City Of London
Environmental and Engineering Services Department
Wastewater Treatment Operations

2016 Annual Report
Adelaide Wastewater Treatment Plant
February 2017

Summary

This annual report is in response to requirements under Ministry of the Environment Certificate of Approval No. 7397-96SPH7 for the Adelaide Wastewater Treatment Plant.

(a) A *summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7, including an overview of the success and adequacy of the works*;

The annual average flow for the Adelaide Wastewater Treatment Plant was 27,455 cubic metres per day or 93% of the rated capacity of section 2. The daily average peak flow in 2016 was 38,090 cubic metres per day and the instantaneous peak flow was 72,748 cubic metres per day, on March 24. Section #1 has remained shut down since 1997 but is used to provide primary treatment for peak flows and the approved peak rate for section 2 is 59,200 cubic metres per day. The Adelaide secondary bypass on March 24, 2016 was 1,592 cubic metres or 2% of the peak flow receiving primary treatment only. The Ministry of the Environment guideline F5-5 recommends treating as much sewage as possible in the treatment plant prior to bypassing.

There were no compliance excursions of concentrations or loadings for BOD, suspended solids, total phosphorous, E. Coli or ammonia in 2016. There has been one compliance excursions in the past fifteen years. The works at the Adelaide Wastewater Treatment Plant are sufficient to meet requirements.

The goals of the Pollution Prevention and Control Plan (PPCP) are to outline the nature, cause and extent of pollution problems, evaluate alternatives and propose remedial measures for reducing and mitigating pollution from sewer overflows, and then recommend an implementation program for achieving those goals. The City of London contracted engineering consulting firm CH2M HILL Canada Limited in 2012 to develop the 3 phased plan through a detailed analysis of the impacts of rainfall events on our existing sewer systems and the Thames River. Phase 2 of the project, which consisted of 2 stages of detailed hydraulic modelling of the City's sanitary sewer systems and subsequent evaluation and prioritization of overflows, is nearly complete. Phase 3 of the project, which will include proposing remedial measures and an implementation program for them, is scheduled to be completed by the end of 2017.

Stress testing on the Adelaide Wastewater Treatment Plant was completed in 2016 with final reporting due spring 2017. Results will be used for future treatment capacity assessments and planning.

(b) *A description of any operating problems encountered and corrective action taken*.

Precipitation levels in 2016 were average at 929 mm compared to 974 mm yearly average for rainfall from 1986 to 2014. No issues at the plant.

(c) *A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works*;

The Work Order list for the Adelaide Wastewater Treatment Plant is attached near the end of the report.

Sewage is being directed to the Adelaide Wastewater Treatment Plant from the Medway pumping station to equalize flow over the day and to help the bacteria thrive during the normal

diurnal low flow (food) periods.

(d) *A summary of any effluent quality assurance or control measures undertaken in the reporting period*;

A Plant and effluent monitoring program was conducted and the data is in the tables of this report. All sampling and analyse equalled or exceeded the requirements in the Certificate of Approval in 2016.

(e) *A summary of the calibration and maintenance carried out on all effluent monitoring equipment*;

Flow meter calibrations are attached near the end of the report.

(f) *A description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6*;

The Adelaide Wastewater Treatment Plant monthly concentration and loading objectives for BOD, suspended solids, total phosphorous, E. Coli, and un-ionized ammonia were achieved 100% of the time in 2016.

(g*) A tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed.*

Sludge generated at the Adelaide Wastewater Treatment Plant had an average solids concentration of 3.83% based on flow into the storage tank. Total sludge hauled to the Greenway Pollution Control Centre for incineration was 113,596 cubic metres for a total of 4,352 dry tonnes. The dry tonnes may be low since the tank is decanted when sludge has settled prior to hauling to the Greenway WWTP. The primary sludge was 50,512 cubic metres at 3.1% solids and the thickened waste activated sludge was 63,084 cubic metres at 4.4% solids in 2016. The City of London will continue to haul sludge to Greenway for dewatering and incineration. In 2017 the incinerator is scheduled to be shut down for two weeks in the spring for inspection of the dome, preheater and reheater heat exchangers. During this time the sludge will be treated by the bioset process and hauled to the landfill. The 2017 sludge volume for the Adelaide Wastewater Treatment Plant is expected to be similar to the 2016 level.

(h) *A summary of any complaints received during the reporting period and any steps taken to address the complaints*;

There was one odour complaint on September 20, 2016. Two bleach air scrubbers were being flushed out at the Adelaide wastewater Treatment Plant for maintneance. One scrubber scrubs air from the rotating Drum filters and the second scrubber is for the waste storage tank.

(i) *A summary of all By-pass, spill or abnormal discharge events*.

There were no raw bypass events at the Adelaide Wastewater Treatment Plant and there were two secondary treatment by-pass events in 2016. Section #1 was used to provide primary treatment for bypass flows. The total volume of primary treated effluent was 5.358 ML. Fully

treated effluent was 99.95% of the flow into the plant. Rainfall in 2016 was average at 929 mm.

