

SEAMAP Summer 2012 Shrimp/Groundfish Survey Cruise Report

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Introduction

SEAMAP Summer Shrimp/Groundfish cruises are conducted to provide fishery-independent monitoring and assessment information essential to management of Texas Gulf of Mexico fisheries resources in a coordinated and cost-efficient program. Fishery-independent information is that collected without direct reliance on statistics reported by commercial or recreational fishermen.

Objectives

1. Conduct a summer trawl survey to collect information on shrimp and groundfish abundance and distribution with standard TPWD 20-ft trawls.
2. Select 120 stations for random sampling. All species are identified, measured, weighed, and counted, and selected species are sexed with their maturity stage recorded according to the Texas SEAMAP Operations Manual.
3. Collect information on environmental parameters (salinity, temperature, dissolved oxygen, turbidity, wind speed, wind direction, barometric pressure, wave height, water color, cloud cover, etc.) in conjunction with trawl sampling.
4. Code all data according to approved Texas SEAMAP Operations Manual guidelines, and enter data on the Texas SEAMAP data entry system.
5. Submit data to the Gulf States Marine Fisheries Commission SEAMAP Coordinator.

Methods

Vessels that participated in the 2012 Texas Summer Shrimp/Groundfish Survey were: R.J. Kemp (31), Matagorda Bay (32), Sabine (40), San Jacinto (69), and San Antonio Bay (87). All Texas Territorial Sea areas were sectioned into 1-minute latitude by 1-minute longitude grids. Grids within the Texas territorial sea with at least 1/3 of their area equal to or greater than 1.8 m (1 fm) deep and at least 1/3 of which is free from known obstructions, were selected at random by a computer program. Sampling was conducted in 16 grids from each one of the following five gulf areas: (Sabine Pass, Bolivar Pass, Matagorda Pass, Aransas Pass, and Brazos Santiago Pass). Eight trawls samples were collected in each gulf area between the 1st and 15th of the month and 8 between the 16th and the last day of the month. A

20 ft trawl with 1.5 inch (38 mm) stretched mesh was lowered into position at the selected site and towline was set at a 5:1 cable length water depth ratio. Trawl towing was conducted at or near 3 mph for 10 minutes after lockdown and towed parallel to fathom curve. Direction of first tow was randomly selected. Subsequent tows alternated tow direction.

Sample work and data processing was conducted in accordance with the Texas SEAMAP Operations Manual guidelines.

Environmental data were collected in conjunction with each trawl. Temperature and dissolved oxygen were measured with a YSI 6600 datasonde.

Results

Texas vessels collected 120 Summer Shrimp/Groundfish survey samples in Texas Territorial Seas (between latitudes 25° 59' and 29° 44' and longitudes -93° 34' and -97° 11') (Table 1). Samples were collected between June 5, 2012 and July 12, 2012 (Table 1).

Deviations

There were no significant deviations.

Cruise participants:

Texas Parks and Wildlife Department staff collected samples, processed catch and entered information on data sheets. Cruise report summary completed by Fernando Martinez-Andrade.

Submitted By:

Fernando Martinez-Andrade
Texas Parks & Wildlife Department
Texas SEAMAP Coordinator

Table 1. TPWD SEAMAP 2012 Summer Shrimp/Groundfish cruise report summary.

