Idaho Dept of Water Resources
ESPA Spring Diversion Inventory

District 36A **Date** 7/13/2004

Basin 36 **Ditch or users association** Hagerman Water Users

Diversion Name Hagerman Water Users **POD Number**

Spring Name N. Spring, S. Spring Tunnel, other small springs **Tributary to** Billingsley Creek

GPS site ID (also Sherman Springs if irrigation is off) **Inventory Examiner** J. Berkey

Owner **Operator**

Measuring Device Data			
Type of Device or Method	4.12 foot suppressed rect weir	Standard	Non-standard
If non-standard describe:	submerged, no ventilation for nappe		

Discharge and Measurement Method	
How Measurement was taken: (Staff gauge, current meter, polysonic meter) staff gage	
Staff gauge Head Reading ~~0.68~~ 0.69 0.70	Current Meter/or poly-sonic measurement: ~~NA~~ 8.34 cfs
Time of Day 5:40 pm 11:00 Am 7/14	
Table used for Q standard suppressed weir ~~not adequate device~~ eqn	Meter Measurement Confidence 2% (5%) 10% +10% ~~NA~~
Total Flow = 8.04 cfs ~~cannot determine from MD~~	Does device meet IDWR standards? (YES) ~~NO~~
Discharge notes attached? (YES) ~~NO~~	Measurement Taken by: J. Berkey
Calculations Attached? (YES) ~~NO~~	Is follow-up Needed? ~~YES~~ (NO)

Concerns about measuring device: not ~~adequate~~, ~~submerged~~, no ~~air pocket~~

4.12 feet in length (steel plate)

Aquarius Aquaculture 410087 Hidden Springs Hatchery
Huff
5:50pm
staff gage measurement @ heading of raceways

RW1 L: 4.30 h=0.21
RW2 L: 4.26 h=0.22
RW3 checked off
RW4 checked off
other pond area dry

suppressed rect weir - non-standard, 1.5" thick boards

source is same spring complex as Hagerman water users - collection ditch is lower than Hagerman water users', so he captures some water that they can't. In winter he also gets the water they use during irrig season

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Fish Dev
R RW L=3.03 h=0.50 → 8" PVC standpipe for drain right in front of ~~weir~~ middle of weir - needs to be removed

Current meter measurement

Site: Hagerman Water Users
Date: 7/14/2004
WMIS ID: 4100444
Source: Springs (north spring, south spring tunnel, other small springs, Sherman Springs when Sherman Springs irrigation pipeline is off)

Staff gage readings: 0.70 feet @ 10:30 AM
0.70 feet @ 11:35 AM

Meter type: Suppressed rectangular weir
Weir Length: 4.12 feet
Rating curve: Standard suppressed rectangular weir equation
Meter discharge: 8.04 ft^3/s

Measured in north ditch and south ditch approximately 200 feet upstream of weir

	Distance feet	Depth feet	Obs Depth	Velocity ft/sec	Width feet	Area ft^2	Discharge ft^3/s
South Ditch							
REW	1.1	0.00			0.2		
	1.5	0.32	0.6	0.94	0.45	0.144	0.13536
	2.0	0.75	0.6	1.12	0.5	0.375	0.42
	2.5	0.96	0.6	1.29	0.5	0.48	0.6192
	3.0	1.13	0.6	1.40	0.5	0.565	0.791
	3.5	1.25	0.6	1.36	0.5	0.625	0.85
	4.0	1.29	0.6	1.19	0.5	0.645	0.76755
	4.5	1.32	0.6	1.17	0.5	0.66	0.7722
	5.0	1.30	0.6	1.09	0.5	0.65	0.7085
	5.5	1.29	0.6	0.90	0.5	0.645	0.5805
	6.0	1.34	0.6	0.72	0.5	0.67	0.4824
	6.5	1.38	0.6	0.59	0.5	0.69	0.4071
	7.0	1.37	0.6	0.42	0.5	0.685	0.2877
	7.5	1.23	0.6	0.23	0.5	0.615	0.14145
	8.0	1.11	0.6	0	0.7	0.777	0
LEW	8.9	0.00			0.45		
South Ditch Total					7.8	8.226	6.96
North Ditch							
LEW	1.4	0			0.3		
	2.0	0.36	0.6	0.68	0.55	0.198	0.13464
	2.5	0.44	0.6	0.90	0.5	0.22	0.198
	3.0	0.60	0.6	1.05	0.5	0.3	0.315
	3.5	0.69	0.6	1.12	0.375	0.25875	0.2898
	3.75	0.73	0.6	0.89	0.25	0.1825	0.162425
	4.0	0.71	0.6	0.59	0.375	0.26625	0.157088
	4.5	0.53	0.6	0.46	0.375	0.19875	0.091425
	4.75	0.43	0.6	0.23	0.25	0.1075	0.024725
	5.0	0.52	0.6	0.01	0.425	0.221	0.00221
REW	5.6	0			0.3		
North Ditch Total					4.2	1.95275	1.38
Diversion Total					12.0	10.18	8.34
Error							-3.6%

