8 August 2022

Technical Memorandum (TM) #4.1

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Subject Area:	Water Quality
Topic:	Salinity

This Technical Memorandum (TM) was prepared as part of the Salton Sea Water Importation Proposal Review to provide information to support and reflect the Independent Review Panel's evaluation of submitted ideas to restore the Salton Sea by water importation and provide the Salton Sea Management Program (SSMP) with approaches that are feasible. Parts of this TM may be used in the Panel's Screening Report, Fatal Flaw Report, Feasibility Report, and/or Summary Report (Reports). In the event that any discrepancies are found between the Reports and this TM, the Reports shall take precedence.

1.0 Historic, Current, & Projected Salinity

Salinity in the Salton Sea began increasing in the early 1900s after the initial flooding event formed the sea in 1905-1907; salts left in the basin from the historic Lake Cahuilla began dissolving (Tostrud, 1997). Salinity decreased in the 1920s as increased agricultural runoff diluted the Sea (Tostrud, 1997). Subsequent increases and decreases in salinity are associated with rate changes of agricultural irrigation runoff (Tostrud, 1997). The decreased inflow associated with the Quantification Settlement Agreement (QSA) in 2003 led to quicker salinity increase, rising from 47,000 mg/L in 2003 (p4-2, Ch2m, 2018) to 74,200 mg/L in 2020 (Bureau of Reclamation, 2020).

The QSA is a set of agreements that outline Colorado River water use, conservation, and environmental impact mitigation between the U.S., State of California, the Imperial Irrigation District (IID), the Metropolitan Water District (MWD), the Coachella Valley Water District (CVWD), and the San Diego County Water Authority (SDCWA) (IID, no date). The QSA required the other water districts to pay IID to improve agricultural irrigation efficiencies and line the All-American Canal, thereby reducing seepage and inflow to the Salton Sea (IID, no date). It transferred 200,000 AFY from IID to SDCWA and 103,000 AFY from IID to CVWD and MWD, reducing Salton Sea inflow (IID, no date). Lining the All-American Canal increased water transferred from IID to SDCWA and San Luis Rey Indian Tribes by 67,000 AFY (IID, no date). Because the Salton Sea is in an endorheic basin (i.e., no outflows to other water bodies) and the

evaporation rate exceeds inflow rate, the Sea's salinity has been rising and will continue to rise under a no action scenario (Figure 1).

Figure 1: Historic and Projected Salton Sea Salinity under a Future No Action scenario, 1906-2077 (pB-5 to B-8, Tostrud, 1997; p4-2 and 6-6 to 6-7, Ch2m, 2018; Bureau of Reclamation, 2020).



Some salinity measures and predictions may not be fully accurate. SSAM modeling predicts a salinity of approximately 196,000 ppm and sea elevation of -254 by 2045. Salinity measurements made prior to 1945 exist for 1907-1916, 1923, and 1929 (B-5 to B-8, Tostrud, 1997). Yearly measurements exist from 1945-2020 (Tostrud, 1997; Ch2m, 2018; Bureau of Reclamation, 2020). The accuracy of the early measurements is questioned due to inaccurate data collection methods (Weghorst, 2001). Calculated salinity for 1906 and those between 1917-1944 are also questioned due to disparities in reported Sea

acreage and diversion amounts (pIV-I, Tostrud, 1997). The 2020 recorded salinity is for January only (Bureau of Reclamation, 2020), while all other historic measures are either year averages or end-of-year measures. Finally, it should be noted that the 2021-2077 projections from the SALSA2 model increase in uncertainty as salinity exceeds 200,000 mg/L due to saturation (p6-1, Ch2m, 2018). The SALSA2 model developed by TetraTech for IID analyzes Salton Sea salinity and hydrology to simulate future elevation and salinity under differing inflow scenarios (p3-1, Ch2m, 2018). Select data tables and visualizations from Tostrud (1997) and Ch2m (2018) are in Attachment A. Data from Figure 1 can be found in Microsoft Teams in the Support Team channel in the Salinity folder.