STA#	DATE	TIME	LAT	LONG	STAT	MAX	DO		SALINITY			TEMPERATURE			FIN	CRUS	OTHER	MIN	BIO	LENGTH	
					ZONE	DEPTH	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	CATCH	CATCH	CATCH	FISHED	COUNT	COUNT
31 R.J. KEMP																					
31001	06/07/2012	914	2616.50	-9705.45	21	19.8	6.9	8.4	10.2	35.1	35.2	34.9	27.0	26.0	22.8	0.446	0.024	0.185	10	10	38
31002	06/07/2012	951	2616.70	-9703.38	21	20.7	6.7	8.4	10.3	35.7	35.9	35.9	27.2	26.4	22.9	0	0	0.198	10	4	1
31003	06/07/2012	1027	2618.43	-9704.35	21	21.1	6.9	8.5	10.1	34.9	36.3	32.6	27.1	25.9	22.9	0.366	0.009	0.078	10	13	31
31004	06/07/2012	1120	2620.70	-9707.02	21	17.3	7.0	8.8	9.5	36.5	36.4	36.4	25.9	23.1	22.7	0.004	0	0.014	10	4	3
31005	06/07/2012	1157	2621.27	-9709.53	21	16.9	6.8	8.0	8.6	36.4	36.5	36.3	26.2	25.0	22.3	0.418	0.026	0.075	10	12	19
31006	06/07/2012	1236	2618.72	-9711.48	21	5.1	6.7	7.2	7.6	36.6	36.6	36.5	26.8	25.7	25.1	2.083	0.752	0.436	10	16	92
31007	06/07/2012	1317	2617.22	-9708.40	21	17.0	6.8	7.9	9.1	36.1	36.4	36.4	26.3	24.6	22.8	0.119	0.146	0.040	10	8	12
31008	06/07/2012	1343	2616.65	-9707.45	21	18.5	6.7	7.9	9.1	36.6	36.6	36.6	26.7	25.1	22.9	0.046	0.012	0.018	10	7	8
31009	06/18/2012	823	2603.22	-9708.50	21	11.8	6.3	6.2	6.2	36.6	36.6	36.7	26.3	26.3	26.2	0.165	0.064	0.050	10	6	8
31010	06/18/2012	927	2600.72	-9707.48	21	14.1	6.2	6.1	6.1	36.8	36.7	36.7	26.3	26.1	26.0	0.547	0.049	0.013	10	9	20
31011	06/18/2012	1003	2559.28	-9705.47	21	20.0	6.3	6.1	5.6	36.8	36.8	36.8	25.8	25.5	24.1	2.714	0	0.220	10	9	39
31012	06/18/2012	1139	2559.78	-9701.43	21	26.2	6.4	6.4	6.4	36.9	36.9	36.9	26.6	26.4	26.2	0.056	0.002	0.123	10	8	9
31013	06/18/2012	1213	2601.30	-9701.40	21	26.1	6.3	6.3	6.3	36.7	36.7	36.7	25.9	25.7	25.1	0.032	0.083	0.100	10	9	11
31014	06/18/2012	1305	2606.70	-9701.53	21	24.7	6.5	6.3	6.2	36.8	36.2	36.2	26.6	25.3	22.9	0.141	0.069	0.073	10	12	14
31015	06/18/2012	1402	2610.23	-9705.40	21	18.7	6.3	6.4	6.4	36.6	36.6	36.7	26.7	25.3	23.9	0	0.020	0.009	10	2	2
31016	06/18/2012	1455	2605.90	-9708.45	21	11.8	6.5	6.5	6.5	36.6	36.6	36.7	26.7	25.4	23.8	0	0	0	10	12	37
31017	07/06/2012	825	2609.33	-9703.47	21	21.0	6.2	6.0	6.0	36.5	36.6	36.0	28.8	28.8	28.7	0.839	0.003	0.095	10	15	43
31018	07/06/2012	901	2611.78	-9702.55	21	22.8	6.2	6.1	5.9	35.7	36.1	36.2	28.7	28.7	28.5	0.459	0.024	0.363	10	18	45
31019	07/06/2012	957	2618.28	-9704.50	21	20.5	6.6	6.3	6.1	36.5	36.6	36.7	29.1	29.0	29.0	0.792	0.070	0.218	10	7	27
31020	07/06/2012	1033	2620.85	-9706.55	21	18.5	6.6	6.3	5.9	36.3	36.4	36.6	29.1	28.8	28.2	0.182	0.064	0	10	11	44
31021	07/06/2012	1105	2619.33	-9707.52	21	17.4	6.6	6.3	5.5	36.5	36.5	36.6	29.1	28.9	27.5	1.102	0.018	0.211	10	5	8
31022	07/06/2012	1133	2620.80	-9708.53	21	16.1	6.4	6.2	5.4	36.1	36.4	36.4	29.6	29.1	27.8	0.045	0.023	0.072	10	10	19
31023	07/06/2012	1204	2619.25	-9709.55	21	16.5	6.1	5.8	5.3	35.3	35.8	36.2	29.2	28.6	27.9	0.447	0.210	0.052	10	15	110
31024	07/06/2012	1222	2619.77	-9711.58	21	11.0	6.3	6.1	5.9	35.7	36.2	36.4	29.7	29.0	29.1	2.978	0.019	0.124	10	15	101
32 MATAGORDA BAY																					
32001	06/05/2012	855	2826.47	-9617.52	19	5.4	6.5	6.2	5.5	33.2	33.5	33.6	28.2	27.9	27.7	3.519	0.003	0.454	10	18	85
32002	06/05/2012	921	2826.47	-9616.45	19	9.4	6.6	5.5	6.4	33.3	33.8	33.9	28.1	27.2	26.3	17.135	0.243	0.260	10	21	125
32003	06/05/2012	1007	2822.52	-9615.48	19	16.4	6.9	6.7	6.5	32.9	33.6	33.9	27.6	27.3	26.6	0.651	0.098	0.497	10	8	24
32004	06/05/2012	1045	2825.58	-9611.37	19	15.2	6.9	6.4	6.0	32.7	33.6	33.7	28.6	27.2	26.8	3.809	0.024	3.824	10	18	74
32005	06/05/2012	1122	2824.45	-9609.52	19	17.0	6.9	6.7	6.3	32.9	33.6	33.8	27.8	27.2	26.7	0.169	0.096	0.232	10	7	41
32006	06/05/2012	1157	2824.57	-9606.33	19	18.2	6.9	6.8	5.6	32.8	33.2	34.0	27.9	27.4	26.3	2.084	0.290	0.605	10	20	74
32007	06/05/2012	1233	2827.37	-9605.52	19	15.5	7.2	6.2	5.6	32.7	33.6	33.9	29.2	27.0	26.5	10.655	0.112	1.201	10	16	99
32008	06/05/2012	1317	2831.55	-9607.45	19	7.9	7.0	6.4	2.5	32.8	33.2	33.7	29.4	28.3	26.4	7.451	0.092	0.227	10	16	81

