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Department of Water Resources
Southern Region

June 25, 2003

Mr. Allen Merritt
Idaho Department of Water Resources
1341 Fillmore Street, Suite 200
Twin Falls, ID 83301

Subject: Mitigation Plan - Bussman Water Right Transfer

Dear Allen:

Enclosed is the spreadsheet showing the consumptive use calculation for the Beckley farm. The Bussman transfer proposed to dry up 20-acres of the farm as shown. The FSA records indicate that this 20-acres was in pasture in 2002; therefore, I used the Richfield, Allen, and Brockway (1983) consumptive use for pasture.

The analysis shows that the annual pasture C.U. is 3.09 af/a, which comports with the value used in the mitigation analysis. My understanding is that these proposed acres do not have canal shares appurtenant.

Call me if you have additional questions and let me know if any additional information is required.

Sincerely,

Charles E. Brockway P.E. Ph.D.

Enclosure: Consumptive Use Spreadsheet-Beckley

cc: Del Kohtz

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PROJECT: Busman Transfer Beckley C.U. Analysis

Brockway Engineering 6/25/2003

Water Requirements

ET from Brockway and Allen (1983)

Proposed Acres to Transfer

Irrigation Method

Located in the NW 1/4 SE 1/4 T6S R 17E Parts of FSA Parcels #8, #13, #9
 Crop= Irrigated Pasture in 2002

Irrigation Efficiency %

Proposed Crop Distribution and IR

Station: Import from U of I, Kimberly

Project Consumptive Use and Irrigation Requirement by Crop

Monthly average daily (mm/day) and Seasonal Totals (mm)

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total mm/yr	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total acre feet	Percent annual crop	Weighted Avg Annual	
ETr																					
MEAN ETr	1.52	4.65	6.28	7.87	8.05	6.73	5.17	3.34	1335	3.1	9.2	12.8	15.5	16.4	13.7	10.2	6.8	87.5			
STDV ETr	0.54	0.48	0.5	0.51	0.31	0.37	0.4	0.34	46										0	0.0	
Alfalfa Hay																				0.0	
MEAN CU	1.76	5.63	6.99	6.64	5.12	3.4	1.1		939	0.0	3.5	11.5	13.8	13.5	10.4	6.7	2.2	61.5		0.0	
MEAN IR	1.35	5.02	6.41	6.46	4.85	3.12	0.77		856	0.0	2.7	10.2	12.6	13.1	9.9	6.1	1.6	56.2		0.0	
STDEV CU	0.18	0.45	0.45	0.25	0.28	0.26	0.11		30												
STDEV IR	0.43	0.69	0.96	0.38	0.57	0.51	0.37		55										0	0.0	
Alfalfa Seed																				0	0.0
MEAN CU	2.72	5.58	6.99	6.31	3.33	1.78	0.64		837	0.0	5.4	11.4	13.8	12.8	6.8	3.5	1.3	54.9		0.0	
MEAN IR	2.28	4.97	6.41	6.13	3.09	1.53	0.31		756	0.0	4.5	10.1	12.6	12.5	6.3	3.0	0.6	49.6		0.0	
STDEV CU	0.28	0.45	0.45	0.24	0.18	0.14	0.06		28												
STDEV IR	0.52	0.68	0.96	0.36	0.46	0.4	0.34		54										0	0.0	
Dry Beans																				0	0.0
MEAN CU				2.54	6.05	5.63	1.11		472	0.0	0.0	0.0	5.0	12.3	11.5	2.2	0.0	30.9		0.0	
MEAN IR				2.16	5.9	5.39	0.9		441	0.0	0.0	0.0	4.3	12.0	11.0	1.8	0.0	29.0		0.0	
STDEV CU				0.16	0.23	0.31	0.09		15												
STDEV IR				0.53	0.33	0.56	0.31		29										0	0.0	
Silage Corn																				0	0.0
MEAN CU			1.88	2.65	6.34	6.35	4.28		660	0.0	0.0	3.8	5.2	12.9	12.9	8.4	0.0	43.3		0.0	
MEAN IR			1.43	2.23	6.17	6.07	3.99		609	0.0	0.0	2.9	4.4	12.6	12.3	7.9	0.0	40.1		0.0	
STDEV CU			0.15	0.17	0.24	0.35	0.33		21												
STDEV IR			0.39	0.59	0.36	0.64	0.56		39										0	0.0	
Sweet Corn																				0	0.0
MEAN CU			1.88	2.73	6.45	6.12			530	0.0	0.0	3.8	5.4	13.1	12.4	0.0	0.0	34.8		0.0	
MEAN IR			1.43	2.3	6.28	5.84			489	0.0	0.0	2.9	4.5	12.8	11.9	0.0	0.0	32.1		0.0	
STDEV CU			0.15	0.18	0.25	0.34			18												
STDEV IR			0.39	0.59	0.36	0.62			36										0	0.0	
Peas																				0	0.0
MEAN CU		1.4	2.8	6.69	3.62	1.07			476	0.0	2.8	5.7	13.2	7.4	2.2	0.0	0.0	31.2		0.0	
MEAN IR		1.04	2.36	6.18	3.49	0.89			425	0.0	2.0	4.8	12.2	7.1	1.8	0.0	0.0	27.9		0.0	
STDEV CU		0.14	0.22	0.43	0.14	0.06			18												
STDEV IR		0.36	0.43	0.87	0.24	0.31			42										0	0.0	
Potatoes																				0	0.0
MEAN CU			1.9	4.83	6.76	5.28	3.19		674	0.0	0.0	3.9	9.5	13.8	10.7	6.3	0.0	44.1		0.0	

