

Should questions arise during the processing of this application please contact:
Dave Shaw - ERO Resources Corp. (208) 373-7983

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JUL 10 2012

DEPARTMENT OF
WATER RESOURCES

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 34-7247

- Owner Mitchell D. Sorensen Phone No. (208) 527-3271
Current Address 3871 W 2500N, Moore, ID 83255
- Examiner's name David Shaw EXAM DATE 8/10/2011
- Accompanied by Mitchell D. Sorensen Email soremd@ida.net
Address _____
Relationship to permit holder self Phone No. _____
- Source Ground Water tributary to _____

B. OVERLAP REVIEW

- Other water rights with the same place of use 34-496A, 692D, 2428, 7035B, 12416 & Permit 34-7430
- Other water rights with the same point of diversion 34-2428 & 12416

C. DIVERSION AND DELIVERY SYSTEM**1. Point(s) of Diversion:**

ID No.	Gov't Lot	¼	¼	¼	Sec	Twp.	Rge.	County	Method of Determination/Remarks
		NW	SE	NE	5	4N	26E	Butte	NAIP Photography

2. Place(s) of Use: Indicate Method of Determination 34-2428 Decree

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
3N	25E	2					Lt 3 39	Lt 4 39	40	40									158
		3	Lt 1 39	Lt 2 39															78
4N	25E	34	39	38	40	40									40	40	40	40	317

		35					38	38	40	40	20	40	39	20					275
	26E	5				39									39			39	117

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or i.d. ☒ see attached.

Scale: 1" = _____.

- ☐ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required).
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0058844	US Electric	200	C521989	Hydroflow	12" Discharge
			84-07046-381		

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Polysonic Transit Time		Polysonic	DCT-7088	33508		12/2010
Weir	Cipolletti	Fabricated			3 feet	

Measurements: Measurement was made on the 12" (11.96" I.D.) mainline under open discharge into the weir and then into the Timberdome Canal. The booster pump that is used to irrigate the 117 acres in Section 5 near the well was off and all sprinklers for those acres were off at the time of the measurement. The Polysonic meter was installed near the pump with sufficient straight pipe for a good reading (see photos). Discharge was measured at 4300 gpm (9.58 cfs). The weir was then measured at 11¾" for about 9.78 cfs. The difference in measurements is a little over 2% and is within the expected range of errors for these types of measurements.

E. NARRATIVE / REMARKS / COMMENTS

This is a replacement well drilled in late April and early May of 2011. The new well is located about 25' east of the old well, see photos. The pump is a 2 stage 16" bowl pump set at 195 feet in depth. The Polysonic measurement was based upon an 11.96" I.D. pipeline with transducers set in a "V" mount at 9.93" spacing.

A licensing amendment is included with this field exam to recognize the PPU that was decreed for the other rights used in conjunction with this water right. This application for permit was filed in 1980 for existing well capacity that was being used to irrigate lands not covered by a water right. The attached 1986-87 adjudication photo shows the lands covered by this permit were being irrigated at that time even though this permit was not approved until 1999. In 1984 20 acres in the SESW Sec 35 Twp 4N Rge 25E were covered by the transfer of a portion of water right 34-7120 (Now 34-13841) and the acreage recommended to be licensed under 34-7247 is reduced by that 20 acres. The remainder of the acreage covered by this permit is within the PPU that the accompanying application for amendment seeks to incorporate this right for licensing. The available water supply and allowable irrigated acreage are described in the accompanying application for amendment.

The 168.4 acres not covered by a separate water right in the POU for this permit requires 3.37 cfs of diversion rate under this right at 0.02 cfs/acre. The additional 1.12 cfs when added to the total water supply for the PPU still provides less than 0.02 cfs/acre for the 945 acre PPU. Based upon this analysis, the full 4.49 cfs that was historically diverted is recommended for irrigation within the 945 acre PPU.

Water rights 34-2428 and 34-12416 both carry a combined volume limit of 3,229.9 ac-ft/year. The full field headgate amount for this area is 3.5 ac-ft/acre and for the 945 acre PPU the total allowable volume is 3,307.5 ac-ft/year. The recommended volume limit for this right is a combined volume limit with 34-2428, 34-7035B and 34-12416 of 3,307.5 ac-ft/year.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must e done to meet the permit requirements?

The electric control panel for the pump is lockable which would prevent the pump motor from being turned on. The Cipolletti weir was designed by the U of I Extension Service and the measurement taken at the time of the field exam compared favorably with the measurement taken with the Polysonic meter.

F.

FLOW CALCULATIONS

Additional computation sheets attached

Measured Method: Transit time & weir measurements described above.

G.

VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

 $V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{See combined use volume limits under Narrative.}$ $V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = \text{See combined use limits described above.}$ $V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \text{See combined use limits described above.}$

2. Volume Calculations for Other Uses:

H.

RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use		Period of Use		Rate of Diversion	Annual Volume
		From	To	Q (cfs)	V (afa)
Irrigation	4/1	10/31		4.49	3,307.5 combined limit
				Totals: 4.49	

2. Recommended Amendments

☐ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1 ☐ None☐ Change P.U. as reflected on page 1☒ Add P.U. as reflected on page 1 ☐ Other

I.

AUTHENTICATION

Field Examiner's Signature

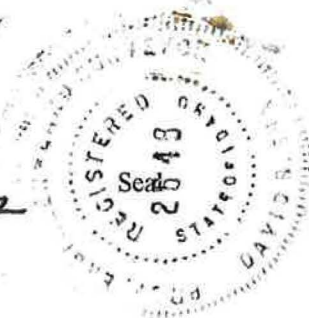
Date

7/9/12

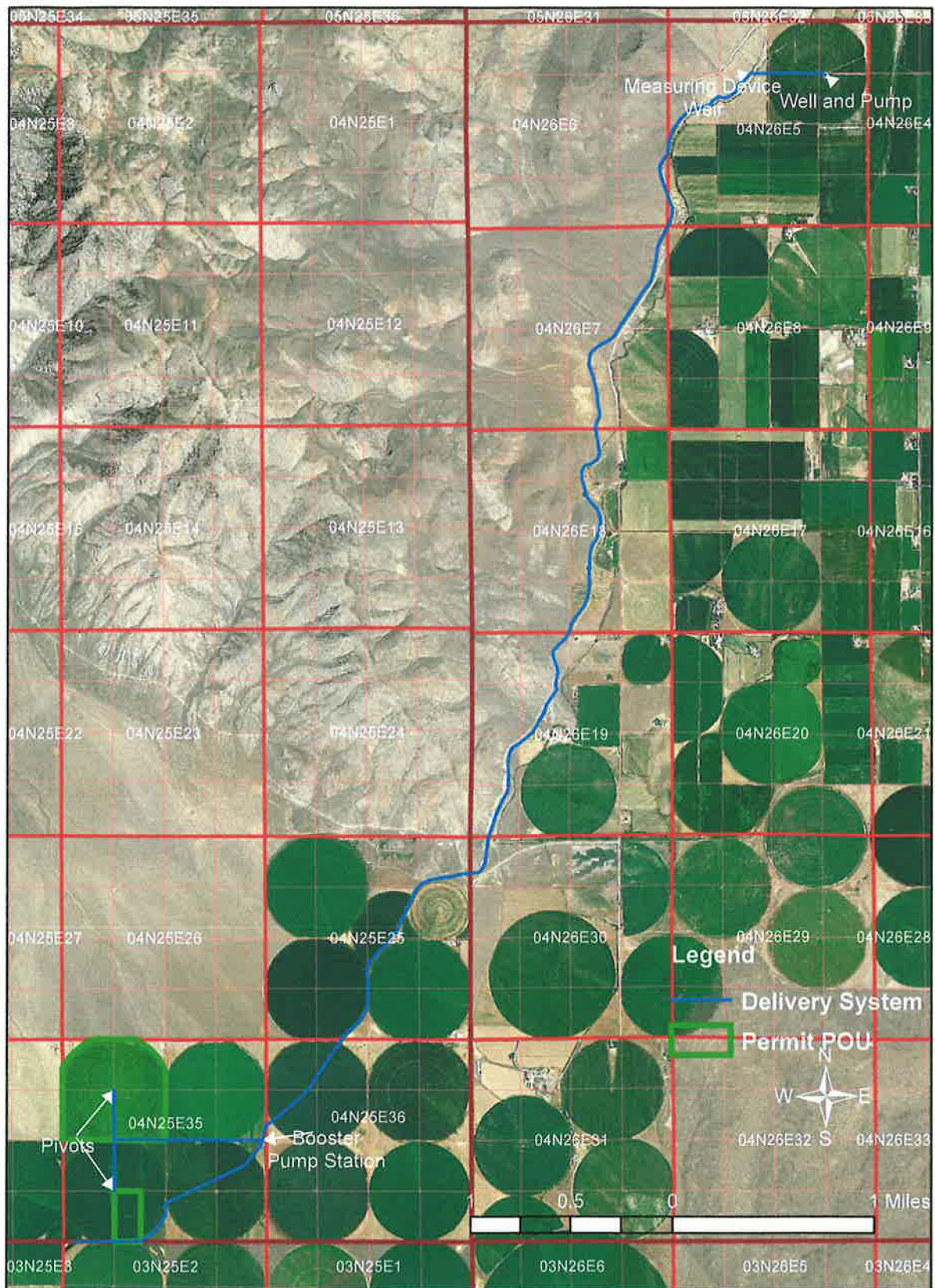
Reviewer

Date

11/26/2012



System Map for Permit 34-7247

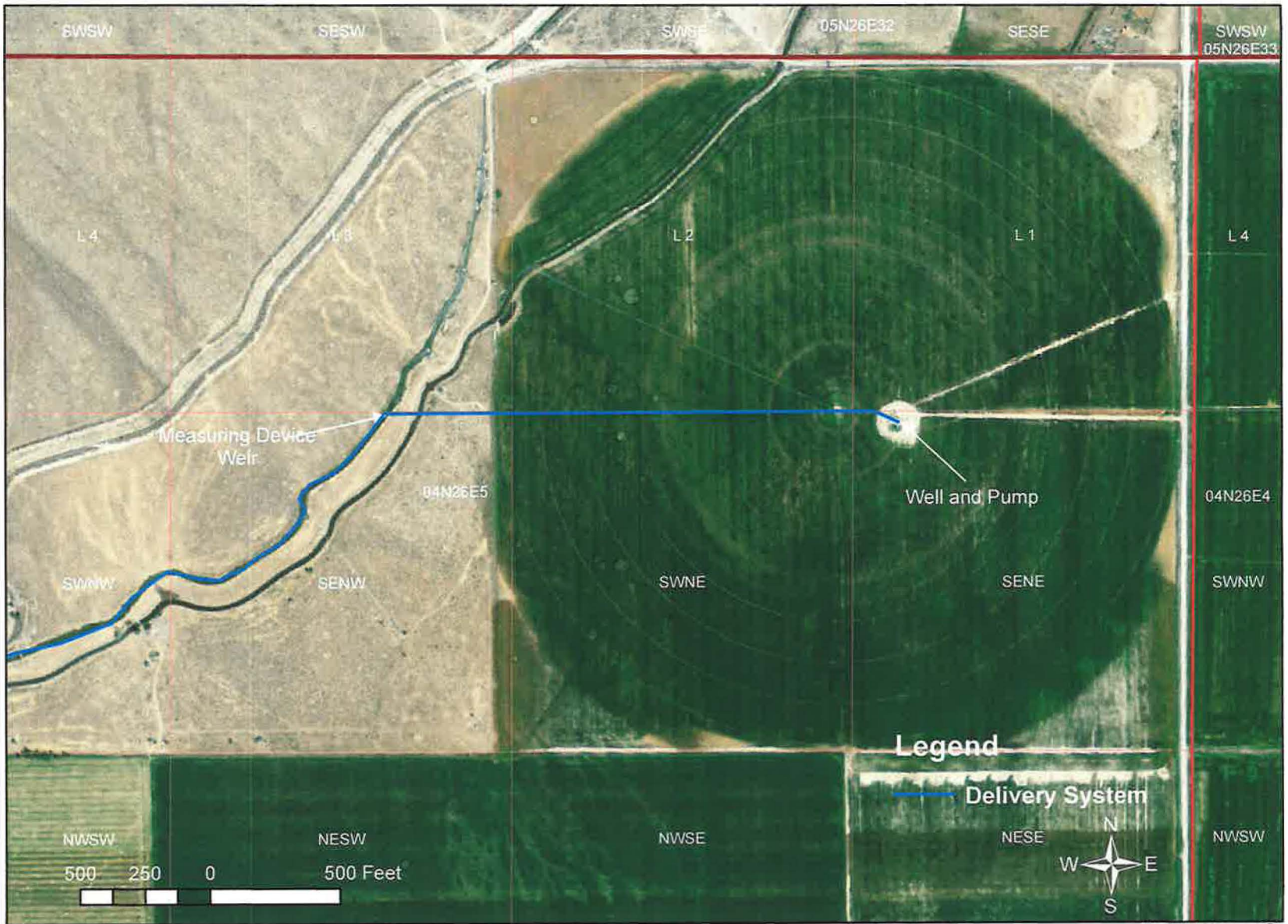


NAIP 2011 Photography

Prepared for Mitchell D. Sorensen 2-2012



POD Map for 34-7247



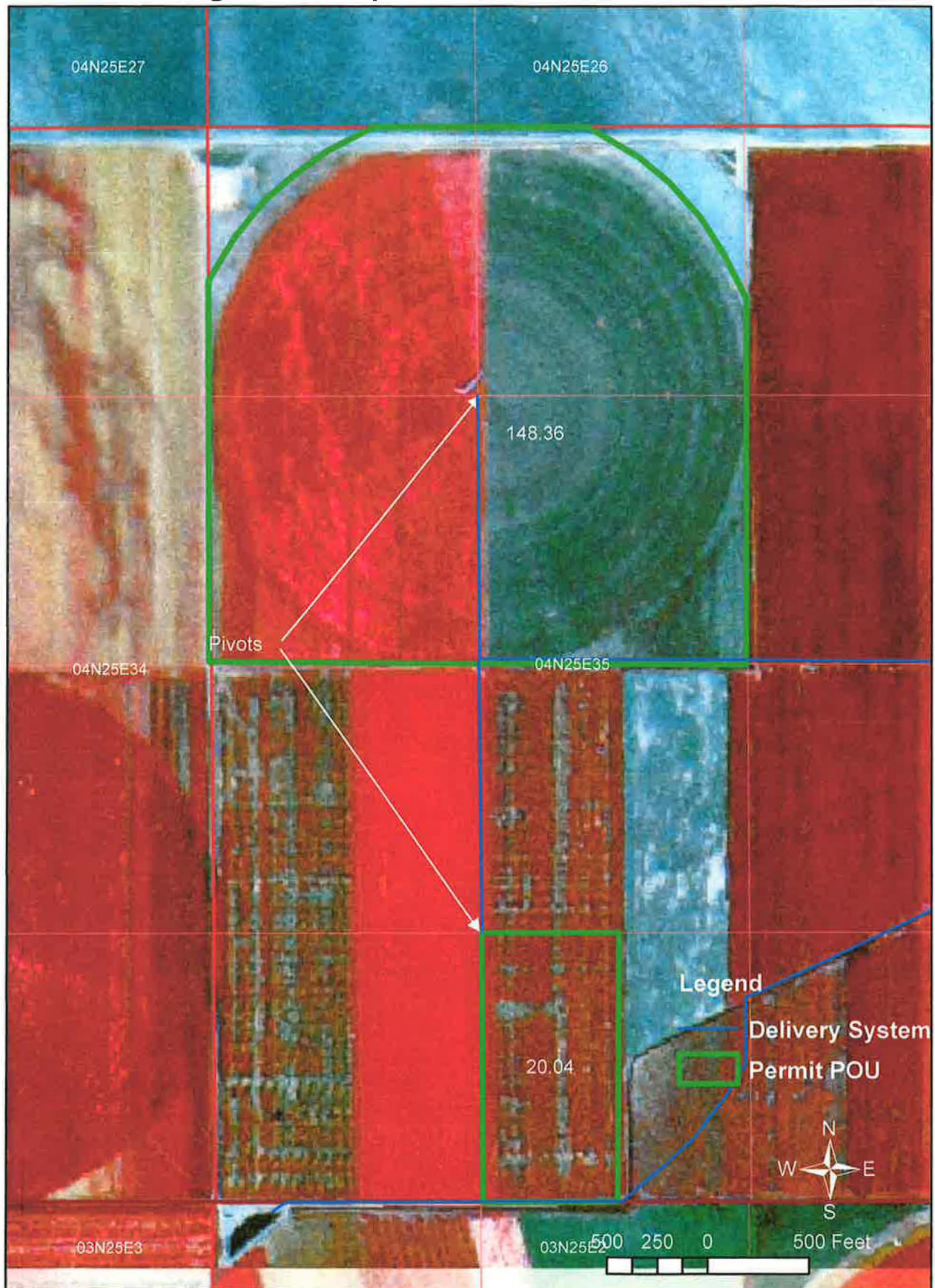
NAIP 2011 Photography

Prepared for Mitchell D. Sorensen 2-2012

