

Appendix A

Participating Class Member Documents

(see .zip file)

Appendix B

Participating Class Member Electrical Meter Data

Appendix B
Electrical Data Table for Participating Class Members (all values in kWh)

Class Member	Notes	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	2011 Totals	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012 Totals
Anderson	Separate Well Meter	4	3	0	51	189	28	26	23	19	37	33	8	421	0	0	21	35	74	79	72	21	24	32	35	8	401
Bellanca	Separate Well Meter	46	51	119	276	454	639	644	654	577	566	209	41	4,276	43	42	123	347	411	574	676	704	605	528	198	53	4,304
Clawson ¹	Combined Well Meter	427	371	411	388	416	404	423	687	674	445	376	366	5,388	374	310	361	405	332	329	422	483	895	493	297	366	5,067
Coffman	Combined Well Meter	587	555	495	491	454	556	619	659	594	550	485	534	6,579	545	476	439	447	455	654	815	914	856	791	525	582	7,499
Coyle	Household Meter	738	525	536	483	462	614	629	671	687	548	510	445	6,848	722	633	682	439	536	753	707	682	754	528	523	521	7,480
Crawford	Combined Well Meter	1,009	752	901	672	607	743	1,105	922	910	506	507	n/a	8,634	635	722	593	553	601	774	923	1,343	1,217	776	638	n/a	8,775
Curtis	Combined Well Meter	340	381	379	307	298	500	874	811	943	529	470	444	6,276	416	407	334	375	446	663	731	891	678	666	459	400	6,466
Damron	Combined Well Meter	1,580	1,400	1,480	380	2,240	1,100	1,000	1,280	1,060	1,170	1,080	1,490	15,260	1,530	1,140	1,609	1,201	1,118	1,103	1,113	1,208	1,170	1,109	1,066	1,227	14,594
Davidson	Combined Well Meter	1,667	1,570	1,565	1,298	1,250	1,239	1,371	1,709	1,442	1,286	1,253	1,567	17,217	1,937	1,406	1,044	1,064	882	1,069	1,367	1,553	1,212	1,474	1,042	1,188	15,238
Deckert	Combined Well Meter	1,267	924	1,055	1,067	904	1,030	1,624	1,616	1,902	1,502	1,032	1,113	15,036	1,616	1,241	1,013	1,148	1,100	1,327	1,702	1,653	2,052	1,540	1,127	964	16,483
DeVoe ¹	Combined Well Meter	1,586	859	1,016	995	716	1,934	1,079	1,844	1,585	821	708	315	13,458	576	643	637	711	808	1,454	1,928	2,007	1,720	784	685	315	12,268
Doucette	Combined Well Meter	873	754	764	731	734	799	867	1,058	1,126	1,016	676	782	10,180	816	770	720	701	754	837	864	1,395	1,903	1,334	869	850	11,813
Dumin	Combined Well Meter	638	703	690	486	654	720	1,081	1,481	1,123	929	589	641	9,735	868	599	552	544	551	731	975	815	1,210	737	659	853	9,094
Dunn	Combined Well Meter	522	618	829	897	976	1,376	1,505	1,605	1,649	1,009	566	260	11,812	535	709	718	849	1,219	1,600	2,355	590	3,139	1,118	890	558	14,280
Enos	Combined Well Meter	1,339	883	1,041	902	908	1,226	1,432	1,528	1,570	1,334	1,237	974	14,374	1,237	1,026	943	806	1,061	1,115	1,148	1,579	1,267	1,281	1,295	1,334	14,092
Fennell	Combined Well Meter	790	806	870	795	739	912	863	1,094	1,118	889	883	912	10,671	848	886	802	810	860	783	868	1,520	1,165	1,027	945	831	11,345
Firsick	Household Meter	407	539	469	640	1,259	1,107	962	1,047	976	792	694	622	9,514	645	515	539	560	714	894	963	1,114	987	922	605	556	9,014
Firsick	Separate Well Meter	359	378	354	346	394	440	444	477	449	406	418	360	4,825	418	369	364	373	404	479	575	510	519	516	351	299	5,177
France	Combined Well Meter	274	58	24	78	308	505	629	538	611	414	321	297	4,057	301	298	277	334	389	440	588	604	525	401	379	375	4,911
Garcia	Combined Well Meter	935	958	1,035	862	925	885	824	732	854	637	685	611	9,943	635	652	419	518	496	645	677	850	736	683	539	588	7,438
Garibay	Household Meter	1,230	1,097	1,050	690	738	761	918	1,218	589	1,553	1,010	953	11,807	1,784	885	988	1,091	743	849	1,180	1,208	1,323	1,162	833	802	12,848
Gezalyan	Household Meter	280	104	113	120	108	83	72	72	69	85	120	127	1,353	291	264	119	129	157	219	222	223	189	229	225	248	2,515
Gezalyan	Separate Well Meter	1,844	1,689	1,983	1,302	1,346	992	1,228	1,297	983	735	499	586	14,484	638	510	666	450	594	902	1,198	1,283	1,429	1,048	796	493	10,007
Gibbs	Combined Well Meter	692	588	838	774	813	970	1,332	1,432	2,616	326	991	740	12,112	773	730	884	966	1,108	1,287	1,649	1,755	1,591	1,384	891	798	13,816
Godde	Combined Well Meter	780	744	607	561	629	1,360	460	1,099	1,141	932	696	635	9,644	809	661	307	946	307	1,608	483	1,665	940	877	693	644	9,940
Graham	Combined Well Meter	1,297	1,129	807	885	731	816	836	785	802	873	844	987	10,792	1,060	815	871	809	767	248	1,321	851	825	875	773	1,015	10,230
Gregory	Combined Well Meter	n/a	575	642	469	464	660	798	973	869	981	700	609	7,740	668	600	525	508	544	765	742	1,002	948	951	610	570	8,433
Grimes	Combined Well Meter	921	520	561	545	539	1,490	843	362	1,551	1,223	872	640	10,067	678	546	773	307	813	834	1,344	1,590	2,056	1,726	890	594	12,151
Gutierrez	Household Meter	893	758	767	619	574	692	906	797	895	906	931	450	9,188	828	689	866	600	601	696	1,079	1,230	966	771	715	728	9,769
Gutierrez	Combined Well Meter	1,077	944	862	580	505	177	674	2,191	1,178	1,334	355	368	10,245	802	637	608	371	438	553	656	584	563	527	602	544	6,885
Hawkins	Combined Well Meter	766	509	752	614	522	534	719	1,027	910	839	665	531	8,388	650	526	565	497	562	829	1,020	958	1,123	1,058	701	628	9,117
Hill	Combined Well Meter	1,009	829	886	808	795	1,235	1,088	1,755	1,001	1,093	1,163	1,027	12,689	1,076	663	747	628	651	656	1,347	1,462	1,446	1,468	875	767	11,786
Hoier	Combined Well Meter	387	359	347	332	320	381	157	288	570	466	460	423	4,490	396	389	323	364	372	437	501	636	541	388	434	412	5,193
Houchen, Z.	Separate Well Meter	83	80	82	68	76	81	83	84	95	66	50	69	917	32	51	49	50	279	50	80	148	117	144	188	48	1,236
Houchen, Z.	Household Meter	1,166	1,138	1,103	906	793	888	806	975	1,050	859	941	1,143	11,768	1,074	889	780	736	724	745	1,055	1,056	1,162	934	904	933	10,992
Hoyt	Combined Well Meter	874	702	667	669	666	602	664	794	697	671	627	558	8,191	743	646	711	594	539	587	618	636	742	752	605	624	7,797
Huston	Household Meter			1,403	712	1,475	1,475	1,475	140	854	1,722	1,513	1,542	12,311	1,528	1,211	1,641	1,760	1,072	1,117	1,146	1,026	1,140	1,210	993	1,190	15,034
Jung	Separate Well Meter	0	50	150	250	400	620	1,060	1,000	1,140	590	180	300	5,740	180	140	370	580	790	820	930	1,010	1,207	841	825	628	8,321
Jung	Household Meter	435	499	427	281	501	788	1,386	1,412	1,271	621	550	668	8,839	559	603	441	471	571	791	1,077	1,299	1,091	581	522	544	8,550
Kerr	Combined Well Meter	986	664	774	588	742	842	835	1,188	1,132	994	1,041	1,283	11,069	1,216	1,023	1,098	822	868	996	1,228	1,186	1,254	1,248	1,006	1,191	13,136
Kertzman (Parsons)	Combined Well Meter	590	670	500	750	650	1,030	1,100	1,250	1,060	760	550	680	9,590	660	540	570	640	753	863	975	987	1,079	856	622	626	9,171
King	Separate Well Meter	227	190	178	236	185	192	267	59	145	186	194	328	2,387	100	176	196	221	132	128	134	85	127	109	127	145	1,680
King	Household Meter	830	715	680	653	469	475	608	596	613	598	530	1,111	7,878	842	840	750	1,085	409	579	626	629	719	598	499	713	8,289
Leon	Combined Well Meter	965	1,085	807	727	844	107	101	610	847	563	662	973	8,291	1,231	1,050	1,609	376	566	335	205	1,841	853	911	853	853	10,683
Lennox	Combined Well Meter	1,301	907	1,181	1,024	745	931	1,206	1,056	961	904	658	965	11,839	945	989	814	806	901	1,258	1,324	1,256	1,308	990	906	966	12,463
Lytle	Household Meter	397	332	318	341	298	411	610	607	670	515	511	666	5,676	552	460	384	267	359	515	575	653	652	536	415	461	5,829
Lytle	Separate Well Meter	169	116	123	192	247	399	525	525	512	443	216	109	3,576	160	190	196	412	321	542	584	537	510	422	275	149	4,298
Macisaac	Combined Well Meter	324	323	701	368	260	186	166	141	212	211	432	536	3,860	969	392	63	58	24	229	333	660	706	745	446	456	5,081
Maldini	Combined Well Meter	1,740	1,083	1,201	1,329	1,134	1,193	1,161	1,345	1,243	1,320	1,201	1,594	15,544	2,011	1,404	1,407	1,113	1,253	1,431	1,292	1,321	1,209	1,239	1,238	1,350	16,268
Marcogliese	Combined Well Meter	594	972	668	720	1,296	1,874	1,908	2,448	1,980	1,820	668															

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Class Member	Notes	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	2011 Totals	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012 Totals
Masters	Combined Well Meter	422	364	353	376	449	803	979	1,350	1,266	1,078	839	436	8,715	491	444	498	557	766	1,100	1,330	1,418	1,410	1,271	818	587	10,690
Maupin	Separate Well Meter	27	17	11	8	1	21	18	21	19	35	4	3	185	4	4	9	8	5	15	20	24	19	18	4	8	138
Maupin	Household Meter	312	94	185	191	212	323	151	332	317	283	250	200	2,850	185	181	173	228	204	360	181	332	291	370	321	309	3,135
McCrae	Combined Well Meter	662	519	519	446	453	368	496	830	847	749	488	450	6,827	392	396	466	407	372	405	668	806	1,083	864	506	506	6,871
Morel	Combined Well Meter	1,683	1,265	1,436	1,048	943	772	1,031	1,050	1,173	851	764	1,109	13,125	1,238	1,342	1,414	1,284	856	833	1,016	1,065	1,162	1,043	890	1,310	13,453
Morris	Household Meter	423	407	458	392	352	495	496	912	911	599	480	435	6,360	471	468	446	469	576	669	854	1,342	774	547	436	490	7,542
Murphey	Separate Well Meter	48	81	53	51	91	94	110	159	197	64	117	67	1,132	79	71	77	92	142	216	99	107	149	73	66	74	1,245
Mynear	Combined Well Meter	422	276	461	326	269	279	313	397	352	335	317	418	4,165	209	278	321	285	291	312	332	483	182	354	314	343	3,704
Newcomer	Combined Well Meter	827	817	806	860	752	858	1,147	1,032	1,009	854	761	923	10,646	831	806	877	622	778	894	1,075	1,032	1,041	444	785	783	9,968
Nye	Combined Well Meter	777	593	640	629	633	735	1,794	1,376	1,575	1,015	733	645	11,145	776	630	641	580	699	1,072	1,327	1,871	1,432	1,116	830	590	11,564
Olson/Adkins	Combined Well Meter	315	829	879	740	727	843	1,272	1,036	1,162	991	820	559	10,173	821	546	600	670	662	739	885	1,027	1,080	738	655	610	9,033
Prelewicz	Combined Well Meter	265	235	227	228	169	220	236	247	297	303	218	215	2,860	300	359	209	251	268	191	250	303	364	314	247	271	3,327
Reasor	Separate Well Meter	98	113	113	116	99	101	114	119	157	90	68	50	1,238	45	43	54	59	86	128	159	133	153	104	85	61	1,110
Reasor	Combined Well Meter (Harrell)	1,125	888	838	755	698	798	1,097	1,095	1,280	880	943	913	11,310	835	798	797	727	735	903	1,178	1,213	1,213	1,114	857	923	11,293
Reasor	Combined Well Meter (Reasor)	257	306	280	279	391	296	333	358	404	302	330	368	3,904	380	313	318	298	397	326	446	530	553	513	319	238	4,631
Reuter ¹	Separate Well Meter	30	50	70	70	90	100	130	180	120	90	50	50	1,030	107	106	123	133	154	158	144	188	167	152	127	50	1,609
Reuter ¹	Household Meter	498	400	463	351	365	367	405	401	423	426	432	497	5,028	428	398	358	370	400	376	388	511	512	435	485	497	5,158
Robbins	Combined Well Meter		632	714	811	622	586	904	806	868	731	793	735	8,202	566	671	1,010	643	665	763	799	962	911	857	656	674	9,177
Rogers ²	Combined Well Meter	10,807	333					841	676	901	662	688	923	15,831	13,897					612	1,043	674	800	572	732	375	18,705
Schnaidt	Separate Well Meter	24	48	36	24	96	60	240	156	156	36	48	36	960	24	36	72	288	180	24	156	523	69	36	26	53	1,487
Schnaidt	Household Meter	392	391	445	379	422	373	520	542	504	178	163	208	4,517	135	206	243	208	316	93	464	391	490	265	242	260	3,313
Schweizer (Levi)	Household Meter	628	631	495	619	741	335	961	1,739	1,655	1,046	1,635	516	11,001	454	690	517	892	491	828	1,219	1,541	1,912	935	716	563	10,758
Schweizer (Levi)	Separate Well Meter	136	105	89	136	233	252	286	381	213	311	331	399	2,872	364	291	410	283	418	695	682	647	658	664	721	455	6,288
Sides	Combined Well Meter	868	742	864	760	687	754	932	1,087	962	952	867	768	10,243	745	780	689	777	693	809	914	972	974	1,066	808	864	10,091
Sloney	Combined Well Meter	n/a	518	473	432	431	414	395	474	332	347	435	537	4,788	376	418	422	433	359	357	361	339	302	459	375	396	4,597
Smith ¹	Separate Well Meter	40	70	90	190	1,100	900	1,640	2,210	1,130	320	300	330	8,320	200	180	500	710	1,630	2,010	2,460	2,690	1,190		2,421	330	14,321
Steele	Separate Well Meter	48	60	48	36	60	60	60	84	96	60	36	12	660	48	24	36	48	60	120	99	69	73	90	58	54	779
Stevens, R.	Separate Well Meter	137	167	217	344	321	312	581	492	561	563	299	210	4,204	343	198	251	240	337	529	705	484	587	293	344		4,311
Sterling	Combined Well Meter	1,350	1,370	1,460	1,290	1,570	1,330	1,840	2,340	2,150	1,360	1,600	1,420	19,080	1,760	1,400	1,690	980	1,170	1,580	1,800	2,096	2,529	2,036	2,248	2,184	21,473
Sterling	Household Meter	40	40	40	40	40	40	40	40	40	40	40	40	480	40	40	40	40	40	40	40	40	40	40	40	40	480
Storsteen	Combined Well Meter	1,628	1,293	1,470	806	549	409	1,195	1,266	1,451	1,054	745	1,385	13,251	1,764	1,584	1,676	1,284	921	1,188	1,671	1,875	2,145	1,847	774	1,257	17,986
Thompson	Combined Well Meter	1,253	1,103	1,156	1,173	991	1,064	1,105	1,444	1,303	1,253	1,161	1,136	14,142	1,224	981	405	1,508	1,031	1,145	1,350	1,430	1,638	1,608	1,180	1,224	14,724
Thurston	Separate Well Meter	163	214	287	256	432	521	452	471	515	519	276	185	4,291	216	241	348	357	409	528	626	617	604	608	398	230	5,182
Tribuzi	Combined Well Meter	197	449	150	245	276	410	180	251	103	168	156	128	2,713	460	422	789	978	281	604	468	543	481	480	315	342	6,163
Tucker, Margaret	Combined Well Meter	459	408	267	307	418	397	397	541	419	392	374	302	4,681	370	415	333	374	428	330	397	483	467	365	394	400	4,756
Tucker, John	Combined Well Meter	689	634	581	473	359	384	331	450	508	420	541	759	6,129	759	699	542	420	520	489	728	596	512	459	358	413	6,495
Tyler	Combined Well Meter	2,492	2,574	2,628	2,540	2,825	2,437	2,401	3,078	2,434	3,140	4,390	2,854	33,793	2,201	1,686	1,927	1,795	2,472	1,597	3,369	2,543	2,612	2,742	2,417	1,997	27,358
Ward	Combined Well Meter	373	331	326	393	360	374	668	1,271	1,165	800	409	362	6,832	360	393	357	352	376	470	918	1,261	1,480	969	456	422	7,814
Webb, George ³	Separate Well Meter	68	109	150	292	365	386	453	337	301	239	123	83	2,906	72	68	133	198	300	396	428	473	348	305	152	97	2,970
Welsh	Combined Well Meter	2,108	2,026	2,120	1,579	1,391	1,704	953	2,725	1,707	1,923	2,240	2,230	22,706	1,334	3,296	1,758	1,528	1,201	1,433	1,511	1,675	1,543	1,401	1,668	1,431	19,779
West	Combined Well Meter	734	574	614	524	546	540	648	542	597	554	587	707	7,167	763	564	659	451	507	536	541	508	597	758	474	516	6,874
Wonnell	Separate Well Meter	1,547	923	1,296	854	877	649	723	761	871	708	879	1,719	11,807	1,813	1,457	1,357	1,124	724	723	946	1,013	1,168	900	858	1,238	13,321
Wonnell	Household Meter	945	622	640	530	472	413	771	954	1,085	738	583	803	8,556	766	674	636	350	5,099	728	959	997	1,198	1,192	479	581	13,659
Wood	Meter for booster pump/heating wires	39	32	29	15	4	2	2	3	4	2	22	26	180	26	49	26	26	13	4	3	2	2	2	8	13	174
Wood	Separate Well Meter	10	5	16	175	249	445	468	425	367	261	15	13	2,449	19	265	392	330	318	330	313	416	348	21	8	7	2,767
Wood	Household Meter	316	253	251	229	220	175	367	372	408	327	243	281	3,442	281	358	265	246	227	249	164	448	405	322	270	236	3,471

Notes:
¹Dec 2012 not provided, assume same as Dec 2011.
²Jan 11 and Jan 12 data are total annuals for Wind Generator system.
³Jan-11 thru Jul-11 are from 2013

Appendix C

Edison Informal Response to Wood Class Subpoena

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9. Andrew & Julia Sterling, 18333 Lancaster Road, Lancaster, CA – 3 Accounts	12
10. Javier & Sarah Pomposo, 18325 West Ave B, Lancaster, CA – Declined to Participate.....	15
11. Gordon Wayne Hill, 22853 West Ave D 11, Lancaster, CA	16
12. Wanda Leon, 5501 E. Avenue D8, Lancaster, CA	17
13. Roger Damron, 22929 West Avenue D, Neenach, CA 93636.....	18
14. Donald & Beverly Bellanca, 5841 Cathy Ave, Rosamond, CA – Declined to Participate.....	19
15. Gary Garibay, 6612 East Avenue K, Lancaster, CA.....	20
16. Diane Catherine Klechefski, 8847 W. Rosamond Blvd, Rosamond, CA – Forthcoming.....	21
17. Olaf Landsgaard, P.O. Box 2567, Rosamond, CA – 2 Accounts.....	22
18. John & Lisa Gibbs, 18106 East Avenue O, Lancaster, CA	24
19. Rosemarie King, 13658 East Avenue K, Lancaster, CA – 2 Accounts	25
20. James Deckert, P.O. Box 1261, Rosamond, CA (APN 252231097).....	27
21. Barbara & Edwin Rogers, 19620 West Avenue A, Lancaster, CA.....	28
22. Robert & Carol Morris, 2513 100 th Street West #3, Rosamond, CA	29
23. Thomas Houchen, 19800 Gaskell Road, Rosamond, CA	30
24. Earl David Whiteside, 45408 160 th Street West, Lancaster, CA – 2 Accounts	31
25. Catherine & Mario Gutierrez, 2113 60 th Street West, Rosamond, CA.....	33
26. George & Anna Tuttle, 29826 Lancaster Road, Lancaster, CA – Unable to Reach	34
27. John Graham, 20001 Big Pines Highway, Valyermo, CA (APN 3060021014).....	35
28. Patrick & Susan Connelly, 48004 190 th Street West, Lancaster, CA – 2 Accounts.....	36
29. Michael & Patricia Welsh, 35720 47 th Street East, Palmdale, CA	38
30. Charles Francoeur, 3334 Longridge Terrance, Sherman Oaks, CA (APN 25446021006) – Unable to Locate.....	39
31. Margaret Tucker (Piirainen), 42658 70 th Street East, Palmdale, CA	40
32. Milton & Lisa Doucette, 29860 Lancaster Road, Lancaster, CA.....	41
33. Michael Grimes, 50235 82 nd Street West, Lancaster, CA.....	42
34. Frank Chiodo, 17030 Simonds Street, Granada Hills, CA (APN 3256007002) – Unable to Locate	43
35. James Quillen, 18450 West Avenue D, Lancaster, CA – Account Closed in 2003.....	44
36. Deborah Adkins, 4995 Elder Avenue, Rosamond, CA	45
37. Pamela & Douglas Huston, 23004 West Lancaster Road, Lancaster, CA.....	46

38. Bennie Moore, 48141 3 Points Road, Lake Hughes, CA (Service APN 3278019017) – Declined to Participate	47
39. Robert Pike, 6000 West 140 th Street, Rosamond, CA – Unable to Locate	48
40. Willard Sloney, 22510 East Avenue Q, Palmdale, CA – Forthcoming	49
41. Yang W. Lee, 9020 West Avenue J, Lancaster, CA (APN 3203034007) – Account Closed in 2005	50
42. Janet & Cecil McDonald, 2316 67 th Street West, Rosamond, CA.....	51
43. Sid & Gwen Fromberg, P.O. Box 2575 Lancaster, CA (APN 3153071028)	52
44. Lawrence Levin, P.O. Box 588, Littlerock, CA (APN 3059008050) – Unable to Locate	53
45. Karen Wonnell, 21115 East Avenue R6, Palmdale, CA – 2 Accounts.....	54
46. William & Angel Basner, 1744 Poli Street, Ventura, CA (APN 3279001025) – Record Omitted.....	56
47. Dorothy M Nolan, P.O. Box 668, Lancaster, CA (APN 3113006087) – Unable to Locate.....	57
48. Janet & Emil Sulek, 455 West Avenue G, Lancaster, CA – 2 Accounts.....	58
49. Timothy & Shanda Coyle, 10714 Yucca Avenue, Rosamond, CA.....	60
50. Pat Murphy / Donald Cornelius, 18655 West Avenue E, Lancaster, CA	61
51. May & James Tong, 47603 224 th Street West, Lancaster CA.....	62
52. Sharon Brown / Peter Maslanik, 7238 West Avenue J, Quartz Hill, CA	63
53. Nancy Larson, 22217 223 rd Avenue SE, Maple Valley, WA (APN 3279003026) – Unable to Locate	64
54. Patricia & Charles Lennox, P.O. Box 7, Pearblossom, CA (APN 3060015025) – Unable to Locate	65
55. Charles & Beverly Tyler, 18245 Lancaster Road, Lancaster, CA.....	66
56. Greg & Lindy Hogan, 20350 West Avenue F, Lancaster, CA – Unable to Locate	67
57. Craig Stewart / Cook Brothers, P.O. Box 94303 Pasadena, CA (APN 3116022002) – Unable to Locate ..	68

Leslie West, 23008 Lancaster Road, Lancaster, CA

SA Statement History : SACT : 003-9883-61

Service Account Num: 003-9883-61

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	00719	0.00	31	642	20.71	\$3.93	\$126.96
12/03/12	00077	0.00	32	516	16.13	\$2.75	\$91.55
11/01/12	99561	0.00	27	474	17.56	\$3.17	\$88.96
10/05/12	99087	0.00	36	758	21.06	\$3.20	\$119.79
08/30/12	98329	0.00	29	597	20.59	\$3.08	\$93.00
08/01/12	97732	0.00	30	508	16.93	\$5.02	\$153.69
07/02/12	97224	0.00	31	541	17.45	\$2.27	\$73.61
06/01/12	96683	0.00	31	536	17.29	\$2.70	\$87.30
05/01/12	96147	0.00	28	507	18.11	\$2.89	\$84.61
04/03/12	95640	0.00	29	451	15.55	\$2.29	\$69.28
03/05/12	95189	0.00	33	659	19.97	\$3.34	\$115.04
02/01/12	94530	0.00	29	564	19.45	\$3.21	\$97.42
01/03/12	93966	0.00	31	763	24.61	\$4.55	\$147.43
12/03/11	93203	0.00	31	707	22.81	\$4.06	\$131.52
11/02/11	92496	0.00	33	587	17.79	\$2.82	\$97.13
09/30/11	91909	0.00	31	554	17.87	\$2.30	\$74.34
08/30/11	91355	0.00	29	597	20.59	\$2.70	\$81.94
08/01/11	90758	0.00	32	542	16.94	\$2.16	\$72.23
06/30/11	90216	0.00	29	648	22.34	\$3.04	\$92.22
06/01/11	89568	0.00	29	540	18.62	\$3.00	\$90.78
05/03/11	89028	0.00	29	546	18.83	\$3.04	\$92.22
04/04/11	88482	0.00	31	524	16.90	\$2.57	\$83.12

Usage Details Close

SA Statement History : SACT : 003-9883-61

Service Account Num: 003-9883-61

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/04/11	88482	0.00	31	524	16.90	\$2.57	\$83.12
03/04/11	87958	0.00	30	614	20.47	\$3.44	\$107.83
02/02/11	87344	0.00	29	574	19.79	\$3.28	\$99.35
01/04/11	86770	0.00	32	734	22.94	\$4.07	\$136.03

Lauri J. Lytle, 368 55th Street West, Rosamond, CA

SA Statement History : SACT : 011-2767-25

Service Account Num: 011-2767-25

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/26/12	0	0.00	29	461	15.90	\$2.38	\$69.12
11/27/12	0	0.00	33	415	12.58	\$1.66	\$54.83
10/25/12	0	0.00	31	536	17.29	\$2.55	\$78.92
09/24/12	0	0.00	32	652	20.38	\$2.66	\$85.11
08/23/12	02983	0.00	29	653	22.52	\$3.18	\$92.34
07/25/12	02330	0.00	30	575	19.17	\$2.54	\$76.16
06/25/12	01755	0.00	32	515	16.09	\$2.15	\$68.72
05/24/12	01240	0.00	29	359	12.38	\$1.64	\$47.68
04/25/12	00881	0.00	28	267	9.54	\$1.23	\$34.53
03/28/12	00614	0.00	30	384	12.80	\$1.71	\$51.27
02/27/12	24477	0.00	32	460	14.38	\$2.00	\$64.10
01/26/12	24247	0.00	30	552	18.40	\$2.97	\$88.95
12/27/11	23695	0.00	29	666	22.97	\$4.11	\$119.28
11/28/11	23029	0.00	33	511	15.48	\$2.29	\$75.59
10/26/11	22518	0.00	33	515	15.61	\$2.23	\$73.68
09/23/11	22003	0.00	31	670	21.61	\$2.91	\$90.28
08/23/11	21333	0.00	28	607	21.68	\$2.92	\$81.73
07/26/11	20726	0.00	32	610	19.06	\$2.47	\$79.12
06/24/11	20116	0.00	31	411	13.26	\$1.68	\$52.20
05/24/11	19705	0.00	28	298	10.64	\$1.37	\$38.37
04/26/11	19407	0.00	32	341	10.66	\$1.36	\$43.66
03/25/11	19066	0.00	29	318	10.97	\$1.41	\$40.91

Usage Details Close

SA Statement History : SACT : 011-2767-25

Service Account Num: 011-2767-25

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/25/11	19066	0.00	29	318	10.97	\$1.41	\$40.91
02/24/11	18748	0.00	30	332	11.07	\$1.43	\$42.99
01/25/11	18416	0.00	29	397	13.69	\$1.82	\$52.76

Jeff Goode, 13104 Buckhorn Avenue, Rosamond, CA

SA Statement History : SACT : 005-1289-47

Service Account Num: 005-1289-47

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/21/12	0	0.00	30	644	21.47	\$3.79	\$113.58
11/21/12	0	0.00	29	693	23.90	\$4.48	\$130.05
10/23/12	0	0.00	33	877	26.58	\$4.85	\$159.93
09/20/12	0	0.00	30	940	31.33	\$5.28	\$158.25
08/21/12	04127	0.00	29	1,665	57.41	\$12.88	\$373.52
07/23/12	02462	0.00	30	483	16.10	\$2.05	\$61.64
06/23/12	01979	0.00	32	1,608	50.25	\$11.12	\$355.68
05/22/12	00371	0.00	29	307	10.59	\$1.36	\$39.40
04/23/12	65977	0.00	31	946	30.52	\$6.16	\$191.10
03/23/12	65095	0.00	29	307	10.59	\$1.36	\$39.40
02/23/12	64788	0.00	30	661	22.03	\$3.85	\$115.54
01/24/12	64127	0.00	33	809	24.52	\$4.53	\$149.34
12/22/11	63318	0.00	30	635	21.17	\$3.62	\$108.58
11/22/11	62683	0.00	29	696	24.00	\$4.38	\$127.04
10/24/11	61987	0.00	33	932	28.24	\$5.19	\$171.16
09/21/11	61055	0.00	30	1,141	38.03	\$6.88	\$206.39
08/22/11	59914	0.00	32	1,099	34.34	\$5.89	\$188.49
07/21/11	58815	0.00	29	460	15.86	\$2.00	\$57.95
06/22/11	58355	0.00	33	1,360	41.21	\$8.31	\$274.07
05/20/11	56995	0.00	29	629	21.69	\$3.75	\$108.77
04/21/11	56366	0.00	29	561	19.34	\$3.16	\$91.56
03/23/11	55805	0.00	29	607	20.93	\$3.54	\$102.69

