

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

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

OCT 28 2010

Department of Water Resources

A. GENERAL INFORMATIONPermit No. 36-87851. Owner Buckeye Farms, Inc.Phone No. 208-837-6595Current Address P.O. Box 269, Hagerman, ID 833322. Examiner's name David ShawEXAM DATE 10/5/20103. Accompanied by Bill McCarthyEmail buckeyefarmsinc@gmail.comAddress P.O. Box 269, Hagerman, ID 83332Relationship to permit holder Ranch Manager Phone No. (208) 539-31244. Source Riley Creek tributary to Snake River**B. OVERLAP REVIEW**1. Other water rights with the same place of use See list in Remarks2. Other water rights with the same point of diversion 36-1, 36-2, 36-31, 36-2046, 36-7741, 36-8729**C. DIVERSION AND DELIVERY SYSTEM**

1. Point(s) of Diversion:

Ident No.	Gov't Lot	¼	¼	¼	Sec	Twp.	Rge.	County	Method of Determination/Remarks
	6		SW	NE	1	8S	13E	Gooding	GCDB & aerial photo

2. Place(s) of Use: Indicate Method of Determination GCDB & aerial photo

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
7S	13E	33	X	X L1	X L4	X				X L4					X L10	X L5		X	
		34	X	X		X	X		X L7		X L3	X L4	X L5		X L1	X L2			
7S	13E	34							H L7		H L3								

3. **Delivery System Diagram** Indicate all major components and distance 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

*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
8 feet wide broad crested weir		Poured in place				

2. Measurements: Staff gage read 1.36' and weir table based upon design dimensions shows discharge of 40.3 cfs. Current meter measurement was taken at head of weir showing 43.2 cfs discharge. Difference is within expected accuracy of the devices. Survey of as-built weir might bring measurements closer together. Weir table and current meter data sheets are attached.

E. NARRATIVE / REMARKS / COMMENTS

Other water rights with the same place of use: 36-1, 36-2, 36-3H, 36-7739, 36-7740, 36-7741, 36-7742, 36-8335, 36-8728, 36-8729, 36-8730

See attached photos and rating curves for rated sections on Riley Creek as required by condition of approval number 6 on the amended permit.

Water is diverted from Riley Creek into the Hunt Ditch through 2 – 36 inch locking slide gates and is measured over an 8 foot broad crested weir. The gates and weir are shown in the attached photos. The Hunt Ditch also carries the water of others and travels about 2 miles until it reaches Buckeye Farms property. A pumping station just inside Buckeye Farms property takes part of the Hunt Ditch water to higher ground that was once served by water from the South Pipeline and water from the Curren Ditch and Weatherby Springs. The Hunt Ditch continues on within the Buckeye Farms property for approximately an additional mile where it joins with the Buckeye Ditch and water from Billingsley Creek. The fish propagation facilities and the wildlife, recreation and aesthetic ponds are shown on the attached portion of a USGS Quadrangle Map and on 2009 NAIP photography background.

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 be done to meet the permit requirements?

F. FLOW CALCULATIONS

Measured Method: Broad crested weir and current meter. Measured discharge included 5.4 cfs taken by others from the Hunt Ditch. Buckeye water from Riley Creek was 43.2 cfs minus 5.4 cfs or 37.8 cfs. (The 5.4 cfs amount was determined by upstream and downstream current meter measurements in the Hunt Ditch. There was no obvious means to directly measure the amount of water being taken by others.) The 37.8 cfs being diverted by Buckeye includes all ditch losses, including losses attributable to the delivery of the 5.4 cfs to others, and is less than the total combined maximum diversion rate of 38.45 cfs for Buckeye Farms as specified in Condition 9 of this permit. The slide gates were out of the water and the limitation on delivery quantity was the elevation of Riley Creek. The system has sufficient capacity to divert at least an additional 0.65 cfs (or 3.55 cfs if the weir measurement is used) to fulfill the Buckeye entitlement.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$ _____
 $V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 =$ _____
 $V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$ _____

