



July 13, 2007

Idaho Department of Water Resources
Western Regional Office
2735 Airport Way
Boise, ID 83705-5082

Attention: Steve Lester

Subject: Response to your transfer application questions

Dear Steve,

It is good to hear that this transfer application is moving forward. This is very good news to the Choutchourous. This letter is in response to your July 3, 2007 request for additional information regarding the transfer application on a portion of "Mellin Water Right No. 63-7194." Responses to the numbered items in your letter follow:

1. As you know and identified, the applicants hold several water rights associated with the dairy including 63-12364 and 63-9179B providing a total of 0.38 cfs and 69.8 AFA for combined commercial and stock water needs with 37.2 AFA designated for stockwater and 32.6 AFA designated for commercial uses. The quantity provided by these water rights is insufficient to meet total dairy water requirements and therefore Choutchourous have purchased the 30-acre portion from Mellin and propose transferring this right for stockwater and commercial use.
2. Choutchourou's dairy operates with approximately 4,200 milking cows and 630 dry cows. Enclosed is a Dairy Water Use Worksheet indicating total annual stockwater requirements of 145 acre-feet and commercial requirements of 32.7 acre-feet. Existing water rights identified above appear to fully cover commercial water needs; the operation is deficient in stockwater rights, which is why the transfer on Mellin's right listed only stockwater. However, as you recommended, the transfer is now amended to describe both commercial and stockwater uses thereby providing flexibility and coverage for the operation. The enclosed dairy worksheet should provide sufficient details regarding commercial water uses at this operation. If you need further information, please let me know.
3. The basis for consumptive use calculations as proposed in the transfer application is from Allen & Brockway (1983) for the Swan Falls Power House with a crop of alfalfa hay, a crop typically grown on Mellin's place per Ralph Mellin. A copy of the appurtenant

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page from Allen & Brockway's report, Appendix E, is enclosed. Data that are more recent are now available from the University of Idaho's Kimberly station web site (<http://www.kimberly.uidaho.edu/ETIdaho/>). The Swan Falls station is not available on the web-provided data, but consumptive use data from the Kuna station, which is also near Mellin's property, is available. This data shows that the annual **net irrigation water requirement** for alfalfa with frequent cuttings is 1095 mm per year (3.59 ft/yr). Based on my recent conversation with Jeff Peppersack, IDWR prefers to use the best and most recent available consumptive use data, and therefore I suppose we use this value for calculations. For 30 acres of alfalfa at 3.59 ft/yr, the total consumptive quantity available for transfer is 107.7 acre-feet. Table 1 provides a summary of water requirements compared to existing and transferred water rights. Based on the dairy water requirement analysis, the existing water rights and the transferred water provide adequate water with a minor deficit in annual volume.

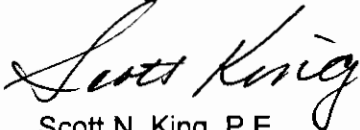
	Stockwater		Commercial		Total	
	cfs	AFA	cfs	AFA	cfs	AFA
63-12364	0.22	19.7	0.22	15.1	0.22	34.8
63-9179B	0.16	17.5	0.16	17.5	0.16	35
63-12364 & 63-9179B Combined	0.38	37.2	0.38	32.6	0.38	69.8
63-32654 (Transferred from Mellin)	0.5	107.7	0.5	107.7	0.5	107.7
Total Available	0.88	144.9	0.88	140.3	0.88	177.5
Total Dairy Requirement	0.64	145	0.64	32.7	0.64	177.7
Surplus (Deficit)					0.24	(0.20)

Table 1: Water requirements and water rights.

4. The transfer is amended to indicate a volume of 135 acre feet which is consistent with the quantity identified on right 63-32654.

An amended transfer application is enclosed. The signature page was faxed to me this morning; an original will follow to you as soon as I receive it. I believe this should answer the question posed in your letter. Please contact me with any other questions or requests for additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott N. King". The signature is written in a cursive, flowing style.

