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Table 1. Managed recharge volumes for eastern Snake River Plain.

Year	Volume (ac-ft)
1995	180,000
1996	169,000
1997	230,000
1998	201,000
1999	153,000
2000	70,000
2001 and later	none

Table 2. Start and end date for model stress periods. Irrigation season stress periods start on May 1 and end on October 31 of the same year. Non-irrigation season stress periods start on November 1 and end on April 30 of the following year.

Period	Start Month	End Month	Length (days)	Period	Start Month	End Month	Length (days)
SP001	May, 1980	Oct, 1980	182	SP023	May, 1991	Oct, 1991	182
SP002	Nov, 1980	April, 1981	183	SP024	Nov, 1991	April, 1992	183
SP003	May, 1981	Oct, 1981	182	SP025	May, 1992	Oct, 1992	182
SP004	Nov, 1981	April, 1982	183	SP026	Nov, 1992	April, 1993	183
SP005	May, 1982	Oct, 1982	182	SP027	May, 1993	Oct, 1993	182
SP006	Nov, 1982	April, 1983	183	SP028	Nov, 1993	April, 1994	183
SP007	May, 1983	Oct, 1983	182	SP029	May, 1994	Oct, 1994	182
SP008	Nov, 1983	April, 1984	183	SP030	Nov, 1994	April, 1995	183
SP009	May, 1984	Oct, 1984	182	SP031	May, 1995	Oct, 1995	182
SP010	Nov, 1984	April, 1985	183	SP032	Nov, 1995	April, 1996	183
SP011	May, 1985	Oct, 1985	182	SP033	May, 1996	Oct, 1996	182
SP012	Nov, 1985	April, 1986	183	SP034	Nov, 1996	April, 1997	183
SP013	May, 1986	Oct, 1986	182	SP035	May, 1997	Oct, 1997	182
SP014	Nov, 1986	April, 1987	183	SP036	Nov, 1997	April, 1998	183
SP015	May, 1987	Oct, 1987	182	SP037	May, 1998	Oct, 1998	182
SP016	Nov, 1987	April, 1988	183	SP038	Nov, 1998	April, 1999	183
SP017	May, 1988	Oct, 1988	182	SP039	May, 1999	Oct, 1999	182
SP018	Nov, 1988	April, 1989	183	SP040	Nov, 1999	April, 2000	183
SP019	May, 1989	Oct, 1989	182	SP041	May, 2000	Oct, 2000	182
SP020	Nov, 1989	April, 1990	183	SP042	Nov, 2000	April, 2001	183
SP021	May, 1990	Oct, 1990	182	SP043	May, 2001	Oct, 2001	182
SP022	Nov, 1990	April, 1991	183	SP044	Nov, 2001	April, 2002	183

Table 3. List of model cells containing river cells representing the Snake River.

Row	Column	Stage (ft)	Riverbed Conductance (ft ² /day)	River Bottom Elevation (ft)	Reach
52	200	5059.56	1.01E+06	5020.45	Ashton to Rexburg
52	201	5072.45	1.01E+06	5034.25	Ashton to Rexburg
53	197	5018.37	1.01E+06	4977.65	Ashton to Rexburg
53	198	5034.22	1.01E+06	4993.48	Ashton to Rexburg
53	199	5045.92	1.01E+06	5005.63	Ashton to Rexburg
54	182	4826.99	1.01E+06	4790.52	Ashton to Rexburg
54	183	4828.79	1.01E+06	4792.48	Ashton to Rexburg
54	184	4836.26	1.01E+06	4800.14	Ashton to Rexburg
54	185	4840.07	1.01E+06	4803.99	Ashton to Rexburg
54	186	4848.72	1.01E+06	4812.76	Ashton to Rexburg
54	187	4859.43	1.01E+06	4823.79	Ashton to Rexburg
54	188	4866.33	1.01E+06	4831.1	Ashton to Rexburg
54	189	4876.77	1.01E+06	4842.16	Ashton to Rexburg
54	190	4901.92	1.01E+06	4867.95	Ashton to Rexburg
54	191	4914.41	1.01E+06	4880.7	Ashton to Rexburg
54	192	4945.66	1.01E+06	4912.51	Ashton to Rexburg
54	193	4963.37	1.01E+06	4928.95	Ashton to Rexburg
54	194	4980.06	1.01E+06	4942.81	Ashton to Rexburg
54	195	4994.97	1.01E+06	4954.97	Ashton to Rexburg
54	196	5007.84	1.01E+06	4967.19	Ashton to Rexburg
55	180	4818.69	1.01E+06	4781.67	Ashton to Rexburg
55	181	4823.2	1.01E+06	4786.41	Ashton to Rexburg
56	178	4814.93	1.01E+06	4777.38	Ashton to Rexburg
56	179	4816.46	1.01E+06	4779.12	Ashton to Rexburg
56	168	4770.82	1.10E+05	4730.46	Heise to Shelley
56	169	4775.57	1.10E+05	4735.15	Heise to Shelley
56	170	4779.76	1.10E+05	4739.28	Heise to Shelley
57	166	4763.71	1.10E+05	4723.57	Heise to Shelley
57	167	4766.42	1.10E+05	4726.23	Heise to Shelley
57	170	4784.37	1.10E+05	4743.82	Heise to Shelley
57	177	4813.42	1.10E+05	4775.62	Heise to Shelley
58	166	4764.36	1.10E+05	4724.34	Heise to Shelley
58	167	4764.85	1.10E+05	4724.8	Heise to Shelley
58	171	4790.95	1.10E+05	4750.3	Heise to Shelley
58	174	4807.07	1.10E+05	4766.88	Heise to Shelley
58	175	4809.3	1.10E+05	4769.74	Heise to Shelley
58	176	4810.94	1.10E+05	4772.55	Heise to Shelley
59	165	4762.48	1.10E+05	4722.56	Heise to Shelley
59	166	4764.36	1.10E+05	4724.4	Heise to Shelley
59	171	4794.72	1.10E+05	4754.03	Heise to Shelley
59	174	4807.5	1.10E+05	4774.5	Heise to Shelley
60	164	4759.23	1.10E+05	4719.36	Heise to Shelley
60	172	4797.76	1.10E+05	4757.04	Heise to Shelley

Table 3 (contd.). List of model cells containing river cells representing the Snake River.

Row	Column	Stage (ft)	Riverbed Conductance (ft ² /day)	River Bottom Elevation (ft)	Reach
60	173	4802.84	1.10E+05	4762.07	Heise to Shelley
60	174	4811.5	1.10E+05	4778.5	Heise to Shelley
61	164	4758.28	1.10E+05	4718.46	Heise to Shelley
61	175	4830	1.10E+05	4797	Heise to Shelley
62	164	4755.48	1.10E+05	4715.76	Heise to Shelley
62	175	4837.5	1.10E+05	4804.5	Heise to Shelley
63	164	4753.39	1.10E+05	4713.72	Heise to Shelley
63	175	4844.5	1.10E+05	4811.5	Heise to Shelley
64	164	4749.19	1.10E+05	4709.61	Heise to Shelley
64	176	4865.5	1.10E+05	4832.5	Heise to Shelley
65	164	4744.68	1.10E+05	4705.43	Heise to Shelley
65	176	4873.5	1.10E+05	4840.5	Heise to Shelley
65	177	4884	1.10E+05	4851	Heise to Shelley
66	163	4739.41	1.10E+05	4700.6	Heise to Shelley
66	177	4896.5	1.10E+05	4863.5	Heise to Shelley
67	163	4737.56	1.10E+05	4699.08	Heise to Shelley
67	178	4912.5	1.10E+05	4879.5	Heise to Shelley
68	163	4735.39	1.10E+05	4697.22	Heise to Shelley
68	178	4926.5	1.10E+05	4893.5	Heise to Shelley
69	162	4720.53	1.10E+05	4682.79	Heise to Shelley
69	178	4788.82	1.10E+05	4755.82	Heise to Shelley
70	161	4707.02	1.10E+05	4669.82	Heise to Shelley
70	179	4770.5	1.10E+05	4737.5	Heise to Shelley
71	161	4701.45	1.10E+05	4664.52	Heise to Shelley
71	180	4786	1.10E+05	4753	Heise to Shelley
72	161	4690.55	1.10E+05	4654.02	Heise to Shelley
72	180	4797	1.10E+05	4764	Heise to Shelley
73	160	4677.21	1.10E+05	4641.1	Heise to Shelley
73	180	4809	1.10E+05	4776	Heise to Shelley
74	157	4647.71	1.10E+05	4612.6	Heise to Shelley
74	158	4658.3	1.10E+05	4622.86	Heise to Shelley
74	159	4665.72	1.10E+05	4630.04	Heise to Shelley
74	180	4816	1.10E+05	4783	Heise to Shelley
74	181	4818	1.10E+05	4785	Heise to Shelley
75	153	4606.84	1.10E+05	4572.26	Heise to Shelley
75	156	4629.01	1.10E+05	4594.46	Heise to Shelley
75	181	4818	1.10E+05	4785	Heise to Shelley
76	154	4610.81	1.10E+05	4576.84	Heise to Shelley
76	155	4617.41	1.10E+05	4583.2	Heise to Shelley
76	181	4818	1.10E+05	4785	Heise to Shelley
76	152	4598.48	1.57E+05	4561.11	Shelley to Near Blackfoot
77	151	4589.92	1.57E+05	4548.08	Shelley to Near Blackfoot
77	152	4595.78	1.57E+05	4556.51	Shelley to Near Blackfoot

Table 3 (contd.). List of model cells containing river cells representing the Snake River.