2. Volume Calculations for Other Uses: N/A

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Wildlife	1/1	12/31	16.0	
Recreation	1/1	12/31	16.0	
Fish Propagation	1/1	12/31	16.0	
Aesthetics	1/1	12/31	16.0	
Totals:			16.0	

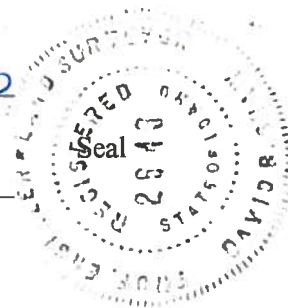
2. Recommended Amendments

- ☐ 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

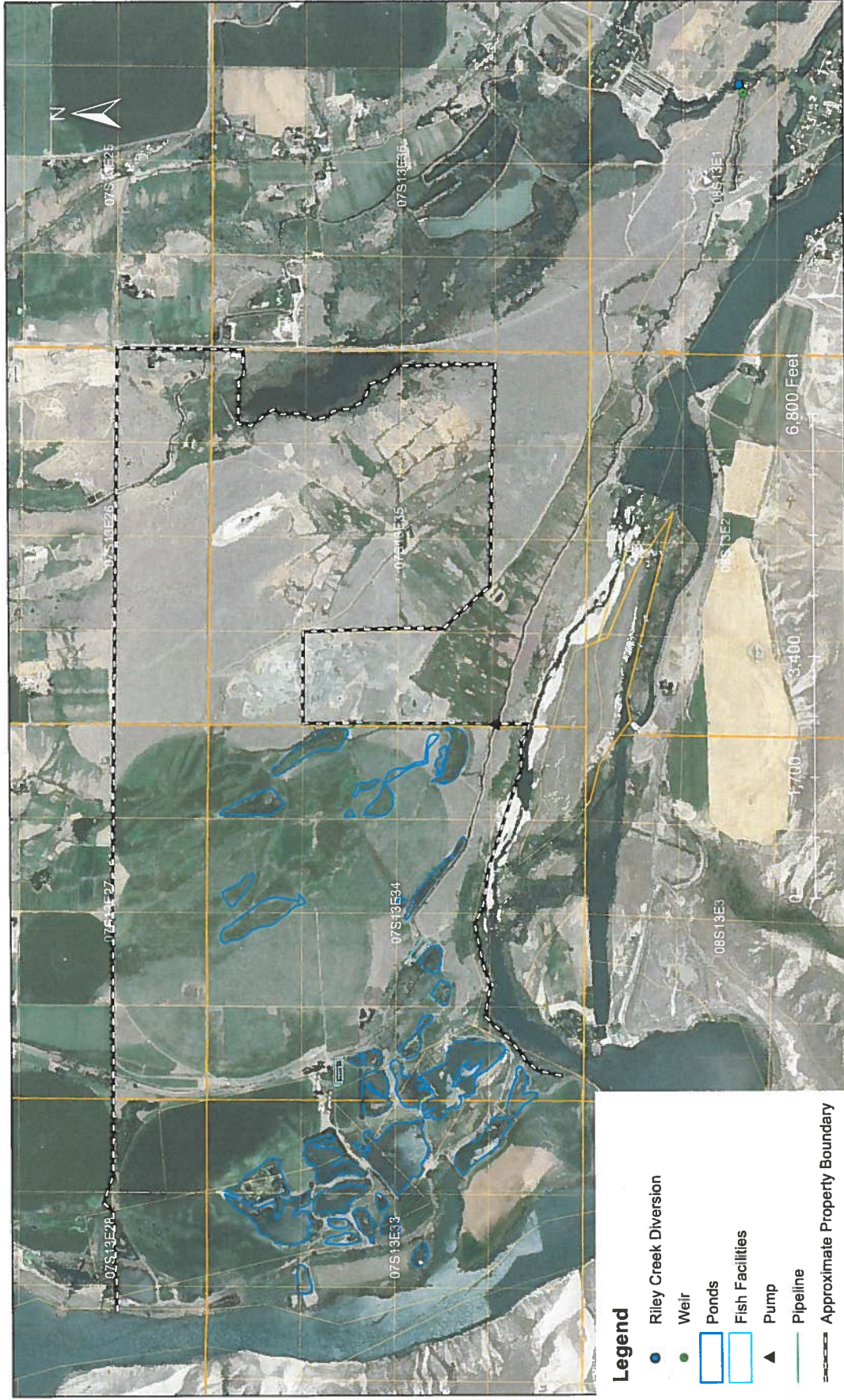
I. AUTHENTICATION

Field Examiner's Signature  Date 10/28/10

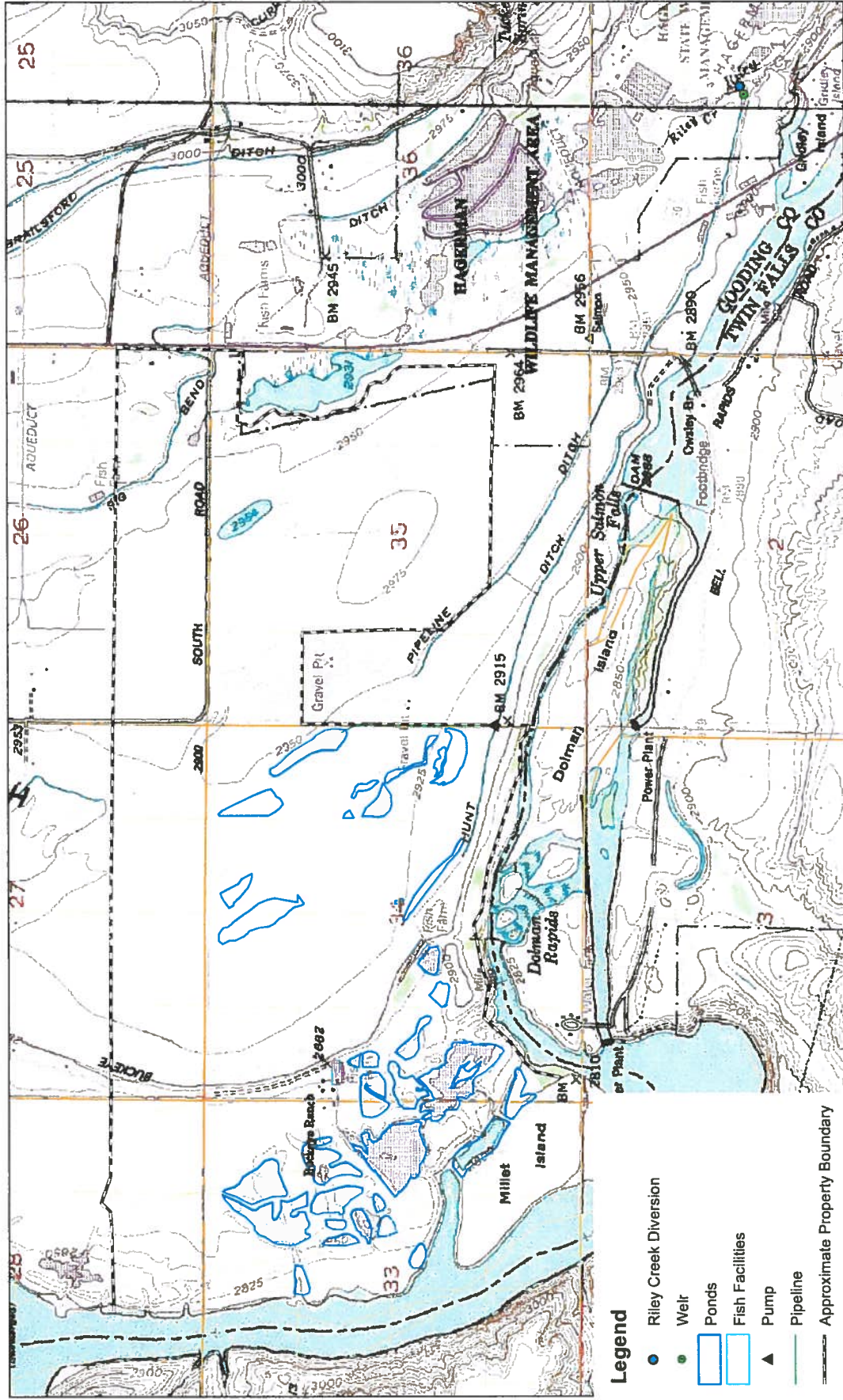
Reviewer _____ Date _____



Buckeye Farms Water Use Map 36-8785



Buckeye Farms Water Use Map 36-8785





ERO Resources Corporation
3314 Grace St.
Boise, Idaho 83703-5836
(208) 373-7983

DISCHARGE MEASUREMENT NOTES

Site Number _____ Site Name Hunt Ditch at Road Home
Time _____ Date 05 October 2010
By MAP Duplicate of Site Number _____
