

APPENDIX B: LIFT STATION PUMP PERFORMANCE TEST RESULTS



City of Tyler Lift Station Discharge Measurements

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown and Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Gilly Creek												
Pump 1	Square	31.66	1002.36	0.5	501.18	3748.81	7.55	497	2.63	1425.4	1922	2.768
Pump 1	Square	31.66	1002.36	0.5	501.18	3748.81	11.61	323	3.75	999.7	1323	1.905
Pump 1	Square	31.66	1002.36	0.5	501.18	3748.81	7.20	521	2.96	1266.5	1787	2.574
Pump 1 Average											1677	2.415
Pump 2	Square	31.66	1002.36	0.5	501.18	3748.81	17.41	215	2.86	1310.8	1526	2.198
Pump 2	Square	31.66	1002.36	0.5	501.18	3748.81	18.50	203	3.78	991.7	1194	1.720
Pump 2	Square	31.66	1002.36	0.5	501.18	3748.81	18.65	201	3.7	1013.2	1214	1.748
Pump 2 Average											1312	1.889
Pump 1+2	Square	31.66	1002.36	0.5	501.18	3748.81	3.72	1008	2.61	1436.3	2444	3.519
Pump 1+2	Square	31.66	1002.36	0.5	501.18	3748.81	3.85	974	2.92	1283.8	2258	3.251
Pump 1+2	Square	31.66	1002.36	0.5	501.18	3748.81	3.30	1136	3.13	1197.7	2334	3.361
Pump 1+2 Average											2345	3.377

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown and Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Greenbriar												
Pump 1	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	21.20	175	9.16	404.6	579	0.834
Pump 1	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	21.58	172	5.66	654.9	827	1.190
Pump 1	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	23.08	161	5.96	621.9	783	1.127
Pump 1 Average											730	1.051
Pump 2	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	13.36	277	7.46	496.9	774	1.115
Pump 2	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	9.41	394	7.05	525.8	920	1.324
Pump 2	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	10.25	362	7.3	507.7	869	1.252
Pump 2 Average											854	1.230
Pump 1+2	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	5.61	661	4.83	767.4	1428	2.056
Pump 1+2	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	9.46	392	5.1	726.8	1119	1.611
Pump 1+2	Rectangle	25.25x39.25	991.06	0.5	495.53	3706.57	13.06	284	5.46	678.9	963	1.386
Pump 1+2 Average											1170	1.685

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown and Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
East Grande												
Pump 1	Square	12	144.00	0.5	72.00	538.56	1.33	405	3.4	158.4	563	0.811
Pump 1	Square	12	144.00	0.5	72.00	538.56	1.12	481	10.05	53.6	534	0.770
Pump 1	Square	12	144.00	0.5	72.00	538.56	1.15	468	6.28	85.8	554	0.798
Pump 1 Average											551	0.793
Pump 2	Square	12	144.00	0.5	72.00	538.56	1.03	523	4.08	132.0	655	0.943
Pump 2	Square	12	144.00	0.5	72.00	538.56	1.25	431	9.55	56.4	487	0.702
Pump 2	Square	12	144.00	0.5	72.00	538.56	1.06	508	6.86	78.5	587	0.845
Pump 2 Average											576	0.830
Pump 1+2	Square	12	144.00	1	144.00	1077.12	1.80	598	18.16	59.3	658	0.947
Pump 1+2	Square	12	144.00	0.5	72.00	538.56	0.91	592	5.58	96.5	688	0.991
Pump 1+2	Square	12	144.00	0.5	72.00	538.56	1.03	523	7.21	74.7	598	0.861
Pump 1+2 Average											648	0.933

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown and Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
CR 46 New Harmony												
Pump 1	Custom	Custom	271.12	0.5	135.56	1013.99	0.45	2253	70	14.5	2268	3.266
Pump 2	Custom	Custom	271.12	0.5	135.56	1013.99	0.38	2668	70	14.5	2683	3.863
Pump 1+2	Custom	Custom	271.12	0.5	135.56	1013.99	0.28	3621	70	14.5	3636	5.236