Average Velocity = 0.82 ft/sec

STATE OF IDAHO

Meas. No. _____

DEPARTMENT OF WATER RESOURCES

Water District

Comp. by _____

DISCHARGE MEASUREMENT NOTES

Checked by _____

Sta. No. _____

Nagerman Water Users

Date 7/14/2004 Party J. Berkey, F. Erwin

Width 12 Area 10.2 Vel. 0.8 G. H. _____ Disch. 8.34

Method _____ No. secs. _____ G. H. change _____ in _____ hrs. Susp. _____

Method coef. _____ Hor. angle coef. _____ Susp. coef. _____ Meter No. _____

GAGE READINGS				
Time		Recorder	Inside	Outside
10:30		—	—	0.70
11:35		—	—	0.70
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter _____

Date rated _____ for rod, other.

Meter _____ ft. above bottom of weight.

Spin before meas. 381 after 363

Meas. plots ____ % diff. from rating _____

(Wading), cable, ice, boat, upstr., downstr., side

bridge ~200 feet, mile, (above) below

gage, and 2 measurements north ditch

Check-bar, found _____, south ditch

changed to _____ at _____

Correct _____

Levels obtained _____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section _____

Flow _____ Weather sunny, hot

Other _____ Air _____°F@ _____

Gage _____ Water _____°F@ _____

_____ Record removed _____ Intake flushed U

Observer _____

_____

Control _____

_____

Remarks removed some algae from each x-section

_____

_____

G. H. of zero flow _____ ft.

.0 .10 .20 .30 .40 .50 .60 .70 .75

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	Adjusted for hor. angle or	Area	Discharge
REW	1.1		~~0.3~~	—	—		—			0.144	0.135
	1.5	~~0.45~~ 0.5	0.32	0.6			0.94			~~0.50~~	~~0.47~~
	2.0	0.5	0.75	0.6			1.22			0.38	0.42
	2.5	0.5	0.96	|			1.29			0.48	0.62
	3.0	0.5	1.13	|			1.40			0.57	0.79
	3.5	0.5	1.25	|			1.36			0.63	0.85
	4.0	0.5	1.29	|			1.19			0.65	0.77
	4.5	0.5	1.32	|			1.17			0.66	0.77
	5.0	0.5	1.30	|			1.09			0.65	0.71
	5.5	0.5	1.29	|			0.90			0.65	0.58
	6.0	0.5	1.34	|			0.72			0.67	0.48
	6.5	0.5	1.38	|			0.59			0.69	0.41
	7.0	0.5	1.37	|			0.42			0.69	0.29
	7.5	0.5	1.23	V			0.23			0.62	0.14
⊙	8.0	0.7	0.11				0			0.78	0
	8.9	LEW	0								~~7.0~~
	NORTH DITCH										
	1.4	LEW									
	2.0	0.55	0.36	0.6			0.68			0.198	0.135
	2.5	0.5	0.44	|			0.90			0.22	0.198
	3.0	0.5	0.60	|			1.05			0.30	0.315
	3.5	0.375	0.69	|			1.12			0.259	0.290
	4.0	0.375	0.73	|			0.59			0.274	0.161
	3.75	0.25	0.71	|			0.89			0.178	0.158
	4.5	~~0.375~~ 0.5	0.53	|			0.46			0.199	0.091
	5.0	~~0.425~~ 0.5	0.43	|			0.01			0.183	0.002
	4.75	0.25	0.52	V			0.23			0.130	0.030
	5.6	REW	0								
											1.4

.0 .10 .20 .30 .40 .50 .60 .70 .75

.80 .85 .90 .92 .94 .96 .97 .98 .99 1.00 .99 .98 .97 .96 .94 .92 .90 .85 .80

SOUTH DITCH