

To: 73-4089

From: D. Shaff

Date: December 8, 2009

Subject: Irrigation Requirements

Approximate elevation at Point of Diversion 4740 ft MSL

Approximate elevation at Ellis property 4710 ft MSL

Distance of canal – not less than 8200 ft.

Per cent slope = $\text{Fall}/\text{length} \times 100 = 30/8200 \times 100 = .37 \%$

Width of canal near beginning = about 6 ft.

Soils at place of use

MUSYM	13	14	4
MUKEY	83012	83023	38174
Est. of field	59%	1%	40%
55 % field efficiency			

Average Water Holding Capacity (AWC)

Fine Sand	.05-.08
Sand	.04-.07
Loamy Sand	.06-.09

Maximum Root Zone = 3 ft.

Maximum Consumptive Use per day = 7.81 mm/day = 0.3075 inches/day

Table C-3 attached

Field Irrigation Requirement per acre (FIR in cfs) = $4.2 \times (\text{CU}/\text{FAE})$

CU = Consumptive Use

FAE = Field Application Efficiency

$\text{FIR} = 4.2 \times (0.3075/55) = 0.0235 \text{ cfs/acre}$

$\text{FIR for 73-4089} = 0.0235 \times 25 \text{ acres} = 0.5870 \text{ cfs}$

Conveyance loss for all rights on P-6 ditch = 50%

Total for 73-4089 = $0.5870 \text{ cfs}/0.50 = 1.18 \text{ cfs}$.

Table C-3. Continued.

	Mar	Apr	May	June	July	Aug	Sept	Oct	Mar-Oct
Kilgore	-.05	2.67	4.87	6.51	7.22	5.86	4.00	2.09	1015
Kooskia	1.86	3.94	5.27	6.37	7.52	6.14	4.34	2.19	1152
Kuna 2 NNE	2.21	4.61	6.14	7.74	8.47	7.12	5.44	3.29	1378
Lewiston WSO AP	1.88	3.89	5.24	6.50	7.67	6.24	4.42	2.28	1167
Lifton Pumping Station	.40	3.22	5.01	6.89	7.78	6.53	4.67	2.48	1132
Mackay Ranger Station	.81	4.01	5.65	7.31	8.14	6.51	4.78	2.90	1227
Malad	1.27	3.94	5.26	7.05	7.93	6.74	4.99	2.89	1226
Malad City	1.19	3.77	5.15	6.88	7.75	6.58	4.83	2.79	1192
Malta 2 E	1.87	4.27	5.88	7.76	8.35	6.91	5.15	3.26	1330
May	1.15	4.14	5.68	7.15	7.81	6.26	4.54	2.79	1209
Mc Call	.82	2.95	4.84	6.52	7.28	5.87	4.32	2.49	1074
Minidoka Dam	1.83	4.37	6.04	7.82	8.29	6.80	5.28	3.48	1344
Montpelier Ranger Station	.51	3.23	4.78	6.60	7.51	6.29	4.50	2.48	1098
Moscow-Univ. of Idaho	1.28	3.66	4.88	5.81	7.58	6.06	4.37	2.07	1093
Mountain Home	2.23	4.61	6.09	7.90	8.24	6.70	5.08	3.64	1362