2.0 Salt Precipitation

The average annual salt precipitation was estimated in 2001 to be between 330,000 to 1.5 million metric tons/yr (p23, Amrhein, et al., 2001). Salton Sea salts include sodium chloride, calcite, and gypsum, with sodium chloride being the most soluble (Amrhein, et al., 2001). Calcite and gypsum reach their saturation point at a salinity of 42,300 mg/L (p1, Weghorst, 2001), which was last surpassed in 1996 (B-8, Tostrud, 1997). Other salts include bicarbonate, calcium, and sodium sulfate, which reached their saturation point soon after the initial flooding event, around 1950, and around 1980, respectively (pIII-9 and pIII-10, Tostrud, 1997).

3.0 Inflow Salinity & Salt Load

The flooding event from 1905-1907 brought in Colorado River water with a salinity of 500 mg/L (p2-1, Ch2m, 2018). The salt left in the basin prior to the current Sea's formation dissolved, increasing the salinity of the flood water (p2-1, Ch2m, 2018). An estimated 77 million tons of salt were in the Salton Sea by 1907 with 22 million tons coming from the Colorado River (pIII-6, Tostrud, 1997). This increased to 110 million tons by 1914 with 30 million tons total from the Colorado River (pIII-6, Tostrud, 1997). Tostrud (1997) contains historic salt loads into the Sea for 1943-1996 (pIII-1 to III-4). The average annual salt load from inflows to the Sea is predicted to be 3,970,000 tons/yr (for 2016-2077) (p5-3, Ch2m, 2018).

Inflow comes from the Alamo River, New River, Whitewater River/Coachella Valley Stormwater Channel (CVSC), other drains and small water bodies (Salton Sea Authority, 2016) and groundwater (Amrhein, et al., 2001). Each vary in salinity and salt load (Table 1). Soils in the region are not equipped to store or leach salts because they are sandy and porous (pB-5, Salton Sea Accounting Model, 2000).

Table 1: Salinity and salt load data for Salton Sea inflow sources. Groundwater data fromAjami (2021) page 32 and Sanford (2018) page 2.

Source	Salinity (mg/L TDS)	Salt Load ^a (metric ton/y)	Salt Load %
Alamo River	2,100	1,518,000	47%
New River	2,700	1,348,000	42%
Whitewater River/ CVSC	1,200	58,000	2%
Other drains/ small water bodies	-	312,000	10%
Groundwater ^{b,c}	Imperial Basin: 14,000 Indio Subbasin: 224- 520	Low	Not Included

- a- Salt load based on 2004-2014 average.
- b- Groundwater data from Ajami (2021) page 32 and Sanford (2018) page 2.
- c- There are 7 groundwater basins in the region, each varying in salinity and not all are known (p32, Ajami, 2021). The Imperial Valley basin has a salinity of 14,000 mg/L TDS (p32, Ajami, 2021) and the Indio Subbasin has a salinity of 224-520 mg/L TDS (p2, Sanford, 2018), but others have lower salinities and higher seepage rates (Amrhein, et al., 2001). It is thought that salt loading from groundwater is low (Amrhein, et al., 2001).

The Salton Sea Accounting Model assumes salinity of agricultural drainage in the Imperial and Coachella Valleys increases as inflow amount decreases. For instance, the salinity is 2,800 mg/L for 1,346,000 a-f/yr, 3,459 mg/L for 1,006,000 a-f/yr, and 4,107 mg/L for 806,000 a-f/yr (pB-6, Salton Sea Accounting Model, 2000).

Pacific Ocean salinity in the California Current is 32,500-34,500 mg/L (Britannica, 2011) and the Sea of Cortez salinity is 35,000-35,800 mg/L (Nix, 2013).

4.0 Impact on Evaporation

Evaporation is the largest part of the Salton Sea water budget (p5-15, Ch2m, 2018) and decreases as salinity increases above 56,200 mg/L (Figure 3) (pIII-4, Tostrud, 1997). The total evaporation is 69 in/yr with a net evaporation of 66.4 in/yr (p5-14, Ch2m, 2018). Climate change will increase evaporation by 0.03-0.11 in/yr (p5-15, Ch2m, 2018), but the slowed evaporation rate from increased salinity may negate this.