Usage Details Close

SA Statement History : SACT : 005-1289-47

Service Account Num: 005-1289-47

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/23/11	55805	0.00	29	607	20.93	\$3.54	\$102.69
02/22/11	55198	0.00	32	744	23.25	\$4.17	\$133.40
01/21/11	54454	0.00	30	780	26.00	\$4.93	\$147.76



Armen Gezalyan, 48419 190th Street West, Lancaster, CA

Unable to Locate

Zenieda Houchen, 19738 Gaskell Road, Rosamond, CA

Domestic

SA Statement History : SACT : 013-4337-35

Service Account Num: 013-4337-35

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
12/20/12	0	0.00	30	933	31.10	\$3.97	\$118.99
11/20/12	0	0.00	29	904	31.17	\$3.98	\$115.32
10/22/12	0	0.00	33	934	28.30	\$3.29	\$108.42
09/19/12	0	0.00	30	1,162	38.73	\$5.03	\$150.99
08/20/12	0	0.00	31	1,056	34.06	\$4.02	\$124.74
07/20/12	0	0.00	25	951	38.04	\$4.99	\$124.86
06/25/12	0	0.00	5	104	20.80	\$1.30	\$6.50
06/20/12	0	0.00	30	745	24.83	\$2.38	\$71.45
05/21/12	0	0.00	32	724	22.63	\$2.89	\$92.34
04/19/12	0	0.00	28	736	26.29	\$3.35	\$93.74
03/22/12	0	0.00	29	780	26.90	\$3.42	\$99.32
02/22/12	0	0.00	30	889	29.63	\$3.77	\$113.24
01/23/12	0	0.00	33	1,074	32.55	\$4.26	\$140.57
12/21/11	0	0.00	30	1,143	38.10	\$5.18	\$155.35
11/21/11	0	0.00	31	941	30.35	\$3.99	\$123.67
10/21/11	0	0.00	31	859	27.71	\$3.19	\$98.79
09/20/11	0	0.00	32	1,050	32.81	\$3.57	\$114.24
08/19/11	0	0.00	30	975	32.50	\$3.49	\$104.73
07/20/11	0	0.00	29	806	27.79	\$2.41	\$69.85
06/21/11	0	0.00	33	888	26.91	\$2.65	\$87.35
05/19/11	0	0.00	29	793	27.34	\$3.47	\$100.57
04/20/11	0	0.00	29	906	31.24	\$3.98	\$115.41

Usage Details Close

SA Statement History : SACT : 013-4337-35

Service Account Num: 013-4337-35

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/20/11	0	0.00	29	906	31.24	\$3.98	\$115.41
03/22/11	0	0.00	32	1,103	34.47	\$4.45	\$142.50
02/18/11	0	0.00	29	1,138	39.24	\$5.24	\$152.09
01/20/11	0	0.00	30	1,166	38.87	\$5.17	\$155.02

Zenieda Houchen, 19738 Gaskell Road, Rosamond, CA

Well

SA Statement History : SACT : 013-4158-18

Service Account Num: 013-4158-18

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/20/12	0	3.00	30	48	1.60	\$.96	\$28.80
11/20/12	0	4.00	29	188	6.48	\$1.60	\$46.50
10/22/12	0	4.00	33	144	4.36	\$1.38	\$45.42
09/19/12	0	4.00	30	117	3.90	\$1.48	\$44.33
08/20/12	00605	0.00	31	148	4.77	\$1.64	\$50.83
07/20/12	00457	0.00	30	80	2.67	\$1.24	\$37.14
06/20/12	00377	0.00	30	50	1.67	\$1.01	\$30.38
05/21/12	00327	0.00	31	279	9.00	\$1.89	\$58.74
04/20/12	37990	0.00	29	50	1.72	\$.96	\$27.71
03/22/12	37988	0.00	29	49	1.69	\$.95	\$27.58
02/22/12	37939	0.00	30	51	1.70	\$.95	\$28.57
01/23/12	37888	0.00	33	32	.97	\$.86	\$28.35
12/21/11	37856	0.00	30	69	2.30	\$1.04	\$31.07
11/21/11	37787	0.00	31	50	1.61	\$.94	\$29.27
10/21/11	37737	0.00	31	66	2.13	\$1.05	\$32.48
09/20/11	37671	0.00	32	95	2.97	\$1.25	\$40.03
08/19/11	37576	0.00	30	84	2.80	\$1.22	\$36.59
07/20/11	37492	0.00	29	83	2.86	\$1.23	\$35.67
06/21/11	37409	0.00	33	81	2.45	\$1.11	\$36.70
05/19/11	37328	0.00	29	76	2.62	\$1.08	\$31.31
04/20/11	37252	0.00	29	68	2.34	\$1.04	\$30.20
03/22/11	37184	0.00	32	82	2.56	\$1.07	\$34.28

Usage Details Close

SA Statement History : SACT : 013-4158-18

Service Account Num: 013-4158-18

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/22/11	37184	0.00	32	82	2.56	\$1.07	\$34.28
02/18/11	37102	0.00	29	80	2.76	\$1.10	\$31.82
01/20/11	37022	0.00	30	83	2.77	\$1.10	\$32.92

Eleonore, Parsons (formerly Kertzman), 745 100th Street West, Rosamond, CA

SA Statement History : SACT : 028-3479-68

Service Account Num: 028-3479-68

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/21/12	0	0.00	30	626	20.87	\$1.80	\$54.10
11/21/12	0	0.00	29	622	21.45	\$1.85	\$53.74
10/23/12	0	0.00	33	856	25.94	\$2.39	\$79.01
09/20/12	0	0.00	30	1,079	35.97	\$4.01	\$120.41
08/21/12	04138	0.00	29	987	34.03	\$3.83	\$110.93
07/23/12	03151	0.00	32	975	30.47	\$3.16	\$101.14
06/21/12	02176	0.00	30	863	28.77	\$2.72	\$81.68
05/22/12	01313	0.00	29	753	25.97	\$2.24	\$64.96
04/23/12	5586	0.00	31	640	20.65	\$1.78	\$55.32
03/23/12	5578	0.00	29	570	19.66	\$1.70	\$49.30
02/23/12	5521	0.00	30	540	18.00	\$1.56	\$46.75
01/24/12	5467	0.00	33	660	20.00	\$1.76	\$58.00
12/22/11	5401	0.00	30	680	22.67	\$2.07	\$62.13
11/22/11	5333	0.00	29	550	18.97	\$1.73	\$50.24
10/24/11	5278	0.00	33	760	23.03	\$2.08	\$68.64
09/21/11	5202	0.00	30	1,060	35.33	\$3.97	\$119.16
08/22/11	5096	0.00	32	1,250	39.06	\$4.61	\$147.54
07/21/11	4971	0.00	29	1,100	37.93	\$4.41	\$127.99
06/22/11	4861	0.00	33	1,030	31.21	\$3.03	\$100.12
05/20/11	4758	0.00	29	650	22.41	\$1.98	\$57.45
04/21/11	4693	0.00	29	750	25.86	\$2.27	\$65.87
03/23/11	4618	0.00	29	500	17.24	\$1.52	\$44.07

Usage Details Close

SA Statement History : SACT : 028-3479-68

Service Account Num: 028-3479-68

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/23/11	4618	0.00	29	500	17.24	\$1.52	\$44.07
02/22/11	4568	0.00	32	670	20.94	\$1.85	\$59.27
01/21/11	4501	0.00	30	590	19.67	\$1.75	\$52.48

Mary Enos, P.O. Box 588 Lake Hughes, CA (service APN 261242028)

SA Statement History : SACT : 022-0717-45

Service Account Num: 022-0717-45

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/20/12	0	0.00	30	1,334	44.47	\$10.83	\$324.82
11/20/12	0	0.00	29	1,295	44.66	\$10.89	\$315.84
10/22/12	0	0.00	33	1,281	38.82	\$8.37	\$276.20
09/19/12	0	0.00	30	1,267	42.23	\$8.22	\$246.56
08/20/12	05532	0.00	31	1,579	50.94	\$10.85	\$336.47
07/20/12	03953	0.00	30	1,148	38.27	\$7.23	\$216.82
06/20/12	02805	0.00	30	1,115	37.17	\$7.38	\$221.38
05/21/12	01690	0.00	31	1,061	34.23	\$7.27	\$225.34
04/20/12	39746	0.00	29	806	27.79	\$5.43	\$157.60
03/22/12	39569	0.00	29	943	32.52	\$6.75	\$195.83
02/22/12	38626	0.00	30	1,026	34.20	\$7.27	\$218.04
01/23/12	37600	0.00	33	1,237	37.48	\$8.26	\$272.53
12/21/11	36363	0.00	30	974	32.47	\$6.70	\$200.85
11/21/11	35389	0.00	31	1,237	39.90	\$8.95	\$277.46
10/21/11	34152	0.00	31	1,334	43.03	\$9.30	\$288.20
09/20/11	32818	0.00	32	1,570	49.06	\$9.83	\$314.53
08/19/11	31248	0.00	30	1,528	50.93	\$10.38	\$311.35
07/20/11	29720	0.00	29	1,432	49.38	\$9.91	\$287.31
06/21/11	28288	0.00	33	1,226	37.15	\$7.21	\$238.00
05/19/11	27062	0.00	29	908	31.31	\$6.42	\$186.15
04/20/11	26154	0.00	29	902	31.10	\$6.35	\$184.12
03/22/11	25252	0.00	32	1,041	32.53	\$6.76	\$216.31

Usage Details Close

SA Statement History : SACT : 022-0717-45

Service Account Num: 022-0717-45

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/22/11	25252	0.00	32	1,041	32.53	\$6.76	\$216.31
02/18/11	24211	0.00	29	883	30.45	\$6.16	\$178.62
01/20/11	23328	0.00	30	1,339	44.63	\$10.50	\$314.95

Ernest & Ernestina Perkins, 23400 W. Ave D15, Lancaster, CA

SA Statement History : SACT : 000-8639-70

Service Account Num: 000-8639-70

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	2.00	30	193	6.43	\$1.60	\$50.29
12/04/12	0	3.00	33	209	6.33	\$1.58	\$54.62
11/01/12	0	2.00	31	165	5.32	\$1.45	\$47.01
10/01/12	0	1.00	32	155	4.84	\$1.65	\$55.32
08/30/12	00782	0.00	29	135	4.66	\$1.62	\$49.06
08/01/12	00647	0.00	30	120	4.00	\$1.49	\$46.73
07/02/12	00527	0.00	31	150	4.84	\$1.65	\$53.44
06/01/12	00377	0.00	30	158	5.27	\$1.41	\$44.30
05/02/12	00219	0.00	28	162	5.79	\$1.48	\$43.30
04/04/12	37631	0.00	30	137	4.57	\$1.32	\$41.45
03/05/12	37551	0.00	33	155	4.70	\$1.34	\$46.19
02/01/12	37396	0.00	29	148	5.10	\$1.39	\$42.17
01/03/12	37248	0.00	31	175	5.65	\$1.47	\$47.73
12/03/11	37073	0.00	31	163	5.26	\$1.42	\$46.07
11/02/11	36910	0.00	33	149	4.52	\$1.33	\$46.02
09/30/11	36761	0.00	31	129	4.16	\$1.45	\$47.07
08/30/11	36632	0.00	29	108	3.72	\$1.38	\$41.87
08/01/11	36524	0.00	32	114	3.56	\$1.35	\$45.19
06/30/11	36410	0.00	29	102	3.52	\$1.33	\$40.38
06/01/11	36308	0.00	29	114	3.93	\$1.25	\$38.03
05/03/11	36194	0.00	29	120	4.14	\$1.28	\$38.84
04/04/11	36074	0.00	31	134	4.32	\$1.31	\$42.29

Usage Details Close

SA Statement History : SACT : 000-8639-70

Service Account Num: 000-8639-70

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/04/11	36074	0.00	31	134	4.32	\$1.31	\$42.29
03/04/11	35940	0.00	30	138	4.60	\$1.34	\$42.14
02/02/11	35802	0.00	29	149	5.14	\$1.42	\$42.91
01/04/11	35653	0.00	32	131	4.09	\$1.27	\$42.54

Andrew & Julia Sterling, 18333 Lancaster Road, Lancaster, CA

Domestic Account 1

SA Statement History : SACT : 018-3922-27

Service Account Num: 018-3922-27

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	30	10	.33	\$.07	\$2.24
12/04/12	0	0.00	33	21	.64	\$.10	\$3.51
11/01/12	0	0.00	31	31	1.00	\$.15	\$4.76
10/01/12	0	0.00	32	49	1.53	\$.21	\$7.13
08/30/12	00842	0.00	29	54	1.86	\$.26	\$7.73
08/01/12	00788	0.00	30	47	1.57	\$.22	\$6.89
07/02/12	00741	0.00	31	44	1.42	\$.20	\$6.52
06/01/12	00697	0.00	31	35	1.13	\$.16	\$5.33
05/01/12	00662	0.00	28	29	1.04	\$.15	\$4.48
04/03/12	00633	0.00	29	453	15.62	\$2.30	\$69.56
03/05/12	10423	0.00	33	237	7.18	\$.93	\$32.04
02/01/12	10366	0.00	29	91	3.14	\$.42	\$12.68
01/03/12	10275	0.00	31	157	5.06	\$.68	\$21.97
12/03/11	10118	0.00	31	11	.35	\$.07	\$2.38
11/02/11	10107	0.00	33	2	.06	\$.05	\$1.69
09/30/11	10105	0.00	31		.00	\$.04	\$1.42
08/30/11	10105	0.00	29		.00	\$.04	\$1.34
08/01/11	10105	0.00	32	1	.03	\$.05	\$1.57
06/30/11	10104	0.00	29		.00	\$.04	\$1.34
06/01/11	10104	0.00	29		.00	\$.04	\$1.34
05/03/11	10104	0.00	32		.00	\$.04	\$1.47
04/01/11	10104	0.00	29		.00	\$.04	\$1.34

Usage Details Close

SA Statement History : SACT : 018-3922-27

Service Account Num: 018-3922-27

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	10104	0.00	29		.00	\$.04	\$1.34
03/03/11	10104	0.00	30		.00	\$.04	\$1.38
02/01/11	10104	0.00	28		.00	\$.04	\$1.29
01/04/11	10104	0.00	32	20	.63	\$.10	\$3.38

Andrew & Julia Sterling, 18333 Lancaster Road, Lancaster, CA

Domestic Account 2

SA Statement History : SACT : 017-8575-54

Service Account Num: 017-8575-54

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	30	1,677	55.90	\$7.20	\$225.75
12/04/12	0	0.00	33	2,184	66.18	\$9.66	\$333.12
11/01/12	0	0.00	31	2,248	72.52	\$11.22	\$363.40
10/01/12	0	0.00	32	2,036	63.63	\$10.32	\$345.04
08/30/12	03155	0.00	29	2,529	87.21	\$17.34	\$525.34
08/01/12	3539	0.00	30	2,096	69.87	\$12.24	\$383.81
07/02/12	3392	0.00	31	1,800	58.06	\$9.03	\$292.45
06/01/12	3212	0.00	31	1,580	50.97	\$6.34	\$205.37
05/01/12	3054	0.00	28	1,170	41.79	\$5.08	\$148.73
04/03/12	2937	0.00	29	980	33.79	\$4.12	\$124.71
03/05/12	2839	0.00	33	1,690	51.21	\$6.38	\$219.89
02/01/12	2670	0.00	29	1,400	48.28	\$5.94	\$179.88
01/03/12	2530	0.00	31	1,760	56.77	\$7.51	\$243.19
12/03/11	2354	0.00	31	1,420	45.81	\$5.74	\$185.86
11/02/11	2212	0.00	33	1,600	48.48	\$6.15	\$211.98
09/30/11	2052	0.00	31	1,360	43.87	\$5.50	\$178.28
08/30/11	1916	0.00	29	2,150	74.14	\$12.92	\$391.48
08/01/11	1701	0.00	32	2,340	73.13	\$12.64	\$422.49
06/30/11	1467	0.00	29	1,840	63.45	\$10.03	\$304.08
06/01/11	1283	0.00	29	1,330	45.86	\$5.56	\$168.33
05/03/11	1150	0.00	32	1,570	49.06	\$5.99	\$200.20
04/01/11	0993	0.00	29	1,290	44.48	\$5.36	\$162.47

Usage Details Close

SA Statement History : SACT : 017-8575-54

Service Account Num: 017-8575-54

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	0993	0.00	29	1,290	44.48	\$5.36	\$162.47
03/03/11	0864	0.00	30	1,460	48.67	\$5.96	\$186.93
02/01/11	0718	0.00	28	1,370	48.93	\$6.00	\$175.57
01/04/11	0581	0.00	32	1,350	42.19	\$5.12	\$171.09

Andrew & Julia Sterling, 18333 Lancaster Road, Lancaster, CA

OL-1A Account

SA Statement History : SACT : 017-8766-23

Service Account Num: 017-8766-23

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/01/13	300000000000	0.00	31		.00	\$.31	\$9.65
12/01/12	300000000000	0.00	30		.00	\$.32	\$9.65
11/01/12	300000000000	0.00	31		.00	\$.31	\$9.65
10/01/12	300000000000	0.00	30		.00	\$.32	\$9.63
09/01/12	300000000000	0.00	31		.00	\$.31	\$9.63
08/01/12	300000000000	0.00	31		.00	\$.31	\$9.70
07/01/12	300000000000	0.00	30		.00	\$.32	\$9.70
06/01/12	300000000000	0.00	31		.00	\$.31	\$9.65
05/01/12	300000000000	0.00	30		.00	\$.32	\$9.65
04/01/12	300000000000	0.00	31		.00	\$.31	\$9.65
03/01/12	300000000000	0.00	29		.00	\$.33	\$9.65
02/01/12	300000000000	0.00	31		.00	\$.31	\$9.65
01/01/12	300000000000	0.00	31		.00	\$.32	\$9.87
12/01/11	300000000000	0.00	30		.00	\$.33	\$9.87
11/01/11	300000000000	0.00	31		.00	\$.32	\$9.87
10/01/11	300000000000	0.00	30		.00	\$.33	\$9.86
09/01/11	300000000000	0.00	31		.00	\$.32	\$9.86
08/01/11	300000000000	0.00	31		.00	\$.32	\$9.86
07/01/11	300000000000	0.00	30		.00	\$.33	\$9.86
06/01/11	300000000000	0.00	31		.00	\$.32	\$10.05
05/01/11	300000000000	0.00	30		.00	\$.34	\$10.05
04/01/11	300000000000	0.00	31		.00	\$.32	\$10.05

Usage Details Close

SA Statement History : SACT : 017-8766-23

Service Account Num: 017-8766-23

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	300000000000	0.00	31		.00	\$.32	\$10.05
03/01/11	300000000000	0.00	28		.00	\$.36	\$10.04
02/01/11	300000000000	0.00	31		.00	\$.32	\$10.06
01/01/11	300000000000	0.00	31		.00	\$.32	\$10.02



Javier & Sarah Pomposo, 18325 West Ave B, Lancaster, CA

Declined to Participate

Gordon Wayne Hill, 22853 West Ave D 11, Lancaster, CA

SA Statement History : SACT : 014-0584-85

Service Account Num: 014-0584-85

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	30	790	26.33	\$5.23	\$163.90
12/04/12	0	0.00	33	767	23.24	\$4.30	\$148.24
11/01/12	0	0.00	31	875	28.23	\$5.72	\$185.42
10/01/12	0	0.00	32	1,468	45.88	\$9.17	\$306.70
08/30/12	05280	0.00	29	1,446	49.86	\$10.53	\$319.01
08/01/12	03834	0.00	30	1,462	48.73	\$10.15	\$318.09
07/02/12	02372	0.00	31	1,347	43.45	\$8.67	\$280.74
06/01/12	01025	0.00	30	656	21.87	\$3.81	\$119.54
05/02/12	78611	0.00	29	651	22.45	\$3.97	\$120.44
04/03/12	78329	0.00	29	628	21.66	\$3.76	\$113.86
03/05/12	77701	0.00	33	747	22.64	\$4.02	\$138.67
02/01/12	76954	0.00	29	663	22.86	\$4.09	\$123.86
01/03/12	76291	0.00	31	1,076	34.71	\$7.38	\$238.93
12/03/11	75215	0.00	31	1,027	33.13	\$6.89	\$223.09
11/02/11	74188	0.00	33	1,163	35.24	\$7.50	\$258.65
09/30/11	73025	0.00	31	1,093	35.26	\$6.14	\$198.77
08/30/11	71932	0.00	29	1,001	34.52	\$5.96	\$180.48
08/01/11	70931	0.00	32	1,755	54.84	\$11.55	\$386.21
06/30/11	69176	0.00	29	1,088	37.52	\$6.69	\$202.64
06/01/11	68088	0.00	29	1,235	42.59	\$9.91	\$300.41
05/03/11	66853	0.00	29	795	27.41	\$5.33	\$161.60
04/04/11	66058	0.00	31	808	26.06	\$4.94	\$160.16

Usage Details Close

SA Statement History : SACT : 014-0584-85

Service Account Num: 014-0584-85

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/04/11	66058	0.00	31	808	26.06	\$4.94	\$160.16
03/04/11	65250	0.00	30	886	29.53	\$5.91	\$185.35
02/02/11	64364	0.00	29	829	28.59	\$5.65	\$171.24
01/04/11	63535	0.00	32	1,009	31.53	\$6.41	\$214.49

Wanda Leon, 5501 E. Avenue D8, Lancaster, CA

SA Statement History : SACT : 022-8405-62

Service Account Num: 022-8405-62

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/14/12	04269	0.00	30	853	28.43	\$4.50	\$141.02
11/14/12	03416	0.00	30	853	28.43	\$4.50	\$141.02
10/15/12	02563	0.00	32	911	28.47	\$5.38	\$180.01
09/13/12	01652	0.00	30	853	28.43	\$6.06	\$190.07
08/14/12	00799	0.00	32	1,841	57.53	\$11.58	\$387.22
07/13/12	98958	0.00	29	205	7.07	\$2.07	\$62.80
06/14/12	98753	0.00	31	335	10.81	\$2.40	\$77.76
05/14/12	98418	0.00	31	566	18.26	\$3.09	\$100.06
04/13/12	97852	0.00	29	376	12.97	\$2.41	\$72.94
03/15/12	97476	0.00	29	1,609	55.48	\$7.89	\$239.23
02/15/12	95867	0.00	30	1,050	35.00	\$5.25	\$164.59
01/16/12	94817	0.00	32	1,231	38.47	\$5.74	\$192.04
12/15/11	93586	0.00	29	973	33.55	\$5.14	\$155.67
11/16/11	92613	0.00	33	662	20.06	\$3.37	\$116.09
10/14/11	91951	0.00	30	563	18.77	\$3.67	\$115.08
09/14/11	91388	0.00	33	847	25.67	\$5.21	\$179.58
08/12/11	90541	0.00	29	610	21.03	\$4.38	\$132.71
07/14/11	89931	0.00	30	101	3.37	\$1.31	\$41.21
06/14/11	89830	0.00	32	107	3.34	\$1.22	\$40.88
05/13/11	89723	0.00	29	844	29.10	\$4.63	\$140.43
04/14/11	88879	0.00	29	727	25.07	\$4.08	\$123.57
03/16/11	88152	0.00	30	807	26.90	\$4.33	\$135.78

Usage Details Close

SA Statement History : SACT : 022-8405-62

Service Account Num: 022-8405-62

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/16/11	88152	0.00	30	807	26.90	\$4.33	\$135.78
02/14/11	87345	0.00	31	1,085	35.00	\$5.41	\$175.31
01/14/11	86260	0.00	30	965	32.17	\$5.02	\$157.25

Roger Damron, 22929 West Avenue D, Neenach, CA 93636

SA Statement History : SACT : 006-2187-70

Service Account Num: 006-2187-70

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/04/13	0	0.00	30	1,365	45.50	\$11.30	\$354.29
12/05/12	0	0.00	33	1,227	37.18	\$8.48	\$292.47
11/02/12	0	0.00	31	1,066	34.39	\$7.58	\$245.50
10/02/12	0	0.00	32	1,109	34.66	\$6.11	\$204.14
08/31/12	10352	0.00	29	1,170	40.34	\$7.82	\$236.85
08/02/12	09182	0.00	30	1,208	40.27	\$7.78	\$244.01
07/03/12	07974	0.00	29	1,113	38.38	\$7.26	\$219.99
06/04/12	06861	0.00	31	1,103	35.58	\$7.58	\$245.42
05/04/12	05758	0.00	30	1,118	37.27	\$8.21	\$257.47
04/04/12	04640	0.00	29	1,201	41.41	\$9.50	\$287.74
03/06/12	03439	0.00	33	1,609	48.76	\$11.75	\$405.30
02/02/12	01830	0.00	28	1,140	40.71	\$9.27	\$271.31
01/05/12	9340	0.00	31	1,530	49.35	\$11.85	\$383.78
12/05/11	9256	0.00	33	1,490	45.15	\$10.55	\$363.80
11/02/11	9107	0.00	30	1,080	36.00	\$7.78	\$243.73
10/03/11	8999	0.00	33	1,170	35.45	\$6.27	\$216.33
08/31/11	8882	0.00	29	1,060	36.55	\$6.49	\$196.75
08/02/11	8776	0.00	32	1,280	40.00	\$7.40	\$247.36
07/01/11	8648	0.00	29	1,000	34.48	\$5.89	\$178.49
06/02/11	8548	0.00	29	1,100	37.93	\$8.40	\$254.46
05/04/11	8438	0.00	30	2,240	74.67	\$19.89	\$623.60
04/04/11	8214	0.00	31	380	12.26	\$1.60	\$51.71

Usage Details Close

SA Statement History : SACT : 006-2187-70

Service Account Num: 006-2187-70

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/04/11	8214	0.00	31	380	12.26	\$1.60	\$51.71
03/04/11	8176	0.00	30	1,480	49.33	\$11.98	\$375.65
02/02/11	8028	0.00	28	1,400	50.00	\$12.19	\$356.67
01/05/11	7888	0.00	33	1,580	47.88	\$11.44	\$394.47



Donald & Beverly Bellanca, 5841 Cathy Ave, Rosamond, CA

Declined to Participate

Gary Garibay, 6612 East Avenue K, Lancaster, CA

SA Statement History : SACT : 022-1354-26

Service Account Num: 022-1354-26

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	15581	0.00	31	997	32.16	\$4.14	\$134.07
12/03/12	14584	0.00	32	802	25.06	\$3.16	\$105.74
11/01/12	13782	0.00	31	833	26.87	\$3.39	\$109.77
10/01/12	12949	0.00	32	1,162	36.31	\$5.93	\$198.42
08/30/12	11787	0.00	29	1,323	45.62	\$8.38	\$253.95
08/01/12	10464	0.00	30	1,208	40.27	\$6.90	\$216.37
07/02/12	09256	0.00	31	1,180	38.06	\$6.37	\$206.32
06/01/12	08076	0.00	31	849	27.39	\$3.49	\$112.96
05/01/12	07227	0.00	28	743	26.54	\$3.38	\$98.87
04/03/12	06484	0.00	32	1,091	34.09	\$4.47	\$149.40
03/02/12	05393	0.00	29	988	34.07	\$4.46	\$135.24
02/02/12	04405	0.00	30	885	29.50	\$3.75	\$117.67
01/03/12	03520	0.00	31	1,784	57.55	\$9.72	\$314.77
12/03/11	01736	0.00	31	953	30.74	\$4.05	\$131.15
11/02/11	00783	0.00	34	1,010	29.71	\$3.91	\$138.96
09/29/11	99773	0.00	29	1,553	53.55	\$10.13	\$306.96
08/31/11	98220	0.00	29	589	20.31	\$2.57	\$77.75
08/02/11	97631	0.00	33	1,218	36.91	\$5.87	\$202.53
06/30/11	96413	0.00	29	918	31.66	\$4.62	\$139.98
06/01/11	95495	0.00	30	761	25.37	\$3.22	\$100.87
05/02/11	94734	0.00	31	738	23.81	\$3.01	\$97.58
04/01/11	93996	0.00	29	690	23.79	\$3.01	\$91.09

Usage Details Close

SA Statement History : SACT : 022-1354-26

Service Account Num: 022-1354-26

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	93996	0.00	29	690	23.79	\$3.01	\$91.09
03/03/11	93306	0.00	29	1,050	36.21	\$4.73	\$143.19
02/02/11	92256	0.00	29	1,097	37.83	\$4.96	\$150.43
01/04/11	91159	0.00	33	1,230	37.27	\$4.88	\$168.12

Diane Catherine Klechefski, 8847 W. Rosamond Blvd, Rosamond, CA

Forthcoming

Olaf Landsgaard, P.O. Box 2567, Rosamond, CA

Account 1

SA Statement History : SACT : 037-6404-78

Service Account Num: 037-6404-78

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/16/13	43239	0.00	33	1,598	48.42	\$12.67	\$418.09
12/14/12	41641	0.00	29	1,120	38.62	\$8.85	\$256.57
11/15/12	40521	0.00	31	959	30.94	\$6.44	\$199.56
10/15/12	39562	0.00	32	1,483	46.34	\$11.08	\$354.64
09/13/12	38079	0.00	31	2,088	67.35	\$17.49	\$542.28
08/13/12	35991	0.00	31	2,199	70.94	\$18.57	\$575.68
07/13/12	33792	0.00	29	2,569	88.59	\$24.05	\$697.58
06/14/12	31223	0.00	30	912	30.40	\$6.05	\$181.56
05/15/12	30311	0.00	32	1,403	43.84	\$10.14	\$324.62
04/13/12	28908	0.00	29	870	30.00	\$5.97	\$173.20
03/15/12	28038	0.00	29	1,017	35.07	\$7.44	\$215.80
02/15/12	27021	0.00	29	147	5.07	\$6.7	\$19.39
01/17/12	26874	0.00	33	5	.15	\$0.7	\$2.38
12/15/11	26869	0.00	29	4	.14	\$0.7	\$2.06
11/16/11	26865	0.00	30	9	.30	\$0.8	\$2.52
10/17/11	26856	0.00	33	29	.88	\$1.4	\$4.68
09/14/11	26827	0.00	28	45	1.61	\$7.7	\$21.45