New Meadows Ranger Station	1.07	3.47	5.11	6.74	7.38	6.01	4.40	2.40	1119
Nezperce	1.36	3.27	4.67	5.90	7.14	5.97	4.09	1.94	1051
Oakley	2.01	4.54	6.09	7.77	8.35	6.94	5.38	3.61	1367
Ola 4 S	1.94	4.18	5.84	7.54	8.17	6.70	5.13	3.00	1301
Orofino	1.89	4.07	5.41	6.54	7.75	6.36	4.45	2.24	1185
Palisades Dam	1.01	3.94	5.92	7.43	8.02	6.43	4.90	3.14	1248
Parma Exp. Station	2.23	4.67	6.24	7.86	8.58	7.14	5.39	3.17	1386
Paul 1 ENE	1.83	4.34	6.04	7.68	8.23	6.80	5.17	3.28	1327
Payette	2.29	4.78	6.38	8.01	8.77	7.27	5.48	3.21	1414
Picabo	1.07	4.14	6.02	7.79	8.02	6.79	5.04	3.06	1283
Pocatello WSO AP	1.64	4.24	5.91	7.91	8.23	6.53	4.92	3.36	1308
Porthill	1.00	3.51	4.85	5.75	7.24	5.56	3.79	1.65	1021
Potlatch 3 NNE	1.21	3.53	4.75	5.67	7.32	5.81	4.10	1.92	1051
Preston Sugar Factory	1.17	3.95	5.23	7.00	7.87	6.67	4.94	2.88	1215
Reynolds	1.84	3.64	5.28	6.94	7.48	6.04	4.61	3.00	1189
Richfield	1.52	4.65	6.28	7.87	8.05	6.73	5.17	3.34	1334
Riggins	2.11	4.19	5.44	6.54	7.86	6.47	4.66	2.60	1221
Rupert	1.90	4.62	6.16	7.85	8.38	6.80	5.21	3.43	1357
St Anthony 1 WNW	.98	4.09	5.97	7.28	7.76	6.22	4.64	2.94	1220
Saint Maries	1.24	3.61	4.89	5.82	7.43	5.79	4.13	1.97	1068
Salmon	1.31	4.37	5.78	7.12	7.61	5.92	4.31	2.75	1198
Salmon 1 N	1.48	4.33	5.80	7.52	7.93	6.16	4.40	2.69	1233
Sandpoint Exp. Station	1.05	3.48	4.79	5.70	7.20	5.60	3.88	1.73	1023
Shoshone 1 WNW	1.82	4.91	6.48	8.15	8.27	6.79	5.24	3.57	1384
Stanley	.35	2.89	4.78	6.45	6.32	5.14	3.76	2.40	982
Strevell	1.65	4.11	5.73	7.52	8.23	6.80	5.20	3.29	1301
Swan Falls Power House	2.58	4.97	6.57	8.19	8.89	7.21	5.69	3.79	1466
Swan Valley	1.08	3.82	5.68	7.16	7.84	6.31	4.67	2.74	1203
Tensed	1.18	3.37	4.49	5.58	7.18	5.77	3.99	1.84	1023
Tetonia Exp. Station	.62	3.43	5.55	7.18	7.99	6.52	4.70	2.55	1180
Three Creek	1.53	3.62	5.00	6.65	7.07	5.68	4.16	2.97	1123
Twin Falls 2 NNE	2.13	4.75	6.34	7.92	8.32	6.78	5.22	3.52	1376
Twin Falls 3 SE	2.03	4.66	6.27	7.91	8.41	6.87	5.29	3.45	1374
Twin Falls WSO	1.95	4.18	6.23	7.49	8.10	6.82	5.21	3.34	1326
Welser 2 SE	2.27	4.73	6.33	7.99	8.67	7.13	5.40	3.20	1399