Width 8.00 Area 26.36 Velocity 1.64 G.H. _____ Discharge 43.2
Method 0.6 No. Secs 18 G.H. change _____ in _____ hr. Susp. 100
Method coef. 1.0 Hor. Angle coef. 1.0 Susp. Coef. 1.0 Meter No. _____
Type of meter AA Date rated at 2 Spin before measurement _____; after _____
Meter _____ ft. above bottom of weight. Tag checked _____ Levels obtained _____

GAGE READINGS				
Time	Inside			Outside
1140				1.36
	<u>mean 1141-1201</u>			
1202				1.36
Weighted M.G.H.				
G.H. correction				
Correct M.G.H.				

Meas. Plots _____ % diff. from _____ rating.
Chain bar chain found _____ changed to _____
at _____
Wading, cable, ice, boat, upstream
downstream, side bridge _____ feet, mile,
above, below gage. end of theme

Aquacalc No. _____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), estimated, none;
based on the following conditions:

Flow fairly uniform

Cross section concrete, sand

Control _____

Weather _____ Air _____ • C @ _____ Water _____ • C @ _____

pH _____ Cond _____ μ S TDS _____ Mg/L

DO _____ Mg/L _____ % Meter ID _____

Number of Sections Sampled: _____ EWI _____ EDI _____

Remarks _____

GAGE ID# Hunt Ditch at head
DATE 10/05/2010
TRANSECT 01
USER ID# WAH
SH BEGIN 0.00
SH END 0.00
GH BEGIN 0.00
GH END 0.00
EST. DISCHARGE 0.00
EST. Q (ADJ) 43.20
METER ID# 000000
AQUACALC ID# 0
SOUNDING WT. 0
START MEAS. AT LEW
METER TYPE Price AA 1:1 ST2
METER CONST. C1 2.2048
METER CONST. C2 0.0178
METER CONST. C3 2.2048
METER CONST. C4 0.0178
METER CONST. C5 0.0
MEASUREMENT TIME 40
MEAS. SYSTEM SAE
PERCENT SLOPE 0.00
TOTAL VERTICALS 19
TOTAL STATIONS 19
TOTAL WIDTH 8.01
TOTAL AREA 26.20
TOTAL DISCHARGE 43.200
PCT DIFFERENCE 0.0
MEAN VELOCITY 1.65
WETTED PERIMETER 14.16
HYDRAULIC RADIUS 1.85
MANNING FACTOR 0.00

