

Appendix H

**Mojave Basin Area Watermaster
Mojave River Hydrology Analysis
Alto Transition Zone Water Budget
Water Years 1993-94 to 2009-10**

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Alto Transition Zone Water Budget - Water Years 1993-94 to 2009-10

(all measurements in acre-feet)

Component	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	
Supply																			
Mojave River Measured Inflow (Lower Narrows) ⁽¹⁾	10,923	113,270	11,032	8,217	83,501	9,403	6,995	5,616	4,549	6,246	5,384	192,554	27,250	4,940	9,151	4,362	19,177		30,739
Surface Runoff ⁽²⁾	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subsurface Inflow	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Precipitation ⁽³⁾	76	163	70	72	277	84	50	100	40	163	90	341	86	11	74	88	168		115
Deep Percolation of Precipitation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VVWRA Effluent ⁽⁴⁾	7,753	7,949	8,475	8,705	9,353	8,744	9,006	9,286	9,689	10,281	11,392	13,246	13,542	13,067	13,865	13,609	14,525		10,735
Subtotal	20,752	123,382	21,577	18,993	95,130	20,231	18,050	17,002	16,278	18,689	18,866	208,142	42,878	20,019	25,090	20,059	35,870		43,589
Return Flow ⁽⁵⁾	4,014	3,565	5,428	5,404	4,339	4,419	4,866	4,275	4,260	4,502	4,568	4,063	4,548	3,704	3,607	4,020	2,984		4,269
Total Available Supply	24,767	126,946	27,005	24,397	99,470	24,651	22,917	21,277	20,538	23,191	23,434	212,204	47,426	23,722	28,697	24,079	38,854		47,857
Demand																			
Subsurface Outflow (from Judgment After Trial)	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000		2,000
Production ⁽⁶⁾																			
Agricultural	4,499	3,959	4,880	5,012	3,526	3,001	2,867	2,101	1,956	2,272	1,959	1,806	2,111	1,375	2,107	1,359	278		2,651
Domestic	196	103	357	292	208	185	87	89	123	146	115	92	98	91	44	52	68		138
Golf Course	2,947	2,826	3,456	3,374	2,925	3,458	3,899	3,416	3,453	3,443	3,766	3,021	3,423	3,662	3,092	3,679	3,230		3,357
Industrial	2,757	3,077	2,043	1,784	1,387	2,405	2,485	1,856	2,611	2,507	1,881	1,545	1,555	1,580	1,187	697	527		1,876
Municipal	2,873	2,464	6,067	5,946	5,307	5,802	6,376	6,726	7,119	7,008	6,671	7,295	7,694	6,192	6,126	6,018	5,775		5,968
Parks	0	0	0	0	0	12	9	0	0	0	0	0	0	0	0	0	14		2
Phreatophytes Consumptive Use ⁽⁷⁾	4,486	4,306	4,408	4,444	4,043	4,279	4,503	4,482	4,552	4,283	4,393	4,262	4,373	4,593	5,844	5,583	5,774		4,624
Total Demand	19,758	18,735	23,211	22,852	19,396	21,142	22,226	20,670	21,814	21,659	20,785	20,021	21,254	19,493	20,400	19,388	17,666		20,616
Mojave River Estimated Outflow (Helendale Fault)	5,009	108,212	3,794	1,545	80,074	3,509	691	607	-1,275	1,533	2,649	192,184	26,172	4,229	8,297	4,690	21,188		27,242

- Notes:
- ⁽¹⁾ USGS 10261500 Mojave River at Lower Narrows Near Victorville, CA.
 - ⁽²⁾ Surface runoff is assumed to be negligible.
 - ⁽³⁾ Precipitation measured at Victorville Pump Plant, as reported in Annual Reports of MBA Watermaster, falling on 260 acres of water surface.
 - ⁽⁴⁾ Victor Valley Wastewater Reclamation Authority effluent discharges from MBA Watermaster.
 - ⁽⁵⁾ Return flow is estimated as 46.3% of agricultural pumping based on Alto Subarea use from Table 5-2 of MBA Watermaster Annual Reports. Golf course return flow is calculated based on measured irrigation usage at Silver Lakes Golf Course. from water year 2000 to 2010, estimated consumptive use of applied water on 208 acres of golf course estimated using DWR's CUP+ program, and evaporation of 260 acres of lake surface area estimated using reference evapotranspiration reported for the CIMIS Victorville station. Average golf course return flow percentage of production from 2000 through 2010 (32%) was used to calculate golf course return flow from 1994 to 1999. Return flow for Helendale Community Services District (HCSD) for 2006-2010 is estimated as the actual HCSD wastewater flow. The ratio of HCSD wastewater to production for 2006-2011 (32%) is applied to all other Municipal Production to determine return flow for years 1994-2010 as well as all Domestic Production.
 - ⁽⁶⁾ 1994-2010 verified production from MBA Watermaster.
 - ⁽⁷⁾ Based on values reported in "Evapotranspiration Water Use Analysis of Saltcedar and Other Vegetation in the Mojave River Flood plain, 2007 and 2010, Mojave Water Agency Water Supply Management Study, Phase 1 Report."