

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
DRAFT BENEFICIAL USE FIELD REPORT (waiting on add'l information)

A. GENERAL INFORMATION

Permit No: 85-7660
And 85-7664
Exam Date: 5/29/2012

1. Current Owner: US DEPT OF ENERGY
BONNEVILLE POWER
PO BOX 3621 TRF 3
PORTLAND OR 97208-3621
(503)230-5572

2. Accompanied by: Aaron Penney

Phone No: (208)790-1876, (208)621-3504, wk (208)843-7384 Ext 3504

Address: 18985 Hubbard Gulch, Juliaetta, ID 83535

Relationship to Permit Holder: Assistant Hatchery Manager, Nez Perce Tribal Hatchery

Email: aaronp@nezperce.org

Both of these water rights 85-7660 and 85-7664 were written up on this one report, since if you look at the aerial map, and go through the pictures showing the system, it will make it easier to understand.

3. SOURCE

TRIBUTARY

85-7660:

SOUTH FORK CLEARWATER RIVER

CLEARWATER RIVER

85-7664:

GROUND WATER

B. OVERLAP REVIEW FOR BOTH 85-7660 and 85-7664:

1. **Other water rights with the same place of use:** Both 85-7660 and 85-7664 overlap the same POU/fish hatchery.
2. **Other water rights with the same point of diversion:** None. 85-7660 (surface water source), and 85-7664 (groundwater source).

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

85-7660:

SOUTH FORK CLEARWATER RIVER NE1/4NE1/4 Sec. 17 Twp 31N, Rge 04E, B.M. IDAHO County*

85-7664:

GROUND WATER SW1/4SE1/4 Sec. 8, Twp 31N, Rge 04E, B.M. IDAHO County**

*Only one surface water source POD was found at time of the field examination.

**Only one groundwater source POD was found at the time of the field examination, although there is a "test well" in the same QQ, it is not divert any water to any location, it is only a "test well."

Method of Determination: Garmin GPS Map 76S, ArcMap esri and 2004 – 2013 Imagery.

2.

85-7660 and 85-7664:

PLACE OF USE: FISH PROPAGATION, FISH PROPAGATION STORAGE and DIVERSION TO STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
31N	04E	17	X																

Method of Determination: Garmin GPS Map 76S, ArcMap esri and 2004 – 2013 Imagery.

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 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 Size</u>
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85-7660 (no ID Tags, since I ran out of tags, during my multi-days out in the field):

Intake #1 (main)	Godwin	25 Hp	02518EP3E284T	3-phase	6 inch*
	Godwin	25 Hp	02518EP3E284T	3-phase	6 inch*
Intake #2 (back-up)	Godwin	25 Hp	02518EP3E284T	3-phase	6 inch*

**Discharge then goes thru flow meter before being discharged to 10 inch above-the-ground PVC running northwest, and then turns to the east slightly to discharge into the silver tank.*

There is a back-up generator located next to the supply building, in the event there is an extended power outage.

85-7664:

D0010235	submersible Christensen	15 Hp	2261138020		4 inch*
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**Discharge goes thru the flow meter before being discharged to the 6 inch above-the-ground PVC running southeast down the hill to discharge into the silver tank.*

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

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
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85-7660 (for both #1 8-inch and #2 6-inch intakes):

Vectrue Inverter			CFW09		9 inch (diverts to 10 inch above the ground PVC)	unknown
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85-7664:

Water Specialty			Serial #201005-4		4 inch (diverts to 6 inch above the ground PVC)	unknown
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2. Measurements:

85-7660 (surface water source):

Theoretical:

(Using the Main #1 pumps, since they are used all the time and #2 is only the back-up and rarely used, with psi unknown)

Using 30 psi = 2 identical pumps X (8.8 X 25 Hp X 0.7 eff)/[10 ft + (30 psi X 2.31)] = 2 X (154/79.3) = 3.88 cfs

Using 40 psi = 2 X (154/102.4) = 3.00 cfs

Using 50 psi = 2 X (154/125.5) = 2.45 cfs

***PSI was requested. INSERT**

Pipe Conversion (8 inch intake, thru flow meter) = 1.74 cfs

Flow Records (requested, but have not received them yet): **INSERT**

85-7664 (groundwater source):

Theoretical:

(8.8 X 15 Hp X 0.7 eff)/[21 ft + 30 psi X 2.31]] = 1.02 cfs*

***With the information that Bonneville submitted in reference to the reasoning behind an increased flow, and not needing it continuously 365 days per year, but only when fish are in the tanks to make a "natural" concept, this would be a realistic rate to recommend, since the pipe conversion and well log pump test calculations are within this range.**