Figure 3: Evaporation rate reduction percentage with increased salinity (pIII-5, Tostrud, 1997).

The Salton Sea Accounting Model uses the evaporation rate change equation of:

 $Y = (0.9819 + (-0.00000013982 * X^{2.5}))^{2}/0.9606$

where X = salinity in ppt and Y = standardized evaporation in percent of freshwater pan evaporation (pB-7, Salton Sea Accounting Model, 2000).

5.0 Citations

- Ajami, H. (2021). Chapter 2 Watershed Hydrology: Hydrology and Water Resources in the Salton Sea Watershed in Crisis at the Salton Sea: The Vital Role of Science. University of California Riverside Salton Sea Task Force, EDGE Institute and Center for Science to Policy. <u>https://doi.org/10.5281/zenodo.5149222</u>
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- Tostrud, M.B. (1997) The Salton Sea 1906-1996, Computed and Measured Salinities and Water Levels, Colorado River Board of California, November 1997.
- Weghorst, P.A. (2001). Historic Salinity Increases in the Salton Sea and Solids Precipitation and/or Reduction. US Bureau of Reclamation. January 30, 2001.

ATTACHMENT A: ADDITIONAL SALTON SEA SALINITY DATA & VISUALIZATIONS

Historical and Projected Salton Sea Salinity under a Future No Action scenario, 2003-2078 (p6-2, Ch2m, 2018).



Observed salinity (mg/L) from 2004-2020 compared to Pacific Ocean salinity. Data from Bureau of Reclamation, graph from California Natural Resources Agency (p46, CNRA, 2021).





Measured and Computed Salton Sea Salinity (ppm), 1906-1996 (pIV-5, Tostrud, 1997).

Measured and Computed Salton Sea Salinity (ppm), 1906-1996 (pB-5 to B-8, Tostrud, 1997).

	Elevation (feet)		Sea Content (AF)		Salinity (ppm)		Tons of Salt In Sea		Yearly Salt	Yearly Sal
	Measured	Calculated	Measured	Calculated	Measured (Calculated	Measured	Calculated	gain (tons)	gain (tons
-	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10
1905	-249.70	-249.73	2,609,216	3,905,221						
1906	-199.20	-242.13	15,325,218	16,179,101		1,073		23,613,600		
1907	-201.20	-172.03	14,645,982	13,354,348	3.353	3,422		62,148,003		38,534,403
1908	-205.70	-205.14	13,177,161	11,403,290	4,070	4,471		69,341,119		7,193,116
1909	-210.30	-211.49	11,757,038	9,828,450	5,194	5,718		76,426,132		7,085,012
1910	-215.30	-216.99	10,301,484	8,420,993	6,036	7,316		83,784,866		7,358,734
1911	-219.30	-222.25	9,199,515	7,315,506	7,180	9,165		91,182,024	÷.	7,397,158
1912	-223.50	-226.63	8,099,078	6,332,021	8,646	11.482		98.879.879		7.697.855
1913	-227.70	-230.73	7,053,793	5,492,653	10,026	13,520		100,997,842		2,117,963
1914	-232.00	-234.40	6,037,870	4,656,478	11,796	16,236		102,822,462		1,824,619
1915	-237.00	-236.66	4,926,899	3,970,142	13,774	19,458		105,062,638		2,240,176
1916	-241.10	-241.79	4,100,808	3,633,921	16,472	21,738		107,433,330		2,370,692
1917	-244.30	-243.61	3,509,825	3,029,517	-/ / -	26,624		109,694,218		2,260,888
1918	-248.50	-247.09	2,799,463	2,625,848		31,483		112,428,836		2,734,618
1919	-252.00	-249.59	2,259,428	2,372,394		35,776		115,429,243		3,000,407
1920	-248.70	-251.24	2,767,377	2,600,932		33,416		118,202,265		2,773,022
1921	-249.00	-249.75	2,719,532	2,554,861		34,858		121,119,023		2,916,758
1922	-249.60	-250.05	2,624,863	2,248,083		40,421		123,583,121		2,464,098
1923	-249.00	-252.08	2,719,532	2,417,589	37,600	38,375		126,174,098		2,590,977
924	-250.20	-250.94	2,531,537	2,284,570		41,466		128,836,291		2,662,192
925	-249.70	-251.83	2,609,216	2,228,273		43,346		131,356,653		2,520,362
926	-247.80	-252.21	2,912,978	2,560,136		38,699		134,741,666		3,385,013
927	-246.10	-250.02	3,196,665	2,790,127		36,284		137,683,590		2,941,924
928	-246.50	-248.56	3,128,878	2,656,923		38,892		140,532,061		2,848,471
929	-245.20	-249.40	3,351,567	2,832,189	36,800	37,264		143,534,275		3,002,214
930	-244.30	-248.30	3,509,825	3,002,111	/0	36,034		147,122,605		3,588,331
931	-244.20	-247.26	3,527,620	2,972,296		37,431		151,308,065		4,185,459
932	-244.00	-247.44	3,563,337	3,097,968		36,673		154,510,859		3,202,795