Usage Details

Close

Olaf Landsgaard, P.O. Box 2567, Rosamond, CA

Account 2

SA Statement History : SACT : 012-0173-43

Service Account Num: 012-0173-43

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/14/13	0	0.00	32	856	26.75	\$3.42	\$109.33
12/13/12	0	0.00	30	785	26.17	\$3.30	\$99.04
11/13/12	0	0.00	32	906	28.31	\$3.57	\$114.22
10/12/12	0	0.00	31	1,110	35.81	\$5.47	\$169.62
09/11/12	03732	0.00	32	1,336	41.75	\$7.30	\$233.61
08/10/12	02396	0.00	29	992	34.21	\$5.43	\$157.40
07/12/12	01404	0.00	30	951	31.70	\$4.83	\$144.77
06/12/12	73355	0.00	33	1,039	31.48	\$4.30	\$141.88
05/10/12	72769	0.00	29	833	28.72	\$3.66	\$106.01
04/11/12	71936	0.00	29	786	27.10	\$3.45	\$100.08
03/13/12	71150	0.00	29	860	29.66	\$3.78	\$109.54
02/13/12	70290	0.00	32	1,037	32.41	\$4.21	\$134.58
01/12/12	69253	0.00	29	858	29.59	\$3.83	\$111.18
12/14/11	68395	0.00	30	954	31.80	\$4.21	\$126.38
11/14/11	67441	0.00	33	1,021	30.94	\$4.08	\$134.80
10/12/11	66420	0.00	30	1,160	38.67	\$5.89	\$176.71
09/12/11	65260	0.00	33	1,453	44.03	\$7.64	\$252.10
08/10/11	63807	0.00	29	1,223	42.17	\$7.12	\$206.57
07/12/11	62584	0.00	29	1,110	38.28	\$6.17	\$179.01
06/13/11	61474	0.00	33	1,026	31.09	\$4.14	\$136.64
05/11/11	60448	0.00	29	805	27.76	\$3.52	\$102.10
04/12/11	59643	0.00	29	875	30.17	\$3.82	\$110.70

Usage Details Close

SA Statement History : SACT : 012-0173-43

Service Account Num: 012-0173-43

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/12/11	59643	0.00	29	875	30.17	\$3.82	\$110.70
03/14/11	58768	0.00	32	937	29.28	\$3.71	\$118.81
02/10/11	57831	0.00	29	792	27.31	\$3.47	\$100.66
01/12/11	57039	0.00	30	762	25.40	\$3.22	\$96.74

John & Lisa Gibbs, 18106 East Avenue O, Lancaster, CA

SA Statement History : SACT : 008-1792-17

Service Account Num: 008-1792-17

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
12/15/12	0	0.00	30	798	26.60	\$3.73	\$116.88
11/15/12	0	0.00	30	891	29.70	\$4.32	\$135.56
10/16/12	0	0.00	33	1,384	41.94	\$5.48	\$188.95
09/13/12	10255	0.00	30	1,591	53.03	\$6.59	\$206.66
08/14/12	08664	0.00	29	1,755	60.52	\$7.97	\$241.38
07/16/12	06909	0.00	32	1,649	51.53	\$6.29	\$210.15
06/14/12	05260	0.00	30	1,287	42.90	\$5.75	\$180.30
05/15/12	03973	0.00	29	1,108	38.21	\$5.71	\$173.05
04/16/12	02865	0.00	31	966	31.16	\$4.42	\$143.32
03/16/12	01899	0.00	30	884	29.47	\$4.12	\$129.14
02/15/12	01015	0.00	29	730	25.17	\$3.34	\$101.19
01/17/12	54007	0.00	33	773	23.42	\$3.04	\$104.98
12/15/11	53519	0.00	29	740	25.52	\$3.45	\$104.52
11/16/11	52779	0.00	33	991	30.03	\$4.26	\$146.96
10/14/11	51788	0.00	30	326	10.87	\$5.54	\$16.97
09/14/11	51462	0.00	33	2,616	79.27	\$10.85	\$374.13
08/12/11	48846	0.00	29	1,432	49.38	\$5.58	\$169.01
07/14/11	47414	0.00	30	1,332	44.40	\$4.71	\$147.54
06/14/11	46082	0.00	32	970	30.31	\$3.47	\$115.96
05/13/11	45112	0.00	28	813	29.04	\$4.13	\$120.85
04/15/11	44299	0.00	30	774	25.80	\$3.51	\$109.92
03/16/11	43525	0.00	29	838	28.90	\$4.09	\$124.06

Usage Details Close

SA Statement History : SACT : 008-1792-17

Service Account Num: 008-1792-17

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
03/16/11	43525	0.00	29	838	28.90	\$4.09	\$124.06
02/15/11	42687	0.00	32	588	18.38	\$2.14	\$71.67
01/14/11	42099	0.00	30	692	23.07	\$3.00	\$94.07

Rosemarie King, 13658 East Avenue K, Lancaster, CA

Account 1

SA Statement History : SACT : 003-9614-40

Service Account Num: 003-9614-40

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/11/13	0	0.00	30	131	4.37	\$.58	\$18.25
12/12/12	0	0.00	33	145	4.39	\$.58	\$19.95
11/09/12	0	0.00	29	127	4.38	\$.58	\$17.47
10/11/12	0	0.00	31	109	3.52	\$.47	\$15.18
09/10/12	00573	0.00	32	127	3.97	\$.53	\$17.56
08/09/12	00446	0.00	29	85	2.93	\$.40	\$12.07
07/11/12	00361	0.00	30	134	4.47	\$.59	\$18.59
06/11/12	00227	0.00	32	128	4.00	\$.53	\$17.87
05/10/12	4852	0.00	29	132	4.55	\$.60	\$18.30
04/11/12	4819	0.00	29	221	7.62	\$.99	\$30.02
03/13/12	4598	0.00	32	196	6.13	\$.80	\$26.84
02/10/12	4402	0.00	30	176	5.87	\$.77	\$24.13
01/11/12	4226	0.00	29	100	3.45	\$.47	\$14.33
12/13/11	4126	0.00	33	328	9.94	\$1.32	\$45.55
11/10/11	3798	0.00	30	194	6.47	\$.87	\$27.26
10/11/11	3604	0.00	32	186	5.81	\$.76	\$25.40
09/09/11	3418	0.00	31	145	4.68	\$.61	\$19.91
08/09/11	3273	0.00	29	59	2.03	\$.28	\$8.56
07/11/11	3214	0.00	32	267	8.34	\$1.07	\$35.63
06/09/11	2947	0.00	30	192	6.40	\$.83	\$25.89
05/10/11	2755	0.00	29	185	6.38	\$.83	\$25.16
04/11/11	2570	0.00	31	236	7.61	\$.98	\$31.74

Usage Details Close

SA Statement History : SACT : 003-9614-40

Service Account Num: 003-9614-40

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/11/11	2570	0.00	31	236	7.61	\$.98	\$31.74
03/11/11	2334	0.00	29	178	6.14	\$.80	\$24.31
02/10/11	2156	0.00	30	190	6.33	\$.83	\$25.94
01/11/11	1966	0.00	29	227	7.83	\$1.01	\$30.71

Rosemarie King, 13658 East Avenue K, Lancaster, CA

Account 2

SA Statement History : SACT : 003-9614-43

Service Account Num: 003-9614-43

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/11/13	0	0.00	30	797	26.57	\$5.45	\$170.97
12/12/12	0	0.00	33	713	21.61	\$3.83	\$132.09
11/09/12	0	0.00	29	499	17.21	\$2.71	\$82.20
10/11/12	0	0.00	31	598	19.29	\$2.69	\$87.08
09/10/12	02953	0.00	32	719	22.47	\$3.17	\$105.92
08/09/12	02234	0.00	29	629	21.69	\$2.99	\$90.65
07/11/12	01605	0.00	30	626	20.87	\$2.80	\$87.85
06/11/12	00979	0.00	32	579	18.09	\$2.73	\$91.21
05/10/12	3261	0.00	29	409	14.10	\$1.94	\$58.82
04/11/12	3252	0.00	29	1,085	37.41	\$8.26	\$250.38
03/13/12	2167	0.00	32	750	23.44	\$4.24	\$141.84
02/10/12	1417	0.00	30	840	28.00	\$5.49	\$172.08
01/11/12	0577	0.00	29	842	29.03	\$5.76	\$174.47
12/13/11	9735	0.00	33	1,111	33.67	\$7.06	\$243.37
11/10/11	8624	0.00	30	530	17.67	\$2.81	\$87.99
10/11/11	8094	0.00	32	598	18.69	\$2.60	\$87.08
09/09/11	7496	0.00	31	613	19.77	\$2.59	\$83.79
08/09/11	6883	0.00	29	596	20.55	\$2.69	\$81.48
07/11/11	6287	0.00	32	608	19.00	\$2.46	\$82.12
06/09/11	5679	0.00	30	475	15.83	\$2.22	\$69.67
05/10/11	5204	0.00	29	469	16.17	\$2.41	\$72.91
04/11/11	4735	0.00	31	653	21.06	\$3.57	\$115.55

[Usage Details](#) [Close](#)

SA Statement History : SACT : 003-9614-43

Service Account Num: 003-9614-43

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/11/11	4735	0.00	31	653	21.06	\$3.57	\$115.55
03/11/11	4082	0.00	29	680	23.45	\$4.24	\$128.42
02/10/11	3402	0.00	30	715	23.83	\$4.34	\$136.05
01/11/11	2687	0.00	29	830	28.62	\$5.62	\$170.45

James Deckert, P.O. Box 1261, Rosamond, CA (APN 252231097)

SA Statement History : SACT : 028-0801-89

Service Account Num: 028-0801-89

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/16/13	0	0.00	32	1,646	51.44	\$13.62	\$435.87
12/15/12	0	0.00	30	964	32.13	\$6.86	\$205.85
11/15/12	0	0.00	30	1,127	37.57	\$8.61	\$258.25
10/16/12	0	0.00	33	1,540	46.67	\$10.40	\$343.25
09/13/12	08296	0.00	30	2,052	68.40	\$16.35	\$490.53
08/14/12	06244	0.00	29	1,653	57.00	\$12.75	\$369.66
07/16/12	04591	0.00	32	1,702	53.19	\$11.54	\$369.21
06/14/12	02889	0.00	30	1,327	44.23	\$9.72	\$291.70
05/15/12	01562	0.00	29	1,100	37.93	\$8.42	\$244.23
04/16/12	70344	0.00	32	1,148	35.88	\$7.78	\$249.09
03/15/12	69658	0.00	29	1,013	34.93	\$7.50	\$217.40
02/15/12	68645	0.00	29	1,241	42.79	\$9.92	\$287.70
01/17/12	67404	0.00	33	1,616	48.97	\$11.77	\$388.29
12/15/11	65788	0.00	29	1,113	38.38	\$8.50	\$246.49
11/16/11	64675	0.00	30	1,032	34.40	\$7.28	\$218.54
10/17/11	63643	0.00	34	1,502	44.18	\$9.31	\$316.46
09/13/11	62141	0.00	32	1,902	59.44	\$12.94	\$414.22
08/12/11	60239	0.00	29	1,616	55.72	\$11.80	\$342.20
07/14/11	58623	0.00	30	1,624	54.13	\$11.33	\$339.76
06/14/11	56999	0.00	32	1,030	32.19	\$6.10	\$195.05
05/13/11	55969	0.00	29	904	31.17	\$6.38	\$185.15
04/14/11	55065	0.00	29	1,067	36.79	\$8.09	\$234.56

Usage Details Close

SA Statement History : SACT : 028-0801-89

Service Account Num: 028-0801-89

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/14/11	55065	0.00	29	1,067	36.79	\$8.09	\$234.56
03/16/11	53998	0.00	30	1,055	35.17	\$7.59	\$227.68
02/14/11	52943	0.00	31	924	29.81	\$5.98	\$185.40
01/14/11	52019	0.00	30	1,267	42.23	\$9.73	\$291.91

Barbara & Edwin Rogers, 19620 West Avenue A, Lancaster, CA

SA Statement History : SACT : 014-7941-57

Service Account Num: 014-7941-57

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/04/13	0	0.00	30	375	12.50	\$.04	\$1.38
12/05/12	0	0.00	33	732	22.18	\$.03	\$3.11
11/02/12	0	0.00	31	572	18.45	\$.04	\$1.42
10/02/12	0	0.00	32	800	25.00	\$.03	\$1.46
08/31/12	0	0.00	29	674	23.24	\$.03	\$1.43
08/02/12	0	0.00	30	1,043	34.77	\$.03	\$4.71
07/03/12	76518	0.00	29	612	21.10	\$.04	\$1.34
07/03/12		0.00	29		.00	\$.00	\$247.84
06/04/12	76614	0.00	32		.00	\$.04	\$1.47
05/03/12	77257	0.00	29		.00	\$.04	\$1.34
04/04/12	77781	0.00	29		.00	\$.04	\$1.34
03/06/12	78003	0.00	33		.00	\$.04	\$1.52
02/02/12	78277	0.00	28		.00	\$.04	\$1.29
01/05/12	78342	0.00	31	923	29.77	\$.03	\$6.35
12/05/11	77419	0.00	33	688	20.85	\$.03	\$4.97
11/02/11	76731	0.00	30	662	22.07	\$.03	\$4.74
10/03/11	76069	0.00	33	901	27.30	\$.03	\$4.29
08/31/11	75168	0.00	29	676	23.31	\$.03	\$2.78
08/02/11	74492	0.00	32	841	26.28	\$.03	\$3.70
07/01/11	73651	0.00	29		.00	\$.04	\$1.34
07/01/11		0.00	29		.00	\$.00	\$.00
06/02/11	73776	0.00	29		.00	\$.04	\$1.34

Usage Details Close

SA Statement History : SACT : 014-7941-57

Service Account Num: 014-7941-57

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
06/02/11	73776	0.00	29		.00	\$.04	\$1.34
05/04/11	74745	0.00	30		.00	\$.04	\$1.38
04/04/11	75754	0.00	31		.00	\$.04	\$1.42
03/04/11	76096	0.00	30		.00	\$.04	\$1.38
02/02/11	76328	0.00	28	333	11.89	\$.03	\$2.63
01/05/11	75995	0.00	33		.00	\$.04	\$1.52

Robert & Carol Morris, 2513 100th Street West #3, Rosamond, CA

SA Statement History : SACT : 007-0751-51

Service Account Num: 007-0751-51

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/20/12	0	0.00	30	490	16.33	\$2.49	\$74.76
11/20/12	0	0.00	29	436	15.03	\$2.17	\$62.83
10/22/12	0	0.00	33	547	16.58	\$2.36	\$77.97
09/19/12	0	0.00	30	774	25.80	\$3.96	\$118.69
08/20/12	03803	0.00	31	1,342	43.29	\$8.63	\$267.59
07/20/12	02461	0.00	30	854	28.47	\$4.64	\$139.18
06/20/12	01607	0.00	30	669	22.30	\$3.43	\$102.87
05/21/12	00938	0.00	31	576	18.58	\$3.00	\$93.07
04/20/12	24334	0.00	29	469	16.17	\$2.43	\$70.59
03/22/12	24227	0.00	29	446	15.38	\$2.25	\$65.12
02/22/12	23781	0.00	30	468	15.60	\$2.30	\$68.88
01/23/12	23313	0.00	33	471	14.27	\$1.99	\$65.63
12/21/11	22842	0.00	30	435	14.50	\$2.06	\$61.89
11/21/11	22407	0.00	31	480	15.48	\$2.29	\$70.91
10/21/11	21927	0.00	31	599	19.32	\$2.95	\$91.31
09/20/11	21328	0.00	32	911	28.47	\$4.49	\$143.53
08/19/11	20417	0.00	30	912	30.40	\$4.92	\$147.62
07/20/11	19505	0.00	29	496	17.10	\$2.18	\$63.31
06/21/11	19009	0.00	33	495	15.00	\$1.97	\$64.92
05/19/11	18514	0.00	29	352	12.14	\$1.59	\$46.04
04/20/11	18162	0.00	29	392	13.52	\$1.78	\$51.68
03/22/11	17770	0.00	32	458	14.31	\$1.95	\$62.35

Usage Details Close

SA Statement History : SACT : 007-0751-51

Service Account Num: 007-0751-51

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/22/11	17770	0.00	32	458	14.31	\$1.95	\$62.35
02/18/11	17312	0.00	29	407	14.03	\$1.89	\$54.80
01/20/11	16905	0.00	30	423	14.10	\$1.91	\$57.25

Thomas Houchen, 19800 Gaskell Road, Rosamond, CA

SA Statement History : SACT : 035-4405-50

Service Account Num: 035-4405-50

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
12/20/12	0	0.00	30	6	.20	\$.08	\$2.25
11/20/12	0	0.00	29	6	.21	\$.08	\$2.19
10/22/12	0	0.00	33	7	.21	\$.08	\$2.52
09/19/12	0	0.00	30	6	.20	\$.08	\$2.25
08/20/12	00026	0.00	31	6	.19	\$.07	\$2.31
07/20/12	00020	0.00	30	5	.17	\$.07	\$2.19
06/20/12	00015	0.00	30	6	.20	\$.08	\$2.26
05/21/12	00009	0.00	31	6	.19	\$.07	\$2.31
04/20/12	04008	0.00	29	3	.10	\$.07	\$1.96
03/22/12	04008	0.00	29		.00	\$.06	\$1.71
02/22/12	04008	0.00	30		.00	\$.06	\$1.77

SA Statement History : SACT : 035-4405-50

Service Account Num: 035-4405-50

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
02/22/12	04008	0.00	30		.00	\$.06	\$1.77
01/23/12	04008	0.00	33		.00	\$.06	\$1.95
12/21/11	04008	0.00	30		.00	\$.06	\$1.77
11/21/11	04008	0.00	31		.00	\$.06	\$1.83
10/21/11	04008	0.00	31		.00	\$.06	\$1.83
09/20/11	04008	0.00	32		.00	\$.06	\$1.89
08/19/11	04008	0.00	30		.00	\$.06	\$1.77
07/20/11	04008	0.00	29	3	.10	\$.07	\$1.93
06/21/11	04005	0.00	33		.00	\$.06	\$1.95
05/19/11	04005	0.00	29		.00	\$.06	\$1.71
04/20/11	04005	0.00	29		.00	\$.06	\$1.71
03/22/11	04005	0.00	32		.00	\$.06	\$1.89
02/18/11	04005	0.00	29		.00	\$.06	\$1.71
01/20/11	04005	0.00	30	1	.03	\$.06	\$1.88

Earl David Whiteside, 45408 160th Street West, Lancaster, CA

Account 1

SA Statement History : SACT : 003-1640-34

Service Account Num: 003-1640-34

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	12042	0.00	31	1,152	37.16	\$5.77	\$186.97
12/03/12	10890	0.00	32	1,116	34.88	\$5.32	\$177.98
11/01/12	09774	0.00	31	1,189	38.35	\$5.99	\$193.99
10/01/12	08585	0.00	32	1,199	37.47	\$5.00	\$167.09
08/30/12	07386	0.00	30	1,104	36.80	\$4.87	\$152.73
07/31/12	06282	0.00	29	1,028	35.45	\$4.61	\$139.63
07/02/12	05254	0.00	31	1,364	44.00	\$6.19	\$200.56
06/01/12	03890	0.00	31	1,076	34.71	\$5.08	\$164.42
05/01/12	02814	0.00	28	877	31.32	\$4.46	\$130.53
04/03/12	01937	0.00	32	1,042	32.56	\$4.69	\$156.75
03/02/12	42396	0.00	30	1,161	38.70	\$8.66	\$271.33
02/01/12	42130	0.00	29	1,130	38.97	\$8.74	\$264.87
01/03/12	41000	0.00	31	1,265	40.81	\$9.24	\$299.16
12/03/11	39735	0.00	32	1,116	34.88	\$7.42	\$248.26
11/01/11	38619	0.00	32	1,092	34.13	\$7.15	\$239.22
09/30/11	37527	0.00	31	1,162	37.48	\$6.72	\$217.84
08/30/11	36365	0.00	29	1,067	36.79	\$6.56	\$198.72
08/01/11	35298	0.00	32	1,135	35.47	\$6.20	\$207.24
06/30/11	34163	0.00	29	997	34.38	\$5.86	\$177.64
06/01/11	33166	0.00	29	1,007	34.72	\$7.46	\$226.20
05/03/11	32159	0.00	32	1,068	33.38	\$7.03	\$235.14
04/01/11	31091	0.00	29	1,085	37.41	\$8.28	\$250.94

Usage Details Close

SA Statement History : SACT : 003-1640-34

Service Account Num: 003-1640-34

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	31091	0.00	29	1,085	37.41	\$8.28	\$250.94
03/03/11	30006	0.00	30	1,002	33.40	\$7.03	\$220.47
02/01/11	29004	0.00	28	1,313	46.89	\$11.22	\$328.31
01/04/11	27691	0.00	33	1,042	31.58	\$6.42	\$221.53

Earl David Whiteside, 45408 160th Street West, Lancaster, CA

Account 1

SA Statement History : SACT : 001-0916-90

Service Account Num: 001-0916-90

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	04662	0.00	31	206	6.65	\$.86	\$27.91
12/03/12	04456	0.00	32	339	10.59	\$1.35	\$45.26
11/01/12	04117	0.00	31	582	18.77	\$3.10	\$100.47
10/01/12	03535	0.00	32	515	16.09	\$2.04	\$68.26
08/30/12	03020	0.00	30	483	16.10	\$2.04	\$64.02
07/31/12	02537	0.00	29	467	16.10	\$2.06	\$62.51
07/02/12	02070	0.00	31	361	11.65	\$1.50	\$48.56
06/01/12	01709	0.00	31	329	10.61	\$1.37	\$44.35
05/01/12	01380	0.00	28	270	9.64	\$1.25	\$36.47
04/03/12	01110	0.00	32	619	19.34	\$3.19	\$106.57
03/02/12	20260	0.00	30	628	20.93	\$3.57	\$111.82
02/01/12	20123	0.00	29	686	23.66	\$4.30	\$130.43
01/03/12	19437	0.00	31	664	21.42	\$3.69	\$119.48
12/03/11	18773	0.00	32	701	21.91	\$3.82	\$127.79
11/01/11	18072	0.00	32	916	28.63	\$5.60	\$187.18
09/30/11	17156	0.00	31	783	25.26	\$3.74	\$121.05
08/30/11	16373	0.00	29	589	20.31	\$2.66	\$80.69
08/01/11	15784	0.00	32	563	17.59	\$2.26	\$75.49
06/30/11	15221	0.00	29	417	14.38	\$1.80	\$54.57
06/01/11	14804	0.00	29	337	11.62	\$1.51	\$45.76
05/03/11	14467	0.00	32	456	14.25	\$1.93	\$64.69
04/01/11	14011	0.00	29	439	15.14	\$2.15	\$65.03

Usage Details Close

SA Statement History : SACT : 001-0916-90

Service Account Num: 001-0916-90

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	14011	0.00	29	439	15.14	\$2.15	\$65.03
03/03/11	13572	0.00	30	411	13.70	\$1.82	\$56.95
02/01/11	13161	0.00	28	624	22.29	\$3.91	\$114.47
01/04/11	12537	0.00	33	350	10.61	\$1.36	\$47.06

Catherine & Mario Gutierrez, 2113 60th Street West, Rosamond, CA

SA Statement History : SACT : 000-2100-36

Service Account Num: 000-2100-36

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
12/24/12	0	0.00	28	728	26.00	\$3.28	\$91.84
11/26/12	0	0.00	33	715	21.67	\$2.74	\$90.37
10/24/12	0	0.00	33	771	23.36	\$3.38	\$111.66
09/21/12	0	0.00	30	966	32.20	\$5.91	\$177.20
08/22/12	04152	0.00	29	1,230	42.41	\$8.77	\$254.37
07/24/12	02922	0.00	32	1,079	33.72	\$6.35	\$203.10
06/22/12	01843	0.00	30	696	23.20	\$3.42	\$102.65
05/23/12	01147	0.00	29	601	20.72	\$2.65	\$76.72
04/24/12	07851	0.00	29	600	20.69	\$2.64	\$76.59
03/26/12	07797	0.00	31	866	27.94	\$3.56	\$110.24
02/24/12	06931	0.00	30	689	22.97	\$2.93	\$87.85
01/25/12	06242	0.00	33	828	25.09	\$3.22	\$106.30
12/23/11	05414	0.00	30	450	15.00	\$1.98	\$59.36
11/23/11	04964	0.00	29	931	32.10	\$4.28	\$124.14
10/25/11	04033	0.00	33	906	27.45	\$3.83	\$126.45
09/22/11	03127	0.00	31	895	28.87	\$4.82	\$149.47
08/22/11	02232	0.00	28	797	28.46	\$4.71	\$131.87
07/25/11	01435	0.00	32	906	28.31	\$4.67	\$149.52
06/23/11	00529	0.00	31	692	22.32	\$3.13	\$97.16
05/23/11	99837	0.00	31	574	18.52	\$2.36	\$73.05
04/22/11	99263	0.00	29	619	21.34	\$2.70	\$78.43
03/24/11	98644	0.00	29	767	26.45	\$3.34	\$96.96

Usage Details Close

SA Statement History : SACT : 000-2100-36

Service Account Num: 000-2100-36

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
03/24/11	98644	0.00	29	767	26.45	\$3.34	\$96.96
02/23/11	97877	0.00	30	758	25.27	\$3.21	\$96.34
01/24/11	97119	0.00	32	893	27.91	\$3.55	\$113.69

George & Anna Tuttle, 29826 Lancaster Road, Lancaster, CA

Unable to Reach

John Graham, 20001 Big Pines Highway, Valyermo, CA (APN 3060021014)

SA Statement History : SACT : 008-0408-68

Service Account Num: 008-0408-68

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/24/12	08089	0.00	33	1,015	30.76	\$6.38	\$220.16
11/21/12	07074	0.00	28	773	27.61	\$5.48	\$160.39
10/24/12	06301	0.00	33	875	26.52	\$5.10	\$175.87
09/21/12	05426	0.00	31	825	26.61	\$4.97	\$161.10
08/21/12	04601	0.00	29	851	29.34	\$5.73	\$173.73
07/23/12	03750	0.00	31	1,321	42.61	\$9.69	\$313.88
06/22/12	02429	0.00	30	248	8.27	\$1.07	\$33.62
05/23/12	02181	0.00	29	767	26.45	\$5.00	\$151.57
04/24/12	01414	0.00	29	809	27.90	\$5.40	\$163.55
03/26/12	17106	0.00	31	871	28.10	\$5.45	\$176.64
02/24/12	16840	0.00	30	815	27.17	\$5.20	\$162.97
01/25/12	16025	0.00	33	1,060	32.12	\$6.54	\$225.50
12/23/11	14965	0.00	30	987	32.90	\$6.74	\$211.16
11/23/11	13978	0.00	29	844	29.10	\$5.70	\$172.84
10/25/11	13134	0.00	33	873	26.45	\$4.91	\$169.32
09/22/11	12261	0.00	31	802	25.87	\$4.58	\$148.39
08/22/11	11459	0.00	28	785	28.04	\$5.15	\$150.61
07/25/11	10674	0.00	33	836	25.33	\$4.43	\$152.71
06/22/11	09838	0.00	30	816	27.20	\$4.98	\$156.00
05/23/11	09022	0.00	28	731	26.11	\$4.91	\$143.70
04/25/11	08291	0.00	32	885	27.66	\$5.32	\$178.00
03/24/11	07406	0.00	28	807	28.82	\$5.65	\$165.20

Usage Details Close

SA Statement History : SACT : 008-0408-68

Service Account Num: 008-0408-68

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/24/11	07406	0.00	28	807	28.82	\$5.65	\$165.20
02/24/11	06599	0.00	31	1,129	36.42	\$7.87	\$255.04
01/24/11	05470	0.00	32	1,297	40.53	\$9.14	\$305.50

Patrick & Susan Connelly, 48004 190th Street West, Lancaster, CA

Domestic Account

SA Statement History : SACT : 030-8331-21

Service Account Num: 030-8331-21

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	30	930	31.00	\$6.58	\$206.11
12/04/12	0	0.00	33	726	22.00	\$3.94	\$135.97
11/01/12	0	0.00	31	537	17.32	\$2.74	\$88.63
10/01/12	0	0.00	32	678	21.19	\$2.67	\$89.20
08/30/12	04969	0.00	29	954	32.90	\$5.74	\$173.86
08/01/12	04015	0.00	28	964	34.43	\$6.16	\$180.32
07/04/12	03051	0.00	33	582	17.64	\$2.30	\$79.35
06/01/12	02469	0.00	30	539	17.97	\$2.86	\$89.66
05/02/12	01930	0.00	29	567	19.55	\$3.24	\$98.16
04/03/12	01363	0.00	29	678	23.38	\$4.23	\$128.14
03/05/12	48992	0.00	33	857	25.97	\$4.93	\$170.09
02/01/12	48820	0.00	29	681	23.48	\$4.26	\$129.00
01/03/12	48139	0.00	31	1,379	44.48	\$10.36	\$335.47
12/03/11	46760	0.00	31	1,476	47.61	\$11.30	\$365.98
11/02/11	45284	0.00	33	686	20.79	\$3.51	\$121.12
09/30/11	44598	0.00	31	1,030	33.23	\$5.60	\$181.38
08/30/11	43568	0.00	29	831	28.66	\$4.53	\$137.24
08/01/11	42737	0.00	32	835	26.09	\$3.93	\$131.51
06/30/11	41902	0.00	29	699	24.10	\$3.44	\$104.37
06/01/11	41203	0.00	29	621	21.41	\$3.68	\$111.49
05/03/11	40582	0.00	32	734	22.94	\$4.09	\$136.85
04/01/11	39848	0.00	29	827	28.52	\$5.63	\$170.52

Usage Details Close

SA Statement History : SACT : 030-8331-21

Service Account Num: 030-8331-21

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	39848	0.00	29	827	28.52	\$5.63	\$170.52
03/03/11	39021	0.00	30	808	26.93	\$5.20	\$162.88
02/01/11	38213	0.00	28	838	29.93	\$6.02	\$176.11
01/04/11	37375	0.00	32	994	31.06	\$6.29	\$210.21

Patrick & Susan Connelly, 48004 190th Street West, Lancaster, CA

GS-1 Account

SA Statement History : SACT : 024-9207-52

Service Account Num: 024-9207-52

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	15.00	30	184	6.13	\$1.60	\$50.16
12/04/12	0	15.00	33	392	11.88	\$2.35	\$80.98
11/01/12	0	15.00	31	565	18.23	\$3.19	\$103.18
10/01/12	0	15.00	32	689	21.53	\$4.81	\$160.71
08/30/12	0	15.00	29	696	24.00	\$5.27	\$159.63
08/01/12	0	16.00	30	807	26.90	\$5.86	\$183.75
07/02/12	16896	15.60	31	583	18.81	\$4.33	\$140.20
06/01/12	16867	15.36	31	612	19.74	\$3.31	\$107.32
05/01/12	16816	15.12	28	216	7.71	\$1.76	\$51.52
04/03/12	16798	15.24	29	168	5.79	\$1.51	\$45.84
03/05/12	16784	15.24	33	144	4.36	\$1.33	\$45.81
02/01/12	16772	15.24	29	120	4.14	\$1.30	\$39.37
01/03/12	16762	15.00	31	228	7.35	\$1.73	\$56.03
12/03/11	16743	15.12	31	144	4.65	\$1.37	\$44.52
11/02/11	16731	15.24	33	420	12.73	\$2.46	\$84.71
09/30/11	16696	15.36	31	840	27.10	\$5.46	\$176.81
08/30/11	16626	15.12	29	588	20.28	\$4.30	\$130.27
08/01/11	16577	15.24	32	660	20.63	\$4.35	\$145.41
06/30/11	16522	15.24	29	444	15.31	\$3.38	\$102.33
06/01/11	16485	14.28	29	420	14.48	\$2.70	\$81.90
05/03/11	16450	13.44	32	348	10.88	\$2.22	\$74.08
04/01/11	16421	12.00	29	288	9.93	\$2.09	\$63.23