Row	Column	Stage (ft)	Riverbed Conductance (ft ² /day)	River Bottom Elevation (ft)	Reach
78	150	4575.03	1.57E+05	4532.01	Shelley to Near Blackfoot
79	149	4569.54	1.57E+05	4526.38	Shelley to Near Blackfoot
80	147	4553.89	1.57E+05	4510.25	Shelley to Near Blackfoot
80	148	4560.89	1.57E+05	4517.62	Shelley to Near Blackfoot
81	139	4491.97	1.57E+05	4453.9	Shelley to Near Blackfoot
81	140	4501.35	1.57E+05	4461.96	Shelley to Near Blackfoot
81	141	4513.71	1.57E+05	4472.78	Shelley to Near Blackfoot
81	142	4521.68	1.57E+05	4478.88	Shelley to Near Blackfoot
81	143	4527.72	1.57E+05	4484.18	Shelley to Near Blackfoot
81	144	4535.9	1.57E+05	4491.21	Shelley to Near Blackfoot
81	145	4541.93	1.57E+05	4497.1	Shelley to Near Blackfoot
81	146	4547.91	1.57E+05	4503.68	Shelley to Near Blackfoot
82	128	4418.1	1.57E+05	4383.03	Shelley to Near Blackfoot
82	129	4423.53	1.57E+05	4388.8	Shelley to Near Blackfoot
82	130	4431.3	1.57E+05	4396.07	Shelley to Near Blackfoot
82	131	4435.75	1.57E+05	4400.34	Shelley to Near Blackfoot
82	132	4442.82	1.57E+05	4407.11	Shelley to Near Blackfoot
82	133	4448.35	1.57E+05	4412.2	Shelley to Near Blackfoot
82	134	4456.59	1.57E+05	4419.38	Shelley to Near Blackfoot
82	135	4464.03	1.57E+05	4425.76	Shelley to Near Blackfoot
82	136	4472.21	1.57E+05	4433.43	Shelley to Near Blackfoot
82	137	4477.15	1.57E+05	4438.74	Shelley to Near Blackfoot
82	138	4485.21	1.57E+05	4447.49	Shelley to Near Blackfoot
83	127	4408.11	1.57E+05	4372.24	Shelley to Near Blackfoot
83	115	4354.09	9.90E+04	4314.81	Near Blackfoot to Neeley
83	116	4357.37	9.90E+04	4318.34	Near Blackfoot to Neeley
83	126	4402.41	9.90E+04	4365.84	Near Blackfoot to Neeley
84	114	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
84	115	4354.09	9.90E+04	4314.81	Near Blackfoot to Neeley
84	116	4357.37	9.90E+04	4318.34	Near Blackfoot to Neeley
84	125	4393.24	9.90E+04	4354.98	Near Blackfoot to Neeley
84	126	4399.29	9.90E+04	4361.92	Near Blackfoot to Neeley
85	112	4353.76	9.90E+04	4313.88	Near Blackfoot to Neeley
85	113	4353.66	9.90E+04	4314.01	Near Blackfoot to Neeley
85	114	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
85	115	4354.09	9.90E+04	4314.81	Near Blackfoot to Neeley
85	116	4357.37	9.90E+04	4318.34	Near Blackfoot to Neeley
85	122	4378.63	9.90E+04	4336.98	Near Blackfoot to Neeley
85	123	4382.95	9.90E+04	4342.12	Near Blackfoot to Neeley
85	124	4387.28	9.90E+04	4347.59	Near Blackfoot to Neeley
86	112	4353.76	9.90E+04	4313.88	Near Blackfoot to Neeley
86	113	4353.66	9.90E+04	4314.01	Near Blackfoot to Neeley
86	114	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley

Table 3 (contd.). List of model cells containing river cells representing the Snake River.

Row	Column	Stage (ft)	Riverbed Conductance (ft ² /day)	River Bottom Elevation (ft)	Reach
86	115	4353.66	9.90E+04	4314.27	Near Blackfoot to Neeley
86	116	4357.37	9.90E+04	4318.34	Near Blackfoot to Neeley
86	117	4359.68	9.90E+04	4320.81	Near Blackfoot to Neeley
86	118	4360.26	9.90E+04	4320.66	Near Blackfoot to Neeley
86	119	4363.43	9.90E+04	4323.18	Near Blackfoot to Neeley
86	120	4365.87	9.90E+04	4325.32	Near Blackfoot to Neeley
86	121	4373.64	9.90E+04	4332.18	Near Blackfoot to Neeley
87	111	4353.66	9.90E+04	4313.61	Near Blackfoot to Neeley
87	112	4353.76	9.90E+04	4313.88	Near Blackfoot to Neeley
87	113	4353.66	9.90E+04	4314.01	Near Blackfoot to Neeley
87	114	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
88	107	4353.56	9.90E+04	4311.31	Near Blackfoot to Neeley
88	109	4353.67	9.90E+04	4313.3	Near Blackfoot to Neeley
88	110	4353.66	9.90E+04	4313.41	Near Blackfoot to Neeley
88	111	4353.66	9.90E+04	4313.61	Near Blackfoot to Neeley
88	112	4353.7	9.90E+04	4313.73	Near Blackfoot to Neeley
88	113	4353.66	9.90E+04	4314.01	Near Blackfoot to Neeley
88	114	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
88	115	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
89	106	4353.18	9.90E+04	4310.06	Near Blackfoot to Neeley
89	107	4353.56	9.90E+04	4311.31	Near Blackfoot to Neeley
89	108	4353.66	9.90E+04	4312.48	Near Blackfoot to Neeley
89	109	4353.67	9.90E+04	4313.3	Near Blackfoot to Neeley
89	110	4353.66	9.90E+04	4313.41	Near Blackfoot to Neeley
89	111	4353.66	9.90E+04	4313.61	Near Blackfoot to Neeley
89	112	4353.7	9.90E+04	4313.73	Near Blackfoot to Neeley
89	113	4353.66	9.90E+04	4314.01	Near Blackfoot to Neeley
89	114	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
89	115	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
90	104	4353.12	9.90E+04	4308.02	Near Blackfoot to Neeley
90	105	4352.87	9.90E+04	4308.82	Near Blackfoot to Neeley
90	106	4353.18	9.90E+04	4310.06	Near Blackfoot to Neeley
90	107	4353.56	9.90E+04	4311.31	Near Blackfoot to Neeley
90	108	4353.66	9.90E+04	4312.48	Near Blackfoot to Neeley
90	109	4353.67	9.90E+04	4313.16	Near Blackfoot to Neeley
90	110	4353.66	9.90E+04	4313.41	Near Blackfoot to Neeley
90	111	4353.66	9.90E+04	4313.61	Near Blackfoot to Neeley
90	112	4353.7	9.90E+04	4313.73	Near Blackfoot to Neeley
90	113	4353.66	9.90E+04	4314.01	Near Blackfoot to Neeley
90	114	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
90	115	4353.66	9.90E+04	4314.18	Near Blackfoot to Neeley
91	103	4352.68	9.90E+04	4306.46	Near Blackfoot to Neeley
91	104	4353.12	9.90E+04	4308.02	Near Blackfoot to Neeley

Table 3 (contd.). List of model cells containing river cells representing the Snake River.

