

MEMORANDUM

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OCT 02 2006
DEPARTMENT OF
WATER RESOURCES

TO: ADJUDICATION FILES 63-4281

FROM: DANIEL A. NELSON

DATE: 10/2/06

SUBJECT: CLAIM REVIEW

On 9/29/2006, I performed a field exam on the above claim. During my field examination, I found that wastewater from a ditch is diverted into a small pond in the northeast corner of the NESW and then is piped to a larger pond in the southeast corner of the same tract. Boise Kuna water is also diverted into this same pond. Three pumps divert the water through a series of mainlines to wheel lines that irrigate the entire property.

According to Kieth Kendall, the previous owner, the ground associated with this claim is outside the borders of the Boise Kuna Irrigation District. Therefore, the original owners George and Donna Thomas, needed to use the wastewater for these lands. Mr. Kendall also told me that he purchased water from Boise Kuna Irrigation District to irrigate this ground to supplement their wastewater, since it was not consistent enough to grow a proper crop. From what Mr. Kendall told me the newest owner of this property still does purchase Boise Kuna Irrigation District water for the ground associated with this claim.

Mr. Kendal told me that the ground associated with this right was above the irrigation ditch, so they could not irrigate this ground by gravity flow with Boise Kuna Irrigation District water. That is the reason they filed on the wastewater to irrigate this property. When he purchased the property, he re-worked the system, so all the ground could be irrigated out of a single irrigation system using a main pond for the wastewater and the Boise Kuna Irrigation District water. The original wastewater pond was increased in size, and the canal water and wastewater was piped to the new enlarged pond. Now three pumps irrigate the entire farm. Originally, the wastewater was the only water diverted into the pond, and a single pump was used to irrigate the 53 acres in the N ½ of the SW that is west of the original Boise Kuna Irrigation Ditch. The new pond has 3-25 Hp pumps that are used to irrigate the entire farm, which is approximately 150 acres.

In order to determine the flow rate, I performed a Mannings Equation on the waste ditch entering the property. The ditch has the capacity of carrying 1.28 cfs, which is well above the 1.00 cfs claimed. I found 53 acres irrigated, which at an inch or 0.02 cfs per acre would allow 1.06 cfs per acre. Only 1.00 cfs was claimed and paid for under this claim, so I must limit the diversion rate to the amount claimed or 1.00 cfs. **It appears as though there was a court case involved with this right that might have set the maximum allowable diversion rate at the 1.00 cfs. Therefore, the recommending agent will need to review this case to determine how it affects this right.** At 1.00 cfs the full volume of 4.5 afa for the 53 acres or 238.5 afa can be used. With the information available, I would recommend this right as follows:

SOURCE – Wastewater TRIBUTARY to the Snake River

in the NENESW S24 T1S R2W

1.00 cfs and 238.5 afa for irrigation use from 3/1 to 11/15

For a total of 53 acres – with 36 acres in the NWSW and 17 acres in the NESW

Conditions:

Boise Kuna Irrigation District water also used on this ground

This right when combined with all other rights is limited to 0.02 cfs and 4.5 afa per acre.

Conditions concerning the associated court case found in the statutory claim documents will need to be determined.

T1S R2W S24

Boise Kuna ditch. Canal water could not be used west of this ditch in the N 1/2 of SW 1/4, because it was high ground and gravity flow could not reach it.

**NWSW
36 acres**

**NESW
17 acres**

Ditch to pond.

Water is and was pumped from this pond.

Land was and is irrigated with sprinklers. Now using wheel lines, was using hand lines. This is the only ground without canal water shares. Canal water is purchased and used on this property when it is available due to inconsistency of waste water.

NWNW

MANNING EQUATION CHANNEL CAPACITY RESULTS

09-29-2006

File Number: 63-4281

Claimant: Kendall/Davenport

Channel measured: Drain Ditch

Date of measurement: 9/29/2006

Measurement location:

Approximately 200 feet upstream from silt pond.

Calculation prepared by: Dan Nelson

Comments about the measurement:

The results of the calculation are:

The length of the channel measured is 100 feet.

The upstream and downstream rod readings are 5.85 and 6.14 feet.

The channel cross section is 2.62 ft-sq.

The wetted perimeter is 5.54 feet.

The hydraulic radius is 0.47 feet.

The slope is 0.0029

The roughness coefficient is 0.1000

The flow velocity is 0.487 ft/sec.

The rate of flow is 1.28 cfs.

CROSS SECTION NUMBER 1

For File Number 63-4281 for the Drain Ditch

Number	Rod Reading	Water Depth	Distance
1	0.00	0.00	1.10
2	0.26	0.26	1.50
3	0.37	0.37	2.00
4	0.40	0.40	2.50
5	0.50	0.50	3.00
6	1.02	1.02	3.50
7	1.00	1.00	4.00
8	0.78	0.78	4.50
9	0.40	0.40	5.00
10	0.15	0.15	5.50
11	0.00	0.00	5.90

The area for this cross section is 2.42 square feet
and the wetted perimeter is 5.38 feet.

CROSS SECTION NUMBER 2

For File Number 63-4281 for the Drain Ditch

Number	Rod Reading	Water Depth	Distance
1	0.00	0.00	0.90
2	0.22	0.22	1.50
3	0.42	0.42	2.00
4	0.68	0.68	2.50
5	0.46	0.46	3.00
6	0.76	0.76	3.50
7	0.92	0.92	4.00
8	0.74	0.74	4.50
9	0.59	0.59	5.00
10	0.37	0.37	5.50
11	0.00	0.00	6.10

The area for this cross section is 2.61 square feet
and the wetted perimeter is 5.70 feet.