Scott N. King, P.E.
Senior Project Engineer

cc: Bernard and Toni Choutchourrou

File: 408.0010

FILE NUMBER Choutchourou Dairy
REVIEWER Scott King
DATE July 11, 2007

DAIRIES: WATER USE WORKSHEET

REQUIRED DAIRY DATA

NUMBER OF MILKING CATTLE 4200
NUMBER OF DRY CATTLE 630
NUMBER OF REPLACEMENT CATTLE 0-2 MONTHS 0
3-4 MONTHS 0
5-8 MONTHS 0
9-12 MONTHS 0
13-15 MONTHS 0
16-24 MONTHS 0
ENTER 1 FOR MANUAL COW WASHING, 2 FOR AUTOMATIC COW WASHING,
OR 3 IF SPRINKLERS ARE USED TO FLUSH HOLDING PEN AND WASH COWS 3
IF SPRINKLERS ARE USED: NUMBER OF SPRINKLERS IN HOLDING PEN 10
NOZZLE DISCHARGE (USE 5.0 GPM IF UNKNOWN) 3.50
TOTAL OPERATION TIME OF SPRINKLERS (MIN/DAY) 800
NUMBER OF MILKINGS PER DAY 2
AVG. LBS. OF MILK PRODUCED PER DAY PER ANIMAL (IDAHO AVG IS 70 LBS.) 70
ARE THERE SEPARATE PUMPS FOR COMMERCIAL AND STOCKWATER USES? N
IF SO: HOW MANY HOURS PER DAY DOES THE STOCKWATER PUMP RUN?
HOW MANY HOURS PER DAY DOES THE COMMERCIAL PUMP RUN?
IF ONLY ONE PUMP, HOW MANY TOTAL HOURS PER DAY DOES IT RUN? 10.0
IS A PLATE COOLER USED? Y
IS PLATE COOLER WATER LATER RECYCLED FOR OTHER USES? (IF NO PLATE
COOLER, LEAVE BLANK) Y
ARE CORRAL MISTERS USED IN HOLDING PEN? Y
IF USING CORRAL MISTERS: NUMBER OF MISTERS (IF UNKNOWN,
ASSUME 1 MISTER FOR EVERY 5 COWS) 840
NOZZLE DISCHARGE (USE 5.0 GPM IF UNKNOWN) 5.00
SPRAY INTERVAL (EX - 2 MIN ON EVERY 5 MIN = 2/5) 1/5
OPERATION TIME OF MISTERS (HRS/DAY) 8
DAYS PER YEAR MISTERS ARE USED 50
ENTER A TOTAL VOLUME IN GPD FOR MISCELLANEOUS WATER USES NOT
INDIVIDUALLY CALCULATED BELOW (EX - RESTROOMS, WASHING MACHINES) 700

CALCULATIONS

DIVERSION RATE (CFS):

STOCKWATER
MILKING CATTLE (BASED ON MILK PRODUCTION) 4200
DRY CATTLE @ 17.0 GPD/HD 10710
REPLACEMENT CATTLE 0
TOTAL 0.64

COMMERCIAL
TOTAL 0.64

TOTAL DIVERSION RATE 0.64

DIVERSION VOLUME (AFA):

STOCKWATER
MILKING CATTLE 135.5
DRY CATTLE 9.5
REPLACEMENT CATTLE 0.0
TOTAL 145.0

COMMERCIAL
WASHING OF BULK TANK AND RELATED EQUIPMENT 0.4
BACKFLUSH 4.7
PARLOR/MILKHOUSE/HOLDING PEN CLEANUP 2.0
CATTLE WASHING BASED UPON METHOD OF WASHING 23.5
PLATE COOLER 0.0
CORRAL MISTERS 1.2
MISCELLANEOUS USES 0.8
TOTAL 32.7

TOTAL DIVERSION VOLUME 177.7

CONSUMPTIVE USE VOLUME (AFA)(assuming 100% consumptive):

STOCKWATER 145.0
COMMERCIAL 32.7
TOTAL CONSUMPTIVE USE 177.7

THEORETICAL FLOW ESTIMATION WORKSHEET

REQUIRED PUMP INFORMATION

	PUMP 1	PUMP 2	PUMP 3	PUMP 4	PUMP 5
PUMP HORSEPOWER (HP)	0.00		0.00	0.00	0.00
PUMP EFFICIENCY (%)	70		70	70	70
LIFT (FT)	0		0	0	0
DISCHARGE PRESSURE (PSI)	0		0	0	0
FRICTION LOSSES (FT)	0.0		0.0	0.0	0.0
HOURS PER DAY PUMP OPERATES	0.0		0.0	0.0	0.0

