PCWA-L-064

Placer County Water Agency

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A Public Agency

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March 8, 2004

Mr. Takeshi Yamashita, Regional Engineer
FEDERAL ENERGY REGULATORY COMMISSION
901 Market Street, Suite 350
San Francisco, CA 94103-1778

Attention: Ms. Jill Eichbauer

RE: FERC Project No. 2079
Middle Fork American River Project
Surveillance Data - L.L. Anderson Dam,
Hell Hole Dam, Ralston Afterbay Dam

Dear Mr. Yamashita:

Enclosed are three copies of the following monitoring records for the subject dams, through December, 2003:

1. French Meadows Dam Leakage Weirs, Year 1999 through December, 2003
(Previous submittal of this weir data was through December, 2002, and was submitted on 2/18/03)
The readings are consistent with historical levels, and indicate no trends toward a potentially deteriorating condition.

2. French Meadows Dam Piezometers, Year 1999 through 2003
(Previous submittal of this piezometer data was through December, 2002, and was submitted on 2/18/03)
The readings are consistent with historical levels, and indicate no trends toward a potentially deteriorating condition. Two of the holes remain dry.

3. French Meadows Dam Settlement Monument Record, dated 9/16/03
(The previous survey was done in September, 2001, and was submitted on 11/20/01)
The record indicates that the dam continues to be stable, since only minimal settlement has occurred relative to the previous survey. The settlement record forms have been revised to compare current data with the previous survey data, as well as with the original 1985 survey data.

4. Hell Hole Dam Leakage Weir, Year 1999 through 2003
(Previous submittal of this weir data was through December, 2002, and was submitted on 2/18/03)
The readings are consistent with historical levels, and indicate no trends toward a potentially deteriorating condition.

5. Hell Hole Dam Settlement Monument Record
(The previous survey was done in September, 2001, and was submitted on 11/20/01)
The record indicates that the dam continues to be stable, since only minimal settlement or offset has occurred relative to the previous survey. The settlement record forms have been revised to compare current data with the previous survey data, as well as with the original 1965 survey data.

6. Ralston Afterbay Dam Piezometers and Total Gallery Flow, Year 1999 through 2003
(Previous submittal of this piezometer and gallery data was through December, 2002, and was submitted on 2/18/03)
The chart has been reformatted to have the lake elevation and the piezometer water levels on the same scale. Piezometers #P1 and #P3, and the gallery weirs, have readings consistent with historical levels. We have continued to experience intermittent problems with piezometer #P2, and it was returned to the manufacturer for service several times. We believe the problem has now been corrected. We had outages or false readings on this equipment from 5/9/03 to 6/1/03, 8/15/03 to 9/25/03, and 10/29/03 to11/31/03. Recorded water levels in #P2 have been somewhat higher since mid-2002, before which water levels were around 1106 to1108, and now generally are in the 1112 to 1114 range. Using redundant checks, we have confirmed the accuracy of the current piezometer readings, but are not able to verify the accuracy of the readings before mid-2002. We believe there are no trends toward a potentially deteriorating condition.

7. Ralston Afterbay Dam Settlement Monument Record (not included, scheduled for 2004)
(Previous submittal of this settlement record (8/20/02) was made on 2/18/03)
The previous record indicates that the dam continues to be stable, since only minimal settlement or offset has occurred relative to previous surveys.

8. Ralston Afterbay Dam Drainage Gallery Sounding Records, Year 2003
(Previous submittal of the 2002 data was made on 2/18/03)
The record indicates that no unusual or abnormal condition has occurred, based on a comparison of this record with the previous year's record. The average water level in the

drains was just slightly higher than the previous year. Three drains (#36, 37, and 39) had obstructions discovered in 2002, where the flushing hose did not have enough clearance to pass through. Following this year's flushing of the drains, our maintenance crew attempted to remove the obstructions by drilling, with only partial success. We are planning to have the vertical drains reamed and flushed by a drilling contractor this year.

9. Ralston Afterbay Dam Drainage Gallery Joint Monitoring - Year 2003
(Previous submittal of the 2002 data was made on 2/18/03)
This monitoring started 12/6/01, as a result of a discussion with DSOD during a 2001 inspection. Only minimal movements were measured since the measurements began in 2001, and do not indicate a potentially deteriorating condition. The spreadsheet for this monitoring has been revised, and charts added.

10. Annual High Hazard Dam Inspection Report by the Power System Manager - Year 2002
This report is dated July 7, 2003, and is a requirement of the FERC Part 12 Dam Safety Inspection Program.

11. Layout drawings
Layout drawings for the weirs, piezometers, and monuments at each of the dams is included with this report.

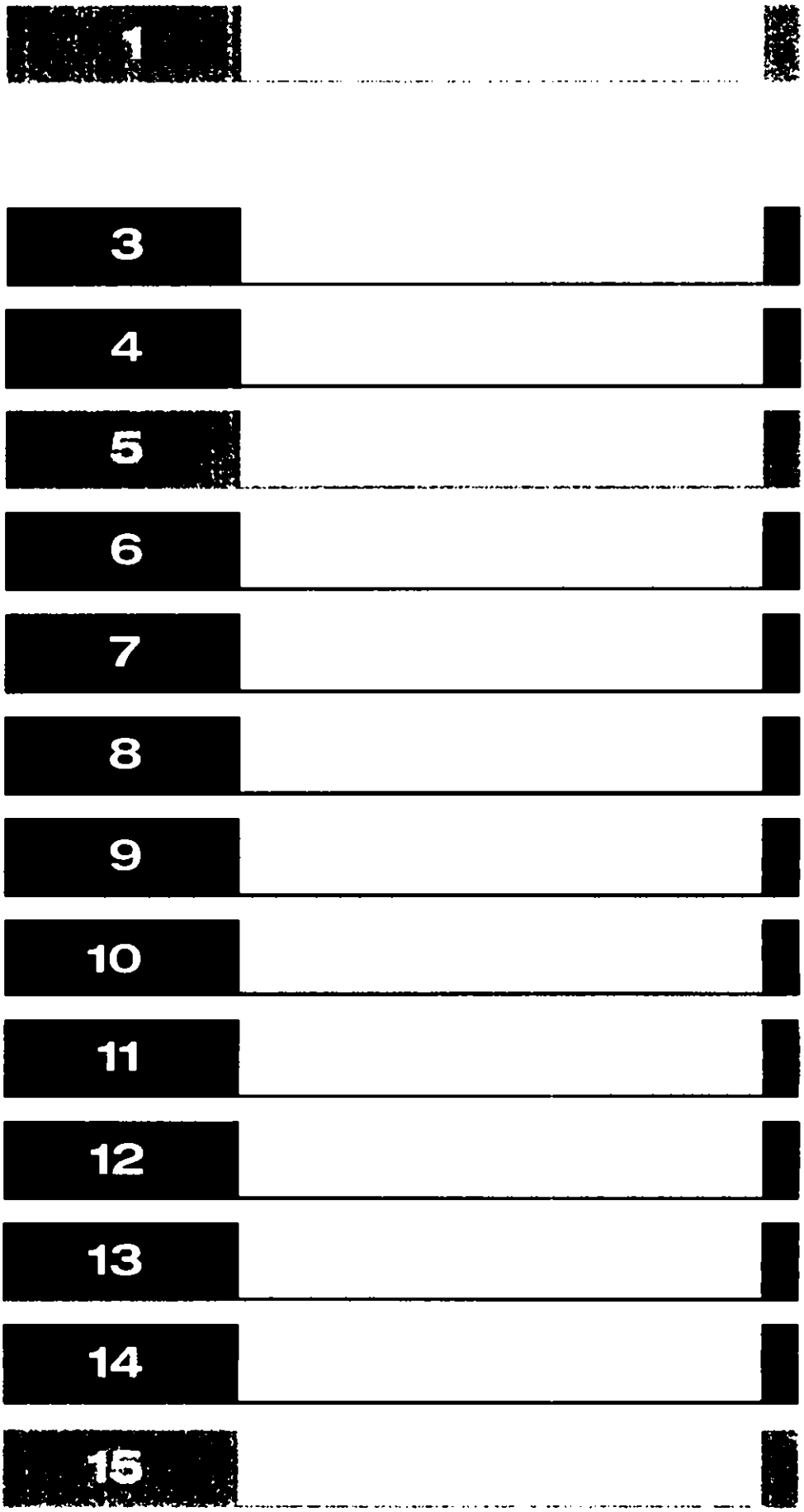
Please call Jon Mattson or me at (530)885-6917, if you have any questions.

Sincerely,

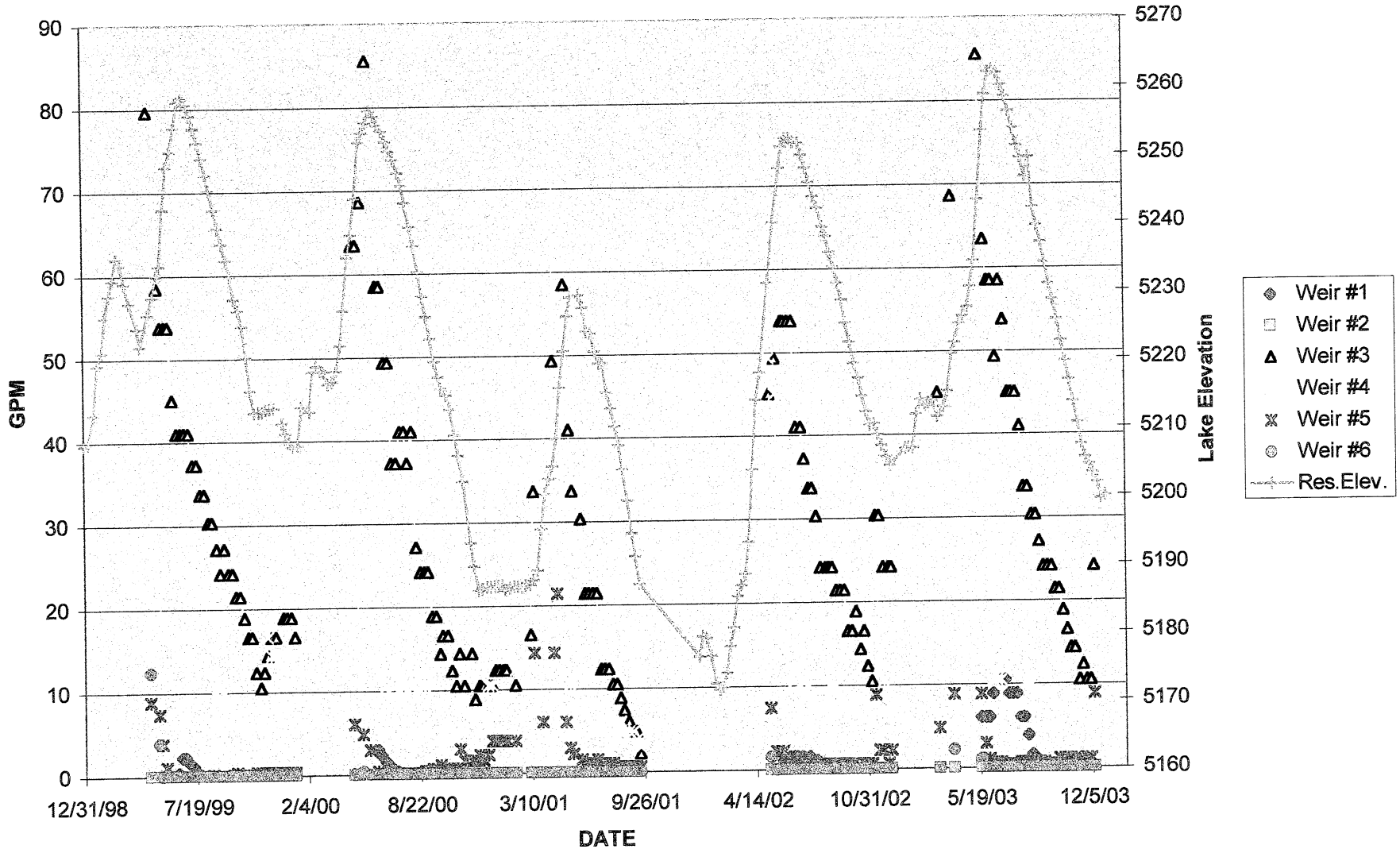
PLACER COUNTY WATER AGENCY

Stephen J. Jones
Power System Manager

Enclosure



French Meadows Dam Leakage Weirs 1999 - 2003 (through 12/31/03)