Table 1: 2016 Adelaide Daily Plant Summary

Date	Rainfall (mm)	Wind Direction	Temperature - Sewage Raw	Temperature - Sewage Final	Max Sewage Flow (10^3m^3/D)	Min Sewage Flow (10^3m^3/D)	Total Sewage Flow (10^3m^3/D)	Plant By-Pass Volume (10^3m^3)	Plant By-Pass Hours	Plant By-Pass BOD (mg/L)	Plant By-Pass Suspended Solids (mg/L)	Plant By-Pass Ammonia (mg/L)	Plant By-Pass Temperature (C)	Plant By-Pass pH	Plant By-Pass Unionized Ammonia (mg/L)	BOD 5 Day Raw #2 (mg/L)	BOD 5 Day UV Channel (mg/L)	Suspended Solids Raw #2 (mg/L)	Suspended Solids UV Channel (mg/L)	pH Raw #2	pH Raw UV Channel	Total Phosphorus Raw #2 (mg/L)	Total Phosphorus UV (mg/L)	NH3 UV (mg/L)	DO Plant Effluent UV (mg/L)	E.Coli UV (MPN)
1/Jan/16		wsw	15	17	33.46	18.82	24.09																		6.7	
2/Jan/16			16	16	36.85	4.48	23.78																		6.7	
3/Jan/16	1.50		14	14	31.03	3.73	22.43																		6.9	
4/Jan/16	0.40	nnw	13	15	40.67	18.41	24.90																		6.9	
5/Jan/16		nne	15	16	35.37	17.01	24.89									253	2	198		7.5	7.0	6.9	0.47	0.10	6.8	
6/Jan/16		ssw	13	14	33.46	18.91	24.91																		6.8	
7/Jan/16		ssw	13	14	33.19	17.82	24.75									158	1	331	1	7.5	7.3	7.8	0.82	0.10	6.6	
8/Jan/16		ssw	15	16	31.55	18.80	26.13																		6.6	
9/Jan/16			14	15	40.99	6.87	28.60																		6.1	
10/Jan/16	14.40		14	14	59.29	5.82	30.06																		6.0	
11/Jan/16	1.70	w	13	14	44.88	3.91	27.76																		6.4	
12/Jan/16	5.20	sw	13	14	42.06	19.30	25.60									202	3	191	6	7.6	7.2	6.2	0.37	0.10	6.3	
13/Jan/16	1.70	wsw	13	14	41.13	17.53	30.71																		6.6	
14/Jan/16	0.30	wsw	14	15	36.76	18.30	25.07									292	1	266	1	7.6	7.3	5.4	0.48	0.10	6.5	
15/Jan/16		e	14	14	44.15	16.28	28.87																		6.2	
16/Jan/16		sw	14	14	41.90	21.85	29.08																		5.6	
17/Jan/16		wsw	13	14	33.92	12.03	26.57																		7.0	
18/Jan/16	0.20	w	14	15	37.76	4.21	24.84																		6.7	
19/Jan/16	0.20	w	15	16	36.19	4.84	23.76									252	1	293	4	7.5	7.1	8.4	0.53	0.10	7.0	
20/Jan/16	0.70	sw	14	15	46.88	7.30	24.00																		6.4	
21/Jan/16		w	14	15	32.03	17.64	23.26									245	1	297	1	7.5	7.2	7.5	0.48		6.8	
22/Jan/16		ene	13	14	31.92	4.12	23.11																		6.9	
23/Jan/16		n	13	14	33.17	16.57	23.80																		6.0	
24/Jan/16		n	13	14	32.06	4.14	24.22																		5.6	
25/Jan/16	0.20	s	13	14	28.85	16.30	22.27																		6.8	
26/Jan/16	0.50	ssw	15	16	29.31	18.48	23.37									224	1	320	1	7.5	7.0	7.8	0.38	0.10	6.5	
27/Jan/16	0.30	w	15	15	30.65	14.00	23.44																		6.3	
28/Jan/16	1.00	ssw	16	16	30.69	17.46	23.07									225	1	199	1	7.5	8.4	6.0	0.67	0.15	6.2	
29/Jan/16		wnw	16	16	33.60	12.34	28.42																		6.8	
30/Jan/16			15	16	34.33	18.12	22.06																		6.0	
31/Jan/16	4.20		14	15	36.28	3.91	28.94																		5.8	
1/Feb/16	0.20	w	14	15	42.01	15.14	23.82																		6.1	
2/Feb/16	9.20	ne	14	15	44.38	18.73	29.22									191	1	265		7.5	7.1	6.6	0.60	0.10	6.2	
3/Feb/16	0.80	sse	13	15	44.65	6.09	28.45																		5.5	