Usage Details Close

SA Statement History : SACT : 024-9207-52

Service Account Num: 024-9207-52

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	16421	12.00	29	288	9.93	\$2.09	\$63.23
03/03/11	16397	15.00	30	168	5.60	\$1.51	\$47.35
02/01/11	16383	14.64	28	144	5.14	\$1.45	\$42.38
01/04/11	16371	8.16	32	108	3.38	\$1.21	\$40.41

Michael & Patricia Welsh, 35720 47th Street East, Palmdale, CA

SA Statement History : SACT : 004-9856-09

Service Account Num: 004-9856-09

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
12/27/12	0	0.00	29	1,431	49.34	\$12.40	\$375.72
11/28/12	0	0.00	33	1,668	50.55	\$12.78	\$440.64
10/26/12	0	0.00	31	1,401	45.19	\$10.28	\$332.89
09/25/12	0	0.00	32	1,543	48.22	\$7.91	\$264.34
08/24/12	07675	0.00	29	1,675	57.76	\$11.06	\$335.00
07/26/12	06000	0.00	30	1,511	50.37	\$8.71	\$273.14
06/26/12	04489	0.00	32	1,433	44.78	\$4.94	\$165.28
05/25/12	03056	0.00	29	1,201	41.41	\$6.30	\$190.93
04/26/12	01855	0.00	29	1,528	52.69	\$8.35	\$253.09
03/28/12	81336	0.00	30	1,758	58.60	\$9.43	\$295.49
02/27/12	79905	0.00	31	3,296	106.32	\$18.11	\$586.47
01/27/12	76609	0.00	31	1,334	43.03	\$6.59	\$213.55
12/27/11	75275	0.00	28	2,230	79.64	\$13.22	\$386.64
11/29/11	73045	0.00	33	2,240	67.88	\$11.08	\$382.08
10/27/11	70805	0.00	34	1,923	56.56	\$8.37	\$297.41
09/23/11	68882	0.00	30	1,707	56.90	\$6.28	\$196.74
08/24/11	67175	0.00	29	2,725	93.97	\$12.74	\$386.14
07/26/11	64450	0.00	32	953	29.78	\$1.51	\$50.61
06/24/11	63497	0.00	30	1,704	56.80	\$6.88	\$215.72
05/25/11	61793	0.00	29	1,391	47.97	\$7.65	\$231.93
04/26/11	60402	0.00	29	1,579	54.45	\$8.83	\$267.56
03/28/11	58823	0.00	31	2,120	68.39	\$11.39	\$368.98

Usage Details Close

SA Statement History : SACT : 004-9856-09

Service Account Num: 004-9856-09

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
03/28/11	58823	0.00	31	2,120	68.39	\$11.39	\$368.98
02/25/11	56703	0.00	30	2,026	67.53	\$11.24	\$352.30
01/26/11	54677	0.00	30	2,108	70.27	\$11.74	\$368.02

Charles Francoeur, 3334 Longridge Terrance, Sherman Oaks, CA (APN 25446021006)

Unable to Locate

Margaret Tucker (Pirainen), 42658 70th Street East, Palmdale, CA

SA Statement History : SACT : 007-7922-39

Service Account Num: 007-7922-39

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	29	531	18.31	\$2.15	\$62.23
12/05/12	02054	0.00	34	400	11.76	\$1.06	\$35.89
11/01/12	01815	0.00	31	394	12.71	\$1.16	\$35.83
10/01/12	01421	0.00	32	365	11.41	\$1.00	\$32.00
08/30/12	01056	0.00	29	467	16.10	\$1.40	\$40.66
08/01/12	00589	0.00	30	483	16.10	\$1.40	\$42.04
07/02/12	15127	0.00	31	397	12.81	\$1.12	\$34.70
06/01/12	14836	0.00	31	330	10.65	\$.93	\$28.98
05/01/12	14506	0.00	28	428	15.29	\$1.54	\$43.23
04/03/12	14078	0.00	32	374	11.69	\$1.05	\$33.50
03/02/12	13704	0.00	29	333	11.48	\$1.03	\$29.74
02/02/12	13371	0.00	30	415	13.83	\$1.28	\$38.43
01/03/12	12956	0.00	31	370	11.94	\$1.13	\$34.96
12/03/11	12586	0.00	31	302	9.74	\$.90	\$28.04
11/02/11	12284	0.00	34	374	11.00	\$1.03	\$34.85
09/29/11	11910	0.00	29	392	13.52	\$1.17	\$34.04
08/31/11	11518	0.00	29	419	14.45	\$1.26	\$36.51
08/02/11	11099	0.00	33	541	16.39	\$1.43	\$47.16
06/30/11	10558	0.00	29	397	13.69	\$1.17	\$33.96
06/01/11	10161	0.00	29	397	13.69	\$1.29	\$37.35
05/03/11	09764	0.00	32	418	13.06	\$1.22	\$38.88
04/01/11	09346	0.00	29	307	10.59	\$.94	\$27.37

Usage Details Close

SA Statement History : SACT : 007-7922-39

Service Account Num: 007-7922-39

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	09346	0.00	29	307	10.59	\$.94	\$27.37
03/03/11	09039	0.00	29	267	9.21	\$.83	\$24.16
02/02/11	08772	0.00	29	408	14.07	\$1.36	\$39.38
01/04/11	08364	0.00	33	459	13.91	\$1.32	\$43.65

Milton & Lisa Doucette, 29860 Lancaster Road, Lancaster, CA

SA Statement History : SACT : 001-1499-39

Service Account Num: 001-1499-39

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/07/13	0	0.00	32	850	26.56	\$5.35	\$179.04
12/06/12	0	0.00	31	850	27.42	\$5.49	\$177.94
11/05/12	0	0.00	33	869	26.33	\$5.18	\$178.79
10/03/12	0	0.00	29	1,334	46.00	\$9.53	\$288.77
09/04/12	06824	0.00	32	1,903	59.47	\$13.54	\$452.88
08/03/12	04921	0.00	29	1,395	48.10	\$9.96	\$301.77
07/05/12	03526	0.00	30	864	28.80	\$4.72	\$147.96
06/05/12	02662	0.00	32	837	26.16	\$4.87	\$162.90
05/04/12	01825	0.00	29	754	26.00	\$4.95	\$149.85
04/05/12	01071	0.00	30	701	23.37	\$4.22	\$132.37
03/06/12	60852	0.00	29	720	24.83	\$4.62	\$140.14
02/06/12	60502	0.00	32	770	24.06	\$4.41	\$147.53
01/05/12	59732	0.00	30	816	27.20	\$5.25	\$164.71
12/06/11	58916	0.00	33	782	23.70	\$4.30	\$148.35
11/03/11	58134	0.00	30	676	22.53	\$3.99	\$125.22
10/04/11	57458	0.00	33	1,016	30.79	\$5.11	\$176.19
09/01/11	56442	0.00	29	1,126	38.83	\$7.09	\$214.97
08/03/11	55316	0.00	29	1,058	36.48	\$6.47	\$196.01
07/05/11	54258	0.00	32	867	27.09	\$4.13	\$138.21
06/03/11	53391	0.00	30	799	26.63	\$5.04	\$158.06
05/04/11	52592	0.00	29	734	25.31	\$4.75	\$143.99
04/05/11	51858	0.00	29	731	25.21	\$4.71	\$142.83

Usage Details Close

SA Statement History : SACT : 001-1499-39

Service Account Num: 001-1499-39

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/05/11	51858	0.00	29	731	25.21	\$4.71	\$142.83
03/07/11	51127	0.00	31	764	24.65	\$4.56	\$147.69
02/04/11	50363	0.00	29	754	26.00	\$4.94	\$149.80
01/06/11	49609	0.00	31	873	28.16	\$5.49	\$177.68

Michael Grimes, 50235 82nd Street West, Lancaster, CA

SA Statement History : SACT : 008-0470-39

Service Account Num: 008-0470-39

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	30	677	22.57	\$4.15	\$130.00
12/04/12	0	0.00	33	594	18.00	\$2.91	\$100.32
11/01/12	0	0.00	31	890	28.71	\$5.86	\$189.93
10/01/12	0	0.00	32	1,726	53.94	\$9.70	\$324.46
08/30/12	08514	0.00	29	2,056	70.90	\$15.41	\$466.86
08/01/12	06458	0.00	30	1,590	53.00	\$9.75	\$305.71
07/02/12	04868	0.00	31	1,344	43.35	\$6.91	\$223.89
06/01/12	03524	0.00	30	834	27.80	\$5.43	\$170.37
05/02/12	02690	0.00	29	813	28.03	\$5.50	\$166.70
04/03/12	01877	0.00	29	307	10.59	\$1.37	\$41.38
03/05/12	01570	0.00	32	773	24.16	\$4.44	\$148.40
02/02/12	00797	0.00	29	546	18.83	\$3.07	\$92.92
01/04/12	01436	0.00	32	678	21.19	\$3.63	\$121.38
12/03/11	01009	0.00	31	640	20.65	\$3.50	\$113.32
11/02/11	00369	0.00	33	872	26.42	\$4.96	\$171.08
09/30/11	99497	0.00	31	1,223	39.45	\$5.52	\$178.67
08/30/11	98274	0.00	29	1,551	53.48	\$9.43	\$285.63
08/01/11	96723	0.00	32	362	11.31	\$3.37	\$12.35
06/30/11	96361	0.00	29	843	29.07	\$2.85	\$86.31
06/01/11	95518	0.00	29	1,490	51.38	\$12.65	\$383.41
05/03/11	94028	0.00	32	539	16.84	\$2.56	\$85.61
04/01/11	93489	0.00	28	545	19.46	\$3.19	\$93.19

Usage Details Close

SA Statement History : SACT : 008-0470-39

Service Account Num: 008-0470-39

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	93489	0.00	28	545	19.46	\$3.19	\$93.19
03/04/11	92944	0.00	30	561	18.70	\$3.01	\$94.49
02/02/11	92383	0.00	29	520	17.93	\$2.83	\$85.76
01/04/11	91863	0.00	33	921	27.91	\$5.42	\$186.98

Frank Chiodo, 17030 Simonds Street, Granada Hills, CA (APN 3256007002)

Unable to Locate



James Quillen, 18450 West Avenue D, Lancaster, CA

Account Closed December 22, 2003

Deborah Adkins, 4995 Elder Avenue, Rosamond, CA

SA Statement History : SACT : 015-1976-14

Service Account Num: 015-1976-14

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/26/12	0	0.00	29	610	21.03	\$2.65	\$76.93
11/27/12	0	0.00	33	655	19.85	\$2.50	\$82.64
10/25/12	0	0.00	31	738	23.81	\$3.29	\$102.07
09/24/12	0	0.00	32	1,080	33.75	\$6.29	\$201.13
08/23/12	01519	0.00	29	1,027	35.41	\$6.81	\$197.61
07/25/12	24296	0.00	30	885	29.50	\$5.17	\$155.11
06/25/12	23903	0.00	32	739	23.09	\$3.42	\$109.53
05/24/12	23164	0.00	29	662	22.83	\$2.90	\$84.22
04/25/12	22502	0.00	29	670	23.10	\$2.94	\$85.23
03/27/12	21832	0.00	29	600	20.69	\$2.63	\$76.39
02/27/12	21232	0.00	32	546	17.06	\$2.18	\$69.64
01/26/12	20686	0.00	30	821	27.37	\$3.49	\$104.82
12/27/11	19865	0.00	29	559	19.28	\$2.53	\$73.30
11/28/11	19306	0.00	33	820	24.85	\$3.25	\$107.16
10/26/11	18486	0.00	33	991	30.03	\$4.24	\$139.86
09/23/11	17495	0.00	31	1,162	37.48	\$7.10	\$219.97
08/23/11	16333	0.00	28	1,036	37.00	\$6.95	\$194.72
07/26/11	15297	0.00	33	1,272	38.55	\$7.36	\$242.86
06/23/11	14025	0.00	30	843	28.10	\$4.29	\$128.84
05/24/11	13182	0.00	28	727	25.96	\$3.29	\$92.13
04/26/11	12455	0.00	32	740	23.13	\$2.92	\$93.36
03/25/11	11715	0.00	29	879	30.31	\$3.86	\$111.82

Usage Details Close

SA Statement History : SACT : 015-1976-14

Service Account Num: 015-1976-14

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/25/11	11715	0.00	29	879	30.31	\$3.86	\$111.82
02/24/11	10836	0.00	30	829	27.63	\$3.50	\$105.12
01/25/11	10007	0.00	29	315	10.86	\$1.39	\$40.41

Pamela & Douglas Huston, 23004 West Lancaster Road, Lancaster, CA

SA Statement History : SACT : 036-8058-99								
Service Account Num: 036-8058-99								
<input checked="" type="radio"/> Active <input type="radio"/> All								
SA Statement History								
Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges	
12/04/12	0	0.00	33	1,190	36.06	\$4.74	\$163.33	
11/01/12	0	0.00	31	993	32.03	\$4.11	\$133.14	
10/01/12	0	0.00	32	1,210	37.81	\$4.30	\$143.79	
08/30/12	06397	0.00	29	1,140	39.31	\$4.83	\$146.34	
08/01/12	05257	0.00	30	1,026	34.20	\$3.60	\$112.70	
07/02/12	04231	0.00	31	1,146	36.97	\$4.27	\$138.23	
06/01/12	03085	0.00	28	1,117	39.89	\$5.50	\$160.80	
05/04/12	01968	0.00	24	1,072	44.67	\$6.64	\$166.40	
04/10/12	84125	0.00	36	1,760	48.89	\$7.64	\$287.36	
03/05/12	83261	0.00	33	1,641	49.73	\$7.84	\$270.32	
02/01/12	81620	0.00	29	1,211	41.76	\$5.94	\$179.93	
01/03/12	80409	0.00	31	1,528	49.29	\$7.78	\$251.92	
12/03/11	78881	0.00	31	1,542	49.74	\$7.88	\$255.25	
11/02/11	77339	0.00	33	1,513	45.85	\$6.96	\$239.96	
09/30/11	75826	0.00	31	1,722	55.55	\$8.82	\$285.85	
08/30/11	74104	0.00	29	854	29.45	\$2.33	\$70.60	
08/01/11	73250	0.00	32	140	4.38	\$1.16	\$5.38	
06/30/11	73110	0.00	29	1,475	50.86	\$9.35	\$283.46	
06/01/11	71635	0.00	29	1,475	50.86	\$8.05	\$243.80	
05/03/11	70160	0.00	29	1,475	50.86	\$8.03	\$243.38	
04/04/11	68685	0.00	14	712	50.86	\$8.03	\$117.51	
03/21/11	67973	0.00	27	1,403	51.96	\$8.29	\$233.94	

Usage Details

Close

Bennie Moore, 48141 3 Points Road, Lake Hughes, CA (Service APN 3278019017)

To: Southern California Edison Company

2244 Walnut Grove

Rosemead, CA 91770

Attention: Cristina Limon

Please do not provide anyone requesting ELECTRICITY USAGE DATA RECORDS regarding pending class action lawsuit to Michael McLachlan, Esq., Counsel for the Woods Class. See below.

Regarding: Parcel Number 3278- 019- 017

I have received the Notice of Pendency of Class Action Settlement in the lawsuit: Richard Wood v. Los Angeles County Waterworks District No. 40, et al. Superior Court of California, County of Santa Clara Case Number J.C.C.P. No. 4408. I hereby request to be excluded from this class action lawsuit. I understand that I have been identified as a member of the settlement Class. I also understand that by submitting this Request for Exclusion I will no longer be a member of the Class;

I declare under penalty of perjury that the information I provided on this form is true and correct, and that I wish to be excluded from the settlement in Richard Wood v. Los Angeles County Waterworks District No. 40, et al. Superior Court of California, County of Santa Clara Case Number J.C.C.P. No. 4408.

Property location and/or property description:

24825 W AVENUE D HWY 138, LANCASTER CA 93536. FOR DESE SEE ASSESSOR'S MAPS POR OF SW1/4 OF SEC 15 T8N R16W.

Mailing Address: 48141 N. Three Points Rd, Lake Hughes CA 93532

Phone Number: 661-724-9277

Executed Date: November 22, 2013

Bennie E. Moore: Bennie E. Moore

Annette Moore: Annette Moore

Robert Pike, 6000 West 140th Street, Rosamond, CA

Unable to Locate

Willard Sloney, 22510 East Avenue Q, Palmdale, CA

Forthcoming



Yang W. Lee, 9020 West Avenue J, Lancaster, CA (APN 3203034007)

Account Closed August 9, 2005

Janet & Cecil McDonald, 2316 67th Street West, Rosamond, CA

SA Statement History : SACT : 005-1187-80

Service Account Num: 005-1187-80

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
12/24/12	0	0.00	28	705	25.18	\$4.85	\$135.91
11/26/12	0	0.00	33	804	24.36	\$4.62	\$152.47
10/24/12	0	0.00	33	926	28.06	\$5.33	\$176.03
09/21/12	0	0.00	30	1,082	36.07	\$6.50	\$194.92
08/22/12	06361	0.00	29	1,163	40.10	\$7.75	\$224.62
07/24/12	05198	0.00	32	1,067	33.34	\$5.86	\$187.56
06/22/12	04131	0.00	30	890	29.67	\$5.24	\$157.11
05/23/12	03241	0.00	29	670	23.10	\$4.15	\$120.44
04/24/12	02571	0.00	29	615	21.21	\$3.63	\$105.40
03/26/12	01956	0.00	31	743	23.97	\$4.38	\$135.84
02/24/12	01213	0.00	30	746	24.87	\$4.63	\$139.00
01/25/12	17577	0.00	33	976	29.58	\$5.91	\$194.98
12/23/11	17068	0.00	31	899	29.00	\$5.74	\$177.79
11/22/11	16169	0.00	28	762	27.21	\$5.25	\$147.02
10/25/11	15407	0.00	34	864	25.41	\$4.48	\$152.23
09/21/11	14543	0.00	30	989	32.97	\$5.55	\$166.38
08/22/11	13554	0.00	31	983	31.71	\$5.22	\$161.80
07/22/11	12571	0.00	30	900	30.00	\$4.83	\$144.79
06/22/11	11671	0.00	30	812	27.07	\$4.45	\$133.42
05/23/11	10859	0.00	31	725	23.39	\$4.22	\$130.75
04/22/11	10134	0.00	29	635	21.90	\$3.81	\$110.38
03/24/11	09499	0.00	29	651	22.45	\$3.96	\$114.73

Usage Details Close

SA Statement History : SACT : 005-1187-80

Service Account Num: 005-1187-80

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
03/24/11	09499	0.00	29	651	22.45	\$3.96	\$114.73
02/23/11	08848	0.00	30	671	22.37	\$3.94	\$118.10
01/24/11	08177	0.00	33	969	29.36	\$5.86	\$193.22

Sid & Gwen Fromberg, P.O. Box 2575 Lancaster, CA (APN 3153071028)

SA Statement History : SACT : 009-3855-36

Service Account Num: 009-3855-36

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/09/13	0	0.00	30	916	30.53	\$6.59	\$206.53
12/10/12	0	0.00	33	1,004	30.42	\$6.36	\$219.22
11/07/12	0	0.00	29	851	29.34	\$6.05	\$183.42
10/09/12	0	0.00	33	1,283	38.88	\$6.22	\$214.52
09/06/12	01525	0.00	31	1,525	49.19	\$8.30	\$268.93
08/06/12	76308	0.00	31	1,472	47.48	\$7.77	\$251.78
07/06/12	74836	0.00	29	1,188	40.97	\$5.96	\$180.62
06/07/12	73648	0.00	31	1,105	35.65	\$7.08	\$229.36
05/07/12	72543	0.00	31	895	28.87	\$5.72	\$185.36
04/06/12	71648	0.00	29	833	28.72	\$5.69	\$172.40
03/08/12	70815	0.00	30	874	29.13	\$5.80	\$181.79
02/07/12	69941	0.00	29	827	28.52	\$5.63	\$170.69
01/09/12	69114	0.00	31	813	26.23	\$4.99	\$161.62
12/09/11	68301	0.00	32	885	27.66	\$5.37	\$179.66
11/07/11	67416	0.00	32	1,043	32.59	\$6.74	\$225.32
10/06/11	66373	0.00	30	1,152	38.40	\$6.37	\$199.81
09/06/11	65221	0.00	32	1,440	45.00	\$7.72	\$258.01
08/05/11	63781	0.00	29	1,288	44.41	\$7.55	\$228.91
07/07/11	62493	0.00	30	1,129	37.63	\$5.73	\$179.77
06/07/11	61364	0.00	29	934	32.21	\$6.17	\$186.82
05/09/11	60430	0.00	32	942	29.44	\$5.90	\$197.17
04/07/11	59488	0.00	29	903	31.14	\$6.35	\$192.46

Usage Details Close

SA Statement History : SACT : 009-3855-36

Service Account Num: 009-3855-36

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/07/11	59488	0.00	29	903	31.14	\$6.35	\$192.46
03/09/11	58585	0.00	29	761	26.24	\$5.01	\$151.76
02/08/11	57824	0.00	32	1,038	32.44	\$6.73	\$225.19
01/07/11	56786	0.00	30	756	25.20	\$4.68	\$146.83

Lawrence Levin, P.O. Box 588, Littlerock, CA (APN 3059008050)

Unable to Locate

Karen Wonnell, 21115 East Avenue R6, Palmdale, CA

Account 1

SA Statement History : SACT : 018-7965-16

Service Account Num: 018-7965-16

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/09/13	0	0.00	30	1,803	60.10	\$10.27	\$321.92
12/10/12	0	0.00	33	1,238	37.52	\$5.83	\$201.03
11/07/12	0	0.00	29	858	29.59	\$4.31	\$130.59
10/09/12	0	0.00	33	900	27.27	\$3.23	\$111.31
09/06/12	05246	0.00	30	1,168	38.93	\$5.27	\$165.19
08/07/12	04078	0.00	29	1,013	34.93	\$4.51	\$136.81
07/09/12	03065	0.00	32	946	29.56	\$3.52	\$117.60
06/07/12	02119	0.00	30	723	24.10	\$3.02	\$94.68
05/08/12	01396	0.00	29	724	24.97	\$3.31	\$100.25
04/09/12	96889	0.00	31	1,124	36.26	\$5.36	\$173.55
03/09/12	96437	0.00	30	1,357	45.23	\$6.99	\$219.24
02/08/12	95080	0.00	30	1,457	48.57	\$7.60	\$238.25
01/09/12	93623	0.00	31	1,813	58.48	\$9.40	\$304.42
12/09/11	91810	0.00	32	1,719	53.72	\$8.54	\$285.40
11/07/11	90091	0.00	32	879	27.47	\$3.81	\$127.34
10/06/11	89212	0.00	30	708	23.60	\$2.49	\$78.13
09/06/11	88504	0.00	32	871	27.22	\$3.02	\$100.85
08/05/11	87633	0.00	29	761	26.24	\$2.84	\$86.04
07/07/11	86872	0.00	30	723	24.10	\$2.45	\$76.75
06/07/11	86149	0.00	29	649	22.38	\$2.73	\$82.60
05/09/11	85500	0.00	32	877	27.41	\$3.83	\$127.96
04/07/11	84623	0.00	28	854	30.50	\$4.38	\$128.27

Usage Details Close

SA Statement History : SACT : 018-7965-16

Service Account Num: 018-7965-16

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/07/11	84623	0.00	28	854	30.50	\$4.38	\$128.27
03/10/11	83769	0.00	31	1,296	41.81	\$6.49	\$210.18
02/07/11	82473	0.00	28	923	32.96	\$4.85	\$142.00
01/10/11	81550	0.00	32	1,547	48.34	\$7.62	\$254.85

Karen Wonnell, 21115 East Avenue R6, Palmdale, CA

Account 2

SA Statement History : SACT : 016-0667-96

Service Account Num: 016-0667-96

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/09/13	0	0.00	30	557	18.57	\$2.27	\$71.29
12/10/12	0	0.00	33	581	17.61	\$2.14	\$73.80
11/07/12	0	0.00	29	479	16.52	\$2.01	\$60.90
10/09/12	0	0.00	33	1,192	36.12	\$6.93	\$238.89
09/06/12	04741	0.00	30	1,198	39.93	\$7.70	\$241.44
08/07/12	03543	0.00	29	997	34.38	\$6.15	\$186.35
07/09/12	02546	0.00	32	959	29.97	\$5.00	\$167.31
06/07/12	01587	0.00	30	728	24.27	\$4.30	\$134.76
05/08/12	00859	0.00	29	509	17.55	\$2.76	\$83.72
04/09/12	71237	0.00	31	350	11.29	\$1.47	\$47.74
03/09/12	71237	0.00	30	636	21.20	\$3.63	\$113.81
02/08/12	70601	0.00	30	674	22.47	\$3.98	\$124.68
01/09/12	69927	0.00	31	766	24.71	\$4.58	\$148.36
12/09/11	69161	0.00	32	803	25.09	\$4.68	\$156.56
11/07/11	68358	0.00	32	583	18.22	\$2.94	\$98.18
10/06/11	67775	0.00	30	738	24.60	\$3.74	\$117.33
09/06/11	67037	0.00	32	1,085	33.91	\$5.79	\$193.60
08/05/11	65952	0.00	29	954	32.90	\$5.52	\$167.20
07/07/11	64998	0.00	30	771	25.70	\$3.82	\$119.85
06/07/11	64227	0.00	29	413	14.24	\$1.90	\$57.62
05/09/11	63814	0.00	32	472	14.75	\$2.06	\$68.87
04/07/11	63342	0.00	28	530	18.93	\$3.06	\$89.47

Usage Details Close

SA Statement History : SACT : 016-0667-96

Service Account Num: 016-0667-96

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWh Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/07/11	63342	0.00	28	530	18.93	\$3.06	\$89.47
03/10/11	62812	0.00	31	640	20.65	\$3.48	\$112.73
02/07/11	62172	0.00	28	622	22.21	\$3.90	\$113.99
01/10/11	61550	0.00	32	945	29.53	\$5.87	\$196.27

William & Angel Basner, 1744 Poli Street, Ventura, CA (APN 3279001025)

Record Omitted

Dorothy M Nolan, P.O. Box 668, Lancaster, CA (APN 3113006087)

Unable to Locate

Janet & Emil Sulek, 455 West Avenue G, Lancaster, CA

Domestic Account

SA Statement History : SACT : 005-5897-63

Service Account Num: 005-5897-63

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/10/13	0	0.00	30	1,619	53.97	\$14.27	\$447.46
12/11/12	0	0.00	33	1,280	38.79	\$9.00	\$310.28
11/08/12	0	0.00	29	1,018	35.10	\$7.82	\$236.96
10/10/12	0	0.00	33	1,202	36.42	\$6.97	\$240.32
09/07/12	10361	0.00	30	1,261	42.03	\$8.29	\$259.81
08/08/12	09100	0.00	29	1,199	41.34	\$8.09	\$245.01
07/10/12	07901	0.00	32	1,266	39.56	\$7.59	\$253.69
06/08/12	06635	0.00	30	1,129	37.63	\$8.02	\$251.56
05/09/12	05506	0.00	29	881	30.38	\$6.14	\$186.12
04/10/12	04625	0.00	29	1,072	36.97	\$8.12	\$246.18
03/12/12	03553	0.00	32	1,311	40.97	\$9.35	\$312.80
02/09/12	02242	0.00	29	1,238	42.69	\$9.89	\$299.66
01/11/12	24408	0.00	30	1,394	46.47	\$10.99	\$344.53
12/12/11	24018	0.00	33	1,410	42.73	\$9.82	\$338.55
11/09/11	22608	0.00	33	1,090	33.03	\$6.87	\$236.76
10/07/11	21518	0.00	30	1,098	36.60	\$6.77	\$212.37
09/07/11	20420	0.00	30	1,314	43.80	\$8.41	\$263.68
08/08/11	19106	0.00	31	1,241	40.03	\$7.40	\$239.71
07/08/11	17865	0.00	30	1,206	40.20	\$7.42	\$232.72
06/08/11	16659	0.00	29	922	31.79	\$6.21	\$188.06
05/10/11	15737	0.00	29	870	30.00	\$6.06	\$183.51
04/11/11	14867	0.00	32	977	30.53	\$6.18	\$206.58

Usage Details Close

SA Statement History : SACT : 005-5897-63

Service Account Num: 005-5897-63

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/11/11	14867	0.00	32	977	30.53	\$6.18	\$206.58
03/10/11	13890	0.00	29	735	25.34	\$4.76	\$144.31
02/09/11	13155	0.00	29	650	22.41	\$3.95	\$119.82
01/11/11	12505	0.00	32	995	31.09	\$6.30	\$210.55

Janet & Emil Sulek, 455 West Avenue G, Lancaster, CA

GS-1 Account

SA Statement History : SACT : 008-7873-02

Service Account Num: 008-7873-02

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/10/13	0	0.00	30	28	.93	\$.89	\$27.84
12/11/12	0	1.00	33	29	.88	\$.87	\$29.84
11/08/12	0	0.00	29	24	.83	\$.86	\$26.00
10/10/12	0	0.00	33	25	.76	\$.88	\$30.25
09/07/12	00371	0.00	30	114	3.80	\$1.46	\$45.74
08/08/12	00257	0.00	29	20	.69	\$.87	\$26.28
07/10/12	00237	0.00	32	58	1.81	\$1.08	\$36.01
06/08/12	00179	0.00	30	80	2.67	\$1.12	\$34.96
05/09/12	00099	0.00	29	17	.59	\$.81	\$24.52
04/10/12	00082	0.00	29	16	.55	\$.80	\$24.38
03/12/12	00066	0.00	32	24	.75	\$.83	\$27.75
02/09/12	00042	0.00	30	26	.87	\$.85	\$26.49
01/10/12	00975	0.00	29	22	.76	\$.83	\$25.25
12/12/11	00969	0.00	33	26	.79	\$.84	\$28.86
11/09/11	00943	0.00	33	42	1.27	\$.90	\$31.04
10/07/11	00901	0.00	30	38	1.27	\$.94	\$29.53
09/07/11	00863	0.00	30	23	.77	\$.87	\$27.17
08/08/11	00840	0.00	31	14	.45	\$.81	\$26.28
07/08/11	00826	0.00	30	12	.40	\$.80	\$25.11
06/08/11	00814	0.00	29	26	.90	\$.86	\$25.95
05/10/11	00788	0.00	29	9	.31	\$.77	\$23.33
04/11/11	00779	0.00	32	26	.81	\$.84	\$28.00