Row	Column	Stage (ft)	Riverbed Conductance (ft ² /day)	River Bottom Elevation (ft)	Reach
91	105	4353.29	9.90E+04	4308.74	Near Blackfoot to Neeley
91	106	4353.18	9.90E+04	4310.06	Near Blackfoot to Neeley
91	107	4353.56	9.90E+04	4311.31	Near Blackfoot to Neeley
91	108	4353.66	9.90E+04	4312.48	Near Blackfoot to Neeley
91	109	4353.67	9.90E+04	4313.16	Near Blackfoot to Neeley
91	110	4353.66	9.90E+04	4313.41	Near Blackfoot to Neeley
92	100	4348.82	9.90E+04	4299.47	Near Blackfoot to Neeley
92	101	4350.99	9.90E+04	4302.4	Near Blackfoot to Neeley
92	102	4352.79	9.90E+04	4305.13	Near Blackfoot to Neeley
92	103	4352.77	9.90E+04	4306.06	Near Blackfoot to Neeley
92	104	4353.12	9.90E+04	4308.02	Near Blackfoot to Neeley
92	105	4353.29	9.90E+04	4308.74	Near Blackfoot to Neeley
92	106	4353.18	9.90E+04	4310.06	Near Blackfoot to Neeley
92	107	4353.56	9.90E+04	4311.31	Near Blackfoot to Neeley
92	108	4353.66	9.90E+04	4312.48	Near Blackfoot to Neeley
92	109	4353.67	9.90E+04	4313.16	Near Blackfoot to Neeley
93	99	4327.91	9.90E+04	4277.3	Near Blackfoot to Neeley
93	100	4348.46	9.90E+04	4298.4	Near Blackfoot to Neeley
93	101	4350.99	9.90E+04	4302.4	Near Blackfoot to Neeley
93	102	4352.79	9.90E+04	4305.13	Near Blackfoot to Neeley
93	103	4352.77	9.90E+04	4306.06	Near Blackfoot to Neeley
94	99	4273.49	9.90E+04	4222.01	Near Blackfoot to Neeley
95	98	4240.65	9.90E+04	4188	Near Blackfoot to Neeley
95	99	4248.08	9.90E+04	4196.01	Near Blackfoot to Neeley
85	68	4172.75	3.51E+04	4123.2	Neeley to Minidoka
85	69	4190.45	3.51E+04	4140.28	Neeley to Minidoka
85	70	4192.86	3.51E+04	4141.68	Neeley to Minidoka
86	71	4195.25	3.51E+04	4142.87	Neeley to Minidoka
86	72	4195.28	3.51E+04	4141.95	Neeley to Minidoka
86	73	4195.02	3.51E+04	4141.09	Neeley to Minidoka
87	74	4195.44	3.51E+04	4140.29	Neeley to Minidoka
88	74	4196.01	3.51E+04	4140.01	Neeley to Minidoka
89	75	4195.99	3.51E+04	4138.93	Neeley to Minidoka
90	75	4196.08	3.51E+04	4138.09	Neeley to Minidoka
91	75	4195.54	3.51E+04	4136.65	Neeley to Minidoka
92	75	4195.62	3.51E+04	4135.82	Neeley to Minidoka
93	76	4196.07	3.51E+04	4134.87	Neeley to Minidoka
93	78	4196.18	3.51E+04	4133.16	Neeley to Minidoka
94	77	4195.92	3.51E+04	4132.94	Neeley to Minidoka
94	79	4196.18	3.51E+04	4133.16	Neeley to Minidoka
94	80	4196.18	3.51E+04	4133.49	Neeley to Minidoka
95	81	4196.18	3.51E+04	4134.13	Neeley to Minidoka
95	95	4196.6	3.51E+04	4140.24	Neeley to Minidoka

Table 3 (concluded). List of model cells containing river cells representing the Snake River.

Row	Column	Stage (ft)	Riverbed Conductance (ft ² /day)	River Bottom Elevation (ft)	Reach
95	96	4202.58	3.51E+04	4147.47	Neeley to Minidoka
95	97	4217.18	3.51E+04	4163.29	Neeley to Minidoka
96	82	4196.17	3.51E+04	4134.81	Neeley to Minidoka
96	83	4196.18	3.51E+04	4135.79	Neeley to Minidoka
96	90	4195.04	3.51E+04	4133.79	Neeley to Minidoka
96	93	4194.75	3.51E+04	4135.54	Neeley to Minidoka
96	94	4195.68	3.51E+04	4137.93	Neeley to Minidoka
97	84	4196.18	3.51E+04	4135.79	Neeley to Minidoka
97	85	4196.18	3.51E+04	4136.22	Neeley to Minidoka
97	86	4196.18	3.51E+04	4136.67	Neeley to Minidoka
97	87	4196.18	3.51E+04	4137.15	Neeley to Minidoka
97	88	4196.18	3.51E+04	4137.5	Neeley to Minidoka
97	89	4196.11	3.51E+04	4137.54	Neeley to Minidoka
97	91	4195.04	3.51E+04	4133.79	Neeley to Minidoka
97	92	4195.87	3.51E+04	4135.33	Neeley to Minidoka

Table 4. List of model cells containing drains representing springs in the Thousand Springs region.

Row	Column	Drain Elevation (ft) Elevation (ft)	Drain Conductance (ft ² /d)	Reach
70	30	3693.77	87.56523	Devils Washbowl to Buhl
69	29	3682	10.34861	Devils Washbowl to Buhl
68	29	3661	68.46006	Devils Washbowl to Buhl
66	28	3645.97	31711.91	Devils Washbowl to Buhl
65	28	3622.07	72169.5	Devils Washbowl to Buhl
65	27	3608.07	7904.277	Devils Washbowl to Buhl
64	26	3591	1273.676	Devils Washbowl to Buhl
62	24	3540.61	453546.3	Devils Washbowl to Buhl
61	23	3506	3502.608	Devils Washbowl to Buhl
59	22	3455	278.6165	Devils Washbowl to Buhl
58	21	3419.59	1512.49	Devils Washbowl to Buhl
57	20	3372	604.996	Devils Washbowl to Buhl
54	18	3250.03	941722.4	Devils Washbowl to Buhl
53	17	3241.2	103486.1	Devils Washbowl to Buhl
51	14	3180	254.8987	Buhl to Thousand Springs
50	13	3150.01	185533.5	Buhl to Thousand Springs
50	12	3128.01	456229.9	Buhl to Thousand Springs
49	11	3100.02	189105	Buhl to Thousand Springs
48	11	3100	1058810	Buhl to Thousand Springs
47	13	3128.27	149180.1	Buhl to Thousand Springs
47	12	3107.83	641034.8	Buhl to Thousand Springs
46	13	3115.92	179172.9	Buhl to Thousand Springs
46	12	3094.06	307529.7	Buhl to Thousand Springs
45	12	3075	404081.1	Thousand Springs
44	12	3059.08	15649154	Thousand Springs
43	12	3050	500578.1	Thousand Springs
42	12	3072.47	29734.38	Thousand Springs
42	13	3096.3	24060.39	Thousand Springs to Malad
41	13	3098.59	2168.47	Thousand Springs to Malad
40	13	3095.04	944.3784	Thousand Springs to Malad
39	14	3074.71	33836.27	Thousand Springs to Malad
38	14	3072.87	949.0182	Thousand Springs to Malad
37	14	3047	11480.96	Thousand Springs to Malad
37	13	3058	34838.79	Thousand Springs to Malad
36	14	3016	9501.488	Thousand Springs to Malad
36	16	3072.35	1118337	Malad
36	15	2998.77	1158866	Malad
35	14	3007	19541.74	Malad to Bancroft
34	14	2978.97	78008.92	Malad to Bancroft
33	14	2949.78	21851.87	Malad to Bancroft
32	14	2931.01	14574.1	Malad to Bancroft
31	14	2939.88	6660.319	Malad to Bancroft
31	13	2923.55	12483.49	Malad to Bancroft
30	13	2957.8	1236.11	Malad to Bancroft
25	6	2787	75081.41	Malad to Bancroft

Table 5. List of tributary basins.

