

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 36-8094

Exam Date: 12/15/2011

1. Current Owner: IDAHO WATER RESOURCE BOARD
PO BOX 83720
BOISE ID 83720-0098
(208)287-4800
2. Accompanied by: Brian Tadlock
Phone No: 208.410.2055
Address: 201 Warm Creek Rd, Jerome ID 83338
Relationship to Permit Holder: Hatchery Manager for Lessee- SeaPac of Idaho

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NONE.
2. Other water rights with the same point of diversion: 36-7130 and 36-8669 (application). 36-7130 is for fish propagation from same well and is the authorizing heat use for this diversion. 36-8669 is held without action in the Twin Falls geothermal moratorium. It seeks additional flow for fish prop and aesthetic use from same well. Permit 36-8573 diverts in the same QQ from a different source and different use on the property and does not overlap. Application 36-8137 appears not to have been completed. Claim 36-15216 for storage in a pond was disallowed.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER

L14 SW1/4NE1/4

Sec. 29, Twp 09S, Rge 17E, B.M.

JEROME County

Method of Determination: map, gis

2.

PLACE OF USE: POWER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
09S	17E	29			X														
					L 14														

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
09S	17E	29								X	X					X			
										L 15	L 17					L 18			

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 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>
A0003168	flowing geothermal well				12 inch discharge

*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>
Installed Flow meter (this meter was installed in approx 2007 replacing an older Grainland flow meter)	Insertion Mag	SeaMetrics	EX 101		12"	2008
Portable Flow meter	ultrasonic	Fuji	Portaflow	240335		2012
Portable Flow meter	ultrasonic	Polysonics	TFP			

2. Measurements:

1/26/2000 – 7.27 cfs taken by A Folsom with TFP meter
 7/20/2004 – 6.57 cfs taken by C Knowles with Fuji meter
 6/10/2008 – 6.56 cfs taken by C Yenter with Fuji meter

A series of annual totalizer volumes from the installed flowmeter(s) are available from 1992 through 2012. For the development period 1992-1995, annual diversion volumes support average diversion rates between 4.3 cfs and 4.8 cfs.

E. FLOW CALCULATIONS

Measured Method

☒ Additional Computation Sheets Attached

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Uses:

Power Generation: $4.56 \text{ cfs} \times 1.9835 \times 365 = 3301.3 \text{ AF}$

- Maximum physical volume based on full licensed flow over a full year

Domestic: $13,000 \text{ gpd limit}$

- 2 homes, internal use only

G. NARRATIVE/REMARKS/COMMENTS

System is a flowing well constructed in 1992, which discharges into a horizontal power generation turbine and then into a pipeline which conveys it to homes and fish propagation raceways. A condition of approval on the permit requires the "use of the low temperature geothermal water for rearing of warm water fish, or some other beneficial use which extracts the heat value from the water." Diversion for fish propagation from the well in the amount of 4.5 cfs is authorized under 36-7130 and provides the the majority of the heating use of the geothermal water upon which this permit is both contingent and limited.

Geothermal water is also used to heat 2 homes and provides hot water to a sink in the office; heating flows are discharged to a pond in SENW Section 29. The domestic heating use has no recorded right and will be added to this right via a licensing amendment. A portion of the unlicensed power diversion rate will be used for this conversion. Review of DOQQ imagery suggests that both homes and the office were present in 1992 when the hot well was constructed. The homes and shop also have a cold water well or wells for drinking and other household uses. Lacking a way to obtain a specific flow measurement to heating use, and because no additional information relative to heating requirements has been provided for these structures, use will be recommended as domestic use, and a standard 0.06 cfs will be used for two homes based on the "Maximum Instantaneous Water Requirements for Domestic Use" curve found in the field exam manual.

Because heating of homes is also a heat-value use of the geothermal water, diversions for power production are also authorized in conjunction with this flow. License recommendation for power will thus be limited to a maximum of 4.56 cfs, provided that domestic heating is occurring, or 4.50 cfs if heating is not occurring. Total rates and volumes are non-additive.

This system has a flowmeter installed in the power house, upstream from the turbine, and discharge has been measured numerous times by IDWR staff since 2000. This system is thoroughly documented as having a discharge capacity of at least 7 cfs. Data collected by USGS and IDWR indicate that from development in 1992 to 1999, total annual volume discharge from the well was around 3300 AF, which implies an average diversion rate of around 4.5 cfs. Between 1999 and 2009, the system was operated at the full permit rate of 7 cfs, which exceeds the diversion limitation placed on the permit when combined with right no. 36-7130. In 2009 the new owners of the permit agreed to reduce the flow back to 4.5 cfs. In reality the flows I have observed range from 4.5 to 4.6 cfs.

Aside from the restricted rate limitation, this permit could not be recommended at the full rate of 7 cfs for two important reasons: 1. the full rate was not developed and diversions of 7 cfs were not made until after proof was filed in 1995; and 2. power generation records over the period 1999-2009 indicate no significant increase in power generation as a result of increased flows. In other words, there was no additional beneficial use as a result of increased flow rate. My understanding is that this was due to design limitations of the generation turbine.

The permit also contains a condition limiting power use "by the applicant to the Sunnybrook (hatchery) facility; future power use for other than the Sunnybrook facility will comply with all applicable state and federal requirements." Pristine signed a contract with FERC in 1993 which authorized sales of power to Idaho Power Company. The Idaho Water Resource Board has requested that the above condition be removed from the water right license.

This permit was approved with point of diversion and place of use within Lot 14, Section 29 with QQs described as NENW in each case. POD and POU for power are in fact within Lot 14, but the correct QQ description is SWNE Section 29. This has been corrected on the license. License amendment will be required to add uses and pou.

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	4.56 CFS	3,301.3 AF
DOMESTIC	01/01 to 12/31	0.06 CFS	
	<u>Totals:</u>	4.560 CFS	3,301.3 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 (add beneficial use)

I. AUTHENTICATION

Field Examiner's Name Cyenter Date 12.13.13

Reviewer _____ Date _____

Pristine Springs T09S R17E

IJK Raceways

DEMS Raceways

Sunnybrook Hatchery

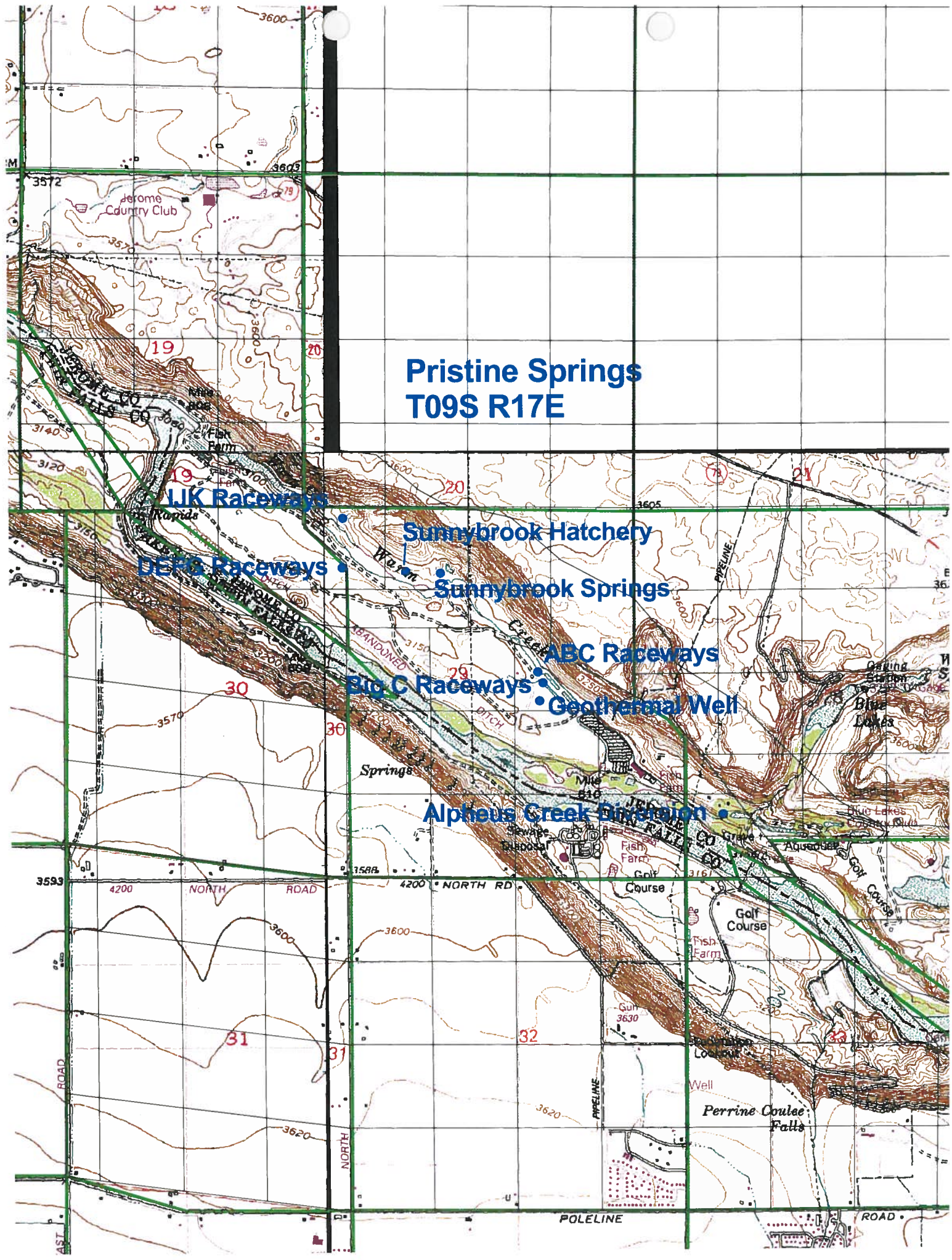
Sunnybrook Springs

ABC Raceways

Big C Raceways

Geothermal Well

Alpheus Creek Diversion



**PRISTINE SPRINGS DESCRIPTION OF DIVERSION WORKS
AND SUMMARY OF WATER RIGHT OVERLAPS
October 23, 2002**

Cindy Yenter, Sr. Water Resource Agent, Watermaster Water District 130

Partial licensing examinations have been conducted for permit nos. 36-8094, 36-8573, 36-7757 and 36-8414. This summary has been prepared to supplement the eventual license recommendations and also to aid in the processing of an application for transfer filed pursuant to water right no. 36-7130.

