Raymondi, Rick

From: Travis Thompson [tlt@idahowaters.com]

Sent: Wednesday, January 23, 2008 7:32 AM

To: Raymondi, Rick

Cc: A&B Irrigation District; Rassier, Phil

Subject: A&B Cost Information

Attachments: AB Summary Cost Letter.pdf; AB Power Cost.xls; Conveyance Efficiency Improvements - Acct # 472.xls; Well Pump System Rehab- Acct #445.xls; Well Pump System Rehab- Acct #472.xls

Rick,

Please find attached information from Dan Temple that IDWR staff requested at the January 4th meeting. Please let me know if you have any questions.

Thanks,

Travis Thompson

A&B Irrigation District

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January 22, 2008

A&B Irrigation District (A&B) has been required to pay for deeper production wells, increased pump capacity, more-efficient conveyance systems and increased power use because of declining ground water levels in the Eastern Snake Plain Aquifer. A&B has compiled an estimate of the costs which are detailed in separate fiscal accounts (summarized below). This estimate only includes the costs described above incurred as a result of declining ground water levels and does not include other normal maintenance, power or infrastructure costs.

Account #472 - Reclamation Water Management Program. Well & Pump System Rehab.

This account is a reclamation water management program for the purpose of eliminating or reducing operational losses through conveyance efficiency improvements. This account also includes costs for rehabilitation of pumping wells required from declining ground water levels. Costs are detailed on the spreadsheets, "Well & Pump System Rehab- Acct #472.xls" and "Conveyance Efficiency Improvements - Acct.# 472.xls".

Account #445 - Production Well Deepening, Well & Pump System Rehab

This is an account established to track the improvement costs for pumps and wells needed due to declining pump discharges caused by the decline of ground water levels in the aquifer. Costs are detailed on the spreadsheet, "Well & Pump System Rehab- Acct #445.xls".

Power Account - Usage from USBR Billing Summaries

This account tracks costs paid per kwh and per acre-foot for ground water pumped by wells. A summary is included in the enclosed spreadsheet, "A&B Power Costs.xls", that shows the costs from higher power use required to pump ground water at deeper levels than prior to 1980.

The total cost for well improvement and deepening, infrastructure improvement and additional power costs due to declining ground water levels since 1980 is $7,951,849 (2008 dollars) and is summarized in the table below. A 3.2 percent annual inflation factor was included to adjust to 2008 dollars. Detailed cost accounting spreadsheets for each account are attached. This estimate does not include costs for wells that need to be but have not yet been deepened or upgraded. The estimate also does not include costs for other infrastructure or well improvements that will be needed if ground water levels continue to decline in the future.

Sincerely,

Dan Temple
A&B Irrigation District Manager

Summary of A&B Costs from Declining Ground Water Levels

1/22/2008

Account	Total Material Cost	Total Direct Labor Cost	Total Indirect Labor Costs	Total Equipment Cost	TOTAL	Yearly Total Cost adjusted to 2008 dollar value
Conveyance Efficiency Improvements - Acct. # 472	$302,976	$132,894	$43,855	$520,454 *	$1,000,179	$1,150,366
Well & Pump System Rehab- Acct. # 472	$135,969				$135,969	$155,922
Well & Pump System Rehab- Acct #445.xls	$2,642,375	$535,594 *	$176,746		$3,354,714	$3,399,368
A&B Power Cost.xls						$3,246,193
TOTAL	$3,081,320	$668,488	$220,601	$520,454	$4,490,863	**$7,951,849**

Notes:

1. Summary does not include the future costs of needed rehabilitation of the pumps currently producing less that the .75 criteria, estimated costs about $250,000 for this work.
2. Acct # 472 was a reclamation water management program for the purpose of eliminating or reducing operational losses through conveyance efficiency improvements
3. Acct. #445 - This is an account established to track pump and well material and contract labor costs associated with declining pump discharges caused by the decline of the aquifer. It does not track District labor or equipment costs.
4. Inflation to 2008 dollars from previous-years costs was accomplished using an annual inflation rate of 3.2 percent based on US Dept. of Labor statistics.