Basin	Average Annual Tributary Valley Underflow for ESPAM Model (acre feet)	Average Annual Tributary Valley Underflow for ESPAM Model (ft ³)	Average Tributary Valley Underflow for ESPAM Model (ft ³ /stress period)
American Falls	20,000	8.51E+08	4.25E+08
Big Lost River	48,000	2.09E+09	1.04E+09
Big Wood River	8,900	3.87E+08	1.93E+08
Birch Creek	69,000	3.02E+09	1.51E+09
Blackfoot River	12,000	5.03E+08	2.51E+08
Camas/Beaver Creeks	193,000	8.39E+09	4.20E+09
Clover Creek	8,900	3.87E+08	1.93E+08
Goose Creek	24,000	1.04E+09	5.22E+08
Henry's Fork	98,000	4.25E+09	2.13E+09
Lincoln/Ross Creeks	3,600	1.55E+08	7.73E+07
Little Lost River	138,000	5.99E+09	3.00E+09
Little Wood River	21,000	9.28E+08	4.64E+08
Medicine Lodge Creek	8,000	3.48E+08	1.74E+08
Palisades	6,200	2.71E+08	1.35E+08
Portneuf River	56,000	2.44E+09	1.22E+09
Raft River	75,000	3.25E+09	1.62E+09
Rexburg Bench	16,000	6.96E+08	3.48E+08
Rock Creek	45,000	1.97E+09	9.86E+08
Silver Creek	47,000	2.05E+09	1.02E+09
Teton River	2,700	1.16E+08	5.80E+07
Thorn Creek	5,300	2.32E+08	1.16E+08
Willow Creek	26,000	1.12E+09	5.61E+08

Table 6. List of perched non-Snake River reaches.

Reach	Acre Feet/Stress Period	Acre Feet/Year
Basin 31 Flood Control	1,929	3,857
Below Magic Reservoir	41,023	82,046
Big Lost River 1	7,279	14,557
Big Lost River 2	3,651	7,302
Big Lost River 3	4,511	9,022
Big Lost River 4	2,084	4,168
Big Lost River Flood Control	6,435	12,870
Big Wood River Below Gooding	3,493	6,985
Birch Creek	4,144	8,288
Birch Creek Hydropower Discharge	6,227	12,455
Camas Creek	13,827	27,654
Camas National Wildlife Refuge	3,712	7,425
Little Lost River	3,088	6,175
Little Lost River Flood Control	3,723	7,446
Little Wood River 1	2,436	4,873
Little Wood River 2	1,095	2,190
Little Wood River 3	1,699	3,397
Lone Tree Flood Control (Camas Creek)	3,079	6,157
Medicine Lodge Creek	16,202	32,404
Milner-Pickets (TFCC)	1,408	2,815
Mud Lake	4,514	9,028
Murtaugh Lake	1,675	3,351
Total	137,233	274,466

Table 7. List of canals represented with specified flux.

Canal Name
Northside Main
Northside Wilson Lake
Milner-Gooding
Aberdeen-Springfield
Northside Laterals above Rim

Table 8. Six-year average of measured lysimeter winter ET for Kimberly, Idaho.

Month	Average ET, mm/day	Average ET, ft/month
November	0.7	0.069
December	0.4	0.041
January	0.6	0.061
February	1.0	0.093

Table 9. Calculated Winter-Time ET Rates, Feet Per Month

Station	County	ID	Elev (ft)	Nov ET (ft)	Dec ET (ft)	Jan ET (ft)	Feb ET (ft)
Aberdeen Exp	Bingham	100010	4400	0.069	0.041	0.061	0.072
American Falls 3 NW	Power	100227	4320	0.069	0.041	0.061	0.075
Arco 3 SW	Butte	100375	5330	0.050	0.041	0.042	0.042
Ashton	Fremont	100470	5110	0.059	0.041	0.049	0.049
Blackfoot Fire Dept	Bingham	100915	4320	0.069	0.041	0.061	0.075
Bliss	Gooding	101002	3270	0.069	0.041	0.061	0.109
Burley FAA AP	Cassia	101303	4160	0.069	0.041	0.061	0.080
Dubois Exp	Clark	102707	5460	0.046	0.038	0.038	0.038
Fort Hall Indian Age	Bingham	103297	4500	0.069	0.041	0.061	0.069
Hamer 4 NW	Jefferson	103964	4800	0.069	0.041	0.060	0.060
Hazelton	Jerome	104140	3770	0.069	0.041	0.061	0.093
IF 16 SE	Bonneville	104456	5720	0.036	0.030	0.030	0.030
IF FAA AP	Bonneville	104457	4740	0.069	0.041	0.061	0.061
Jerome	Jerome	104670	3770	0.069	0.041	0.061	0.093
MacKay Ranger St	Custer	105462	5910	0.029	0.024	0.024	0.024
Minidoka Dam	Minidoka	105980	4210	0.069	0.041	0.061	0.079
Paul	Minidoka	106877	4150	0.069	0.041	0.061	0.080
Picabo	Blaine	107040	4880	0.068	0.041	0.057	0.057
Poc WB AP	Bannock	107211	4770	0.069	0.041	0.060	0.060
Richfield	Lincoln	107673	4310	0.069	0.041	0.061	0.075
Shoshone	Lincoln	108380	3970	0.069	0.041	0.061	0.086
St Anthony	Fremont	108022	4970	0.065	0.041	0.054	0.054

Table 10. Irrigation Entity Table

Entity ID	Entity Name	Irrigation Company(ies) Included in Entity
IESW01	A & B 1	A & B Irrigation District
IESW02	Aberdeen Springfield 1	Aberdeen Springfield Canal Co
IESW03	Arcadia 1	Arcadia Reservoir & Canal Co Ltd
IESW04	Bell Rapids 1	Bell Rapids Mutual Irrigation Co
IESW05	Big Lost River 3	Big Lost River Irrigation District Moore Water Users Association Darlington Land & Irrigation Co
IESW06	Big Spring 3	Banbury Pipe Company Inc Big Spring Water Users Assn Hagerman Water Users Association
IESW07	Big Wood 4	Justice Ditch Co Thorpe Ditch Co Big Wood Canal Company Mullins Canal & Reservoir Co
IESW08	Blaine 1	Blaine County Canal Co
IESW09	Burgess 5	Burgess Canal & Irrigating Co North Rigby Irrigation & Canal Co Inc Parks & Lewisville Irrigation Co Inc Rigby Canal & Irrigation Co Clark & Edwards Canal Company
IESW10	Burley 1	Burley Irrigation District
IESW11	Butte and Market 1	Butte & Market Lake Canal Co
IESW12	Canyon Creek 3	Enterprise Irrigation District Canyon Creek Lateral Ditch Assn Canyon Creek Canal Co Inc
IESW13	Consolidated Farmers 4	Roxana Canal Co Consolidated Farmers Canal Co Ltd Saurey-Sommer Ditch Island Ward Canal Co

Entity ID	Entity Name	Irrigation Company(ies) Included in Entity
IESW14	Corbett 4	Corbett Slough Ditch Company Eastern Idaho Water Co Little Butte Irrigation Co Ltd Younie Ditch Co
IESW15	Dewey 1	Dewey Canal Co
IESW16	Egin 2	Egin Bench Canals Inc St Anthony Union Canal Co
IESW17	Fall River 1	Fall River Irrigation Co
IESW18	Falls 3	Falls Irrigation District Warm Creek Irrigation Co Fort Hall Indian Reservation
IESW20	Harrison 5	Rudy Irrigation Canal Co Ltd Harrison Canal & Irrigation Co Kite And Nord Ditch Enterprise Canal Co Ltd Butler Island Canal Co
IESW21	Heise 1	Heise Canal
IESW22	Idaho 2	Snake River Valley Irrigation District Idaho Irrigation District
IESW23	Independent 6	Lowder Slough Canal Co West Labelle Irrigation Co Ltd Dilts Irrigation Company Ellis-Bramwell Ditch CO Independent Irrigation Co Labelle Irrigating Co
IESW24	Island 1	Island Irrigation Co
IESW25	Little Wood 2	Fish Creek Reservoir Company Inc Little Wood River Canal Co
IESW26	Long Island 1	Long Island Irrigation Co
IESW27	Milner 1	Milner Irrigation District
IESW28	Minidoka 1	Minidoka Irrigation District Owsley Canal Company Holley Water Users Assn
Entity ID	Entity Name	Irrigation Company(ies) Included in Entity
IESW29	Mud Lake 4	Level Canal Co Inc Mud Lake Water Users Inc
IESW30	New Sweden 7	Smith-Maxwell Ditch Co New Sweden Irrigation District Shattuck Irrigation Co. Stattuck Irrigation Co Long Island Canal Co Blackfoot Irrigation Co Woodville Canal Co
IESW31	North Fremont 1	North Fremont Canal Systems Inc
IESW32	North Side 4	King Hill Irrigation District North Side Canal Company Ltd American Falls Reservoir Dist #2 Dba Bs Farms & Irrigation Co
IESW33	Osgood 4	Owners Mutual Irrigation Co Osgood Canal Co Inc

