

Table S3. Isotopic data collected from the 7 USGS multiple-depth monitoring-well sites and 6 domestic wells in San Diego County, California.

[Date format is month, day, year;  $\delta^2\text{H}$ , delta hydrogen in water molecule;  $\delta^{18}\text{O}$ , delta oxygen in water molecule;  $^{87}\text{Sr}/^{86}\text{Sr}$ , strontium-87/86 ratio;  $^3\text{H}$ , hydrogen-3 given in tritium units;  $^{14}\text{C}$ , carbon-14 given in percent modern carbon (pmc);  $\delta^{13}\text{C}$ , delta carbon in dissolved inorganic carbon; -, no data]

Common well name	$\delta^2\text{H}$ (‰)	$\delta^{18}\text{O}$ (‰)	$^{87}\text{Sr}/^{86}\text{Sr}$	$^3\text{H}$ (TU)	$^{14}\text{C}$ (pmc)	$\delta^{13}\text{C}$ (‰)
SDOT1	-42.2	-6.48	0.70738	0.08	2.5	-14.9
SDOT2	-45.4	-6.60	0.70768	0.66	6.2	-17.2
SDOT3	-37.3	-5.48	0.70704	-0.09	22.7	-16.0
SDOT4	-36.0	-5.40	0.70697	0.20	81.9	-13.1
SDOT5	-33.5	-5.04	0.70747	2.46	88.4	-14.0
SDOR1	-40.1	-5.78	0.70770	0.09	2.1	-10.2
SDOR2	-44.2	-6.51	0.70810	0.31	12.0	-10.0
SDOR3	-35.7	-5.39	0.70790	-0.03	34.9	-13.8
SDOR5	-40.1	-5.78	0.70790	0.91	62.8	-13.3
SDCC1	-41.2	-6.34	0.70804	0.16	3.1	-9.74
SDCC2	-43.4	-6.44	0.70817	0.06	4.1	-8.91
SDCC3	-43.8	-6.59	0.70853	0.22	5.3	-9.08
SDCC4	-45.8	-6.82	0.70830	0.38	6.6	-14.0
SDCC5	-43.8	-6.51	0.70824	0.34	7.8	-10.4
SDCC6 <sup>a</sup>	-47.7	-6.26	0.70834	1.81	47.4	-9.82
SDMC1	-34.3	-5.25	0.70726	0.05	2.9	-18.9
SDMC2	-35.2	-5.51	0.70685	-0.04	9.8	-17.0
SDMC3	-35.5	-5.54	0.70630	-0.04	17.5	-14.5
SDMC4	-32.5	-5.13	0.70719	-0.07	32.6	-15.3
SDMC5	-39.5	-5.66	0.70720	2.68	79.9	-14.4
SDSW1	-40.7	-6.03	0.70848	-0.06	0.4	-18.9
SDSW2	-46.0	-6.85	0.70804	-0.09	1.2	-12.6
SDSW3	-44.5	-6.67	0.70701	0.03	10.7	-14.9
SDSW4	-36.4	-5.59	0.70650	-0.06	18.3	-14.8
SDSW5 <sup>b</sup>	-37.5	-5.52	0.70828	0.25	79.1	-12.7
SDSW6	-35.2	-5.37	0.70748	2.88	99.8	-16.0
SDNB1	-24.8	-3.76	0.70770	-	8.1	-11.8
SDNB2	-36.2	-5.58	0.70782	0.12	17.7	-11.3
SDNB3	-16.1	-2.28	0.70829	0.49	33.3	-10.0
SDNB4	-12.8	-1.18	0.70898	0.08	76.9	-10.3
SDNB5	-34.5	-4.94	0.70853	1.48	-	-
SDEP1	-44.2	-6.56	0.70820	0.02	1.3	-6.89
SDEP2	-42.4	-6.30	0.70678	0.03	12.4	-14.0
SDEP3	-35.8	-5.42	0.70703	0.07	22.0	-11.9
SDEP4	-34.3	-5.40	0.70697	0.10	37.1	-13.9
SDEP5	-35.3	-5.43	0.70713	0.05	33.2	-12.4
PPTT	-34.1	-5.70	0.70678	0.16	67.5	-14.7
SMWC1	-41.1	-6.66	0.70689	0.56	70.1	-17.7
SMWC2	-41.1	-6.47	0.70523	29.00	104.0	-16.9
DJRV	-42.9	-6.76	0.70693	0.34	62.1	-16.9
SRVP	-41.8	-7.00	0.70511	0.13	35.3	-17.6
DESD	-37.4	-5.72	0.70514	1.66	106.4	-14.8

<sup>a</sup>Not shown in figures 4, 8c, 9c; <sup>b</sup>Not shown in figure 8d.