Usage Details Close

SA Statement History : SACT : 008-7873-02

Service Account Num: 008-7873-02

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/11/11	00779	0.00	32	26	.81	\$.84	\$28.00
03/10/11	00753	0.00	29	10	.34	\$.77	\$23.43
02/09/11	00743	0.00	29	4	.14	\$.75	\$22.62
01/11/11	00739	0.00	32	9	.28	\$.77	\$25.61

Timothy & Shanda Coyle, 10714 Yucca Avenue, Rosamond, CA

SA Statement History : SACT : 024-2774-22

Service Account Num: 024-2774-22

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
12/19/12	0	0.00	30	521	17.37	\$2.75	\$82.56
11/19/12	0	0.00	31	523	16.87	\$2.62	\$81.30
10/19/12	0	0.00	31	528	17.03	\$2.53	\$78.40
09/18/12	03846	0.00	32	754	23.56	\$3.44	\$109.92
08/17/12	03092	0.00	29	682	23.52	\$3.43	\$99.50
07/19/12	02410	0.00	30	707	23.57	\$3.45	\$103.55
06/19/12	01703	0.00	32	753	23.53	\$3.81	\$121.78
05/18/12	00950	0.00	29	536	18.48	\$2.98	\$86.56
04/19/12	50862	0.00	29	439	15.14	\$2.19	\$63.44
03/21/12	50837	0.00	29	682	23.52	\$4.27	\$123.73
02/21/12	50155	0.00	32	633	19.78	\$3.29	\$105.33
01/20/12	49522	0.00	31	722	23.29	\$4.19	\$130.04
12/20/11	49800	0.00	31	445	14.35	\$2.02	\$62.77
11/19/11	48355	0.00	30	510	17.00	\$2.65	\$79.49
10/20/11	47845	0.00	31	548	17.68	\$2.60	\$80.56
09/19/11	47297	0.00	32	687	21.47	\$2.88	\$92.08
08/18/11	46610	0.00	30	671	22.37	\$3.08	\$92.36
07/19/11	45939	0.00	29	629	21.69	\$2.92	\$84.70
06/20/11	45310	0.00	33	614	18.61	\$2.63	\$86.84
05/18/11	44696	0.00	28	462	16.50	\$2.48	\$69.50
04/20/11	44234	0.00	30	483	16.10	\$2.38	\$71.45
03/21/11	43751	0.00	31	536	17.29	\$2.66	\$82.58

Usage Details Close

SA Statement History : SACT : 024-2774-22

Service Account Num: 024-2774-22

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
03/21/11	43751	0.00	31	536	17.29	\$2.66	\$82.58
02/18/11	43215	0.00	30	525	17.50	\$2.72	\$81.66
01/19/11	42690	0.00	30	738	24.60	\$4.54	\$136.29

Pat Murphy / Donald Cornelius, 18655 West Avenue E, Lancaster, CA

SA Statement History : SACT : 007-7933-19

Service Account Num: 007-7933-19

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	30	1,268	42.27	\$6.16	\$193.16
12/04/12	0	0.00	33	847	25.67	\$3.24	\$111.68
11/01/12	0	0.00	31	761	24.55	\$3.10	\$100.36
10/01/12	0	0.00	32	1,114	34.81	\$5.57	\$186.16
08/30/12	03912	0.00	29	1,193	41.14	\$7.13	\$216.05
08/01/12	02719	0.00	30	1,159	38.63	\$6.51	\$203.96
07/02/12	01560	0.00	31	1,186	38.26	\$6.42	\$207.84
06/01/12	87434	0.00	31	992	32.00	\$4.14	\$134.18
05/01/12	86816	0.00	29	951	32.79	\$4.26	\$129.23
04/02/12	85865	0.00	28	1,162	41.50	\$5.88	\$172.00
03/05/12	84703	0.00	33	1,728	52.36	\$8.47	\$291.96
02/01/12	82975	0.00	29	1,731	59.69	\$10.23	\$310.12
01/03/12	81244	0.00	31	2,022	65.23	\$11.74	\$380.18
12/03/11	79222	0.00	31	1,338	43.16	\$6.34	\$205.27
11/02/11	77884	0.00	33	808	24.48	\$3.21	\$110.72
09/30/11	77076	0.00	30	1,108	36.93	\$5.87	\$183.97
08/31/11	75968	0.00	30	1,336	44.53	\$7.77	\$243.54
08/01/11	74632	0.00	32	1,430	44.69	\$7.80	\$260.75
06/30/11	73202	0.00	29	1,040	35.86	\$5.58	\$169.00
06/01/11	72162	0.00	30	772	25.73	\$3.26	\$102.32
05/02/11	71390	0.00	28	860	30.71	\$3.90	\$114.21
04/04/11	70530	0.00	32	1,306	40.81	\$5.60	\$187.22

Usage Details Close

SA Statement History : SACT : 007-7933-19

Service Account Num: 007-7933-19

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/04/11	70530	0.00	32	1,306	40.81	\$5.60	\$187.22
03/03/11	69224	0.00	29	1,758	60.62	\$10.45	\$316.65
02/02/11	67466	0.00	29	1,793	61.83	\$10.78	\$326.78
01/04/11	65673	0.00	32	1,617	50.53	\$7.93	\$265.26

May & James Tong, 47603 224th Street West, Lancaster CA

SA Statement History : SACT : 005-6342-62

Service Account Num: 005-6342-62

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	30	1,055	35.17	\$7.90	\$247.78
12/04/12	0	0.00	33	983	29.79	\$6.17	\$212.93
11/01/12	0	0.00	31	723	23.32	\$4.32	\$139.92
10/01/12	0	0.00	32	828	25.88	\$4.00	\$133.73
08/30/12	01956	0.00	29	888	30.62	\$5.16	\$156.31
08/01/12	01068	0.00	30	824	27.47	\$4.40	\$137.84
07/02/12	36854	0.00	31	538	17.35	\$2.26	\$73.11
06/01/12	36560	0.00	31	712	22.97	\$4.11	\$133.10
05/01/12	35848	0.00	28	810	28.93	\$5.74	\$167.96
04/03/12	35038	0.00	29	822	28.34	\$5.59	\$169.28
03/05/12	34216	0.00	33	864	26.18	\$4.99	\$172.09
02/01/12	33352	0.00	29	953	32.86	\$6.86	\$207.86
01/03/12	32399	0.00	31	972	31.35	\$6.37	\$206.37
12/03/11	31427	0.00	31	908	29.29	\$5.81	\$188.14
11/02/11	30519	0.00	33	793	24.03	\$4.37	\$150.68
09/30/11	29726	0.00	31	792	25.55	\$3.80	\$123.23
08/30/11	28934	0.00	29	828	28.55	\$4.50	\$136.49
08/01/11	28106	0.00	32	879	27.47	\$4.25	\$142.10
06/30/11	27227	0.00	29	729	25.14	\$3.68	\$111.49
06/01/11	26498	0.00	29	726	25.03	\$4.68	\$141.85
05/03/11	25772	0.00	29	714	24.62	\$4.56	\$138.26
04/04/11	25058	0.00	31	892	28.77	\$5.69	\$184.37

Usage Details Close

SA Statement History : SACT : 005-6342-62

Service Account Num: 005-6342-62

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/04/11	25058	0.00	31	892	28.77	\$5.69	\$184.37
03/04/11	24166	0.00	30	921	30.70	\$6.23	\$195.43
02/02/11	23245	0.00	29	948	32.69	\$6.81	\$206.51
01/04/11	22297	0.00	32	1,014	31.69	\$6.46	\$215.92

Sharon Brown / Peter Maslanik, 7238 West Avenue J, Quartz Hill, CA

SA Statement History : SACT : 023-4688-77

Service Account Num: 023-4688-77

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
01/09/13	0	0.00	30	777	25.90	\$5.19	\$155.62
12/10/12	0	0.00	33	758	22.97	\$4.22	\$139.29
11/07/12	0	0.00	29	452	15.59	\$2.31	\$66.86
10/09/12	0	0.00	32	1,058	33.06	\$6.08	\$194.47
09/07/12	04790	0.00	31	1,377	44.42	\$8.95	\$277.57
08/07/12	03413	0.00	29	1,108	38.21	\$7.21	\$209.18
07/09/12	02305	0.00	32	1,030	32.19	\$5.54	\$177.33
06/07/12	01275	0.00	29	698	24.07	\$4.24	\$122.89
05/09/12	00577	0.00	33	577	17.48	\$2.74	\$90.55
04/06/12	66897	0.00	29	546	18.83	\$3.07	\$88.93
03/08/12	66351	0.00	30	802	26.73	\$5.14	\$154.28
02/07/12	65549	0.00	29	849	29.28	\$5.84	\$169.37
01/09/12	64700	0.00	31	825	26.61	\$5.09	\$157.90
12/09/11	63875	0.00	32	907	28.34	\$5.56	\$177.86
11/07/11	62968	0.00	32	630	19.69	\$3.28	\$105.01
10/06/11	62338	0.00	30	905	30.17	\$5.05	\$151.63
09/06/11	61433	0.00	32	1,194	37.31	\$6.69	\$214.13
08/05/11	60239	0.00	29	921	31.76	\$5.23	\$151.70
07/07/11	59318	0.00	30	722	24.07	\$3.45	\$103.54
06/07/11	58596	0.00	29	551	19.00	\$2.94	\$85.30
05/09/11	58045	0.00	32	556	17.38	\$2.69	\$86.18
04/07/11	57489	0.00	29	599	20.66	\$3.48	\$100.78

Usage Details Close

SA Statement History : SACT : 023-4688-77

Service Account Num: 023-4688-77

☒ Active ☐ All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWH Usage per Day	Daily Cost	Total Service Account Charges
04/07/11	57489	0.00	29	599	20.66	\$3.48	\$100.78
03/09/11	56890	0.00	29	673	23.21	\$4.17	\$120.94
02/08/11	56217	0.00	32	810	25.31	\$4.75	\$151.95
01/07/11	55407	0.00	30	826	27.53	\$5.32	\$159.62

Nancy Larson, 22217 223rd Avenue SE, Maple Valley, WA (APN 3279003026)

Unable to Locate

Patricia & Charles Lennox, P.O. Box 7, Pearblossom, CA (APN 3060015025)

Unable to Locate

Charles & Beverly Tyler, 18245 Lancaster Road, Lancaster, CA

SA Statement History : SACT : 005-8373-35

Service Account Num: 005-8373-35

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
01/03/13	0	0.00	30	1,981	66.03	\$12.38	\$388.09
12/04/12	0	0.00	33	1,997	60.52	\$10.72	\$369.61
11/01/12	0	0.00	31	2,417	77.97	\$15.72	\$509.09
10/01/12	0	0.00	32	2,742	85.69	\$19.40	\$648.66
08/30/12	15874	0.00	29	2,612	90.07	\$21.81	\$660.79
08/01/12	13262	0.00	28	2,543	90.82	\$21.97	\$642.85
07/04/12	10719	0.00	33	3,369	102.09	\$25.49	\$878.82
06/01/12	07350	0.00	30	1,597	53.23	\$8.67	\$271.91
05/02/12	05753	0.00	28	2,472	88.29	\$18.05	\$528.19
04/04/12	03281	0.00	30	1,795	59.83	\$10.28	\$322.11
03/05/12	07600	0.00	33	1,927	58.39	\$9.90	\$341.53
02/01/12	07159	0.00	29	1,686	58.14	\$9.84	\$298.21
01/03/12	05473	0.00	31	2,201	71.00	\$13.30	\$430.68
12/03/11	03272	0.00	31	2,854	92.06	\$19.08	\$618.16
11/02/11	00418	0.00	33	4,390	133.03	\$31.65	\$1,091.54
09/30/11	96028	0.00	31	3,140	101.29	\$24.16	\$782.58
08/30/11	92888	0.00	29	2,434	83.93	\$19.00	\$575.70
08/01/11	90454	0.00	32	3,078	96.19	\$22.65	\$757.29
06/30/11	87376	0.00	29	2,401	82.79	\$18.52	\$561.09
06/01/11	84975	0.00	29	2,437	84.03	\$16.93	\$513.13
05/03/11	82538	0.00	32	2,825	88.28	\$18.09	\$604.78
04/01/11	79713	0.00	29	2,540	87.59	\$17.86	\$541.36

Usage Details Close

SA Statement History : SACT : 005-8373-35

Service Account Num: 005-8373-35

Active All

SA Statement History

Ending Meter Read Date	KWH Read	KW Demand	Billing Days	Total kWH Usage	Avg kWh Usage per Day	Daily Cost	Total Service Account Charges
04/01/11	79713	0.00	29	2,540	87.59	\$17.86	\$541.36
03/03/11	77173	0.00	30	2,628	87.60	\$17.89	\$560.80
02/01/11	74545	0.00	28	2,574	91.93	\$19.20	\$561.83
01/04/11	71971	0.00	32	2,492	77.88	\$15.10	\$504.97

Greg & Lindy Hogan, 20350 West Avenue F, Lancaster, CA

Unable to Locate



Craig Stewart / Cook Brothers, P.O. Box 94303 Pasadena, CA (APN 3116022002)

Unable to Locate

Appendix D

Edison Pump Testing and Hydraulic Services Manual

PUMP TESTING AND HYDRAULIC SERVICES MANUAL

Improving your overall pumping plant efficiency



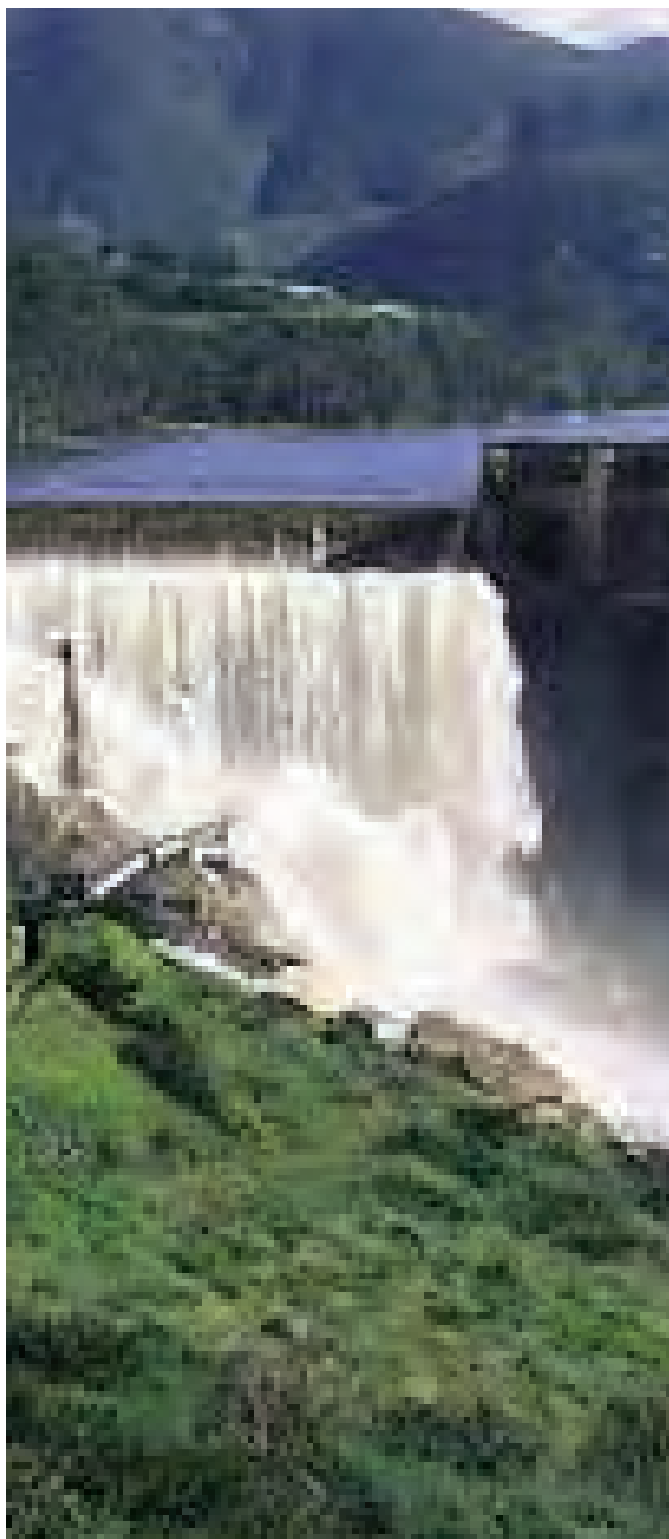
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We at Southern California Edison (SCE) do more than supply electrical energy to our business clients across California. We also offer our customers the knowledge, insights and expertise from our more than 100 years of experience providing service to Californians.

The energy demands in California continue to increase as our state continues to thrive and grow. Those demands put a tremendous strain on the energy available for every business and homeowner. It is our goal at SCE to support our business customers with tools and services that help them become more energy efficient, save money and ultimately conserve energy resources for all Californians.

Since 1911, SCE has provided free pump testing for our clients. This service is part of our commitment to helping California businesses thrive today, and throughout the future. It provides information, advice and incentives that encourage businesses to take practical steps to better manage their energy usage and expenses.

As you know, it requires a significant amount of energy to power a water-pumping system. If any pump is not working to specifications, or if the pumping requirements have changed, it's possible that the plant could be using power inefficiently, causing a drain on both resources and money.

SCE's free pump testing services will provide you with information so that you can assess your overall pumping plant's performance. It will help you to identify problems or potential ones allowing you to take measures, if needed, to improve operations and lower your energy cost.

We want you to think of SCE not simply as your energy supplier, but also as an energy management resource that you can call on whenever you need information, answers or options. It is a role we enjoy because a major part of our mission is to help our customers save energy and money.

Energy Efficiency Programs are funded by California utility ratepayers and are administered by Southern California Edison under the auspices of the California Public Utilities Commission.

This booklet provides useful information for any business that uses pumps to irrigate property or deliver a water source. It is designed to **help you operate your pumping plants more efficiently**, thereby reducing energy costs. It can also guide you to the many resources and services from SCE and other entities that can help you save energy, money and improve your operations throughout the year.

Who is this Manual for?

The information in this manual is valuable to any SCE client that operates a pumping plant to: irrigate crops, landscaping or turfgrass; supply water for domestic use; or supply water to an industrial process.

It is intended for any person desiring to know which questions to ask in order to operate, maintain, and manage an efficient pump system. It is also designed to effectively communicate with managers in the field who must make important decisions every day regarding energy use.

Please note that the information provided, such as the calculations and formulas regarding energy usage, is based on electrical energy measurements. Although the principles are the same, pumping operations that use natural gas or another energy source would not be able to use all of our formulas to measure pump performance.

What is the Purpose of this Manual?

This booklet is primarily intended to help you understand the importance of pumping performance as it relates to managing energy use and lowering energy costs. We urge you to establish a regular pump test program if one is not already in place.

For those who are interested in assessing and measuring their system's overall pumping plant efficiency, this manual includes helpful electric energy-usage formulas, as well as the explanations of the factors used in them, to arrive at the key measurements.

From free pump testing to energy efficiency incentives, we want you to know about the many resources available to you from SCE that can help you operate your pumping plant more efficiently.

We want to provide you with the tools that will help your business save time, money and energy.



SCE's Pump Testing and Hydraulic Services department offers a variety of services at no charge.

SCE Energy Centers

SCE's Energy Centers in Tulare and Irwindale provide energy management and energy-efficiency solutions through hands-on demonstrations of the latest state-of-the-art technologies as well as workshops, classes and interactive displays.



**Agricultural Technology
Application Center (AgTAC)**
4175 S. Laspina Street
Tulare, CA 93274
800.772.4822



**Customer Application
Technology Center (CTAC)**
6090 N. Irwindale Avenue
Irwindale, CA 91702
800.336.2822

Seminars

SCE offers a variety of seminars and classes at their Energy Centers. For a complete listing of upcoming classes, visit www.sce.com/energycenter or call:

AgTAC 800.772.4822
CTAC 800.336.2822

SCE's Customer Service

Business 800.990.7788
Agriculture 800.634.9175

Energy Efficiency Information and Incentives

SCE's Agricultural Energy Efficient Programs (AEEP)
www.sce.com/rebatesandsavings or call 800.736.4777

California Energy Efficiency
www.californiaenergyefficiency.com

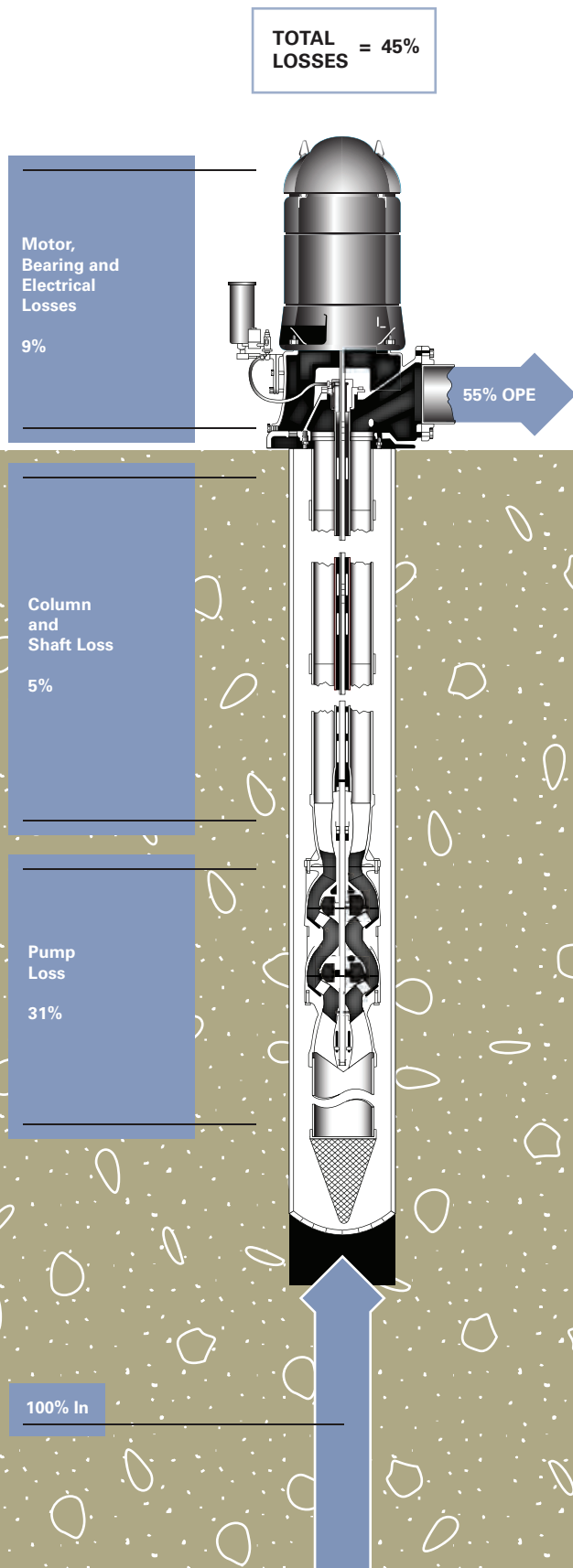
Websites

Hydraulic Institute
www.pumps.org

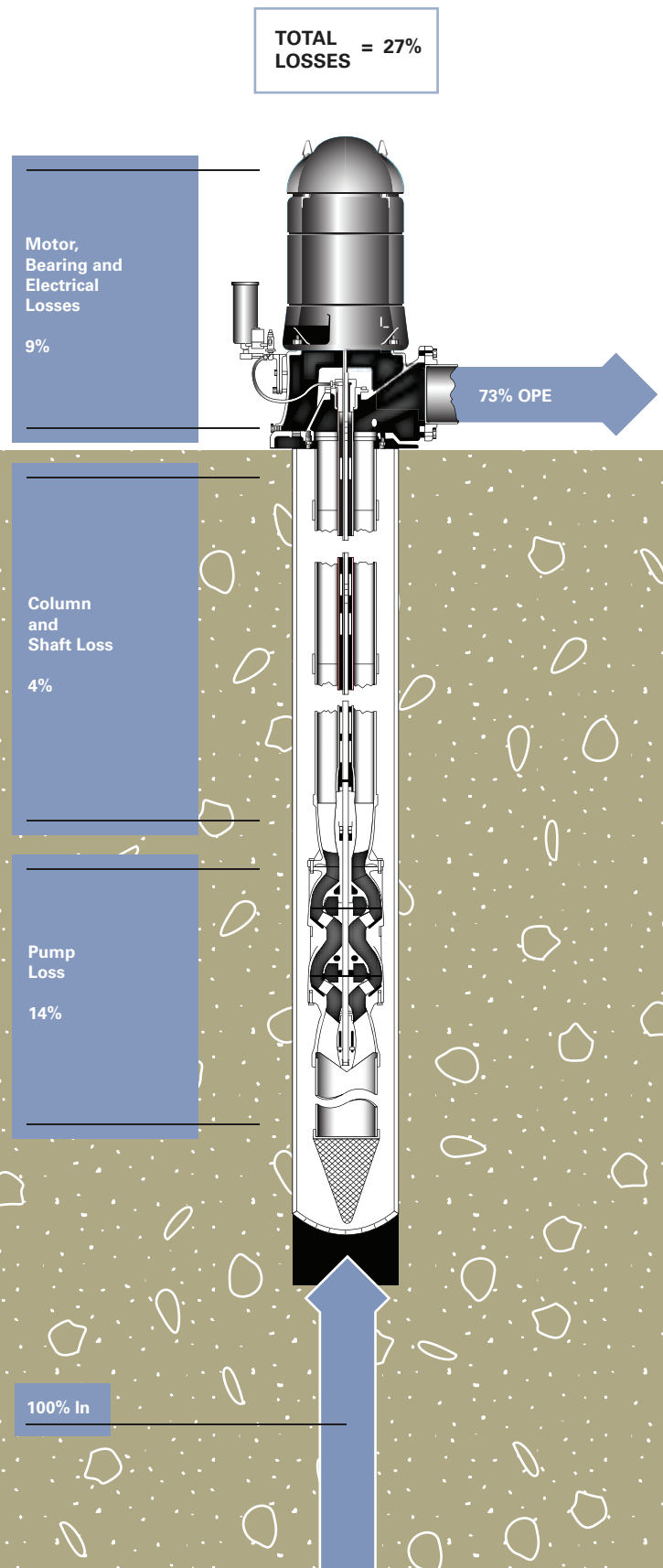
SCE for Agricultural Businesses
www.sce.com/agriculture

Please see example on page 5.

Inefficient Plant



Efficient Plant



A variety of factors can alter a pump's performance and cause energy and money to be wasted. As you know, **a pump does not have to be broken to be ineffective**; many "working" pumps are nonetheless working inefficiently. That is why it is critical to evaluate your pumping plant's operating efficiency routinely. A FREE pump test from SCE can help you measure your plant's operating efficiency.

Pumping Plant Efficiency, Energy Demands and Costs

For most agricultural clients and municipalities, the annual cost of energy represents a significant percentage of overall operating expenses. In fact, energy costs alone are sometimes as much as 60 to 70% of operating costs.

Additionally, for businesses that perform irrigation or that deliver water to other entities, a significant percentage of the cost of energy comes from the electric power required to pump the tremendous volume of water demanded daily and year-round by the business's operation. **Knowing your Overall Pumping Plant Efficiency (OPE) will help you manage your energy costs.**

The Cost of Poor Pump Performance

When one or more pumps are not operating efficiently, it may take more energy than necessary for the pump to perform as needed. That creates not only an inefficient use of a high-demand resource — it also represents a steady flow of your energy dollars going down the drain.

And consider that, even if a pump is operating properly, the pumping-system management itself may be inefficient. A pump test can help you to verify if the correct pump is in place or if the current pump you have could be used in a different way or at different times to conserve energy and save money.

EXAMPLE: Inefficient vs. Efficient Pump

The table on the right provides an example of an inefficient pump versus an efficient pump. The example assumes that OPEs do not lessen or change over a five year period (or averaged the OPEs shown below over 5-years). Total Head does not change and water demand remains the same. The example also assumes \$25,000 cost for improvement and shows an efficiency payback over a 5-year timeframe. **The calculation indicates a return on investment in approximately 2 years and an overall savings of \$37,410 after 5 years.**

	Inefficient Pump	Efficient Pump	Savings
Overall Efficiency	55%	73%	
kWh/Acre Ft.	649	511	138
Acre Ft./Year	822	822	
Annual kWh	533,472	420,000	113,472
Cost per Year @ \$.11/kWh	\$58,681	\$46,200	\$12,481

5-YEAR COMPARISON: INEFFICIENT VS. EFFICIENT OVERALL PLANT EFFICIENCY

	INEFFICIENT PLANT	EFFICIENT PLANT			PAYBACK
	Annual Cost @ 55% OPE	Annual Cost @ 73% OPE	Annual Operational Savings	Replacement Costs	Yearly Savings
Year 1	\$58,682	\$46,200	\$12,482	\$25,000	(\$12,518)
Year 2	\$58,682	\$46,200	\$12,482		(\$36)
Year 3	\$58,682	\$46,200	\$12,482		\$12,482
Year 4	\$58,682	\$46,200	\$12,482		\$12,482
Year 5	\$58,682	\$46,200	\$12,482		\$12,482
5 YEAR TOTALS:	\$293,410	\$231,000	\$62,410	\$25,000	\$37,410

Pump Performance Factors

A pumping plant's operating efficiency is determined by a variety of factors:

- Type and size of pump
- Condition of the pump
- Pump speed
- Total Head or pump pressure
- Condition of the well
- Conversion of mechanical energy (pump) to water-energy (water flow), motor efficiency, power efficiency
- Transmission of water flow through pipes, fittings, valves, etc.