Table 1. (cont.)

STA#	DATE	TIME	LAT	LONG	STAT	MAX	DO			SALINITY			TEMPERATURE			FIN	CRUS	OTHER	MIN	BIO	LENGTH
					ZONE	DEPTH	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	CATCH	CATCH	CATCH	FISHED	COUNT	COUNT
32 MATAGORDA BAY (cont)																					
32009	06/18/2012	920	2822.68	-9620.47	19	9.4	6.5	6.4	6.4	33.6	33.7	33.7	29.4	29.4	29.5	1.700	0.047	0.198	10	18	71
32010	06/18/2012	958	2819.38	-9619.53	19	17.0	6.5	6.4	6.3	33.7	33.7	33.7	29.0	29.0	29.0	2.981	0.140	0.273	10	10	41
32011	06/18/2012	1055	2816.53	-9627.43	19	10.3	6.7	6.5	6.5	33.8	33.8	33.8	29.4	29.1	29.1	2.045	0	0.108	10	14	70
32012	06/18/2012	1131	2814.43	-9626.50	19	16.4	6.8	6.5	6.5	33.5	33.5	33.5	29.0	28.7	28.6	3.161	0.028	0.864	10	13	56
32013	06/18/2012	1207	2812.43	-9624.45	19	21.3	6.7	6.5	6.4	33.4	33.4	33.4	29.0	28.6	28.5	0.085	0.016	0.131	10	8	15
32014	06/18/2012	1242	2813.45	-9622.58	19	22.2	6.6	6.5	6.4	33.5	33.5	33.5	29.2	28.6	28.6	0.192	0.024	0.166	10	13	26
32015	06/18/2012	1346	2819.50	-9614.50	19	20.7	6.6	6.4	6.5	33.5	33.5	33.5	30.2	28.8	28.8	0.069	0.005	0.510	10	8	19
32016	06/18/2012	1423	2819.55	-9611.58	19	21.0	6.7	6.7	6.3	33.4	33.4	33.4	30.1	28.8	28.7	0.215	0.099	0.133	10	15	20
32017	07/03/2012	906	2823.55	-9617.40	19	12.4	6.6	6.5	6.4	29.4	29.4	29.5	29.7	29.7	29.7	1.137	0.253	0.436	10	22	67
32018	07/03/2012	938	2825.38	-9616.55	19	10.9	6.7	6.1	4.5	29.0	29.2	30.3	29.5	29.5	29.4	7.133	0.808	0.541	10	13	68
32019	07/03/2012	1022	2826.52	-9611.50	19	14.3	6.8	5.7	3.2	29.2	29.4	31.8	29.7	29.6	28.9	6.740	0.032	0.837	10	14	59
32020	07/03/2012	1100	2829.42	-9610.52	19	10.6	6.6	6.4	6.3	28.5	28.6	29.3	30.0	29.7	29.6	3.470	0.239	0.088	10	22	63
32021	07/03/2012	1141	2826.45	-9608.60	19	15.2	7.0	6.1	4.2	29.0	29.2	32.0	29.9	29.6	29.1	4.135	0.338	0.758	10	11	74
32022	07/03/2012	1223	2826.57	-9604.62	19	17.3	7.1	6.3	5.5	28.3	31.0	32.2	30.0	29.2	29.1	6.715	0.309	0.059	10	19	88
32023	07/03/2012	1328	2822.62	-9612.45	19	17.6	7.1	5.1	5.0	29.3	30.9	32.5	30.0	29.3	28.9	10.215	0.330	0	10	19	127