OB	DIST	DEPTH	ICE	REVS	TIME	COS:VF	LOC	COEF	CLOCK	VEL	AREA	FLOW(Q)	FLAGS
1	0.00	0.00	0.00	0	0.0	1.00	6	1.00	11:42	0.000	0.000	0.000	
2	2.50	0.00	0.00	0	0.0	1.00	B	1.00	11:42	0.000	0.000	0.000	
3	3.00	3.40	0.00	46	40.6	1.00	6	1.00	11:44	2.516	1.700	4.277	1
4	3.50	3.38	0.00	42	40.8	1.00	6	1.00	11:45	2.287	1.690	3.865	1
5	4.00	3.40	0.00	44	40.8	1.00	6	1.00	11:46	2.395	1.700	4.072	1
6	4.50	3.40	0.00	43	40.6	1.00	6	1.00	11:47	2.353	1.700	4.000	1
7	5.00	3.40	0.00	42	40.9	1.00	6	1.00	11:48	2.282	1.700	3.879	1
8	5.50	3.40	0.00	37	41.1	1.00	6	1.00	11:49	2.003	1.700	3.405	1
9	6.00	3.40	0.00	33	41.3	1.00	6	1.00	11:50	1.779	1.700	3.024	1
10	6.50	3.40	0.00	26	40.5	1.00	6	1.00	11:52	1.433	1.700	2.436	1
11	7.00	3.40	0.00	21	40.1	1.00	6	1.00	11:53	1.172	1.700	1.992	
12	7.50	3.40	0.00	20	40.0	1.00	6	1.00	11:54	1.120	1.700	1.904	
13	8.00	3.35	0.00	19	40.9	1.00	6	1.00	11:55	1.042	1.680	1.751	
14	8.50	3.35	0.00	21	40.8	1.00	6	1.00	11:56	1.153	1.680	1.937	
15	9.00	3.37	0.00	23	41.8	1.00	6	1.00	11:57	1.231	1.690	2.080	
16	9.50	3.30	0.00	26	40.5	1.00	6	1.00	11:58	1.433	1.650	2.364	1
17	10.00	3.30	0.00	25	41.2	1.00	6	1.00	11:59	1.355	1.650	2.236	1
18	10.50	3.23	0.00	0	0.0	1.00	B	1.00	12:00	0.000	0.824	0.000	
19	10.51	0.00	0.00	0	0.0	1.00	6	1.00	0:00	0.000	0.000	0.000	

1. USER EXCEEDED SINGLE SUBSECTION 05% EST. Q.
2. THE PRODUCT OF VELOCITY AND DEPTH EXCEEDED THE
SELECTED SOUNDING WEIGHT.
3. INCORRECT METER USED FOR DEPTH OF STREAM.
4. INCORRECT METER USED FOR VELOCITY OF STREAM.
5. ABNORMAL VELOCITY PROFILE CALCULATED.
6. DEPTH ESTIMATED BY USER.
7. VELOCITY ESTIMATED BY USER.

DISCHARGE TABLE FOR HUNT DITCH BROAD CRESTED WEIR

DEVELOPED 4/18/2005 C.E. BROCKWAY P.E.