Well Log (4 hr pump test):

500 gpm X 0.00223 = 1.11 cfs

Pipe Conversion (6 inch PVC pipe) = 0.98 cfs

At time of the field examination, measurement taken off the flow meter, but not at maximum use (when fish in the tanks):

125 gpm X 0.00223 = 0.28 cfs

Flow Records (requested, but have not received them yet): **INSERT**

E. FLOW CALCULATIONS

Measured Method:

None

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

2. Volume Calculations for Other Uses:

Size of tanks for both 85-7660 and 85-7664:

Arc Map calculated the (10) tanks at 0.1 acre X 5 ft average depth = 0.5 af + 0.1 af for refill = 0.6 af

RECOMMEND:

85-7660: 0.5 af with 0.1 af for refill = 0.6 af * (as permitted)

85-7664: 0.5 af with 0.1 af for refill = 0.6 af * (as permitted)

***Add the following 2 conditions each of the above water rights:**

(1) Combined Limit of 0.6 af, and (2) 0.5 af + 0.1 refill = 0.6 af total.

G. NARRATIVE/REMARKS/COMMENTS

Water right 85-7664 consists of a groundwater source, ID Tag # D0010235, drilled by Layne Christensen Co #512 on 8/6/1999. The well has a 10 inch casing that extends 31 inches above ground level, and is 540 ft deep. It has a static level of 11.48 ft, and at the time of the drilling it was pump tested at 500 gpm for 4 hrs. It has a 15 Hp single phase Christensen pump serial # 2261138020 with a 4 inch discharge thru a 4 inch Water Specialty flow meter serial # 201005-4 (located in a concrete vault), that discharges to above ground 6 inch PVC that runs down the hill to the silver tank, and also has a 1 inch above the ground poly pipe that runs to the trailer (for employees potable use). At the time of the field examination the flow meter read 125 gpm (0.28 cfs), which Aaron Penney stated was the range that water was usually pumped at this source. Along the side of the road running from this well to the silver tank, there is also another well located, which was indicated to be only a test well, and is not connected to this distribution system.

At the surface water source (S. Fork Clearwater River) for water right 85-7660, it has 2 intakes that are side by side. The main one is an 8 inch intake made up of variegated pipe laid in the river, and the back-up intake is a 6 inch variegated pipe laid in the river. There are 2 mobile Godwin pump set ups: #1 Main Godwin Pumps, for the 8 inch intake, has (2) 25 Hp pumps serial # 02518EP3E284T, 3-phase, and #2 Godwin pump (back-up) for the 6 inch intake, has (1) 25 Hp pumps serial # 02518EP3E284T, 3-phase, with both sets of pumps set up to flow through the same 10 inch CFW09 Vectrue Inverter flow meter, that discharges to 10 inch above the ground PVC that runs up the hill to the northwest, and discharges into the silver tank.

Water right 85-7664 (groundwater source) and 85-7660 (surface water source) both join into the same distribution system at the silver tank (called the green prep tank), where they co-mingle and then are discharged through a 10 inch PVC pipe to the (10) 20 ft X 5 ft fish propagation tanks that are interconnected by 4 inch overflow, which then discharges the effluent back to the S. Fork Clearwater River (a complete flow through system without any chemicals added to the system).

Beneficial use for both water rights 85-7660 and 85-7664 is for Diversion to Storage, Fish Propagation Storage and Fish Propagation for the Clearwater River sub-basin Chinook salmon restoration with rearing and release of 250,000 - 400,000 fall Chinook salmon fingerlings or smolts. This is a cooperative project between Bonneville Power and the Nez Perce Tribe.

The common name for this location is: Luke's Gulch.

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

H. RECOMMENDATIONS

1. Recommended Amounts

85-7660:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
FISH PROPAGATION	01/01 to 12/31	0.00CFS INSERT	
DIVERSION TO STORAGE	01/01 to 12/31	0.00 CFS INSERT	
FISH PROPAGATION STORAGE	01/01 to 12/31		0.6AF
<u>Totals:</u> 0.00 CFS INSERT			

85-7664:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
FISH PROPAGATION	01/01 to 12/31	1.020 CFS	
DIVERSION TO STORAGE	01/01 to 12/31	1.020 CFS	
FISH PROPAGATION STORAGE	01/01 to 12/31		0.6AF
<u>Totals:</u>		1.020 CFS*	

*The amount that was being diverted at the time of the field exam (125 gpm or 0.28 cfs) was not representative of what is pumped when additional water is needed at the actual times when fish occupy the fish propagation tanks. Information submitted by the Bonneville Power Administration showed that the direct design of the system to simulate natural conditions (the Natures concept) included holding and rearing fish at low densities thereby requiring more pond volume and increased water flow, meeting the beneficial use for cold water biota in the receiving waters. For this reason, the capacity of the system (1.02 cfs) is being recommended for the diversion rate.