IESW34	Peoples 8	H & W Water Users Association Bear Island Water Assn Watson Slough Ditch And Irrigation Companies Peoples Canal & Irrigation Co Parsons Ditch Co Wearyrick Ditch Co Trego Ditch Co Danskin Ditch Company New Lavaside Ditch Company Limited Riverside Canal Co
IESW35	Progressive 2	Poplar Irrigation District Progressive Irrigation District
IESW36	Reid 6	Consolidated Feeder Canal Co Liberty Park Irrigation Co Inc Texas Slough Irrigating Canal Co Reid Canal Co Lenroot Canal Co Sunnydell Irrigation District

Entity ID	Entity Name	Irrigation Company(ies) Included in Entity
IESW37	Reno 1	Reno Ditch Company Inc
IESW38	Rexburg 1	Rexburg Irrigation Co C/O Keith Erikson
IESW39	Silky 2	Silky Lateral Ditch Water Users Assn Silky Irrigation District
IESW40	Southwest 2	Oakley Canal Co Southwest Irrigation District
IESW41	Twin Falls 1	Twin Falls Canal Co
IESW42	Twin Groves 6	Wilford Irrigation And Mfg Co Pioneer Ditch Co Ltd Twin Groves Irrigation & Manufacturing Salem Union Canal Co Ltd Farmers Friend Irrigation Co Ltd North Salem Agr & Mill Canal Inc
IESW43	Woodmansee Johnson 6	Woodmansee-Johnson Canal Company Teton Irrigation And Manufacturing Co Pincock Garner Ditch Association Pincock-Byington Ditch Co Wolf Ditch Company Teton Island Feeder Canal Co
IESW44	Jefferson 3	Jefferson Irrigation Co Producers Irrigation Co Monteview Canal Co Inc Monteview Canal Co Inc

Table 11. Sprinkler ratios used for interpolation between specific years.

ENTITY_ID	May-80	May-82	May-87	May-92	May-97	Oct-00
IEGW501	0.150	0.254	0.520	0.686	0.710	0.720
IEGW502	0.200	0.230	0.310	0.389	0.500	0.550
IEGW503	0.875	0.885	0.910	0.934	0.960	0.975
IEGW504	0.981	0.982	0.986	0.989	0.992	0.994
IEGW505	0.983	0.986	0.992	0.997	0.999	1.000
IEGW506	0.770	0.803	0.880	0.917	0.945	0.960
IEGW507	0.580	0.657	0.830	0.904	0.920	0.930
IEGW508	0.530	0.617	0.840	0.940	0.963	0.970
IEGW509	0.640	0.692	0.810	0.864	0.880	0.890
IEGW600	1.000	1.000	1.000	1.000	1.000	1.000
IESW000	0.333	0.373	0.499	0.555	0.610	0.634
IESW001	0.150	0.311	0.520	0.676	0.710	0.720
IESW002	0.825	0.847	0.900	0.919	0.930	0.936
IESW005	0.700	0.731	0.810	0.880	0.934	0.970
IESW007	0.147	0.165	0.215	0.239	0.263	0.276
IESW008	0.540	0.570	0.650	0.729	0.800	0.840
IESW009	0.015	0.050	0.130	0.185	0.220	0.250
IESW010	0.010	0.150	0.600	0.733	0.850	0.910
IESW011	0.440	0.467	0.530	0.560	0.590	0.610
IESW012	0.867	0.870	0.875	0.879	0.897	0.897
IESW014	0.210	0.286	0.450	0.545	0.640	0.700
IESW015	0.000	0.000	0.010	0.015	0.025	0.030
IESW016	0.050	0.136	0.750	0.808	0.860	0.890
IESW018	1.000	1.000	1.000	1.000	1.000	1.000
IESW019	1.000	1.000	1.000	1.000	1.000	1.000
IESW020	0.050	0.082	0.190	0.226	0.260	0.280
IESW022	0.250	0.384	0.650	0.763	0.850	0.900
IESW025	0.210	0.318	0.600	0.700	0.800	0.860
IESW027	0.000	0.000	0.230	0.307	0.360	0.380
IESW028	0.130	0.219	0.550	0.714	0.800	0.840
IESW029	0.035	0.068	0.150	0.240	0.320	0.420
IESW030	0.180	0.292	0.630	0.801	0.910	0.960
IESW031	0.950	0.961	0.980	0.998	1.000	1.000
IESW032	0.000	0.000	0.600	0.750	0.840	0.900
IESW033	0.970	0.976	0.990	0.996	1.000	1.000
IESW034	0.540	0.582	0.690	0.741	0.800	0.830
IESW035	0.020	0.056	0.190	0.278	0.360	0.410
IESW036	0.020	0.049	0.120	0.149	0.180	0.195
IESW037	0.145	0.229	0.420	0.608	1.000	1.000
IESW038	0.251	0.286	0.251	0.216	0.251	0.251
IESW039	0.270	0.296	0.270	0.243	0.270	0.270
IESW040	0.400	0.528	0.800	0.921	1.000	1.000
IESW041	0.000	0.017	0.120	0.188	0.250	0.285
IESW044	0.020	0.041	0.100	0.161	0.300	0.370
IESW051	0.000	0.000	0.000	0.000	0.040	0.070
IESW052	0.000	0.000	0.000	0.000	0.040	0.070

IESW053	0.530	0.560	0.610	0.630	0.645	0.660
IESW054	0.319	0.359	0.467	0.510	0.560	0.588
IESW055	0.000	0.007	0.026	0.041	0.059	0.072
IESW056	0.451	0.468	0.507	0.536	0.571	0.584
IESW057	0.648	0.676	0.767	0.813	0.813	0.813

Table 12. Measured Return Flow Sites.

Site #	Station #	Site Name	Location	
Henry's Fork River basin:				
1	13055300	Farmers Own Canal - Black Spring	Lat. 44 02'59"	Long. 111 32'20"
2	13055337	Rexburg Canal drain nr Thornton	Lat. 43 48'55"	Long. 111 53'15"
3	13050543	Independent Canal drain		
4	13056550	Texas Slough Canal nr Thornton	Lat. 43 47' 58"	Long. 111 54' 49"
5	13056600	Texas Slough nr Rexburg	Lat. 43 47'17"	Long. 111 53'45.
6	13056650	Liberty Park Canal	Lat. 43 47'24"	Long. 111 55'27"
7	13056850	Bannock Jim Spring Slough	Lat. 43 46'30"	Long. 111 56'11"
Snake River to American Falls Reservoir:				
8	13057000	Scott's Slough	Lat. 42 44'32"	Long. 111 58'20"
9	13057020	Dry Bed	Lat. 43 42'11"	Long. 112 04'13"
10	13057030	South Parks	Lat. 43 41'19"	Long. 112 03'47"
11	13057045	Butte Market Lake Canal	Lat. 43 39'20"	Long. 112 05'27"
12	13057100	Burgess drain nr Idaho Falls	Lat. 43 36'60"	Long. 112 03'03"
Near to and just below American Falls Reservoir:				
13	13069548	Sterling Waste	Lat. 43 01'49"	Long. 112 43'40"
14	13069565	Aberdeen Waste Drain	Lat.	Long.
15	13076210	Tartar Waste	Lat. 42 52'40"	Long. 112 51'23"
16	13077650	Rock Creek nr American Falls	Lat. 42 39'10"	Long. 113 01'00"

Table 12 (continued). Measured Return Flow Sites.