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FMDam19992003

FRENCH MEADOWS DAM WEIR READINGS, N=NORMAL, R=RAIN, S=SNOW, MS=MELTING SNOW, SW1=Staff Read Weir 1

Date	Res. Elev.	Cond.	SW1	GPM	SW2	GPM	SW3	GPM	SW4	GPM	SW5	GPM	SW6	GPM	TOTAL
1/1/99	5208.4	S													
1/9/99	5208.7	S													
1/19/99	5213.0	S													
1/26/99	5220.2	S													
2/3/99	5222.0	S													
2/10/99	5227.2	S													
2/17/99	5230.4	S													
2/23/99	5232.7	S													
3/2/99	5235.8	S													
3/9/99	5234.9	S													
3/16/99	5232.2	S													
3/25/99	5229.3	S													
4/8/99	5225.6	S													
4/13/99	5222.9	S													
4/27/99	5227.6	S	0	0.0	0	0.0	0.34	79.7	0.22	27.2	0.14	8.9	0.16	12.4	128.2
5/5/99	5230.1	S													
5/13/99	5233.2	N	0	0.0	0	0.0	0.30	58.5	0.20	21.5	0.13	7.4	0.10	3.9	91.3
5/18/99	5234.7	N	0	0.0	0	0.0	0.29	53.8	0.19	18.9	0.10	3.9	0.02	0.1	76.7
5/25/99	5243.0	N	0	0.0	0	0.0	0.29	53.8	0.19	18.9	0.06	1.1	0.03	0.2	74.0
6/1/99	5249.3	N	0	0.0	0	0.0	0.29	53.8	0.18	16.6	0.02	0.1	0.00	0.0	70.5
6/8/99	5251.5	N	0	0.0	0	0.0	0.27	45.1	0.28		0.02	0.1	0.00	0.0	45.2
6/15/99	5255.0	N	0.04	0.4	0	0.0	0.26	41.1	0.17	14.4	0.02	0.1	0.00	0.0	56.0
6/22/99	5258.8	N	0.06	2.2	0	0.0	0.26	41.1	0.17	14.4	0.01	0.0	0.00	0.0	57.7
6/29/99	5259.3	N	0.06	2.2	0	0.0	0.26	41.1	0.18	16.6	0.02	0.1	0.00	0.0	60.0
7/6/99	5258.5	N	0.07	1.6	0	0.0	0.26	41.1	0.18	16.6	0.02	0.1	0.00	0.0	59.3
7/13/99	5256.8	N	0.06	1.1	0	0.0	0.25	37.3	0.18	16.6	0.01	0.0	0.00	0.0	55.0
7/20/99	5254.9	N	0.04	0.4	0	0.0	0.25	37.3	0.18	16.6	0.01	0.0	0.00	0.0	54.3
7/27/99	5252.8	N	0.03	0.2	0	0.0	0.24	33.7	0.18	16.6	0.02	0.1	0.00	0.0	50.6
8/3/99	5250.5	N	0	0.0	0	0.0	0.24	33.7	0.17	14.4	0.02	0.1	0.00	0.0	48.2
8/10/99	5248.0	N	0	0.0	0	0.0	0.23	30.4	0.16	12.4	0.02	0.1	0.00	0.0	42.8
8/16/99	5245.8	N	0	0.0	0	0.0	0.23	30.4	0.16	12.4	0.03	0.2	0.00	0.0	42.9
8/24/99	5242.9	N	0	0.0	0	0.0	0.22	27.2	0.15	10.6	0.02	0.1	0.00	0.0	37.8
8/31/99	5240.2	N	0	0.0	0	0.0	0.21	24.2	0.15	10.6	0.02	0.1	0.00	0.0	34.9
9/7/99	5238.0	N	0	0.0	0	0.0	0.22	27.2	0.14	8.9	0.02	0.1	0.00	0.0	36.2
9/14/99	5235.5	N	0	0.0	0	0.0	0.21	24.2	0.14	8.9	0.02	0.1	0.00	0.0	33.2
9/21/99	5233.2	N	0	0.0	0	0.0	0.21	24.2	0.13	7.4	0.03	0.2	0.00	0.0	31.9
9/28/99	5229.8	N	0	0.0	0	0.0	0.20	21.5	0.13	7.4	0.04	0.4	0.00	0.0	29.3
10/5/99	5228.2	N	0	0.0	0	0.0	0.20	21.5	0.12	6.1	0.03	0.2	0.00	0.0	27.8
10/12/99	5225.9	N	0	0.0	0	0.0	0.19	18.9	0.11	4.9	0.03	0.2	0.00	0.0	24.0
10/19/99	5221.3	N	0	0.0	0	0.0	0.18	16.6	0.12	6.1	0.03	0.2	0.00	0.0	22.9
10/26/99	5216.4	N	0	0.0	0	0.0	0.18	16.6	0.11	4.9	0.03	0.2	0.00	0.0	21.7
11/2/99	5213.2	N	0	0.0	0	0.0	0.16	12.4	0.10	3.9	0.04	0.4	0.00	0.0	16.7
11/10/99	5213.2	N	0	0.0	0	0.0	0.15	10.6	0.10	3.9	0.04	0.4	0.00	0.0	14.8
11/16/99	5213.2	N	0	0.0	0	0.0	0.16	12.4	0.09	3.0	0.04	0.4	0.00	0.0	15.8
11/23/99	5213.6	N	0	0.0	0	0.0	0.17	14.4	0.18	16.6	0.04	0.4	0.00	0.0	31.4
11/30/99	5213.7	N	0	0.0	0	0.0	0.18	16.6	0.17	14.4	0.04	0.4	0.00	0.0	31.4
12/7/99	5213.8	N	0	0.0	0	0.0	0.18	16.6	0.17	14.4	0.04	0.4	0.00	0.0	31.4
12/14/99		S													
12/22/99	5211.6	N	0	0.0	0	0.0	0.19	18.9	0.17	14.4	0.04	0.4	0.00	0.0	33.7
12/28/99	5210.1	N	0	0.0	0	0.0	0.19	18.9	0.17	14.4	0.04	0.4	0.00	0.0	33.7

jmm 2/4/03

FRENCH MEADOWS DAM WEIR READINGS, N=NORMAL, R=RAIN, S=SNOW, MS=MELTING SNOW, SW1=Staff Read Weir 1

Date	Res. Elev.	Cond.	SW1	GPM	SW2	GPM	SW3	GPM	SW4	GPM	SW5	GPM	SW6	GPM	TOTAL
1/4/00	5208.7	N	0	0.0	0	0.0	0.19	18.9	0.17	14.4	0.04	0.4	0	0.0	33.7
1/10/00	5208.0	N	0	0.0	0	0.0	0.18	16.6	0.16	12.4	0.04	0.4	0	0.0	29.4
1/19/00	5208.3	R													
1/26/00	5213.9	S													
2/9/00	5213.3	S													
2/15/00	5219.1	S													
2/22/00	5219.9	S													
2/29/00	5219.3	S													
3/6/00	5219.1	S													
3/14/00	5217.2	S													
3/21/00	5217.6	S													
3/28/00	5219.2	S													
4/5/00	5222.9	S													
4/11/00	5228.0	S													
4/19/00	5235.8	S													
4/25/00	5239.1	N	0.01	0.0	0	0.0	0.31	63.5	0.19	18.9	0.12	6.1	0.02	0.1	88.6
5/2/00	5244.4	N	0	0.0	0	0.0	0.31	63.5	0.19	18.9	0.03	0.2	0.01	0.0	82.6
5/10/00	5252.6	N	0.01	0.0	0	0.0	0.32	68.6	0.22	27.2	0.11	4.9	0.04	0.4	101.2
5/16/00	5254.0	R													
5/23/00	5255.5	N	0.01	0.0	0	0.0	0.35	85.6	0.2	21.5	0.09	3.0	0	0.0	110.1
5/30/00	5257.3	N													
6/6/00	5256.5	N	0.09	3.0	0	0.0	0.3	58.5	0.17	14.4	0.04	0.4	0	0.0	76.3
6/13/00	5255.2	N	0.08	2.2	0	0.0	0.3	58.5	0.17	14.4	0.03	0.2	0	0.0	75.3
6/20/00	5254.3	N	0.07	1.6	0	0.0	0.28	49.3	0.15	10.6	0.03	0.2	0	0.0	61.7
6/27/00	5252.8	N	0.06	1.1	0	0.0	0.28	49.3	0.14	8.9	0.03	0.2	0	0.0	59.6
7/3/00	5251.4	N	0.04	0.4	0	0.0	0.25	37.3	0.16	12.4	0.04	0.4	0	0.0	50.5
7/11/00	5250.1	N	0.04	0.4	0	0.0	0.25	37.3	0.16	12.4	0.03	0.2	0	0.0	50.3
7/18/00	5248.2	N	0.01	0.0	0	0.0	0.26	41.1	0.15	10.6	0.03	0.2	0	0.0	51.9
7/25/00	5246.3	N	0	0.0	0	0.0	0.26	41.1	0.15	10.6	0.03	0.2	0	0.0	51.9
7/31/00	5243.7	N	0	0.0	0	0.0	0.25	37.3	0.16	12.4	0.03	0.2	0	0.0	49.9
8/8/00	5240.3	N	0	0.0	0	0.0	0.26	41.1	0.15	10.6	0.03	0.2	0	0.0	51.9
8/15/00	5237.4	N	0	0.0	0	0.0	0.22	27.2	0.14	8.9	0.03	0.2	0	0.0	36.3
8/22/00	5233.6	N	0	0.0	0	0.0	0.21	24.2	0.15	10.6	0.03	0.2	0	0.0	35.0
8/29/00	5230.0	N	0	0.0	0	0.0	0.21	24.2	0.15	10.6	0.04	0.4	0	0.0	35.2
9/5/00	5227.1	N	0	0.0	0	0.0	0.21	24.2	0.11	4.9	0.04	0.4	0	0.0	29.6
9/12/00	5223.7	N	0	0.0	0	0.0	0.19	18.9	0.11	4.9	0.05	0.7	0	0.0	24.5
9/19/00	5220.4	N	0	0.0	0	0.0	0.19	18.9	0.1	3.9	0.05	0.7	0	0.0	23.5
9/26/00	5218.2	N	0	0.0	0	0.0	0.17	14.4	0.11	4.9	0.06	1.1	0	0.0	20.4
10/1/00	5216.4	N	0	0.0	0	0.0	0.18	16.6	0.1	3.9	0.05	0.7	0	0.0	21.1
10/10/00	5215.5	S	0	0.0	0	0.0	0.18	16.6	0.1	3.9	0.05	0.7	0	0.0	21.1
10/17/00	5213.4	N	0	0.0	0	0.0	0.16	12.4	0.1	3.9	0.05	0.7	0	0.0	17.0
10/24/00	5209.6	N	0	0.0	0	0.0	0.15	10.6	0.08	2.2	0.05	0.7	0	0.0	13.5
10/31/00	5206.6	S	0	0.0	0	0.0	0.17	14.4	0.14	8.9	0.09	3.0	0	0.0	26.3
11/8/00	5202.8	R	0	0.0	0	0.0	0.15	10.6	0.13	7.4	0.07	1.6	0	0.0	19.6
11/21/00	5193.8	N	0	0.0	0	0.0	0.17	14.4	0.13	7.4	0.07	1.6	0	0.0	23.4
11/27/00	5190.3	N	0	0.0	0	0.0	0.14	8.9	0.12	6.1	0.07	1.6	0	0.0	16.6
12/5/00	5186.9	N	0	0.0	0	0.0	0.15	10.6	0.13	7.4	0.08	2.2	0	0.0	20.2
12/11/00	5187.0	N	0	0.0	0	0.0	0.15	10.6	0.12	6.1	0.07	1.6	0	0.0	18.3
12/20/00	5187.3	S	0	0.0	0	0.0	0.15	10.6	0.15	10.6	0.08	2.2	0	0.0	23.4
12/27/00	5187.3	S	0	0.0	0	0.0	0.15	10.6	0.15	10.6	0.1	3.9	0	0.0	25.0