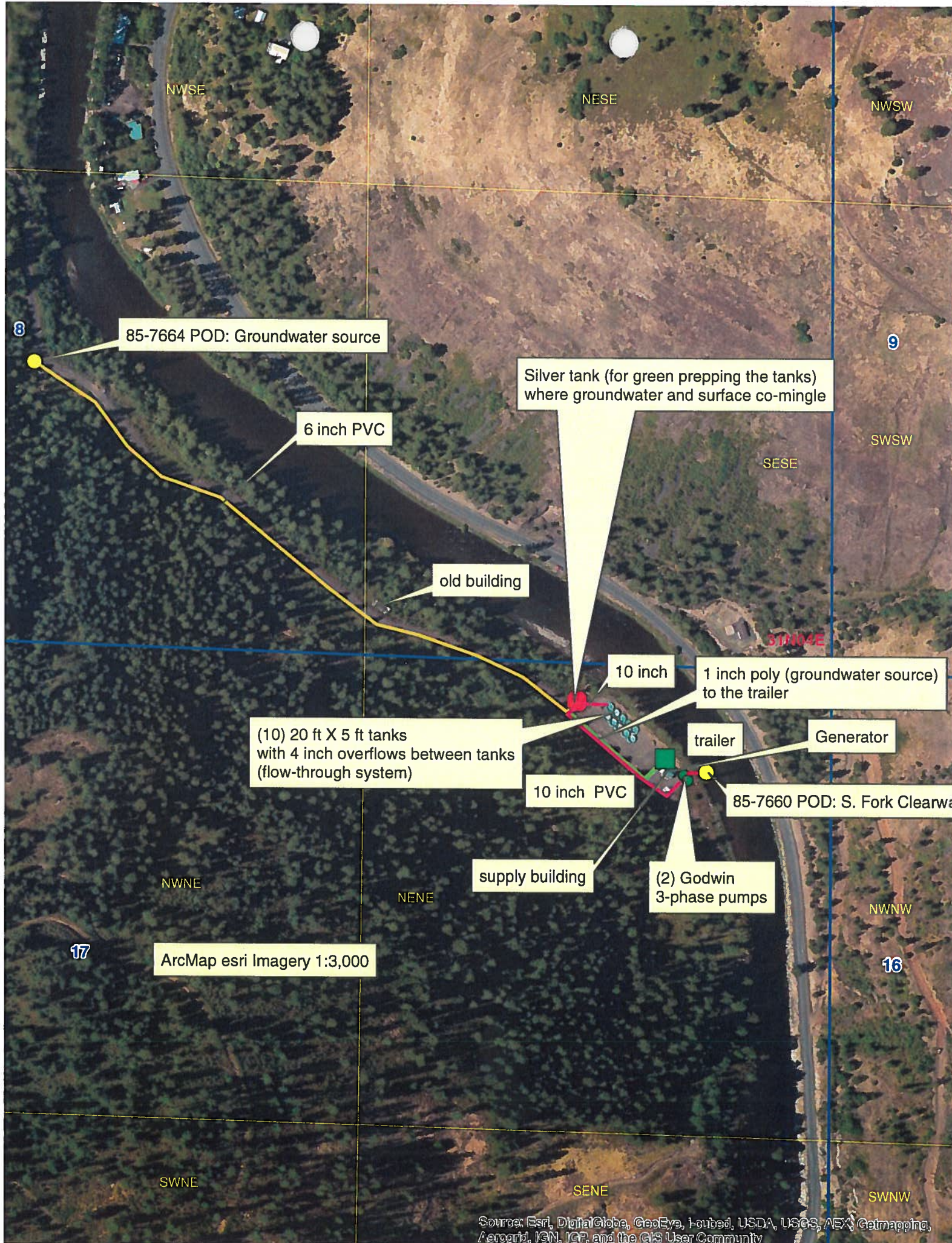
2. Recommended Amendments

☐ 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 _____ Date _____



85-7664 POD: Groundwater source

6 inch PVC

Silver tank (for green prepping the tanks)
where groundwater and surface co-mingle

old building

10 inch

1 inch poly (groundwater source)
to the trailer

(10) 20 ft X 5 ft tanks
with 4 inch overflows between tanks
(flow-through system)

trailer

Generator

10 inch PVC

85-7660 POD: S. Fork Clearwa

supply building

(2) Godwin
3-phase pumps

ArcMap esri Imagery 1:3,000

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping,
Aerogrid, IGN, IGP, and the GIS User Community