Table C-4. Standard deviation of Alfalfa Reference Evapotranspiration, mm/day. Adjusted for station aridity.

	Mar	Apr	May	June	July	Aug	Sept	Oct
ABERDEEN EXP. STATION	.47	.54	.51	.48	.32	.31	.40	.36
AMERICAN FALLS 1 SW	.42	.44	.46	.52	.28	.29	.37	.35
ANDERSON DAM	.38	.45	.47	.54	.29	.36	.44	.40
ARBON 2 NW	.44	.49	.40	.47	.22	.37	.44	.38
ARCO 3 SW	.54	.56	.53	.47	.37	.38	.40	.36
ASHTON	.47	.60	.52	.49	.32	.31	.41	.38
BAYVIEW MODEL BASIN	.18	.23	.33	.29	.27	.32	.29	.18
BLACKFOOT 2 SSW	.46	.58	.47	.43	.34	.34	.44	.38
BLISS	.35	.47	.49	.47	.26	.33	.41	.35
BOISE WSO AP	.31	.38	.46	.47	.32	.40	.44	.32
BONNERS FERRY 1 SW	.26	.32	.30	.33	.29	.30	.34	.16
BRUNEAU	.30	.48	.43	.50	.35	.33	.42	.30
BURLEY FAA AP	.34	.45	.46	.46	.24	.31	.40	.34
CABINET GORGE	.22	.28	.35	.32	.29	.37	.38	.16
CALDWELL	.28	.37	.47	.51	.37	.39	.38	.26
CAMBRIDGE	.47	.44	.45	.51	.43	.39	.39	.29
CASCADE 1 NW	.36	.42	.43	.46	.30	.33	.44	.31
CASTLEFORD 2 N	.36	.52	.39	.45	.22	.38	.41	.33
CHALLIS	.39	.48	.52	.52	.33	.37	.37	.34
CHILLY BARTON FLAT	.48	.53	.49	.52	.42	.42	.41	.35
COEUR D'ALENE 1 E	.25	.34	.35	.33	.28	.32	.35	.19
COTTONWOOD	.33	.37	.43	.41	.38	.34	.36	.25
COUNCIL	.46	.43	.46	.49	.30	.38	.42	.28
DEER FLAT DAM	.28	.37	.43	.39	.26	.28	.34	.23
DRIGGS	.47	.57	.52	.53	.32	.30	.44	.38
DUBOIS EXP. STATION	.48	.60	.56	.54	.35	.33	.45	.39
EMMETT 2 E	.30	.41	.47	.46	.32	.34	.37	.27
FAIRFIELD RANGER STATION	.47	.52	.44	.43	.28	.43	.48	.39
FORT HALL INDIAN AGNCY	.40	.49	.52	.48	.28	.32	.34	.34
GARDEN VALLEY RS	.30	.43	.39	.47	.32	.36	.41	.27
GLENNS FERRY	.35	.44	.49	.48	.30	.36	.35	.33
GRACE	.54	.64	.48	.55	.35	.32	.40	.39
GRAND VIEW 2 W	.28	.42	.46	.49	.35	.36	.38	.28
GRANGEVILLE	.30	.38	.42	.37	.32	.36	.41	.26
HAILEY RANGER STATION	.45	.62	.55	.50	.34	.39	.44	.41
HAMER 4 NW	.48	.49	.49	.42	.30	.35	.40	.34
HAZELTON	.37	.49	.55	.51	.39	.36	.41	.38
HILL CITY	.52	.54	.50	.49	.29	.35	.40	.35
HOLLISTER	.38	.54	.57	.59	.32	.37	.44	.40
HOWE	.48	.46	.37	.45	.31	.33	.48	.36
IDAHO CITY	.39	.41	.46	.41	.32	.35	.40	.31
IDAHO FALLS 2 ESE	.44	.50	.48	.44	.26	.36	.42	.32
IDAHO FALLS 16 SE	.43	.48	.35	.41	.31	.43	.51	.40
IDAHO FALLS FAA AP	.54	.54	.53	.49	.26	.30	.41	.35
IDAHO FALLS 46 W	.51	.48	.48	.50	.27	.36	.45	.32
ISLAND PARK DAM	.46	.54	.49	.46	.30	.35	.43	.39
JEROME	.37	.48	.55	.53	.31	.36	.40	.34
KELLOGG	.26	.38	.38	.35	.31	.34	.35	.20