* = Estimated Costs

Power Account - Usage from USBR Billing Summaries - A&B Power Cost.xls 1/22/2008

Year	Unit B Annual Amount Pumped (ac-ft)	Total Annual Power Used (kwh)	Power Per Amount Pumped (kwh/ac-ft)	1969-1979 Ave. kwh/ac-ft	Diff. from ave. 1969-1979 and post-1980 kwh/ac-ft	Total Increase in kwhs for Water Pumped	Price Per kwh from USBR (mills)	2008 Inflated Price per kwh from USBR (mills)	Increased $ since 1980 from Declining Ground Water Levels (Assuming 2008 Power Rate)
1969	222,290	93,176,480	419						
1970	195,268	84,076,573	431						
1971	204,486	81,598,856	399						
1972	216,578	90,286,299	417						
1973	211,035	86,435,152	410						
1974									
1975									
1976	192,574	79,650,905	414						
1977	219,136	91,620,040	418						
1978									
1979				415					
1980	193,026	83,757,875	434		19	3,598,510	4.0	9.66	$34,771
1981	215,057	88,146,810	410				5.1	11.94	
1982	178,645	76,912,067	431		15	2,724,811	5.1	11.57	$31,519
1983	177,069	76,363,979	431		16	2,831,325	5.1	11.21	$31,736
1984	182,390	78,741,010	432		16	2,998,622	5.1	10.86	$32,569
1985	194,690	82,138,282	422		7	1,287,769	5.1	10.52	$13,553
1986	186,998	78,136,904	418		3	480,708	5.1	10.20	$4,902
1987	209,647	89,143,265	425		10	2,081,693	7.7	15.00	$31,220
1988	212,409	86,725,593	408				7.7	14.53	
1989	215,241	89,285,426	415				7.7	14.08	
1990	211,532	98,061,266	464		48	10,216,687	7.7	13.65	$139,407
1991	190,024	85,523,615	450		35	6,610,789	10.6	18.16	$120,044
1992	213,797	100,967,007	472		57	12,181,782	10.6	17.60	$214,348
1993	174,193	82,221,148	472		57	9,882,543	10.6	17.05	$168,499
1994	205,813	95,764,022	465		50	10,294,541	10.6	16.52	$170,081
1995	160,552	77,426,767	482		67	10,753,173	10.6	16.01	$172,150
1996	189,953	88,262,865	465		49	9,379,731	10.6	15.51	$145,506
1997	174,267	83,185,343	477		62	10,816,215	12.7	17.96	$194,248
1998	160,254	76,080,611	475		59	9,530,770	12.7	17.40	$165,855
1999	175,018	82,272,797	470		55	9,591,546	12.7	16.86	$161,737
2000	207,090	95,300,601	460		45	9,300,810	12.7	16.34	$151,971
2001	196,367	89,387,698	455		40	7,840,848	12.7	15.83	$124,144
2002	182,635	84,385,248	462		47	8,540,826	15.6	18.85	$160,954
2003	183,153	83,394,968	455		40	7,335,723	15.6	18.26	$133,957
2004	181,921	86,329,178	475		59	10,781,389	15.6	17.69	$190,774
2005	150,163	71,296,751	475		60	8,937,437	19.3	21.26	$189,980
2006	172,525	81,150,661	470		55	9,504,697	19.3	20.60	$195,774
2007	183,834	89,694,337	488		73	13,352,122	19.3	19.96	$266,493
					Total 1980-2007				**$3,246,193**