jmm 2/4/03

FRENCH MEADOWS DAM WEIR READINGS, N=NORMAL, R=RAIN, S=SNOW, MS=MELTING SNOW, SW1=Staff Read Weir 1

Date	Res. Elev.	Cond.	SW1	GPM	SW2	GPM	SW3	GPM	SW4	GPM	SW5	GPM	SW6	GPM	TOTAL
1/3/01	5187.4	S	0.0	0.0	0.0	0.0	0.2	12.4	0.1	8.9	0.1	3.9	0.0	0.0	25.2
1/9/01	5187.4	S	0.0	0.0	0.0	0.0	0.2	12.4	0.1	7.4	0.1	3.9	0.0	0.0	23.7
1/16/01	5187.5	S	0.0	0.0	0.0	0.0	0.2	12.4	0.1	8.9	0.1	3.9	0.0	0.0	25.2
1/22/01	5186.9	S	0.0	0.0	0.0	0.0	0.2	12.4	0.1	8.9	0.1	3.9	0.0	0.0	25.2
1/30/01	5187.1	S													
2/7/01	5187.4	S	0.0	0.0	0.0	0.0	0.2	10.6	0.2	12.4	0.1	3.9	0.0	0.0	26.8
2/13/01	5187.4	S													
2/20/01	5187.1	S													
2/27/01	5187.5	S													
3/7/01	5187.7	S	0.0	0.0	0.0	0.0	0.2	16.6	0.2	18.9		0.0	0.0	0.0	35.5
3/13/01	5188.3	MS	0.0	0.0	0.0	0.0	0.2	33.7	0.2	27.2	0.2	14.4	0.0	0.0	75.3
3/20/01	5189.7	S													
3/28/01	5195.7	MS	0.0	0.0	0.0	0.0	0.4	91.8	0.2	27.2	0.1	6.1	0.0	0.0	125.1
4/3/01	5200.8	S													
4/10/01	5203.1	S													
4/17/01	5204.9	MS	0.0	0.0	0.0	0.0	0.3	49.3	0.2	21.5	0.2	14.4	0.0	0.0	85.2
4/24/01	5208.9	MS	0.0	0.0	0.0	0.0	0.4	104.9	0.2	27.2	0.2	21.5	0.0	0.0	153.6
5/1/01	5216.4	MS													
5/8/01	5221.8	MS	0.0	0.0	0.0	0.0	0.3	58.5	0.2	14.4	0.1	6.1	0.0	0.0	79.0
5/15/01	5226.9	R	0.0	0.0	0.0	0.0	0.3	41.1	0.2	10.6	0.1	3.0	0.0	0.0	54.6
5/21/01	5229.7	N	0.0	0.0	0.0	0.0	0.2	33.7	0.1	7.4	0.1	2.2	0.0	0.0	43.4
6/5/01	5229.9	N	0.0	0.0	0.0	0.0	0.2	30.4	0.1	7.4	0.1	1.6	0.0	0.0	39.4
6/12/01	5228.1	N	0.0	0.0	0.0	0.0	0.2	21.5	0.1	8.9	0.1	1.1	0.0	0.0	31.5
6/19/01	5224.6	N	0.0	0.0	0.0	0.0	0.2	21.5	0.1	6.1	0.1	1.1	0.0	0.0	28.7
6/28/01	5224.3	N	0.0	0.0	0.0	0.0	0.2	21.5	0.1	4.9	0.1	1.1	0.0	0.0	27.5
7/3/01	5221.7	N	0.0	0.0	0.0	0.0	0.2	21.5	0.1	4.9	0.1	1.6	0.0	0.0	28.0
7/10/01	5219.9	N	0.0	0.0	0.0	0.0	0.2	12.4	0.1	6.1	0.1	1.1	0.0	0.0	19.6
7/17/01	5220.0	N	0.0	0.0	0.0	0.0	0.2	12.4	0.1	6.1	0.1	1.1	0.0	0.0	19.6
7/24/01	5215.7	N	0.0	0.0	0.0	0.0	0.2	12.4	0.1	6.1	0.1	1.1	0.0	0.0	19.6
7/31/01	5213.4	N	0.0	0.0	0.0	0.0	0.2	10.6	0.1	6.1	0.1	1.1	0.0	0.0	17.7
8/7/01	5210.7	N	0.0	0.0	0.0	0.0	0.2	10.6	0.1	4.9	0.1	0.7	0.0	0.0	16.2
8/14/01	5207.9	N	0.0	0.0	0.0	0.0	0.1	8.9	0.1	6.1	0.1	0.7	0.0	0.0	15.7
8/20/01	5204.4	N	0.0	0.0	0.0	0.0	0.1	7.4	0.1	4.9	0.1	0.7	0.0	0.0	13.0
8/28/01	5199.7	N	0.0	0.0	0.0	0.0	0.1	6.1	0.1	4.9	0.1	0.7	0.0	0.0	11.7
9/5/01	5195.0	N	0.0	0.0	0.0	0.0	0.1	4.9	0.1	4.9	0.1	0.7	0.0	0.0	10.5
9/11/01	5191.6	N	0.0	0.0	0.0	0.0	0.1	4.9	0.1	3.9	0.1	0.7	0.0	0.0	9.5
9/18/01	5187.5	N	0.0	0.0	0.0	0.0	0.1	2.2	0.1	3.0	0.1	0.7	0.0	0.0	5.9
1/2/02	5176.8	S													
1/9/02	5179.8	S													
1/15/02	5179.4	S													
1/23/02	5176.8	S													
2/1/02	5172.8	S													
2/7/02	5171.9	S													
2/13/02	5172.2	S													
2/20/02	5174.3	S													
2/26/02	5178.3	S													
3/5/02	5181.0	S													
3/12/02	5185.6	S													
3/19/02	5187.2	S													
3/26/02	5188.8	S													

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FMDam19992003

FRENCH MEADOWS DAM WEIR READINGS, N=NORMAL, R=RAIN, S=SNOW, MS=MELTING SNOW, SW1=Staff Read Weir 1															
ate	Res. Elev.	Cond.	SW1	GPM	SW2	GPM	SW3	GPM	SW4	GPM	SW5	GPM	SW6	GPM	OTAL
4/2/02	5193.5	S													
4/9/02	5204.0	S													
4/16/02	5214.3	S													
4/23/02	5218.2	S													
5/9/02	5231.5	MS	0	0.0	0	0.0	0.27	45.1	0.28	49.3	0.13	7.4	0.07	1.6	103.5
5/19/02	5240.2	MS	0	0.0	0	0.0	0.28	49.3	0.27	45.1	0.08	2.2	0.02	0.1	96.8
5/30/02	5248.3	N	0.06	1.1	0	0.0	0.29	53.8	0.17	14.4	0.08	2.2	0	0.0	71.5
6/4/02	5251.4	N	0.06	1.1	0	0.0	0.29	53.8	0.17	14.4	0.08	1.1	0	0.0	70.4
6/11/02	5252.6	N	0.07	1.6	0	0.0	0.29	53.8	0.16	12.4	0.05	0.7	0	0.0	68.5
6/18/02	5252.6	N	0.07	1.6	0	0.0	0.29	53.8	0.15	10.6	0.05	0.7	0	0.0	66.7
6/25/02	5252.0	N	0.07	1.6	0	0.0	0.26	41.1	0.16	12.4	0.08	1.1	0	0.0	56.2
7/4/02	5251.9	N	0.07	1.6	0	0.0	0.26	41.1	0.15	10.6	0.05	0.7	0	0.0	54.0
7/9/02	5250.2	N	0.06	1.1	0	0.0	0.25	37.3	0.15	10.6	0.05	0.7	0	0.0	49.7
7/16/02	5248.2	N	0.07	1.6	0	0.0	0.24	33.7	0.14	8.9	0.06	1.1	0	0.0	45.3
7/23/02	5246.1	N	0.06	1.1	0	0.0	0.24	33.7	0.14	8.9	0.05	0.7	0	0.0	44.4
7/30/02	5244.1	N	0.06	1.1	0	0.0	0.23	30.4	0.13	7.4	0.05	0.7	0	0.0	39.6
8/6/02	5242.4	N	0.04	0.4	0	0.0	0.21	24.2	0.13	7.4	0.05	0.7	0	0.0	32.8
8/15/02	5239.5	N	0	0.0	0	0.0	0.21	24.2	0.13	7.4	0.05	0.7	0	0.0	32.4
8/20/02	5238.2	N	0	0.0	0	0.0	0.21	24.2	0.14	8.9	0.05	0.7	0	0.0	33.9
8/27/02	5235.9	N	0	0.0	0	0.0	0.21	24.2	0.15	10.6	0.05	0.7	0	0.0	35.5
9/3/02	5233.7	N	0	0.0	0	0.0	0.2	21.5	0.14	8.9	0.05	0.7	0	0.0	31.1
9/10/02	5231.3	N	0	0.0	0	0.0	0.2	21.5	0.13	7.4	0.05	0.7	0	0.0	29.6
9/17/02	5228.9	N	0	0.0	0	0.0	0.2	21.5	0.13	7.4	0.05	0.7	0	0.0	29.6
9/24/02	5225.5	N	0	0.0	0	0.0	0.18	16.6	0.13	7.4	0.05	0.7	0	0.0	24.7
10/1/02	5222.6	N	0	0.0	0	0.0	0.18	16.6	0.13	7.4	0.05	0.7	0	0.0	24.7
10/8/02	5219.5	N	0	0.0	0	0.0	0.19	18.9	0.13	7.4	0.03	0.2	0	0.0	26.6
10/16/02	5217.3	N	0	0.0	0	0.0	0.17	14.4	0.14	8.9	0.02	0.1	0	0.0	23.4
10/23/02	5214.8	N	0	0.0	0	0.0	0.18	16.6	0.13	7.4	0.05	0.7	0	0.0	24.7
10/29/02	5212.4	N	0	0.0	0	0.0	0.16	12.4	0.12	6.1	0.05	0.7	0	0.0	19.2
11/5/02	5210.4	N	0	0.0	0	0.0	0.15	10.6	0.12	6.1	0.05	0.7	0	0.0	17.3
11/12/02	5210.6	N	0	0.0	0	0.0	0.23	30.4	0.25	37.3	0.14	8.9	0	0.0	76.6
11/19/02	5209.0	N	0	0.0	0	0.0	0.23	30.4	0.16	12.4	0.08	2.2	0	0.0	45.0
11/26/02	5207.5	N	0	0.0	0	0.0	0.21	24.2	0.15	10.6	0.08	2.2	0	0.0	37.0
12/5/02	5205.8	N	0	0.0	0	0.0	0.21	24.2	0.13	7.4	0.05	0.7	0	0.0	32.4
12/10/02	5204.5	R	0	0.0	0	0.0	0.21	24.2	0.13	7.4	0.08	2.2	0	0.0	33.9
1/7/03	5207.0	S													
1/14/03	5207.1	S													
1/21/03	5207.1	S													
1/28/03	5212.0	S													
2/4/03	5214.1	S													
2/12/03	5213.3	S													
2/19/03	5213.7	S													
2/25/03	5213.8	S													
3/6/03	5211.6	MS	0	0.0	0	0.0	0.27	45.1	0.16	12.4	0.11	4.9	0	0.0	62.4
3/18/03	5213.0	MS													
3/25/03	5215.3	MS													
4/1/03	5220.9	MS	0	0.0	0	0.0	0.32	68.6	0.19	18.9	0.14	8.9	0.08	2.2	98.7
4/8/03	5222.5	S													
4/16/03	5225.3	S													
4/22/03	5226.3	MS													