Table C-4. Continued.

	Mar	Apr	May	June	July	Aug	Sept	Oct
KILGORE	.39	.55	.43	.38	.25	.36	.52	.41
KOOSKIA	.25	.33	.36	.34	.26	.30	.32	.20
KUNA 2 NNE	.29	.42	.45	.41	.32	.34	.36	.30
LEWISTON WSO AP	.23	.32	.35	.41	.31	.40	.36	.20
LIFTON PUMPING STATION	.51	.58	.44	.43	.23	.27	.36	.32
MACKAY RANGER STATION	.46	.59	.53	.53	.34	.36	.37	.38
MALAD	.38	.49	.45	.45	.31	.36	.40	.35
MALAD CITY	.42	.39	.41	.42	.21	.34	.34	.30
MALTA 2 E	.41	.50	.40	.52	.29	.49	.44	.29
MAY	.41	.46	.47	.48	.32	.34	.41	.31
MC CALL	.45	.52	.50	.49	.27	.36	.40	.30
MINIDOKA DAM	.41	.45	.47	.47	.28	.36	.41	.35
MONTPELIER RANGER STATION	.50	.62	.48	.52	.27	.31	.36	.37
MOSCOW-UNIV. OF IDAHO	.27	.40	.39	.36	.30	.34	.35	.23
MOUNTAIN HOME	.32	.46	.50	.51	.34	.38	.40	.40
NEW MEADOWS RANGER STATION	.45	.42	.42	.42	.27	.32	.39	.29
NEZPERCE	.28	.36	.40	.37	.29	.38	.42	.23
OAKLEY	.37	.49	.54	.51	.32	.34	.39	.39
OLA 4 S	.35	.38	.41	.42	.27	.38	.43	.27
OROFINO	.24	.32	.36	.35	.25	.29	.31	.20
PALISADES DAM	.42	.52	.46	.47	.31	.34	.40	.37
PARMA EXP. STATION	.29	.42	.46	.48	.33	.34	.34	.26
PAUL 1 ENE	.36	.45	.47	.47	.27	.36	.42	.35
PAYETTE	.29	.36	.41	.40	.27	.31	.34	.25
PICABO	.53	.51	.53	.54	.33	.45	.56	.41
POCATELLO WSO AP	.41	.47	.48	.48	.28	.35	.45	.39
PORTHILL	.27	.28	.30	.31	.27	.30	.31	.17
POTLATCH 3 NNE	.28	.40	.39	.37	.35	.32	.39	.26
PRESTON SUGAR FACTORY	.48	.50	.44	.46	.25	.30	.34	.30
REYNOLDS	.31	.45	.43	.43	.30	.44	.46	.32
RICHFIELD	.54	.48	.50	.51	.31	.37	.40	.34
RIGGINS	.29	.43	.40	.40	.27	.37	.39	.26
RUPERT	.39	.45	.58	.53	.32	.31	.35	.37
ST ANTHONY 1 WNW	.47	.52	.52	.41	.26	.31	.40	.37
SAINT MARIES	.26	.37	.37	.33	.30	.33	.35	.20
SALMON	.40	.37	.48	.43	.27	.27	.35	.28
SALMON 1 N	.33	.50	.36	.42	.27	.35	.38	.30
SANDPOINT EXP. STATION	.26	.33	.33	.30	.25	.28	.30	.17
SHOSHONE 1 WNW	.46	.51	.54	.58	.36	.46	.46	.37
STANLEY	.57	.47	.40	.49	.20	.34	.53	.32
STREVELL	.39	.54	.53	.64	.31	.34	.49	.41
SWAN FALLS POWER HOUSE	.29	.41	.44	.53	.29	.32	.39	.29
SWAN VALLEY	.45	.53	.38	.35	.32	.33	.45	.34
TENSED	.19	.30	.27	.29	.22	.32	.40	.17
TETONIA EXP. STATION	.46	.55	.49	.41	.31	.34	.49	.37
THREE CREEK	.35	.55	.45	.45	.31	.37	.50	.49
TWIN FALLS 2 NNE	.32	.47	.48	.45	.27	.32	.41	.35
TWIN FALLS 3 SE	.36	.48	.51	.52	.28	.30	.39	.37
TWIN FALLS WSO	.35	.43	.42	.36	.24	.36	.47	.34
WEISER 2 SE	.31	.42	.42	.42	.34	.34	.37	.31