CALCULATIONS

THEORETICAL FLOW RATE (CFS) *	0.00	0.00	0.00	0.00	0.00
DIVERSION VOLUME (AFA) **	0.0	0.0	0.0	0.0	0.0

* IF PUMP EFFICIENCY IS UNKNOWN, 70% MAY BE ASSUMED

** DIVERSION VOLUME IS THE ABSOLUTE MAXIMUM VOLUME BASED ON THE
THEORETICAL FLOW RATE ASSUMING PUMP RUNS EVERY DAY OF THE YEAR

EVALUATION OF EQUIVALENT IRRIGATED ACREAGE

IRRIGATION RIGHT (BEFORE CHANGE)

DIVERSION RATE	CFS
ACRES OF IRRIGATION	ACRES
DIVERSION VOLUME	AC-FT/AC
CONSUMPTIVE USE VOLUME	AC-FT/AC
IRRIGATION IS BEING CONVERTED FOR WHICH PORTION OF THE DAIRY OPERATION - STOCKWATER (S), COMMERCIAL (C), OR BOTH (B)?	

CALCULATIONS

IRRIGATION DIVERSION RATE PER ACRE	#DIV/D*	CFS/AC
REDUCTION OF IRRIGATION BASED ON DIVERSION RATE	#DIV/D*	ACRES
REDUCTION OF IRRIGATION BASED ON DIVERSION VOLUME	#DIV/D*	ACRES
REDUCTION OF IRRIGATION BASED ON CONSUMPTIVE USE	#DIV/D*	ACRES

Monthly	-0.75	-0.11	0.59	3.13	4.74	5.31	6.68	4.70	2.96	1.94	-0.62	-0.90	1012	1002
15-Day Moving Average	-1.83	-0.64	0.01	1.72	3.71	3.57	4.95	3.40	1.46	0.84	-1.81	-1.63		
7-Day Moving Average	-3.21	-1.69	-1.24	-0.31	0.97	1.64	2.93	1.30	0.35	-0.54	-3.30	-3.05		
3-Day Moving Average	-6.46	-3.57	-3.48	-3.18	-2.95	-1.69	2.05	-1.93	-2.23	-2.63	-5.46	-5.26		
Ave Highest ET						mm/day							--	
15-Day Moving Average ^f	0.26	0.62	1.61	5.26	7.05	8.41	8.52	6.76	4.70	3.75	0.50	0.22		
7-Day Moving Average ^g	0.59	1.25	2.35	6.30	8.27	9.58	9.23	7.51	5.91	4.86	1.14	0.59		
3-Day Moving Average ^h	0.90	1.85	3.21	7.66	9.61	10.60	9.86	8.38	6.89	5.61	1.73	0.91		
Ave Lowest ET						mm/day							--	
15-Day Moving Average ^f	-0.94	-0.20	0.26	3.06	4.61	5.05	5.52	4.18	2.58	1.52	-0.92	-0.84		
7-Day Moving Average ^g	-1.84	-1.01	-0.39	1.67	2.54	2.90	3.49	2.61	1.45	0.41	-2.02	-1.63		
3-Day Moving Average ^h	-3.48	-2.23	-1.75	-0.51	-0.09	0.25	1.96	1.11	-0.19	-1.05	-3.85	-3.33		
Special normal distribution parameters for monthly, seasonal, and annual intervals													--	
Skew	-0.56	-2.04	0.19	0.04	-0.43	-0.07	-0.03	-0.44	0.48	0.01	-0.54	-0.20	0.69	0.86
Kurtosis	1.48	8.84	0.66	2.85	1.33	1.89	0.93	1.28	3.08	0.58	4.14	0.60	3.14	3.50

^a Growing Season: This is usually the time from green up or planting in the spring to a killing frost or harvest in the fall. It is not applicable for entries without a growing season and will be blank.

^b Mean of the average daily value for month

^c Mean of the fourteen 15-day period averages contained in the month

^d Mean of the twenty three 7-day period averages contained in the month

^e Mean of the twenty seven 3-day period averages contained in the month

^f Mean of the highest/lowest 15-day period average in month

^g Mean of the highest/lowest 7-day period average in month

^h Mean of the highest/lowest 3-day period average in month

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The citation for the evapotranspiration data used from this site should be: *Allen, Richard G. and Clarence W. Robison, 2006 (Revised 2007). **Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho**, Research Technical Completion Report, Kimberly Research and Extension Center, University of Idaho, Moscow, ID.*

Questions regarding the data should be addressed to Clarence W. Robison or Richard G. Allen, University of Idaho, Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, ID 83341. Telephone (208)-423-6610