32024	07/03/2012	1416	2819.53	-9615.58	19	19.5	7.3	6.3	6.1	29.3	31.4	32.7	30.0	29.3	28.9	5.918	0.103	0.639	10	17	93
40 SABINE																					
40001	06/15/2012	758	2939.57	-9347.22	17	7.3	5.6	5.5	5.0	28.8	29.2	30.2	28.9	29.2	29.1	3.701	0.487	0.244	10	18	80
40002	06/15/2012	936	2939.40	-9400.88	17	4.3	6.0	5.8	5.8	31.4	31.4	31.4	30.0	29.8	29.7	4.209	1.031	0.010	10	12	81
40003	06/15/2012	1025	2939.32	-9402.27	17	4.6	6.2	6.0	5.8	31.4	31.4	31.4	29.9	29.9	29.6	3.403	0.384	0.025	10	12	76
40004	06/15/2012	1123	2936.48	-9356.97	17	6.7	6.3	5.9	5.8	30.7	30.7	30.7	29.8	29.4	29.4	4.657	0.190	0.056	10	17	66
40005	06/15/2012	1222	2934.37	-9354.13	17	9.1	6.7	5.9	5.9	30.9	30.8	30.9	30.2	29.5	29.5	5.238	0.577	0	10	13	81
40006	06/15/2012	1329	2936.52	-9351.77	17	6.7	6.4	6.1	5.5	30.6	30.5	30.4	30.2	29.7	29.3	4.687	0.822	0.055	10	16	98
40007	06/15/2012	1415	2936.48	-9349.15	17	8.8	6.7	5.8	3.5	29.4	29.5	30.2	30.1	29.3	29.1	5.345	0.512	0.309	10	17	114
40008	06/15/2012	1500	2935.68	-9347.67	17	10.4	6.8	5.6	2.1	29.5	30.0	30.8	30.2	29.5	28.9	3.565	0.390	0.049	10	18	142
40009	06/24/2012	810	2941.37	-9348.78	17	4.0	7.7	7.4	7.9	17.6	18.4	21.5	29.7	29.5	29.6	1.775	0.018	0.040	10	11	54
40010	06/24/2012	849	2941.43	-9345.23	17	7.0	8.9	8.7	5.9	17.6	20.3	23.3	29.5	29.6	29.0	1.358	0.102	0.059	10	13	60
40011	06/24/2012	922	2940.43	-9345.93	17	7.6	9.1	8.3	6.5	17.7	21.9	24.4	29.5	29.4	29.2	1.343	0.067	0.027	10	11	67
40012	06/24/2012	1017	2944.33	-9341.08	17	3.7	7.5	6.9	4.3	18.8	19.3	21.2	29.7	29.3	28.9	2.617	0.193	0.121	10	14	87
40013	06/24/2012	1058	2941.42	-9339.85	17	7.9	9.8	7.3	5.2	18.5	21.8	23.7	29.9	29.2	28.7	5.145	0.135	0.059	10	10	55
40014	06/24/2012	1145	2942.43	-9335.12	17	7.6	10.6	6.9	3.0	18.7	23.5	25.3	30.2	29.1	28.6	2.725	0.165	0.057	10	16	59
40015	06/24/2012	1237	2936.40	-9335.87	17	11.3	10.3	7.6	6.5	21.5	28.0	28.7	29.6	29.6	29.1	9.418	0.040	0.048	10	14	63
40016	06/24/2012	1313	2936.37	-9334.25	17	11.3	11.0	7.6	6.6	22.0	28.1	28.6	30.3	29.3	29.1	6.435	0.114	0.080	10	13	65

Table 1. (cont.)