City of Tyler

Lift Station Discharge Measurements

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Bellwood												
Pump 1	Circular	6.16	29.79	0.5	14.89	111.40	1.03	108	0.7	159.1	267	0.385
Pump 1	Circular	6.16	29.79	0.5	14.89	111.40	1.06	105	0.8	139.3	244	0.352
Pump 1	Circular	6.16	29.79	0.5	14.89	111.40	1.06	105	0.76	146.6	252	0.362
Pump 1	Circular	6.16	29.79	1	29.79	222.81	1.55	144	1.13	197.2	341	0.491
Pump 1 Average											276	0.366
Pump 2	Circular	6.16	29.79	Out of Service	0.00	0.00	1.03	0	0	0.0	0	0.000

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Animal Shelter												
Pump 1	Circular	4	12.56	Out of Service	0.00	0.00	0.00	0	9.33	0.0	0	0.000
Pump 2	Circular	4	12.56	0.5	6.28	46.97	1.17	40	45	0.5	41	0.059
Pump 2	Circular	4	12.56	0.5	6.28	46.97	1.23	38	52	0.5	39	0.056
Pump 2 Average											40	0.056

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Nottingham												
Pump 1	Circular	8	50.24	0.5	25.12	187.90	1.80	104	13.65	6.9	111	0.160
Pump 1	Circular	8	50.24	0.5	25.12	187.90	1.68	112	11.46	8.2	120	0.173
Pump 1 Average											116	0.160
Pump 2	Circular	8	50.24	0.5	25.12	187.90	1.30	145	14.58	6.4	151	0.217
Pump 2	Circular	8	50.24	0.5	25.12	187.90	1.15	163	11.15	8.4	172	0.247
Pump 2 Average											161	0.208
Pump 1+2	Circular	8	50.24	0.5	25.12	187.90	0.61	308	15.2	6.2	314	0.452
Pump 1+2	Circular	8	50.24	0.5	25.12	187.90	0.65	289	11	8.5	298	0.429
Pump 1+2 Average											306	0.363

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Rustic Park												
Pump 1*	Circular	6	28.26	0.5	14.13	105.69	0.85	124	7.36	7.2	132	0.189
Pump 1*	Circular	6	28.26	0.5	14.13	105.69	0.90	117	3.98	4.0	121	0.175
Pump 1* Average											126	0.189
Pump 2	Circular	6	28.26	0.5	14.13	105.69	0.70	151	6.83	4.0	155	0.223
Pump 2	Circular	6	28.26	0.5	14.13	105.69	0.76	139	7.13	4.0	143	0.206
Pump 2 Average											149	0.206
Pump 1+2	Circular	6	28.26	0.5	14.13	105.69	0.63	168	6.2	4.0	172	0.247
Pump 1+2	Circular	6	28.26	0.5	14.13	105.69	0.66	160	5.8	4.0	164	0.236
Pump 1+2 Average Pump 1* Bad check valve											168	0.230

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Haver Hill												
Pump 1*	Circular	8	50.24	0.5	25.12	187.90	1.55	121	3.73	25.2	146	0.211
Pump 1*	Circular	8	50.24	0.5	25.12	187.90	1.81	104	3.45	27.2	131	0.189
Pump 1* Average											139	0.211
Pump 2	Circular	8	50.24	0.5	25.12	187.90	0.46	408	12.53	7.5	416	0.599
Pump 2	Circular	8	50.24	0.5	25.12	187.90	0.50	376	13.5	7.0	383	0.551
Pump 2 Average											399	0.454
Pump 1+2	Circular	8	50.24	0.5	25.12	187.90	0.21	895	2.5	37.6	932	1.343
Pump 1+2	Circular	8	50.24	0.5	25.12	187.90	0.30	626	2.88	32.6	659	0.949
Pump 1+2 Average Pump 1* Bad check valve											796	0.779