Table C-5. Alfalfa reference evapotranspiration, mm/day.
Not adjusted for station aridity.

	Mar	Apr	May	June	July	Aug	Sept	Oct	Mar-Oct
ABERDEEN EXP. STATION	1.56	4.50	6.21	8.24	8.83	7.27	5.33	3.20	1381
AMERICAN FALLS 1 SW	1.74	4.68	6.35	8.40	9.06	7.56	5.65	3.47	1435
ANDERSON DAM	1.81	4.64	6.41	8.33	9.16	7.77	5.81	3.77	1460
ARBON 2 NW	1.38	4.10	5.97	8.10	8.77	7.28	5.40	3.24	1354
ARCO 3 SW	1.07	4.31	6.31	7.83	8.67	7.06	5.16	2.93	1326
ASHTON	.80	4.08	6.16	7.53	8.17	6.68	4.95	2.84	1261
BAYVIEW MODEL BASIN	.98	3.23	4.58	5.67	7.30	5.81	3.92	1.63	1014
BLACKFOOT 2 SSW	1.62	4.86	6.62	8.09	8.97	7.35	5.48	3.26	1415
BLISS	2.14	5.38	6.94	8.62	8.88	7.58	5.86	3.73	1503
BOISE WSO AP	2.17	4.48	6.22	8.08	9.01	7.55	5.77	3.38	1428
BONNERS FERRY 1 SW	1.11	3.69	5.05	6.05	7.76	6.12	4.18	1.71	1092
BRUNEAU	2.52	5.07	6.73	8.51	8.97	7.57	5.68	3.76	1494
BURLEY FAA AP	1.90	4.56	6.19	7.91	8.58	7.17	5.43	3.32	1379
CABINET GORGE	1.08	3.49	4.91	5.99	7.72	6.16	4.21	1.80	1083
CALDWELL	2.34	4.83	6.44	8.09	8.88	7.37	5.58	3.26	1432
CAMBRIDGE	1.81	4.47	6.13	7.84	8.83	7.29	5.38	3.02	1370
CASCADE 1 NW	.99	3.39	5.18	6.89	7.82	6.49	4.77	2.56	1166
CASTLEFORD 2 N	2.14	5.02	6.72	8.42	8.51	7.33	5.67	3.54	1448
CHALLIS	1.27	4.54	6.16	7.81	8.73	7.10	5.14	3.00	1339
CHILLY BARTON FLAT	.55	3.62	5.34	6.97	7.79	6.28	4.40	2.41	1143
COEUR D'ALENE 1 E	1.18	3.69	5.10	6.12	8.05	6.47	4.51	2.03	1137
COTTONWOOD	1.33	3.41	4.77	5.93	7.43	6.19	4.28	2.04	1083
COUNCIL	1.79	4.45	6.17	7.89	8.89	7.45	5.57	3.17	1389
DEER FLAT DAM	2.26	4.73	6.30	7.93	8.71	7.28	5.56	3.26	1409
DRIGGS	.74	3.74	5.73	7.28	8.28	6.77	4.92	2.74	1230
DUBOIS EXP. STATION	.66	4.10	5.99	7.69	8.88	7.27	5.19	2.89	1306
EMMETT 2 E	2.34	4.83	6.41	8.03	8.78	7.33	5.65	3.34	1429
FAIRFIELD RANGER STATION	.80	4.14	6.06	7.73	8.01	6.86	5.16	3.07	1279
FORT HALL INDIAN AGNCY	1.71	4.67	6.43	8.47	9.03	7.44	5.55	3.44	1430
GARDEN VALLEY RS	1.77	4.23	5.91	7.61	8.51	7.14	5.42	3.05	1336
GLENNS FERRY	2.47	5.16	6.76	8.58	9.08	7.54	5.65	3.71	1498
GRACE	1.11	4.11	5.91	7.95	8.60	7.13	5.28	3.13	1322
GRAND VIEW 2 W	2.49	5.18	6.76	8.64	9.07	7.58	5.61	3.60	1497
GRANGEVILLE	1.42	3.44	4.80	6.01	7.51	6.27	4.27	2.02	1094
HAILEY RANGER STATION	1.15	4.52	6.35	7.98	8.40	7.21	5.45	3.31	1358
HAMER 4 NW	.86	4.25	6.01	7.74	8.58	6.93	4.91	2.72	1285
HAZELTON	2.04	4.80	6.48	8.24	8.90	7.47	5.68	3.54	1443
HILL CITY	.74	4.13	6.01	7.56	8.03	6.87	5.08	2.97	1266
HOLLISTER	1.88	4.52	6.11	7.85	8.72	7.30	5.53	3.45	1388
HOWE	1.12	4.58	6.23	7.89	8.65	7.00	4.91	2.78	1321
IDAHO CITY	1.46	3.88	5.55	7.18	8.06	6.76	5.08	2.91	1251
IDAHO FALLS 2 ESE	1.44	4.54	6.47	8.10	8.84	7.28	5.34	3.11	1381
IDAHO FALLS 16 SE	.95	3.79	5.70	7.32	8.13	6.66	4.83	2.72	1227
IDAHO FALLS FAA AP	1.32	4.58	6.41	7.89	8.77	7.20	5.29	3.03	1362
IDAHO FALLS 46 W	1.03	4.10	6.12	7.83	8.71	7.12	5.04	2.70	1305
ISLAND PARK DAM	0.00	2.93	5.02	6.73	7.70	6.28	4.35	2.27	1080
JEROME	2.03	4.86	6.56	8.31	9.01	7.55	5.78	3.59	1460
KELLOGG	1.20	3.69	5.06	6.04	7.89	6.25	4.37	1.94	1115