YEARLY POWER USAGE -UNIT B

Power kWH Usage	Unit B - (34.5) Metered KWH Usage	Transformer Loss **	Delivered kWH	System Losses	Distribution Losses	Billing kWH Total	USBR Rate (mills)	Current Billing Amount
Total-2007	81,370,943	1.029	83,730,701	1.036	1.034	89,694,337	19.34	$1,734,689
Total - 2006	73,620,098	1.029	75,755,082	1.036	1.034	81,150,661	19.34	$1,569,453
Total - 2005	64,680,594	1.029	65,000,342	1.036	1.034	71,296,751	19.34	$1,378,880
Total - 2004	78,318,063	1.029	80,589,286	1.036	1.034	86,329,178	15.60	$1,346,736
Total - 2003	75,656,140	1.029	77,850,168	1.036	1.034	83,394,968	15.60	$1,300,941
Total - 2002	77,004,953	1.029	79,238,095	1.077		84,385,248	15.60	$1,331,294
Total - 2001	80,657,858	1.029	82,996,935	1.077		89,387,698	12.70	$1,135,225
Total - 2000	85,993,289	1.029	88,487,095	1.077		95,300,601	12.70	$1,210,318
Total - 1999	74,237,814	1.029	76,390,711	1.077		82,272,797	12.70	$1,044,864
Total - 1998	68,650,376	1.029	70,641,236	1.077		76,080,611	12.70	$966,224
Total -1997	75,061,238	1.029	77,238,015	1.077		83,185,343	12.70	$1,056,454
Total - 1996	79,642,923	1.029	81,952,568	1.077		88,262,865	10.63	$938,234
Total - 1995	69,856,038	1.029	71,881,863	1.077		77,426,767	10.63	$822,940
Total - 1994	86,411,452	1.029	88,917,384	1.077		95,764,022	10.63	$1,017,972
Total - 1993	74,191,212	1.029	76,342,756	1.077		82,221,148	10.63	$874,011
Total - 1992	91,106,299	1.029	93,748,382	1.077		100,967,007	10.63	$1,073,279
Total -1991	77,171,151	1.029	79,409,114	1.077		85,523,615	10.63	$909,116
Total - 1990	88,484,340	1.029	91,050,386	1.077		98,061,266	7.74	$758,994
Total-1989	80,565,574	1.029	82,901,974	1.077		89,285,426	7.74	$691,069
Total-1988	81,072,882	**Transformer Loss	82,595,803	1.05		86,725,593	7.74	$644,021
Total-1987	81,333,129	**Transformer Loss	84,898,348	1.05		89,143,265	7.74	$689,969
Total-1986	73,044,709	**Transformer Loss	74,416,099	1.05		78,136,904	5.10	$391,466

1.02 wells Over 500 KVA

1.01 wells under 500 KVA

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YEARLY POWER USAGE -UNIT B

Power kWH Usage	Unit B - (34.5) Metered KWH Usage	Transformer Loss **	Delivered kWH	System Losses	Distribution Losses	Billing kWH Total	USBR Rate (mills)	Current Billing Amount
Total-2007	81,370,943	1.029	83,730,701	1.036	1.034	89,694,337	19.34	$1,734,689
Total - 2006	73,620,098	1.029	75,755,082	1.036	1.034	81,150,661	19.34	$1,569,453
Total - 2005	64,680,594	1.029	65,000,342	1.036	1.034	71,296,751	19.34	$1,378,880
Total - 2004	78,318,063	1.029	80,589,286	1.036	1.034	86,329,178	15.60	$1,346,736
Total - 2003	75,656,140	1.029	77,850,168	1.036	1.034	83,394,968	15.60	$1,300,941
Total - 2002	77,004,953	1.029	79,238,095	1.077		84,385,248	15.60	$1,331,294
Total - 2001	80,657,858	1.029	82,996,935	1.077		89,387,698	12.70	$1,135,225
Total - 2000	85,993,289	1.029	88,487,095	1.077		95,300,601	12.70	$1,210,318
Total - 1999	74,237,814	1.029	76,390,711	1.077		82,272,797	12.70	$1,044,864
Total - 1998	68,650,376	1.029	70,641,236	1.077		76,080,611	12.70	$966,224
Total -1997	75,061,238	1.029	77,238,015	1.077		83,185,343	12.70	$1,056,454
Total - 1996	79,642,923	1.029	81,952,568	1.077		88,262,865	10.63	$938,234
Total - 1995	69,856,038	1.029	71,881,863	1.077		77,426,767	10.63	$822,940
Total - 1994	86,411,452	1.029	88,917,384	1.077		95,764,022	10.63	$1,017,972
Total - 1993	74,191,212	1.029	76,342,756	1.077		82,221,148	10.63	$874,011
Total - 1992	91,106,299	1.029	93,748,382	1.077		100,967,007	10.63	$1,073,279
Total -1991	77,171,151	1.029	79,409,114	1.077		85,523,615	10.63	$909,116
Total - 1990	88,484,340	1.029	91,050,386	1.077		98,061,266	7.74	$758,994
Total-1989	80,565,574	1.029	82,901,974	1.077		89,285,426	7.74	$691,069
Total-1988	81,072,882	**Transformer Loss	82,595,803	1.05		86,725,593	7.74	$644,021
Total-1987	81,333,129	**Transformer Loss	84,898,348	1.05		89,143,265	7.74	$689,969
Total-1986	73,044,709	**Transformer Loss	74,416,099	1.05		78,136,904	5.10	$391,466
		1.02 wells Over 500 KVA						
		1.01 wells under 500 KVA						