4/Feb/16	0.70	wnw	15	15	38.83	6.18	26.61									246	1	288	1	7.5	7.2	9.2	0.46	0.40	6.2	
5/Feb/16		wsw	16	16	37.47	17.46	26.29																		6.2	
6/Feb/16			14	15	37.83	4.68	26.34																		5.8	
7/Feb/16			14	15	38.28	3.64	26.84																		6.2	
8/Feb/16	6.50	s	14	15	34.40	18.19	25.88																		5.6	
9/Feb/16	5.70	ssw	16	16	31.67	18.07	24.63									343	1	188	1	7.5	7.1	5.9	0.39	0.32	6.2	
10/Feb/16	1.80	wsw	16	16	31.87	17.60	24.79																		6.3	
11/Feb/16	14.20	wnw	14	14	30.30	18.91	24.23									122	1	93	4	7.5	7.3				6.5	
12/Feb/16	snow	sw	14	14	31.87	18.91	25.74																		6.2	
13/Feb/16	snow		15	16	41.38	7.00	28.35																		5.8	
14/Feb/16	snow		15	15	36.60	5.48	27.68																		5.7	
15/Feb/16			15	15	36.85	4.87	25.43																		5.9	
16/Feb/16		n	14	14	32.90	3.12	24.33									163	3	180	6	8.2	7.1	6.3	0.45	0.31	6.2	
17/Feb/16	1.60	wsw	14	14	37.40	9.73	24.20																		6.4	
18/Feb/16	0.20	ene	14	14	35.92	14.80	24.73									218	3	196	1	7.5	7.1				6.4	
19/Feb/16		se	14	14	44.74	14.91	28.75																		6.0	
20/Feb/16		wsw	15	15	48.88	22.23	42.52																		5.3	
21/Feb/16		n	15	15	44.15	18.55	26.17																		5.8	
22/Feb/16		n	15	15	41.13	20.62	30.59																		5.7	
23/Feb/16		ene	14	15	40.74	5.82	28.66									140	2	174	4	8.0	7.2	5.0	0.23	0.22	6.0	
24/Feb/16	16.30	ne	14	14	52.74	6.89	40.86																		5.9	
25/Feb/16	3.10	nw	14	14	67.61	6.00	35.51									104	4	107	7	8.1	7.3				5.6	
26/Feb/16	0.20	nw	14	14	43.26	19.94	31.24																		5.9	
27/Feb/16		sw	14	14	38.74	23.46	29.03																		6.0	
28/Feb/16		sse	13	14	41.65	5.46	30.82																		5.8	
29/Feb/16	3.10	nw	14	14	46.61	24.14	34.56																		5.6	
1/Mar/16		e	13	14	45.31	26.14	33.73									132	3	121	4	7.6	7.2	3.6	0.55	0.34	6.2	
2/Mar/16			14	14	29.94	6.62	29.59																		6.3	
3/Mar/16			13	14	39.85	22.69	31.63									199	3	224	1	7.5	7.4				5.9	
4/Mar/16	0.10	ne	15	16	37.42	6.23	29.74																		5.7	
5/Mar/16	0.20		16	16	37.87	19.69	27.31																		5.8	
6/Mar/16		n	14	14	37.51	6.23	26.62																		6.5	
7/Mar/16			14	14	44.65	4.73	29.16																		6.1	
8/Mar/16			14	14	42.74	21.03	29.23									467	2	825	1	7.4	7.2	11.1	0.34	0.10	6.1	
9/Mar/16			14	14	36.83	22.03	29.78																		5.9	
10/Mar/16	3.30	sw	14	15	41.15	5.64	29.98									238	1	325	1	7.5	7.3				5.9	
11/Mar/16		n	14	15	37.10	5.05	29.83																		6.3	
12/Mar/16		calm	15	14	39.88	6.12	28.69																		6.1	
13/Mar/16		e	14	14	41.47	6.71	27.97																		6.0	
14/Mar/16	6.90	e	14	15	41.97	5.37	29.46																		5.9	
15/Mar/16	1.30	n	13	14	36.87	19.23	27.35									201	1	271	5	7.8	7.5	6.3	0.78	0.10	6.1	
16/Mar/16	3.60	e	14	14	44.40	19.05	29.83																		6.1	
17/Mar/16		sw	14	14	36.01	22.05	29.20									187	1	169	1	7.5	7.3				6.6	
18/Mar/16		wnw	14	14	35.15	21.76	27.48																		6.7	
19/Mar/16		ne	14	15	40.65	16.37	29.44																		6.9	
20/Mar/16		e	14	15	43.33	16.69	29.66																		6.9	

