

LAND & WATER RIGHTS

Bruce A. Estes, PLS, CWRE

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WATER RESOURCES DEPT
SALEM, OREGON60382 Arnold Mkt. Rd.
Bend, OR 97702
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FAX 382-7391PO Box 17519
Salem, OR 97305-7519
(503) 585-7593
FAX 585-7593**CLAIM OF BENEFICIAL USE SITE REPORT****I. General Information**

1. Application number: S - 71293
2. Permit number: 51439 & T-6621 E
3. County: Umatilla
4. Tax Lot Information: Tax map number 5 29 12. Tax lot number 100
5. Date of Site Inspection: August 12 and 13, 2004.
6. Persons interviewed: Bureau - Chet Sater, Acting Manager and Jim Henry, Pumping Plant Operator. Ray Kopacz, manager, Stanfield Irrigation District. Chuck Wilcox, manager, Hermiston Irrigation District.
7. Permittee: U. S. Bureau of Reclamation U.S. Bureau of Reclamation
Pacific Northwest Region Umatilla Field Office
1150 N. Curtis Rd. 32871 Diagonal Road
Boise, ID 83706-1234 Hermiston, OR 97838
8. Property owner: NA
9. If any property described in the permit or transfer final order is not included in this report, identify the owner of record for that property (ORS 537.230(3)): Project was developed as planned. All sites were included.

II. Points of Diversion/Appropriation and Place of Use

1. Point of Diversion: Columbia River Pumping Plant
2. Source: Columbia River (Lake Wallula).
3. Point of diversion located: SE 1/4 SE 1/4, Section 12, T 5 N, R 29 E, W.M. - 280' North & 460' West from the SE corner of Section 12.
4. Use: Umatilla River Instream Flow Enhancement through an exchange with irrigation water from the Umatilla River. **Total Quantity of Water: 240 cfs**
5. Place of use for the point of diversion: HERMISTON IRRIGATION DISTRICT and STANFIELD IRRIGATION DISTRICT.

System Information:

1. & 2. Pump and Motor information:

Columbia River Pumping Plant: Six Kato electric verticle shaft motors running turbine pumps in the stilling basin. C-1 2500 HP, serial # 10356-04; C-2 2500HP, serial# missing; C-3 2500 HP, serial # 10356-3; C-4 1000 HP, serial # 10355-02; C-5 1000 HP, serial # 10355-01; and C-6 2500 HP, serial # 10356-2. The four 2500 HP pumps have 36" steel discharge pipes and the two 1000 HP pumps have 24" steel discharge pipes all into collection manifold to the 66" pipe to the Columbia - Cold

Springs Canal. According to the engineering drawings this station has a total dynamic head (TDH) of 335'. Therefore the 2500 HP pumps should be capable of $7.04 \times 2500 / 335 = 52.5$ cfs open discharge. The 1000 HP pumps should be $7.04 \times 1000 / 335 = 21.0$ cfs.

Cold Springs Pumping Plant: Six US Electric 250 HP verticle shaft motors on turbine pumps with 24" intake and discharge pipes manifolded into a 60" steel pipe to the Furnish Canal. This station has a TDH of 62.5'.

Stanfield Relift Pumping Plant: Two 250 HP and two 125 HP pumps into 42" HDPE pipe to Furnish Canal. This station has a TDH of 61'.

Echo Pump: A 50 HP pump with a TDH of 122' to the cistern.

3. Meter information: Class A gaging station at head of Columbia - Cold Springs Canal

4. Measurement device description: Continuous recording gaging station.

5. Measured pump capacity: The gaging station recorded 238 cfs on August 14 and 15, 1998. That is well within the tolerance of error to use as 240 cfs.

6. Theoretical pump capacity: Columbia River Pumping Plant - 252 cfs

7. Hydraulic calculations:

Columbia River Pumping Plant: The 2500 HP pumps should be capable of $7.04 \times 2500 / 335 = 52.5$ cfs open discharge. The 1000 HP pumps should be capable of $7.04 \times 1000 / 335 = 21.0$ cfs. $4 \times 52.5 + 2 \times 21 = 252$ cfs. It is probably only capable of this in June when the backwater curve from McNary Dam is the highest.

Columbia - Cold Springs Canal: Concrete lined canal with 6' bottom, 1 1/2 : 1 side slopes, 7.2' deep on a 0.03% slope. With an n value of 0.013 in Manning's formula the canal should be capable of $1.486 / 0.013 \times 67.5 \times 1.9914 \times 0.0173 = 265$ cfs at 5' deep.

