

Water Quality Results - Lower Aquifer Monitoring

Station ID	Well Name	Basin Plan Well ID	Aquifer Zone	Date	HCO3	Total Hardness	Cond	pH	TDS	Cl	NO3-N	SO4	Ca	Mg	K	Na
					mg/l	mg/l	umhos/cm	units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-11A2	Sand Spit #1 East	LA2	D	3/14/2005	180	4600	16000	7.3	8900	5400	ND	430	770	640	20	1300
				10/21/2015	150	6640	17700	7.4	13100	6300	ND	740	1030	990	31	1560
30S/10E-12J1	MBO5 DWR Obs.	LA11	E	2/14/2005	350	370	1300	8.1	840	77	ND	190	51	58	6.1	110
				11/20/2009	300	360	1150	7.5	732	83	ND	190	51	58	4.4	95
				7/24/2014	360	489	1290	7.7	780	105	ND	212	69	77	5	88
				4/22/2015	360	475	1290	7.8	810	112	ND	189	65	76	5	88
				10/1/2015	250	486	1280	7.3	840	117	ND	188	68	77	4	85
				4/20/2016	330	524	1370	n/a	840	151	ND	193	73	40	5	83
				10/10/2016	350	497	1370	7.1	930	173	ND	189	69	79	4	81
				4/11/2017	350	541	1380	7.5	880	167	ND	186	75	86	4	81
				10/4/2017	300	543	1370	7	850	162	ND	191	76	86	5	90
				4/10/2018	350	595	1390	7.6	820	173	ND	192	85	93	5	97
				10/2/2018	350	497	1340	7.4	870	160	ND	160	69	79	3	87
				4/9/2019	350	539	1430	7.4	860	196	ND	189	76	85	4	85
				10/2/2019	250	290	1520	7.6	1000	187	ND	189	80	90	5	91
4/14/2020	350	667	1580	7	950	222	ND	187	81	113	5	83				
30S/10E-13Bb	Lupine Zone D	LA41	D	11/7/2019	210	312	1310	7.7	760	136	3.1	188	69	34	4	140
				4/8/2020	310	204	943	7.8	560	68	0.3	109	44	23	2	101
30S/10E-13Ba	Lupine Zone E	LA40	E	11/6/2019	210	2090	5330	7	4750	1460	1.3	224	388	272	6	182
				4/7/2020	240	3300	7360	7.6	6340	2190	0.3	202	569	458	7	203
30S/10E-13J1* Highlighted chloride values from GSWC water quality monitoring (dates vary from those listed)	GSWC Rosina	LA10	D,E	12/20/2004	72	230	720	7.1	410	150	1.6	14	38	33	1.4	29
				1/14/2010	35	260	778	6	435	200	1.6	13	41	38	1.5	33
				7/24/2014	80	418	1200	7.3	910	303	1.7	16	67	61	2	39
				4/22/2015	80	431	1230	7.1	750	331	1.9	20	69	63	2	39
				10/5/2015	70	460	1280	7	950	329	1.7	19	74	67	2	41
				4/26/2016	80	412	1170	7.1	840	299	1.8	18	66	60	2	37
				10/12/2016	60	509	1430	6.8	1100	389	1.8	27	82	74	2	44
				4/10/2017	80	327	957	6.9	720	300	2.6	15	52	48	2	35
				10/12/2017	80	245	702	6.9	510	220	3.4	13	39	36	2	33
				4/24/2018	70	188	620	7.4	400	190	4.3	12	29	28	1	29
				10/9/2018	70	265	730	7.1	450	210	3.2	13	42	39	2	34
				4/15/2019	80	251	744	7	600	174	1.9	10	38	38	2	31
				10/14/2019	80	332	961	7.1	830	229	2	13	54	48	1	33
4/21/2020	80	353	1310	6.4	970	250	2.1	14	59	50	2	32				
30S/10E-13M2	Howard East	LA31	C,D	11/22/2004	51	810	2900	7.3	1500	810	0.5	140	60	120	4.7	210
				12/9/2009	55	1100	3740	7.1	2170	1100	0.5	220	160	160	4.8	370
				8/4/2014	60	757	3340	7.1	2450	990	0.6	178	117	113	5	382
				4/21/2015	60	739	3430	7.3	1930	950	0.6	178	117	113	5	382
				10/6/2015	30	756	3370	7.1	2140	960	0.5	185	115	114	5	342
				4/20/2016	50	726	3520	7.2	2190	941	0.7	179	113	108	5	400
				10/19/2016	70	722	3420	7.4	2190	943	0.6	182	113	107	4	398
				4/17/2017	60	733	3380	6.8	2060	907	0.6	178	114	109	4	413
				10/5/2017	60	738	3350	7.5	2190	960	0.7	160	116	109	5	411
				4/24/2018	70	664	3370	7.2	2020	946	0.6	2.8	103	99	4	367
				10/17/2018	60	740	3400	7.3	2180	834	0.6	153	115	110	5	414
				4/3/2019	70	640	3290	7.8	2010	940	0.6	179	103	93	4	341
				10/3/2019	70	574	3120	7.4	2120	827	0.7	169	90	85	4	340
4/9/2020	70	519	2970	7.8	1740	738	0.6	152	86	74	4	258				