City of Tyler Lift Station Discharge Measurements

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
University Park												
Pump 1	Circular	6	28.26	0.5	14.13	105.69	1.23	86	4.02	13.1	99	0.143
Pump 1	Circular	6	28.26	0.5	14.13	105.69	1.10	96	4.1	12.9	109	0.157
Pump 1 Average											104	0.143
Pump 2	Circular	6	28.26	0.5	14.13	105.69	0.85	124	4.1	4.4	129	0.185
Pump 2	Circular	6	28.26	0.5	14.13	105.69	0.78	136	3.7	4.4	140	0.201
Pump 2 Average											134	0.177
Pump 1+2	Circular	6	28.26	0.5	14.13	105.69	0.68	155	3.8	4.4	160	0.230
Pump 1+2	Circular	6	28.26	0.5	14.13	105.69	0.75	141	4.4	4.4	145	0.209
Pump 1+2 Average											153	0.201

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pilot Truck												
Pump 1	Circular	6	28.26	0.5	14.13	105.69	1.15	92	10.25	5.2	97	0.140
Pump 1	Circular	6	28.26	0.5	14.13	105.69	1.31	81	7.76	6.8	87	0.126
Pump 1 Average											92	0.140
Pump 2	Circular	6	28.26	0.5	14.13	105.69	0.53	199	24.08	2.2	202	0.290
Pump 2	Circular	6	28.26	0.5	14.13	105.69	0.45	235	10.53	5.0	240	0.345
Pump 2 Average											221	0.259
Pump 1+2	Circular	6	28.26	0.5	14.13	105.69	0.46	230	12.33	4.3	234	0.337
Pump 1+2	Circular	6	28.26	0.5	14.13	105.69	0.38	278	9.9	5.3	283	0.408
Pump 1+2 Average											259	0.328

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Hwy 69N												
Pump 1	Circular	8	50.24	0.5	25.12	187.90	0.80	235	80	1.2	236	0.340
Pump 1	Circular	8	50.24	0.5	25.12	187.90	0.73	257	16.72	5.6	263	0.379
Pump 1 Average											250	0.340
Pump 2	Circular	8	50.24	0.5	25.12	187.90	0.20	939	80	1.2	941	1.355
Pump 2	Circular	8	50.24	0.5	25.12	187.90	0.25	752	14.58	6.4	758	1.092
Pump 2 Average											849	0.929
Pump 1+2	Circular	8	50.24	0.5	25.12	187.90	0.40	470	80	1.2	471	0.678
Pump 1+2	Circular	8	50.24	0.5	25.12	187.90	0.35	537	17.3	5.4	542	0.781
Pump 1+2 Average											507	0.967

Lift Station	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Dixie												
Pump 1	Circular	6	28.26	0.5	14.13	105.69	3.38	31	8.76	6.0	37	0.054
Pump 1	Circular	6	28.26	0.5	14.13	105.69	3.20	33	5.4	9.8	43	0.062
Pump 1 Average											40	0.054
Pump 2	Circular	6	28.26	0.5	14.13	105.69	3.28	32	12	4.4	37	0.053
Pump 2	Circular	6	28.26	0.5	14.13	105.69	3.02	35	5.53	9.6	45	0.064
Pump 2 Average											41	0.056
Pump 1+2	Circular	6	28.26	0.5	14.13	105.69	2.31	46	8.33	6.3	52	0.075
Pump 1+2	Circular	6	28.26	0.5	14.13	105.69	1.16	91	5.1	10.4	101	0.146
Pump 1+2 Average											77	0.079



City of Tyler

Lift Station Discharge Measurements

Lift Station HWY 31	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pump 1	Circular	5.83	26.68	0.5	13.34	99.79	0.36	277	102	0.5	278	0.400
Pump 2	Circular	5.83	26.68	0.5	13.34	99.79	0.43	232	102	0.5	233	0.335
Pump 1+2	Circular	5.83	26.68	0.5	13.34	99.79	0.33	302	102	0.5	303	0.436

Lift Station Shoreline	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pump 1	Rectangle	7.16x7	50.12	0.5	25.06	187.45	1.28	146	14	13.4	160	0.230
Pump 2	Rectangle	7.16x7	50.12	0.5	25.06	187.45	1.15	163	13.4	14.0	177	0.255
Pump 1+2	Rectangle	7.16x7	50.12	0.5	25.06	187.45	0.90	208	15.05	12.5	221	0.318