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	Elevatio	Elevation (feet) Sea C		ent (AF)	Salinity (ppm)	Tons of S	alt in Sea	Yearly Salt	Yearly Salf
	Measured	Calculated	Measured	Calculated	Measured	Calculated	Measured	Calculated	gain (tons)	gain (tons)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10
1933	-244.60	-246.68	3,456,695	3,126,099		37,116		157,799,161		3,288,302
1934	-247.80	-246.52	2,912,978	2,414,718		49,120		161,311,865		3,512,704
1935	-248.30	-250.96	2,831,703	2,643,722		45,858		164,882,132		3,570,268
1936	-247.70	-249.48	2,929,349	2,648,460		46,988		169,246,631	•	4,364,499
1937	-246.40	-249.45	3,145,764	2,647,280		48,062		173,037,228		3,790,597
1938	-244.70	-249.46	3,439,069	2,823,556		46,080		176,948,401		3,911,173
1939	-242.20	-248.35	3,892,558	3,071,406		43,409		181,322,743		4.374.341
1940	-242.50	-246.84	3,836,703	2,977,004		45,737		185,177,153		3,854,410
1941	-241.00	-247.41	4,120,011	3,527,526		39,550		189,736,894		4,559,741
1942	-241.30	-244.20	4,062,537	3,689,212		38,583		193,583,054		3,846,160
1943	-241.05	-243.30	4,110,404	3,876,072		37,452		197,426,086		3,843,032
1944	-240.80	-242.29	4,158,556	3,979,413		37,163		201,124,486		3,698,401
1945	-240.35	-241.74	4,245,957	4,049,229	36.184	37,194		204,826,548		3,702,062
1946	-240.45	-241.37	4,226,453	4,193,474	37,485	36,569		208,555,613		3,729,065
1947	-240.45	-240.62	4,226,453	4,031,020	37,140	38,661		211,944,901		3,389,288
1948	-240.75	-241.47	4,168,221	3,959,621	39,839	40,068	225,838,558	215,769,682		3,824,781
1949	-240.20	-241.84	4,275,299	4,018,728	38,453	40,218	223,581,366	219,808,770	(2,257,192)	4,039,088
1950	-239.60	-241.53	4,393,721	4,159,157	38,100	39,615	227,665,072	224,080,539	4,083,706	4,271,770
1951	-238.30	-240.80	4,656,184	4,638,958	38,808	36,321	245,748,159	229,146,911	18,083,088	5,066,372
1952	-236.60	-238.38	5,011,896	5,131,085	36,089	33,529	245,989,087	233,972,703	240,928	4,825,793
1953	-235.75	-236.05	5,195,227	5,303,840	35,158	33,083	248,409,149	238,634,401	2,420,062	4,661,698
1954	-234.75	-235.25	5,415,635	5,339,623	34,000	33,527	250,418,960	243,468,230	2,009,810	4,833,829
1955	-234.35	-235.09	5,504,845	5,429,831	33,451	33,614	250,433,901	248,222,807	14,942	4,754,577
1956	-234.50	-234.39	5,471,340	5,277,315	34,113	35,243	253,835,602	252,946,164	3,401,701	4,723,357
1957	-234.45	-234.39	5,482,502	5,271,838	34,573	35,946	257,783,278	257,720,403	3,947,676	4,774,239
1958	-234.60	-235.21	5,449,038	5,200,545	35,769	37,036	265,073,010	261,947,401	7,289,732	4,226,998
1959	-234.30	-235.73	5,516,027	5,273,712	35,749	37,126	268,181,738	266,276,770	3,108,728	4,329,369
1960	-233.75	-235.39	5,639,482	5,464,627	35,366	36,457	271.246.460	270,945,204	3.064,722	4.668,434

