Appendix A

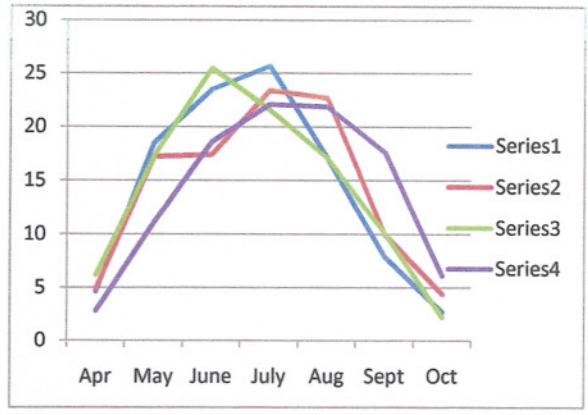
Irrigation Distribution Computations

Monthly Distribution

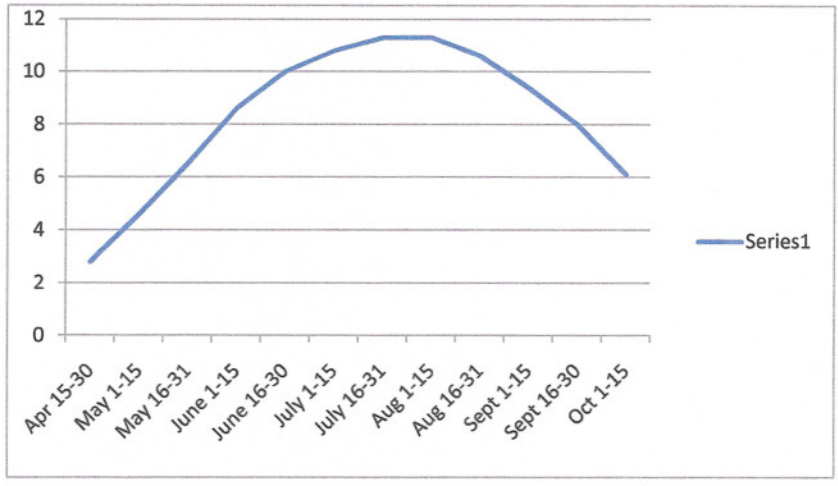
Green River Pumping Plant

Irrigation Distribution Pattern

	Hist	Theor	State	GRPP
Apr	4.6	4.9	6.2	**2.8**
May	18.5	17.2	17.3	**11.1**
June	23.5	17.4	25.5	**18.6**
July	25.7	23.4	21.6	**22.1**
Aug	17.1	22.7	17.1	**21.9**
Sept	7.9	10.0	10.1	**17.6**
Oct	2.7	4.4	2.2	**6.1**
	100.0	100.0	100.0	**100.2**



New Demand Pattern		
Apr 15-30	**2.8**	
May 1-15	**4.6**	11.1
May 16-31	**6.5**	
June 1-15	**8.6**	18.60
June 16-30	**10.0**	
July 1-15	**10.8**	22.10
July 16-31	**11.3**	
Aug 1-15	**11.3**	21.90
Aug 16-31	**10.6**	
Sept 1-15	**9.4**	17.40
Sept 16-30	**8.0**	
Oct 1-15	**6.1**	
Total	**100.0**	



	Historical		Supplemental		Total		Rounded
	Percent	Demand	Percent	Demand	Demand	Percent	Percent
Apr	4.6	227			227	2.8	**2.8**
May	18.5	913			913	11.1	**11.1**
June	23.5	1,160	11.2	372	1,532	18.6	**18.6**
July	25.7	1,269	16.9	558	1,827	22.2	**22.1**
Aug	17.1	844	29.2	967	1,811	22.0	**21.9**
Sept	7.9	390	31.5	1,041	1,431	17.4	**17.4**
Oct	2.7	133	11.2	372	505	6.1	**6.1**
Total	**100.0**	**4937**	**88.8**	**3,309**	**8,246**	**100.0**	**100.0**

Apr 15-30	2.8	238	280
May 1-15	4.6	391	460
May 16-31	6.5	553	650
June 1-15	8.6	731	860
June 16-30	10.0	850	1,000
July 1-15	10.8	918	1,080
July 16-31	11.3	960	1,130
Aug 1-15	11.3	960	1,130
Aug 16-31	10.6	901	1,060
Sept 1-15	9.4	799	940
Sept 16-30	8.0	680	800
Oct 1-15	6.1	519	610
Total	**100.0**	**8,500**	**10,000**

Supplemental Irrigation Computations

	Uintah R Direct Flow		Distribution					
Month	Uinta R	Dir Flow	Hist	Theor	Diff*	Adj	Total	Percent
Apr	4,906	4.4	4.6	4.9				
May	20,624	18.6	18.5	17.2				
June	35,322	31.8	23.5	17.4		1	1.0	11.2
July	19,334	17.4	25.7	23.4		1.5	1.5	16.9
Aug	13,239	11.9	17.1	22.7	5.6	-3.0	2.6	29.2
Sept	10,102	9.1	7.9	10.0	2.1	0.7	2.8	31.5
Oct	7,519	6.8	2.7	4.4	1.7	-0.7	1.0	11.2
Total	**111,046**	**100.0**	**100.0**	**100.0**	**9.4**		**8.9**	**88.8**

* Difference between theoretical (ideal demand) and historical, except in June and July. June and July are adjusted to reflect estimated storage component of historical deliveries

Water Demands

	Hist	Supp	Total GRPP	Exchange
WIC				400
URIC				1900
OPIC - Br				2300
OPIC - UC				332
OPIC - LC	4937	3309	8246	
OPIC - PL				
Total	**4937**	**3309**	**8246**	**4932**

Note: The Franson Civil study shows a total average delivery to the Lower Cottonwood Service area of 4,937 af/yr. This amount would be delivered on the historical distribution pattern. The study shows an additional delivery of 3,309 af/yr (2,949 + 360) delivered to the Lower Cottonwood Service area as supplemental water which would be delivered on a supplemental irrigation distribution pattern. The 4,937 af/yr historical to Lower Cottonwood would be exchanged higher in the system as supplemental water to the other project participants.