Lift Station Hogan	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pump 1	Rectangle	11.83x12.25	144.92	0.5	72.46	541.99	5.83	93	9.33	58.1	151	0.218
Pump 1	Rectangle	11.83x12.25	144.92	0.5	72.46	541.99	6.30	86	2.2	246.4	332	0.479
Pump 1 Average											242	0.218
Pump 2	Rectangle	11.83x12.25	144.92	0	0.00	0.00	10.00	0	0	0.0	0	0.000
Pump 1+2	Rectangle	11.83x12.25	144.92	0.5	72.46	541.99	7.23	75	9.33	58.1	133	0.192
Pump 1+2	Rectangle	11.83x12.25	144.92	0.5	72.46	541.99	5.95	91	2.95	183.7	275	0.396
Pump 1+2 Average											204	0.257

Lift Station Stewart	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pump 1	Rectangle	7.25x7.08	51.33	0.5	25.67	191.97	7.48	26	26.5	7.2	33	0.047
Pump 1	Rectangle	7.25x7.08	51.33	0.5	25.67	191.97	7.25	26	27.13	7.1	34	0.048
Pump 1 Average											33	0.047
Pump 2	Rectangle	7.25x7.08	51.33	0.5	25.67	191.97	1.86	103	38.15	5.0	108	0.156
Pump 2	Rectangle	7.25x7.08	51.33	0.5	25.67	191.97	1.70	113	30.33	6.3	119	0.172
Pump 2 Average											114	0.084
Pump 1+2	Rectangle	7.25x7.08	51.33	0.5	25.67	191.97	2.06	93	33.83	5.7	99	0.142
Pump 1+2	Rectangle	7.25x7.08	51.33	0.5	25.67	191.97	1.76	109	29.85	6.4	116	0.166
Pump 1+2 Average											107	0.144

Lift Station The Crossings	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pump 1	Square	8x8	64.00	0.25	16.00	119.68	0.40	299	3.73	32.1	331	0.477
Pump 1	Square	8x8	64.00	0.25	16.00	119.68	0.43	278	4.83	24.8	303	0.436
Pump 1 Average											317	0.477
Pump 2	Square	8x8	64.00	0.25	16.00	119.68	0.45	266	4.55	26.3	292	0.421
Pump 2	Square	8x8	64.00	0.25	16.00	119.68	0.40	299	4.56	26.2	325	0.469
Pump 2 Average											309	0.445
Pump 1+2	Square	8x8	64.00	0.25	16.00	119.68	0.20	598	3.33	35.9	634	0.913
Pump 1+2	Square	8x8	64.00	0.25	16.00	119.68	0.20	598	4.98	24.0	622	0.896
Pump 1+2 Average											628	0.629



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Lift Station Discharge Measurements

Lift Station Shackleford Creek	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pump 1	Rectangle	25x15.83	395.75	0.25	98.94	740.05	4.80	154	2.45	302.1	456	0.657
Pump 1	Rectangle	25x15.83	395.75	0.25	98.94	740.05	3.98	186	2.23	331.9	518	0.746
Pump 1 Average											487	0.657
Pump 2	Rectangle	25x15.83	395.75	0.25	98.94	740.05	2.38	311	2.13	347.4	658	0.948
Pump 2	Rectangle	25x15.83	395.75	0.25	98.94	740.05	2.08	356	2.03	364.6	720	1.037
Pump 2 Average											689	0.784
Pump 1+2	Rectangle	25x15.83	395.75	0.25	98.94	740.05	2.93	253	2.7	274.1	527	0.758
Pump 1+2	Rectangle	25x15.83	395.75	0.25	98.94	740.05	2.15	344	2.25	328.9	673	0.969
Pump 1+2 Average											600	0.899