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FRENCH MEADOWS DAM WEIR READINGS, N=NORMAL, R=RAIN, S=SNOW, MS=MELTING SNOW, SW1=Staff Read Weir 1															
ate	Res. Elev.	Cond.	SW1	GPM	SW2	GPM	SW3	GPM	SW4	GPM	SW5	GPM	SW6	GPM	OTAL
4/30/03	5227.7	MS													
5/6/03	5230.6	MS													
5/12/03	5234.4	MS													
5/20/03	5243.3	MS	0.12	6.1	0	0.0	0.35	85.6	0.19	18.9	0.14	8.9	0.06	1.1	120.7
5/28/03	5253.5	N	0.12	6.1	0	0.0	0.31	63.5	0.18	16.6	0.09	3.0	0.01	0.0	89.1
6/3/03	5258.9	N	0.12	6.1	0	0.0	0.30	58.5	0.16	12.4	0.06	1.1	0	0.0	78.1
6/10/03	5262.1	N	0.14	8.9	0	0.0	0.30	58.5	0.15	10.6	0.05	0.7	0	0.0	78.7
6/17/03	5262.4	N	0.15	10.6	0	0.0	0.28	49.3	0.15	10.6	0.05	0.7	0	0.0	71.2
6/24/03	5262.0	N	0.15	10.6	0	0.0	0.30	58.5	0.15	10.6	0.05	0.7	0	0.0	80.3
7/1/03	5260.2	N	0.15	10.6	0	0.0	0.29	53.8	0.13	7.4	0.04	0.4	0	0.0	72.2
7/9/03	5258.5	N	0.14	8.9	0	0.0	0.27	45.1	0.13	7.4	0.04	0.4	0	0.0	61.8
7/15/03	5256.3	N	0.14	8.9	0	0.0	0.27	45.1	0.13	7.4	0.04	0.4	0	0.0	61.8
7/22/03	5253.8	N	0.14	8.9	0	0.0	0.27	45.1	0.13	7.4	0.04	0.4	0	0.0	61.8
7/29/03	5251.3	N	0.12	6.1	0	0.0	0.26	41.1	0.13	7.4	0.05	0.7	0	0.0	55.3
8/5/03	5249.5	N	0.12	6.1	0	0.0	0.24	33.7	0.13	7.4	0.05	0.7	0	0.0	47.9
8/12/03	5246.7	N	0.10	3.9	0	0.0	0.24	33.7	0.15	10.6	0.05	0.7	0	0.0	48.9
8/19/03	5249.6	N	0.07	1.6	0	0.0	0.23	30.4	0.14	8.9	0.05	0.7	0	0.0	41.6
8/26/03	5242.3	R	0.06	1.1	0	0.0	0.23	30.4	0.14	8.9	0.05	0.7	0	0.0	41.1
9/2/03	5239.6	N	0.04	0.4	0	0.0	0.22	27.2	0.14	8.9	0.05	0.7	0	0.0	37.2
9/9/03	5237.1	N	0	0.0	0	0.0	0.21	24.2	0.14	8.9	0.05	0.7	0	0.0	33.9
9/16/03	5234.1	N	0	0.0	0	0.0	0.21	24.2	0.14	8.9	0.04	0.4	0	0.0	33.6
9/23/03	5231.0	N	0	0.0	0	0.0	0.21	24.2	0.14	8.9	0.04	0.4	0	0.0	33.6
9/30/03	5228.7	N	0	0.0	0	0.0	0.20	21.5	0.13	7.4	0.04	0.4	0	0.0	29.3
10/7/03	5225.8	N	0	0.0	0	0.0	0.20	21.5	0.11	4.9	0.06	1.1	0	0.0	27.5
10/14/03	5222.6	N	0	0.0	0	0.0	0.19	18.9	0.13	7.4	0.04	0.4	0	0.0	26.8
10/21/03	5219.7	N	0	0.0	0	0.0	0.18	16.6	0.14	8.9	0.06	1.1	0	0.0	26.6
10/28/03	5216.9	N	0	0.0	0	0.0	0.17	14.4	0.12	6.1	0.04	0.4	0	0.0	20.9
11/4/03	5213.8	S	0	0.0	0	0.0	0.17	14.4	0.12	6.1	0.06	1.1	0	0.0	21.6
11/12/03	5210.6	S	0	0.0	0	0.0	0.15	10.6	0.12	6.1	0.05	0.7	0	0.0	17.3
11/18/03	5207.4	S	0	0.0	0	0.0	0.16	12.4	0.14	8.9	0.05	0.7	0	0.0	22.0
11/25/03	5205.5	S	0	0.0	0	0.0	0.15	10.6	0.11	4.9	0.06	1.1	0	0.0	16.6
12/2/03	5204.4	S	0	0.0	0	0.0	0.15	10.6	0.11	4.9	0.06	1.1	0	0.0	16.6
12/8/03	5203.2	MS	0	0.0	0	0.0	0.21	24.2	0.22	27.2	0.14	8.9	0	0.0	60.4
12/16/03	5201.8	S													
12/23/03	5199.5	S													
12/30/03	5199.9	S													

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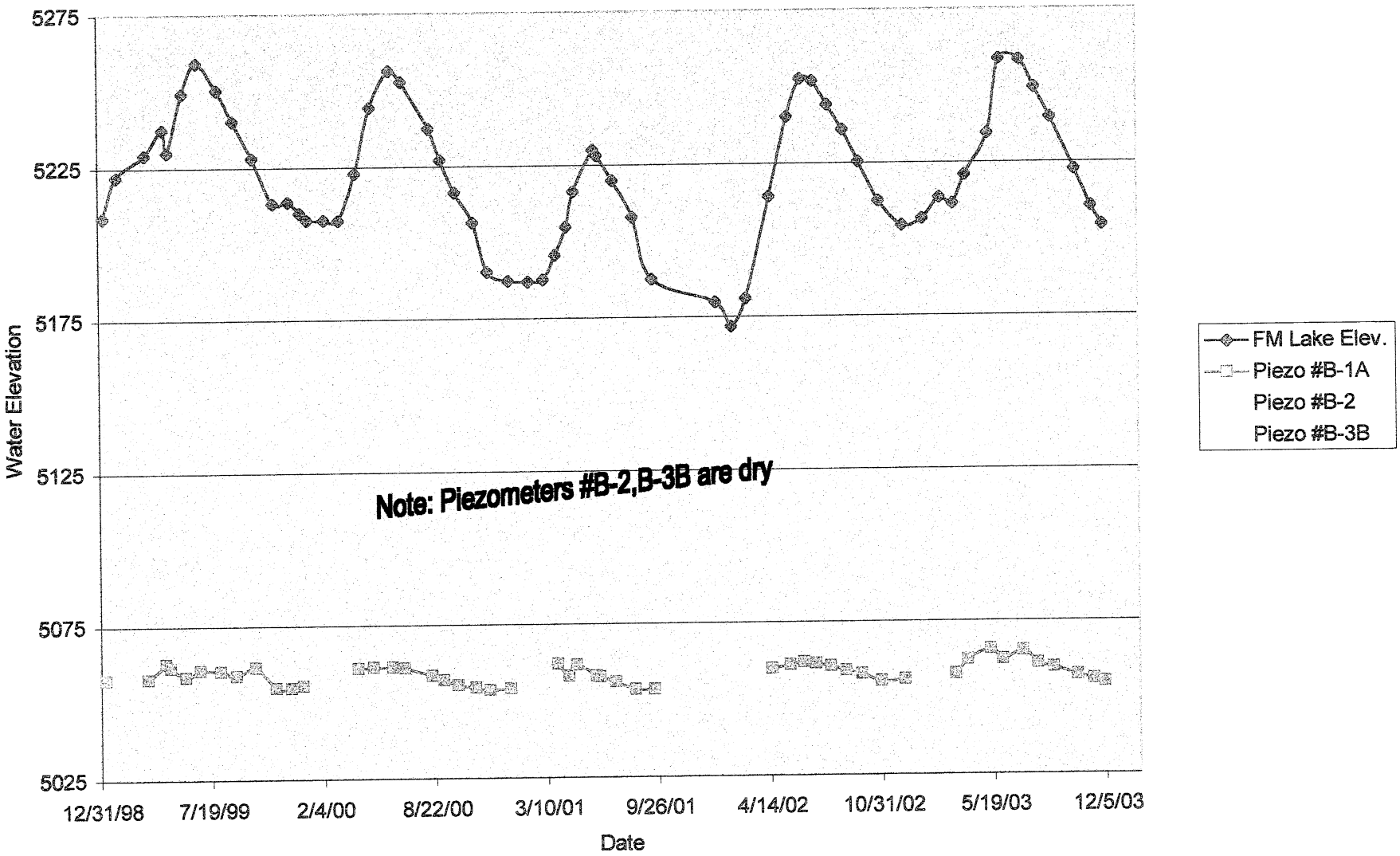
French Meadows Dam Piezometers 1999 - 2003 (last reading 12/2/03)



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FRENCH MEADOWS PIEZOMETERS 1999 - 2002

French Meadows Piezometers 1999 - 2003												
			B-1A				B-2			B-3B		
		Road Elev.	5275.2 Feet			Road Elev.	5274.7 Feet			Road Elev.	5273.6 Feet	
		Height of Dam	230 Feet			Height of Dam	160 Feet			Height of Dam	132 Feet	
Date	F.M. Elev.	Condition	Dist. to Water	Water Elev.	Depth Above Bottom	Dist. to Water	Water Elev.	Depth Above Bottom		Dist. to Water	Water Elev.	Depth Above Bottom
1/9/99	5208.68	Normal	217.6	5057.7	12.5	DRY				DRY		
2/3/99	5222.03	Snow										
3/25/99	5229.31	Snow	217.3	5057.9	12.7	DRY				DRY		
4/27/99	5237.59	Snow	212.3	5062.9	17.7	DRY				DRY		
5/5/99	5230.08	Normal	213.7	5061.5	16.3	DRY				DRY		
6/1/99	5249.28	Normal	216.7	5058.5	13.3	DRY				DRY		
6/28/99	5259.34	Normal	214.5	5060.7	15.5	DRY				DRY		
8/3/99	5250.45	Normal	214.8	5060.5	15.3	DRY				DRY		
8/31/99	5240.23	Normal	216.3	5059.0	13.8	DRY				DRY		
10/5/99	5228.17	Normal	213.6	5061.6	16.4	DRY				DRY		
11/10/99	5213.23	Normal	220.3	5055.0	9.8	DRY				DRY		
12/7/99	5213.8	Normal	220.5	5054.7	9.5	DRY				DRY		
12/28/99	5210.05	Normal	219.7	5055.6	10.4	DRY				DRY		
1/10/00	5207.7	Snow										
2/9/00	5207.8	Snow										
3/8/00	5207.6	Snow										
4/5/00	5222.89	Normal	214.2	5061.1	15.9	DRY				DRY		
5/2/00	5244.4	Normal	213.8	5061.4	16.2	DRY				DRY		
6/6/00	5256.48	Mormal	213.8	5061.4	16.2	DRY				DRY		
6/27/00	5252.8	Normal	214.2	5061.0	15.8	DRY				DRY		
8/15/00	5237.38	Normal	216.6	5058.6	13.4	DRY				DRY		
9/5/00	5227.08	Normal	218.2	5057.1	11.9	DRY				DRY		
10/1/00	5216.42	Normal	219.8	5055.5	10.3	DRY				DRY		
11/1/00	5206.59	Normal	220.7	5054.5	9.3	DRY				DRY		
11/27/00	5190.34	Normal	221.5	5053.7	8.5	DRY				DRY		
1/3/01	5187.36	Normal	221.0	5054.3	9.1	DRY				DRY		
2/7/01	5187.1	Snow										
3/7/01	5187.68	Snow										
3/28/01	5195.73	Snow	213.2	5062.1	16.9	DRY				DRY		
4/17/01	5204.88	Normal	217.2	5058.0	12.8	DRY				DRY		
5/1/01	5216.36	Normal	213.6	5061.7	16.5	DRY				DRY		
6/5/01	5229.94	Normal	217.2	5058.0	12.8	DRY				DRY		
6/12/01	5228.09	Normal	217.6	5057.6	12.4	DRY				DRY		
7/10/01	5219.88	Normal	219.2	5056.0	10.8	DRY				DRY		
8/14/01	5207.86	Normal	221.7	5053.6	8.3	DRY				DRY		
9/18/01	5187.51	Normal	221.7	5053.6	8.3	DRY				DRY		
1/9/02	5179.79	Snow										
2/6/02	5171.91	Snow										

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FRENCH MEADOWS PIEZOMETERS 1999 - 2002

3/5/02	5180.97	Snow									
4/16/02	5214.29	Normal	215.3	5059.9	14.7	DRY			DRY		
5/19/02	5240.28	Normal	214.1	5061.1	15.9	DRY			DRY		
6/12/02	5252.59	Normal	213.4	5061.8	16.6	DRY			DRY		
7/4/02	5251.91	Normal	213.9	5061.3	16.1	DRY			DRY		
7/30/02	5244.08	Normal	214.6	5060.6	15.4	DRY			DRY		
8/27/02	5235.88	Normal	216.1	5059.1	13.9	DRY			DRY		
9/24/02	5225.51	Normal	217.4	5057.8	12.6	DRY			DRY		
10/29/02	5212.59	Normal	219.7	5055.5	10.3	DRY			DRY		
12/10/02	5204.52	Normal	219.1	5056.1	10.9	DRY			DRY		
1/15/03	5206.79	Snow									
2/15/03	5213.55	Snow									
3/11/03	5211.62	Normal	217.5	5057.7	12.5	DRY			DRY		
4/1/03	5220.85	Rain	212.9	5062.3	17.1	DRY			DRY		
5/12/03	5234.43	Normal	209.5	5065.7	20.5	DRY			DRY		
6/3/03	5258.85	Normal	212.9	5062.3	17.1	DRY			DRY		
7/9/03	5258.52	Normal	210.0	5065.2	20.0	DRY			DRY		
8/5/03	5249.49	Normal	214.1	5061.1	15.9	DRY			DRY		
9/2/03	5239.61	Normal	215.5	5059.7	14.5	DRY			DRY		
10/14/03	5222.61	Normal	218.0	5057.2	12.0	DRY			DRY		
11/12/03	5210.61	Normal	219.4	5055.9	10.7	DRY			DRY		
12/2/03	5204.44	Normal	220.4	5054.8	9.6	DRY			DRY		

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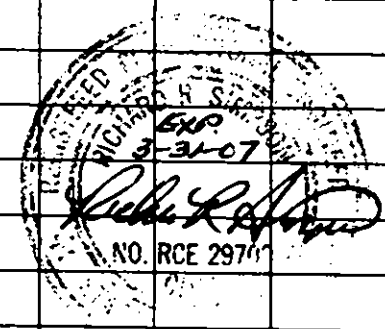
PLACER COUNTY WATER AGENCY
Power Systems Division
MIDDLE FORK AMERICAN RIVER DEVELOPMENT