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	Actual and	Measured Sa	Iton Sea Eleval	tion, Surface C	ontent, Salinit	itent, Salinity, and Surface Salt Content			Measured	Calculated
	Lievau	on (reet)	Sea Cont	ent (AF)	Salinity	(ppm)	Tons or s	ait in Sea	rearly Salt	Yearly Sa
	Measured	Calculated	Measured	Calculated	Measured	Calculated	Measured	Calculated	gain (tons)	gain (tons
	(1)	(2)	(3)	(4)	(5)	(0)	(/)	(8)	(9)	(10
1961	-233.35	-234.09	5,729,791	5,640,192	35,303	35,988	275,099,193	276,049,382	3,852,733	5,104,178
1962	-232.65	-233.75	5,888,900	5,878,107	35,122	35,215	281,288,725	281,518,662	6,189,532	5,469,280
1963	-231.20	-232.70	6,222,852	6,118,545	35,998	34,498	304,653,901	287,064,349	23,365,176	5,545,688
1964	-231.65	-231.65	6,072,416	6,027,121	36,727	35,621	303,309,407	291,982,580	(1,344,494)	4,918,231
1965	-232.00	-232.05	6,037,870	6,012,605	36,835	36,374	302,470,706	297,437,397	(838,701)	5,454,816
1966	-231.95	-232.11	6,049,378	6,038,445	36,339	36,866	298,966,557	302,754,173	(3,504,149)	5,316,777
1967	-231.75	-232.00	6,095,482	6,127,092	38,120	36,979	316,009,299	308,141,451	17,042,743	5,387,278
1968	-231.80	-231.61	6,083,946	6,151,469	38,540	37,454	318,886,355	313,335,986	2,877,056	5,194,535
1969	-231.95	-231.51	6,049,378	6,175,827	40,009	37,953	329,160,212	318,769,055	10,273,857	5,433,069
1970	-231.90	-231.40	6,060,894	6,138,887	38,583	38,812	318,032,538	324,034,302	(11,127,674)	5,265,246
1971	-231.65	-231.56	6,118,577	6,197,098	39,150	39,092	325,777,488	329,472,031	7,744,950	5,437,729
1972	-231.30	-231.31	6,199,630	6,298,651	39,013	39,099	328,937,979	334,930,998	3,160,490	5,458,967
1973	-231.15	-230.87	6,234,473	6,440,730	39,186	38,852	332,253,547	340,321,238	3,315,568	5,390,240
974	-230.65	-230.27	6,351,082	6,697,767	39,183	37,958	338,442,050	345,762,389	6,188,503	5,441,151
1975	-230.05	-229.18	6,491,958	6,790,585	38,973	38,008	344,095,055	351,007,609	5,653,006	5,245,220
1976	-228.60	-228.79	6,836,710	7,000,302	38,528	37,456	358,230,479	356,592,268	14,135,424	5,584,659
977	-228.25	-227.92	6,920,847	7,127,535	38,461	37,349	362,008,467	362,045,174	3,777,987	5,452,907
1978	-228.20	-227.40	6,932,896	7,170,987	38,141	37,654	359,621,518	367,223,591	(2,386,949)	5,178,416
1979	-227.75	-227.22	7,041,670	7,209,239	38,423	37,973	367,964,423	372,308,540	8,342,905	5,084,949
1980	-227.25	-227.06	7,163,234	7,362,830	37,616	37,570	366,455,020	376,210,088	(1,509,403)	3,901,548
1981	-227.40	-226.44	7,126,687	7,363,668	38,451	37,972	372,678,396	380,278,373	6,223,376	4,068,285
982	-227.55	-226.43	7,090,206	7,280,477	39,897	38,823	384,714,025	384,404,566	12,035,629	4,126,193
983	-226.65	-226.77	7,310,097	7,359,797	39,479	38,801	392,489,654	388,371,931	7,775,629	3,967,364
984	-226.70	-226.45	7,297,818	7,435,152	40,335	38,758	400,326,160	391,909,327	7,836,505	3,537,396
985	-226.85	-226.14	7,261,023	7,430,397	40,021	39,098	395,207,031	395,101,287	(5,119,128)	3,191,960
986	-226.80	-226.16	7,273,280	7,401,777	40,792	39,545	403,500,650	398,074,648	8,293,618	2,973,361
987	-227.10	-226.28	7,199,849	7,333,781	40,516	40,208	396,724,351	401,037,010	(6,776,299)	2,962,362
1988	-227.15	-226.55	7.187.637	7.313.755	42.654	40.626	416,950,775	404.093.096	20 226 424	3 056 086