STA#	DATE	TIME	LAT	LONG	STAT	MAX	DO			SALINITY			TEMPERATURE			FIN	CRUS	OTHER	MIN	BIO	LENGTH
					ZONE	DEPTH	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	CATCH	CATCH	CATCH	FISHED	COUNT	COUNT
40 SABINE (cont.)																					
40017	07/03/2012	800	2933.48	-9347.15	17	12.2	5.8	6.0	5.0	23.9	28.4	30.1	29.6	29.8	29.5	6.251	0.426	0.034	10	16	90
40018	07/03/2012	849	2931.55	-9349.95	17	12.5	5.9	6.1	4.3	23.6	28.4	30.3	29.5	29.7	29.5	8.995	0.570	0.108	10	17	98
40019	07/03/2012	944	2932.37	-9354.17	17	11.5	5.9	4.8	1.9	25.6	27.0	30.0	29.6	29.6	29.3	7.215	0.017	0.005	10	6	26
40020	07/03/2012	1044	2936.55	-9354.78	17	6.4	7.2	6.0	4.0	23.4	24.3	26.1	30.0	29.7	29.6	4.157	0.155	0.001	10	6	41
40021	07/03/2012	1121	2938.52	-9353.17	17	4.8	7.9	6.5	4.2	22.3	24.8	26.1	30.5	29.9	29.6	4.042	0.501	0.039	10	12	89
40022	07/03/2012	1158	2938.67	-9355.90	17	5.2	7.7	6.8	4.7	22.3	24.4	25.5	30.4	29.9	29.7	6.459	0.228	0.005	10	11	98
40023	07/03/2012	1234	2939.42	-9355.22	17	4.6	7.8	6.3	2.8	22.0	23.0	25.2	30.5	30.0	29.6	4.262	0.282	0.190	10	15	106
40024	07/03/2012	1328	2937.58	-9400.92	17	6.4	8.2	7.0	4.4	23.5	25.2	28.3	31.0	30.1	29.8	3.511	0.140	0	10	14	51
69 SAN JACINTO																					
69001	06/07/2012	931	2918.60	-9440.52	18	11.3	5.5	5.4	5.4	32.8	32.8	32.9	28.1	28.1	28.0	3.261	0.350	0.096	10	20	101
69002	06/07/2012	1028	2924.17	-9441.73	18	3.7	6.1	5.8	5.5	32.7	32.8	32.8	29.1	29.0	28.6	1.071	0.096	0.060	10	12	31
69003	06/07/2012	1107	2924.80	-9439.45	18	6.1	6.5	6.3	6.3	32.8	32.8	32.8	28.6	28.4	28.3	0.741	0.123	0.098	10	16	46
69004	06/07/2012	1206	2927.33	-9433.75	18	7.0	6.8	5.8	5.8	32.8	32.8	32.8	28.8	28.4	28.3	1.817	0.105	0.074	10	17	51
69005	06/07/2012	1237	2928.75	-9433.37	18	3.7	6.9	6.2	5.9	32.3	32.4	32.4	29.8	29.2	29.0	2.076	0.380	0.476	10	19	68
69006	06/07/2012	1328	2924.23	-9431.85	18	10.7	7.0	6.6	5.9	32.5	32.5	31.1	28.8	28.3	27.9	4.128	0.765	0.008	10	14	72
69007	06/07/2012	1410	2923.82	-9428.32	18	11.9	6.8	6.7	5.3	33.1	33.4	33.4	28.9	28.3	27.6	7.134	0.207	0.057	10	19	78