SURVEY DATE: September 16, 2003
SURVEYED BY: S.& E. Engineering Co. , Nevada City, CA
Richard Simpson (RCE #29700)

SETTLEMENT MOUMENT RECORD

PROJECT SITE: FRENCH MEADOWS RESERVOIR
@ L. L. ANDERSON DAM

Monument Number	Original Station	Present Station	Original Elevation 1985	Previous Elevation 2001	Present Elevation 2003	Total Settlement	Two Year Settlement	Total Ahead	Total Back	Total U/S	Total D/S	Remarks
1			5272.17	5272.17	5272.17	-0.00	-0.00					
2			5272.38	5272.40	5272.41	+0.03	+0.01					
3			5273.99	5273.97	5273.97	-0.02	-0.00					
4			5274.29	5274.29	5274.29	+0.00	+0.00					
5			5273.90	5273.89	5273.89	-0.01	-0.00					
6			5273.36	5273.36	5273.35	-0.01	-0.01					
7			5272.78	5272.78	5272.77	-0.01	-0.01					
7.5			5272.17	5272.16	5272.15	-0.02	-0.01					
8			5271.75	5271.75	5271.74	-0.01	-0.01					

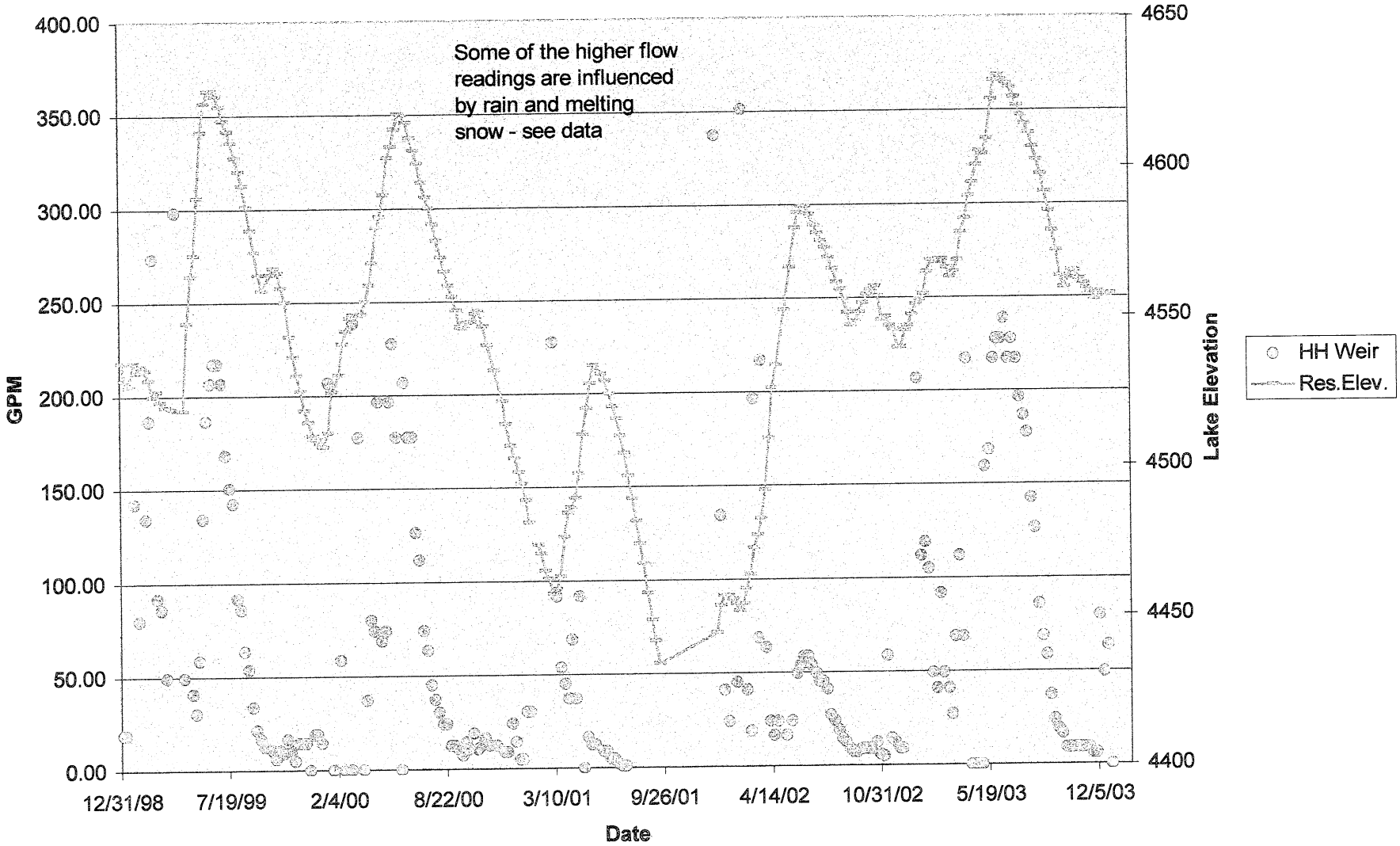


WATER SURFACE ELEVATION: 5234.22' @ 12:45 P.D.T.

REMARKS: Elevations are from H. W. Blair records dated 09/11/85. Elevations are based upon the Brass Cap in the concrete slab West of the Generator House, on the right abutment. Elevation of this cap is stated as: 5272.18'.

D:\RICH\PCWA\FM0003

Hell Hole Dam Leakage Weir 1999 - 2003 (through 12/31/03)



jmm 2/3/03

Hell Hole Dam Leakage Weir Readings 1999 - 2003

Hell Hole Reservoir Leakage Wier				
S=Snow, R=Rain, N=Normal, MS=Melting Snow				
Date	Res. Elev.	Cond.	Depth	GPM
1/5/99	4536.1		0.19	18.9
1/9/99	4530.2		0.19	18.9
1/19/99	4527.9	R		
1/26/99	4536.0	S	0.43	142.4
2/3/99	4532.9	S	0.34	79.7
2/9/99	4535.1	R		
2/16/99	4533.6	S	0.42	134.3
2/23/99	4530.5	S	0.48	186.8
3/2/99	4524.7	R	0.56	273.4
3/9/99	4526.5	S	0.36	91.8
3/16/99	4523.0	S	0.35	85.6
3/25/99	4521.3		0.28	49.3
4/8/99	4520.5			
4/13/99	4520.2		0.58	298.2
4/27/99	4520.1		0.28	49.3
5/5/99	4549.5			
5/13/99	4565.1		0.26	41.1
5/18/99	4572.0		0.23	30.4
5/25/99	4591.1		0.3	58.5
6/1/99	4613.2		0.42	134.3
6/8/99	4622.8		0.48	186.8
6/15/99	4627.0		0.5	206.7
6/22/99	4627.1		0.51	217.0
6/29/99	4625.3		0.51	217.0
7/6/99	4621.7		0.5	206.7
7/13/99	4617.0		0.46	168.2
7/20/99	4613.3		0.44	150.7
7/27/99	4609.7		0.43	142.4
8/3/99	4604.5		0.36	91.8
8/10/99	4600.0		0.35	85.6
8/16/99	4595.3		0.31	63.5
8/24/99	4588.2		0.29	53.8
8/31/99	4580.2		0.24	33.7
9/7/99	4572.9		0.2	21.5
9/14/99	4565.4		0.18	16.6
9/21/99	4560.1		0.16	12.4
10/5/99	4565.4		0.15	10.6
10/12/99	4567.6		0.12	6.1
10/19/99	4566.1		0.15	10.6
10/26/99	4561.0		0.14	8.9
11/2/99	4556.2		0.18	16.6
11/10/99	4544.8		0.15	10.6
11/16/99	4537.9		0.11	4.9
11/23/99	4531.7		0.17	14.4
11/30/99	4526.5		0.17	14.4
12/7/99	4519.9		0.17	14.4
12/14/99	4516.0			
12/22/99	4511.5		0.19	18.9

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Hell Hole Dam Leakage Weir Readings 1999 - 2003

12/28/99	4510.2		0.19	18.9
1/4/00	4508.9	N	0.17	14.4
1/10/00	4507.7	N		
1/19/00	4512.4	R	0.5	206.7
1/26/00	4526.3	R		
2/9/00	4531.7	N	0.3	58.5
2/15/00	4542.2	N		
2/22/00	4546.4	N		
2/29/00	4550.8	N		
3/8/00	4552.0	S	0.53	238.6
3/14/00	4551.7	S	0.47	177.4
3/21/00	4552.1	N		
3/28/00	4556.2	N	0.25	37.3
4/5/00	4561.8	N	0.34	79.7
4/11/00	4569.3	N	0.33	74.0
4/19/00	4581.1	R	0.49	196.6
4/25/00	4584.7	N	0.32	68.6
5/2/00	4592.0	N	0.33	74.0
5/10/00	4604.4	N	0.49	196.6
5/16/00	4608.0	R	0.52	227.7
5/23/00	4613.9	N	0.47	177.4
5/30/00	4619.0	N		
6/6/00	4618.8	N	0.5	206.7
6/13/00	4616.1	N	0.47	177.4
6/20/00	4611.0	N	0.47	177.4
6/27/00	4606.7	N	0.41	126.6
7/3/00	4602.5	N	0.39	111.9
7/11/00	4596.1	N	0.33	74.0
7/18/00	4591.2	N	0.31	63.5
7/25/00	4587.4	N	0.27	45.1
7/31/00	4582.2	N	0.25	37.3
8/8/00	4576.6	N	0.23	30.4
8/15/00	4570.9	N	0.21	24.2
8/22/00	4566.2	N	0.21	24.2
8/29/00	4561.4	N	0.16	12.4
9/5/00	4557.7	N	0.16	12.4
9/12/00	4553.2	N	0.15	10.6
9/19/00	4547.6	N	0.13	7.4
9/26/00	4547.1	N	0.17	14.4
10/1/00	4548.8	N	0.15	10.6
10/10/00	4549.2	S	0.19	18.9
10/17/00	4551.9	N	0.15	10.6
10/24/00	4553.0	N	0.16	12.4
10/31/00	4547.7	S	0.18	16.6
11/8/00	4541.5	R	0.16	12.4
11/21/00	4533.0	N	0.16	12.4
12/5/00	4522.6	N	0.14	8.9
12/11/00	4514.9	N	0.14	8.9
12/20/00	4507.7	S	0.21	24.2
12/27/00	4503.5	N	0.17	14.4
1/3/01	4498.8	N	0.11	4.9

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Hell Hole Dam Leakage Weir Readings 1999 - 2003

1/9/01	4494.9	N	0.11	4.9
1/16/01	4489.6	S	0.23	30.4
1/22/01	4481.9	S	0.23	30.4
1/30/01		S		
2/7/01	4474.4	S		
2/13/01	4471.6	S		
2/20/01	4465.9	S		
2/27/01	4463.0	S		
3/7/01	4458.1	MS	0.52	227.7
3/13/01	4459.7	MS	0.36	91.8
3/20/01	4463.9	MS	0.29	53.8
3/28/01	4477.0	MS	0.27	45.1
4/3/01	4485.1	MS	0.25	37.3
4/10/01	4487.0	MS	0.32	68.6
4/17/01	4490.0	MS	0.25	37.3
4/24/01	4498.3	MS	0.36	91.8
5/1/01	4511.2			
5/8/01	4520.0	N	0.18	16.6
5/15/01	4528.4	R	0.16	12.4
5/21/01	4534.6	N	0.16	12.4
6/5/01	4531.5	N	0.14	8.9
6/12/01	4529.2	N	0.14	8.9
6/19/01	4524.9	N	0.11	4.9
6/26/01	4520.6	N	0.11	4.9
7/3/01	4516.5	N	0.08	2.2
7/10/01	4510.7	N	0.06	1.1
7/17/01	4505.1	N	0.06	1.1
7/24/01	4497.4	N		
7/31/01	4489.7	N		
8/7/01	4482.3	N		
8/14/01	4474.6	N		
8/20/01	4468.0	N		
8/28/01	4458.1	N		
9/5/01	4449.1	N		
9/11/01	4442.2	N		
9/18/01	4434.6	N		
1/2/02	4444.7	MS	0.61	337.7
1/9/02	4453.8	MS	0.42	134.3
1/15/02	4457.2	MS	0.26	41.1
1/23/02	4456.9	S	0.21	24.2
2/1/02	4455.9	S		
2/7/02	4454.4	S	0.27	45.1
2/13/02	4452.0	S		
2/20/02	4454.2	MS	0.62	351.6
2/26/02	4459.3	MS	0.26	41.1
3/5/02	4464.0	MS	0.19	18.9
3/12/02	4472.9	MS	0.49	196.6
3/19/02	4477.2	MS	0.32	68.6
3/26/02	4482.8	MS	0.51	217.0
4/2/02	4492.3	MS	0.31	63.5
4/9/02	4509.7	R	0.21	24.2