Facility Overview

Pristine Springs Inc operates an aquaculture facility and a hydropower generation plant in the Snake River Canyon in Jerome County. Both trout and warm-water tilapia are raised. Power generated is used at the Sunnybrook Hatchery and sold back to Idaho Power under terms of Pristine's FERC license. The sources of water are Alpheus Creek, Warm Creek, Sunnybrook Springs, geothermal ground water from an on-site well, and waste water from their facility and from Blue Lakes Trout, immediately upstream on Alpheus Creek. A land application system is used to spread solid waste from raceways.

Diversion Works and Measuring Devices (Current Configuration)

There are two primary diversions into the upper end of the facility. The first diversion is a pipeline which conveys first-priority Alpheus Creek water from the Blue Lakes Trout (BLT) pipeline directly into the Pristine ABC raceways. The Blue Lakes Trout facility is situated directly above Pristine Springs on the Alpheus drainage. Total flows in the pipeline are measured at the BLT diversion point over a 14-foot broad-crested weir. Flows to Pristine, amounting to 25.3 cfs under 36-3603C, are rediverted to a 6" pipeline just above the BLT raceways. Rediverted flows are measured through a submerged orifice installed in the 6" pipeline. Discharge from the ABC raceways is also measured over a 16' rectangular weir.

The second and largest upper diversion is a canal which captures tailwater from BLT. Flows in the canal are entirely derived from Alpheus Creek waters which have been diverted and used by BLT. A portion of the canal flow is taken into the Pristine Big C raceways, and the balance is diverted around the raceways in a 42" bypass pipeline. The Big C raceway discharge is measured over a 20' rectangular contracted weir. A weir at the head of the bypass pipeline is not functional due to submergence. Bypassed flows return to an exit canal below the Big C weir, joining discharges from the ABC raceways.

Note: Total flows measured over the BLT weir include both the Pristine first-priority and the BLT second-priority rights from Alpheus Creek. The Pristine first-priority amount is subtracted from the total to determine the BLT net diversion, which is also the amount delivered to the Pristine main canal. Total flows in the canal below the ABC discharge should equal the initial flow measured over the BLT weir.

The exit canal conveys all discharged and bypassed flows from the upper raceways to a point just above the Sunnybrook Hatchery, at the confluence with the old Warm Creek channel, where flows are again split. A portion of flows are diverted into a small impoundment on the Warm Creek drainage, below the Sunnybrook Hatchery. The remainder are placed in a 42"

pipeline and sent to lower raceways. There are no measuring devices at this divergence, although there is a control gate.

Cold water from the canal pipeline is mixed with hot water from the geothermal well and used at the DEFG raceways, situated south of the Warm Creek channel. Flows from the well are conveyed in a 21" pipeline to the main mixing box. The mixing box serves raceways DEFG, a hatch house and spawning ponds. It also receives recirculated warm water from below the raceways and is used to balance and maintain accurate temperature in the warm water raceways. The balance of the cold water goes to cold-water raceways in the same block. At present, 2 raceway runs are used for cold-water rearing, and 8 runs are used for warm-water rearing. Recycled flows are returned to the mixing box with 3, 20hp and 1, 10hp turbine pumps located at the end of the warm raceways and below the spawning ponds. All discharged flows from DEFG are sent to an upper settling pond (above and to the south of the Warm Creek channel), then into a lower settling pond on Warm Creek, and finally into the Snake River. There are no measuring devices at the DEFG raceways.

At the Sunnybrook Hatchery, the flows of Sunnybrook Spring are diverted via pipeline directly into the hatchery building. Discharge from the hatchery building is measured over an 8' rectangular weir and into the impoundment on Warm Creek, joining the waste flows from the upper hatchery. Also collected here are seeps and overflow from Sunnybrook springs which are not used in the hatchery. Flows below Sunnybrook are diverted into a canal leading to the IJK raceways situated north of the Warm Creek channel. Discharges from the IJK raceways occur at three locations into lower Warm Creek, where they flow into the lower settling pond and then into the Snake River. There are no measuring devices at the IJK raceways or in the diversion canal.

The geothermal flowing well at Pristine is equipped with an impeller-type Aquamaster in-line flowmeter, installed in the 12" discharge line from the well. The flowmeter was calibrated by IDWR on 11-14-2001 and found to be operating within $\pm 5\%$ of a standard polysonic meter. Geothermal flows are sent through a horizontal turbine generator prior to being used for fish propagation.

Solid waste from all raceways is pumped to one of two on-site sludge processing stations, situated below the Big C raceways, and below the DEFG raceways. A small amount of tailwater also flows through the sludge stations to help convey the waste to holding sites. During the irrigation season, solid waste is mixed with waste water and land-applied to pasture lands owned by Pristine. Land-applied flows are delivered using a 50hp turbine pump (at upper station) and 60hp turbine pump (at lower station) through pressurized mainline to solid-set or hand line sprinklers.

Water Right Overlap Analysis and Licensing Recommendations

Alpheus Creek

36-2603C is decreed for 25.3 cfs. This is the first-priority diversion on Alpheus Creek used directly in the ABC raceways in Lot 14 (SWNE) Sec 29. It may be measured in two locations: at the bypass orifice at BLT and at the ABC discharge weir. Historically, discharges appear to have been made directly to Warm Creek and were picked up below Sunnybrook under other rights (see below). This is still occurring, except discharges are now commingled with later in time flows, and first travel down a canal before reaching Warm Creek at the Sunnybrook facility. On the day of the exam, the discharge weir indicated a flow of 27.1 cfs.

Permit 36-7757 authorizes diversions of up to 215 cfs which are limited to the diversion of tailwater from Blue Lakes Trout. Diversions may be measured at the BLT weir (total flow minus first-priority bypass). It has been requested that the BLT weir be used as the primary measuring device for this right, and that should be acceptable provided that all of the diversions at Blue Lakes Trout are entirely from Alpheus Creek. POU under this right is shown at Big C raceways in Lot 14, and also in Lot 11. Secondary uses below Big C are actually at DEFG raceways, or in return flows to Warm Creek. There can be no specific use attributed to IJK raceways because the contribution to Warm Creek is not quantified. There is no use in Lot 11. The DEFG raceways are not included in the place of use of this permit and will be recommended to be added through licensing amendment. The highest recorded flow through the BLT raceways in 2000 was 209 cfs. Data from 2001 are incomplete because the measuring device was under reconstruction.

Sunnybrook Springs and Warm Creek

Warm Creek is a dry channel which only flows below Sunnybrook springs due to the influx from the springs, and return flows from the Pristine Canal.

Decreed right 36-2603D, 1.9 cfs, is diverted directly from Sunnybrook Springs and is used in the Sunnybrook hatchery building. The original location of this hatchery may have been in Lot 11. Its present location is in Lot 9 (NENW) Section 29.

Decreed right 36-200, 40 cfs, lists springs and Warm Creek as a source. Its POU is listed and shown as the Sunnybrook hatchery in Lot 9, raceways IJK in Lot 10 (NWNW) Sec 29 and Lot 4 (SWSW) Sec 20, and raceways DEFG in Lot 8 (NENE) Section 30, although flows from this source do not reach the DEFG block.

Permit 36-8414, 20 cfs, from Sunnybrook Springs, includes places of use for Sunnybrook Hatchery and IJK raceways. Flows from Sunnybrook Springs are not diverted directly to IJK. Rather, flows tributary to Warm Creek, including Sunnybrook Springs and the returned flows from Alpheus Ck, are diverted to IJK. Flows under this right are not really needed in the Sunnybrook hatchery, as the maximum reported flows over the Sunnybrook weir are around 8 or 9 cfs, and the earlier rights cover that amount. However, they may be needed to cover maximum diversions at IJK. Possible licensing amendments may include modifying the water source to Warm Creek.

Recommended right 36-15378, 748 acre-feet. This right is for the impounded flows in the settling pond on lower Warm Creek.

Flows from this complex are measured only over the Sunnybrook hatchery weir. Incoming return flows from the Alpheus canal are not measured. There is no device on the canal to IJK raceways. On the day of the exam, the Sunnybrook weir indicated a flow of 9.44 cfs.

Ground Water

Decreed right 36-7130, 4.5 cfs for fish propagation. POD and POU shown in Lot 14 (SWNE) Sec 29, also the location of the Big C raceways. Historical use of this right was in an earthen pond also in this location (*see Affidavit of Wendell Stark, attached*). However, present use is only in the DEFG raceways in Lot 10 (NENE) Sec 30. A transfer is pending to add Lot 10 as a place of use under this right.

Permit 36-8094, 7.0 cfs for power production. A condition of use on this permit limits diversions for power to the amount which may be beneficially used for the heat value of the water. POD and POU are incorrectly shown on permit as in NWNE Sec 29 and must be amended.

Claim 36-15218 for aesthetic storage was disallowed.

Waste Water

Permit 36-8573, 4.0 cfs for water quality improvement, through land application of fish waste. A license exam has not been conducted for this permit.

Claim 36-15336 was disallowed.

ALPHEUS CREEK DIVERSION

UPPER SYSTEM

FRESH WATER

BYPASS (25.3 cfs)

ORIFICE

BLUE LAKES TROUT

Settling Pond

WEIR (Submerged)

72" BYPASS LINE

ABC Raceways

Big C Raceways

Sludge

WEIR

WEIR

MAIN CANAL

HOT WELL

IRRIGATION PUMP

DEVICE REQD

ALPHEUS BYPASS

LOWER SYSTEM

SUNNYBROOK HATCHERY

WEIR

* Sunnybrook flows cannot be diverted to DEFG.

RECIRC

Hatch Hse.