Lift Station Brooks	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
0 to 9 feet	Rectangle	10.16x30.33	395.75									
9 to 25	Rectangle	20.33x30.33	616.61									
Pump 1	Rectangle	10.16x30.33	395.75	0.25	98.94	740.05	1.05	705	9.96	74.3	779	1.122
Pump 1	Rectangle	10.16x30.33	395.75	0.25	98.94	740.05	0.98	755	10.23	72.3	827	1.192
Pump 1 Average											803	1.122
Pump 2	Rectangle	10.16x30.33	395.75	0.25	98.94	740.05	1.15	644	9.25	80.0	724	1.042
Pump 2	Rectangle	10.16x30.33	395.75	0.25	98.94	740.05	0.98	755	9.75	75.9	831	1.197
Pump 2 Average											777	1.118
Pump 1+2	Rectangle	10.16x30.33	395.75	0.25	98.94	740.05	0.65	1139	10.33	71.6	1210	1.743
Pump 1+2	Rectangle	10.16x30.33	395.75	0.25	98.94	740.05	0.61	1213	9.53	77.7	1291	1.859
Pump 1+2 Average											1251	1.392

Lift Station Charleston	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pump 1	Rectangle	7.04x8.04	56.60	Not in Operation	0.00	0.00	0.00	0	0	0.0	0	0.000
Pump 2	Rectangle	7.04x8.04	56.60	0.5	28.30	211.69	1.23	172	17.08	12.4	184	0.266
Pump 2	Rectangle	7.04x8.04	56.60	0.5	28.30	211.69	1.16	182	18.65	11.4	194	0.279
Pump 2 Average											189	0.272

Lift Station Hamptons	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Pump 1	Circular	6.08	29.02	0.5	14.51	108.53	0.26	417	3.25	33.4	451	0.649
Pump 1	Circular	6.08	29.02	0.5	14.51	108.53	0.46	236	3.78	28.7	265	0.381
Pump 1 Average											358	0.649
Pump 2	Circular	6.08	29.02	0.5	14.51	108.53	0.65	167	3.56	30.5	197	0.284
Pump 2	Circular	6.08	29.02	0.5	14.51	108.53	0.81	134	3.71	29.3	163	0.235
Pump 2 Average											180	0.438
Pump 1+2	Circular	6.08	29.02	No Test	0.00	0.00	0.00	0	0	0.0	0	0.000

Lift Station Oak Creek	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Insufficient Flow	Square	10.41x10.41	108.37									

Lift Station Faulkner	Geometry	Dimension (ft)	Area (sq.ft.)	Drawdown/Return Depth (ft)	Volume cu.ft.	Volume gal.	Drawdown Time-min.	Drawdown Rate - gpm	Return Drawdown Time-min.	Return Rate - gpm	Pump Rate gpm	Pump Rate MGD
Ejector	No access											

**APPENDIX C:
SAMPLE LIFT STATION CONDITION
ASSESSMENT FORM**

Tyler Water Utilities - Lift Station Assessment Form

Lift Station Name _____	Type _____
Location/Address _____	
Lift Station Asset ID _____	Number of Pumps _____
Firm Capacity in GPM (all pumps operating) _____	
Firm Capacity in GPM (largest pump out of service) _____	
Inspector _____	Date _____
City Works Work Order _____	

Building and Grounds		Good	Fair	Poor	Critical	N/A
Building Structure	Type: _____					
	Building Roof/Ceiling	☐	☐	☐	☐	☐
	Building Finishes	☐	☐	☐	☐	☐
	Building Doors and Windows	☐	☐	☐	☐	☐
	Building HVAC Type: _____	☐	☐	☐	☐	☐
Fencing	Type: _____	☐	☐	☐	☐	☐
	Gates Type: _____	☐	☐	☐	☐	☐
Site/Grounds	Size: _____	☐	☐	☐	☐	☐
	Lighting	☐	☐	☐	☐	☐
Pavement (Driving)	Type: _____	☐	☐	☐	☐	☐
Drainage	Type: _____	☐	☐	☐	☐	☐
Odor	Comment: _____	☐	☐	☐	☐	☐
	Odor Control System Type: _____	☐	☐	☐	☐	☐
	Odor Control Mechanical	☐	☐	☐	☐	☐
	Odor Control Media Type: _____	☐	☐	☐	☐	☐
Noise		☐	☐	☐	☐	☐
Overall Site Appearance		☐	☐	☐	☐	☐