CROSS SECTION NUMBER 3

For File Number 63-4281 for the Drain Ditch

Number	Rod Reading	Water Depth	Distance
1	0.00	0.00	1.00
2	0.34	0.34	1.50
3	0.42	0.42	2.00
4	0.45	0.45	2.50
5	0.90	0.90	3.00
6	1.05	1.05	3.50
7	0.92	0.92	4.00
8	0.72	0.72	4.50
9	0.54	0.54	5.00
10	0.32	0.32	5.50
11	0.00	0.00	6.00

The area for this cross section is 2.83 square feet
and the wetted perimeter is 5.53 feet.

MANNING'S "n" (roughness coefficient)

BASIC "n" CHANNEL MATERIAL				CHANNEL OBSTRUCTIONS							
earth	.020	✓	(1)	negligible	.000		(1)				
rock	.025		(2)	minor	.010		(2)				
fine gravel	.024		(3)		.015	✓	(3)				
coarse gravel	.028		(4)	appreciable	.020		(4)				
					.030		(5)				
				severe	.040		(6)				
					.050		(7)				
					.060		(8)				
				SURFACE IRREGULARITY				VEGETATION			
				smooth	.000		(1)	low	.005		(1)
minor	.005		(2)	.010		(2)					
moderate	.010	✓	(3)	medium	.015		(3)				
severe	.020		(4)		.020		(4)				
					.025		(5)				
				high	.030		(6)				
					.040		(7)				
					.050	✓	(8)				
				very high	.060		(9)				
					.075		(10)				
					.100		(11)				
VARIATIONS IN SIZE AND SHAPE OF CROSS-SECTION				DEGREE OF MEANDERING							
gradual	.000		(1)	minor	1.00	✓	(1)				
occasional	.005	✓	(2)	appreciable	1.15		(2)				
frequent	.010		(3)	severe	1.30		(3)				
	.015		(4)								

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 9/29/2006

FILE NUMBER 63-4281



The picture above shows the silt pond used to remove silt from the wastewater. The pond is covered by weeds, but it is just on the other side of the wheel line. The wastewater ditch travels towards the tree in the middle of the picture. The measurement was made on this ditch approximately $\frac{3}{4}$ of the way to the tree.

The photo below shows the cement structure that sends the water to the distribution pond. There are two pipes in this structure.



PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 9/29/2006

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The top photo shows the distribution pond and the lands being irrigated in the background.

The second photo shows where the water comes into the distribution pond. The two smaller pipe comes in from the Boise Kuna ditch. The large pipe on the right is the pipe coming from the silt pond.

The third picture shows the spillway and the pump intake to the left.

The fourth and bottom photo shows the three pumps now used. Originally there was only one pump used for this system, but it proved to be too inefficient to make this system work well.

ADDITIONAL INFORMATION NEEDED FOR IRRIGATION FIELD EXAMS

Field Examiners, please complete the following checklist. Mark "unknown" or N/A if information doesn't apply or information is unavailable.

IF CURRENT OWNER DOES NOT MATCH PROOF REPORT PLEASE GIVE NEW OWNER CHANGE OF OWNERSHIP FORM TO COMPLETE.

1.) Pump information:

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
WEST RELIFT	PRIEST ELEC	25HP	256JA	CORNELL	30064
MID RELIFT	PRIEST	25	2365P	CORNELL	111 2836.5
EAST RELIFT	PRIEST	25HP	HB256	CORNELL	3125-2

TDC

2.) Lift (distance from pump to water) _____

3.) How was lift determined (well log, measurement, owner)? _____

4.) Pressure against pump (this is checked using the owner's psi gauge, your gauge, or an estimate by owner) _____

5.) Was a measurement made? _____ If no can a measurement be made at a latter time? _____

6.) What type of measurement device was used? _____

7.) Is there a pump curve available for pump? _____

8.) Please fill out the following:

Number of sprinklers _____

Sprinkler nozzle size _____

Number of Pivots (include gpm rating for each pivot) _____

$\frac{1}{2}$

9.) Please outline all acres irrigated on attached aerial photo. _____ DONE

10.) Please clearly mark all points of diversion on map and GPS. _____ DONE

11.) Please clearly mark all mainlines, ditches, and other conveyances.
_____ DONE

12.) Pictures taken of place of use and point of diversion. _____ DONE

13.) Please show where and how water from other sources are diverted into the irrigation system.

FIELD EXAMINERS NOTES (descriptions, other uses, questions, ect.)

1.1 - 0	.9 ✓	1 - 0
1.5 .20	1.5 .22	1.5 .34
2.0 .37	2.0 .47	2.0 .45
2.5 .40	2.5 .68	2.5 .45
3.0 .50	3.0 .46	3.0 .9
3.5 1.02	3.5 .76	3.5 1.05
4.0 1.00	4.0 .92	4.0 .82
4.5 .78	4.5 .74	4.5 .72
5.0 .4	5.0 .59	5.0 .54
5.5 .15	5.5 .37	5.5 .32
5.9 0	6.1 - 0	6.0 0

100 FT.

6.14

5.85

DATE EXAM CONDUCTED _____

FIELD EXAMINER _____

Pipes
in
Ponds

100 0

WATER
WATER

Boise Kuna
DITCH

WASTE
DITCH

P/O

Settling
pond
Here..

Div.
pond
Pumped
HERE

WASTE WATER
used
Here

NOT
under
canal
water

AHL
lethal
now diverted
Through Pond.

Water
is now
mixed
with
Boist
water

Settling
Pond

Big
Pond