Table C-5. Continued.

	Mar	Apr	May	June	July	Aug	Sept	Oct	Mar-Oct
KILGORE	-.05	2.73	4.96	6.64	7.44	6.10	4.15	2.09	1043
KOOSKIA	1.86	4.01	5.38	6.51	7.79	6.44	4.52	2.19	1185
KUNA 2 NNE	2.21	4.61	6.14	7.74	8.47	7.12	5.44	3.29	1378
LEWISTON WSO AP	1.88	4.02	5.44	6.77	8.17	6.79	4.74	2.28	1227
LIFTON PUMPING STATION	.40	3.29	5.11	7.04	8.03	6.82	4.86	2.48	1164
MACKAY RANGER STATION	.81	4.14	5.83	7.56	8.56	6.98	5.08	2.90	1281
MALAD	1.27	4.05	5.42	7.28	8.32	7.20	5.27	2.89	1276
MALAD CITY	1.19	3.89	5.33	7.14	8.18	7.09	5.15	2.79	1247
MALTA 2 E	1.87	4.32	5.95	7.85	8.50	7.08	5.27	3.26	1350
MAY	1.15	4.28	5.89	7.42	8.28	6.79	4.86	2.79	1268
MC CALL	.82	3.08	5.03	6.80	7.74	6.40	4.66	2.49	1133
MINIDOKA DAM	1.83	4.54	6.31	8.19	8.88	7.49	5.72	3.48	1421
MONTPELIER RANGER STATION	.51	3.36	4.97	6.87	7.96	6.82	4.83	2.48	1156
MOSCOW-UNIV. OF IDAHO	1.28	3.69	4.94	5.88	7.73	6.22	4.47	2.07	1110
MOUNTAIN HOME	2.23	4.82	6.41	8.35	8.97	7.55	5.61	3.64	1456
NEW MEADOWS RANGER STATION	1.07	3.53	5.20	6.86	7.58	6.24	4.54	2.40	1145
NEZPERCE	1.36	3.31	4.72	5.97	7.28	6.13	4.18	1.94	1068
OAKLEY	2.01	4.64	6.24	7.98	8.69	7.34	5.64	3.61	1413
OLA 4 S	1.94	4.27	5.98	7.74	8.51	7.09	5.38	3.00	1344
OROFINO	1.89	4.13	5.51	6.69	8.02	6.65	4.63	2.24	1217
PALISADES DAM	1.01	4.13	6.20	7.80	8.64	7.15	5.35	3.14	1329
PARMA EXP. STATION	2.23	4.70	6.28	7.92	8.67	7.25	5.46	3.17	1398
PAUL 1 ENE	1.83	4.42	6.17	7.86	8.52	7.14	5.39	3.28	1366
PAYETTE	2.29	4.82	6.44	8.09	8.92	7.44	5.58	3.21	1432
PICABO	1.07	4.21	6.11	7.92	8.22	7.02	5.19	3.06	1309
POCATELLO WSO AP	1.64	4.51	6.30	8.48	9.16	7.58	5.58	3.36	1427
PORTHILL	1.00	3.62	5.01	5.97	7.66	6.02	4.06	1.65	1071
POTLATCH 3 NNE	1.21	3.56	4.78	5.72	7.41	5.91	4.17	1.92	1062
PRESTON SUGAR FACTORY	1.17	4.06	5.39	7.23	8.26	7.13	5.23	2.88	1265
REYNOLDS	1.84	3.89	5.66	7.47	8.37	7.07	5.26	3.00	1303
RICHFIELD	1.52	4.76	6.44	8.09	8.40	7.14	5.43	3.34	1380
RIGGINS	2.11	4.36	5.69	6.89	8.49	7.18	5.08	2.60	1298
RUPERT	1.90	4.76	6.38	8.15	8.87	7.37	5.58	3.43	1421
ST ANTHONY 1 WNW	.98	4.25	6.23	7.62	8.33	6.87	5.05	2.94	1294
SAINT MARIES	1.24	3.71	5.04	6.01	7.81	6.20	4.37	1.97	1113
SALMON	1.31	4.61	6.12	7.59	8.42	6.82	4.87	2.75	1300
SALMON 1 N	1.48	4.56	6.15	8.00	8.73	7.06	4.97	2.69	1335
SANDPOINT EXP. STATION	1.05	3.55	4.90	5.85	7.48	5.91	4.06	1.73	1057
SHOSHONE 1 WNW	1.82	5.14	6.82	8.62	9.01	7.66	5.80	3.57	1482
STANLEY	.35	3.09	5.07	6.86	6.95	5.87	4.23	2.40	1065
STREVELL	1.65	4.24	5.93	7.80	8.68	7.33	5.54	3.29	1361
SWAN FALLS POWER HOUSE	2.58	5.19	6.91	8.66	9.69	8.14	6.28	3.79	1569
SWAN VALLEY	1.08	3.91	5.82	7.35	8.16	6.67	4.90	2.74	1243
TENSED	1.18	3.40	4.54	5.65	7.33	5.93	4.09	1.84	1039
TETONIA EXP. STATION	.62	3.47	5.60	7.25	8.10	6.65	4.77	2.55	1193
THREE CREEK	1.53	3.85	5.36	7.15	7.89	6.64	4.76	2.97	1229
TWIN FALLS 2 NNE	2.13	4.90	6.58	8.25	8.86	7.40	5.61	3.52	1446
TWIN FALLS 3 SE	2.03	4.76	6.42	8.12	8.75	7.26	5.54	3.45	1418
TWIN FALLS WSO	1.95	4.18	6.23	7.49	8.10	6.82	5.21	3.34	1326
WEISER 2 SE	2.27	4.78	6.41	8.10	8.86	7.35	5.54	3.20	1423

Table C-6. Standard deviation of Alfalfa Reference Evapotranspiration, mm/day. Not adjusted for station aridity.