Permit 36-8785 Field Exam Photos taken October 5, 2010



Lockable Slide Gates at Hunt Ditch Head – Looking Upstream



Looking Downstream at Weir About 75 Feet Below Gates



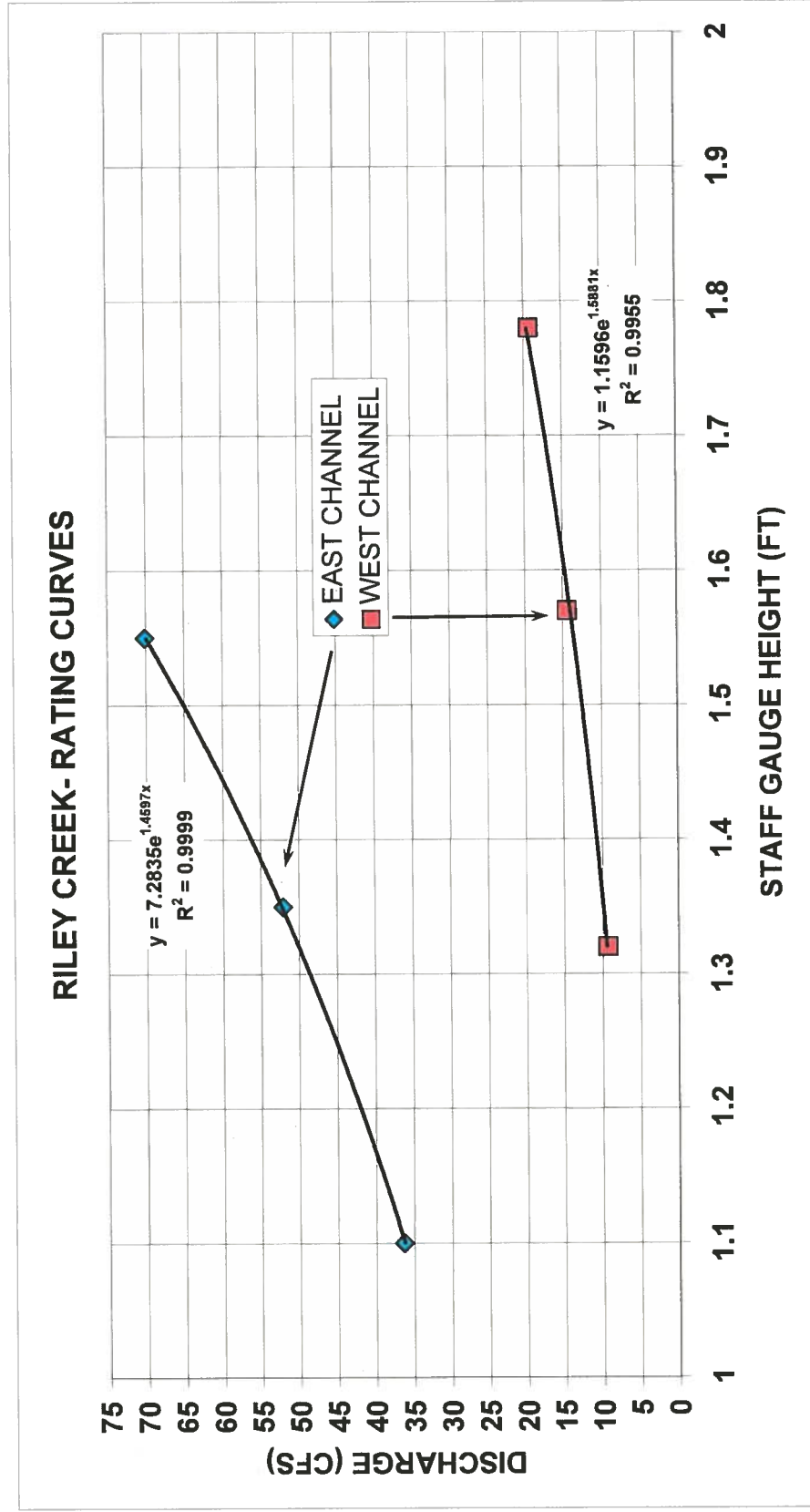
Staff Gage on Weir Wall – Stilling Well Behind Staff Gage



Looking Upstream at Weir

BUCKEYE FARMS- RILEY CREEK: RATING CURVES FOR BOTH EAST AND WEST CHANNELS

Date:	East Channel Gage Height (ft):	East Channel Discharge (cfs):	West Channel Gage Height (ft):	West Channel Discharge (cfs):
9/15/2009	1.1	36.33	1.32	9.31
10/1/2009	1.55	70.10	1.78	19.29
10/6/2009	1.35	52.08	1.57	14.44



Photos of Riley Creek Rated Sections taken 9/15/2009



Photos of East and West Channel Stilling Wells - Looking South



East Channel Section and Stilling Well - Looking South



West Channel Stilling Well and Section with Bridge to East Channel – Looking South