Raceways

DEFG

MIXING BOX

HOT COLD

JK CANAL

DEVICE REQD

JK Raceways

Sludge

IRRIGATION PUMP

Settling

Settling

TO SNAKE RIVER (VIA HYDRO PLANT)

PRISTINE SPRINGS

Distribution System Schematic (NOT TO SCALE)

C. Yenter
5-11-04

IDAHO DEPARTMENT OF WATER RESOURCES
Water Measurement Program**WATER MEASURING DEVICE CERTIFICATION**

(Revised 7/2002)

District DWRDiversion Name Pristine Geo Well

Inventory Date _____

Inventory Examiner _____

PCC o.k.? ☐ Yes ☐ NoTest Date 6.10.08Person performing test CyenterExam complete? ☒ Yes ☐ No

Name: _____

Water Right No.: _____

Legal Description: T _____ R _____ Sec. _____ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ Site Tag No.: A0003168

Diversion Name: _____

Current Owner

Name _____

Phone _____

Address _____

Cell _____

City _____ St _____ Zip _____

E-mail _____

Operator (if leased or operated by person other than owner)

Name _____

Phone _____

Address _____

Cell _____

City _____ St _____ Zip _____

E-mail _____

SECTION 1 – Well Site Identification**Global Positioning System Data:**

Data Collection Filename _____ Offset _____

IDWR Site Tag Identification No. _____

Site Tag Location description: _____

PLS/USGS LOCATOR _____

For Department/District Use Only

Received by _____

Date _____

Reviewed by _____

Date _____

Data Entry By _____

Date _____

SECTION II – Installed Meter Information

METER AND MOUNTING PIPE INFORMATION			
Motor HP	flowing	Volume units	Acre-Feet <u>Gallons</u> Other (specify) _____
Meter Install Date	See Meter	Volume multiplier	1000
Manufacturer	SeaMetrics	Installation location	☐ Excel ☐ Fair ☒ Good ☐ Poor
Meter Type	Mag-Inserthen	Pipe material	CS
Meter Model		Outside diameter	12.75
Serial Number		Wall thickness	.373
Size (nominal)		Inside diameter	
Measure Flow Rate?	☒ Yes ☐ No	Amount of straight pipe upstream from meter	<u>144</u> Inches <u>12</u> Pipe Lengths
Measurement Units	☐ CFS ☒ GPM Other (specify) _____	Amount of straight pipe downstream from meter	<u>72</u> ~~144~~ Inches <u>6</u> ~~12~~ Pipe Lengths
Flow Rate Multiplier	1000	Standard Meter Type	☒ Sonic ☐ Pyg ☐ Collins ☐ Hall ☐ Anub ☐ Dye/chem ☐ Other _____
Measure Cumulative Volume?	☒ Yes ☐ No	Standard Meter Confidence	☐ Excellent 2% ☒ Good 5% ☐ Fair 10% ☐ Poor > 10%

9.92 FLG15

Multiple FlowmetersAre multiple flowmeters used to measure diversions from this well? ☐ Yes ☒ No

If yes, how many? _____

(Attach separate form for each meter checked and/or calibrated.)

Multiple Wells

If this meter measures diversions from multiple wells, list names and locations of other wells:

SECTION III – Certification for Calibration of a Water Measurement Meter

Measurement No. 1 (M_1) is the measured rate of flow from the permanently installed flow meter.

Measurement No. 2 (M_2) is the measured rate of flow from the measuring device being used to check the flow for the calibration. This method or device must be accurate to within $\pm 5\%$ error. Describe below the method and equipment used to perform this measurement.

$$\text{Percent Difference} = (M_1 - M_2) \div M_2 \times 100 = \pm \% \quad (\text{Acceptable is within } \pm 10\%) \quad (\text{equation 1})$$

$$\text{Calibration Multiplier} = M_2 \div M_1 \quad (\text{equation 2})$$

Is flowmeter installed according to manufacturer's specifications? ☐ Yes ☐ No ☐ Unsure

Describe any apparent problems with installation or operation _____

Flowmeter accuracy prior to any adjustments: _____ Totalizer reading _____

Flowmeter accuracy after final adjustment: _____ Totalizer reading _____

Flowmeter calibration multiplier: _____

FLOWMETER ACCURACY CALIBRATION TABLE

Installed meter (totalizer reading)	Time	Total Gallons	Average Flow Rate GPM (M_1)	Standard total gallons	Average Flow Rate GPM (M_2)	% diff. ($\pm$)	Comments and adjustments
590045	11:55						
590076	12:05	31000	3160	29519	2951.9	+7%	
	(9.81)						

Notes – Comments – Calculations: speed 5055 (5013 for 104°F) Sound = 4

test for purposes of verifying bypass flow.

LCD on display unit is malfunctioning – cannot read all numbers clearly

WATER LEVEL DATA	
Does the well have access to measure water levels? ~ Yes ~ No (check one)	
Is this well part of USGS, IDWR, or another network of water level monitoring wells? ~ Yes ~ No (check one)	
Static Water Level _____ ft Date _____	Pumping Water Level _____ ft (at condition _____) Date _____

Sketch and/or photograph of installation:

2nd Meas on bypass

~~W = 12.8~~
~~T = 2.59~~
~~Space = 9.85~~
~~FLGIS~~

→ Q = 0

Bypass is not flowing. ALL flow through generator.
 Orifice was changed in generator but power panel
 never upgraded so power curve did not change
 appreciably (fr. Bryan Tadlock)
 Can we verify through PUC records?

I certify that the above information is true and correct to the best of my knowledge and ability and the measurements taken and recorded are in accordance with the standards and specifications of the equipment used.

Signature _____ Date _____
 (person performing measurements)

Pristine Geothermal Well - flow check

LOG NAME:PRISTINE TOT

START :06-10 11:55

END :06-10 12:05

INTERVAL:00:01:00

6/10/2008 11:55

+8.375E+0 ft/s
+2.954E+3 gal/m
+TOTAL 0000000 gal
NORMAL

6/10/2008 12:01

+8.412E+0 ft/s
+2.967E+3 gal/m
+TOTAL 0017626 gal
NORMAL

6/10/2008 11:56

+8.327E+0 ft/s
+2.937E+3 gal/m
+TOTAL 0002898 gal
NORMAL

6/10/2008 12:02

+8.355E+0 ft/s
+2.947E+3 gal/m
+TOTAL 0020574 gal
NORMAL

6/10/2008 11:57

+8.436E+0 ft/s
+2.975E+3 gal/m
+TOTAL 0005843 gal
NORMAL

6/10/2008 12:03

+8.358E+0 ft/s
+2.948E+3 gal/m
+TOTAL 0023524 gal
NORMAL

6/10/2008 11:58

+8.378E+0 ft/s
+2.955E+3 gal/m
+TOTAL 0008792 gal
NORMAL

6/10/2008 12:04

+8.352E+0 ft/s
+2.946E+3 gal/m
+TOTAL 0026466 gal
NORMAL

6/10/2008 11:59

+8.366E+0 ft/s
+2.951E+3 gal/m
+TOTAL 0011738 gal
NORMAL

6/10/2008 12:05

+8.389E+0 ft/s
+2.959E+3 gal/m
+TOTAL 0029421 gal
NORMAL

6/10/2008 12:00

+8.364E+0 ft/s
+2.950E+3 gal/m
+TOTAL 0014674 gal
NORMAL

2942.1 gpm
6.56 cfs

IDAHO DEPARTMENT OF WATER RESOURCES
Water Measurement Program

WATER MEASURING DEVICE CERTIFICATION

(Revised 7/2002)

District _____

Diversion Name Pristine Geothermal Well

Inventory Date _____

Inventory Examiner _____

PCC o.k.? ☐ Yes ☐ No

Test Date 7/20/04

Person performing test C. Knowles

Exam complete? ☒ Yes ☐ No

Name: Pristine Springs

Water Right No.: _____

Legal Description: T 09S R 17E Sec. 29 SW 1/4 SW 1/4 NE 1/4

Site Tag No.: 40003168

Diversion Name: Geothermal Well

Current Owner

Name _____

Phone _____

Address _____

Cell _____

City _____ St _____ Zip _____

E-mail _____

Operator (if leased or operated by person other than owner)

Name Bryan Thibodeau

Phone _____

Address _____

Cell _____

City _____ St _____ Zip _____

E-mail _____

SECTION 1 – Well Site Identification

Global Positioning System Data:

Data Collection Filename _____ Offset _____

IDWR Site Tag Identification No. _____

Site Tag Location description: _____

PLS/USGS LOCATOR _____

For Department/District Use Only

Received by _____

Date _____

Reviewed by _____

Date _____

Data Entry By CPK

Date 7/20/04

SECTION II – Installed Meter Information

METER AND MOUNTING PIPE INFORMATION			
Motor HP	Artesian Flow	Volume units	Acre-Feet <u>Gallons</u> Other (specify) _____
Meter Install Date		Volume multiplier	X 10,000
Manufacturer	Groundwell	Installation location	☒ Excel ☐ Fair ☐ Good ☐ Poor
Meter Type	Area meter	Pipe material	CS
Meter Model	400 B	Outside diameter	12.75
Serial Number	19318	Wall thickness	.370
Size (nominal)	12"	Inside diameter	
Measure Flow Rate?	☒ Yes ☐ No	Amount of straight pipe upstream from meter	_____ Inches 6 Pipe Lengths
Measurement Units	☐ CFS ☒ GPM Other (specify) _____	Amount of straight pipe downstream from meter	_____ Inches 4 Pipe Lengths
Flow Rate Multiplier	X 100	Standard Meter Type	☒ Sonic ☐ Pyg ☐ Collins ☐ Hall ☐ Anub ☐ Dye/chem ☐ Other _____
Measure Cumulative Volume?	☒ Yes ☐ No	Standard Meter Confidence	☒ Excellent 2% ☐ Good 5% ☐ Fair 10% ☐ Poor > 10%

Multiple Flowmeters

Are multiple flowmeters used to measure diversions from this well? ☐ Yes ☐ No

If yes, how many? _____
(Attach separate form for each meter checked and/or calibrated.)

Multiple Wells

If this meter measures diversions from multiple wells, list names and locations of other wells:

SECTION III – Certification for Calibration of a Water Measurement Meter

Measurement No. 1 (M_1) is the measured rate of flow from the permanently installed flow meter.

Measurement No. 2 (M_2) is the measured rate of flow from the measuring device being used to check the flow for the calibration. This method or device must be accurate to within $\pm 5\%$ error. Describe below the method and equipment used to perform this measurement.

$$\text{Percent Difference} = (M_1 - M_2) \div M_2 \times 100 = \pm \% \quad (\text{Acceptable is within } \pm 10\%) \quad (\text{equation 1})$$

$$\text{Calibration Multiplier} = M_2 \div M_1 \quad (\text{equation 2})$$

Is flowmeter installed according to manufacturer's specifications? ☐ Yes ☐ No ☐ Unsure

Describe any apparent problems with installation or operation _____

Flowmeter accuracy prior to any adjustments: _____ Totalizer reading _____

Flowmeter accuracy after final adjustment: _____ Totalizer reading _____

Flowmeter calibration multiplier: _____

FLOWMETER ACCURACY CALIBRATION TABLE							
Installed meter (totalizer reading)	Time	Total Gallons	Average Flow Rate GPM (M_1)	Standard total gallons	Average Flow Rate GPM (M_2)	% diff. ($\pm$)	Comments and adjustments
537250	start	40000	2913.33	29511	2951.1	-1.28%	totalizer
537254	13:13 min				2941.3	-.95%	logger

Notes – Comments – Calculations: _____

WATER LEVEL DATA	
Does the well have access to measure water levels? ☐ Yes ☐ No (check one)	
Is this well part of USGS, IDWR, or another network of water level monitoring wells? ☐ Yes ☐ No (check one)	
Static Water Level _____ ft Date _____	Pumping Water Level _____ ft (at condition _____) Date _____

Sketch and/or photograph of installation:

I certify that the above information is true and correct to the best of my knowledge and ability and the measurements taken and recorded are in accordance with the standards and specifications of the equipment used.

