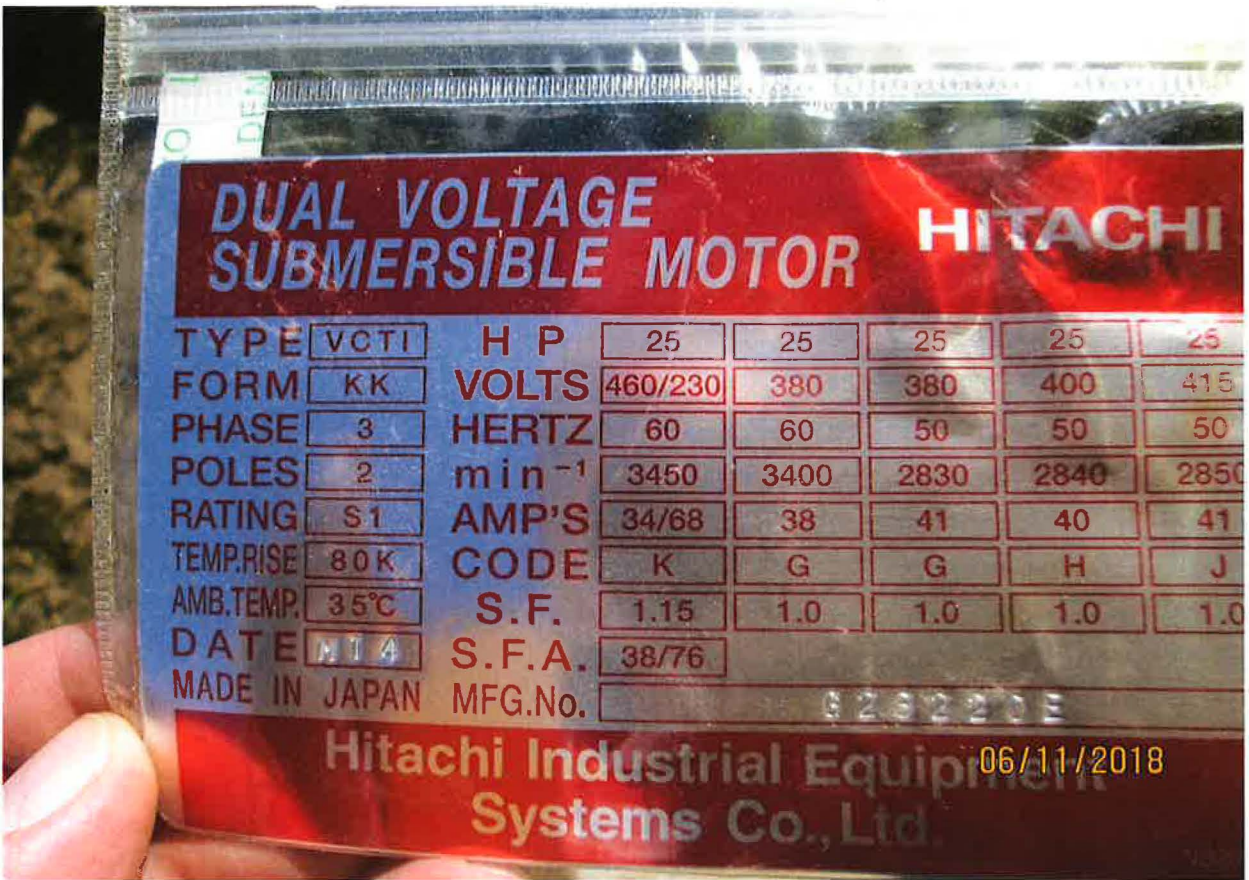
POD



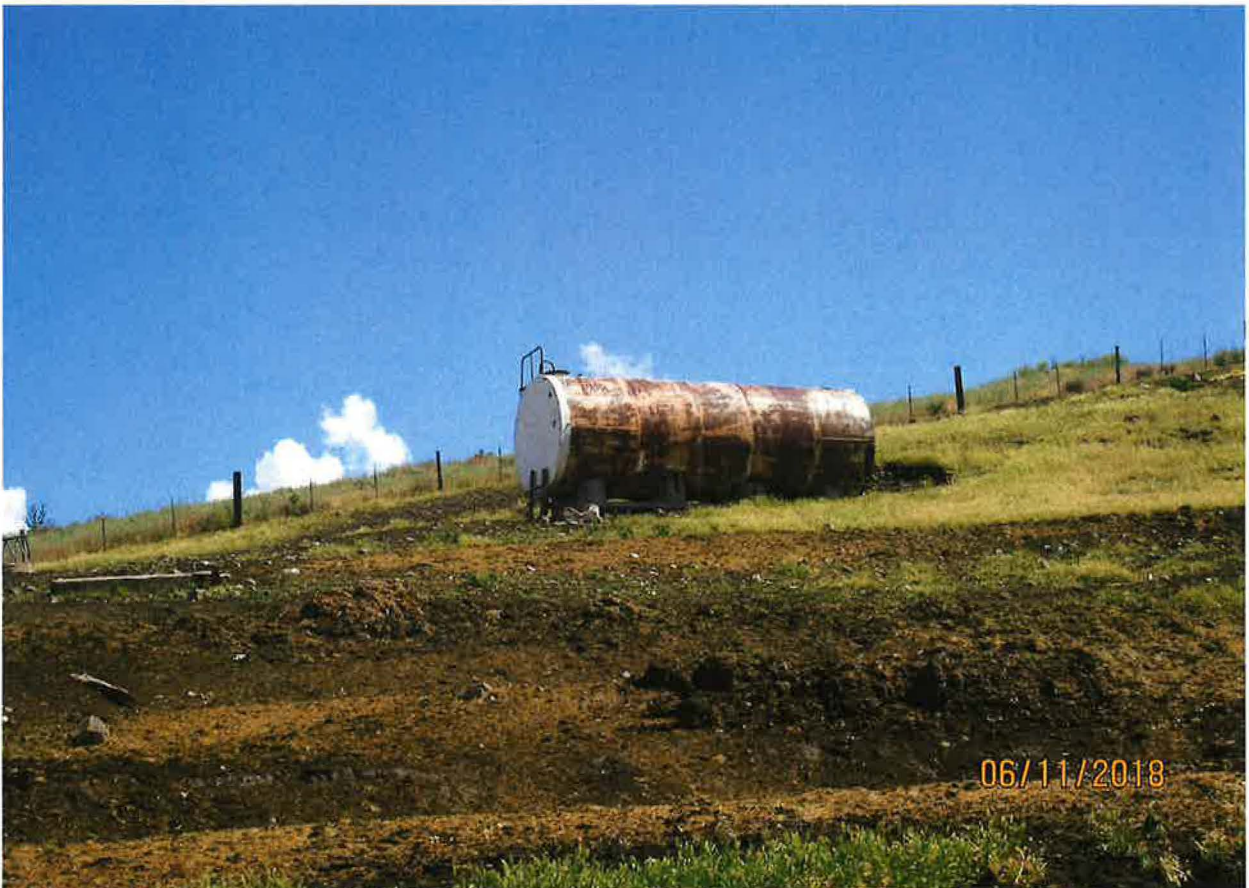
POD – D0061755



CONTROL PANEL



HITACHI 25 HP PUMP



21,000 GALLON STORAGE TANK



POU – IRRIGATION





POU – IRRIGATION



IRRIGATION MAIN LINE



POU – IRRIGATION





STOCKWATER POU