	Mar	Apr	May	June	July	Aug	Sept	Oct
ABERDEEN EXP. STATION	.47	.54	.51	.48	.32	.31	.40	.36
AMERICAN FALLS 1 SW	.42	.44	.46	.52	.28	.29	.37	.35
ANDERSON DAM	.38	.45	.47	.54	.29	.36	.44	.40
ARBON 2 NW	.44	.49	.40	.47	.22	.37	.44	.38
ARCO 3 SW	.54	.56	.53	.47	.37	.38	.40	.36
ASHTON	.47	.60	.52	.49	.32	.31	.41	.38
BAYVIEW MODEL BASIN	.18	.23	.33	.29	.27	.32	.29	.18
BLACKFOOT 2 SSW	.46	.58	.47	.43	.34	.34	.44	.38
BLISS	.35	.47	.49	.47	.26	.33	.41	.35
BOISE WSO AP	.31	.38	.46	.47	.32	.40	.44	.32
BONNERS FERRY 1 SW	.26	.32	.30	.33	.29	.30	.34	.16
BRUNEAU	.30	.48	.43	.50	.35	.33	.42	.30
BURLEY FAA AP	.34	.45	.46	.46	.24	.31	.40	.34
CABINET GORGE	.22	.28	.35	.32	.29	.37	.38	.16
CALDWELL	.28	.37	.47	.51	.37	.39	.38	.26
CAMBRIDGE	.47	.44	.45	.51	.43	.39	.39	.29
CASCADE 1 NW	.36	.42	.43	.46	.30	.33	.44	.31
CASTLEFORD 2 N	.36	.52	.39	.45	.22	.38	.41	.33
CHALLIS	.39	.48	.52	.52	.33	.37	.37	.34
CHILLY BARTON FLAT	.48	.53	.49	.52	.42	.42	.41	.35
COEUR D'ALENE 1 E	.25	.34	.35	.33	.28	.32	.35	.19
COTTONWOOD	.33	.37	.43	.41	.38	.34	.36	.25
COUNCIL	.46	.43	.46	.49	.30	.38	.42	.28
DEER FLAT DAM	.28	.37	.43	.39	.26	.28	.34	.23
DRIGGS	.47	.57	.52	.53	.32	.30	.44	.38
DUBOIS EXP. STATION	.48	.60	.56	.54	.35	.33	.45	.39
EMMETT 2 E	.30	.41	.47	.46	.32	.34	.37	.27
FAIRFIELD RANGER STATION	.47	.52	.44	.43	.28	.43	.48	.39
FORT HALL INDIAN AGNCY	.40	.49	.52	.48	.29	.32	.34	.34
GARDEN VALLEY RS	.30	.43	.39	.47	.32	.36	.41	.27
GLENNS FERRY	.35	.44	.49	.48	.30	.36	.35	.33
GRACE	.54	.64	.48	.55	.35	.32	.40	.39
GRAND VIEW 2 W	.28	.42	.46	.49	.35	.36	.38	.28
GRANGEVILLE	.30	.38	.42	.37	.32	.36	.41	.26
HAILEY RANGER STATION	.45	.62	.55	.50	.34	.39	.44	.41
HAMER 4 NW	.48	.49	.49	.42	.30	.35	.40	.34
HAZELTON	.37	.49	.55	.51	.39	.36	.41	.38
HILL CITY	.52	.54	.50	.49	.29	.35	.40	.35
HOLLISTER	.38	.54	.57	.59	.32	.37	.44	.40
HOWE	.48	.46	.37	.45	.31	.33	.48	.36
IDAHO CITY	.39	.41	.46	.41	.32	.35	.40	.31
IDAHO FALLS 2 ESE	.44	.50	.48	.44	.26	.36	.42	.32
IDAHO FALLS 16 SE	.43	.48	.35	.41	.31	.43	.51	.40
IDAHO FALLS FAA AP	.54	.54	.53	.49	.26	.30	.41	.35
IDAHO FALLS 46 W	.51	.48	.48	.50	.27	.36	.45	.32
ISLAND PARK DAM	.46	.54	.49	.46	.30	.35	.43	.39
JEROME	.37	.48	.55	.53	.31	.36	.40	.34
KELLOGG	.26	.38	.38	.35	.31	.34	.35	.20

Table C-6. Continued.