Signature C. R. R. R. Date 7/20/04
(person performing measurements)

Pristine Springs Geothermal Well - A0003168

LOG NAME:PRISTENGEO THERM

START :07-20 16:15

END :07-20 16:25

INTERVAL:00:01:00

7/20/2004 16:15

+8.331E+0 ft/s
+2.941E+3 gal/m
+TOTAL 0000000 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:21

+8.319E+0 ft/s
+2.937E+3 gal/m
+TOTAL 0017624 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:16

+8.323E+0 ft/s
+2.938E+3 gal/m
+TOTAL 0002900 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:22

+8.354E+0 ft/s
+2.950E+3 gal/m
+TOTAL 0020573 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:17

+8.334E+0 ft/s
+2.942E+3 gal/m
+TOTAL 0005852 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:23

+8.345E+0 ft/s
+2.946E+3 gal/m
+TOTAL 0023526 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:18

+8.300E+0 ft/s
+2.930E+3 gal/m
+TOTAL 0008797 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:24

+8.343E+0 ft/s
+2.946E+3 gal/m
+TOTAL 0026471 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:19

+8.307E+0 ft/s
+2.933E+3 gal/m
+TOTAL 0011736 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:25

+8.338E+0 ft/s
+2.944E+3 gal/m
+TOTAL 0029413 gal
-TOTAL 0000000 gal
NORMAL

7/20/2004 16:20

+8.376E+0 ft/s
+2.957E+3 gal/m
+TOTAL 0014680 gal
-TOTAL 0000000 gal
NORMAL

Average Flow

**2941.3 gpm
6.55 cfs**

No.01
LOG NAME:PRIST1
START :01-26 15:42
END :01-26 15:52
INTERVAL:00:01:00

30-08094

Meas by:
A Folsom
1.26.2000

01-26 15:42:00
+8.423E+0 ft/s
+2.979E+3 gal/m
+TOTAL 0000099 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:43:00
+8.380E+0 ft/s
+2.963E+3 gal/m
+TOTAL 0001974 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:44:00
+8.410E+0 ft/s
+2.974E+3 gal/m
+TOTAL 0004637 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:45:00
+8.412E+0 ft/s
+2.975E+3 gal/m
+TOTAL 0007603 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:46:00
+8.368E+0 ft/s
+2.959E+3 gal/m
+TOTAL 0010319 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:47:00
+8.389E+0 ft/s
+2.967E+3 gal/m
+TOTAL 0013281 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:48:00
+8.396E+0 ft/s
+2.969E+3 gal/m
+TOTAL 0016246 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:49:00
+8.363E+0 ft/s
+2.958E+3 gal/m
+TOTAL 0019208 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:50:00
+8.357E+0 ft/s
+2.956E+3 gal/m
+TOTAL 0022170 gal
-TOTAL 0001990 gal
ABNORMAL

01-26 15:51:00
+8.388E+0 ft/s
+2.966E+3 gal/m
+TOTAL 0025133 gal
-TOTAL 0001990 gal
ABNORMAL

2979
2963
2974
2975
2959
2967
2969
2958
2956
2966
2973

$$\frac{32639}{10} = \frac{3264 \text{ gpm}}{448.83} = \boxed{7.27 \text{ cfs}}$$

01-26 15:52:00
+8.405E+0 ft/s
+2.973E+3 gal/m
+TOTAL 0027811 gal
-TOTAL 0001990 gal
ABNORMAL

Project Booked Kwh Monthly with Plant Size

Start Date 1/1/1995
End Date 12/31/2012

Project Number	Project Name	Contract Status	Calendar Year	Contract Type	Facility Type	Facility Category	Total YTD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
31415164	Pristine Springs #1	Active and Online	1995	PURPA	Hydro	Spring	684,521	0	0	0	0	154,055	0	143,487	77,398	50,000	93,418	16,211	149,952
31415164	Pristine Springs #1	Active and Online	1996	PURPA	Hydro	Spring	883,808	75,935	70,434	60,000	83,848	84,152	59,313	50,000	99,479	76,539	67,203	50,000	106,905
31415164	Pristine Springs #1	Active and Online	1997	PURPA	Hydro	Spring	848,438	70,000	73,135	85,586	70,000	69,579	74,936	60,000	79,999	49,524	56,978	109,549	49,152
31415164	Pristine Springs #1	Active and Online	1998	PURPA	Hydro	Spring	898,185	31,171	133,163	62,859	75,318	71,803	75,008	79,309	71,836	70,416	78,826	68,446	80,030
31415164	Pristine Springs #1	Active and Online	1999	PURPA	Hydro	Spring	861,639	72,506	66,630	79,278	73,750	52,386	50,000	82,121	84,757	72,570	74,627	75,857	77,157
31415164	Pristine Springs #1	Active and Online	2000	PURPA	Hydro	Spring	1,000,462	84,098	77,941	84,558	83,674	84,967	80,380	84,065	86,850	85,425	84,600	81,524	82,380
31415164	Pristine Springs #1	Active and Online	2001	PURPA	Hydro	Spring	965,461	83,010	75,323	81,544	81,309	83,935	78,023	84,549	84,630	82,424	82,822	65,933	81,959
31415164	Pristine Springs #1	Active and Online	2002	PURPA	Hydro	Spring	930,213	79,497	74,252	82,036	76,588	82,823	80,398	78,949	74,134	71,827	76,865	75,695	77,149
31415164	Pristine Springs #1	Active and Online	2003	PURPA	Hydro	Spring	912,898	79,344	76,107	30,073	117,717	73,837	72,986	78,158	78,482	76,574	77,412	74,982	77,226
31415164	Pristine Springs #1	Active and Online	2004	PURPA	Hydro	Spring	855,120	77,266	71,426	76,254	72,928	73,189	71,735	78,366	76,365	78,007	75,211	73,073	31,300
31415164	Pristine Springs #1	Active and Online	2005	PURPA	Hydro	Spring	891,438	77,314	69,730	78,080	74,854	75,925	64,156	73,897	78,514	76,895	77,227	74,720	70,126
31415164	Pristine Springs #1	Active and Online	2006	PURPA	Hydro	Spring	860,448	61,899	63,940	71,203	68,990	0	130,171	77,751	78,487	76,849	78,627	75,142	77,389
31415164	Pristine Springs #1	Active and Online	2007	PURPA	Hydro	Spring	925,393	77,587	70,052	78,876	74,487	78,624	75,731	76,803	79,148	72,544	81,210	74,497	85,834
31415164	Pristine Springs #1	Active and Online	2008	PURPA	Hydro	Spring	847,655	72,226	54,204	26,622	67,420	77,991	75,658	80,156	87,977	70,017	79,765	78,746	76,873
31415164	Pristine Springs #1	Active and Online	2009	PURPA	Hydro	Spring	786,618	79,961	69,221	69,567	39,831	29,160	66,635	72,930	67,067	73,564	73,968	71,313	73,401
31415164	Pristine Springs #1	Active and Online	2010	PURPA	Hydro	Spring	834,539	73,457	66,330	71,492	69,533	73,773	70,816	68,369	62,985	71,148	64,303	70,936	71,397
31415164	Pristine Springs #1	Active and Online	2011	PURPA	Hydro	Spring	855,725	72,591	67,677	71,650	70,070	72,331	69,969	72,780	71,950	70,696	73,108	70,720	72,183
31415164	Pristine Springs #1	Active and Online	2012	PURPA	Hydro	Spring	713,073	71,654	76,742	62,897	70,124	72,776	75,350	78,709	63,392	68,761	72,668	0	0
							15,555,834	1,239,616	1,256,307	1,172,575	1,270,441	1,311,306	1,271,265	1,420,360	1,403,450	1,203,780	1,368,838	1,207,344	1,340,413

Source: IPCO

Project Booked Kwh Monthly with Plant Size

Start Date 1/1/1992
End Date 12/31/1996

Project Number	Project Name	Contract Status	Calendar Year	Plant Size (KW)	Total YTD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
31415164	Pristine Springs #1	Active and Online	1995	125	684,521	0	0	0	0	154,055	0	143,487	77,398	50,000	93,418	16,211	149,952
31415164	Pristine Springs #1	Active and Online	1996	125	883,808	75,935	70,434	60,000	83,848	84,152	59,313	50,000	99,479	76,539	67,203	50,000	106,905
					1,568,329	75,935	70,434	60,000	83,848	238,207	59,313	193,487	176,877	126,539	160,621	66,211	256,857

Source : IPCO

Source: K Neely

Site ID# (Well Name)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	10 YR Average	8 YR Average 2001-08
Pristine Springs - Old	17	873	597	139	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pristine Springs	0	0	1927	3124	3165	3446																		
Canyon Springs	4420	4508	4188	4106	3702	3599	3903	3705	3781	3792	3307	4005	3913	3615	3794	3888	3706	3957	3971	3916	3976	4088		
CSI #1	278	269	147	376	365	387	616	516	403	88	15	229	371	219	72	326	372	48	536	188	132	35		
CSI #2	456	457	423	312	462	323	347	703	1019	872	625	407	264	354	487	363	269	627	281	237	394	583		
Twin Falls High School	154	130	149	137	121	117	115	112	109	97	47	112	47	99	96	83	65	88	88	95	92	86		
CSI Total	734	726	570	688	827	710	963	1219	1422	960	640	636	635	572	559	689	641	675	817	425	526	618		