Table 1: 2016 Adelaide Daily Plant Summary

Date	Rainfall (mm)	Wind Direction	Temperature - Sewage Raw	Temperature - Sewage Final	Max Sewage Flow (10^3m^3/D)	Min Sewage Flow (10^3m^3/D)	Total Sewage Flow (10^3m^3/D)	Plant By-Pass Volume (10^3m^3)	Plant By Pass Hours	Plant By-Pass BOD (mg/L)	Plant By-Pass Suspended Solids (mg/L)	Plant By-Pass Ammonia (mg/L)	Plant By-Pass Temperature (C)	Plant By-Pass pH	Plant By-Pass Unionized Ammonia (mg/L)	BOD 5 Day Raw #2 (mg/L)	BOD 5 Day UV Channel (mg/L)	Suspended Solids Raw #2 (mg/L)	Suspended Solids UV Channel (mg/L)	pH Raw #2	pH Raw UV Channel	Total Phosphorus Raw #2 (mg/L)	Total Phosphorus UV (mg/L)	NH3 UV (mg/L)	DO Plant Effluent UV (mg/L)	E.Coli UV (MPN)
21/Mar/16		w	14	14	35.56	5.46	28.28																		6.2	
22/Mar/16	1.10	ssw	14	14	35.83	17.87	28.62									296	2	525	4	7.5	7.1	8.3	0.47	0.14	6.2	
23/Mar/16	7.50	n	15	14	37.19	18.46	29.99																		6.3	
24/Mar/16	35.80	e	14	14	72.75	23.69	52.37	1.592	8.930	36.4	58.0	5.0	19.0	7.3	0.0										5.4	
25/Mar/16		wnw	14	14	71.75	26.01	42.09			37.0	51.0	5.4	18.0	7.3	0.0										6.1	
26/Mar/16		e	15	16	42.69	28.37	34.26																		5.9	
27/Mar/16	6.00	e	14	14	45.01	6.55	33.19																		6.1	
28/Mar/16	13.70	nw	14	14	62.93	29.65	49.19																		5.8	
29/Mar/16	0.20	nnw	14	15	55.31	4.91	37.78									167	1	242	1	7.6	7.2	4.2	0.37	1.06	5.6	
30/Mar/16		ese	14	15	49.92	5.21	35.76																		6.4	
31/Mar/16	47.90	ssw	13	14	72.75	23.51	63.01	3.766	11.250	39.1	63.0	8.6	19.0	7.3	0.0	221	1	357	4	7.7	7.4				5.2	
1/Apr/16	rain	wnw	15	17	72.75	43.92	55.06																		4.5	
2/Apr/16	3.20	n	16	16	56.43	34.94	49.04																		5.5	
3/Apr/16	snow	wnw	15	18	57.36	29.19	39.76																		6.6	
4/Apr/16		sw	15	14	49.33	16.32	36.23																		6.5	
5/Apr/16	0.20	ne	13	14	45.31	23.67	32.78									157	2	238	1	7.6	7.3	4.4	0.34	0.16	6.7	10
6/Apr/16	7.90	se	14	15	47.06	24.69	36.95																		6.7	
7/Apr/16	10.50	w	13	15	71.20	29.03	45.97									220	1	206	1	7.6	7.3				5.0	
8/Apr/16		wnw	14	15	62.06	22.17	42.54																		5.7	
9/Apr/16		n	14	14	48.65	9.89	36.61																		4.1	
10/Apr/16	10.80	s	15	17	53.83	7.43	39.32																		7.3	
11/Apr/16	8.30	sw	17	18	72.75	33.21	57.83																		4.0	
12/Apr/16		wsw	16	17	56.20	22.80	37.68									156	2	238		7.6	7.3	4.2	0.42	1.51	6.1	10
13/Apr/16		ene	14	15	52.15	7.34	34.37																		7.7	
14/Apr/16		ne	15	16	44.10	29.12	35.23									773	3	1212	8	7.5	7.4				6.5	
15/Apr/16		ene	14	15	45.35	6.00	34.89																		6.7	
16/Apr/16		e	14	16	44.56	22.46	34.09																		7.0	
17/Apr/16	0.20	s	14	14	45.33	6.07	32.71																		6.6	
18/Apr/16		n	14	14	43.47	7.41	32.40																		5.9	
19/Apr/16		n	14	14	36.12	23.60	30.30											104	4	7.9	7.2			0.10	6.9	10
20/Apr/16		e	14	15	37.47	26.26	31.45																		6.7	
21/Apr/16	5.50	e	14	14	40.74	22.87	32.32									205	1	171	1	8.2	7.3	6.6	0.97		6.6	
22/Apr/16		n	14	16	42.38	23.55	32.17																		6.5	
23/Apr/16		nne	15	16	34.87	24.33	30.13																		6.7	