Hell Hole Dam Leakage Weir Readings 1999 - 2003

4/16/02	4526.4	N	0.18	16.6
4/23/02	4534.0	N	0.21	24.2
5/9/02	4552.3	N	0.18	16.6
5/19/02	4566.5	N	0.21	24.2
5/30/02	4579.7	N	0.28	49.3
6/4/02	4584.7	N	0.29	53.8
6/11/02	4586.9	N	0.3	58.5
6/18/02	4586.9	N	0.3	58.5
6/25/02	4584.2	N	0.29	53.8
7/4/02	4580.4	N	0.28	49.3
7/9/02	4577.9	N	0.27	45.1
7/16/02	4575.3	N	0.27	45.1
7/23/02	4573.0	N	0.26	41.1
7/30/02	4569.8	N	0.22	27.2
8/6/02	4566.0	N	0.21	24.2
8/15/02	4561.4	N	0.19	18.9
8/20/02	4559.0	N	0.17	14.4
8/27/02	4555.7	N	0.16	12.4
9/3/02	4551.2	N	0.14	8.9
9/10/02	4547.1	N	0.13	7.4
9/17/02	4548.4	N	0.13	7.4
9/24/02	4551.5	N	0.14	8.9
10/1/02	4554.5	N	0.14	8.9
10/8/02	4557.2	N	0.14	8.9
10/16/02	4558.9	N	0.14	8.9
10/23/02	4560.0	N	0.16	12.4
10/29/02	4556.7	N	0.12	6.1
11/5/02	4548.7	N	0.11	4.9
11/12/02	4549.7	N	0.3	58.5
11/19/02	4546.8	N	0.17	14.4
11/26/02	4545.5	N	0.16	12.4
12/5/02	4539.5	N	0.14	8.9
12/10/02	4539.6	R	0.14	8.9
12/18/02	4545.2	S		
12/23/02	4546.7	S		
12/31/02	4550.4	S		
1/7/03	4553.9	S	0.5	206.7
1/14/03	4555.5	S	0.39	111.9
1/21/03	4557.2	R	0.4	119.1
1/28/03	4564.7	N	0.38	104.9
2/4/03	4568.6	N	0.28	49.3
2/12/03	4567.8	N	0.26	41.1
2/19/03	4568.9	N	0.36	91.8
2/25/03	4568.9	N	0.28	49.3
3/6/03	4566.0	N	0.26	41.1
3/11/03	4563.1	N	0.22	27.2
3/18/03	4564.6	MS	0.32	68.6
3/25/03	4568.6	N	0.39	111.9
4/1/03	4577.9	N	0.32	68.6
4/8/03	4582.5	MS	0.51	217.0
4/16/03	4590.0	MS		0.0

Hell Hole Dam Leakage Weir Readings 1999 - 2003

4/22/03	4594.6	MS		0.0
4/30/03	4600.2	MS		0.0
5/6/03	4605.0	MS		0.0
5/12/03	4604.1	MS	0.45	159.3
5/20/03	4609.1	N	0.46	168.2
5/28/03	4622.1	N	0.51	217.0
6/3/03	4628.6	N	0.52	227.7
6/10/03	4630.4	N	0.52	227.7
6/17/03	4628.8	N	0.53	238.6
6/24/03	4627.8	N	0.51	217.0
7/1/03	4626.2	N	0.52	227.7
7/9/03	4622.9	N	0.51	217.0
7/15/03	4620.1	N	0.49	196.6
7/22/03	4616.9	N	0.48	186.8
7/29/03	4614.1	N	0.47	177.4
8/5/03	4611.0	N	0.43	142.4
8/12/03	4606.5	N	0.41	126.6
8/19/03	4602.0	N	0.35	85.6
8/26/03	4597.2	R	0.32	68.6
9/2/03	4591.2	N	0.30	58.5
9/9/03	4584.8	N	0.25	37.3
9/16/03	4578.3	N	0.21	24.2
9/23/03	4571.6	N	0.19	18.9
9/30/03	4563.2	N	0.18	16.6
10/7/03	4559.3	N	0.14	8.9
10/14/03	4562.6	N	0.14	8.9
10/21/03	4565.1	N	0.14	8.9
10/28/03	4564.7	N	0.14	8.9
11/4/03	4562.0	S	0.14	8.9
11/12/03	4560.7	S	0.14	8.9
11/18/03	4558.9	N	0.14	8.9
11/25/03	4557.5	N	0.12	6.1
12/2/03	4555.3	N	0.12	6.1
12/8/03	4557.7	MS	0.34	79.7
12/16/03	4556.4	MS	0.28	49.3
12/23/03	4556.5	MS	0.31	63.5
12/30/03	4557.0	S		0.0
Note: Typically, where no reading was taken, access to weir was restricted, such as by snow				

jmm 1/13/04

PLACER COUNTY WATER AGENCY
Power Systems Division
MIDDLE FORK AMERICAN RIVER DEVELOPMENT

SURVEY DATE: September 16, 2003
SURVEYED BY: S.A.E. Engineering Co., Nevada City, CA
Richard Simpson (RCE 029700)

SETTLEMENT MOUMENT RECORD

PROJECT SITE: HELL HOLE DAM

Monument Number	Original Elevation 1965	Previous Elevation 2001	Present Elevation 2003	Total Settlement	Two Year Settlement	Original Station 1965	Previous Station 2001	Present Station 2003	Total Displacement Since 1965		Displacement Last Two Years		Original Offset 1965	Previous Offset 2001	Present Offset 2003	Total Offset Since 1965		Offset Last Two Years	
									Ahead	Back	Ahead	Back				U/S	D/S	U/S	D/S
8	4649.90	4649.90	4649.92	+0.02	+0.02	0+19.44	0+19.51	0+19.52	0.08		0.01		11.35RT	11.35RT	11.35RT		0.00		0.00
9	4651.05	4650.71	4650.70	-0.36	-0.01	1+18.66	1+19.50	1+19.53	0.87		0.08		4.50 RT	4.55 RT	4.55 RT		0.05		0.00
10	4652.78	4652.02	4652.00	-0.78	-0.02	2+17.89	2+18.47	2+18.47	0.58		0.00		0.00	.014 RT	.014 RT		0.14		0.00
11	4654.58	4653.44	4653.43	-1.15	-0.01	3+17.56	3+18.13	3+18.18	0.62		0.05		2.27 LT	2.05 LT	2.05 LT		0.22		0.00
13	4657.87	4655.95	4655.96	-1.95	-0.01	5+16.90	5+17.05	5+17.09	0.59		0.04		0.01 LT	0.32 RT	0.33 RT		0.34		0.01
16	4659.36	4657.14	4657.13	-2.43	-0.01	8+14.90	8+14.53	8+14.52		0.38		0.01	19.82RT	20.14RT	20.15RT		0.33		0.01
19	4655.86	4653.95	4653.94	-1.92	+0.01	11+16.66	11+15.70	11+15.71		0.95	0.01		0.24 LT	0.40 RT	0.43 RT		0.67		0.03
20	4654.72	4653.12	4653.11	-1.61	-0.01	12+16.66	12+15.66	12+15.65		1.01		0.01	2.51 LT	1.88 LT	1.85 LT		0.66		0.03
21	4653.55	4652.33	4652.29	-1.26	-0.04	13+15.94	13+14.96	13+14.95		0.99		0.01	2.35 LT	1.77 LT	1.75 LT		0.60		0.02
22	4652.23	4651.45	4651.44	-0.79	-0.01	14+15.16	14+14.35	14+14.34		0.82		0.01	0.27 LT	0.02 LT	0.01 LT		0.26		0.01
23	4651.01	4650.73	4650.69	-0.32	-0.04	15+15.22	15+14.62	15+14.63		0.59	0.01		4.29 RT	4.39 RT	4.41 RT		0.12		0.02

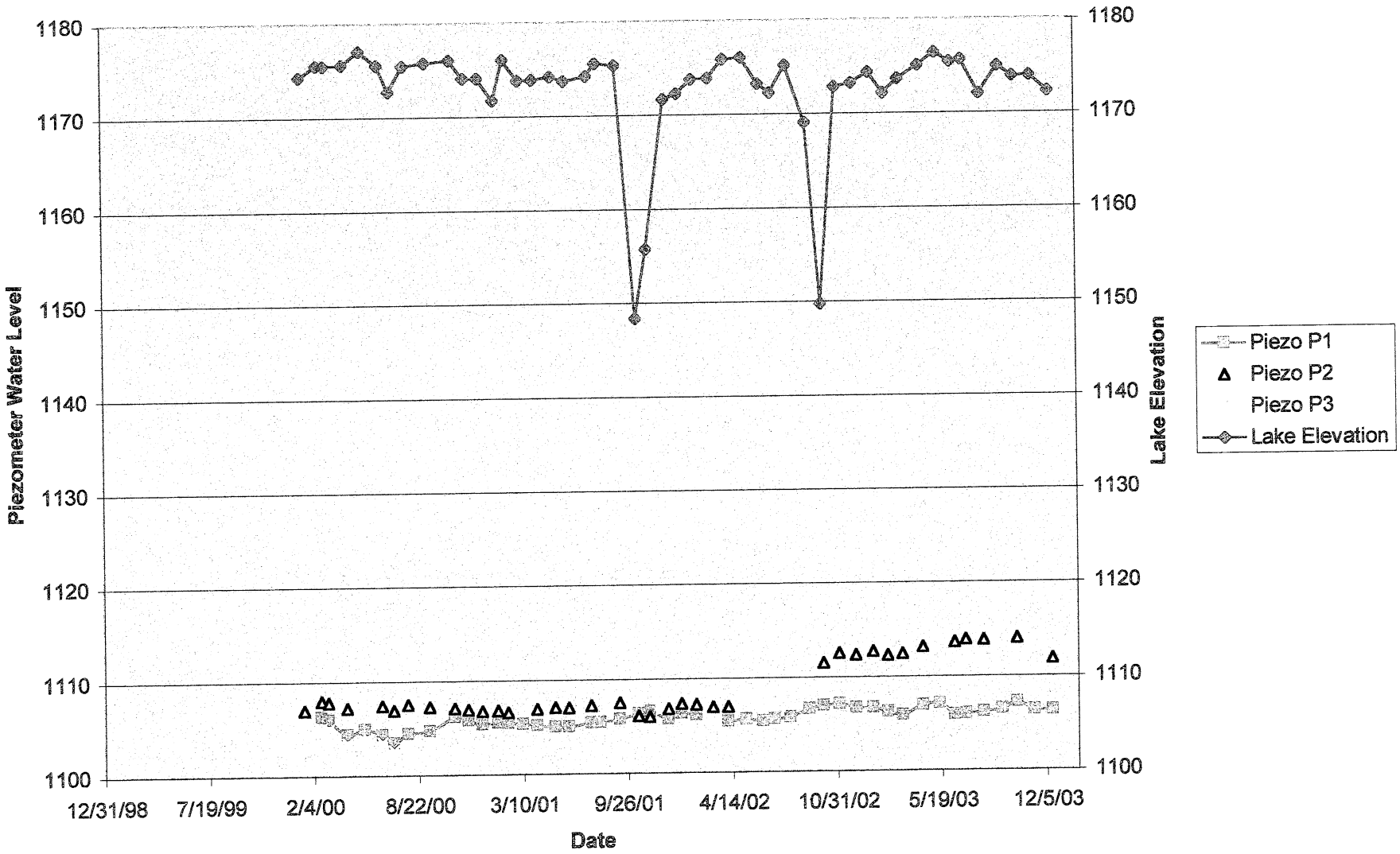
REGISTERED PROFESSIONAL ENGINEER
RICHARD A. SIMPSON
No. RCE 29700
CIVIL
STATE OF CALIFORNIA

WATER SURFACE ELEVATION: 4578.11' @ 3:40 P.D.T.

REMARKS: Elevations are based upon (BM-RT), a Brass Cap stamped R-1, just upstream of the Right abutment. Elevation = 4652.42'.

Original Offset data obtained from PCWA Drawing # 61-05-219.