Use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		
Space Heating	888	856	719	825	948	827	1078	1331	1531	1057	687	748	682	671	655	772	706	763	905	520	618	704		
Power Generation and Fish Farming	4437	5381	6712	7369	6881	7045	7461	6787	6797	6845	7863	8790	8815	8149	8474	8511	8560	8925	8740	7411	7280	7441		
Total	5325	6237	7431	8194	7829	7872	8539	8118	8328	7902	8550	9538	9497	8821	9129	9283	9266	9688	9645	7931	7898	8145		
																			9533			7991		

$$1993 \quad 3124 \text{ AF} / 365 / 1.9835 = 4.3 \text{ cfs}$$

$$1995 \quad 3446 \text{ AF} / 365 / 1.9835 = 4.8 \text{ cfs}$$

From 1/14/94
meeting

Questionable meter reading
Source: KNeely

METER READINGS

Well Number	Date	Gallons	Discharge rate in gallons per minute	Use in acre- feet	Operating/ shut in pressure in pounds per square inch	Water temperature (°C)	Remarks
9S 17E 29ACC1	1/4/93	371,368,000	160	-	128	43.0	
	2/2/93	371,482,000	-	23.3	131	43.0	Meter not working estimated use (160 gallons per minute)
	3/2/93	374,494,000	160	9.2	129	43.0	
	4/5/93	377,526,000	170	9.3	130	43.0	
	5/5/93	380,564,000	160	9.3	130	43.0	
	6/7/93	384,314,000	120	11.5	131	43.0	
	7/7/93	386,730,000	160	7.4	132	43.0	
	8/9/93	387,594,000	-	21.9	131	43.0	Meter not working estimated use (160 gallons per minute)
	9/3/93	387,621,000	-	17.0	133	43.0	Meter not working estimated use (160 gallons per minute)
	10/4/93	388,833,000	110	3.7	133	43.0	
	11/2/93	389,461,000	130	1.9	133	43.0	
	12/2/93	394,261,000	70	14.7	188	43.0	
	1/4/94	395,465,000	-	10.2	190	43.0	Meter not working estimated use (70 gallons per minute)
				total 139 (Rd)			

Loyal Cabal
New well

Source: K Neely

METER READINGS

Well Number	Date	Gallons	Discharge rate in gallons per minute	Use in acre-feet	Operating/shut in pressure in pounds per square inch	Water temperature (°C)	Remarks
9S 17E 29ACC2	1/4/93	209,365,000	1920	-	195	43.0	
	2/2/93	209,365,000	1960	286	194	43.0	Meter totalizer not working estimated use (1960 gallons per minute)
	3/2/93	209,365,000	1930	230	194	43.0	Meter totalizer not working estimated use (1930 gallons per minute)
	4/5/93	38,327,000	1910	291	194	43.0	New meter estimated use (1910 gallons per minute)
	5/3/93	114,531,000	1910	234	194	43.0	
	6/7/93	210,814,000	1960	295	198	43.0	
	7/7/93	293,705,000	1950	255	200	43.0	
	8/9/93	386,127,000	1960	284	200	43.0	
	9/3/93	454,633,000	1940	210	200	43.0	
	10/4/93	540,646,000	1880	264	200	43.0	
	11/2/93	619,219,000	1880	241	200	43.0	
	12/2/93	700,662,000	1970	250	200	43.0	
	1/4/94	793,202,000	1960	284	200	43.0	
				Total 3,124			

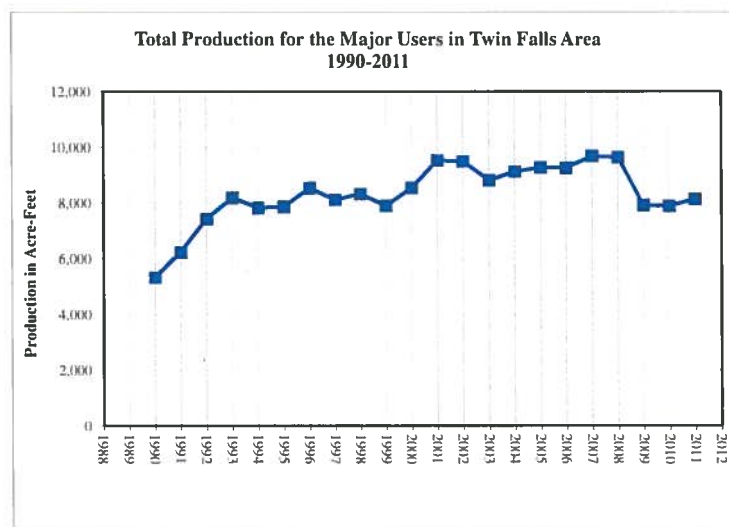
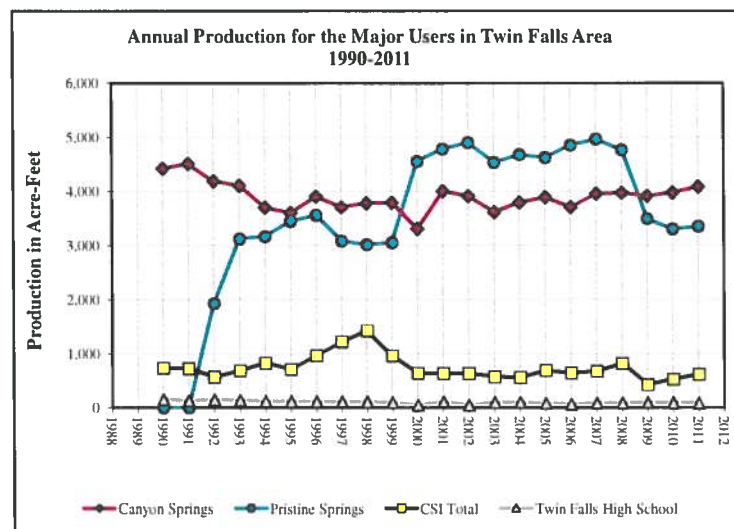
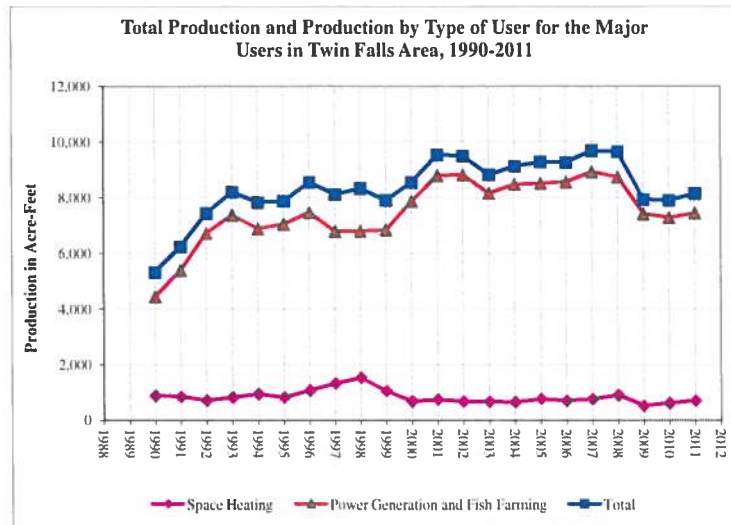
Source: KNeely

TWIN FALLS GEOTHERMAL
WITHDRAWALS
(acre feet)

Well #	1990	1991	1992	1993
9S-17E-29ACC1	17	873	597	139
9S-17E-29ACC2	<i>Pristine Springs</i> <i>Legal - Catfish</i>	-	1,927	3,124
9S-17E-33BBC1	4,420	4,508	4,188	4,106
10S-17E-04CAC1	456	457	423	312
10S-17E-04CDA1	278	269	147	376
10S-17E-10BDA1	154	130	149	137
TOTAL	5,325	6,237	7,431	8,194

USE	1990	1991	1992	1993
Space Heating	888	856	719	825
Power Generation and Fish Farming	4,437	5,381	6,712	7,369
TOTAL	5,325	6,237	7,431	8,194

Source: K Neely



Yenter, Cindy

From: Yenter, Cindy
Sent: Tuesday, September 11, 2012 3:55 PM
To: Gary Marquardt
Subject: Power generation records at Pristine Springs

Greetings Gary – I am working on licensing for five outstanding water right permits at Pristine Springs. Two are the power permits, 36-8094 for the geothermal well and 36-15959 for the lower turbine on Warm Creek. For these license recommendations I will need power generation records for each facility.

Does SeaPac have copies of the generation records for these plants? I need at minium the records during each permit development period. For the geothermal those years are 1992-1995, and for the Warm Springs plant the years are 2002-2004. Records for any subsequent years up to the present are also requested.

If you do not have these records, can you tell me who does? I know that Brian Patton has access to the more recent generation records, after the property was purchased by the IWRB. However for licensing we must go back and confirm generation and diversions at the time of proof filing.

Thanks for your assistance. If you're unable to help me with this, please let me know as soon as possible.

*Cindy Yenter
Idaho Department of Water Resources
Water Distribution Section
Twin Falls, ID
cindy.yenter@idwr.idaho.gov
208-736-3033*



C.L. "Butch" Otter
Governor

Terry T. Uhling
Chairman
Boise
District 2

Bob Graham
Secretary
Bonners Ferry
District 1

**Charles "Chuck"
Cuddy**
Orofino
At Large

Leonard Beck
Burley
District 3

Roger W. Chase
Pocatello
District 4

Vince Alberdi
Kimberly
At Large

Jeff Raybould
St. Anthony
At Large

Peter Van Der Meulen
Hailey
At Large

IDAHO WATER RESOURCE BOARD

December 13, 2012

Idaho Department of Water Resources
Attn: Ms. Cindy Yenter
P.O. Box 83720
322 E. Front St.
Boise, ID 83720-0098

Re: Pristine Springs Geo-thermal Power Production Permit #36-8094

Ms. Yenter:

On behalf of the Idaho Water Resource Board, I am writing this letter to have some of the language in the Permit to Appropriate Water #36-8094 removed. The language the Board would like removed from the Permit states that power generated from the geo-thermal well will only be used at the Sunnybrook facility and reads as follows from the Permit, Conditions/Remarks section, item 10:

"Power use is limited to use by the applicant for its Sunnybrook facility; future power use for other than the Sunnybrook facility will comply with all applicable state and federal requirements."

When the geo-thermal power production was being developed it was assumed that FERC would be the controlling entity for the power generation. At that time in 1993 language was placed into the FERC document QF93-106-000 that stated in section 4c that:

"However, we will use the power for our own use until all permits, contracts, etc are in place to convert to selling power to Idaho Power Co."