24/Apr/16		ese	13	14	35.78	22.92	29.06																		6.8	
25/Apr/16		n	14	14	42.65	6.73	32.06																		6.9	
26/Apr/16	rain	ne	14	14	39.10	6.75	30.44									271	1	504	1	7.6	7.2	9.0	0.40	0.10	6.9	41
27/Apr/16		ne	14	14	54.65	20.26	30.76																		6.5	
28/Apr/16		ene	14	14	35.56	23.55	29.20									192	3	232	1	7.5	7.2				6.9	
29/Apr/16		ene	15	17	37.10	22.73	29.53																		7.0	
30/Apr/16	1.80	ne	14	18	36.28	17.10	30.28																		6.8	
1/May/16	4.80	ne	16	16	36.87	6.05	28.68																		6.6	
2/May/16	8.30	ne	17	17	47.51	20.21	29.31																		6.6	
3/May/16		ene	16	16	40.38	17.55	28.72									230	1	396	6	7.5	7.1	7.7	0.24	0.10	7.4	41
4/May/16		se	14	16	33.49	10.00	29.91																		7.4	
5/May/16		ne	14	16	37.31	24.23	28.80									225	1	220	3	7.5	7.4				7.2	
6/May/16		ne	14	16	43.58	21.17	31.89																		6.9	
7/May/16		ene	16	16	39.19	6.80	31.46																		6.7	
8/May/16		w	18	16	38.15	6.30	30.72																		6.7	
9/May/16		wnw	16	16	36.78	6.57	30.45																		6.7	
10/May/16		e	14	16	37.83	16.62	30.11									191	1	257	1	7.5	7.2	6.8	0.85	0.10	6.7	10
11/May/16		ene	14	17	37.83	20.85	29.92																		6.5	
12/May/16	6.20	e	14	16	45.20	6.46	32.68									286	1	318	1	7.5	7.2				6.7	
13/May/16		wnw	16	18	43.54	7.65	31.58																		6.6	
14/May/16	rain	se	14	16	46.20	5.12	33.54																		6.3	
15/May/16			14	16	42.92	6.87	31.71																		6.4	
16/May/16		sw	15	16	39.65	5.77	26.69																		6.5	
17/May/16		nnw	14	17	33.65	18.32	27.42									199	1	284	1	7.5	7.1	6.6	0.37	0.10	7.1	74
18/May/16		ne	17	18	38.65	6.87	27.27																		6.7	
19/May/16		wsw	16	18	41.06	21.51	28.55									164	1	151	1	7.5	7.2				6.5	
20/May/16		ene	18	16	36.19	7.43	31.83																		7.0	
21/May/16		ne	14	17	34.58	21.10	24.62																		6.9	
22/May/16		n	14	16	37.01	13.41	25.49																		7.1	
23/May/16		w	16	17	35.90	4.59	23.09																		7.0	
24/May/16		n	16	16	37.22	18.78	26.22									243	1	352	1	7.5	7.1	9.7	0.40	0.10	6.6	10
25/May/16		ssw	16	16	26.67	4.91	28.82																		7.4	
26/May/16	0.40	ese	14	16	37.51	23.01	27.36									215	1	247	1	7.5	7.2				6.9	
27/May/16		sw	16	17	19.98	9.54	29.40																		7.1	
28/May/16	0.10	w	14	16	19.68	9.24	29.58																		6.8	
29/May/16	1.00	s	14	16	40.56	8.39	30.21																		7.1	
30/May/16		wsw	14	16	34.83	23.10	26.74																		6.5	
31/May/16		n	14	16	33.08	17.87	25.86									509	1	706	1	7.2	7.0	13.4	0.40	0.10	7.0	97
1/Jun/16		e	15	17	32.56	16.91	26.54																		7.0	
2/Jun/16	0.20	n	14	18	32.92	5.55	26.14									144	1	101	4	7.5	7.2	5.5	0.48	0.10	7.1	
3/Jun/16		wnw	17	17	31.87	4.55	31.28																		6.4	
4/Jun/16	0.30	ene	17	17	37.06	7.39	25.42																		6.9	
5/Jun/16	21.60	sw	17	17	40.42	6.75	30.46																		6.4	
6/Jun/16	20.90	w	17	17	35.74	6.91	26.80																		6.3	
7/Jun/16	0.90	nwn	17	17	36.06	7.14	29.27									161	2	137	4	7.5	7.0	5.4	0.40	0.10	6.7	134
8/Jun/16	0.30	wnw	16	16	35.81	5.73	27.20																		6.7	