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Years continued on page 2

	Conveyance Efficiency Improvements				1/22/2008			
	Acct.# 472	Conveyance Efficiency Improvements - Acct.# 472.xls						
	Pump System	Total Material Cost	Direct Labor Cost	Indirect Labor Cost	Total Labor Cost	Total Equipment Cost	Total Cost	Yearly Total Cost adjusted to 2008 dollar value
2002	5BC823	$5,884.34	$89.17	$29.43	$118.60	$1,460.00	$7,462.94	$9,015.46
	14AB823	$0.00	$2,249.15	$742.22	$2,991.37	$25,830.00	$28,821.37	$34,817.12
	15AB823	$95.87	$0.00	$0.00	$0.00	$0.00	$95.87	$115.81
	22A823	$20,183.43	$10,000.28	$3,300.09	$13,300.37	$2,252.10	$35,735.90	$43,170.09
	24AB823	$12,248.00	$5,511.48	$1,818.79	$7,330.27	$9,320.00	$28,898.27	$34,910.01
	25A823	$799.08	$2,583.16	$852.44	$3,435.60	$0.00	$4,234.68	$5,115.63
	26A724	$1,380.31	$4,626.19	$1,526.64	$6,152.83	$9,110.00	$16,643.14	$20,105.44
	27AC823	$13,158.22	$7,598.05	$2,507.36	$10,105.41	$26,550.00	$49,813.63	$60,176.42
	27C823	$1,757.09	$209.05	$68.99	$278.04	$0.00	$2,035.13	$2,458.50
	27A823	$2,652.53	$385.59	$127.24	$512.83	$2,910.00	$6,075.36	$7,339.23
	27AD823	$747.67	$0.00	$0.00	$0.00	$0.00	$747.67	$903.21
	29AB823	$5,398.13	$72.82	$24.03	$96.85	$247.82	$5,742.80	$6,937.48
		$64,304.67	$33,324.94	$10,997.23	$44,322.17	$77,679.92	$186,306.76	$225,064.40
2003	4AB823	$493.97	$312.69	$103.19	$415.88	$1,794.50	$2,704.35	$3,165.64
	5BC823	$3,569.73	$2,702.47	$891.82	$3,594.29	$27,323.25	$34,487.27	$40,369.86
	15D823	$249.20	$68.35	$22.56	$90.91	$960.00	$1,300.11	$1,521.87
	17AB823	$16,050.89	$10,626.74	$3,506.82	$14,133.56	$53,641.00	$83,825.45	$98,123.81
	17C823	$379.27	$4,206.20	$1,388.05	$5,594.25	$5,770.00	$11,743.52	$13,746.64
	22B724	$3,843.00	$3,976.76	$1,312.33	$5,289.09	$10,060.00	$19,192.09	$22,465.74
	21A823	$0.00	$190.10	$62.73	$252.83	$0.00	$252.83	$295.96
	24AB823	$10.55	$1,832.03	$604.57	$2,436.60	$0.00	$2,447.15	$2,864.57
	25A823	$1,463.90	$506.92	$167.28	$674.20	$1,182.00	$3,320.10	$3,886.42
	26A724	$3,491.88	$2,549.69	$841.40	$3,391.09	$353.50	$7,236.47	$8,470.81
	27C823	$1,979.67	$5,306.41	$1,751.12	$7,057.53	$2,688.88	$11,726.08	$13,726.23
	27A823	$6,265.80	$4,707.75	$1,553.56	$6,261.31	$8,885.00	$21,412.11	$25,064.43
	29AB823	$1,952.01	$2,289.54	$755.55	$3,045.09	$355.50	$5,352.60	$6,265.61
		$39,749.87	$39,275.65	$12,960.96	$52,236.61	$113,013.63	$205,000.11	$239,967.59