The Board assumes that this is the language the Permit is trying to convey but for clarification purposes would like the language removed or changed to allow the sale of power. As of the time of purchase of the Pristine Springs facility by the Board, contracts were in place for the selling of power produced by the geo-thermal and hydro turbines to Idaho Power Co. For this reason the Board would like the language removed from the Permit.

I have attached the FERC document and the current contract with Idaho Power Co. for your records and review.

Sincerely,

Stuart VanGreuning
Project Manager

ORIGINAL

PRISTINE SPRINGS, INC.
Route # 1, Box 1204
Filer, Idaho 83328

FILED
OFFICE OF THE SECRETARY
93 JUN 14 AM 10:03
FEDERAL ENERGY
REGULATORY
COMMISSION

TO: Office of the Secretary
Federal Energy Regulatory Commission
825 North Capitol Street NE
Washington, D.C. 20426

RE: Notice of self qualifying status for the
following small power production facility.
This facility meets all criteria listed by
the Federal Energy Regulatory Commission
as a qualifying facility.

PART A

- 1a - APPLICANT PRISTINE SPRINGS, INC
- 1b - ADDRESS Route # 1, Box 1204
Filer, Idaho 83328
- 1c - OWNER PRISTINE SPRINGS, INC.
- 1d - SIGNATURE OF AUTHORIZED INDIVIDUAL

Nyal Hoffman

2. - NAME - NYAL HOFFMAN

TITLE - Construction & Design Superintendent

PHONE - 208-326-5680 or 208-326-3237

ADDRESS - Route # 1, Box 1204 , Filer, Idaho 83328

3a. LOCATION OF FACILITY -

Lot 14 (NE NW) Sec. 29, Township 09S, Range 17EBM
At the end of Blue Lakes Road, Jerome County, Id.

- 3b. ELECTRIC UTILITY TO PURCHASE POWER PRODUCTION
Idaho Power Co.
Boise, Idaho

FERC DOCKETED
JUN 14 1993

- 4a. The prime mover of this facility will be water flow under
pressure from an existing low temperature - (108 degree)
artesian well. Flow through a Pelton Wheel Turbine coupled
to a synchronous generator, then to the existing warm water
aquaculture facility which uses the heat portion of the warm
water. This will be an "in conduit" facility.

- 4b. The maximum gross production capacity of this facility and
the net capacity will be the same, as no power will be used

9306210067

2049 0000

FILED
OFFICE OF THE SECRETARY

to operate this facility. This is a "stand alone" facility. Amount of production could vary. The equipment design at the present time is for 4.5 C.F.S. at 190 lbs. pressure producing approximately 120 KW per hour year around. This is the flow now being used for fish production. COMMISSION

More flow, up to 7 C.F.S. permitted under permit number #36-08094 (copy attached) issued by the State of Idaho Dept. of Water Resources, could increase production to approx. 170 KW with minor equipment change.

- 4c. The expected installation date will be July 15, 1993. However we will use the power for our own use until all permits, contracts, etc are in place to convert to selling power to Idaho Power Co.
- 4d. The primary energy source for this facility will be water under pressure from the existing well.
5. NONE
- 6a. Power production is an additional beneficial use of an existing water flow with no change in water quality. This should help the facilities qualifying status.
7. This facility will use no fossil fuel.
8. This is an eligible small power producing facility.

PART C

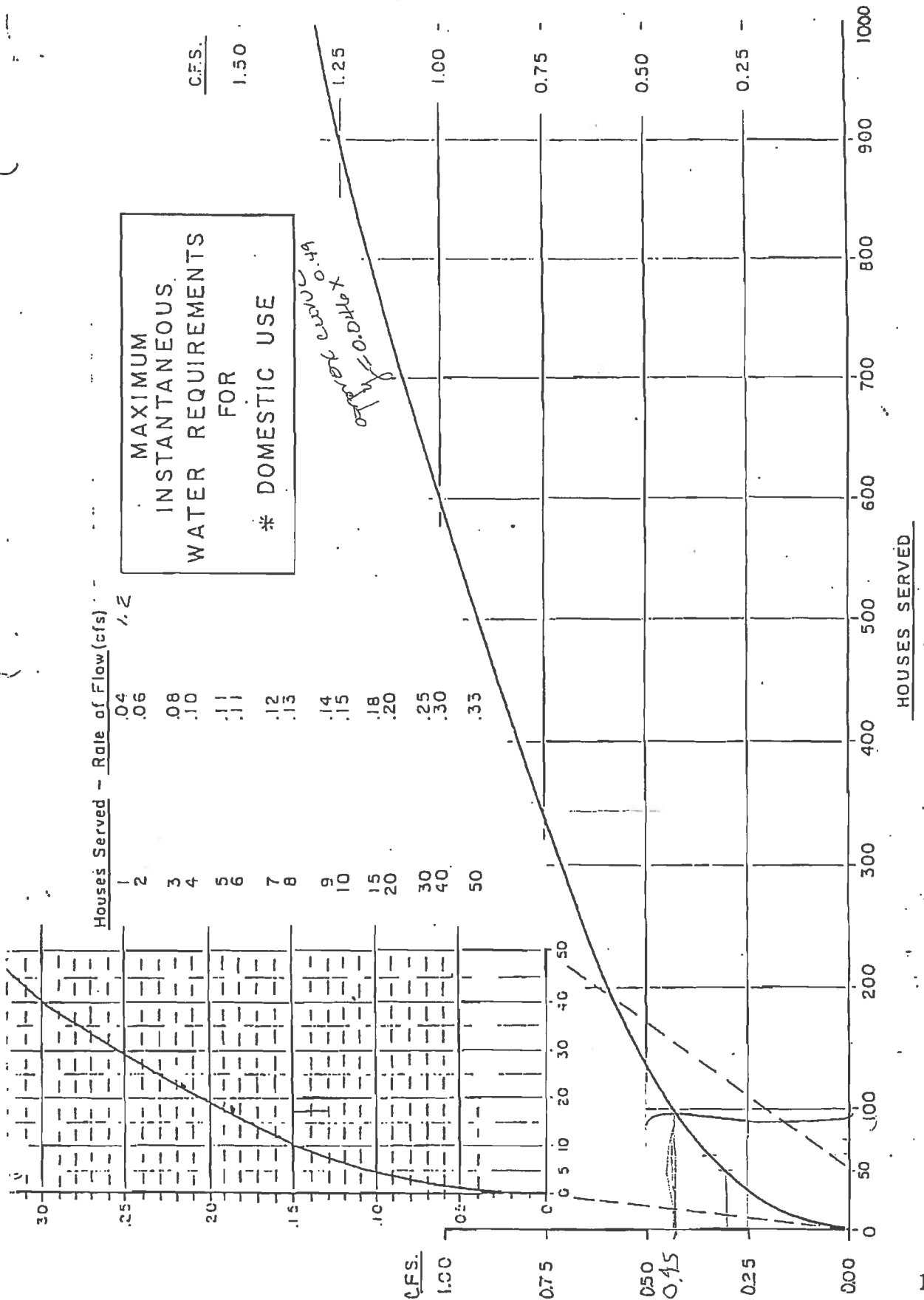
NOT APPLICABLE

Please accept the above information submitted by Pristine Springs, Inc.

If there are further questions or information needed, please call or write myself, Nyal Hoffman.

Sincerely yours,

Nyal Hoffman
Nyal Hoffman



STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources, within 30 days after the completion or abandonment of the well.

Location Corrected by IDWR To:

T09S R17E Sec. 29 NWNWSE

By: mciscell 2012-12-14

1. WELL OWNERName Pristine Springs, Inc.
Address 4074 N 2000 E Filer, ID 83328
Drilling Permit No. 36-91-Z-003
Water Right Permit No. 36-7130**2. NATURE OF WORK**

- ☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

- ☐ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☒ Other Fish Propagation & Power Generation (specify type)

4. METHOD DRILLED

- ☒ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other

Thickness	Diameter	From	To
.250 inches	8 5/8 inches	1 feet	582 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

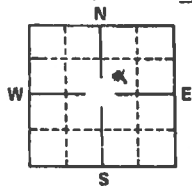
Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____
Placed from _____ feet to _____ feet
Surface seal depth _____ Material used in seal: ☐ Cement grout
☐ Bentonite ☐ Pudding clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing
☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent
☐ Cemented between joints
Describe access port _____

6. LOCATION OF WELL

Sketch map location must agree with written location.

Subdivision Name _____
Bottom of Blue Lakes _____
Grade _____
Lot No. _____ Block No. _____

County _____ Jerome

SW ¼ NE ¼ Sec. 29, T. 9 N 17 E

7. WATER LEVELFlowing _____
Static water level _____ feet below land surface.
Flowing? ☒ Yes ☐ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature _____ °F. Quality _____
Describe artesian or temperature zones below.**8. WELL TEST DATA**

☐ Pump ☐ Bailer ☐ Air ☐ Other

Discharge G.P.M.	Pumping Level	Hours Pump d
_____	_____	_____
_____	_____	_____
_____	_____	_____

9. LITHOLOGIC LOG

83922

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
12	270	302	Very hard Andesite		
	302	311	Slightly softer, trace brown andesite		
	311	359	Very hard black andesite		
	359	366	Softer black andesite		
	366	406	Very hard		
	406	424	Softer with little white/ran clay		
	424	440	Greenish clay with black		
	440	457	Grey basalt		
	457	465	Tannish clay & grey basalt	T	80°
	465	480	Greenish grey sandstone with sand & some clay		88°
	480	484	Sand, flowing 60 gpm		92°
			Overnight drops to 20 gpm		
	484	490	Whitish tan clay or shale		
	490	502	Greenish grey sand & sandstone		
	502	530	Soft black rhyolite		
	530	551	Grey & greenish shale or clay	X	
	551	574	Soft grey shale with layers of sand	X	98°
	574	590	Brown rhyolite		
8	590	605	Brown rhyolite		
	605		Brown rhyolite	X	
	605	624	Brown rhyolite		
	624	630	Brown rhyolite	X	100°
	630	770	Brown rhyolite	X	

Water comes mostly from

T09S R17E Sec. 29 NWNWSE

DEC 07 1992

Department of Water Resources

Southern Region Office

10. Work started 3/23/92 finished 4/24/92

11. DRILLERS CERTIFICATION

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

Firm Name Walker Water Systems, Inc. Firm No. 15
624 Pierce Street
Address Twin Falls, Idaho 83301 Date _____Signed by (Firm Official) Ind Walk
and
(Operator) _____

December 17, 2013

Pristine Springs Development Timeline
Cindy Yenter, Watermaster WD130

This narrative supplements an earlier Water Right Overlap Analysis dated 10.23.2002, and describes the sequential development of rights at Pristine Springs.