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			Appe	ndix B, Ta	ble B-2					
	Actual and Measured Salton Sea Elevation, Surface Content, Salinity, and Surface Salt Content									Calculated
	Elevation (feet)		Sea Conte	Sea Content (AF)		(mqq)	Tons of S	Tons of Salt In Sea		Yearly Salt
	Measured	Calculated	Measured	Calculated	Measured	Calculated	Measured	Calculated	gain (tons)	gain (tons)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1989	-227.40	-226.64	7,126,687	7,242,422	42,327	41,327	410,245,727	407,057,727	(6,705,047)	2,964,631
1990	-227.74	-226.93	7,044,094	7,186,319	43,582	41,967	417,514,142	410,163,427	7,268,415	3,105,701
1991	-227.53	-227.16	7,095,066	7,211,710	42,151	42,195	406,727,239	413,845,455	(10,786,903)	3,682,028
1992	-226.70	-227.05	7,297,818	7,142,171	43,773	43,003	434,448,419	417,700,863	27,721,180	3,855,408
1993	-226.78	-227.34	7,278,185	7,129,695	42,876	43,468	424,400,891	421,480,778	(10,047,528)	3,779,915
1994	-226.49	-227.39	7,349,443	7,161,671	41,771	43,657	417,511,296	425,213,753	(6,889,595)	3,732,975
1995	-226.31	-227.26	7,386,400	7,203,674	40,422	43,779	406,059,382	428,906,448	(11,451,914)	3,692,695
1996	-226.93	-227.08	7.278.185	7.159,569	42.738	44.391	423.034.921	432,233,046	16,975,539	3.326.598

Appendix B, page 8

Projected Salton Sea Salinity (mg/L) 2018-2077 (p6-7 to 6-8, Ch2m, 2018).