Comments _____

Structural

				Good	Fair	Poor	Critical	N/A
Wet Well		Size:						
	Debris			☐	☐	☐	☐	☐
	Fats, oils, and grease			☐	☐	☐	☐	☐
	Ventilation			☐	☐	☐	☐	☐
	Walls	Material:		☐	☐	☐	☐	☐
	Coatings	Type:		☐	☐	☐	☐	☐
	Access Hatches	Number:		☐	☐	☐	☐	☐
	Slab			☐	☐	☐	☐	☐
Dry Well/Valve Vault								
	Walls	Material:		☐	☐	☐	☐	☐
	Coatings	Type:		☐	☐	☐	☐	☐
	Grating/Hatching	Number:		☐	☐	☐	☐	☐
	Stairway/Ladder	Material:		☐	☐	☐	☐	☐
	Sump/Pump	Number:		☐	☐	☐	☐	☐
	Ventilation	Type:		☐	☐	☐	☐	☐

Comments

Mechanical

				Good	Fair	Poor	Critical	N/A
Bypass Connection	(Circle)	YES	/ NO					
Piping and Valves								
	Suction Valve	Number:		☐	☐	☐	☐	☐
	Check Valve	Number:		☐	☐	☐	☐	☐
	Discharge Valve	Number:		☐	☐	☐	☐	☐

Mechanical (continued)

				Good	Fair	Poor	Critical	N/A
	Riser Piping	Material:		☐	☐	☐	☐	☐

Discharge Piping	Material:		☐	☐	☐	☐	☐
Fittings	Material:		☐	☐	☐	☐	☐

Comments

Pumps

Pump 1	Asset ID		Make		Model				
	Capacity		GPM						
	Impeller Dia./Code		Horsepower						
					Good	Fair	Poor	Critical	N/A
	Pump				☐	☐	☐	☐	☐
	Seals				☐	☐	☐	☐	☐
	Motor				☐	☐	☐	☐	☐
	Shaft				☐	☐	☐	☐	☐
	Electrical Cable								
	Noise				☐	☐	☐	☐	☐
	Vibration/Heat				☐	☐	☐	☐	☐

Pump 1	<i>The following components are to be inspected during pump disassembly</i>									
	Oil					☐	☐	☐	☐	☐
	Impeller					☐	☐	☐	☐	☐
	Packing Rings					☐	☐	☐	☐	☐
	Internal Seals					☐	☐	☐	☐	☐

Pump 2	Asset ID _____	Make _____	Model _____
	Capacity _____	GPM _____	
	Impeller Dia./Code _____	Horsepower _____	
			Good Fair Poor Critical N/A
	Pump		☐ ☐ ☐ ☐ ☐
	Seals		☐ ☐ ☐ ☐ ☐
	Motor		☐ ☐ ☐ ☐ ☐
	Shaft		☐ ☐ ☐ ☐ ☐
	Electrical Cable		
	Noise		☐ ☐ ☐ ☐ ☐
	Vibration/Heat		☐ ☐ ☐ ☐ ☐
Pump 2	<i>The following components are to be inspected during pump disassembly</i>		
	Oil		☐ ☐ ☐ ☐ ☐
	Impeller		☐ ☐ ☐ ☐ ☐
	Packing Rings		☐ ☐ ☐ ☐ ☐
	Internal Seals		☐ ☐ ☐ ☐ ☐
Pump 3	Asset ID _____	Make _____	Model _____
	Capacity _____	GPM _____	
	Impeller Dia./Code _____	Horsepower _____	
			Good Fair Poor Critical N/A
	Pump		☐ ☐ ☐ ☐ ☐
	Seals		☐ ☐ ☐ ☐ ☐
	Motor		☐ ☐ ☐ ☐ ☐
	Shaft		☐ ☐ ☐ ☐ ☐
	Electrical Cable		
	Noise		☐ ☐ ☐ ☐ ☐
	Vibration/Heat		☐ ☐ ☐ ☐ ☐