85-7660
POD

6"
intake
(back-up)
8"
intake
(main)

05/29/2012

10"
PVC
to silver
tank
Generate



(2)
Godwin
pumps

6"
intake
(back-up)
8"
intake
(main)

10' lift

05/29/2012

85-7660

S. Hemenway



85-7660
 #1 Godwin
 Main
 Pump
 8" intake
 (2) 25Hp
 (2)
 02518EP-
 3E284T
 3-phase
 CFWO9
 Vectrue
 inverter
 flow
 meter



85-7660
 #2 Godwin
 back-up
 pump
 6" intake
 (1) 25 Hp
 02518EP-
 3E284T
 3-phase
 thru the
 same
 flow
 meter
 as #1,
 when
 this
 one
 is
 used

85-7660

S. Hemerway



85-7660
CFW 09
Vectrue
Inverter
flow
meter

05/29/2012



85-7664
6" PVC
from
well
going
to silver
tank
(green
prep tank)

85-7664
10" PVC
from
surface
water to
the
silver
tank

05/29/2012

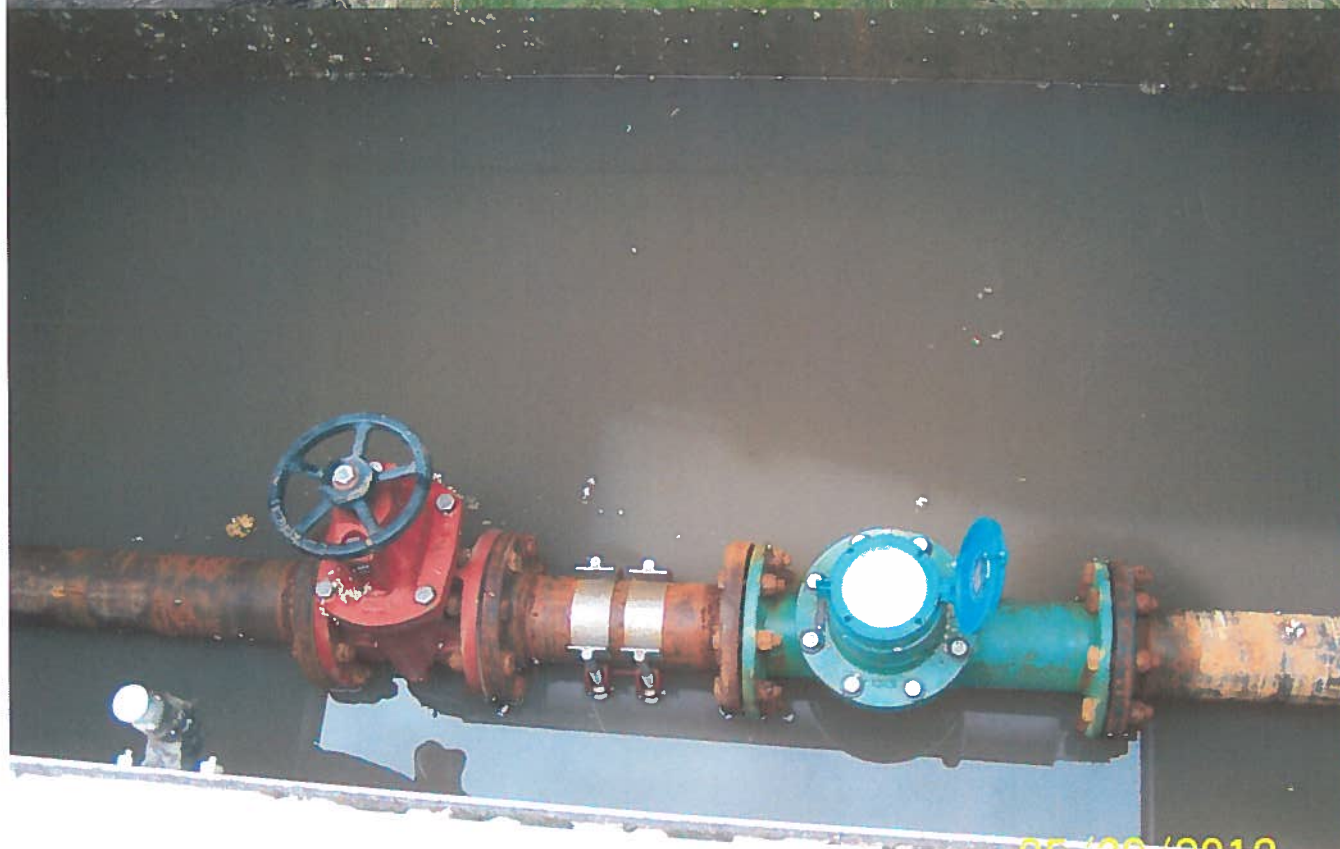
85-7660 + 85-7664



DD010235

POD:
85-7664
well
casing
31" above
ground
level
15 Hp
single
phase
Christens
pump
serial #
22611380
4" disch.
thru
4"
flow
meter
in
vault

05/29/2012



4"
water
specialty
flow
meter
serial #
201005-
that
discharge
to
6" PVC
running
down the
hill to
the silver
tank

05/29/2012

85-7664

S. Hemerway



85-7664
At time
of field
exam
125 gpm
(0.28 cfs)
but
contact
person
will
submit
document
to
confirm
historical
use
when
fish
propagation
is
active.

05/29/2012



85-7664
6" PVC
from
well to
silver
tanks

test
well

05/29/2012

85-7664

S. Hemeriksen



POU:

85-7660
+
85-7664
looking
south
east

85-7660
10"
PVC

85-7664
6"
PVC

05/29/2012



looking
back
up the
road to
the
north

05/29/2012

85-7660 + 85-7664

S. Hemerway



to (10)
fish prop.
tanks
from
85-7660

from
85-7664

05/29/2012

Silver
tank
with
flow
from
85-7664
groundside
+
85-7660
surface
water,
with
10" PVC
discharge
to
(10)
20'x5'
fish
prop.
tanks



85-7664
1"
poly
to trailer

85-7660
10" PVC
from
surface
water
to
silver
tank

05/29/2012

85-7660 + 85-7664

S. Hemerik

85-7660
+ 85-7664



POU:
Fish
Prop. +
Fish
Propagative
Storage

(10)
20'x5'
tanks,
interconn
4" overflow
with
effluent
discharging
back
to the
river

85-7660 + 85-7664

S. Hernerway

Hemenway, Sandy

From: Hemenway, Sandy
Sent: Friday, March 14, 2014 12:15 PM