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					mg/l	mg/l	umhos/cm	units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/10E-13N	S&T #5	LA8	D	11/23/2004	42	80	390	6.9	200	67	5.9	9.2	13	12	1.7	38
				11/19/2009	41	89	386	6.8	267	73	6.1	11	15	13	1.4	38
				7/24/2014	50	100	438	7.4	270	76	7	10	17	14	2	38
				4/21/2015	50	98	445	6.9	280	77	7.7	11	16	14	2	38
				10/6/2015	40	98	422	7.2	310	75	6.8	10	16	14	1	38
				4/20/2016	20	97.5	446	7	320	76	7.2	12	16	14	1	38
				10/13/2016	50	104	470	8	320	79	7.2	12	17	15	1	40
				4/11/2017	50	100	434	7.4	270	77	7.3	12	17	14	1	38
				10/2/2017	30	95	438	7.2	290	78	7.6	13	15	14	1	36
				4/11/2018	60	104	440	7	260	79	7.9	14	17	15	1	39
				10/3/2018	60	107	430	6.5	340	66	6.7	13	18	15	2	40
				4/3/2019	50	100	434	6.3	250	75	7.3	13	17	14	1	36
10/7/2019	60	95	446	7.6	250	77	7.7	14	15	14	1	37				
4/13/2020	60	104	443	8	300	75	7.4	15	17	15	2	37				
30S/10E-14B2	Sand Spit #3 Deep	LA3	D	3/15/2005	100	3600	30000	8	17000	8500	ND	960	1200	130	34	4300
				10/21/2015	ND	7140	29500	11	24700	10000	ND	530	2830	20	80	4040
30S/10E-24C1	GSWC Cabrillo	LA9	D	12/20/2004	64	130	610	7	310	110	4.5	19	22	19	1.6	50
				11/20/2009	60	150	611	7.1	347	130	4.1	22	23	22	1.6	52
				7/24/2014	40	69	339	7.6	240	46	8.4	6	11	10	1	32
				4/22/2015	70	117	530	7.3	320	95	5.5	16	19	17	2	45
				10/5/2015	50	75	349	7.6	270	50	7.6	7	12	11	1	34
				4/26/2016	70	115	499	7	300	90	5.6	16	18	17	2	44
				10/12/2016	70	111	506	7.1	320	93	5.5	15	18	16	1	44
				4/10/2017	70	111	490	7	310	89	5.7	16	18	16	1	43
				10/12/2017	70	117	484	7	270	89	6	16	19	17	2	46
				4/24/2018	70	115	486	7.8	300	90	6.2	17	18	17	1	43
				10/9/2018	60	135	477	6.9	280	76	5.8	17	21	20	2	50
				4/15/2019	70	112	488	7.1	310	92	5.7	16	17	17	2	45
10/14/2019	no sample (off-line)															
4/21/2020	50	75.2	492	6.7	290	80	9.1	8.4	12	11	1	34				
30S/11E-7Q3	LOCSD 8th St.	LA12	D	11/18/2004	250	270	790	7.5	410	73	ND	39	44	40	2.3	48
				11/19/2009	220	290	782	7.4	465	92	ND	46	46	42	1.9	53
				7/23/2014	290	303	876	7.6	460	91	ND	43	49	44	2	54
				4/21/2015	290	305	897	7.7	500	101	ND	55	48	45	2	59
				10/6/2015	280	298	828	7.4	490	91	ND	46	47	44	2	55
				4/20/2016	190	307	907	7.7	520	91	ND	49	49	45	2	54
				10/11/2016	280	278	827	4.9	490	93	ND	46	44	41	2	52
				4/10/2017	300	294	839	7.3	480	91	ND	50	47	43	2	54
				10/4/2017	220	305	826	6.5	470	92	ND	45	48	45	2	56
				4/10/2018	300	319	814	7.7	440	93	ND	46	52	46	2	56
				10/2/2018	290	283	822	7.3	470	78	ND	50	46	41	1	53
				4/9/2019	300	301	844	7.5	480	94	ND	50	48	44	2	53
10/2/2019	290	312	877	8	530	91	ND	51	49	46	2	56				
4/16/2020	310	301	883	7.8	500	94	ND	55	48	44	2	52				