Pump 3*The following components are to be inspected during pump disassembly*

		Good	Fair	Poor	Critical	N/A
	Oil	☐	☐	☐	☐	☐
	Impeller	☐	☐	☐	☐	☐
	Packing Rings	☐	☐	☐	☐	☐
	Internal Seals	☐	☐	☐	☐	☐

Pump 4

Asset ID _____

Make _____

Model _____

Capacity _____

GPM _____

Impeller Dia./Code _____

Horsepower _____

		Good	Fair	Poor	Critical	N/A
	Pump	☐	☐	☐	☐	☐
	Seals	☐	☐	☐	☐	☐
	Motor	☐	☐	☐	☐	☐
	Shaft	☐	☐	☐	☐	☐
	Electrical Cable					
	Noise	☐	☐	☐	☐	☐
	Vibration/Heat	☐	☐	☐	☐	☐

Pump 4*The following components are to be inspected during pump disassembly*

	Oil	☐	☐	☐	☐	☐
	Impeller	☐	☐	☐	☐	☐
	Packing Rings	☐	☐	☐	☐	☐
	Internal Seals	☐	☐	☐	☐	☐

Pump 5	Asset ID _____	Make _____	Model _____
	Capacity _____	GPM _____	
	Impeller Dia./Code _____	Horsepower _____	
			Good Fair Poor Critical N/A
	Pump		☐ ☐ ☐ ☐ ☐
	Seals		☐ ☐ ☐ ☐ ☐
	Motor		☐ ☐ ☐ ☐ ☐
	Shaft		☐ ☐ ☐ ☐ ☐
	Electrical Cable		
	Noise		☐ ☐ ☐ ☐ ☐
	Vibration/Heat		☐ ☐ ☐ ☐ ☐
Pump 5	<i>The following components are to be inspected during pump disassembly</i>		
	Oil		☐ ☐ ☐ ☐ ☐
	Impeller		☐ ☐ ☐ ☐ ☐
	Packing Rings		☐ ☐ ☐ ☐ ☐
	Internal Seals		☐ ☐ ☐ ☐ ☐
Pump 6	Asset ID _____	Make _____	Model _____
	Capacity _____	GPM _____	
	Impeller Dia./Code _____	Horsepower _____	
			Good Fair Poor Critical N/A
	Pump		☐ ☐ ☐ ☐ ☐
	Seals		☐ ☐ ☐ ☐ ☐
	Motor		☐ ☐ ☐ ☐ ☐
	Shaft		☐ ☐ ☐ ☐ ☐
	Electrical Cable		☐ ☐ ☐ ☐ ☐
	Noise		☐ ☐ ☐ ☐ ☐
	Vibration/Heat		☐ ☐ ☐ ☐ ☐

Pump 6*The following components are to be inspected during pump disassembly*

		Good	Fair	Poor	Critical	N/A
	Oil	☐	☐	☐	☐	☐
	Impeller	☐	☐	☐	☐	☐
	Packing Rings	☐	☐	☐	☐	☐
	Internal Seals	☐	☐	☐	☐	☐

Electrical System

					Good	Fair	Poor	Critical	N/A
Electrical System Power		Volt/Phase:							
	Panel/Enclosures	NEMA4X	YES	NO	☐	☐	☐	☐	☐
	Transformers (AEP)				☐	☐	☐	☐	☐
	Disconnect	Type:			☐	☐	☐	☐	☐
	Generator	KW			☐	☐	☐	☐	☐
	Transfer Switch				☐	☐	☐	☐	☐
Electrical System Control									
	Breakers	Type:			☐	☐	☐	☐	☐
	Speed control/VFD	Type:			☐	☐	☐	☐	☐
	Starters	Type:			☐	☐	☐	☐	☐
	Control Relays	Type:			☐	☐	☐	☐	☐