36-2603C. Priority 4.17.1964, 25.3 cfs, Decreed 1998. This is a split from 36-2603B also resulting in right no 36-2603D. This portion of the right is diverted from Alpheus Creek (aka Warm Creek) at a shared diversion with Blue Lakes Trout (BLT). A 1958 right no 36-2356 in the amount of 100 cfs had already been developed by BLT and was also being diverted and used at the time. Combined flows under the three rights originally travelled down an open ditch and later a closed pipeline to just above the BLT raceways where they were separated; 25.3 cfs fresh water was bypassed around BLT and delivered directly to Pristine where it was used in the first set of ponds, and later in developed raceways, named "ABC". The 25.3 cfs was discharged into the Warm Creek channel in Lot 14 Section 29. USGS topo maps show the original location of the Warm Creek channel to the north of the ABC raceways. It is unclear where the BLT effluent was being discharged during this period, but there is an abandoned ditch which runs along the south side of the Pristine property which may have been the BLT waste ditch. Based on comments found in 36-200, BLT effluent was not discharged to Warm Creek until after 1970 or so.

36-2603D. Priority 4.17.1964, 1.9 cfs, Decreed 1997. This split of 36-2603B is diverted from Sunnybrook Springs and used in a hatchery building. The Sunnybrook complex consists of a number of springs emanating from the canyon wall and collecting in Warm Creek beginning approximately ½ mile below the ABC raceways.

36-7130. Priority 5.6.1970, 4.5 cfs, Decreed 1998, geothermal ground water. Originally licensed for 6.0 cfs, the license was reduced to 4.5 cfs as a result of a settlement in the Twin Falls moratorium area. The right was obtained to raise catfish in ponds, although raceways were later constructed. These raceways are now known as "Big C". These flows were also discharged to Warm Creek.

36-200. Priority 9.30.1970, 40 cfs from Sunnybrook Springs and Warm Creek. File comments indicate that the source of water for this right is the 25.3 cfs waste water from 36-2603C, 4.5 cfs waste runoff from the hot well, and 1.9 cfs waste water from 36-2603D, plus other springs arising in the Sunnybrook complex. This seems to infer that there was not any other flow in Warm Creek at the time.

36-15378. Priority 10.27.1977, Decreed 1998. Storage for an on-stream impoundment on Warm Creek. Diversions under 36-200 and re-diversions under 36-7757 are taken at various points in the impound area.

36-7757. Priority 10.27.1977. Permit was protested and not approved until 1991. By this time the application had been amended twice to change both pod and pou. New raceways on the west end of the property had been included in the pou. Raceway blocks DEFG and IJK appear on aerial photography shortly after 1991, and both receive water under the permit. This permit authorized up to 215 cfs diversion of Alpheus Creek flow, diverted as effluent or waste water only at the discharge of Blue Lakes Trout Farm (BLT). Prior to 1977, BLT developed two additional rights from Alpheus Creek, thus increasing their discharges. The discharge channel from BLT was re-routed so flows could be

diverted at Pristine just past the property line. Waste flows were delivered first to the Big C raceways, then discharged into Warm Creek. BLT effluent in excess of that used in Big C raceways is bypassed around the Big C raceways in a 42" pipe and discharged to Warm Creek. The Warm Creek channel below ABC and Big C raceways was enlarged to form the Pristine Main Canal. Waste flows in the Pristine canal travel northwesterly through the property for approximately 0.3 mile. An old ditch appeared to delivered water to the DEFG raceways situated on the south side of Warm Creek; that ditch has since been replaced with a 42" pipe. The balance of the water in the canal is injected into the original Warm Creek channel and commingled with the spring flows in the Sunnybrook complex. Commingled water is rediverted at two additional locations from the Sunnybrook impound. All discharge from lower raceways enters a large settling pond at the lower (west end of the property)

36-8094. Priority 6.28.1982. Permit was not approved until 1992. Authorizes geothermal ground water for power production. Permitted for 7 cfs, but diversions are limited by beneficial use for heat value. The only right developed for that purpose from this source is 36-7130 so licensing under this right limits diversions to 4.56 cfs, which recognizes fish propagation use of 4.5 cfs under 36-7130 and 0.6 cfs domestic use added to 36-8094 under license amendment.

36-8414. Priority 3.7.1989. Permit seeks an additional 20 cfs from Sunnybrook Springs for fish propagation. The intent behind this permit may have been to appropriate some of the waste water injected into Warm Creek from 36-7757 to cover diversions to lower raceways. However, the Springs and not Warm Creek are listed as the source. This amount of water is simply not available from the springs proper and there is no evidence that additional beneficial use was made from this source above that authorized under 36-200.

36-8573. Priority 12.21.1990. Permit authorizes diversion of waste water for water quality improvement purposes, in the form of land application for irrigation. Water is pumped at two sludge separation stations located below the upper and lower sets of raceways, into pivots and large stationary water canons. Sludge liquids are mixed with waste water directly from the raceways to provide adequate dilution and flow. Water is land applied to approximately 150 acres of pasture. In winter when irrigation is not occurring, pumps are used to move sludge liquids to a small settling pond at the lower end of the property.

36-15959. Priority 10.18.2001. Authorizes power production from lower Warm Creek. This plant diverts all flows entering Pristine Springs, flows from the Sunnybrook Spring complex, and any springs which arise in the settling pond. The penstock exits the lower end of the final settling pond, and discharges directly into the Snake River. The design of this plant is low-head and unconventional; due to fluctuating river flows a single operational curve is not available. IDWR was able to develop a theoretical curve for maximum diversions.

In 2003, a transfer was filed on 36-7130, expanding the pou of the geothermal ground water right for fish propagation to include the DEFG raceways on the northwest end of the property. However, after transfer approval the owners used the warm water strictly in raceways DEFG and the brood ponds in Lot 10 Sec 29. This moved the discharge point of the warm water from just below the Big C raceways, to lower Warm Creek below the Sunnybrook area, and shifted the distribution of flows under 36-7757 so that nearly all of the reused flow was being injected into Warm Creek and only 5-7 cfs was being diverted to DEFG as cooling water.

**PRISTINE SPRINGS DESCRIPTION OF DIVERSION WORKS
AND SUMMARY OF WATER RIGHT OVERLAPS
October 23, 2002**

Cindy Yenter, Sr. Water Resource Agent, Watermaster Water District 130

Partial licensing examinations have been conducted for permit nos. 36-8094, 36-8573, 36-7757 and 36-8414. This summary has been prepared to supplement the eventual license recommendations and also to aid in the processing of an application for transfer filed pursuant to water right no. 36-7130.

Facility Overview

Pristine Springs Inc operates an aquaculture facility and a hydropower generation plant in the Snake River Canyon in Jerome County. Both trout and warm-water tilapia are raised. Power generated is used at the Sunnybrook Hatchery and sold back to Idaho Power under terms of Pristine's FERC license. The sources of water are Alpheus Creek, Warm Creek, Sunnybrook Springs, geothermal ground water from an on-site well, and waste water from their facility and from Blue Lakes Trout, immediately upstream on Alpheus Creek. A land application system is used to spread solid waste from raceways.

Diversion Works and Measuring Devices (Current Configuration)

There are two primary diversions into the upper end of the facility. The first diversion is a pipeline which conveys first-priority Alpheus Creek water from the Blue Lakes Trout (BLT) pipeline directly into the Pristine ABC raceways. The Blue Lakes Trout facility is situated directly above Pristine Springs on the Alpheus drainage. Total flows in the pipeline are measured at the BLT diversion point over a 14-foot broad-crested weir. Flows to Pristine, amounting to 25.3 cfs under 36-3603C, are rediverted to a 6" pipeline just above the BLT raceways. Rediverted flows are measured through a submerged orifice installed in the 6" pipeline. Discharge from the ABC raceways is also measured over a 16' rectangular weir.

The second and largest upper diversion is a canal which captures tailwater from BLT. Flows in the canal are entirely derived from Alpheus Creek waters which have been diverted and used by BLT. A portion of the canal flow is taken into the Pristine Big C raceways, and the balance is diverted around the raceways in a 42" bypass pipeline. The Big C raceway discharge is measured over a 20' rectangular contracted weir. A weir at the head of the bypass pipeline is not functional due to submergence. Bypassed flows return to an exit canal below the Big C weir, joining discharges from the ABC raceways.

Note: Total flows measured over the BLT weir include both the Pristine first-priority and the BLT second-priority rights from Alpheus Creek. The Pristine first-priority amount is subtracted from the total to determine the BLT net diversion, which is also the amount delivered to the Pristine main canal. Total flows in the canal below the ABC discharge should equal the initial flow measured over the BLT weir.

The exit canal conveys all discharged and bypassed flows from the upper raceways to a point just above the Sunnybrook Hatchery, at the confluence with the old Warm Creek channel, where flows are again split. A portion of flows are diverted into a small impoundment on the Warm Creek drainage, below the Sunnybrook Hatchery. The remainder are placed in a 42"

pipeline and sent to lower raceways. There are no measuring devices at this divergence, although there is a control gate.

Cold water from the canal pipeline is mixed with hot water from the geothermal well and used at the DEFG raceways, situated south of the Warm Creek channel. Flows from the well are conveyed in a 21" pipeline to the main mixing box. The mixing box serves raceways DEFG, a hatch house and spawning ponds. It also receives recirculated warm water from below the raceways and is used to balance and maintain accurate temperature in the warm water raceways. The balance of the cold water goes to cold-water raceways in the same block. At present, 2 raceway runs are used for cold-water rearing, and 8 runs are used for warm-water rearing. Recycled flows are returned to the mixing box with 3, 20hp and 1, 10hp turbine pumps located at the end of the warm raceways and below the spawning ponds. All discharged flows from DEFG are sent to an upper settling pond (above and to the south of the Warm Creek channel), then into a lower settling pond on Warm Creek, and finally into the Snake River. There are no measuring devices at the DEFG raceways.