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					mg/l	mg/l	umhos/cm	units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-17E8	So. Bay Obs. Middle	LA22	D	1/14/2005	150	150	440	7.5	290	34	2.2	11	24	22	1.4	28
				11/20/2009	120	160	455	7.3	255	42	4.3	12	25	23	1.3	29
				7/23/2014	150	166	500	7.6	270	43	6.3	10	27	24	2	28
				4/21/2015	150	157	481	7.6	270	49	7.1	13	25	23	1	28
				10/1/2015	120	164	475	7.4	290	44	6.6	10	26	24	1	28
				4/19/2016	150	164	476	6.9	290	45	6.9	12	26	24	1	29
				10/13/2016	140	161	521	7.3	290	46	6.9	12	25	24	1	29
				4/13/2017	150	164	466	7.3	300	46	6.7	13	26	24	1	29
				10/11/2017	150	168	476	7.7	260	47	7.2	14	26	25	1	29
				4/16/2018	150	165	473	6.4	310	47	6.7	14	25	25	1	29
				10/10/2018	150	160	471	7.5	250	43	6.1	15	26	23	1	28
				4/10/2019	180	153	466	7.2	290	46	5.8	14	25	22	1	28
10/9/2019	150	155	485	7.3	270	49	7	15	24	23	1	28				
4/14/2020	160	164	482	8	280	48	6.3	15	26	24	1	27				
30S/11E-17N10	GSWC So. Bay #1	LA20	C,D,E	Jan 2003	250	--	510	7.1	290	37	ND	21	41	25	1.3	35
				11/20/2009	230	220	638	7.3	357	41	0.5	30	35	33	1.7	37
				7/24/2014	280	232	646	7.7	370	37	0.5	24	37	34	2	41
				4/22/2015	290	234	653	7.4	360	43	0.6	27	36	35	2	42
				10/5/2015	280	227	614	7.2	370	38	0.5	23	35	34	2	41
				4/26/2016	230	227	629	7.1	360	39	0.6	27	35	34	2	40
				10/12/2016	290	221	631	7	370	40	0.6	25	34	33	2	40
				4/10/2017	280	227	624	7.2	380	39	0.6	27	35	34	2	40
				10/12/2017	260	240	583	6.6	320	41	0.7	28	37	36	2	43
				4/24/2018	200	166	515	7.4	330	43	3.2	23	27	24	2	31
				10/9/2018	290	273	632	7.2	340	38	0.6	29	42	41	3	47
				4/15/2019	200	181	559	7.4	310	42	3.1	22	28	27	2	34
10/14/2019	290	221	626	7.2	380	41	0.7	29	34	33	2	40				
4/21/2020	300	230	705	7	400	50	0.7	27	36	34	2	42				
30S/11E-18K8	10th St. Obs. East (Deep)	LA18	E	1/19/2005	260	290	650	7.5	370	33	ND	38	62	33	2.5	28
				11/20/2009	230	220	620	7.5	378	32	ND	40	51	24	1.8	23
				7/24/2014	290	271	647	7.5	380	28	ND	34	56	32	2	27
				4/21/2015	290	265	634	7.7	400	33	ND	39	55	31	2	27
				10/19/2015	230	256	621	7.3	370	29	ND	33	53	30	2	26
				4/20/2016	190	265	700	7.5	390	31	ND	38	55	31	2	26
				10/18/2016	290	256	615	6.8	370	31	ND	36	53	30	2	26
				4/12/2017	290	274	616	7.5	450	31	ND	38	57	32	2	27
				10/10/2017	220	271	619	7.8	350	30	ND	36	56	32	2	27
				4/17/2018	290	260	625	7.3	390	33	ND	40	53	31	2	27
				10/10/2018	290	254	608	7.5	360	31	ND	40	54	29	2	26
				4/10/2019	290	245	620	7.6	380	32	ND	37	52	28	2	25
10/9/2019	290	253	647	7.9	390	33	ND	41	52	30	2	26				
4/14/2020	290	269	629	7.5	400	33	ND	40	55	32	2	26				