	Conveyance Efficiency Improvements				1/18/2008			
	Pump System	Material Cost	Labor Cost	Indirect cost	Total Labor Cost	Total Equipment Cost	Total Cost	Yearly Total Cost adjusted to 2008 dollar value
2004	1AB823	$6,732.91	$4,382.85	$1,446.34	$5,829.19	$37,266.98	$49,829.08	$56,519.94
	4AB823	$14,664.96	$9,411.81	$3,105.90	$12,517.71	$21,152.00	$48,334.67	$54,824.86
	5BC823	$10,644.79	$8,815.27	$2,909.04	$11,724.31	$33,519.60	$55,888.70	$63,393.22
	8A823	$12,568.30	$3,154.18	$1,040.88	$4,195.06	$20,816.25	$37,579.61	$42,625.65
	14AB823	$20,266.08	$5,777.71	$1,906.64	$7,684.35	$49,732.50	$77,682.93	$88,113.90
	15AB823	$8,877.71	$3,089.34	$1,019.48	$4,108.82	$41,988.00	$54,974.53	$62,356.30
	15D823	$3,797.98	$645.87	$213.14	$859.01	$0.00	$4,656.99	$5,282.31
	17AB823	$0.00	$0.00	$0.00	$0.00	$643.50	$643.50	$729.91
	17C823	$2,204.41	$101.52	$33.50	$135.02	$0.00	$2,339.43	$2,653.56
	18A824	$637.23	$227.37	$75.03	$302.40	$2,095.00	$3,034.63	$3,442.11
	21A823	$3,121.95	$671.17	$221.49	$892.66	$440.00	$4,454.61	$5,052.75
	21B823	$8,898.09	$2,957.57	$976.00	$3,933.57	$6,202.50	$19,034.16	$21,589.99
	22B724	$0.00	$702.11	$231.70	$933.81	$990.00	$1,923.81	$2,182.13
	23AB823	$0.00	$1,035.25	$341.63	$1,376.88	$24,187.50	$25,564.38	$28,997.07
	24C823	$18,724.55	$3,298.46	$1,088.49	$4,386.95	$5,467.63	$28,579.13	$32,416.63
	26B823	$30,170.24	$1,891.87	$624.32	$2,516.19	$4,071.37	$36,757.80	$41,693.49
	Misc.	$7,043.30	$0.00	$0.00	$0.00	$0.00	$7,043.30	$7,989.05
		$148,352.50	$46,162.35	$15,233.58	$61,395.93	$248,572.83	$458,321.26	$519,862.86
2005	1AB823	$3,802.56	$1,679.96	$554.39	$2,234.35	$4,779.00	$10,815.91	$11,887.81
	5BC823		$738.99	$243.87	$982.86	$45,357.74	$46,340.60	$50,933.17
	8A823	$9,532.17	$0.00	$0.00	$0.00	$0.00	$9,532.17	$10,476.85
	14AB823	$15,139.33	$5,192.16	$1,713.41	$6,905.57	$0.00	$22,044.90	$24,229.66
	15AB823	$2,505.97	$727.53	$240.08	$967.61	$285.00	$3,758.58	$4,131.08
	18A824	$239.39	$970.63	$320.31	$1,290.94	$25,941.00	$27,471.33	$30,193.87
	21B823	$4,276.00	$1,152.02	$380.17	$1,532.19	$665.00	$6,473.19	$7,114.71
	23AB823	$9,355.56	$3,085.14	$1,018.10	$4,103.24	$4,160.00	$17,618.80	$19,364.90
	24C823	$3,412.68		$0.00	$0.00	$0.00	$3,412.68	$3,750.89
	26B823		$584.69	$192.95	$777.64	$0.00	$777.64	$854.71
	Misc.	$2,305.33		$0.00	$0.00	$0.00	$2,305.33	$2,533.80
		$50,568.99	$14,131.12	$4,663.27	$18,794.39	$81,187.74	$150,551.12	$165,471.45
	Total Cost	$302,976.03	$132,894.06	$43,855.04	$176,749.10	$520,454.12	$1,000,179.25	$1,150,366.30
	The average inflation rate for 1984 to 2006 is 3.2% - (source US Dept of Labor)							