Table 1: 2016 Adelaide Daily Plant Summary

Date	Rainfall (mm)	Wind Direction	Temperature - Sewage Raw	Temperature - Sewage Final	Max Sewage Flow (10^3m^3/D)	Min Sewage Flow (10^3m^3/D)	Total Sewage Flow (10^3m^3/D)	Plant By-Pass Volume (10^3m^3)	Plant By-Pass Hours	Plant By-Pass BOD (mg/L)	Plant By-Pass Suspended Solids (mg/L)	Plant By-Pass Ammonia (mg/L)	Plant By-Pass Temperature (C)	Plant By-Pass pH	Plant By-Pass Unionized Ammonia (mg/L)	BOD 5 Day Raw #2 (mg/L)	BOD 5 Day UV Channel (mg/L)	Suspended Solids Raw #2 (mg/L)	Suspended Solids UV Channel (mg/L)	pH Raw #2	pH Raw UV Channel	Total Phosphorus Raw #2 (mg/L)	Total Phosphorus UV (mg/L)	NH3 UV (mg/L)	DO Plant Effluent UV (mg/L)	E.Coli UV (MPN)
9/Jun/16		wsw	16	17	35.28	7.91	25.20									251	3	397	8	7.5	7.3			0.10	6.9	
10/Jun/16		n	16	17	30.19	16.14	25.39																		6.8	
11/Jun/16		wnw	16	17	29.01	5.23	24.92																		6.7	
12/Jun/16	0.20	nw	16	17	30.83	4.37	24.57																		6.7	
13/Jun/16		n	17	17	39.38	5.27	21.67																		6.6	
14/Jun/16		e	17	17	32.74	3.62	21.84									307	2	482	1	7.5	7.1	11.6	0.41	0.10	6.9	108
15/Jun/16	1.30	e	17	17	42.67	10.78	24.56																		6.2	
16/Jun/16	6.50	e	17	17	53.65	3.77	23.21									217	1	403	6	7.5	7.3	8.8	0.44	1.96	6.7	
17/Jun/16		n	18	19	24.30	9.18	24.44																		6.6	
18/Jun/16		nnw	18	18	20.04	9.12	23.56																		6.9	
19/Jun/16		n	18	18	31.78	4.82	24.44																		6.6	
20/Jun/16		n	18	18	33.10	5.25	24.28																		6.4	
21/Jun/16		n	18	18	31.65	13.46	23.13									253	1	402	1	7.5	7.1	9.5	0.57	0.23	7.0	41
22/Jun/16		w	18	19	31.05	4.27	23.93																		6.8	
23/Jun/16		e	18	18	29.15	6.12	23.80									440	1	652	1	7.4	7.2	13.5	0.62	0.12	6.8	
24/Jun/16		ne	18	18	34.42	17.96	23.34																		6.7	
25/Jun/16		calm	18	18	29.67	5.25	26.62																		7.2	
26/Jun/16		calm	18	18	34.60	5.05	23.32																		7.3	
27/Jun/16		wsw	18	20	46.20	4.77	26.25																		7.1	
28/Jun/16	1.20	nw	18	18	33.62	15.19	24.44									211	2	271	1	7.8	7.1	8.4	0.56	0.40	7.0	31
29/Jun/16	0.20	wnw	18	19	37.83	15.05	23.91																		6.8	
30/Jun/16		calm	18	18	30.74	17.87	23.20																		6.9	
1/Jul/16	rain	ene	18	18	35.88	7.98	24.11																		7.0	
2/Jul/16		nw	19	19	17.64	7.80	22.85																		6.7	
3/Jul/16		e	20	22	54.72	7.08	22.95																		6.6	
4/Jul/16		se	20	22	22.68	7.08	23.19																		6.5	
5/Jul/16		w	22	23	18.06	7.50	23.53									222	1	298		7.5	7.1	8.1	0.63	2.40	6.8	10
6/Jul/16		sw	22	23	31.92	18.28	25.09																		6.9	
7/Jul/16		w	21	23	28.60	15.87	23.94									397	1	564	1	7.4	7.2	12.7	0.63	0.63	6.8	
8/Jul/16	rain	e	22	23	40.44	18.69	25.96																		6.8	
9/Jul/16		w	20		32.69	5.77	26.99																		6.7	
10/Jul/16		w			32.46	5.66	22.85																			
11/Jul/16		se	21	23	36.83	5.09	24.01																		7.2	
12/Jul/16		sw	21	23	30.37	5.18	24.65									242	1	393	1	7.5	6.9	9.2	0.30	0.10	7.3	52
13/Jul/16	23.60	sw	22	23	30.28	5.18	26.26																		7.3	