At the Sunnybrook Hatchery, the flows of Sunnybrook Spring are diverted via pipeline directly into the hatchery building. Discharge from the hatchery building is measured over an 8' rectangular weir and into the impoundment on Warm Creek, joining the waste flows from the upper hatchery. Also collected here are seeps and overflow from Sunnybrook springs which are not used in the hatchery. Flows below Sunnybrook are diverted into a canal leading to the IJK raceways situated north of the Warm Creek channel. Discharges from the IJK raceways occur at three locations into lower Warm Creek, where they flow into the lower settling pond and then into the Snake River. There are no measuring devices at the IJK raceways or in the diversion canal.

The geothermal flowing well at Pristine is equipped with an impeller-type Aquamaster in-line flowmeter, installed in the 12" discharge line from the well. The flowmeter was calibrated by IDWR on 11-14-2001 and found to be operating within $\pm 5\%$ of a standard polysonic meter. Geothermal flows are sent through a horizontal turbine generator prior to being used for fish propagation.

Solid waste from all raceways is pumped to one of two on-site sludge processing stations, situated below the Big C raceways, and below the DEFG raceways. A small amount of tailwater also flows through the sludge stations to help convey the waste to holding sites. During the irrigation season, solid waste is mixed with waste water and land-applied to pasture lands owned by Pristine. Land-applied flows are delivered using a 50hp turbine pump (at upper station) and 60hp turbine pump (at lower station) through pressurized mainline to solid-set or hand line sprinklers.

Water Right Overlap Analysis and Licensing Recommendations

Alpheus Creek

36-2603C is decreed for 25.3 cfs. This is the first-priority diversion on Alpheus Creek used directly in the ABC raceways in Lot 14 (SWNE) Sec 29. It may be measured in two locations: at the bypass orifice at BLT and at the ABC discharge weir. Historically, discharges appear to have been made directly to Warm Creek and were picked up below Sunnybrook under other rights (see below). This is still occurring, except discharges are now commingled with later in time flows, and first travel down a canal before reaching Warm Creek at the Sunnybrook facility. On the day of the exam, the discharge weir indicated a flow of 27.1 cfs.

Permit 36-7757 authorizes diversions of up to 215 cfs which are limited to the diversion of tailwater from Blue Lakes Trout. Diversions may be measured at the BLT weir (total flow minus first-priority bypass). It has been requested that the BLT weir be used as the primary measuring device for this right, and that should be acceptable provided that all of the diversions at Blue Lakes Trout are entirely from Alpheus Creek. POU under this right is shown at Big C raceways in Lot 14, and also in Lot 11. Secondary uses below Big C are actually at DEFG raceways, or in return flows to Warm Creek. There can be no specific use attributed to IJK raceways because the contribution to Warm Creek is not quantified. There is no use in Lot 11. The DEFG raceways are not included in the place of use of this permit and will be recommended to be added through licensing amendment. The highest recorded flow through the BLT raceways in 2000 was 209 cfs. Data from 2001 are incomplete because the measuring device was under reconstruction.

Sunnybrook Springs and Warm Creek

Warm Creek is a dry channel which only flows below Sunnybrook springs due to the influx from the springs, and return flows from the Pristine Canal.

Decreed right 36-2603D, 1.9 cfs, is diverted directly from Sunnybrook Springs and is used in the Sunnybrook hatchery building. The original location of this hatchery may have been in Lot 11. Its present location is in Lot 9 (NENW) Section 29.

Decreed right 36-200, 40 cfs, lists springs and Warm Creek as a source. Its POU is listed and shown as the Sunnybrook hatchery in Lot 9, raceways IJK in Lot 10 (NWNW) Sec 29 and Lot 4 (SWSW) Sec 20, and raceways DEFG in Lot 8 (NENE) Section 30, although flows from this source do not reach the DEFG block.

Permit 36-8414, 20 cfs, from Sunnybrook Springs, includes places of use for Sunnybrook Hatchery and IJK raceways. Flows from Sunnybrook Springs are not diverted directly to IJK. Rather, flows tributary to Warm Creek, including Sunnybrook Springs and the returned flows from Alpheus Ck, are diverted to IJK. Flows under this right are not really needed in the Sunnybrook hatchery, as the maximum reported flows over the Sunnybrook weir are around 8 or 9 cfs, and the earlier rights cover that amount. However, they may be needed to cover maximum diversions at IJK. Possible licensing amendments may include modifying the water source to Warm Creek.

Recommended right 36-15378, 748 acre-feet. This right is for the impounded flows in the settling pond on lower Warm Creek.

Flows from this complex are measured only over the Sunnybrook hatchery weir. Incoming return flows from the Alpheus canal are not measured. There is no device on the canal to IJK raceways. On the day of the exam, the Sunnybrook weir indicated a flow of 9.44 cfs.

Ground Water

Decreed right 36-7130, 4.5 cfs for fish propagation. POD and POU shown in Lot 14 (SWNE) Sec 29, also the location of the Big C raceways. Historical use of this right was in an earthen pond also in this location (*see Affidavit of Wendell Stark, attached*). However, present use is only in the DEFG raceways in Lot 10 (NENE) Sec 30. A transfer is pending to add Lot 10 as a place of use under this right.

Permit 36-8094, 7.0 cfs for power production. A condition of use on this permit limits diversions for power to the amount which may be beneficially used for the heat value of the water. POD and POU are incorrectly shown on permit as in NWNE Sec 29 and must be amended.

Claim 36-15218 for aesthetic storage was disallowed.

Waste Water

Permit 36-8573, 4.0 cfs for water quality improvement, through land application of fish waste. A license exam has not been conducted for this permit.

Claim 36-15336 was disallowed.

UPPER SYSTEM

ALPHEUS CREEK
DIVERSION

FRESH WATER

BYPASS (25.3 CFS)

ORIFICE

BLUE
LAKES
TROUT

Settling
pond

WEIR (Submerged)

42" BYPASS
LINE

ABC
Raceways

Big C
Raceways

Sludge

(P)

WEIR

(W)
HOT
WELL

IRRIGATION
PUMP

*
DEVICE
READ

LOWER
SYSTEM

ALPHEUS
BYPASS

SUNNYBROOK
HATCHERY

WEIR

* Sunnybrook
flows cannot be
diverted to
DEFG.

RECIRC

Hot
Hse.

(R)

Raceways

(R)

DEFG

MIXING
BOX

HOT
COLD

1JK
CANAL

*
DEVICE
READ

1JK
Raceways

Sludge

(P)

IRRIGATION
PUMP

WARM CREEK

Settling

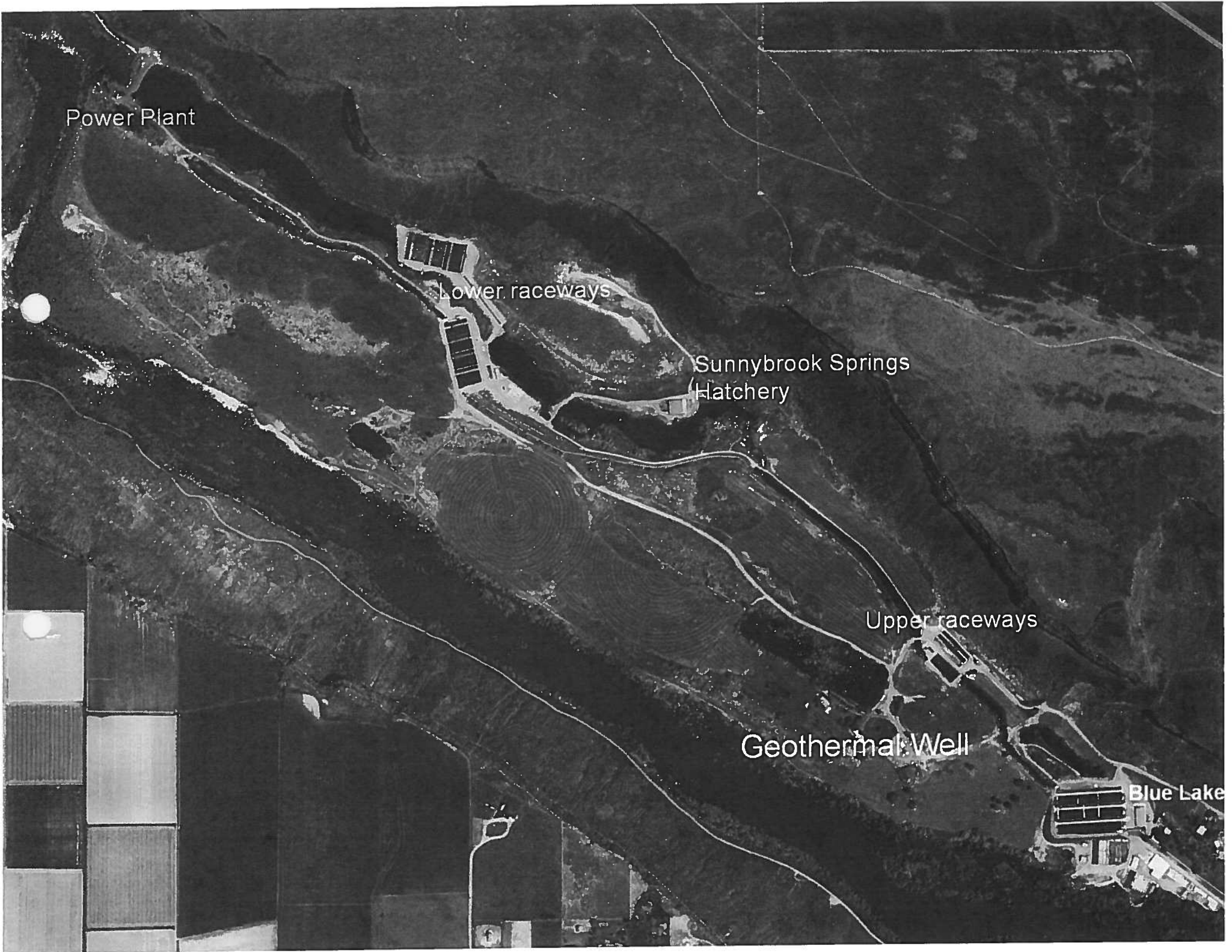
Settling

TO SNAKE RIVER (VIA HYDRO PLANT)

PRISTINE
SPRINGS

Distribution
System
Schematic
(NOT TO SCALE)

C. Yenter
5-11-04



Power Plant

Lower raceways

Sunnybrook Springs
Hatchery

Upper raceways

Geothermal Well

Blue Lake

Photos by :
A. Folsom 6/2000

Wellhead —
OLD flow
meter —

Bypass
valve —



Generator



Generator



Photos by :
A Folsom 6/2000

Bypass Line



OLD flow
meter (replaced
2001)