69008	06/07/2012	1528	2920.82	-9431.37	18	13.1	6.9	6.4	4.7	33.2	33.4	33.7	28.8	28.0	27.3	5.574	0.621	0.112	10	22	116
69009	06/18/2012	1027	2917.70	-9437.65	18	13.7	6.1	6.1	6.1	32.5	32.5	32.5	29.0	29.0	29.0	1.209	0.102	0.152	10	11	45
69010	06/18/2012	1105	2913.82	-9446.30	18	10.7	6.7	6.7	6.6	33.0	32.9	32.9	29.0	29.1	29.0	0.212	0.252	1.342	10	11	19
69011	06/18/2012	1136	2913.23	-9448.80	18	10.7	6.3	6.3	6.3	33.0	33.0	33.0	29.1	29.1	29.1	1.747	0.028	0.079	10	11	42
69012	06/18/2012	1207	2914.82	-9449.43	18	8.5	6.5	6.5	6.5	33.2	33.2	33.1	29.1	29.1	29.1	0	0	0.037	10	1	14
69013	06/18/2012	1236	2913.77	-9450.37	18	9.8	6.5	6.4	6.4	33.1	33.1	33.1	29.1	29.2	29.1	0.375	0.003	0.171	10	8	21
69014	06/18/2012	1320	2910.80	-9450.45	18	12.8	6.8	6.8	6.7	33.0	33.0	33.0	29.1	29.1	29.0	2.101	0.097	0.063	10	12	75
69015	06/18/2012	1407	2907.95	-9449.33	18	15.2	6.7	6.7	6.5	33.3	33.3	33.3	29.0	29.0	28.9	0.027	0.003	0.244	10	5	23
69016	06/18/2012	1512	2910.87	-9442.42	18	16.2	6.5	6.4	6.3	32.8	32.8	32.8	29.1	29.1	28.9	0	0.036	0	10	2	2
69017	07/03/2012	932	2915.92	-9444.10	18	8.8	6.5	4.2	3.8	27.2	30.8	32.1	30.1	29.8	29.8	6.491	0.377	0.008	10	5	38
69018	07/03/2012	1017	2912.25	-9442.60	18	14.6	6.7	5.1	4.1	26.6	32.2	32.8	29.9	29.6	29.4	4.732	0.700	0.110	10	5	35
69019	07/03/2012	1056	2911.75	-9444.32	18	14.0	6.3	4.9	3.9	26.9	32.1	32.8	29.9	29.9	29.4	5.617	0.477	0.015	10	15	70
69020	07/03/2012	1138	2912.28	-9445.65	18	12.8	6.5	5.1	3.2	27.2	32.2	32.4	30.2	29.8	29.3	1.367	0.108	0.032	10	20	119
69021	07/03/2012	1246	2912.85	-9449.27	18	10.7	6.2	3.0	1.7	26.7	29.3	32.5	30.1	29.6	29.1	12.596	0.203	0.026	10	14	98
69022	07/03/2012	1325	2910.28	-9449.62	18	13.4	6.6	6.0	5.0	27.9	32.0	32.7	30.0	29.7	29.5	8.784	0.621	0.041	10	11	53
69023	07/03/2012	1409	2909.32	-9451.67	18	13.7	7.2	4.3	5.1	28.0	31.9	32.7	30.3	29.3	29.6	8.282	0.091	0.027	10	14	90
69024	07/03/2012	1459	2908.28	-9446.60	18	16.2	6.7	6.5	5.9	27.5	32.4	33.0	30.2	29.6	29.4	5.800	0.801	0.230	10	18	111