To: aaronp@nezperce.org
Cc: Hemenway, Sandy
Subject: 85-7660 and 85-7664 US Dept of Energy, Bonneville Power (Luke's Gulch fish propagation)
Attachments: DOC006.pdf

Hi Aaron,

I have attached pictures for this next fish propagation site, help assist in answering the following questions:

- (1) Do you have flow records or have an estimate of the volume used for this facility during a normal season? If so could you please submit it?
- (2) Please submit a copy of the maintenance schedule, if there is one.
- (3) Please submit a copy of the Number, Size of the fish, Type of fish, and Dates fish are stocked to the tanks for a routine year.
- (4) Can you describe any techniques that are used to improve the fish growth and reproduction i.e. nutrients added to the water.
- (5) How long does it take to fill all the tanks?
- (6) How many exchanges/turnovers take place within 24 hours?
- (7) Do you have flow records from the surface water source? If so, can I have a copy? If not, what if the gpm this main pump or the backup runs at, and for what time period?
- (8) Do you have flow records from the well? If so, can I have a copy? If not, what is the gpm this well normally runs at, and for what time period?
- (9) What is the purpose of adding groundwater to the propagation tanks, when there is already a surface water source? You said something about "green-prepping the tank." Could you explain in detail?
- (10) Is the "test well" located along the side of the road, tied into the system or completely disconnected from the system?
- (11) After the water goes through the 10 tanks, what size discharge returns flow back to the river?

Please submit the above information within 2 weeks, so I can complete the licensing process. To expedite the process, please scan and send information back as an email attachment, otherwise you can mail it to the address below.

Thanks so much,

Sandy Hemenway
Sr. Water Resource Agent
IDWR State Office, Boise
PO Box 83720
Boise, ID 83720-0098
(208)287-4920
Sandy.hemenway@idwr.idaho.gov