SECTION 6-SALSA2 APPLICATION FOR FUTURE NO ACTION

	Salinity (mg/L)								
Year	Mean	5%	25%	Median	75%	95%			
2018	63,735	61,876	63,047	63,836	64,608	65,127			
2019	67,693	64,924	66,625	67,538	68,981	70,146			
2020	72,536	69,132	71,029	72,288	74,058	76,218			
2021	78,115	73,685	76,251	77,831	79,981	83,123			
2022	84,138	78,967	81,655	83,642	86,414	90,434			
2023	90,526	84,595	87,587	90,130	92,930	97,923			
2024	97,315	90,008	93,854	96,736	100,615	105,501			
2025	104,572	96,088	100,375	104,247	108,242	114,504			
2026	112,394	102,058	107,654	112,192	117,006	123,493			
2027	120,788	108,188	115,531	120,713	125,694	133,925			
2028	129,940	115,164	123,282	129,978	135,948	144,623			
2029	139,891	122,056	132,168	139,965	146,669	158,431			
2030	150,556	129,683	142,147	150,628	158,885	172,874			
2031	162,259	137,544	150,412	161,676	171,792	192,451			
2032	175,161	145,143	160,386	172,744	187,532	215,700			
2033	189,092	151,445	169,352	185,458	205,077	245,063			
2034	204,695	157,705	179,469	198,913	222,812	276,688			
2035	221,672	164,445	189,067	209,757	244,657	319,096			
2036	238,143	170,916	197,262	223,206	262,711	361,311			
2037	252,233	176,399	206,821	232,380	276,198	393,307			
2038	263,877	179,741	211,711	243,137	291,074	434,329			
2039	273,487	183,942	218,374	254,419	305,902	463,658			
2040	280,727	189,501	223,722	260,481	314,574	498,142			
2041	285,839	190,495	227,446	264,853	323,092	500,000			
2042	289,921	191,961	230,815	267,443	331,209	500,000			
2043	292,285	193,714	234,298	268,295	327,285	500,000			
2044	293,793	196,222	234,647	273,320	331,063	500,000			
2045	294,902	202,499	234,502	271,076	331,714	500,000			
2046	295,076	200,550	235,051	271,888	333,275	500,000			
2047	295,130	201,815	235,389	271,885	332,112	500,000			
2048	284,970	197,405	228,238	262,996	315,038	500,000			
2049	276,758	193,326	222,880	254,635	308,464	500,000			
2050	270,562	186,474	218,625	250,403	296,467	474,317			
2051	265,995	185,440	215,752	245,802	292,663	460,633			
2052	261,593	182,921	211,435	242,926	288,781	444,692			
2053	257,904	181,868	209,207	240,473	286,501	412,823			
2054	255,573	181,206	205,924	236,404	281,972	408,931			
2055	253,079	181,663	205,340	232,755	279,339	407,762			
2056	250,608	179,097	202,815	232,464	278,728	400,317			
2057	249,258	176,916	201,691	228,693	278,007	377,870			
2058	248,144	174,499	200,022	229,719	272,382	384,720			
2059	246,879	173,020	201,877	229,572	271,964	381,374			
2060	246,838	173,058	201,177	229,257	274,346	375,375			

Table 5. Projected Salton Sea Salinity

SECTION 6-SALSA2 APPLICATION FOR FUTURE NO ACTION

Table 5. Projected Salton Sea Salinity

	Salinity (mg/L)											
Year	Mean	5%	25%	Median	7 5%	95%						
2061	246,037	173,250	200,515	230,439	272,755	368,728						
2062	246,022	173,494	202,552	231,300	272,108	369,342						
2063	246,228	173,874	200,899	229,152	274,978	369,853						
2064	246,785	173,668	202,820	230,642	277,515	370,450						
2065	247,537	173,618	203,812	231,014	281,551	376,446						
2066	248,328	174,206	204,624	231,759	281,044	365,340						
2067	250,069	173,072	204,357	232,843	282,715	378,780						
2068	251,387	172,950	207,071	235,824	283,962	382,461						
2069	253,013	173,549	209,473	237,409	285,564	386,556						
2070	254,551	176,517	211,203	238,184	286,949	383,613						
2071	256,796	176,977	211,251	241,467	287,318	396,802						
2072	259,495	180,284	212,750	242,056	289,196	413,836						
2073	261,509	181,158	212,575	244,514	295,138	409,913						
2074	263,560	184,199	216,128	244,205	297,867	400,458						
2075	265,930	186,488	217,533	251,892	295,986	408,018						
2076	268,183	185,299	218,032	251,777	299,983	410,506						
2077	269,882	188,999	218,189	254,509	302,254	420,888						