Table 1. (cont.)

STA#	DATE	TIME	LAT	LONG	STAT	MAX	DO			SALINITY			TEMPERATURE			FIN	CRUS	OTHER	MIN	BIO	LENGTH
					ZONE	DEPTH	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	CATCH	CATCH	CATCH	FISHED	COUNT	COUNT
87 SAN ANTONIO																					
87001	06/05/2012	726	2749.15	-9701.62	20	16.1	6.0	5.4	4.7	36.7	36.7	36.5	26.8	25.6	25.6	0.073	0.044	0.019	10	7	7
87002	06/05/2012	752	2749.85	-9700.52	20	12.4	6.1	6.2	5.9	36.5	36.6	36.8	27.7	27.4	26.8	1.127	0.063	0.021	10	13	32
87003	06/05/2012	818	2749.12	-9659.43	20	14.2	6.2	6.1	6.2	36.8	36.8	36.8	27.5	27.2	26.5	0.154	0.018	0.083	10	12	19
87004	06/05/2012	858	2753.83	-9656.23	20	13.7	6.9	6.0	5.2	36.6	36.9	36.9	27.5	26.1	25.4	0.390	0	0.170	10	7	15
87005	06/05/2012	934	2758.12	-9656.32	20	5.6	6.2	6.2	5.7	36.4	36.4	36.5	28.3	28.2	27.3	0.491	0	0.065	10	4	10
87006	06/05/2012	1036	2755.85	-9648.53	20	18.9	6.4	6.4	6.4	36.5	36.5	36.5	27.2	27.0	26.8	0	0	0.003	10	2	1
87007	06/05/2012	1327	2753.08	-9653.40	20	17.2	6.4	6.7	6.7	36.7	36.8	36.8	28.1	26.7	26.4	0.042	0.005	0.071	10	4	9
87008	06/05/2012	1403	2749.80	-9654.53	20	19.4	6.7	6.7	6.7	36.9	37.0	37.0	27.5	26.7	26.5	0.165	0.072	0.073	10	6	18
87009	06/18/2012	805	2748.62	-9703.03	20	6.8	6.3	6.1	5.9	37.2	37.2	35.6	29.6	29.7	29.7	0	0	0	10	4	3
87010	06/18/2012	856	2742.07	-9702.50	20	17.8	6.4	6.3	6.1	36.4	36.4	36.3	28.7	28.7	28.7	0.052	0	0.002	10	8	16
87011	06/18/2012	935	2740.70	-9702.58	20	18.6	6.2	6.1	6.0	36.4	36.4	36.4	28.7	28.7	28.7	0.024	0.096	0.013	10	6	5
87012	06/18/2012	953	2739.12	-9703.80	20	18.5	6.3	6.2	6.0	36.8	36.8	36.9	28.9	28.9	29.0	0.032	0.008	0.014	10	6	14
87013	06/18/2012	1027	2736.75	-9701.52	20	22.9	6.7	6.6	6.1	36.4	36.4	37.0	28.7	28.6	28.9	0.058	0.071	0.003	10	2	2
87014	06/18/2012	1327	2740.27	-9700.80	20	20.9	6.4	6.4	6.1	36.4	36.4	36.5	29.3	28.9	28.7	0.012	0.001	0	10	5	9
87015	06/18/2012	1546	2747.80	-9653.42	20	21.3	6.6	6.5	6.3	35.9	36.0	36.4	29.1	28.8	28.9	0.032	0.054	0.013	10	6	12
87016	06/18/2012	1627	2747.23	-9658.48	20	17.6	6.7	6.6	6.1	36.7	36.7	36.8	29.8	29.2	29.1	0	0	0	10	5	13
87017	07/12/2012	737	2749.98	-9700.45	20	12.1	5.8	5.7	4.1	36.5	36.5	37.2	29.1	29.1	28.5	4.188	0.461	0.066	10	22	100
87018	07/12/2012	1052	2748.05	-9701.42	20	11.2	5.9	5.9	5.8	36.5	36.5	36.6	28.9	28.9	28.9	4.828	0.158	0.153	10	24	125
87019	07/12/2012	1131	2744.83	-9659.42	20	18.5	6.1	6.2	6.1	37.0	37.0	37.0	28.8	28.8	28.8	0.308	0.025	0.503	10	20	67
87020	07/12/2012	1213	2741.15	-9657.40	20	23.1	6.2	6.3	6.3	37.1	37.1	37.1	28.5	28.5	28.5	1.576	0.071	0.561	10	18	104
87021	07/12/2012	1307	2735.58	-9702.00	20	22.8	6.4	6.0	5.8	37.1	37.1	37.4	28.5	28.3	27.9	1.279	0.122	0.420	10	25	111
87022	07/12/2012	1523	2738.18	-9703.73	20	19.0	6.4	6.3	5.8	37.2	37.2	37.5	28.7	28.5	27.7	0.155	0.018	0.562	10	13	63
87023	07/12/2012	1546	2738.82	-9704.33	20	17.3	6.3	6.3	5.9	37.2	37.1	37.2	29.0	28.8	28.4	0.322	0	0.306	10	15	44
87024	07/12/2012	1613	2738.38	-9708.50	20	13.3	6.4	6.5	6.3	36.8	36.8	37.1	29.2	29.2	28.9	1.314	0.051	0.188	10	13	47