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					mg/l	mg/l	umhos/cm	units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
30S/11E-18K9	LOCS D 10th St.	LA32	C,D	May 2002	250	--	550	6.9	320	37	0.2	26	31	32	--	39
				11/20/2009	180	160	539	7.2	307	36	1	27	27	24	1.3	32
				7/23/2014	220	190	546	7.7	300	32	1	20	30	28	1	35
				4/21/2015	190	108	504	7.6	270	38	1.6	20	17	16	1	27
				10/6/2015	50	62	248	7.2	190	31	5.9	3	10	9	ND	21
				4/20/2016	130	121	382	7.5	220	32	3.3	12	19	18	1	27
				10/11/2016	200	168	511	6.6	270	36	1.2	22	26	25	1	34
				4/10/2017	190	155	461	7.3	270	35	1.9	19	24	23	1	31
				10/9/2017	200	168	493	7.6	270	36	1.4	23	26	25	1	33
				4/10/2018	50	75.2	256	7.7	150	35	6.5	29	12	11	ND	23
				10/2/2018	210	168	492	7.3	270	36	1.3	22	26	25	ND	33
				4/9/2019	200	172	474	7.6	270	34	1.6	22	26	26	1	33
				10/2/2019	200	185	531	7.4	310	36	1.4	25	28	28	1	35
4/16/2020	60	72.7	272	8.1	190	35	6	5.4	11	11	ND	20				
30S/11E-18K	GSWC Los Olivos #5	LA39	D	4/15/2019	290	230	619	8.1	350	38	ND	27	33	36	2	41
				10/14/2019	300	225	628	7.2	370	37	ND	29	34	34	1	41
				4/21/2020	300	236	674	6.9	370	37	0.2	28	37	35	2	42
30S/11E-18L2**	LOCS D Palisades	LA15	D,E	11/18/2004	220	330	880	7.3	420	120	ND	31	54	48	2.2	40
				11/19/2009	200	590	1460	7.2	890	360	0.4	39	94	86	2	44
			D	7/23/2014	250	293	783	7.8	390	90	0.4	26	48	42	2	40
				4/29/2015	80	78	348	7.4	230	43	5	10	13	11	ND	30
				10/28/2015	230	288	782	7.4	420	104	0.6	29	46	42	ND	36
				4/27/2016	230	264	796	7.3	450	93	0.9	28	43	38	2	43
				10/11/2016	200	221	694	7	380	91	1.7	26	36	32	1	35
				10/5/2017	180	306	768	7.6	400	102	0.7	27	50	44	2	40
				4/10/2018	250	311	767	7.3	420	100	0.8	32	52	44	2	40
				10/23/2018	250	288	772	7.7	440	83	0.6	31	48	41	1	38
				4/9/2019	250	301	774	7.4	460	102	0.8	29	48	44	1	38
				11/14/2019	210	303	806	7.8	430	107	0.7	33	49	44	2	39
				4/16/2020	260	299	832	7.7	460	109	0.8	33	49	43	2	37

ND = Not Detected

Chloride Metric Wells in Green (13J1 weighted x2); current chloride concentrations in red

*Chloride concentrations at 13J1 can vary seasonally by 100+ mg/l and are affected by well production and borehole leakage, so fluctuations are expected.

**Water from 18L2 affected by wellbore leakage/upper aquifer influence when inactive

Legend and Detection Limits

Constituent	Description	Practical Quantitation Limit*
HCO3	Bicarbonate Alkalinity in mg/L CaCO3	10.0
Total Hardness	Total Hardness in mg/L CaCO3	--
Cond	Electrical Conductance in umhos/cm	1.0
pH	pH in pH units	--
TDS	Total Dissolved Solids in mg/L	20.0
Cl	Chloride concentration in mg/L	1.0
NO3-N	Nitrate as Nitrogen concentration in mg/L	0.1
SO4	Sulfate concentration in mg/L	2.0
Ca	Calcium concentration in mg/L	1.0
Mg	Magnesium concentration in mg/L	1.0
K	Potassium concentration in mg/L	1.0
Na	Sodium concentration in mg/L	1.0

*where dilution not required