MEAN IR	1.55	4.46	6.63	5.08	2.98	634	0.0	0.0	3.2	8.8	13.5	10.3	5.9	0.0	41.6	0.0
STDEV CU	0.15	0.31	0.26	0.29	0.25	21										
STDEV IR	0.32	0.64	0.34	0.49	0.41	35										
Sugar Beets																0
MEAN CU	1.4	1.88	3.08	7.25	6.67	836	0.0	2.8	3.8	6.1	14.7	13.6	9.1	4.8	54.8	0.0
MEAN IR	1	1.42	2.63	7.07	6.38	761	0.0	2.0	2.9	5.2	14.4	13.0	8.5	4.1	49.9	0.0
STDEV CU	0.14	0.15	0.2	0.28	0.37	24										
STDEV IR	0.39	0.39	0.63	0.4	0.67	46										
Spring Grain																0
MEAN CU	1.4	3.14	7.61	7.94	2.88	704	0.0	2.8	6.4	15.0	16.2	5.9	0.0	0.0	46.1	0.0
MEAN IR	1.05	2.7	7.09	7.77	2.68	651	0.0	2.1	5.5	14.0	15.8	5.5	0.0	0.0	42.8	0.0
STDEV CU	0.14	0.25	0.49	0.3	0.16	24										
STDEV IR	0.36	0.45	0.93	0.41	0.39	47										
Winter Grain																0
MEAN CU	0.49	3.5	6.22	7.87	7.83	863	1.0	6.9	12.7	15.5	15.9	4.6	0.0	0.0	56.6	0.0
MEAN IR	0.06	3.08	5.63	7.3	7.65	788	0.1	6.1	11.5	14.4	15.6	4.2	0.0	0.0	51.8	0.0
STDEV CU	0.17	0.36	0.5	0.51	0.3	32										
STDEV IR	0.36	0.57	0.71	0.99	0.42	58										
Pasture																100
MEAN CU	1.98	4.83	6.06	6.2	5.18	944	0.0	3.9	9.8	11.9	12.6	10.5	7.8	5.2	61.9	61.9
MEAN IR	1.57	4.28	5.53	6.03	4.92	865	0.0	3.1	8.7	10.9	12.3	10.0	7.3	4.5	56.7	56.7
STDEV CU	0.2	0.39	0.39	0.24	0.29	29										
STDEV IR	0.44	0.61	0.86	0.35	0.56	52										
Vegetables																0
MEAN CU	1.9	4.03	6.16	5.36	3.56	645	0.0	0.0	3.9	7.9	12.5	10.9	7.0	0.0	42.2	0.0
MEAN IR	1.55	3.68	6.04	5.16	3.35	605	0.0	0.0	3.2	7.2	12.3	10.5	6.6	0.0	39.8	0.0
STDEV CU	0.15	0.26	0.23	0.3	0.27	20										
STDEV IR	0.32	0.58	0.32	0.5	0.44	33										
Total %							100									100
Weighted Avg Annual																
CU Total																61.9
IR Total																56.7
CU af/ac																3.09
IR af/ac																2.84

Weighted Monthly CU and IR													Total	
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total					
Alfalfa Hay	acre f acre f acre f acre f acre f acre f acre f acre f acre f acre f											annual		
CU	0	0	0	0	0	0	0	0	0	0	0	0		
IR	0	0	0	0	0	0	0	0	0	0	0	0		
Alfalfa Seed	acre f acre f acre f acre f acre f acre f acre f acre f acre f acre f											annual		
CU	0	0	0	0	0	0	0	0	0	0	0	0		
IR	0	0	0	0	0	0	0	0	0	0	0	0		
Dry Beans	acre f acre f acre f acre f acre f acre f acre f acre f acre f acre f											annual		
CU	0	0	0	0	0	0	0	0	0	0	0	0		
IR	0	0	0	0	0	0	0	0	0	0	0	0		
Silage Corn	acre f acre f acre f acre f acre f acre f acre f acre f acre f acre f											annual		