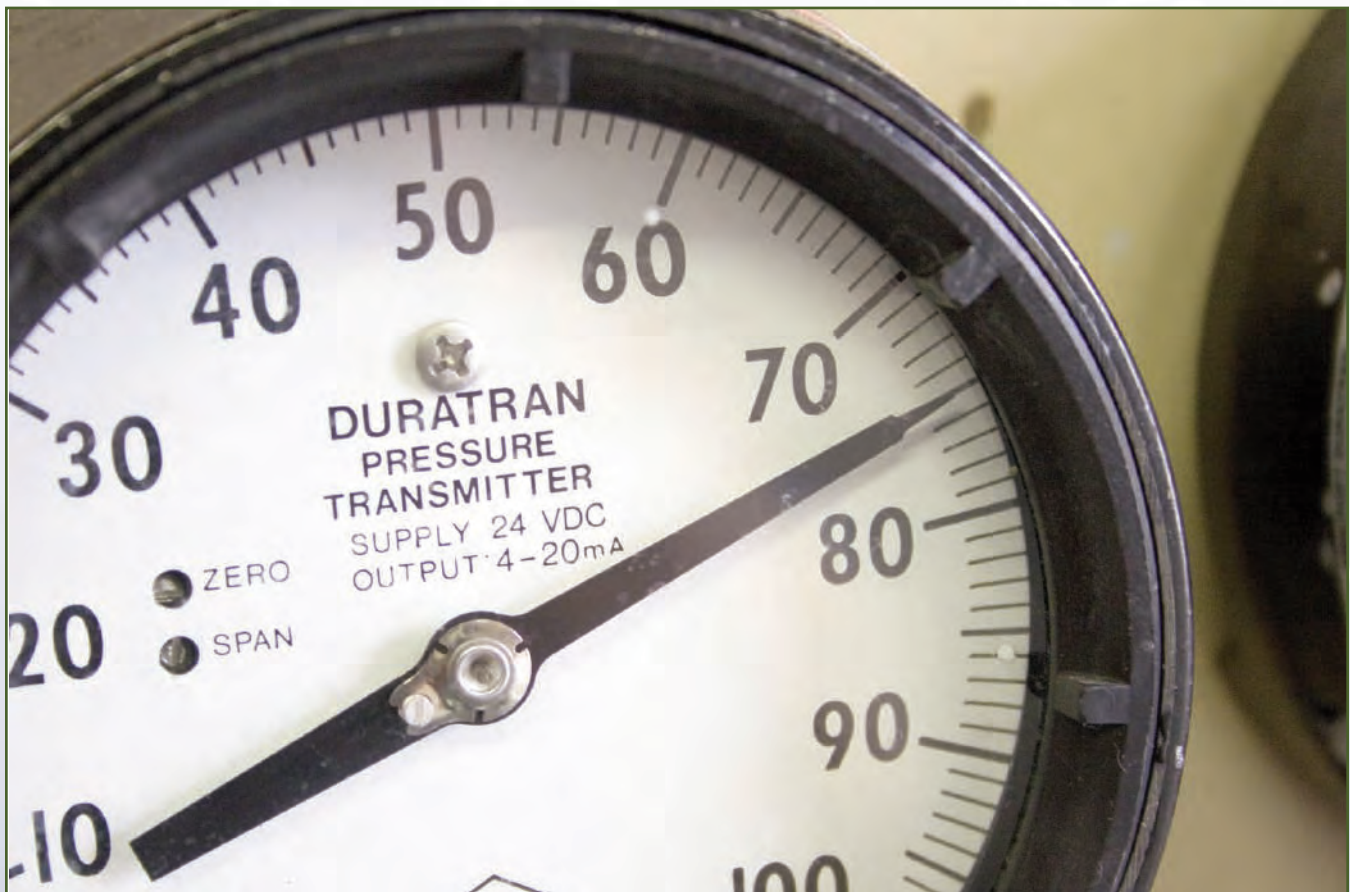
A well's performance will also generally degrade with time, due to a variety of causes:

- Well screen corrosion or encrustation of screen with various deposits reduce allowable flow openings into the well pump
- The well's gravel pack can plug up from fine materials such as silt
- Attempting to pump too much water by using too big a pump for the aquifer may result in low well-specific capacity

This subject is very important to your pumping costs. Consult with your pump dealer and/or well driller if the pump test history reveals significant reduction in well-specific capacity over time.

Preventive Steps, Proactive Measures

By taking **simple and ongoing steps to assess your pumping plant's performance**, you can make an informed and important business decision regarding pump repairs or replacements. Routine pump tests done at regular intervals, typically on a bi-annual basis, can help keep you avoid interruptions to your operations, help you manage energy costs, and **help you improve overall plant-operating efficiency.**



With ongoing measurements and data for your pumping system, **you can evaluate your pumping plant's efficiency and save energy and money.** Measuring your system's Overall Pumping Plant Efficiency (OPE) is a primary component of pumping-system management and can aid in your decision-making and affect your operating costs and performance.

The OPE is the relationship between the power consumed in kilowatts and the amount of water delivered in gallons per minute at a given pumping head, in feet. In other words, the OPE is the percentage of how much water horsepower is needed by the pumping plant from the input horsepower to the motor.

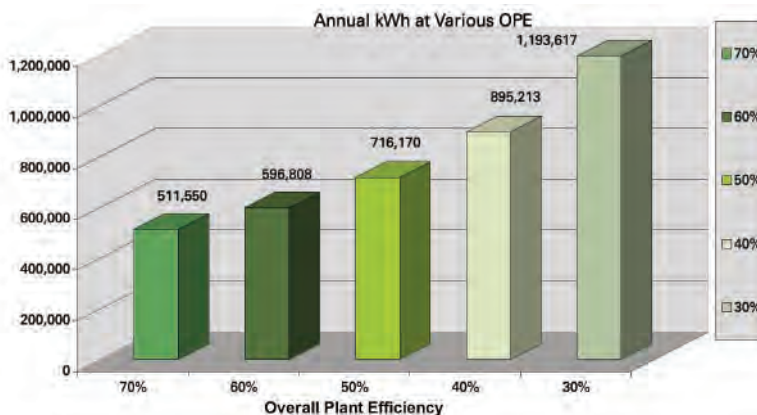
$$\frac{\text{Output HP}}{\text{Input HP}} = \text{OPE}$$

Using Energy Efficiently

Energy input to water output is a key component of the OPE. The pumping plant's power source takes electrical energy and converts it into the rotating mechanical energy of the pump impeller. The pump itself takes the mechanical energy and converts it to fluid energy, moving water at a certain pressure and flow.

In the simplest terms, the more efficient the pumping plant, the lower your energy bill to move the same amount of water.

Example of energy usage to pump 1,000 Acre Feet at 300 Total Head and \$.11/kWh



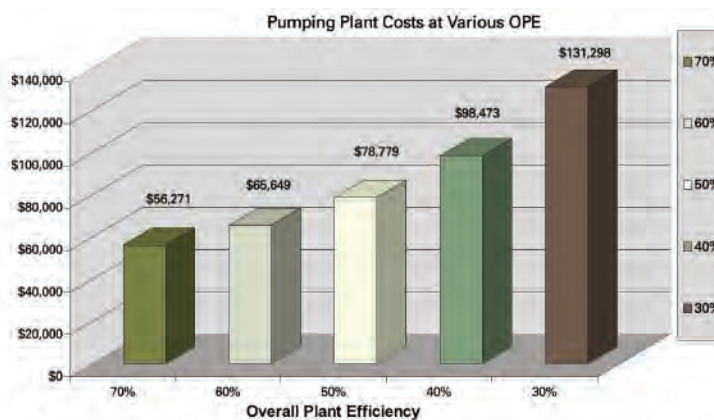
The OPE Rating

The OPE, presented as a percentage, is a key measure for evaluating your system's performance and is an integral part of maintaining high-quality pumping-system management.

The OPE rating is determined by various factors including:

- Bowl efficiency - the pump's efficiency at converting mechanical energy to moving water
- Driver efficiency - the efficiency of the electric motor

Example of cost to pump 1,000 Acre Feet at 300 Total Head and \$.11/kWh



- Transmission shaft efficiency - a measure of losses that occurs in transmission
- Frictional Losses - losses due to mechanical friction within plant, pipe, pump and equipment

OPE can only be measured by a pump test and is the most critical finding of a pump test, taking into account and using all of the test's measurements. To help you gauge what the overall efficiency of your pumping plant actually is, SCE will test your pumps free-of-charge.

How OPE Relates to Performance

"Wire-to-Water" efficiency of a pumping plant is the ratio of work done by a pumping plant to the energy put into the pump. The pumping plant is defined as the pump and motor equipment and controls; including all associated fittings from the water source through the pump to the discharge into the distribution system.

An OPE in the **low to fair range suggests that a pump may need a retrofit, repair, or adjustment**, or that the pump is not matched to the current required operating conditions. For example, the water table may have dropped significantly over time, increasing the total lift above the original specifications.

The OPE values for pumps with submersible motors are viewed slightly differently. The efficiency for a submersible motor is generally 3-5% lower than a standard motor because of electrical energy line losses going down the well.

Overall Plant Efficiency Ranges: Wire to Water

<i>Table of OPE performance ranges for surface mounted motor pump plants</i>	MOTOR HP	Low	Fair	Good	Excellent
	3-5	41.9 or less	42 - 49.9	50 - 54.9	55 or above
	7-10	44.9 or less	45 - 52.6	53 - 57.9	58 or above
	15-30	47.9 or less	48 - 55.9	56 - 60.9	61 or above
	40 - 60	52.9 or less	53 - 59.9	60 - 64.9	65 or above
	75 - up	55.9 or less	56 - 62.9	63 - 68.9	69 or above

Note: Submersible wells OPE values are 3 - 5% less than surface mounted motor pump plants OPE values.

When the results of a pump test identify a low OPE, it could be financially beneficial to investigate the problem area(s) and make the necessary adjustments or repairs.

The Benefits of Knowing your OPE

Knowing your OPE and making system changes to operate at high-performance levels yield positive benefits that could save energy and save money. The tables on page 5 along with the results on page 17 will help to demonstrate these benefits.

- Lower your current pumping requirements with conscientious pumping-system management
- Reduce total energy use for any amount of water pumped by lowering the kilowatt-hours required to pump an Acre Foot
- Track trends for budgeting and forecast potential problems

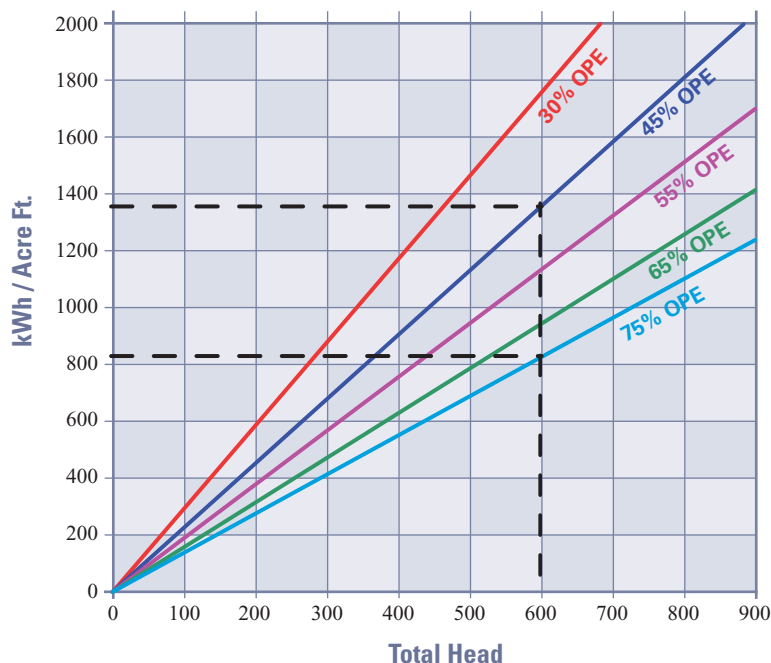


Ongoing System Management

Pumping-plant efficiency should be monitored regularly through accurate record keeping. SCE can also help you investigate the problems with pumps that test at a low OPE. Additionally, SCE has a variety of programs that can help you address problem areas and lower your energy cost. Many of these programs also offer incentives such as hardware discounts, rebates and more.

Example of Total Savings by Improving OPE:

The graph below is an example of the relationship of kWh Consumption, Total Head and OPE.



If Your Total Head = 600 Ft.

Looking at the graph:

- Your kWh/Per Acre Foot @ 45% OPE = 1364
- Your kWh/per Acre Foot @ 75% OPE = 818

Using \$0.11 per kWh:

- Cost to pump Acre Foot of Water @ 45% OPE = \$150
- Cost to pump Acre Foot of Water @ 75% OPE = \$90

Total Savings per Acre Ft. if OPE is improved = \$60/Acre Ft.

If your annual water requirement were 200 Acre Ft.:

- Annual Cost @ 45% OPE = \$30,000
- Annual Cost @ 75% OPE = \$18,000

YOUR TOTAL ANNUAL SAVINGS IF IMPROVED = \$12,000/YEAR

Note:

Reducing Total Head through operational changes can also save energy by reducing the amount of work (kWh) required to pump desired amount of water (Acre Ft.).

Selecting the right pump for the task of moving water in the volume needed is where pumping efficiency begins. There are various types of pumps, with different types or numbers of impellers, the key pump component.

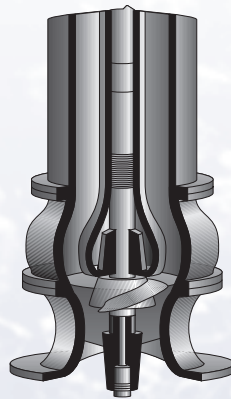
There are many different pump applications, types, and sizes. Pumps are broadly classified as being either centrifugal or positive displacement.

The principal pump type utilized in water industry pumping applications is the centrifugal pump. Centrifugal pumps work by adding kinetic energy to a fluid using a spinning impeller (much like a fan blowing air). Centrifugal pumps are characterized by having a variable flow/head relationship. Head is determined by the amount of lift or pressure resistance a pump must overcome in an application. A centrifugal pump will generate less flow with increasing head requirements. A centrifugal pump's performance is described by its performance curve (please refer to pump performance curves on page 22), which charts the flow rate in relation to head (pressure or lift requirements).

The type of centrifugal pump used or needed for the job should be based on the water and pumping requirements. There are, therefore, a handful of factors to take into consideration when designing a pumping system. **It is important to be knowledgeable of the required operating conditions and the variety of pump types and motors available to ensure that your system operates at the highest efficiency for those conditions.**

The Impeller

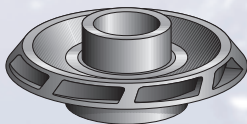
There are several impeller designs: **Axial** (open), **Radial** (closed) or **Mixed** (semi-open).



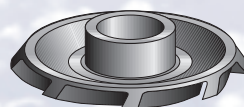
AXIAL FLOW impellers are typically used in agriculture in canal lift pumps, where water flows in a straight line. They provide very high flows at relatively low pressure.



RADIAL FLOW impellers are most often used in booster pumps, and are also used in horizontal centrifugal pumps and deep wells. They produce generally high pressures at lower flows. Water flow through a closed impeller takes a 90° turn.



MIXED FLOW impellers help the water flow through and out of the impeller at an angle less than 90°.



Centrifugal Pump Types



Turbine Pump

The vertical turbine type centrifugal pump is configured as its name implies. The motor (driver) is vertically mounted above the pump's discharge head and is coupled to the turbine pump via a vertical shaft. The vertical turbine pump operates inside the pump casing below the water level (well applications/booster with lift applications) or to a water source under pressure. One or more sets of impellers and bowls on the shaft are assembled into a unit called the bowl assembly, which is the actual pumping element. The advantage of the turbine type pump is its smaller and more compact design. This allows the pump to be installed in relatively small diameters in shallow or deep pumping applications. It also affords flexibility for ease of maintenance and redesign. SCE defines these as a turbine well or turbine booster on test reports and are defined by applications.



Submersible Pump

A submersible pump has a waterproof electric motor connected directly to a turbine pump. As the name implies, both the pump and its motor are in the water. A submersible pump is typically used when the space above ground is at a premium or a straight-line access to the water source is not possible. A submersible pump is also much quieter than pumps that are above ground, which is sometimes desired. SCE defines these as a submersible well or submersible booster on test reports and are defined by applications.



Horizontal Pump

The horizontal centrifugal pump is usually a single-stage unit with one impeller mounted on a horizontal axis. The water enters the center of the rotating impeller and forces the water out radially to the outer diameter of the pump chamber, where it gains energy and is discharged. This action draws in more water to achieve a continuous flow. These are centrifugal boosters. They are not used for well applications.

A suction lift of up to 15 feet is possible with this type of pump and it can deliver up to 70,000 gallons of water per minute. The centrifugal pump operates best when the water flows by gravity to the intake end of the pump. Centrifugal pumps are relatively simple in design and are inexpensive.

A pump test is the **key step in measuring OPE**. The end result of a pump test is an estimate of the overall efficiency of your pump and the total cost of running it under the conditions of the test.

SCE's Pump Test Program

SCE's Pump Testers conduct complete and accurate efficiency tests on water pumps free-of-charge. The goal of the program is to assist customers in making the most efficient use of every kilowatt of electricity to save energy and money. Frequently, SCE also offers energy efficiency cash incentives and rebates applicable to pump plant operations. Ask your SCE Pump Tester about the availability of these programs.

Reasons for Testing

If an existing pump has undergone a mechanical breakdown and is operating in a sub par manner, most likely energy is being wasted. Usually the inefficiency is caused by wear, particularly in well applications where water may contain particulates, such as sand. Also, if the pump is simply not able to produce the required flow and pressure needed, a repair, retrofit or replacement may be needed.

New pumps should also be tested. A test on a new pump will establish baseline performance for future comparison and verify that equipment is operating as designed.

What a Pump Test Measures

A pump test measures various aspects of the pump while in operation to determine OPE:

- Rate of flow
- Total Head
- Power input to the pumping plant

The illustrations on pages 14 and 15 show typical pump plant applications.

Preparing for a Pump Test

An SCE pump test representative will need information regarding the pump's management and design to do a complete cost analysis. This information includes the following:

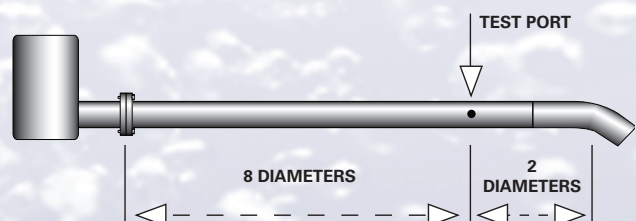
- Hours of operation
- Normal operating conditions
- Required flow rate
- Discharge pressure
- Description of system
(where is the water going?)

Meeting Test-Ready Requirements

On the day of the test, the Pump Tester will need:

- Sounding Location (Sounding tube or opening/hole outside of casing)
- Suitable Location for Flow Determination
- Ability to interrupt operations for equipment setup (in some instances, a corporation valve allows for testing without shutdown)
- Ability to run equipment for extended period (30 minutes to 2 hours typically)

In order to obtain an accurate measurement, the water flow in the pipe must be free from turbulence. Your SCE pump test representative will answer any questions you have on access requirements.





Receiving Test Results

After the test is completed, you will receive a detailed report of your results including data gathered, as well as recommendations regarding financial and energy savings that may be derived by improving pumping productivity.

With a pump test and the expertise of your pump test representative, you will be able to identify which pumps to examine, evaluate, and perhaps replace, repair or retrofit. The results of the evaluation will also show what your annual savings in energy could be if you address problem areas and make changes that improve the OPE of any or all pumping plants. A sub par test result may also lead to an examination of your system for other potential problem areas. Your pump test representative will be able to explain the yearly changes, cost of operations and suggest potential solutions.

The Importance of Regular Pump Testing

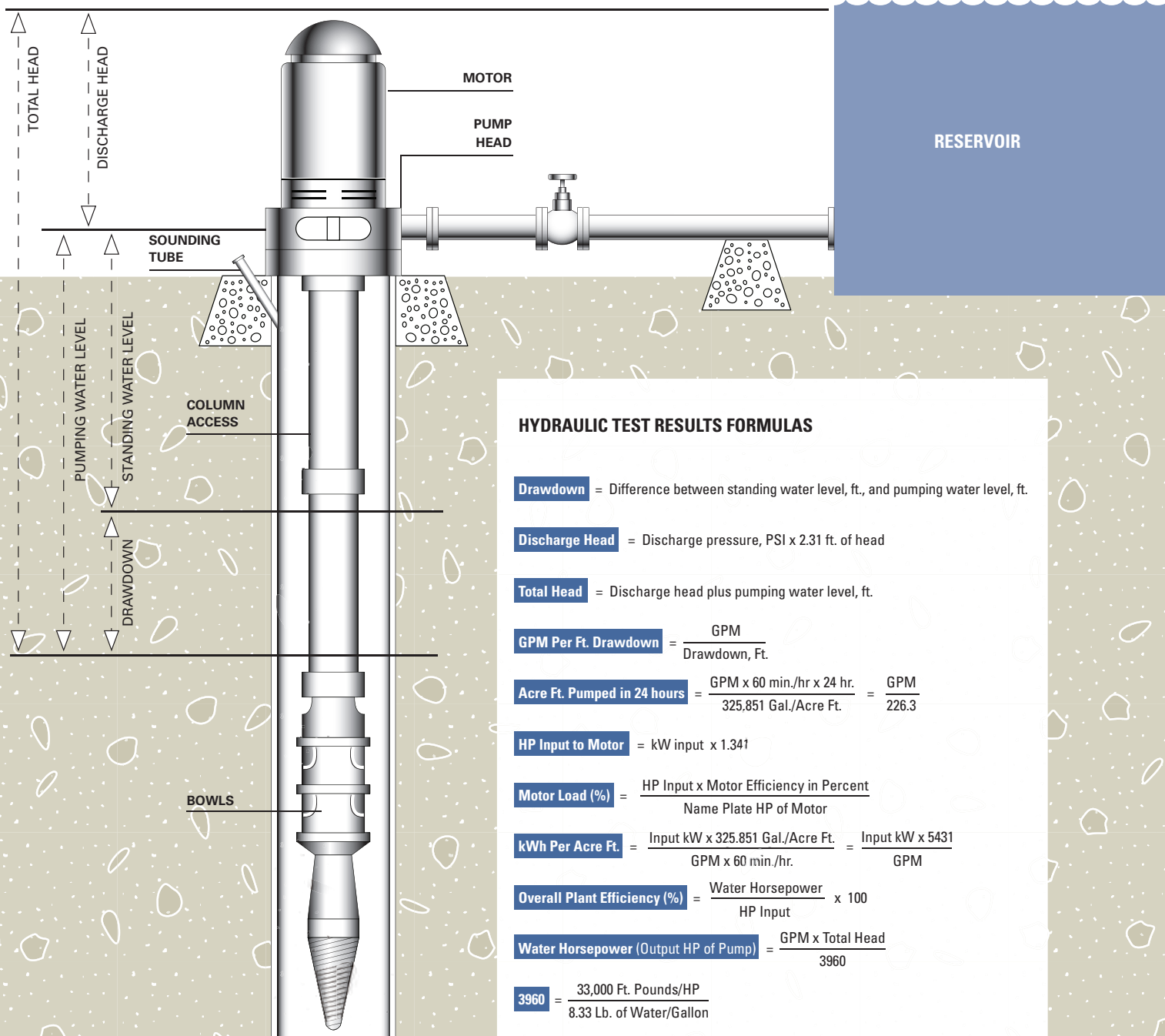
A pump should be tested every one to three years, depending on the annual usage and severity of operating conditions. For example, you may want to test a well pump that pumps a lot of sand-filled water yearly, but test a booster pump supplied by clean water once every three years.

Having tests conducted on a routine basis allows you to evaluate the systems condition over time. For wells, GPM/FT of drawdown can be evaluated over time to show condition of well efficiency (how well the water is being fed to pump).

Regular pump testing cannot only help maintain efficiency and keep energy costs in check—it can also help prevent a serious problem from arising, including a system breakdown. Pinpointing a potential problem allows you to investigate the situation and perform an objective economic analysis to identify when it is financially beneficial to make changes to the system, including possible pump repairs or retrofitting.

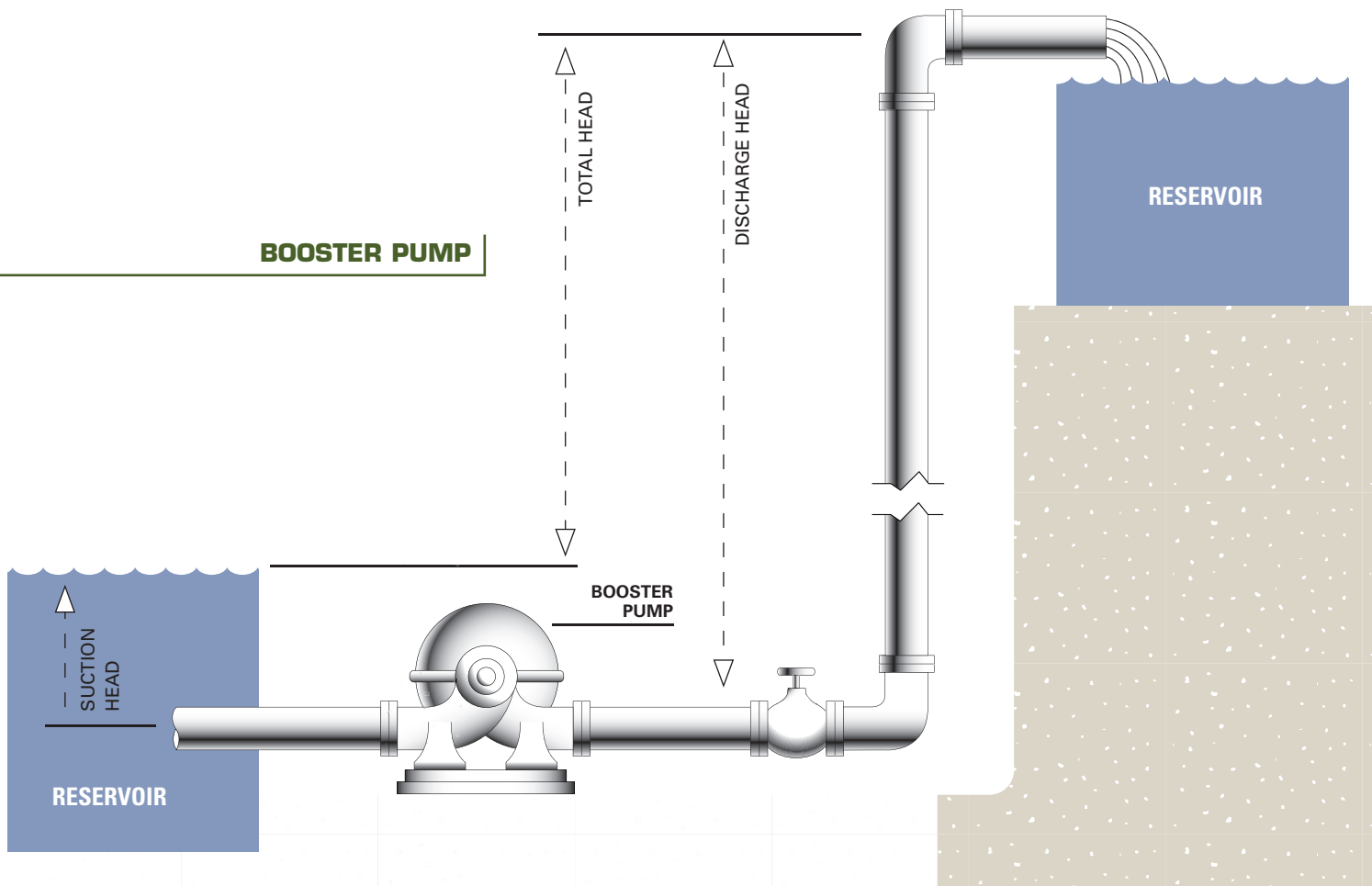
SEE PAGES 17-20
FOR SAMPLES OF SCE'S
TESTING REPORTS

DEEP WELL TURBINE APPLICATION

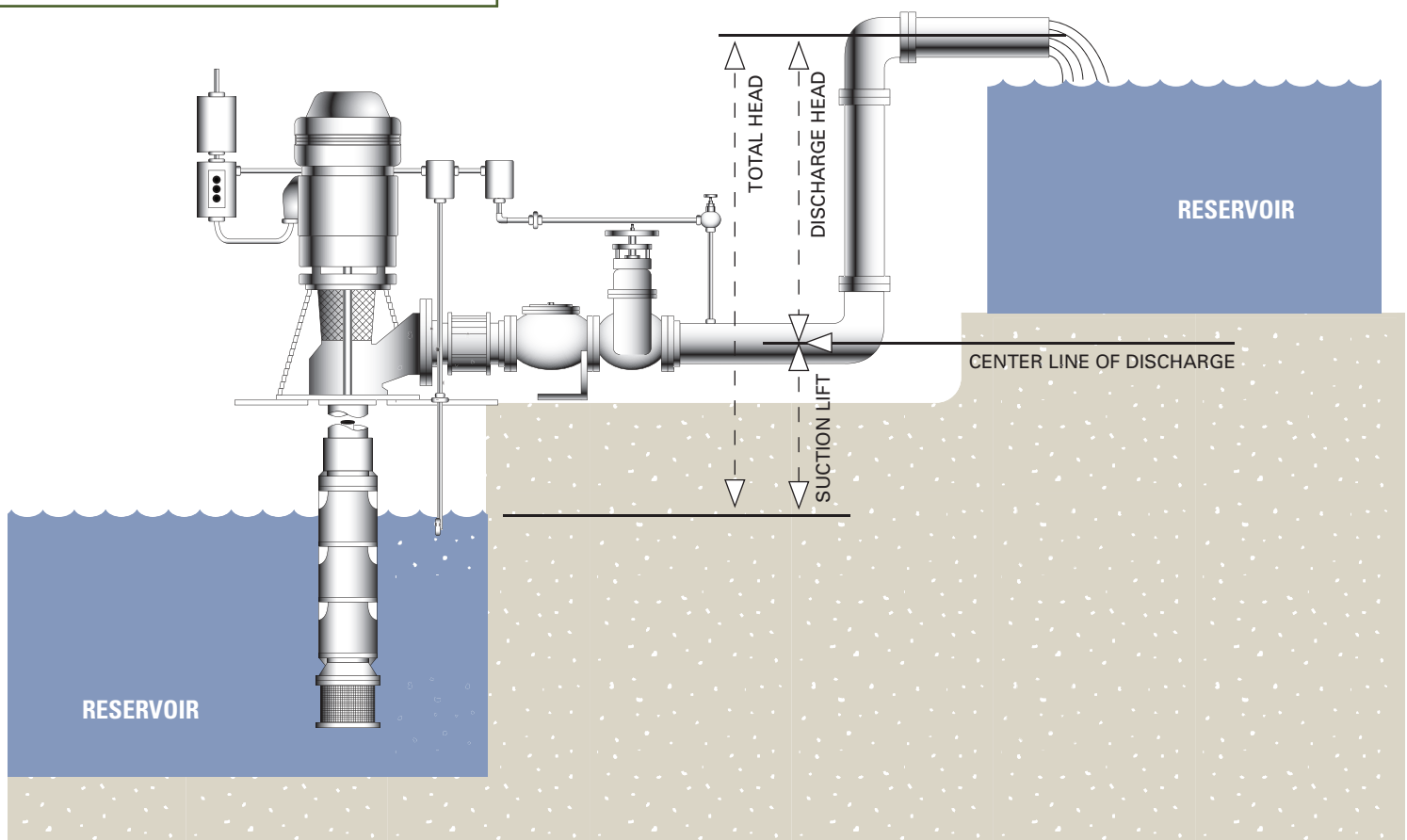


BOOSTER APPLICATIONS

BOOSTER PUMP



TURBINE BOOSTER



Pump Test Key Terms

These key terms are associated with your plant's pumping system and are an important part of the pump test report developed by an SCE technician:

Discharge Pressure, PSI – The pressure obtained at centerline of pump discharge pipe using a calibrated gauge (psig). Discharge pressure is converted to feet and expressed as 'Discharge Head'.

Standing Water Level, Feet – The well's water level obtained when pumping plant is at rest, also referred to as Static Water Level.