Site #	Station #	Site Name	Location	
Below American Falls Reservoir to King Hill:				
17	13082060	F drain nr Declo	Lat. 42 32' 48"	Long. 113 37' 14"
18	13082032	D-3 drain	Lat. 42 36'49"	Long. 113 36'10"
19	13082062	D-5 drain nr Rupert	Lat. 42 33'15"	Long. 113 38'38"
20	13082064	D-4 drain nr Rupert	Lat. 42 34'15"	Long. 113 38'25"
21	13082320	Marsh Creek nr Declo	Lat. 42 31'26"	Long. 113 40'02"
22	13082330	Spring Creek nr Declo	Lat. 42 31'01"	Long. 113 41'03"
23	13084705	D-16 drain nr Heyburn	Lat. 42 32'30"	Long. 113 45'24"
24	13084707	B drain nr Heyburn	Lat. 42 33'33"	Long. 113 47'01"
25	13085060	D-17 drain nr Heyburn	Lat. 42 32'53"	Long. 113 50'51"
26	13085065	Main drain North nr Heyburn	Lat. 42 33'02"	Long. 113 51'59"
27	13085070	G drain nr Burley	Lat. 42 31'56"	Long. 113 53'12"
28	13085080	J drain nr Burley	Lat. 42 31'53"	Long. 113 53'29"
29	13089690	Irr drain nr Hansen	Lat.	Long.
30	13089695	Twin Falls Coulee	Lat. 42 34'11"	Long. 114 20'32"
31	13090370	Fish Hatchery Waste 0	Lat. 42 35'29"	Long. 114 26'03"
32	13090460	Perrine Coulee nr Twin Falls	Lat. 42 35'53"	Long. 114 28'20"
33	13091733	Jerome Golf Course Drain 1	Lat. 42 38 03"	Long. 114 31'03"
34	13093150	Sonnicksen drain	Lat. 42 38'40"	Long. 114 33'26"
35	13093190	Sucker Flat drain nr Filer (LSLQ)	Lat. 42 38'25"	Long. 114 35'30"
36	13093550	Cedar Draw nr Filer	Lat. 42 39'13"	Long. 114 39'15"
37	13093900	Waste I nr Buhl	Lat. 42 39'33"	Long. 114 41'28"
38	13094050	J8 at Rivers Edge	Lat. 42 40'27"	Long. 114 44'27"
39	13094700	Mud Creek nr Buhl	Lat. 42 39'33"	Long. 114 47'20"
40	13095060	Fish Hatchery drain upper	Lat. 42 32'60"	Long. 114 49'21"
41	13095061	Fish Hatchery drain lower	Lat. 42 40'01"	Long. 114 48' 60"
42	13095360	S. Coulee (Cedar Draw)	Lat. 42 41'46"	Long. 114 48'19"
43	13095490	Irr Ditch to Blind Canyon	Lat. 42 42'28"	Long. 114 47'30"
44	13133785	Drain nr Bickel Springs	Lat. 42 45'28"	Long. 114 50'48"
45	13152450	Irr Ditch nr Bliss	Lat. 42 55'56"	Long. 115 00'19"
46	13152895	W. drain nr Tuttle (Drain to Malad River)	Lat. 42 51'50"	Long. 114 51' 58"

Table 13. Assignment of return flows, diversions to surface water entities.
Below American Falls:

<u>Group</u>	<u>Irr. Entity</u>	<u>Assigned Return flows</u>	<u>Water Supply: Historic Diversions</u>
1	IESW032	13152450 Irr. Ditch nr Bliss 13152895 W. Dr. nr Tuttle (to Malad) 13133785 Drain nr Bickel Srings 13094050 J8 at Rivers Edge 13095490 Irr. Drain to Blind Canyon 13095360 S. Coulee(Ceder Draw) 13093150 Sonnickson drain 13091733 Jerome Golf drain	13087000 T. F. Northside 13086510 'A' Lateral in Gooding 13086520 N. Side Cross-cut
2	IESW028	13085060 D-17 drain nr Heyburn 13085065 Main drain North nr Heyburn 13084707 B drain nr Heyburn 13084705 D-16 drain nr Heyburn 13082064 D-4 drain nr Rupert 13082062 D-5 drain nr Rupert 13082032 D-3 drain	13080000 Minidoka Northside
3	IESW010	13082060 F drain nr Declo 13082320 Marsh Creek nr Declo 13082330 Spring Creek nr Declo 13085070 G drain nr Burley 13085080 J drain nr Burley	Minidoka South (13080500)
4	IESW041	13089690 Irr drain nr Hansen 13089695 Twin Falls Coulee 13090370 Fish Hatchery Waste 0 13090460 Perrine Coulee nr Twin Falls 13093190 Sucker Flat drain nr Filer (LSLQ) 13093550 Cedar Draw nr Filer 13093900 Waste 1 nr Buhl 13094700 Mud Creek nr Buhl 13095061 Fish Hatchery drain lower 13095060 Fish Hatchery drain upper	13087500 Twin Falls Southside Canal

Table 13(continued). Assignment of return flows, diversions to surface water entities.

Above American Falls

<u>Group</u>	<u>Irr. Entity</u>	<u>Assigned Return flows</u>	<u>Water Supply: Historic Diversions</u>
5	IESW002	13069548 Sterling Waste 13069565 Aberdeen Waste Drain 13076210 Tartar Waste	13061610 Aberdeen Springfield Canal
6	IESW031	13055300 Farmers Own Canal - Black Spring	13047575 Farmers Own 13047305 Yellowstone 13047415 Marysville
7	IESW016	13050543 Independent Canal drain (Ave. of 1989-90 USGS Data)	13049725 St Anthony Canal 13049550 Last Chance 13050525 Egin Canal 13050530 St Anthony Union Fdr 13050535 Independant Canal
8	IESW011	13057045 Butte Market Lake Canal	13057025 Butte Market Lake
9	IESW036	13056550 Texas Slough Canal nr Thornton 13056650 Liberty Park Canal 13056850 Bannock Jim Spring Slough 13056600 Texas Slough nr Rexburg	13038392 Sunnydell Canal 13038426 Lenroot Canal 13038431 Reid Canal 13038435 Bannock Jim 13038436 Hill Pitinger 13038437 Nelson Cory 13038434 Texas Feeder 13055323 Rexburg Canal 13055334 Rexburg Irr.

Table 13(concluded). Assignment of return flows, diversions to surface water entities.

Above American Falls

<u>Group</u>	<u>Irr. Entity</u>	<u>Assigned Return flows</u>	<u>Water Supply: Historic Diversions</u>
10	IESW009	13057000 Scott's Slough	13038110 Burgess
	IESW020	13057020 Dry Bed	13038115 Clark & Edwards
	IESW023	13057030 South Parks	13038180 Rigby Canal
	IESW024	13057100 Burgess drain nr Idaho Falls	13037975 Eagle Rock
	IESW026		13037977 Eagle Rock ab Will Cr
			13037985 Enterprise
			13038025 Butler Island
			13038030 Ross and Rand
			13038050 Steele Canal
			13038055 Harrison Canal
			13038065 Cheny Canal
			13038080 Butler Island #2
			13038095 Boomer Canal
			13038098 Kite & Nord
			13038145 Croft Pump
			13038387 Nelson Canal
			13038388 Mattson Creg
			1303838150 East Labelle
			13038205 Dilts Canal
			13038225 W. Labelle Long Is
		13038340 White Canal	
		13038360 Bramwell	
		13038362 Ellis Canal	
		13038210 Island Canal	

Table 14. Estimated return flow lags for the ten groups of surface irrigation entities.

Group Irr. Entity Results: Ann. Return and Lags

1	IESW032	Total Annual Returned (%) =>	4.6				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	3	1.6	0	0	0
<hr/>							
2	IESW028	Total Annual Returned (%) =>	4.80				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	2	1	1	1	0
<hr/>							
3	IESW010	Total Annual Returned (%) =>	10.0				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	4	3	3	0	0
<hr/>							
4	IESW041	Total Annual Returned (%) =>	6.4				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	3	2	1.5	0	0
<hr/>							
5	IESW002	Total Annual Returned (%) =>	5.9				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	3	2	1	0	0
<hr/>							
6	IESW031	Total Annual Returned (%) =>	19.5				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	7	4	3	3	2
<hr/>							
7	IESW016	Total Annual Returned (%) =>	1.6				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	1	0.6	0	0	0
<hr/>							
8	IESW011	Total Annual Returned (%) =>	1.8				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	1.8	0	0	0	0
<hr/>							
9	IESW036 IESW038	Total Annual Returned (%) =>	29.2				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	12	10	5	2	1
<hr/>							
10	IESW009 IESW020 IESW023 IESW024 IESW026	Total Annual Returned (%) =>	27.2				
		Month =>	1	2	3	4	5
		Lag. Ret. (%) =>	11	7	4	4	0

Table 15. Normalized annual Silver Creek flows.