14/Jul/16	3.60	wsw	21	23	40.06	16.69	27.44									108	1	150	1	7.6	7.2	4.5	0.32	0.12	7.2	
15/Jul/16		w	21	22	33.33	18.28	27.42																		7.3	
16/Jul/16		ne	20	22	37.74	5.32	23.34																		7.4	
17/Jul/16		sse	20	22	35.24	4.30	24.92																		7.3	
18/Jul/16		w	20	20	34.97	5.27	25.22																		6.9	
19/Jul/16		wnw	21	20	31.12	4.73	24.54									138	1	220	1	7.7	7.0	7.0	0.54	0.10	7.6	86
20/Jul/16		nw	21	19	40.51	4.96	25.36																		7.3	
21/Jul/16		e	20	20	34.85	5.91	25.70									200	1	346	1	7.5	7.2			0.25	6.8	
22/Jul/16	7.00	w	20	20	33.10	17.69	23.41																		7.2	
23/Jul/16		n	21	23	30.21	5.16	22.25																		7.2	
24/Jul/16		se	21	23	30.92	5.32	22.33																		7.4	
25/Jul/16	2.80	w	22	23	34.56	5.46	24.33																		7.3	
26/Jul/16		w	21	23	32.15	15.50	20.99									140	1	227	1	7.5	7.0	8.2	0.60	0.10	7.2	31
27/Jul/16		sw	21	23	30.01	19.73	23.28																		7.1	
28/Jul/16	rain	n	22	23	25.76	20.48	21.77									237	1	325	1	7.4	7.2	7.6	0.69	0.10	7.1	
29/Jul/16	5.50	ene	22	23	29.10	17.60	22.44																		7.0	
30/Jul/16	13.50	ne	21	22	31.69	5.41	24.21																		8.8	
31/Jul/16	11.20	ene	20	23	64.50	5.32	34.78																		7.1	
1/Aug/16		e	21	20	38.19	21.26	21.21																		7.8	
2/Aug/16		ese	21	21	35.49	5.25	25.85									329	1	675	1	7.3	7.1	11.0	0.45	0.10	7.7	20
3/Aug/16		ene	21	21	45.65	5.52	24.66																		6.9	
4/Aug/16		ene	21	21	35.28	5.39	26.91									173	1	176	1	7.4	7.3			0.17	7.4	
5/Aug/16		ese	21	21	33.46	21.64	25.57																		6.9	
6/Aug/16		wnw	21	21	31.83	5.73	24.83																		7.5	
7/Aug/16		nnw	21	21	30.58	5.41	24.58																		7.4	
8/Aug/16		nnw	21	21	30.74	5.57	24.07																		7.4	
9/Aug/16		e	21	21	31.37	5.16	23.66									207	1	297		7.4	6.8	9.3	0.68	0.10	7.4	10
10/Aug/16		nw	22	22	32.99	5.30	24.23																		7.5	
11/Aug/16	7.50	ene	21	21	40.44	16.53	28.20									286	1	364	1	7.3	7.2	8.3	0.52	0.13	7.4	
12/Aug/16	50.40	w	21	22	67.66	5.68	36.75																		7.1	
13/Aug/16	27.00	ssw	21	22	48.74	28.14	34.27																		6.9	
14/Aug/16		w	21	22	38.58	5.71	26.90																		9.1	
15/Aug/16		ese	21	22	41.85	5.71	28.80																		8.8	
16/Aug/16	18.60	s	21	22	61.86	5.05	33.39									146	1	265	1	7.4	7.3	6.7	0.37	0.14	5.2	
17/Aug/16	rain	e	21	22	32.33	5.39	25.90																		8.4	10
18/Aug/16		n	21	22	37.33	20.51	29.82									112	1	99	4	7.5	7.5	3.8	0.21	0.10	7.9	
19/Aug/16		s	22	22	37.10	20.26	28.43																		8.3	
20/Aug/16	0.60	sse	21	22	42.83	6.02	27.99																		7.4	
21/Aug/16	3.20	w	21	22	36.10	5.84	27.60																		7.5	
22/Aug/16		wsw	21	22	38.92	5.71	24.94																		7.8	
23/Aug/16		e	21	22	36.81	18.80	26.38									144	3	211	1	7.5	7.1	6.0	0.29	0.10	8.1	63
24/Aug/16	rain	e	21	22	45.15	17.82	30.78																		7.6	
25/Aug/16	33.70		21	22	65.75	24.26	38.39									224	3	254	1	7.6	7.4	6.8	0.52	0.14	7.4	
26/Aug/16			22	21	47.56	19.96	33.33																		7.2	
27/Aug/16	1.60	e	21	22	46.58	20.98	33.24																		9.6	