Acct. #445 Well & Pump System Rehab- Acct #445.xls

1/22/2008

A&B Irrigation District Cost of Well and Pump Rehabilitation

	Material Cost		Est. Direct Labor Costs	Indirect Labor Cost	Total Est Labor Cost	Total Cost	Yearly Total Cost adjusted to 2008 dollar value
1984	$15,404.00		$3,851.00	$1,270.83	$5,121.83	$20,525.83	$43,713.29
1992	$60,113.16		$15,028.29	$4,959.34	$19,987.63	$80,100.79	$132,590.35
1993	$202,156.07		$50,539.02	$16,677.88	$67,216.89	$269,372.96	$432,065.37
1994	$6,400.00		$1,600.00	$528.00	$2,128.00	$8,528.00	$13,254.49
1995	$144,579.77		$36,144.94	$11,927.83	$48,072.77	$192,652.54	$290,142.14
1996	$20,006.98		$5,001.75	$1,650.58	$6,652.32	$26,659.30	$38,904.97
1997	$10,406.78		$2,601.70	$858.56	$3,460.25	$13,867.03	$19,609.22
1998	$0.00		$0.00	$0.00	$0.00	$0.00	$0.00
1999	$0.00		$0.00	$0.00	$0.00	$0.00	$0.00
2000	$0.00		$0.00	$0.00	$0.00	$0.00	$0.00
2001	$64,052.42		$16,013.11	$5,284.32	$21,297.43	$85,349.85	$106,404.66
2002	$6,382.93		$1,595.73	$526.59	$2,122.32	$8,505.25	$10,274.61
2003	$82,403.96		$20,600.99	$6,798.33	$27,399.32	$109,803.28	$128,532.75
2004	$259,491.29		$64,872.82	$21,408.03	$86,280.85	$345,772.14	$392,201.09
2005	$270,887.21		$67,721.80	$22,348.19	$90,070.00	$360,957.21	$396,729.79
2006	$447,253.28		$111,813.32	$36,898.40	$148,711.72	$595,965.00	$634,717.02
2007	$552,837.00		$138,209.25	$45,609.05	$183,818.30	$736,655.30	$760,228.27
2008	$500,000.00	Budget				$500,000.00	
	$2,642,374.85		$535,593.71	$176,745.93	$712,339.64	$3,354,714.49	$3,399,368.02

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Well & Pump System Rehab

	Pumping Syst	Materials & Drilling Costs	Yearly Total Cost adjusted to 2008 dollar value	Labor Costs
2002	27C823	$ 8,134.00	$ 9,826.13	These labor
	26A724	$ 2,854.00	$ 3,447.72	costs are being
		$ 10,988.00	$ 13,273.85	accounted for in
				the Conveyance
2003	17C823	$ 13,923.24	$ 16,298.17	& Efficiency
	27C823	$ 16,464.60	$ 19,273.02	Labor cost
	21A823	$ 15,375.00	$ 17,997.56	
	26A724	$ 14,290.66	$ 16,728.26	
		$ 60,053.50	$ 70,297.00	
2004	1AB823	$ 6,606.42	$ 7,493.50	
	15AB823	$ 11,556.00	$ 13,107.69	
	14AB823	$ 5,728.91	$ 6,498.17	
	17C823	$ 4,234.60	$ 4,803.21	
		$ 28,125.93	$ 31,902.57	
2005	1AB823	$ 24,007.94	$ 26,387.24	
	15AB823	$ 45.00	$ 49.46	
	14AB823	$ 12,748.45	$ 14,011.88	
		$ 36,801.39	$ 40,448.58	
	Total	$ 135,968.82	$ 155,922.00	

This list is well and or pumping systems below .75 criteria that needed worked on
Work was done under the Reclamation Water Management Program-.acct.#472 not acct. #445

The average inflation rate for 1984 to 2006 is 3.2% - (source US Dept of Labor)