	Mar	Apr	May	June	July	Aug	Sept	Oct
KILGORE	.39	.55	.43	.38	.25	.36	.52	.41
KOOSKIA	.25	.33	.36	.34	.26	.30	.32	.20
KUNA 2 NNE	.29	.42	.45	.41	.32	.34	.36	.30
LEWISTON WSO AP	.23	.32	.35	.41	.31	.40	.36	.20
LIFTON PUMPING STATION	.51	.58	.44	.43	.23	.27	.36	.32
MACKAY RANGER STATION	.46	.59	.53	.53	.34	.36	.37	.38
MALAD	.38	.49	.45	.45	.31	.36	.40	.35
MALAD CITY	.42	.39	.41	.42	.21	.34	.34	.30
MALTA 2 E	.41	.50	.40	.52	.29	.49	.44	.29
MAY	.41	.46	.47	.48	.32	.34	.41	.31
MC CALL	.45	.52	.50	.49	.27	.36	.40	.30
MINIDOKA DAM	.41	.45	.47	.47	.28	.36	.41	.35
MONTPELIER RANGER STATION	.50	.62	.48	.52	.27	.31	.36	.37
MOSCOW-UNIV. OF IDAHO	.27	.40	.39	.36	.30	.34	.35	.23
MOUNTAIN HOME	.32	.46	.50	.51	.34	.38	.40	.40
NEW MEADOWS RANGER STATION	.45	.42	.42	.42	.27	.32	.39	.29
NEZPERCE	.28	.36	.40	.37	.29	.38	.42	.23
OAKLEY	.37	.49	.54	.51	.32	.34	.39	.39
OLA 4 S	.35	.38	.41	.42	.27	.38	.43	.27
OROFINO	.24	.32	.36	.35	.25	.29	.31	.20
PALISADES DAM	.42	.52	.46	.47	.31	.34	.40	.37
PARMA EXP. STATION	.29	.42	.46	.48	.33	.34	.34	.26
PAUL 1 ENE	.36	.45	.47	.47	.27	.36	.42	.35
PAYETTE	.29	.36	.41	.40	.27	.31	.34	.25
PICABO	.53	.51	.53	.54	.33	.45	.56	.41
POCATELLO WSO AP	.41	.47	.48	.48	.28	.35	.45	.39
PORTHILL	.27	.28	.30	.31	.27	.30	.31	.17
POTLATCH 3 NNE	.28	.40	.39	.37	.35	.32	.39	.26
PRESTON SUGAR FACTORY	.48	.50	.44	.46	.25	.30	.34	.30
REYNOLDS	.31	.45	.43	.43	.30	.44	.46	.32
RICHFIELD	.54	.48	.50	.51	.31	.37	.40	.34
RIGGINS	.29	.43	.40	.40	.27	.37	.39	.26
RUPERT	.39	.45	.58	.53	.32	.31	.35	.37
ST ANTHONY 1 WNW	.47	.52	.52	.41	.26	.31	.40	.37
SAINT MARIES	.26	.37	.37	.33	.30	.33	.35	.20
SALMON	.40	.37	.48	.43	.27	.27	.35	.28
SALMON 1 N	.33	.50	.36	.42	.27	.35	.38	.30
SANDPOINT EXP. STATION	.26	.33	.33	.30	.25	.28	.30	.17
SHOSHONE 1 WNW	.46	.51	.54	.58	.36	.46	.46	.37
STANLEY	.57	.47	.40	.49	.20	.34	.53	.32
STREVELL	.39	.54	.53	.64	.31	.34	.49	.41
SWAN FALLS POWER HOUSE	.29	.41	.44	.53	.29	.32	.39	.29
SWAN VALLEY	.45	.53	.38	.35	.32	.33	.45	.34
TENSED	.19	.30	.27	.29	.22	.32	.40	.17
TETONIA EXP. STATION	.46	.55	.49	.41	.31	.34	.49	.37
THREE CREEK	.35	.55	.45	.45	.31	.37	.50	.49
TWIN FALLS 2 NNE	.32	.47	.48	.45	.27	.32	.41	.35
TWIN FALLS 3 SE	.36	.48	.51	.52	.28	.30	.39	.37
TWIN FALLS WSO	.35	.43	.42	.36	.24	.36	.47	.34
WEISER 2 SE	.31	.42	.42	.42	.34	.34	.37	.31

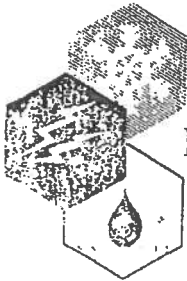
RESEARCH TECHNICAL COMPLETION REPORT

Estimating Consumptive Irrigation Requirements for Crops in Idaho

by

R.G. Allen
C.E. Brockway
University of Idaho
College of Engineering
College of Agriculture

Submitted to
Idaho Department of Water Resources
Boise, Idaho



**Idaho Water and Energy Resources Research Institute
University of Idaho
Moscow, Idaho**

August 1983



State of Idaho

DEPARTMENT OF WATER RESOURCES

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C. L. "BUTCH" OTTER
Governor

DAVID R. TUTHILL, JR.
Director

April 23, 2009

DAVID R ELLIS
JEANNE ELLIS
159 PAHSIMEROI RD
ELLIS ID 83253

RE: Objection to Snake River Basin Adjudication (SRBA) claim 73-4089

Dear Mr. and Ms. Ellis,

The Idaho Department of Water Resources (IDWR) received a copy of the objection to the recommendation for 73-4089.

The objection requests that the recommendation reflect a total diversion rate of 1.5 cfs or 75 inches. My initial review indicates that the amended claim submitted to IDWR on November 26, 2008 appears to have changed the claimed priority date from May 1, 1902 to April 1, 1875 as well as changed the claimed diversion rate from 1.5 cfs to 1.0 cfs.

In order to pursue the 1.5 cfs, you are going to need to amend the claim back to claiming 1.5 cfs. It appears that when the amended claim was prepared for you to sign in November of 2008, the diversion rate on the claim reflected what had been recommended to the court.

For your convenience, I am attaching an amended claim with the diversion rate claiming 1.5 cfs. This is the only thing I changed. Please look over the claim and initial any changes you wish to make. When satisfied, sign the claim and return it to this office in the postage paid envelope provided.

Please note that amending the claim to represent 1.5 cfs is not an indication that the department can support recommending 1.5 cfs under water right 73-4089.

I am sorry for the inconvenience.

Respectfully submitted,

Craig L. Saxton
Water Right Supervisor
Adjudication Bureau

Enclosure(s): Amended claim 73-4089
Postage paid envelope
Copy of Amended claim submitted in November 2008

73-4089

Craig

Looks good and
sorry for the inconven-
-ience. I thank you
for your time.

RECEIVED

MAY 01 2009

DEPARTMENT OF
WATER RESOURCES

Sincerely
David L. Llewellyn