Year	Annual (ac-ft)	Normalized Flux	Dampened Normalized Flux
1980/81	32383	1.17	1.06
1981/82	26539	0.96	0.99
1982/83	38543	1.39	1.13
1983/84	38628	1.39	1.13
1984/85	35633	1.29	1.1
1985/86	30812	1.11	1.04
1986/87	31684	1.14	1.05
1987/88	22700	0.82	0.94
1988/89	20691	0.75	0.92
1989/90	23278	0.84	0.95
1990/91	21075	0.76	0.92
1991/92	20976	0.76	0.92
1992/93	18595	0.67	0.89
1993/94	27301	0.99	1
1994/95	18327	0.66	0.89
1995/96	31272	1.13	1.04
1996/97	32242	1.16	1.05
1997/98	33892	1.22	1.07
1998/99	33167	1.2	1.07
1999/00	30072	1.09	1.03
2000/01	22677	0.82	0.94
2001/02	19090	0.69	0.9
Av			
Annual	27708	1	1

Table 16. Minor land use types.

Classification	Acres	Percent of Study Area	Recharge Rate
Dry Farm	95,000	1.3%	zero
Water and Wetlands	65,000	0.9%	Precipitation minus three feet/year
Cities and Industrial Areas	48,000	0.7%	Negative 1.2 feet/year

Table 17. Apportionment of Mud Lake fixed point pumpage.

Fixed Point	No. Wells	Adjusted No. Wells	Percent of Total Volume
Buck Springs	7	7	18%
Bybee	13	14	35%
Holley	6	8	21%
North Lake, East	12	7	18%
North Lake, West	3	3	8%

Table 18. Fixed point pumpage by stress period (ac-ft/stress period).

Stress Period	Snake/Teton Exchange Wells	Mud Lake Exchange Wells	Recharge Adjustment	Wetlands Adjustment
S1	-6,590	-76,926	0	-11,241
S2	0	-34,089	0	-5,294
S3	-13,082	-73,313	0	-11,241
S4	0	-17,936	0	-5,294
S5	-1,437	-57,902	0	-11,241
S6	0	0	0	-5,294
S7	-914	-23,598	0	-11,241
S8	0	0	0	-5,294
S9	-687	-15,563	0	-11,241
S10	0	0	0	-5,294
S11	-5,800	-69,008	0	-11,241
S12	0	0	0	-5,294
S13	-1,786	-60,730	0	-11,241
S14	0	0	0	-5,294
S15	-2,045	-112,847	0	-11,241
S16	0	0	417	-5,294
S17	-22,395	-167,982	12,933	-11,241
S18	0	-21,792	8,344	-5,294
S19	-7,379	-145,601	0	-11,241
S20	0	-42,358	0	-5,294
S21	-3,709	-159,949	626	-11,241
S22	-9,177	-52,773	8,344	-5,294
S23	-18,657	-145,528	12,725	-11,241
S24	-3,098	-40,742	8,344	-5,294
S25	-47,842	-163,418	30,246	-11,241
S26	0	-36,997	8,344	-5,294
S27	-998	-77,893	0	-11,241
S28	0	-49,972	0	-5,294
S29	-19,020	-156,706	0	-11,241
S30	0	0	0	-5,294
S31	-253	-34,435	0	-11,241
S32	0	-33,359	7,092	-5,294
S33	-448	-149,394	0	-11,241
S34	0	0	417	-5,294
S35	-103	-87,188	0	-11,241
S36	0	-14,917	1,669	-5,294
S37	-281	-52,254	0	-11,241
S38	0	0	0	-5,294
S39	-345	-62,114	0	-11,241
S40	0	0	0	-5,294
S41	-6,774	-166,460	0	-11,241
S42	-434	-43,060	0	-5,294
S43	-51,473	-175,595	37,963	-8,267
S44	0	0	12,308	-8,267
Average	-5,107	-59,600	3,404	-8,268
Annual Average	-10,215	-119,200	6,808	-16,535

Table 19. Evapotranspiration-indexed scale used to vary off-site pumping rates.

Year	Index	Year	Index
1980	0.94	1991	1.03
1981	0.98	1992	1.11
1982	0.97	1993	0.94
1983	0.96	1994	1.09
1984	0.94	1995	0.94
1985	1.01	1996	0.97
1986	1.03	1997	0.94
1987	1.07	1998	0.93
1988	1.10	1999	0.96
1989	1.03	2000	1.01

Table 20. Off-site well pumping for each model stress period (acre-ft per stress period).

Well ID	Location Name	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
1	Jefferson	-12,709	-410	-13,248	-405	-13,115	-401	-12,980	-393	-12,709	-422
2	Jefferson	-12,709	-410	-13,248	-405	-13,115	-401	-12,980	-393	-12,709	-422
3	Jefferson	-12,709	-410	-13,248	-405	-13,115	-401	-12,980	-393	-12,709	-422
4	Monteview	-6,338	-204	-6,609	-202	-6,540	-200	-6,474	-196	-6,338	-211
5	Monteview	-6,338	-204	-6,609	-202	-6,540	-200	-6,474	-196	-6,338	-211
6	Monteview	-6,338	-204	-6,609	-202	-6,540	-200	-6,474	-196	-6,338	-211
7	Producers	-1,479	-48	-1,542	-47	-1,526	-47	-1,510	-46	-1,479	-49
8	Producers	-1,479	-48	-1,542	-47	-1,526	-47	-1,510	-46	-1,479	-49
Well ID	Location Name	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20
1	Jefferson	-13,655	-431	-13,926	-447	-14,465	-460	-14,874	-431	-13,926	-447
2	Jefferson	-13,655	-431	-13,926	-447	-14,465	-460	-14,874	-431	-13,926	-447
3	Jefferson	-13,655	-431	-13,926	-447	-14,465	-460	-14,874	-431	-13,926	-447
4	Monteview	-6,811	-215	-6,947	-223	-7,218	-229	-7,420	-215	-6,947	-223
5	Monteview	-6,811	-215	-6,947	-223	-7,218	-229	-7,420	-215	-6,947	-223
6	Monteview	-6,811	-215	-6,947	-223	-7,218	-229	-7,420	-215	-6,947	-223
7	Producers	-1,589	-50	-1,620	-52	-1,683	-54	-1,730	-50	-1,620	-52
8	Producers	-1,589	-50	-1,620	-52	-1,683	-54	-1,730	-50	-1,620	-52
Well ID	Location Name	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30
1	Jefferson	-14,465	-431	-13,926	-464	-15,009	-393	-12,709	-456	-14,736	-393
2	Jefferson	-14,465	-431	-13,926	-464	-15,009	-393	-12,709	-456	-14,736	-393
3	Jefferson	-14,465	-431	-13,926	-464	-15,009	-393	-12,709	-456	-14,736	-393
4	Monteview	-7,218	-215	-6,947	-232	-7,484	-196	-6,338	-227	-7,353	-196
5	Monteview	-7,218	-215	-6,947	-232	-7,484	-196	-6,338	-227	-7,353	-196
6	Monteview	-7,218	-215	-6,947	-232	-7,484	-196	-6,338	-227	-7,353	-196
7	Producers	-1,683	-50	-1,620	-54	-1,746	-46	-1,479	-53	-1,715	-46
8	Producers	-1,683	-50	-1,620	-54	-1,746	-46	-1,479	-53	-1,715	-46
Well ID	Location Name	S31	S32	S33	S34	S35	S36	S37	S38	S39	S40
1	Jefferson	-12,709	-405	-13,115	-393	-12,709	-389	-12,573	-401	-12,980	-422
2	Jefferson	-12,709	-405	-13,115	-393	-12,709	-389	-12,573	-401	-12,980	-422
3	Jefferson	-12,709	-405	-13,115	-393	-12,709	-389	-12,573	-401	-12,980	-422
4	Monteview	-6,338	-202	-6,540	-196	-6,338	-194	-6,274	-200	-6,474	-211
5	Monteview	-6,338	-202	-6,540	-196	-6,338	-194	-6,274	-200	-6,474	-211
6	Monteview	-6,338	-202	-6,540	-196	-6,338	-194	-6,274	-200	-6,474	-211
7	Producers	-1,479	-47	-1,526	-46	-1,479	-45	-1,463	-47	-1,510	-49
8	Producers	-1,479	-47	-1,526	-46	-1,479	-45	-1,463	-47	-1,510	-49
Well ID	Location Name	S41	S42	S43	S44						
1	Jefferson	-13,655	-464	-15,009	-418						
2	Jefferson	-13,655	-464	-15,009	-418						
3	Jefferson	-13,655	-464	-15,009	-418						
4	Monteview	-6,811	-232	-7,484	-209						
5	Monteview	-6,811	-232	-7,484	-209						
6	Monteview	-6,811	-232	-7,484	-209						
7	Producers	-1,589	-54	-1,746	-49						
8	Producers	-1,589	-54	-1,746	-49						

Table 21. Annual spring discharge (north side only) in the Milner to King Hill reach.