Annual Distribution

Green River Pumping Plant

Annual Demand Variation

Based on Uinta River at Neola Gage

Year	U.R. Flow	Percent	Sorted		Water Year	%	Uinta R
1930	136,820	104.8	235,210	100%	Dry Year	80%	104,481
1931	84,374	64.6	223,650		Average Year	100%	130,602
1932	132,160	101.2	222,630		Wet Year	120%	156,722
1933	89,924	68.9	198,250				
1934	**52,710**	40.4	194,790				
1935	99,230	76.0	193,880		**Uintah River**	**8,500 AF**	**10,000 AF**
1936	105,424	80.7	183,110		235,210	**0**	-
1937	139,830	107.1	178,260	90%	223,650	648	762
1938	159,960	122.5	178,120		222,630	705	830
1939	117,122	89.7	176,580		198,250	2,072	2,438
1940	89,262	68.3	175,630		194,790	2,266	2,666
1941	194,790	149.1	174,580		193,880	2,317	2,726
1942	164,930	126.3	170,600		183,110	2,921	3,436
1943	124,555	95.4	164,930		178,260	3,193	3,756
1944	193,880	148.5	163,690	80%	178,120	3,200	3,765
1945	117,828	90.2	159,960		176,580	3,287	3,867
1946	91,076	69.7	159,839		175,630	3,340	3,929
1947	153,930	117.9	**157,880**		174,580	3,399	3,999
1948	98,277	75.2	153,930		170,600	3,622	4,261
1949	152,930	117.1	153,600		164,930	3,940	4,635
1950	137,650	105.4	152,930		163,690	4,009	4,717
1951	114,561	87.7	152,370	70%	159,960	4,218	4,963
1952	183,110	140.2	144,790		159,839	4,225	4,971
1953	105,380	80.7	140,580		157,880	4,335	5,100
1954	95,131	72.8	139,830		**156,722**	**4,400**	**5,176**
1955	96,571	73.9	138,930		153,930	4,851	5,707
1956	111,828	85.6	138,840		153,600	4,905	5,770
1957	124,070	95.0	137,650		152,930	5,013	5,898
1958	140,580	107.6	136,820	60%	152,370	5,103	6,004
1959	100,659	77.1	136,400		144,790	6,329	7,445
1960	99,876	76.5	133,324		140,580	7,009	8,246
1961	92,743	71.0	132,160		139,830	7,130	8,388
1962	176,580	135.2	**131,355**		138,930	7,276	8,560
1963	118,549	90.8	129,663		138,840	7,290	8,577
1964	153,600	117.6	124,555		137,650	7,483	8,803
1965	222,630	170.5	124,070	50%	136,820	7,617	8,961
1966	133,324	102.1	119,596		136,400	7,685	9,041
1967	174,580	133.7	118,549		133,324	8,182	9,626
1968	175,630	134.5	117,828		132,160	8,370	9,847
1969	170,600	130.6	117,122		**131,355**	**8,500**	**10,000**
1970	129,663	99.3	115,984				

1971	138,840	106.3	114,561		**Water Year**	**# Years**	
1972	115,984	88.8	114,250	40%	< Dry	22	
1973	163,690	125.3	113,280		Dry - Ave	17	
1974	88,146	67.5	111,828		Ave to Wet	14	
1975	157,880	120.9	108,460		> Wet	18	
1976	100,682	77.1	107,411		**Total**	**71**	
1977	81,922	62.7	105,424				
1978	108,460	83.0	105,380				
1979	98,717	75.6	**103,690**	30%	**Demand**	**Water Year**	**% Exceedence**
1980	136,400	104.4	100,682		0	10	0
1981	113,280	86.7	100,659		2400	9	10
1982	152,370	116.7	99,984		4400	8	20
1983	**235,210**	180.1	99,876		6500	7	30
1984	159,839	122.4	99,230		8000	6	40
1985	131,355	100.6	98,717		8500	5	50
1986	178,120	136.4	98,277	20%	8500	4	60
1987	138,930	106.4	96,571		8500	3	70
1988	78,115	59.8	95,131		8500	2	80
1989	67,727	51.9	94,100		8500	1	90
1990	103,690	79.4	92,743		8500	0	100
1991	114,250	87.5	91,076				
1992	86,741	66.4	89,924				
1993	119,596	91.6	89,262	10%			
1994	94,100	72.1	88,146				
1995	223,650	171.2	86,741				
1996	107,411	82.2	84,374				
1997	144,790	110.9	81,922				
1998	198,250	151.8	78,115				
1999	178,260	136.5	67,727				
2000	99,984	76.6	52,710	0%			
	9,272,716						
	130,602						

Range	Probablility
0 - 2400	10%
2400 - 4400	20%
4400 - 6500	30%
6500 - 8000	40%
8000 - 8500	50%