Ralston Afterbay Dam Monthly Piezometer Readings 2000 - 2003 (through 12/31/03)



jmm 2/3/03

Ralston Afterbay Dam Monthly Piezometer Readings 2000 - 2002 (through 12/31/02)

		Piezometer Water Elevations			Dam Gallery	SPILL
Date	Reservoir Elevation	P1 Elevation	P2 Elevation	P3 Elevation	TOTAL FLOW GPM	CFS
1/15/00	1174.4		1107.0	1103.1	0.24	
2/17/00	1175.6	1106.3	1108.0	1105.1		
3/2/00	1175.6	1106.0	1107.8	1105.0	0.31	
4/7/00	1175.7	1104.4	1107.2	1103.6	0.27	
5/9/00	1177.1	1104.9		1103.8	0.23	
6/12/00	1175.6	1104.3	1107.4	1103.6	0.20	
7/5/00	1172.8	1103.5	1106.9	1102.7	0.22	
8/1/00	1175.5	1104.5	1107.5	1103.3	0.13	
9/11/00	1175.8	1104.7	1107.3	1103.3	0.24	
10/29/00	1176.1	1106.2	1107.1	1102.9	0.27	
11/24/00	1174.1	1105.8	1107.0	1103.5	0.21	
12/21/00	1174.1	1105.4	1106.8	1103.2	0.27	
1/20/01	1171.8	1105.5	1106.8	1103.5	0.21	
2/8/01	1176.1	1105.5	1106.6	1103.4	0.24	
3/8/01	1173.9	1105.4		1103.3	0.24	
4/4/01	1173.9	1105.2	1106.9	1103.3	0.23	
5/9/01	1174.2	1105.1	1107.1	1103.4	0.31	
6/4/01	1173.8	1105.0	1107.0	1103.1	0.20	
7/17/01	1174.3	1105.4	1107.2	1102.7	0.20	
8/3/01	1175.6	1105.5		1102.8	0.19	
9/9/01	1175.4	1105.8	1107.5	1102.7	0.20	
10/15/01	1148.4	1106.3	1106.1	1103.3	0.05	
11/5/01	1155.7	1106.6	1106.0	1103.6	0.06	
12/11/01	1171.7	1105.7	1106.8	1102.9	0.15	
1/5/02	1172.3	1106.4	1107.4	1103.6	0.14	
2/2/02	1173.8	1106.1	1107.3	1103.8	0.12	
3/6/02	1173.9		1107.0	1103.5	0.13	
4/4/02	1175.9	1105.4	1107.0		0.21	
5/9/02	1176.1	1105.6		1103.7	0.24	
6/10/02	1173.3	1105.5		1103.4	0.19	
7/2/02	1172.3	1105.7		1102.9	0.18	
8/1/02	1175.3	1105.8		1103.4	0.16	
9/7/02	1169.1	1106.7		1103.2	0.08	
10/4/02	1149.8	1107.0	1111.6	1103.7	0.07	
11/3/02	1172.9	1107.2	1112.6	1102.8	0.15	
12/5/02	1173.3	1106.7	1112.4	1102.5	0.18	
1/7/03	1174.4	1106.7	1112.7	1103.7	0.20	
2/4/03	1172.2	1106.3	1112.3	1103.4	0.14	
3/4/03	1173.7	1105.9	1112.5	1103.0	0.19	
4/12/03	1175.1	1107.0	1113.2	1103.6	0.22	
5/14/03	1176.5	1107.1		1105.0	0.27	
6/12/03	1175.5	1105.9	1113.7	1103.3	0.20	
7/3/03	1175.7	1106.0	1113.9	1103.6	0.16	
8/6/03	1172.1	1106.2	1113.9	1103.3	0.13	
9/11/03	1175.0	1106.5		1103.5	0.30	
10/9/03	1173.9	1107.2	1114.1	1103.8	0.07	
11/11/03	1174.0	1106.4		1102.9	0.11	
12/16/03	1172.3	1106.4	1111.9	1103.2	0.16	
1/31/04		1106.2	1111.8	1103.1		
2/28/04		1107.3	1112.6	1104.0		

jmm 2/4/03

After Bay Dam Drainage
2003

Date: **06/10/2003**

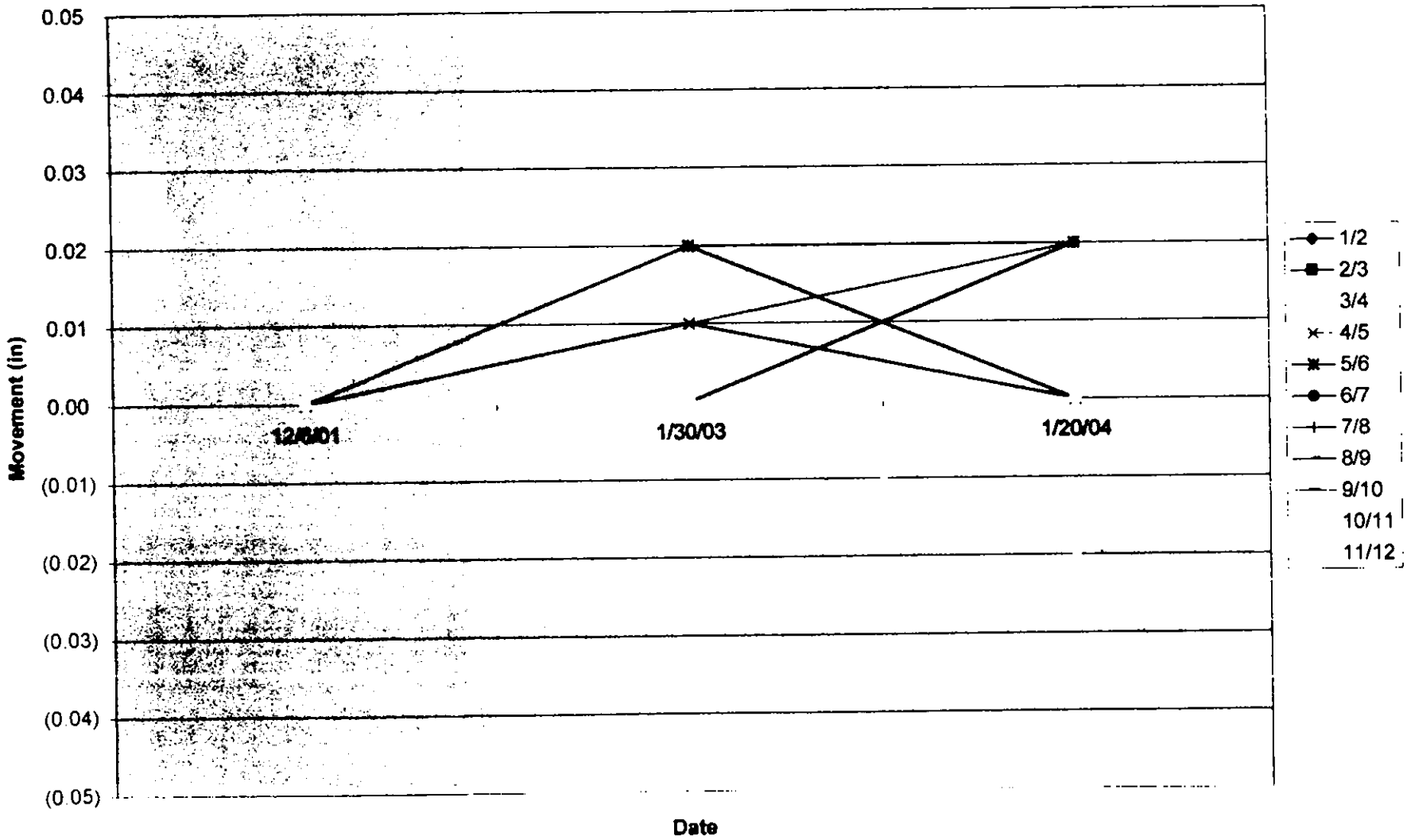
Performed by: Hounchell, Collier, Brunkhorst and Drone

	Water Depth		Condition	Draining	Hole Depth		
Hole #	Feet	In	Wet (Y/N)	to Gutter	Feet	In	COMMENTS
1	0	0	y	y	75	1	
2	30	6	y	n	73	2	
3	37	9	y	n	70	8	
4	29	9	y	n	36	10	
5	26	4	y	n	63	4	
6	19	7	y	n	58	8	
7	12	5	y	n	58	4	Obstr. at 23', black sand
8	0	0	y	n	16	1	Bottom step Weight broke off of tape - 1997
9	2	0	y	n	63	5	Galley floor.
10	7	0	y	n	69	1	Obstr at 30' & 40'. Hose sticks
11	0	2	y	n	70	2	Obstr. at 41', 61' and 65'
12	0	0	y	y	102	4	Obstruction at 57'
13	0	0	y	y	103	0	
14	0	0	y	y	101	3	Black Sand
15	0	0	y	y	103	1	Obst at 65'
16	0	0	y	y	101	0	Obstr. at 32.5' and 45'
17	0	0	y	y	82	6	17 - 18 are connected. Obst at 50' - Needs cleaning
18	0	0	y	y	96	8	Obstr. at 45',Sand flushed thru #17
19	0	0	y	y	90	4	Obstr. at 45.5' , 60.5' and 85.5'. No hose past 46'
20	4	10	y	n	86	6	Obstr. at 45.5'. Heavy black material and sand flushe
21	4	10	y	n	102	1	Black Sand
22	0	11	y	n	90	3	Standing water was clean, Flushed Black Sand
23	0	0	y	n	91	9	Material oozing to ditch, Black sand
24	0	5	y	n	85	9	Black Sand
25	2	2	y	n	84	9	
26	1	8	y	n	85	0	Material oozing to ditch, Black sand
27	0	1	y	n	77	6	
28	0	0	y	y	68	0	Material oozing to ditch
29	0	1	y	n	80	2	
30	0	0	y	y	63	3	Material oozing to ditch

After Bay Dam Drainage
2003

	Water Depth		Condition	Draining	Hole Depth		
Hole #	Feet	In	Wet (Y/N)	to Gutter	Feet	In	COMMENTS
31	0	0	y	y	62	9	Obstr at 28'
32	0	0	y	y	51	11	
33	0	0	y	y	50	0	
34	0	0	y	y	50	5	Galley Floor.
35	0	2	y	n	45	1	Bottom of Stairs.
36	0	7	y	n	8	3	Hard Obstruction at 8'
37	0	8	y	n	8	4	Hard Obstruction at 8' 2"
38	0	0	y	y	51	6	
39	14	0	y	n	36	0	Hard Obstruction at 35' 10"
40	13	10	y	n	36	0	
41	11	7	y	n	64	4	
42	3	7	y	n	76	6	
43	7	6	y	n	82	4	
44	11	4	y	n	78	5	
45	0	6	y	n	88	5	Top of Stairs

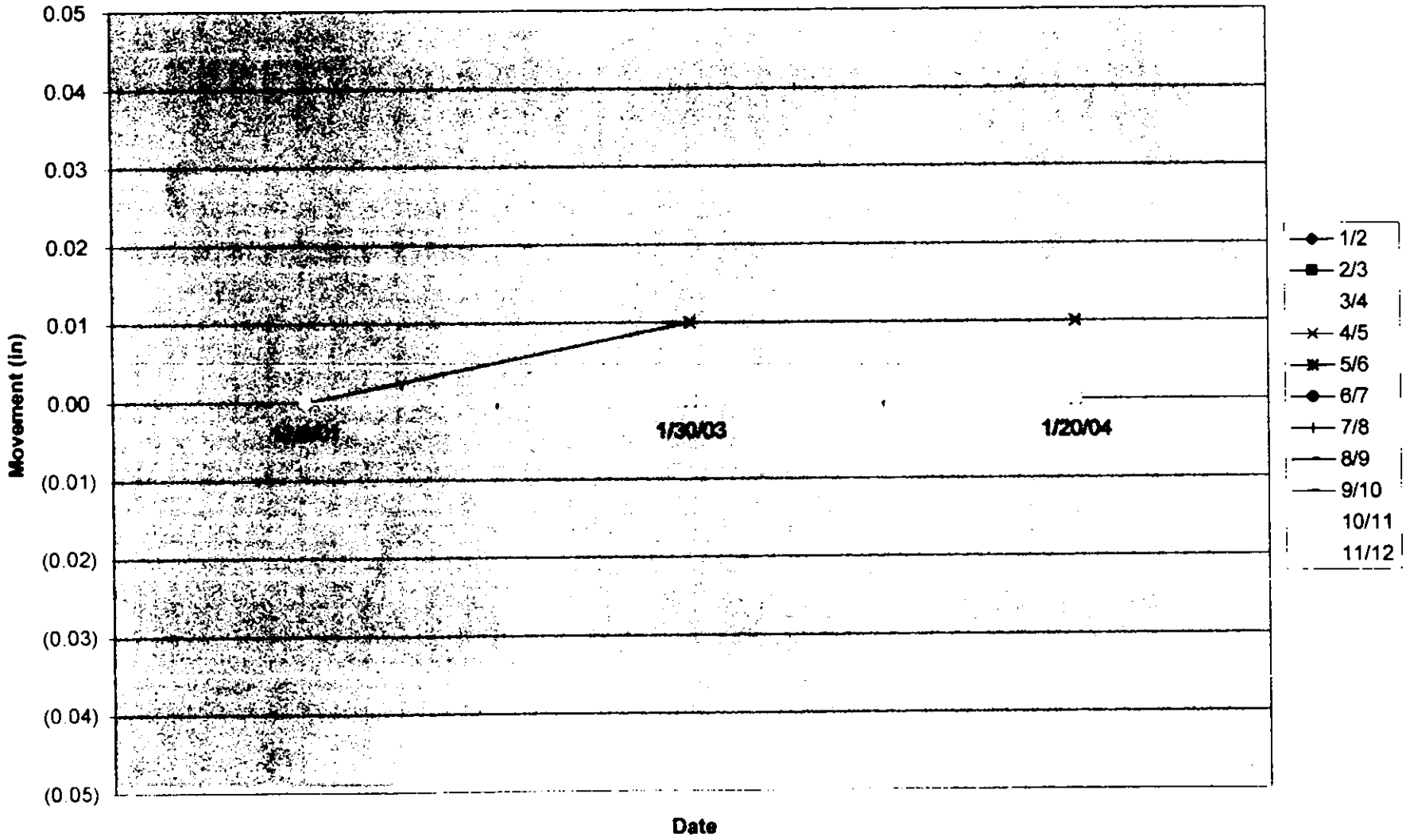
Ralston Afterbay Dam Joint Monitoring - Length Measurement