Water Year	Discharge (cfs)
1980	6110
1981	5860
1982	5760
1983	5690
1984	6030
1985	5830
1986	6350
1987	6260
1988	5960
1989	5820
1990	5610
1991	5460
1992	5190
1993	5090
1994	5320
1995	5120
1996	5040
1997	5430
1998	5870
1999	5660
2000	5830
2001	5870
2002	5440

Table 22. Estimated spring discharge by sub-reach in the Milner to King Hill reach.

Subreach Name	Number of Model Cells	Total Discharge (cfs)	Subreach Proportion of Milner to King Hill Discharge
Devil's Washbowl to Buhl Gage	17	1075	0.17
Buhl Gage to Thousand Springs	12	1700	0.28
Thousand Springs	4	1879	0.31
Billingsley Creek	10	204	0.03
Malad Gorge	2	1199	0.19
Malad Gorge to Bancroft Springs	10	97	0.02

Table 23. Model cells representing individually measured or estimated springs.

Spring	Row	Column
Deviils		
Washbowl	66	28
Deviils Corral	65	28
Blue Lakes	62	24
Crystal	54	18
Clear Lakes	50	12
	50	13
Briggs	49	11
Box	47	12
	47	13
Thousand		
Springs	44	12
Malad	36	15
	36	16

Table 24. Summary of spring discharge calibration target data.

Spring Name	Number of Observations	Start Date	End Date
Devils Washbowl	5657	4/6/85	9/30/00
Devils Corral	35	11/6/80	3/6/01
Blue Lakes	7470	5/1/80	9/15/02
Crystal	1802	6/3/85	2/18/02
Clear Lakes	56	10/13/82	1/16/02
Briggs	3462	5/19/80	9/30/98
Box	7458	5/1/80	9/30/00
Malad	217	12/1/84	12/1/02
Thousand Springs	236	5/1/80	12/1/02

Table 25. Steady state river gain and spring calibration targets and model predictions.

Spring or Reach Name	Steady State Target Discharge (ft ³ /d)	Steady State Discharge (ft ³ /d)
Ashton to Rexburg	2.72E+07	2.67E+07
Heise to Shelley	-5.14E+07	-5.19E+07
Shelley to Near Blackfoot	-6.43E+07	-6.35E+07
Near Blackfoot to Neeley	2.27E+08	2.28E+08
Neeley to Minidoka	7.08E+06	6.97E+06
Devils Washbowl to Buhl	8.66E+07	6.24E+07
Buhl to Thousand Springs	1.37E+08	1.32E+08
Thousand Ssprings	1.51E+08	1.70E+08
Thousand Springs to Malad	6.63E+06	5.34E+06
Malad	9.65E+07	1.04E+08
Malad to Bancroft	7.84E+06	1.14E+07

Table 26. Eastern Snake Plain Aquifer Model Enhancement Design Document Topics

Revised May, 2006

Model Design and Calibration	Author	ESPAM Project Document Number	IWRRI Document Number	Status
Model Design Objectives	Paul Castelin, Donna Cosgrove	DDM-001		Final
Model Boundary	Allan Wylie	DDM-002	IWRRI04-016	Final
Model Layers	Allan Wylie	DDM-003	IWRRI04-019	Final
Model River Representation	Allan Wylie	DDM-010	IWRRI04-017	Final
Estimating Elevation of Wellheads and River Surface	Allan Wylie	DDM-011	IWRRI04-021	Final
Delineating the Bottom of the Aquifer	Allan Wylie	DDM-012	IWRRI04-015	Final
Steady State Response Functions	Donna Cosgrove, Gary Johnson	DDM-013		In Preparation

Transient Response Functions	Donna Cosgrove, Gary Johnson	DDM-014		In Preparation
Model Grid and Grid Orientation	Allan Wylie	DDM-015	IWRRI04-018	Final
Confined vs. Unconfined Aquifer Representation	Allan Wylie	DDM-016	IWRRI04-020	Final
Estimating Reach Gains in the Ashton/Heise to Milner Reach	Brenda Gilliland	DDM-017	IWRRI04-011	Final
Estimating Reach Gains in the Milner to King Hill Reach	Gary Johnson	DDM-018		In Revision
ESPAM Final Report	Donna Cosgrove	DDM-019	IWRRI06-002	Final

Recharge Calculation	Author	ESPAM Project Document Number	IWRRI Document Number	Status
Determination of Crop Mix	Bryce Contor	DDW-001	IWRRI04-025	Final
Percolation, Runoff and Deficit Irrigation	Bryce Contor	DDW-002	IWRRI04-004	Final
Recharge from Precipitation on Non-Irrigated Lands	Bryce Contor	DDW-003	IWRRI04-006	Final
Tributary Underflow	Allan Wylie	DDW-004	IWRRI06-004	Final
Calculating Return Flow Lag Factors	Dick Lutz	DDW-005	N/A	Final
Aggregating Surface Water Canal Companies into Surface Water Irrigation Entities	Brenda Gilliland	DDW-008	IWRRI04-014	Final
Ground Water Irrigation Entities for Recharge Calculation	Bryce Contor	DDW-009	IWRRI04-026	Final
Traditional Evapotranspiration Calculation	Bryce Contor	DDW-010	IWRRI04-009	Final

PRISM Precipitation Maps	Brenda Gilliland	DDW-011	IWRRI04-013	Final
Estimating Irrigation Entity Diversions—Snake	Brenda Gilliland	DDW-012	IWRRI04-012	Final
Historical Gaging Station Locations	Brenda Gilliland	DDW-013	IWRRI04-022	Final
Historical Water Level Measurements	Suzy Shaub	DDW-014	Not assigned	Final
Land Use	Bryce Contor	DDW-015	IWRRI04-007	Final
Estimating ET Using SEBAL	Rick Allen	DDW-016		
Determining Source of Irrigation Water	Bryce Contor	DDW-017	IWRRI04-010	Final
Irrigation Conveyance Losses	Bryce Contor	DDW-020	IWRRI04-008	Final
ET Adjustment Factors	Bryce Contor	DDW-021	IWRRI06-005	Final
Discerning Method of Irrigation Water Application	Bryce Contor	DDW-022	IWRRI04-005	As-Built Version
Non-Snake Perched River Reach Seepage Estimates and Irrigation Diversions	Nathan Erickson	DDW-024	IWRRI06-003	Final

Fixed Point Pumping	Bryce Contor	DDW-026	IWRRI04-027	Final
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Recharge Program	Author	ESPAM Project Document Number	IWRRI Document Number	Status
GIS-Based Recharge Program Component Design	Jim Oakleaf	DDR-001	N/A	Final (incorporated in Recharge Tool as help files)
Preparing GIS Recharge Component Inputs	Bryce Contor	DDR-002	N/A	Available as May, 2004 training notes
Fortran-Based Recharge Program Component User's Guide	Donna Cosgrove	DDR-003		In preparation

Field Work Reports	Author	ESPAM Project Document Number	IWRRI Document Number	Status
ADCP Reach Gain Measurement Report—Spring/Fall, 2001	Idaho Power/USGS	DDF-001	N/A	Final
ADCP Reach Gain Measurement Final Report	Idaho Power/USGS	DDF-005	N/A	Final
Return Flow Measurement Plan	Idaho Power	DDF-006	N/A	Final
Return Flow Measurement Data Report—Year 1	Idaho Power	DDF-007	N/A	Final
Return Flow Measurement Data Report—Year 2	Idaho Power	DDF-008	N/A	Final

Scenarios	Author	ESPAM Project Document Number	IWRRI Document Number	Status
Base Case Scenario	IWRRI	DDS-001	IWRRI04-001	Final
Curtailment Scenario	IWRRI	DDS-004	IWRRI04-023	Final
No Changes in Surface Water Practices Scenario	IWRRI	DDS-003	IWRRI04-003	Final
Managed Recharge Scenario	IWRRI	DDS-002	IWRRI04-002	Final
Drought Scenario	IWRRI	DDS-005	IWRRI04-024	In work
Strawman Scenario	IWRRI	DDS-006	IWRRI05-003	In Work
A&B Irrigation District Scenario	IWRRI	DDS-007		

Notes:

Web site for obtaining documents:

<http://www.if.uidaho.edu/~johnson/ifiwrri/srpmrpts/index.html>

DDM-nnn document number for model design documents

DDW-nnn document number for water budget design documents

DDR-nnn document number for recharge program design documents

DDF-nnn document number for field work design documents

DDF-nnn document number for scenario documents