Cold Springs Pumping Plant: The pumps should be capable of $7.04 \times 250 / 62.5 = 28.2$ cfs each or 169 cfs total (design 150 cfs).

Stanfield Relift Pumping Plant: $7.04 \times 250 / 61 = 28.9$ cfs. $7.04 \times 125 / 61 = 14.4$ cfs. Total $2 \times 28.9 + 2 \times 14.4 = 86.6$ cfs (design 75 cfs).

Echo Pump: $7.04 \times 50 / 122 = 2.89$ cfs (part of usage is before the cistern)

8. Mainline information: NA

9. Handline information: NA

10. Sprinkler information: NA

11. Additional notes or comments related to the system:

Oregon Department of Fish and Wildlife and the Confederated Tribes of the Umatilla Indian Reservation determine the necessary flows for the Umatilla River. Hermiston I. D. and Stanfield I. D. forgo using Umatilla River water and are provided water from the phase II system whenever needed for the fish flows.

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III. CONDITIONS

1. Time Limits:

a. "A" date(April 21, 1993): Constructed five new gaging stations required by the permit May 1992 - March 1993. Actual construction of the Columbia Pumping Plant was begun in 1993. Cold Springs Reservoir and irrigation district facilities in place prior to permit.

"B" date(extended to Oct 1, 2001): Columbia River Pumping Plant was completed August 6, 1996. Cold Springs Pumping Plant was completed December 23, 1996. North Branch Furnish Canal Enlargement completed March, 1996. Upper Furnish Canal and

Echo area system completed fall 1999 (use was made via canal checks for Echo area in 1998). Control system was completed October, 2000.

"C" date (extended to Oct 1, 2001): All pumps ran at capacity on August 14, 15 and 16, 1998.

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2. **Initial Water Level Measurements:** NA.

3. **Annual Static Water Level Measurements:** NA

4. **Measurement, recording, and reporting conditions:**

a. Does the permit or transfer final order require the installation of a meter or approved measuring device? YES

b. Has a meter been installed? YES, there are 21 gaging stations used in the exchange system. The transfer required 22 gaging stations, but the Umatilla River nr. Cottonwood Bend station was deleted after determining it was not necessary.

c. Provide the date the meter was installed: The gaging stations were completed in 1996.

f. Is the water user required to report the water use to the Department? YES

g. Have the reports been submitted? YES, the Watermaster monitors the flows daily.

5. **Fish Screening and/or By-pass Devices**

a. Are any points of diversion required to be screened and/or have a by-pass device to prevent fish from entering the point of diversion? YES, approved screen system was part of the Columbia River Pump Plant and has been maintained since completion.

6. **Pump Test** (typically required for ground water uses prior to issuance of a certificate, but not a requirement of permit development) NA.

7. **Other Permit Conditions:**

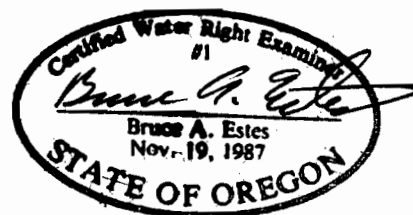
This is a very complicated and comprehensive control system. It requires coordination between ODF&W, CTUIR, WRD and USBR. To be successful the Bureau has many full time employees on the Umatilla for both phase I and II. All parties have been very cooperative. This should be considered a model for success.

IV. Conclusions, Signatures

Permit and Transfer Final Order Rates and System Rates Comparisons:

The system capacity is 252 cfs, but the authorized rate in the permit cannot be exceeded, therefore the rate must be limited to 240 cfs.

An inspection of the project developed under the terms and conditions of permit 51439 and exchange transfer T-6621E was made by me August 12 & 13, 2004, and the facts contained in this report and accompanying map are correct to the best of my knowledge.



I, Chet ^{Sater} ~~Sager~~, agree with Mr Estes' findings and submit this site report and map as our claim of Beneficial Use of the water for permit 51439 and T-6621E and hereby request a water right certificate be issued.