JMM

3/8/04

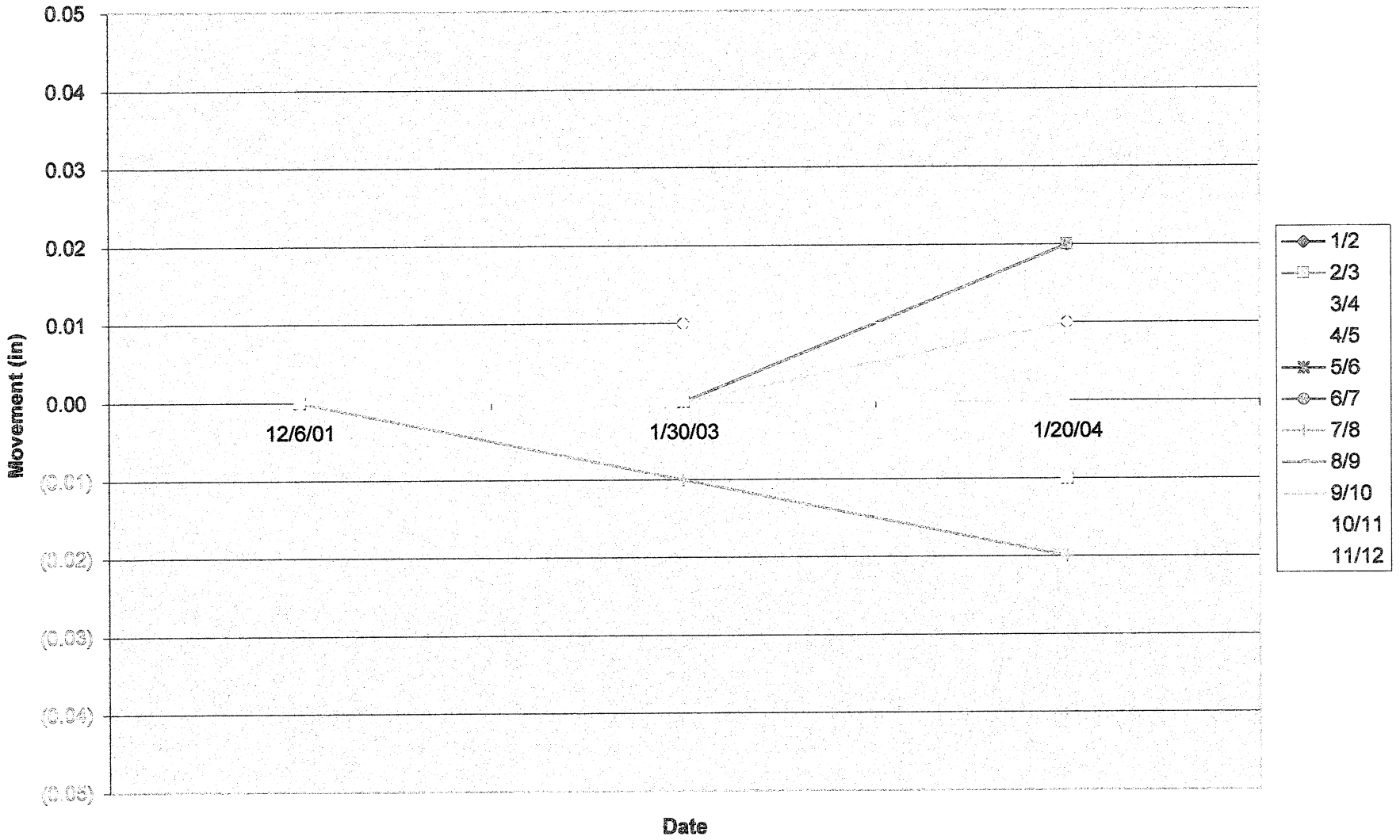
Ralston Afterbay Dam Joint Monitoring - Vertical Measurement



JMM

3/8/04

Ralston Afterbay Dam Joint Monitoring - Horizontal Measurement



JMM

3/8/04

3/8/04

RALSTON AFTERBAY DAM
JOINT MONITORING

JMM

Initial Readings taken 12/6/01, afterbay elevation 1173?

Weather - Showers

Joint #	Length	Vertical Offset	Low Block	Horizontal Offset	D/S Block
	(in)	(in)		(in)	
1/2	6.00	0.00	n/a	0.09	2
2/3	6.00	0.00	n/a	0.25	3
3/4	6.00	0.00	n/a	0.03	4
4/5	6.00	0.01	4	0.00	0
5/6	6.00	0.00	n/a	0.07	6
6/7	6.00	0.00	n/a	0.01	6
7/8	6.00	0.00	n/a	0.07	8
8/9	6.00	0.00	n/a	0.02	8
9/10	6.00	0.00	n/a	0.06	9
10/11	6.00	0.00	n/a	0.00	10
11/12	6.00	0.00	n/a	0.11	11

Readings taken 1/30/03, afterbay elevation 1171.3

Weather - Partly Cloudy, 55 degrees F

Joint #	Length	Vertical Offset	Low Block	Horizontal Offset	D/S Block
	(in)	(in)		(in)	
1/2	6.00	0.00	n/a	0.09	2
2/3	6.00	0.00	n/a	0.25	3
3/4	6.00	0.00	n/a	0.03	4
4/5	6.01	0.02	4	0.00	n/a
5/6	6.02	0.00	n/a	0.07	6
6/7	6.00	0.00	n/a	0.02	6
7/8	6.02	0.00	n/a	0.06	8
8/9	6.01	0.00	n/a	0.03	8
9/10	6.00	0.00	n/a	0.06	9
10/11	6.00	0.00	n/a	0.01	10
11/12	6.00	0.00	n/a	0.11	11

Readings taken 1/20/04, afterbay elevation 1174.5

Weather - Sunny, 50 degrees F

Joint #	Length	Vertical Offset	Low Block	Horizontal Offset	D/S Block
	(in)	(in)		(in)	
1/2	6.02	0.00	n/a	0.11	2
2/3	6.00	0.00	n/a	0.27	3
3/4	5.98	0.00	n/a	0.04	4
4/5	6.02	0.02	4	0.00	n/a
5/6	6.00	0.00	n/a	0.06	6
6/7	6.00	0.00	n/a	0.02	6
7/8	6.02	0.00	n/a	0.05	8
8/9	6.00	0.00	n/a	0.03	8
9/10	6.00	0.00	n/a	0.07	9
10/11	6.00	0.00	n/a	0.01	10
11/12	6.00	0.00	n/a	0.10	11

Change in Length from 12/6/01

	12/6/01	1/30/03	1/20/04

1/2	0.00	0.00	0.02
2/3	0.00	0.00	0.00
3/4	0.00	0.00	(0.02)
4/5	0.00	0.01	0.02
5/6	0.00	0.02	0.00
6/7	0.00	0.00	0.00
7/8	0.00	0.02	0.02
8/9	0.00	0.01	0.00
9/10	0.00	0.00	0.00
10/11	0.00	0.00	0.00
11/12	0.00	0.00	0.00

Change in Vertical Offset from 12/6/01

	12/6/01	1/30/03	1/20/04
1/2	0.00	0.00	0.00
2/3	0.00	0.00	0.00
3/4	0.00	0.00	0.00
4/5	0.00	0.01	0.01
5/6	0.00	0.00	0.00
6/7	0.00	0.00	0.00
7/8	0.00	0.00	0.00
8/9	0.00	0.00	0.00
9/10	0.00	0.00	0.00
10/11	0.00	0.00	0.00
11/12	0.00	0.00	0.00

Change in Horizontal Offset from 12/6/01

	12/6/01	1/30/03	1/20/04
1/2	0.00	0.00	0.02
2/3	0.00	0.00	0.02
3/4	0.00	0.00	0.01
4/5	0.00	0.00	0.00
5/6	0.00	0.00	(0.01)
6/7	0.00	0.01	0.01
7/8	0.00	(0.01)	(0.02)
8/9	0.00	0.01	0.01
9/10	0.00	0.00	0.01
10/11	0.00	0.01	0.01
11/12	0.00	0.00	(0.01)

GENERAL NOTES:

- In the Ralston gallery, there are 11 contraction joints between the blocks forming the dam. There are a total of 14 blocks and 13 joints in the dam. Two of the joints are outside the drainage gallery area. Block #1 is on the south side of the dam, and block #14 is on the north (accessible) side. The blocks are shown on drawing #241-05-210 (pcwa#13).

- All measurement locations are on the east side of the gallery, with the exception of joint #4/5, which is on the roof of the gallery (too

PCWA

Power System

MEMO

To: Files

From: Steve Jones, Power System Manager

Subject: Annual Inspection of High Hazard Dams

Date: July 7, 2003

HELL HOLE DAM. Tuesday, June 10, 2003. I inspected the dam with Jill Eichbauer and Rob O'Rouke, FERC engineers. We inspected the crest first and I walked both sides of the crest, inspecting the upstream side of the dam above the water line and the downstream side of the dam. Then we inspected the spillway, which appeared to be spilling about 100 cfs. The spillway looked in good condition. We inspected the Hell Hole Powerhouse from which the generator rotor had just been removed, and the tunnel. Following this, we inspected the leakage weir. All aspects of the dam appeared in satisfactory condition and no items needing correcting were noted.

RALSTON AFTERBAY DAM. Wednesday, June 11, 2003. When we began inspecting this dam, I noticed that the groins had just been brushed, which provided excellent visibility of the groins and the toe area adjacent to the groins. We inspected the gallery and noted that the gallery had been cleaned and sounded. Radial gate 5 was experiencing a minor leakage flow at the right corner, and gate 3 was also leaking at the same place, but not quite as much as gate 5. There also were a couple of bushes growing from the center construction joint in the gate 2 bay, and a bush growing from the same place in bays 1 and 4. Other than these minor items, the dam appeared in good condition.

FRENCH MEADOWS DAM (L. L. Anderson) Thursday, June 12, 2003. We inspected first the L. L. Anderson dam spillway from the upstream end, then the radial gate structure. We walked to where the Duncan Tunnel enters the reservoir, but the tunnel outlet was under water and could not be seen. We checked the outside staff elevation. Because a minor amount of the enamel is missing from the top-most outside staff, this particular staff plate should be replaced. According to the outside staff reading, the elevation of the reservoir was about four and one-half inches from the top of the spillway radial gates. The water surface was smooth and there were no waves. We walked the crest of the upstream side of the dam and I carefully visually inspected both sides of the dam and the abutments. There are a few bushes on the face of the dam that will probably grow large enough before next Winter that it would be good to remove them before Winter. Ms. Eichbauer also pointed out a tree at the toe of the dam on the left side of the outlet works, near Weir 5, that needs to be removed. We inspected the outlet works, all the weirs and the downstream area of the spillway, which all appeared in good condition.

LARGE-FORMAT IMAGES

One or more large-format images (over 8 ½" X 11") go here. These images are available in FERRIS at:

For Large-Format(s):
Accession No.: 20040316-0073

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File Date: 3/11/04 Docket No.: P2079

Parent Accession No.: 20040316-0072

Set No.: 1 of 1

Number of page(s) in set: 3