Comments

Instrumentation/SCADA

				Good	Fair	Poor	Critical	N/A
Panel	NEMA4X	YES	NO	☐	☐	☐	☐	☐
Instrumentation								
Level	Type:			☐	☐	☐	☐	☐
Flow	Type:			☐	☐	☐	☐	☐
Instrumentation/SCADA (continued)				Good	Fair	Poor	Critical	N/A
PLC	Type:			☐	☐	☐	☐	☐
SCADA				☐	☐	☐	☐	☐
RTU	Type:			☐	☐	☐	☐	☐
Radio/Antenna	Type:			☐	☐	☐	☐	☐

Comments

**APPENDIX D:
CRITERIA FOR DEVELOPMENT OF
LIFT STATION CONDITION
ASSESSMENT FORM**

LS Area	Good	Fair	Poor	Critical
Overall Rating System	Asset has no operational problems, requires typical preventive maintenance and/or shows no signs of deterioration	Asset has only minor problems, minor repairs required, and/or shows little sign of deterioration	Asset has major operational problems, major repairs or replacement required, and/or shows visible signs of deterioration	Asset in eminent danger of failure and immediate action is required to prevent loss of service
Buildings and Grounds	Good appearance, clean, free of debris, secure, well lit, easy all weather access	Building showing signs of wear, grounds and fence need maintenance	Significant defects/issues with building, security, grounds, fencing, etc.	Buildings, security, fencing condition creating a safety concern or system failure
Building	Walls, roof, windows and doors all in good shape, no signs of damage or wear	Minor signs of wear, painting and maintenance required	Building has structural cracking, damaged roofing	Major structural, roofing, or security issues
Odor	No detectible odor	Mild detectable odor	Noticeable odor on the lift station grounds	High odor levels within 2 square blocks of the lift station
Structural	Surfaces are smooth, no spalling, loss of hardness or signs of corrosion	Some loss of hardness, minimal surface cracks, minimal corrosion	Concrete is soft, structural cracks and spalling, some rebar is exposed	Significant structural cracking or corrosion, exposed rebar
Grease and debris in the wet well	No signs of grease or debris in the wet well	Some grease and debris bit the entire surface is not covered	Grease and debris covers the entire surface	Significant grease and/or debris build-up major impact on performance
Mechanical	Mechanical components like new and functioning properly	Some signs of wear, routine maintenance should be sufficient	Measurable deterioration, repair or rehab should be scheduled	Significant mechanical problem, system failure imminent requiring immediate attention
Piping and Valves	No signs of corrosion or wear, valves operate smoothly	Signs of paint wear, rust, minor pitting, valves sticking	Significant pitting and corrosion, valves difficult to operate, minor leakage	Sever corrosion, valves won't operate , significant leakage
Pumps	No signs of wear, normal Amp draw, pumps like new, routine scheduled maintenance	Pumps/motor showing some wear, normal Amp draw, preventive maintenance should be scheduled	Vibration, heat, high Amp draw, etc. Indicating component failure needs immediate maintenance	Pump in failure mode, high Amp draw, requires immediate replacement of rehabilitation
Electrical System	System fully functional, reliable with no signs of wear	Functional and reliable with some wear or corrosion	wear/corrosion causing functionality /reliability problems	System not functioning or is unreliable needs replacement
System Power	Primary and back-up power supply reliable at required service levels	Primary and back-up power showing some wear, requires scheduled maintenance	Primary and back-up power not reliable at required service levels requires maintenance	Primary and back-up not reliable or has failed requires immediate attention
System Controls	Switchgear like new, no signs of wear, routine scheduled maintenance	Switchgear/controls/enclosures showing signs of heat/wear/corrosion requires maintenance	Switchgear/controls/enclosures have significant wear /corrosion requires immediate maintenance	Switchgear/controls/enclosures about to fail, requires immediate replacement
Instrumentation	Level instrumentation and controls properly functioning, no signs of wear	Level instrumentation and controls have signs of wear/corrosion requires maintenance	Level instrumentation and controls corroded or warn requires immediate maintenance	Level instrumentation and controls in failure mode requires immediate replacement
SCADA	Alarms and communications are working with no problems	Some issues with alarm and communication functions requires scheduled maintenance		