Date 10/7/04

Chet ~~Sager~~, Acting Manager, Umatilla Project
^{Sater}

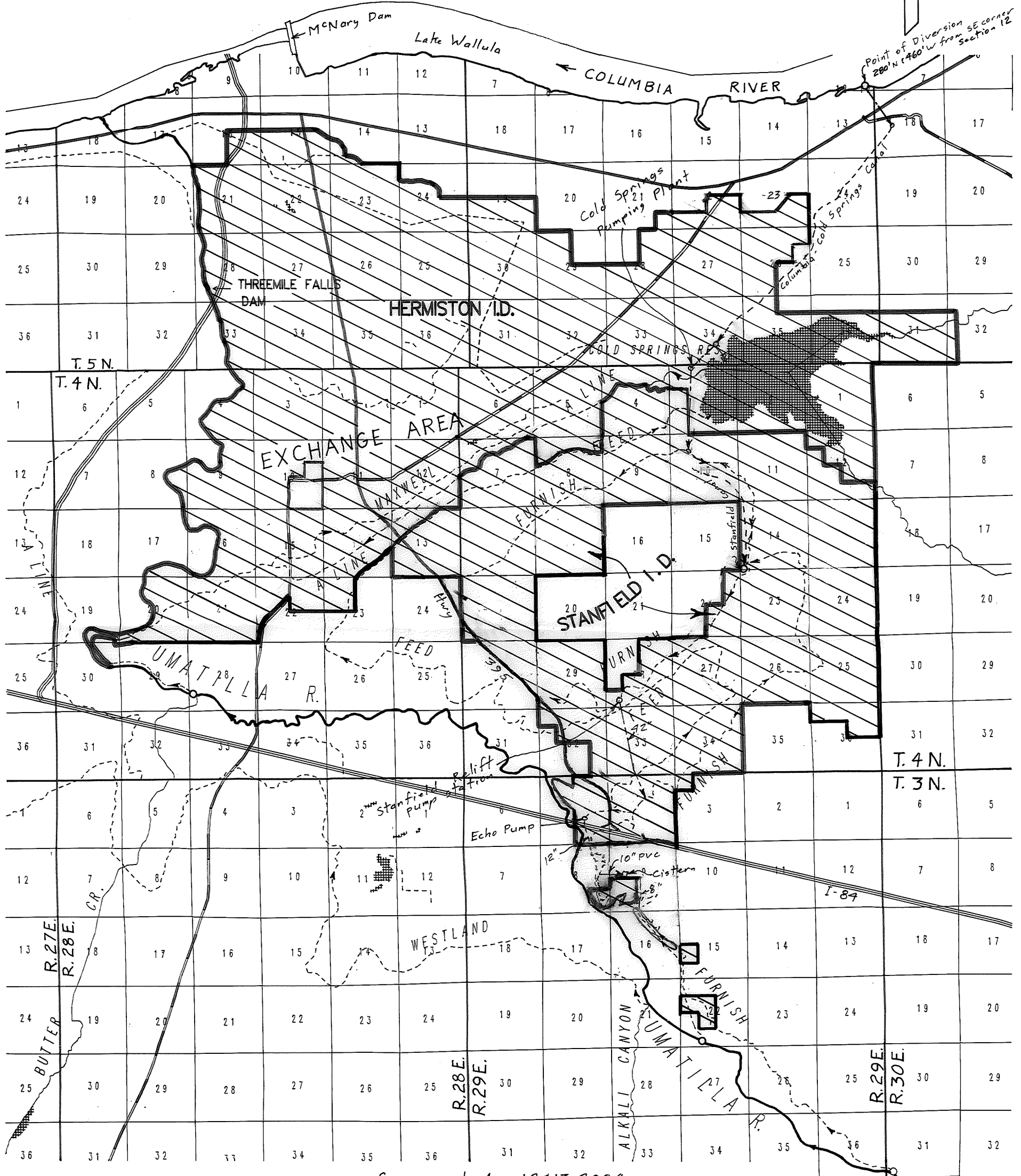
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TOWNSHIPS 3,4 & 5 NORTH,
RANGES 28,29 & 30 EAST, W.M.

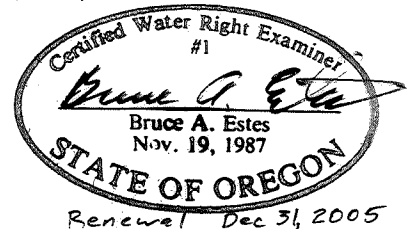
Scale 1" = 8,000'



Surveyed Aug 12 & 13, 2004

Exchange benefits Umatilla River
from SW 1/4 Sec 31, T.3 N., R.30 E., W.M.
to the mouth.

Claim of Beneficial Use Map
for
U.S. BUREAU OF RECLAMATION
UMATILLA PROJECT
Phase II



Application 71293 Permit 51439
and Transfer T-6621E

This map is for the purpose of
locating a water right only
and has no intent to provide
legal dimensions or the location
of property lines.

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