Drawdown, Feet – The measured distance, in feet, that the well's water level changes from standing/static level to operating pumping level during observed test conditions.

Suction Head – Head (in units of feet) measured above center line of pump suction intake. Most often obtained with calibrated bourdon tube pressure gauge (suction pressure) and converted to feet by conversion factor 2.3 ft. water / psi.

Suction Lift – The distance in feet between pump discharge head and water level. Typically measured utilizing measuring tape or via calibrated vacuum pressure gauge.

Discharge Head Feet – Head (in units of feet) measured above center line of pump discharge pipe. Most often obtained with calibrated bourdon tube pressure gauge (discharge psig); pounds per square inch are converted to discharge head by conversion factor 2.31 ft water / p.s.i.

Pumping Water Level, Feet – The well's operating water level below center line of discharge pipe as observed during test conditions.

Total Head, Feet – The sum of the water head above and below the center line of the pump discharge pipe. For well applications, the Total Head is the sum of the Discharge Head and the Pumping Water Level. For booster applications, the Total Head is either determined by subtracting the Suction Head from the Discharge Head or by adding the Suction Lift to the Discharge Head. Total Head is used in determination of water horsepower. It is also useful as a comparison and evaluation of current operations to the pump's design point and/or to past pump operations/conditions.

Capacity, GPM – Flow expressed in gallons per minute. This flow is obtained through the use of SCE equipment (in most instances a Pitot tube). Capacity is used to calculate water horsepower.

GPM per Foot Drawdown – The ratio of capacity (GPM) to drawdown feet. GPM/Ft Drawdown is useful in determining the well's performance, trending well performance year-to-year, and may provide information to be used in designing proper pump to meet application. Factors that may affect the well's performance include (but are not limited to); aquifer conditions, well casing diameter, well screen/strainer, the gravel pack and/or the initial design of the well and pump. This reading is a measure of well performance, not pump performance.

Acre Feet Pumped in 24 hours – Amount of water, in Acre Feet, pumped per day at the measured Capacity, GPM. One Acre Foot of water is equivalent to 325,851 gallons of water.

kW Input to Motor – Input kW determination obtained through timing of SCE electronic meter or by calibrated handheld electronic kW meter. The kWh input is converted to horsepower to calculate input horsepower.

HP Input to Motor – The power input to driver, expressed in horsepower obtained by converting input kW to horsepower. (1.341 kW per 1 horsepower).

Motor Load (%) – The calculated motor load based on the ratio of brake horsepower (horsepower at motor output shaft obtained by factoring motor efficiency) to nameplate horsepower. Brake horsepower is equal to horsepower at the output shaft of motor. The motor load should be generally between the ranges of 70% to 115%.

Measured Speed of Pump, RPM – Measured rotational speed, revolutions per minute, of pump shaft as determined by tachometer.


kWh per Acre Foot – The amount of Kilowatt Hours required to pump one Acre Foot of water. Value obtained using pump test results. Useful in determining pumping costs. Cost to pump an Acre Foot of water can be calculated by multiplying this value by the current cost/kWh.

Overall Plant Efficiency (%) – The ratio of the water horsepower (the overall output of plant) to input horsepower (the power input). The overall output can also be defined as the amount horsepower required to deliver the measured capacity (water gallons per minute) at the measured Total Head (in feet). Overall plant efficiency is used in determining overall condition of pumping plant at observed test conditions. Two main components that contribute to Overall Plant Efficiency: Motor Efficiency and the Pump Efficiency.

Customer Meter, GPM – Flow as indicated by customer meter.

Test Results: Inefficient Pump

The following two letters are samples of communications you would receive when the Overall Pump Plant Efficiency (OPE) result of one your pump plants is inefficient. These samples can be compared to the example of the energy cost of an inefficient pump as shown on page 5 of this manual.



**SOUTHERN CALIFORNIA
EDISON**
An EDISON INTERNATIONAL® Company

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July 11, 2005

MR. JOE WATER
ABC WATER DEPT.
1000 MAIN STREET
ANYTOWN, CA 90000

HYDRAULIC TEST RESULTS, Plant: WELL #6
Location: 5050 MAIN ST HP: 150
Cust. #: 0-000-0000 Serv. Acct. #: 000-0000-00
Meter: P000000 Pump Ref #: 0000

In accordance with your request, a test was made on your turbine well pump on July 9, 2005. If you have any questions regarding the results which follow, please contact YOUR PUMP TEST REPRESENTATIVE at (XXX)XXX-XXXX.

EQUIPMENT

Pump Mfg.: PEERL	No.: 205663
Motor Mfg.: US	No.: 1325283

RESULTS

Discharge Pressure, PSI	82.4
Standing Water Level, Feet	142.2
Drawdown, Feet	17.5
Discharge Head, Feet	190.3
Pumping Water Level, Feet	159.7
Total Head, Feet	350.0
Capacity, GPM	659.0
GPM per Foot Drawdown	37.7
Acre Feet Pumped in 24 Hours	2.913
kW Input to Motor	78.8
HP Input to Motor	105.7
Motor Load (%)	64.5
Measured Speed of Pump, RPM	1,784
kWh per Acre Foot:	649
Overall Plant Efficiency (%)	55.1
Customer Meter, GPM	660.0

Manager
Hydraulic Services

The letter above details the pump test results which in this sample reflect an OPE of 55%. Please see the illustration on page 4 and example on page 5.

When your pump test is completed, you will receive a report from SCE showing the results of your test, indicating **the pumping plant's OPE and other important information related to energy and water savings**. The statistics will help you see how your pump is performing and what affect a pump repair or retrofit may have on energy efficiency and savings.

If your OPE is low, SCE will provide you with a Pumping Cost Analysis, which compares your plant's present operating performance to what it could be if it were operating in optimal conditions. On the next page is an example of the Pumping-Cost Analysis of a pump test report prepared by SCE's technicians.*

Important: The pumping cost analysis presented is only valid for the assumptions listed in lines 1-5 and for the conditions measured during the test. One or more of the assumed variables resulting from a pump repair could be in error and the economics presented would be misleading. Use this section only as a guide to the magnitude of potential savings. Always consult with your pump service company and other available experts before making the decision to retrofit or repair a pump.

Explanation of the Pumping Cost Analysis

The cost analysis is based on assumptions that water requirements will remain the same and all operating conditions remain the same (Total Head and Water Demand). Based on these assumptions, the cost analysis letter will estimate the following:

1. Estimated potential improvement in OPE
2. Estimated energy savings kWh/Year and \$/Year

Below are the calculations that determine the potential savings that can be obtained by improving OPE:

3. **Total kWh** – The total kilowatt hours used annually based on hours of operation and 12-month billing average
4. **kW Input** – Input kW as measured by test representative
5. **kWh per Acre Foot** – The kilowatt-hours required to pump an Acre Foot of water into the system
6. **Acre Feet per Year** – The estimated Acre Feet per year pumped into the system
7. **Average Cost per kWh** – The average cost per kilowatt-hour based on previous 12-month billing
8. **Average Cost per Acre Foot** – The average cost to pump an Acre Foot of water through the system
9. **Overall Plant Efficiency (%)** – The overall pumping plant efficiency (which may be zero in the case where the pumping water level in a well cannot be measured for some reason)
10. **Total Annual Cost** – The estimated annual cost of energy may not include demand charges or other surcharges to run the pump. This will be zero if the annual hours of operation or annual Acre Feet pumped are not known

Note:

You should consult with your SCE account representative or other pumping and water-system experts before making the decision to retrofit or repair a pump.

**NOTE: Other tests may provide other types of information.*

Cost Analysis: Inefficient Pump



Confidential / Proprietary Information

July 11, 2005

MR. JOE WATER
ABC WATER DEPT.
1000 MAIN STREET
ANYTOWN, CA 90000

PUMPING COST ANALYSIS, Plant: WELL #6
Location: 5050 MAIN ST HP: 150
Cust. #: 0-000-0000 Serv. Acct. #: 000-0000-00
Meter: P0000000 Pump Ref #: 0000

The following analysis is presented as an aid to your cost accounting. This is an estimate based on the conditions present during the Edison pump test performed on July 9, 2004, billing history for the past 12 months, and your current rate of TOU-PA-B.

Assuming that water requirements will be the same as for the past year, and all operating conditions (annual hours of operation, head above, and water pumping level) will remain the same as they were at the time of the pump test, it is estimated that:

1. Overall Plant Efficiency can be improved from 55.1% to 72.0%.
2. This can save you up to 125,075 kWh and \$13,758.26 annually.

	Plant Efficiency		
	<u>Existing</u>	<u>Improved</u>	<u>Savings</u>
Total kWh	533,472	408,397	125,075
kW Input	78.8	60.3	18.5
kWh per Acre Foot	649	497	152
Acre Feet per Year	821.5		
Average Cost per kWh	\$0.11		
Average Cost per Acre Foot	\$71.43	\$54.69	\$16.75
Overall Plant Efficiency (%)	55.1	72.0	
Total Annual Cost	\$58,681.92	\$44,923.66	\$13,758.26

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions regarding this report, please contact YOUR PUMP TEST REPRESENTATIVE at (XXX)XXX-XXXX.

Manager
Hydraulic Services

The letter above provides a cost analysis of your existing pump performance at an OPE of 55% and the potential \$13,758.26 savings if the pump were operating at an improved OPE of 73%. Frequently, SCE offers incentives based on energy cost savings for customers improving their OPE through repairs or retrofits. Ask your SCE account representative or pump tester about available incentives and rebates. Please see the illustration on page 4 and example on page 5.

Test Results: Efficient Pump



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May 4, 2006

MR. JOE WATER
ABC WATER DEPT.
1000 MAIN STREET
ANYTOWN, CA 90000

HYDRAULIC TEST RESULTS, Plant: WELL #6

Location: 5050 MAIN ST HP: 150
Cust. #: 0-000-00000 Serv. Acct. #: 000-0000-00
Meter: P000000 Pump Ref #: 0000

In accordance with your request, a test was made on your turbine well pump on May 1, 2006. If you have any questions regarding the results which follow, please contact YOUR PUMP TEST REPRESENTATIVE at (XXX)XXX-XXXX.

EQUIPMENT

Pump Mfg.: PEERL No.: 205663
Motor Mfg.: US No.: 1325283

RESULTS

Discharge Pressure, PSI	85.0
Standing Water Level, Feet	148.3
Drawdown, Feet	18.7
Discharge Head, Feet	196.4
Pumping Water Level, Feet	167.0
Total Head, Feet	363.4
Capacity, GPM	935.0
GPM per Foot Drawdown	50.0
Acre Feet Pumped in 24 Hours	4.133
kW Input to Motor	88.0
HP Input to Motor	118.0
Motor Load (%)	72.0
Measured Speed of Pump, RPM	1,784
kWh per Acre Foot:	511
Overall Plant Efficiency (%)	72.7
Customer Meter, GPM	936.0

Manager
Hydraulic Services

The letter above is used to communicate the detailed test results of a pump that was determined to be operating efficiently.

Test Results: Efficient Pump — Congratulations



Confidential / Proprietary Information

May 4, 2006

MR. JOE WATER
ABC WATER DEPT.
1000 MAIN STREEET
ANYTOWN, CA 90000

PUMPING COST ANALYSIS, Plant: WELL #6
Location: 5050 MAIN ST HP: 150
Cust. #: 0-000-0000 Serv. Acct. #: 000-0000-00
Meter: P000000 Pump Ref #: 0000

The following analysis is presented as an aid to your cost accounting. This is an estimate based on the conditions present during the Edison pump test performed on May 1, 2006, billing history for the past 12 months, and your current rate of TOU-PA-B.

	<u>Existing</u>
Total kWh	420,000
kW Input	88.0
kWh per Acre Foot	511
Acre Feet per Year	821.7
Average Cost per kWh	\$0.11
Average Cost per Acre Foot	\$56.23
Overall Plant Efficiency (%)	72.7
<hr/> Total Annual Cost	<hr/> \$46,200.00

The hydraulic test results indicate that this pump is operating in an efficient manner.

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions regarding this report, please contact YOUR PUMP TEST REPRESENTATIVE at (XXX)XXX-XXXX.

Manager
Hydraulic Services

The above letter provides the energy cost detail information of a pump that was tested and found to be operating efficiently. This information can be used as a historical baseline for future tests and to assist you with energy cost budgeting for your operations.

Pumps have the ability to perform in a range of operating conditions. To help users understand this important information and use it to their advantage and their particular pumping-plant needs, pump manufacturers publish pump-performance curves for each pump type. Overlaying a pump-performance curve on pump test result figures can **provide further insights into actual pump performance.**

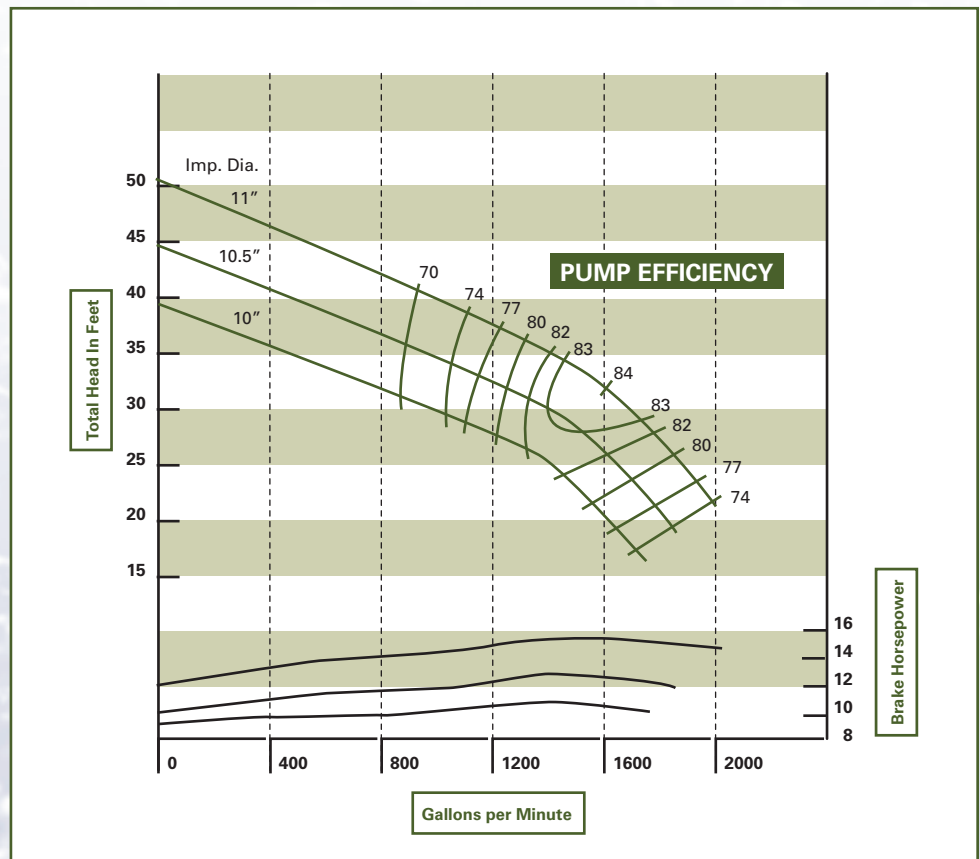
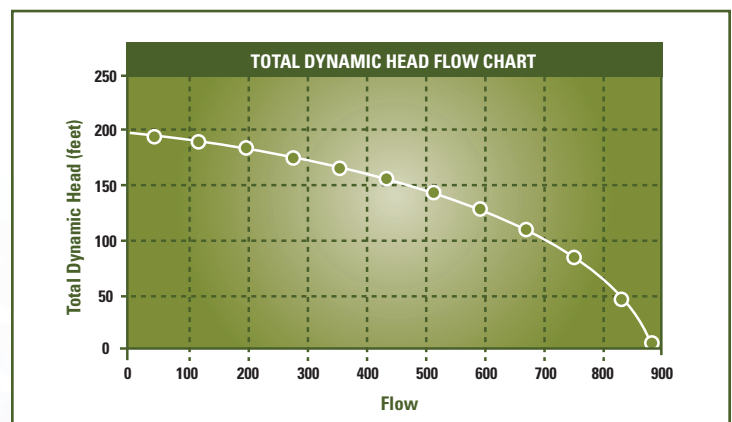
A pump performance curve is a charted or graphed illustration that portrays a pump's range of operating conditions. A simple pump performance curve will show the relationship between pump flow (in gallons per minute), pumping pressure (measured in feet), water horsepower and Net Positive Suction Head (NPSH).

Why They are Useful

Pump-performance curves can help you see what **effect increasing or decreasing pumping pressure will have on pump production** (measured in gallons per minute or GPM) and horsepower requirements.

You can take the results of a SCE hydraulic pump-efficiency test and superimpose them onto the manufacturer's pump-performance curve to determine actual pump operating conditions with respect to design and also to give indications of excessive pump wear.

The sample performance curve on the right has evolved from actual hydraulic pump test results.



1. How long does it take to conduct a pump efficiency test?

An average pump test takes one to three hours. This includes approximately 30 minutes preparation time and 30 minutes to 2 hours pumping plant run time.

2. How much does the pump efficiency test cost?

This service is free to SCE customers. The program is funded with Public Goods Charges from California utility ratepayers.

3. Who can fix my pump?

Just take your pump efficiency test results to a qualified pump contractor to make efficiency improvements to your pumping plant.

4. How do I request a pump test?

There are three ways to request a pump test.

1. You can call one of the numbers depending on where your plant is located:
 - L.A. Area, Orange County, San Bernardino County - 909.820.5333
 - Ventura Area - 800.338.8502
 - San Joaquin Valley - 800.634.9175
2. You can request a form online at <https://www.sce.com/forms/RequestPumpTest.aspx>
3. Contact your assigned SCE account representative.

5. How often should I get a pump test?

The recommended frequency of testing is dependent on many factors. These factors include pump annual operation hours, annual energy consumption, changes in your pumping conditions and concerns specific to the pumping plant. As a general rule of thumb, we recommend that a well pump with average to high usage be tested every one or two years. For booster pumps, the recommended testing frequency is every two to three years.

6. What are some simple things I can do to reduce my costs?

There are several ways to reduce your pumping energy costs. Maintenance options include adjusting bowl and impeller assembly, pump overhaul or replacement, and/or well rehabilitation. If you operate multiple pumps, you can utilize test results to prioritize pumping so that most efficient and lower cost pump(s) act as the

lead. Reductions in system pressures and frictional losses also help to reduce costs.

7. How come my efficiency is not at 100%? It's new.

The SCE pump test measures the Overall Plant Efficiency which includes the combined Motor and Pump Efficiency along with the frictional and electrical losses associated with the plant. Depending on the type and size, motor efficiencies generally range between 85-96%. The same goes for pumps which vary in efficiency, depending on type, size, and manufacturer. Generally, these range from 70-80%.

8. What do I need to do to allow for a pump test?

If you need assistance determining what is needed to conduct a test, please contact us using the numbers provided in #4 above. In general, the following is required to conduct a complete test:

- Ability to start and stop pump for instrument hook-up or proper fittings for instrumentation hook-up while pump is running
- Pumping plant needs to run long enough to conduct test. (usually 30 minutes to 2 hours)
- Ability to measure Water Flow using test equipment or customer water meter
- Ability to measure Electrical Input
- Ability to Sound for pumping and standing water levels in wells
- Ability to measure Total Head. Inlet Pressure, Discharge Pressure, Pumping Level for wells

9. What size HP pump can we test?

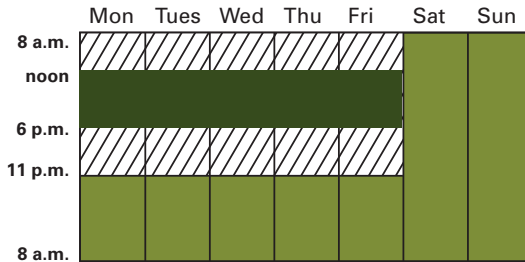
Depending on plant configuration, SCE can test pumping plants ranging from 5 HP and up.

10. What kind of pumps does SCE test?

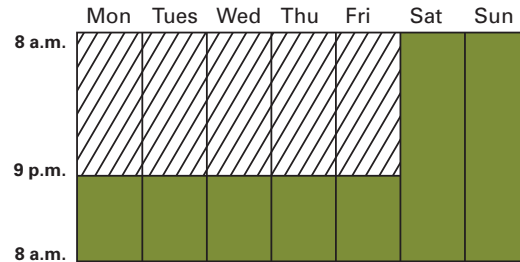
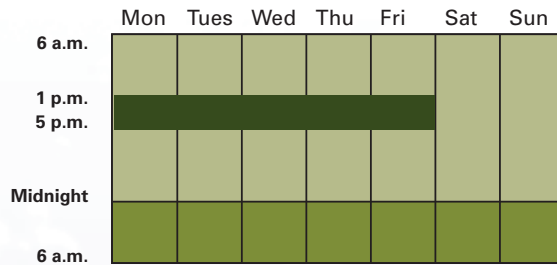
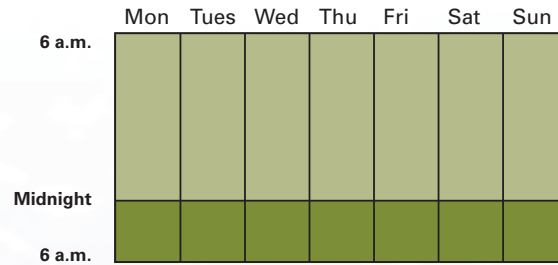
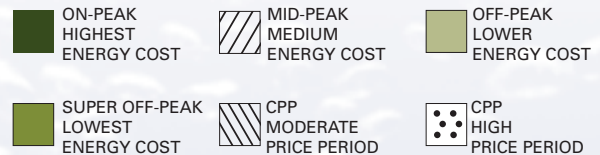
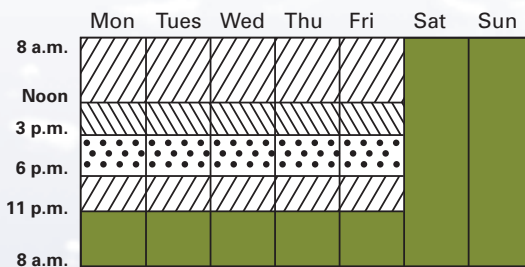
SCE tests pumps for agricultural, municipal and industrial customers as long as the application delivers water to an end use, and the plant configuration allows for measurement of flow, feet of head and electrical power input. These pumps include deep well turbines, turbine boosters, centrifugal boosters and submersible well or booster pumps.

TOU-PA, TOU-PA-5, TOU-PA-7

First Sunday in June to the first Sunday in October

**TOU-PA, TOU-PA-5, TOU-PA-7**

First Sunday in October to the first Sunday in June

**TOU-PA-SOP and TOU-PA-SOP-1 Summer**First Sunday in July to the first Sunday in October (Option1) or
First Sunday in June to the first Sunday in September (Option 2)**TOU-PA-SOP and TOU-PA-SOP-1 Winter**First Sunday in October to the first Sunday in July (Option1) or
First Sunday in September to the first Sunday in June (Option 2)**TOU-PA-CPP Summer during a CPP event**

Both On-Peak and Mid-Peak time periods are considered Off-Peak during the following holidays: New Year's Day (January 1), Washington's Birthday (third Monday in February), Memorial Day (last Monday in May), Independence Day (July 4), Labor Day (first Monday in September), Veteran's Day (November 11), Thanksgiving Day (fourth Thursday in November) and Christmas Day (December 25).

There are many physical and design aspects of your pumping system that may affect its performance including the type of motors used, size of pipes, the actual pumping pressure and more. **Designing or redesigning your system with optimum operational efficiency will prove to be cost-effective over time** and could have an immediate positive impact of the cost and use of energy.

Energy-Efficient Motors

Motors are an essential part of your pumping system, converting electrical energy into mechanical work to move water. **They are not 100% efficient, however, since some electrical input is dissipated as heat.** Some electrical motors have less heat loss than others of comparable size.

Today, motors are designed to be more efficient and are able to convert a higher percentage of their electrical input to useful mechanical work. Motor manufacturers accomplish this by using higher-quality and more expensive materials, such as iron and copper.

Purchasing a new high-efficiency motor may be more economical overall (life cycle cost) than repairing a damaged motor, when you factor in the energy savings that a more efficient motor will deliver.

Example of savings:

Standard vs. Premium Efficient Motors

75% Motor Load and 6000 Hours of Operation

For more information, visit the U.S. Department of Energy's Best Practices Web page at <http://www1.eere.energy.gov/industry/bestpractices>

Motor HP	Standard Efficiency Motor	Annual kWh 6000 Hours Operation	Premium Efficiency Motor	Annual kWh 6000 Hours Operation	Energy Savings kWh/Year	Energy Savings \$/Year
25	90	93,240	93.9	89,339	3,901	\$429
50	91.2	184,070	94.8	177,132	6,938	\$763
100	92.7	362,038	95.4	351,813	10,225	\$1,125
150	93.1	540,992	95.8	525,407	15,585	\$1,714
200	93.5	718,630	95.8	700,470	18,160	\$1,998
250	94.2	886,969	96.0	874,219	12,750	\$1,403

Variable-Speed Drive

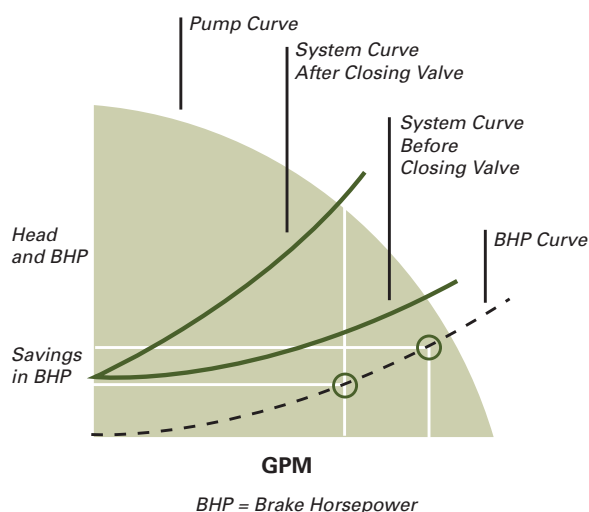
You can reduce pumping energy and costs by using a variable-speed drive (VSD) to control pressure and flow. A VSD-controlled pump can maintain constant pressure when the flow is changing. It can also be used to keep a constant flow when the pressure is changing. In either case, the result is optimum productivity with reduced energy usage.

A variable-speed drive improves a pump's performance by changing its rotational speed to better match the pumping load. The most efficient VSDs use solid-state inverters. A sensor in the pumping system signals the VSD circuits to vary the voltage and frequency outputs, which changes the pump speed.

Energy savings can be projected on a pump by comparing the estimated energy consumption of a fixed-speed pump to a variable-speed model, taking into account the flow characteristics of the pumping site.

Excessive Pumping Pressure

EFFECT OF CLOSING PUMP DISCHARGE VALVE



Your pumping system should maintain the minimum pressure required to operate efficiently. Excessive pumping pressures can be the result of several causes:

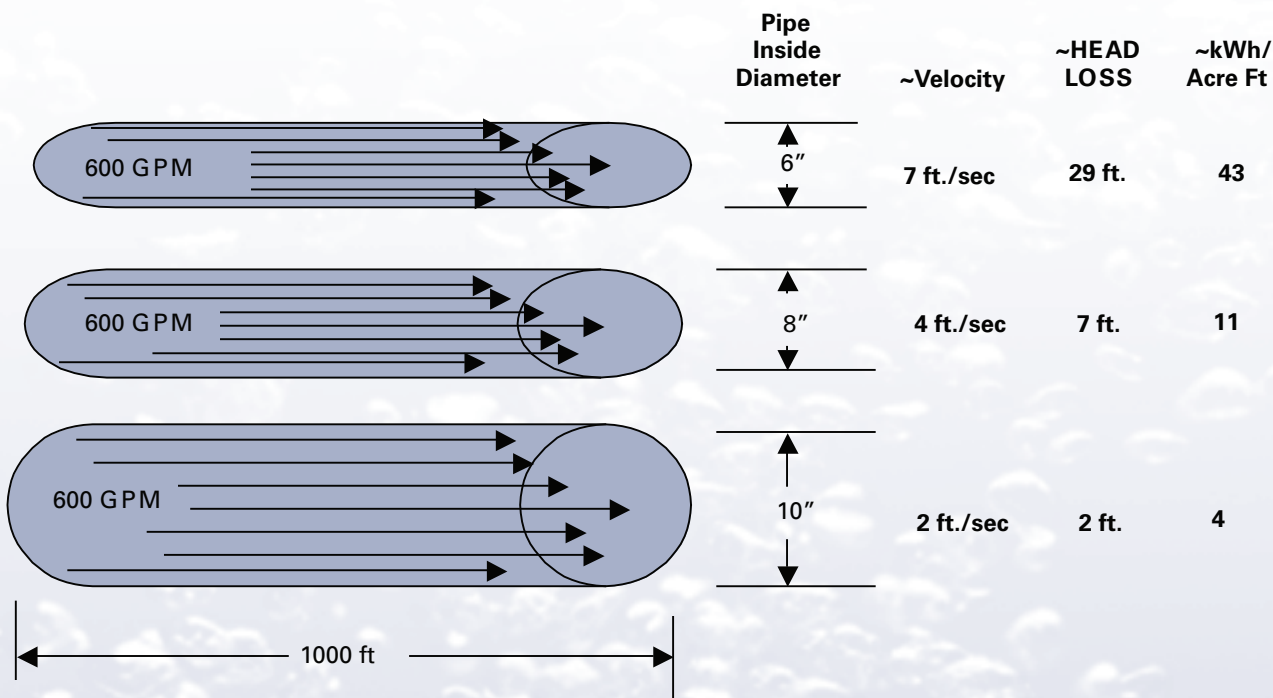
- A defective booster pump control and valves
- Pumping against a higher head than is needed to move water (false head)
- Supplying water at a pressure exceeding state regulations

System pumping pressures should be checked regularly to see that they meet but do not exceed pressure requirements.

Piping System Friction Losses

Large diameter pipes have less flow resistance per unit of flow than smaller pipes. Pipelines are usually sized enough to keep fluid velocities and Total Head losses at acceptable levels. The design involves a balance between capital expenditures for pipe, treatment requirements, system requirements and overall energy consumption based on design.

The figure below is a basic example of potential frictional losses for pumping water in varying diameters of 1,000 feet of straight new cast iron pipe.



**HAZEN - WILLIAMS METHOD FOR DETERMINING FRICTION LOSS. IRON PIPE = 130 FRICTION COEFFICIENT

Approximate cost per year using OPE = 69%, 500 Acre Feet pumped per year, and cost of energy at \$ 0.11/kWh:

6 Inch Pipe = 500 Acre Ft. x 43 kWh/Acre Ft. = 21,500 kWh x \$0.11 kWh = \$ 2,365
 8 Inch Pipe = 500 Acre Ft. x 11 kWh/Acre Ft. = 5,500 kWh x \$0.11 kWh = \$ 605
 10 Inch Pipe = 500 Acre Ft. x 4 kWh/Acre Ft. = 2,000 kWh x \$0.11 kWh = \$ 220

Well Conditions and Pumping Costs

Well-specific capacity, which is the well flow rate divided by the draw down for that flow rate, is a complex relationship based on the aquifer conditions, well casing diameter, well screen, gravel pack selection and the initial development.