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POL Map for Permit 34-7, 47

Showing Development Prior to PPU Decree



Photos for 34-7247 Field Exam



Photo 1. Electrical control panel for well pump on right, booster pump on left. Twelve inch mainline discharges to the right.



Photo 2. Looking back toward well and pump along mainline. Meter in mainline is not used.



Photo 3. Looking westerly along mainline. Booster pump on left was not used during field exam measurement. Old well plug visible right center of photo.



Photo 4. Pump motor and well right center, Polysonic flow meter installed on mainline left center of photo.



Photo 5. Discharge end of mainline with weir used to measure pumped discharge. Wire and vertical bars used to dissipate energy & calm flows to improve measurement.



Photo 6. Weir discharge and weir pool showing reasonably uniform flow approaching the weir crest.



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DEPARTMENT OF
WATER RESOURCES

Hand Delivered

July 9, 2012

Idaho Department of Water Resources
333 E Front Street
PO Box 83720
Boise, ID 83720-0098

RE: Beneficial Use Field Examination and Application for Licensing Amendment
for Permit 34-7247

Gentlemen:

Enclosed please find a Beneficial Use Field Examination Report and an Application for Licensing Amendment for Permit 34-7247 in the name of Mitchell D. Sorensen. Also enclosed is a check in the amount of \$100 for the Application for Amendment fee.

Please let me know if you have questions regarding either the field exam or the amendment application. Thank you in advance.

Yours truly,

A handwritten signature in blue ink, appearing to read "David B. Shaw".

David B. Shaw

Enc.