Well performance will generally degrade with time, due to a variety of causes. Well screens can corrode or encrust with various deposits that reduce flow openings into the well. Gravel packs can also experience plugging from fine materials such as silt. Attempting to pump too much water by using too big a pump for the aquifer also results in low well-specific capacity. This subject is very important to your pumping costs. Consult with your pump dealer and/or well driller if the pump test history reveals significant reduction in well-specific capacity over time.



Your business may be well suited for Supervisory Control and Data Acquisition (SCADA), an automated system that **maximizes pumping system savings with a minimal use of manpower resources.**

SCADA is designed for, and sized to, the pumping system it serves. The aim is the use of energy at minimal cost. An investment payback of less than two years is not uncommon, with ongoing energy-cost savings year after year.

SCADA, which can be effective in any size pumping system, can automate a few or multiple pumping-system operations, including scheduling, monitoring and controlling the use of energy for pumping applications. In an Energy Management System (EMS), pumps with lower operating costs are scheduled to operate first, ensuring energy and money savings.

In a small operation, SCADA might involve only on/off controls, such as time clocks or programmable controllers. For a large pumping system, a network of sophisticated computer controllers operates pumps as needed.

SCADA consists of a central control panel that controls the entire pumping system. An override feature allows authorized employees to vary the operating schedule at any time, if needed, or to make across-the-board adjustments to different areas.

Water Usage And Energy-Saving Ideas

You could reduce water and energy usage and save money by employing a variety of strategies, technologies and simple recommendations—from regular system recordkeeping to irrigation do's and don'ts. One or more of these approaches may go a long way to helping you manage your resource costs effectively.

Using Reservoir Storage

Taking longer to refill a reservoir may help you reduce water-production costs. Filling a reservoir can be accomplished by using one pump with a lower dollar per hundred cubic feet of water produced and pumping over a longer time period. Or you could fill it in a shorter time period using multiple pumps that have slightly higher cost values.

Even though the one-pump process may take more time and may only be possible in winter, the cost savings may be in your favor.

Using Reservoir Capacity

If you are on Time-of-Use (TOU) rates, you can reduce water-production costs during on-peak periods by using more of your reservoir storage capacity, instead of well pumps, to meet water demands.

You will need to make sure that lowering the water level will not cause damage to the reservoir coating. Recoating the reservoir to allow for lower water levels could prove to be cost-effective.

Using Priority Pumping

Priority pumping is a pumping-system strategy that has you select and decide which pumps to use first to achieve maximum water production at the least energy cost. And because using a priority-pumping program typically requires no capital investment, priority pumping may be a quick and effective way to save energy and money.

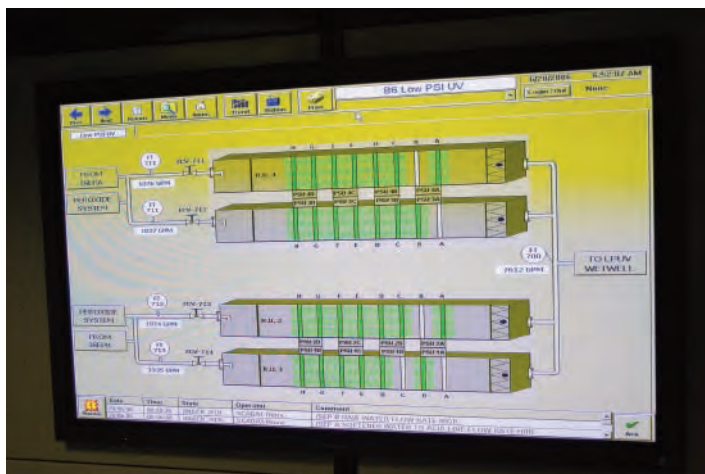
In order to know which pumps to use first and in which order, priority pumping requires that you know the water production characteristics of all your pumps beyond their performance efficiency. This information would include the following:

- Data on ground water level
- Discharge pressure
- Elevation
- Distance to the reservoir

A comparison of the resulting kWh/Acre Ft. for all pumps will help you determine what pumping-priority technique is best for your operation.

Not all water systems may be flexible or adaptable enough for priority pumping. Here are some conditions that may limit your efforts:

- Some well characteristics will limit how much a given pump can be used.
- Some pumps may be limited in ability to move water between given pressure zones. Possible restrictions on individual pump use may limit its performance.



Test Findings and Formulas We Use

Discharge Head: Observed discharge pressure, psi, multiplied by conversion factor of 2.31 feet/psi

Total Head: Discharge head plus pumping water level, ft.

$$\text{GPM Per. Ft. Drawdown} = \frac{\text{GPM}}{\text{Draw down, ft.}}$$

$$\text{Acre Ft. Pumped in 24 hours} = \frac{\text{GPM} \times 60 \text{ min./hr.} \times 24 \text{ hr.}}{325,851 \text{ Gal./Acre Ft.}} = \frac{\text{GPM}}{226.3}$$

$$\text{HP Input to Motor} = \text{kW input} \times 1.341$$

$$\text{Motor Load (\%)} = \frac{\text{HP input} \times \text{Motor Efficiency in Percent}}{\text{Name Plate HP of Motor}}$$

$$\text{KWh per Acre Ft.} = \frac{\text{Input kW} \times 325,851 \text{ Gal. /Acre Ft.}}{\text{GPM} \times 60 \text{ min. /hr}} = \frac{\text{Input kW} \times 5,431}{\text{GPM}}$$

$$\text{OPE (\%)} = (\text{Water Horsepower} / \text{HP Input}) \times 100$$

$$\text{Water Horsepower} = \frac{\text{GPM} \times \text{Total Head}}{3,960}$$

(The output HP of Pump)

$$3,960 = \frac{33,000 \text{ Ft. Pounds/HP}}{8.33 \text{ lb. of Water/Gallon}}$$

Acidification: Injecting an acid chemical (usually hydrochloric acid or sulfuric acid) into a well to dissolve encrusted material on the casing perforations (slots).

Acre Foot: The quantity of water required to cover one acre of land (surface) with water one foot deep (325,851 gallons). The Acre Foot is the most common measure of volume in irrigated agriculture.

Adjustable Speed Drive: Drive speed at shaft adjusted either mechanically or electrically to control speed of pump. Refer to Variable Frequency Drive.

Air-line: A method of sounding a well. Small diameter tubing is installed to a known point below any expected pumping water level. The air pressure required to expel air from this tube indicated the water level in the well, either during pumping or at static conditions.

Application Rate (AR): Equivalent depth of water applied to a given area per hour by the system, usually measured in inches per hour.

Aquifer: A saturated water-bearing geological formation or group of formations having sufficient permeability to yield water to wells.

Axial Flow Pump: Pump design used for low-head, high flow conditions, also called a propeller pump.

Belt Drive: A device that transmits power from a driver (electric motor) to a pump by means of belts (either flat or V-belts) and pulleys.

Booster Pump: A pump used to lift or introduce water from a low surface level (reservoir, canal, lake, river, or pond) to a higher level or greater pressure of water system. This can be a horizontal or a turbine pump. In agricultural applications, Usually used for pumps supplying sprinkler, micro-irrigation system or water supply.

Bowl (Pump): The pump stage of a turbine pump. This is called the “volute” if referring to a centrifugal pump. It contains the rotating impeller and directs water flow into and out of the impeller.

Bowl Efficiency: Efficiency of the pump by itself (as opposed to combination of the pump driver and transmission system). It is difficult to determine bowl efficiency in the field. An estimation can be made by subtracting out other losses associated with the pumping plant such as the power plant and transmission efficiencies. Useful for initial specification or designing pump to match operational requirements.

Brake Horsepower (BHP): Brake horsepower is the output horsepower of a driver (electric motor) to a pump. It may also be used to refer to the required input horsepower to the pump itself.

Capacity (Pump): The flow rate of a pump. It is generally used when referring to the normal (or required design) flow rate of the pumping plant.

Capital Cost: The amount of money required to pay for the purchase and installation of a pumping plant.

Casing: Pipe used as lining for a well.

Cascading Water: Water entering the well at a point above the pumping water level. This can entrain air in the water and cause a significant loss of pumping efficiency. Cascading water may be an indication of an inefficient well or a signal of aquifer changes.

Cavitation: The rapid formation and collapse of air bubbles in water as it moves through a pump. This results from too high a vacuum in the pump itself due to insufficient “net positive suction head.” Cavitation causes pitting of the propeller and pump housing and can greatly degrade pump performance.

CCF: Hundred cubic feet.

CFS: Cubic feet per second is a rate of flow where large quantities of water are considered

Centrifugal Pump: A pump in which water enters the center of a rotating impeller and is flung out radially, gaining energy in the process. This is also a term commonly used for a specific type of pump where the impeller is enclosed in a volute casing. A volute casing is a type of casing where the area of a water flow increases uniformly towards the pump discharge. The increase in flow area converts the velocity achieved through centrifugal action into pressure.

Check Valve: A valve installed in a pipeline that automatically closes and stops water from flowing backwards when a pump is shut off.

Chlorination: Periodic injection of chlorine compounds into wells to prevent the growth of bacteria and slimes. Also used when referring to injection into irrigation systems, most often micro-irrigation systems.

Column Loss: The value of head loss caused by flow friction in the well column pipe.

Column Pipe: The pipe that connects the bowl assembly of a turbine pump to the discharge head of the pump and conducts the water from the bowl assembly to the discharge head.

Concentric Reducer: A symmetrically-shaped pipe fitting used to constrict and divert flow from a larger to a smaller pipe.

Corrosion: Deterioration and destruction of metal by chemical and/or galvanic reactions. Chemical corrosion dissolves the metal, which is then carried away by the water. Chemical corrosion can allow sand to enter the well. Galvanic corrosion is caused by electrolytic cells forming between dissimilar metals or surfaces.

Daily Crop Water Use (Evapotranspiration): This is the net amount of water extracted from the soil daily by the crop and surface evaporation from the soil.

Deep-Well Turbine Pump: A turbine pump installed inside a well casing below the pumping water level in the well.

Development of Well: The process of removing the finer material from the aquifer or gravel pack surrounding a well, which may include drilling mud forced into the formation during well construction. If performed after the well has been in service for some time it is referred to as “re-developing” a well.

Discharge Pressure: Pressure at the discharge flange of a pump.

Discharge Head: A measurement of pressure, in feet of head, at the discharge flange of a pump. A discharge head can also be a physical part of a turbine-type pump base, which supports the column pipe and bowl assembly of a turbine pump.

Distribution Uniformity (DU): A measure of how evenly water soaks into the field during irrigation. It is usually a percentage between 0 and 100; the higher the number the better. A DU of 100% is theoretically possible but practically impossible to achieve. It is the upper limit of irrigation efficiency if the whole field is sufficiently irrigated.

Drawdown: The difference in elevation between static and pumping water levels in a well, usually following a specified operating time.

Driven: A machine or piece of equipment (pump) that requires power from a prime mover (motor) such as a motor-driven pump.

Driver: A prime mover (motor) that supplies power to a machine (pump), generally either a windmill, an electric motor, or an internal combustion engine.

Driver Efficiency: The ratio of the driver output to the power input. Typically expressed in percent efficiency.

Dynamic Head: The sum of pressure and pumping head developed by a pump.

Eccentric Reducer: A non-symmetrically-shaped pipe fitting used to constrict and divert flow to a smaller pipe without leaving an air space at the top of the large pipe.

Effective Root Zone: The depth of soil in which you are actively managing the crop (fertilizer levels, tilth, soil moisture, etc.).

Electric Motor: A device that converts electrical energy to mechanical work.

Electrical Sounding Probe: Device used to measure water level in a well by completing an electrical circuit when a probe is lowered into the well water.

Encrustation: The accumulation of material in the perforations of the well casing, in well screen openings, and in the voids of gravel pack and water-bearing soil. Encrustation decreases open areas in the well casing, impedes water flow into the well, and decreases well efficiency.

End Seal: A seal on the bottom end of the impeller in a turbine pump bowl assembly.

Entrained Air: A mixture of small air bubbles within water. It can develop due to vortexing (whirlpools that form at a pump intake) or cascading water into a well. Entrained air in a pumping system displaces water from the impeller and reduces pump capacity and efficiency.

Evapotranspiration: See “Daily Crop Water Use”

Feet of Head: Feet of head is a measure of pressure in a water system (1 foot of head= 0.433 psi).

Field Capacity: The amount of water the soil will hold.

Float Switch: An electrical switch in the control circuit of a motor control that is actuated by a float in a water tank or reservoir.

Flow Meter: Any measuring device used to measure fluid flow rates in a pipe or open channel. The flow meter may measure instantaneous flow rates or total fluid volumes over a period of time.

Freeboard: Distance from the top of the flowing water to the top of the channel banks.

Friction Head: The head in feet required to overcome the fluid friction in a pipe or water system.

Friction Losses: Energy losses associated with moving water against rough surfaces. In water pumping applications it is the water pressure lost as a result of contact between moving water and the enclosure that it is moving in (either a pipeline or open channel).

Gal/Min. (GPM): Gallons per minute- a rate of flow.

Gas Engine: An internal combustion engine using gasoline or propane as fuel.

Gate Valve: A valve commonly utilized to control flow by lifting or closing a gate. All gate valves have a rising or a nonrising stem. Rising stems provide a visual indication of valve position. Nonrising stems are used where vertical space is limited or underground.

Gear Drive: A mechanical device using gears to connect a driver to a pump. Commonly they are used either to provide different pump speeds or to connect an internal combustion engine to a well pump.

Gravel Pack: A thin layer of various sizes of gravel placed between the well casing and the well itself. Gravel packs are designed to prevent soil particles from entering the well casing.

Head (Water Head): An alternative term for pressure. One pound per square inch pressure (1 psi) equals 2.31 feet of water head. That is, a column of water 2.31 feet high will exert 1 psi at the bottom of the column.

Head-Capacity Curve: A pump performance curve of a particular impeller type showing the relation of dynamic head and flow rate.

Horsepower (HP): Horsepower is a rate of doing work- how far can a mass be moved in a period of time. One horsepower equals 33,000 foot pounds per minute, that is, one horsepower can raise 33,000 pounds one foot over the period of one minute.

Impeller: The impeller is the rotating component of the pump and is contained within the pump bowl (or pump volute). Impellers may be figured as open, closed, or semi-open. They are usually made of bronze, cast iron, plastic, or cast iron coated with porcelain enamel. The impeller transfers energy developed by the pump driver to the water as water flows through the pump bowl.

Impeller Trim: The specific diameter of the impeller used in a pump. Impellers are cast at the maximum diameter but may be “trimmed” to better match the required operating condition(s).

Induction Motor: A type of electric motor commonly used on pumps.

Input Horsepower: The horsepower input to a pumping plant. Value can be calculated from electrical, diesel, or propane power using standard conversion factors.

Irrigation Efficiency (IE): A measure of how much water that is pumped and applied to a field is beneficially used. (Beneficial uses include crop water use and leaching for salt control.) One must know the physical and time boundaries of the measurement for it to be meaningful. The IE for a single irrigation on a field may be different than the average IE for all irrigations on that field for a season. It may be different than the IE for the entire farm for the season. It is usually expressed as a percentage between 0 and 100. An IE of 100% is not theoretically possible due to immediate evaporation of water during irrigation.

Kilowatt: A unit of electrical power. 1000 watts

Kilowatt-hour (kWh): The amount of energy expended by a one kilowatt device over the course of one hour.

Line Shaft: A shaft used to connect a motor to the impeller(s) of a turbine pump.

Line Shaft Bearing: A bearing used on the line shaft of a turbine pump.

Line Shaft Loss: Is the power, expressed in horsepower, (kW), required due to the rotation friction of the line shaft. This value is added to the bowl assembly input to predict the pump input.

Manometer: A portable device using what is known as velocity head (the energy of the moving water) to measure water flow rates in pipelines. These are commonly used during pump efficiency tests due to the ease of installation and removal. However, they are large and require careful handling and are not generally recommended for use by pump owners.

Megohmmeter: An instrument for measuring electric motor insulation resistance.

Motor: A rotating machine that converts electrical power (either alternating current or direct current) into mechanical power.

Motor Load: The output horsepower of an electric motor divided by the rated horsepower of the motor as a percent. This should generally be between 80 and 115 percent.

Multi-Condition Pump Test: A pump efficiency test where pump performance is measured at various Total Head and capacity conditions. Three points are typically taken by throttling discharge valve. Can be used to determine pump's best efficiency point and as a comparison to pump performance curve.

Multi-Stage Pump: A pump having more than one impeller/bowl assembly. Commonly used when referring to turbine pumps.

Net Positive Suction Head (NPSH): A design requirement dependent on the individual pump. The required NPSH must be available at the pump inlet to prevent cavitation.

Net Water Needed Versus Gross Water Applied: Net water is what you need to replace in the field. Gross water is how much you have to pump in order to accomplish this goal.

Oil Tubing: In a turbine pump, the oil tubing encloses the line shaft of the pump giving it rigid, vibration-free support. It extends from the top of the bowl assembly in the well to the pump discharge head at the ground level.

Operating Condition: The combination of flow and pressure (total dynamic head) developed by the pump. A pump can operate at a number of operating conditions defined by its pump performance curve.

Operating Cost: The sum of the expenses necessary to keep a pumping plant in operation. It includes the cost of energy, lubricating oil, maintenance, repairs and labor.

Overall Pumping Plant Efficiency (OPE): A measure of how much water horsepower is produced by the pumping plant from the input horsepower. It is the combination of three efficiencies;

Bowl efficiency - the efficiency of the pump itself.

Driver efficiency - the efficiency of the electric motor or engine.

Transmission efficiency - a measure of losses that occur in transmission shafts, chains, pulleys, and v-belts.

Packing: A flexible material which can be compressed around a pump shaft (between the rotating shaft and the pump case) to prevent leakage of the fluid being pumped.

Parallel Pumps: Two or more pumps (many times of different sizes for flexibility) discharging into a common pipeline to increase the flow rate at a given pressure in the pipeline. Common for booster stations in municipal applications in which varying demand signals pumps to turn on or off.

Pressure Switch: An electric switch in the control circuit of a pump motor that is actuated by the pressure of the water in a water system.

psi: Pounds per square inch is a measure of pressure in a water system. A vertical column of water 2.31 feet high will exert a pressure of one pound per square inch.

Pump: A mechanical device that converts mechanical energy (usually a rotating shaft or reciprocating rod) into a hydraulic energy (flowing water for example).

Pump Capacity (see, Capacity (Pump))

Pump Case: The body of a pump that encloses the impeller and directs the flow of water from the suction to the discharge of the pump.

Pump Curve: A graph that illustrates the performance of a pump from zero to maximum capacity. It will also indicate the head and the horsepower of the pump.

Pump Discharge: The point at which water is discharged from a pump or a pump base. Also can be referred to as Discharge Head.

Pump Efficiency Test: A series of measurements and calculations providing information concerning performance of the pump (and of the well if applicable). The test will indicate the overall pumping plant efficiency, pump flow rate, required pump input horsepower, and discharge pressure among other things.

Pump Performance Curve: A set of measurements, usually in graphical form, available from the pump manufacturer showing the relationship between Total Head, horsepower requirements, and net positive suction head requirements at any given flow rate for a pump.

Pumping Head: The difference in elevation between the pump water level and the pump discharge.

Pumping Lift: The distance from the center line of the discharge pipe at the pump head to the water level in the pumping well.

Pumping Water Level: The elevation of the water level in a well during pumping.

Radial Bearing: One of the two bearings in a vertical electrical motor.

Revolutions Per Minute (RPM): The rotating shaft of a pump or the driver (motor).

Sand Separator: A device installed on the pump intake pipe in deep-well turbine pumps to remove sand from the water before it can enter the pump. They may also be installed on the pump outlet works and be used to remove sand in water before it enters water distribution systems (municipal, industrial, and irrigation).

Semi-Open (Semi-Closed, Mixed Flow) Impeller: An impeller design whereby water enters the eye of the impeller and exits at less than a 90 degree angle. Another defining characteristic is that the impeller is closed on only one side of the vanes. The pump bowl constrains the water flow on the other side.

Series Pumps: Two or more pumps installed so that one pump discharges into the intake of another pump, increasing pressure at a given flow rate. The Total Head developed by the second pump is added to the Total Head of the first pump. The most common configuration is a well pump discharging into a booster pump. Note also that a “multi-stage” turbine pump is actually a pump connected in series.

Shaft (Pump): The round bar to which the impeller of the pump is fastened. It transmits the rotational energy of the driver to the impeller.

Soil Moisture Depletion (SMD): The net amount of water that you need to replace in the root zone of the crop.

Soil Probe: A long piece of 3/8” steel bar, usually tipped by a ball bearing, with a handle. The probe is pressed into wetted soil to judge how deep water has penetrated. It can be used during an irrigation to indicate when enough water has soaked into the ground. It can also be used to judge the uniformity of an irrigation. If 2-3 days after an irrigation the probe can be pushed into the soil to a depth of 4 feet at the top of a furrow, and only to 2 feet at the bottom of the same furrow, this is an indication of poor distribution uniformity.

Sounding a Well: The process of determining where the water level is in a well. This might be the static water level (no pumping) or the pumping water level.

Sounding Tube: A small pipe extending from above the foundation or grout seal into the well casing to allow access for sounding the well.

Stage (Pump): One impeller/bowl assembly of a turbine pump. Pumps can be termed as “single-stage” or “multi-stage” pumps.

Static or Standing Water Level: The elevation of the water level in a well at rest (Pump Off). Time for stabilization varies from several minutes to several days.

Straightening Vanes: Metal strips attached to the inside of a pipe that straighten out the flow of turbulent water usually to provide a more symmetrical flow profile when measuring flow rates.

Suction Bell: A bell-shaped fixture placed on the suction intake of pumps to decrease energy losses.

Suction Lift (Suction Head): Distance from the water surface to the pump intake when the pump is located above the water surface.

Submersible Pump: A type of deep-well turbine pump which utilizes a waterproof electric motor that is connected directly to a turbine pump, both being installed in the well below the pumping water level.

Surging: Fluctuating flow of water from a pump that is created as the pump attempts to pump more water than is flowing into the pump. As applied to a well it occurs when the pump is moving more water than is flowing into the well. This causes the pumping level to drop to the pump intake, breaking the intake suction and allowing a slug of air to enter the pump. The pump capacity falls and the well water level begins to rise. Water then re-enters the pump and the pump flow increases, causing the cycle to repeat, creating a surging action.

Tailwater Reuse/Return System: A system used in surface irrigation to recover and reuse irrigation runoff.

Test Suction: The section of pipe or open channel where flow measurements are taken.

Testing of Wells: The process of determining the drawdown and yield performance of a well.

Thrust Bearing: The bearing in the turbine pump discharge head of in the vertical hollow shaft motor that supports the vertical downward thrust of the turbine pump.

Time-of-Use Rates (TOU): Electric power rate schedules whereby lower costs are offered for power used in the “off-peak” (and sometimes during the “shoulder” or “mid-peak”) period and higher rates are charged for power used during “on-peak” periods. The term “on-peak” refers to times when power use is the highest for a utility. Conversely, off-peak refers to that time when power is lowest.

Totalizer: A type of flow meter, or part of a flow meter, that provides a measure of total water volume flowing past a point over time.

Total Dynamic Head (TDH): Defined as the total dynamic discharge head minus the total suction head or plus the total dynamic suction lift. The pressure in a pump at the impeller outlet (last impeller if there are pumps in a series). This pressure is available to lift water to the soil surface (if in a well), to overcome pressure losses caused by friction and elevation differences, and to provide the required operating pressure in the system. Note that 2.31 feet of head equals one-pound-per-square-inch (psi) of pressure.

Turbine Pump: A centrifugal-type pump with a vertical shaft. The bowls are small in diameter so that they can be installed in a well of any depth (from a few feet to more than 1,000 feet). Many times, multiple pump assemblies (pump bowl and impeller) are stacked on top of each other and the water is directed by the pump bowl upwards to the next impeller/bowl assembly to match system demand.

Variable Frequency (Speed) Drive (VFD): A solid-state electrical device used to change the frequency of AC electric energy supplied to an electric motor. Varying the frequency of the AC current will vary the speed of the motor. VFDs are used in situations requiring many different operating conditions on a regular basis.

VHS Motor: A vertical hollow shaft motor. It is a type of vertical induction motor with a hollow motor rotor.

Vortex: A whirlpool leading into the pump inlet. These are undesirable as they generally entrain air. They are caused by insufficient submergence of the pump intake or poor design of the pump intake works.

Voltage: The electromotive force that causes electrons to move through a circuit.

Water Horsepower (WHP): The output horsepower of a water pump. It is the combination of flow rate and pressure. And,

WHP = Flow x TDH / 3960: Where:
Flow is the pump flow rate in gallons per minute and TDH is total dynamic head in feet of water head at that flow rate

Water Level: The distance in feet between the ground level and the water surface in a well. For pump testing purposes it is the vertical distance between the center line of discharge head to water surface in well.

Watt: A unit of electrical power

Wear Ring: A part of a centrifugal pump that provides a water seal between the impeller and the pump case (or bowl of a turbine pump). It seals the high pressure side of the impeller from the low pressure (suction) side.

Well Casing: Pipe (usually some type of metal but may also be plastic) used as the lining for a well. A layer of rock (termed the “gravel pack”) usually placed between the well casing and the aquifer to help prevent soil particles from entering the well. The casing will have small openings (called perforations or slots) at levels where water-bearing soil formations are thought to be.

Well-Efficiency: The drawdown outside the well casing divided by the drawdown inside the well (the higher the number the better).

Well-Specific Capacity: Expressed in US gallons per minute per foot of drawdown (liters per second per meter of drawdown). It is the rate of flow being pumped from the well divided by the total drawdown as measured during test conditions.

Affinity Laws

(used for variable speed pumping energy calculations)

Impeller diameter held constant

$$1) \frac{Q_2}{Q_1} = \frac{N_2}{N_1}$$

Where

Q = Capacity (GPM)

N = Speed (RPM)

H = Head (feet)

BHP = Brake Horsepower

Example:

$$\frac{1,000 \text{ GPM}}{1,200 \text{ GPM}} = \frac{1,500 \text{ RPM}}{1,800 \text{ RPM}}$$

$$2) \frac{H_2}{H_1} = \left[\frac{N_2}{N_1} \right]^2$$

Example:

$$\frac{100 \text{ feet}}{144 \text{ feet}} = \left[\frac{1,500 \text{ RPM}}{1,800 \text{ RPM}} \right]^2$$

$$3) \frac{BHP_2}{BHP_1} = \left[\frac{N_2}{N_1} \right]^3$$

Example:

$$\frac{32.0 \text{ BHP}}{55.3 \text{ BHP}} = \left[\frac{1,500 \text{ RPM}}{1,800 \text{ RPM}} \right]^3$$

Some caution must be exercised when using the affinity laws. If performance curves are available for the pump from the manufacturer or from actual test results, they should be used to obtain all necessary information. The affinity laws apply only to centrifugal pumps.

Conversions

PRESSURE (HEAD)

1 Atmosphere =	14.70 Pounds per Square Inch 34 Feet of Water 10.4 Meters Of Water
1 Pound per Square Inch =	2.31 Feet of Water Head 6.9 Kilopascals 2.04 Inches of Mercury 0.703 Kilogram per Square Centimeter
1 Foot of Water Head =	0.433 Pounds per Square Inch 0.883 Inch Mercury
1 Meter of Water Head =	3.28 Feet of Water Head
1 Inch of Mercury (vacuum) =	1.13 Feet of Water
1 Kilogram per Square Centimeter =	14.2 Pounds per Square Inch

LENGTH

1 Centimeter =	0.3937 Inch
1 Meter =	3.281 Feet 39.37 Inches
1 Inch =	2.54 Centimeters
1 Foot =	0.3048 Meter
1 Mile =	5,280 Feet 1,609 Meters 1.609 Kilometers

AREA

1 Acre =	43,560 Square Acres
1 Hectare =	2471 Acres

VOLUME

1 Cubic Centimeter =	0.06102 Cubic Inch
1 Cubic Meter =	35.83 Cubic Feet 264.2 Gallons
1 Cubic Inch =	16.39 Cubic Centimeters
1 Cubic Foot =	7.4805 Gallons 0.0283 Cubic Meter
1 Acre Inch =	3,630 Cubic Feet 27,154 Gallons
1 Acre Foot =	43,560 Cubic Feet 325,851 Gallons
1 Liter =	0.2642 Gallons
1 Gallon =	3.785 Liters 231 Cubic Inches 0.1337 Cubic Feet 0.00379 Cubic Meters 0.833 Imp. Gallons 0.0238 42-Gallon Barrel
1 Barrel (oil) =	42 Gallons

MASS

1 Pound =	0.4536 Kilograms
1 Long Ton =	2,240 Pounds
1 Short Ton =	2,000 Pounds

FLOW RATE (CAPACITY)

1 Cubic Foot per Second =	448.8 Gallons per Minute
1 Acre Inch per Hour =	452.6 Gallons per Minute
1 Cubic Meter per Minute =	264.2 Gallons per Minute
1 Liter per Second =	15.85 Gallons per Minute
1,000,000 Gallons per Day =	694.4 Gallons per Minute
1,000 Gallons per 24 Hours =	1.44 Gallons per Minute

WEIGHT

1 Gallon of Water =	8.345 Pounds \approx 8 1/3 Pounds
1 Cubic Foot of Water =	62.4 Pounds
1 Kilogram or Liter of Water =	2.2 Pounds

POWER

1 Horsepower =	.0.746 Kilowatts 33,000 Feet Pounds per Minute 500 Feet Pounds per Second 2,545 British Thermal Units (btu) per Hour
1 Kilowatt =	1.341 Horsepower 0.102 Boiler Horsepower
1 Kilowatt Hour =	3,413 British Thermal Units (btu) per Hour

Energy Efficiency Information and Incentives

SCE's Agricultural Energy Efficient Programs (AEEP)
www.sce.com/rebatesandsavings or call 800.736.4777

California Energy Efficiency
www.californiaenergyefficiency.com

U.S. Department of Energy's Best Practices Web Page
<http://www1.eere.energy.gov/industry/bestpractices>

Pump Test Requests

There are three ways to request a pump test.

1. Call one of the numbers below depending on your plant location:
 - L.A. Area, Orange County, San Bernardino County - 909.820.5333
 - Ventura Area - 800.338.8502
 - San Joaquin Valley - 800.634.9175
2. You can request a form online at **<https://www.sce.com/forms/RequestPumpTest.aspx>**
3. Contact your assigned SCE account representative



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