Table 1: 2016 Adelaide Daily Plant Summary

Date	Rainfall (mm)	Wind Direction	Temperature - Sewage Raw	Temperature - Sewage Final	Max Sewage Flow (10^3m^3/D)	Min Sewage Flow (10^3m^3/D)	Total Sewage Flow (10^3m^3/D)	Plant By-Pass Volume (10^3m^3)	Plant By Pass Hours	Plant By-Pass BOD (mg/L)	Plant By-Pass Suspended Solids (mg/L)	Plant By-Pass Ammonia (mg/L)	Plant By-Pass Temperature (C)	Plant By-Pass pH	Plant By-Pass Unionized Ammonia (mg/L)	BOD 5 Day Raw #2 (mg/L)	BOD 5 Day UV Channel (mg/L)	Suspended Solids Raw #2 (mg/L)	Suspended Solids UV Channel (mg/L)	pH Raw #2	pH Raw UV Channel	Total Phosphorus Raw #2 (mg/L)	Total Phosphorus UV (mg/L)	NH3 UV (mg/L)	DO Plant Effluent UV (mg/L)	E.Coli UV (MPN)
28/Aug/16		s	20	22	44.19	17.12	30.76																		7.8	
29/Aug/16		n	21	21	35.83	18.57	27.01																		8.3	
30/Aug/16	wnw	n	21	21	39.47	5.75	26.95									238	3	333	1	7.4	7.2	6.5	0.48	0.10	7.7	41
31/Aug/16		wnw	21	21	37.76	6.41	26.30																		8.1	
1/Sep/16		nne	21	21	43.74	14.28	26.97									123	1	141	1	7.5	7.4	5.3	0.72	0.10	8.8	
2/Sep/16		nne	21	21	39.65	20.19	28.07																		7.5	
3/Sep/16		se	20	21	35.01	21.01	27.26																		7.5	
4/Sep/16		ne	20	21	34.01	6.41	27.65																		6.9	
5/Sep/16		ene	20	22	38.92	5.55	28.00																		7.1	
6/Sep/16		wsw	22	21	36.60	16.94	27.20											183	1	7.4	7.2				7.1	<10
7/Sep/16	11.90	wsw	22	22	42.38	9.73	29.26																		6.8	
8/Sep/16	3.90	sw	22	22	41.65	21.82	27.46									214	1	232	1	7.4	7.2	6.9	0.56	2.29	7.3	
9/Sep/16		nw	22	22	32.19	19.89	26.81																		7.4	
10/Sep/16	16.60	ene	21	22	38.88	6.59	29.18																		7.1	
11/Sep/16		w	20	22	34.56	5.98	27.67																		6.7	
12/Sep/16		e	21	21	29.33	5.02	26.13																		7.0	
13/Sep/16	4.10	e	21	21	37.67	5.02	27.55											318	1	7.4	7.1	8.4	0.51	0.10	6.9	63
14/Sep/16	0.70	nnw	21	21	34.33	19.78	24.01																		7.1	
15/Sep/16		ene	21	21	28.85	4.09	24.52									230	1	220	1	7.5	7.3				7.6	
16/Sep/16		ene	21	21	38.33	5.59	25.89																		7.5	
17/Sep/16	13.30	ssw	21	22	51.40	5.68	32.89																		7.0	
18/Sep/16		sw	20	22	35.22	5.91	26.75																		6.8	
19/Sep/16		e	22	21	36.58	5.66	26.56																		6.7	
20/Sep/16		w	21	21	41.28	15.48	26.11									266	1	378	1	7.4	7.1	7.9	0.39	0.10	6.5	<10
21/Sep/16		wnw	22	22	39.15	1.55	24.76																		6.7	
22/Sep/16		e	21	21	32.56	4.64	24.93									179	1	291	1	7.4	7.3				6.4	
23/Sep/16		w	21	21	31.19	4.23	26.68																		6.7	
24/Sep/16		ene	20	20	34.10	5.46	26.50																		7.7	
25/Sep/16		ene	19	21	35.03	6.02	27.45																		6.7	
26/Sep/16	5.30	ese	21	21	36.37	6.28	28.05																		6.1	
27/Sep/16		sw	20	20	34.92	5.34	26.24											514	4	7.5	7.1	9.3	0.42	0.82	6.3	20
28/Sep/16		ene	21	20	32.96	5.59	27.39																		6.7	
29/Sep/16	4.40	ene	21	21	37.97	5.89	28.78									300	1	447	1	7.4	7.2				6.5	
30/Sep/16	10.10	e	21	21	35.37	6.30	33.585																		6.6	
1/Oct/16	10.70	e	21	21	34.37	5.98	22.070																		6.8	
2/Oct/16	7.10	e	20	21	37.51	6.53	32.834																		6.5	
3/Oct/16	0.20	n	21	21	35.76	6.98	27.628																		6.2	
4/Oct/16		e	21	21	33.76	23.01	27.074									140	1	165		7.5	7.3	4.5	0.28	0.10	6.7	
5/Oct/16		e	21	21	47.10	55.60	26.603																		6.6	
6/Oct/16		e	22	23	35.31	15.28	28.041									273	3	331	1	7.4	7.2	8.7	0.48		6.2	
7/Oct/16		ese	21	21	33.96	6.66	27.816																		6.2	
8/Oct/16		w	20	20	33.46	6.82	27.812																		6.1	
9/Oct/16		n	22	22	31.33	6.23	26.714																		6.4	
10/Oct/16		nw	21	22	32.49	5.77	26.614																		6.2	
11/Oct/16		ene	20	20	47.50	6.00	26.853									286	1	416	1	7.4	7.3	8.5	0.55	1.27	6.0	
12/Oct/16	2.20	ene	20	20	46.83	18.07	27.120																		5.7	
13/Oct/16	0.30	nwn	20	20	47.15	18.03	26.339									279	3	332	4	7.5	7.2				6.2	
14/Oct/16		n	20	19	31.35	5.55	26.812																		6.3	
15/Oct/16		e	20	20	34.83	5.89	27.581																		6.4	
16/Oct/16	0.40	e	20	20	37.40	6.46	27.584																		6.7	
17/Oct/16		s	20	20	39.19	6.71	27.183																		5.7	
18/Oct/16		sw	20	20	34.10	6.73	25.177									365	1	375	1	7.4	7.2	9.7	0.69	0.27	5.9	
19/Oct/16		nw	20	20	32.51	5.91	26.439																		6.3	
20/Oct/16		e	20	20	35.15	6.50	28.017									256	1	321	4	7.4	7.1	7.6	0.81		6.2	
21/Oct/16	2.60		20	19	58.31	5.89	27.433																		6.3	
22/Oct/16	0.50	nnw	19	20	31.10	5.82	28.144																		5.9	
23/Oct/16	0.04	wsw	20	19	38.94	6.48	27.729																		5.6	
24/Oct/16	0.09	nnw	19	20	37.74	5.91	27.495																		5.7	
25/Oct/16	0.20	n	19	19	30.30	23.64	27.181									251	1	399	1	7.5	7.2	10.1	0.61	0.38	5.8	
26/Oct/16	7.90	ne	19	19	48.56	5.91	27.665																		5.7	
27/Oct/16	3.80	e	19	19	30.37	6.37	26.175									215	1	236	1	7.4	7.2				5.3	
28/Oct/16		n	19	19	37.17	5.39	27.607																		5.6	
29/Oct/16		ne	19	19	43.56	22.58	30.766																		6.6	
30/Oct/16	0.08	w	20	19	37.49	7.09	28.663																		6.2	
31/Oct/16		n	20	19	34.94	6.14	27.038																		5.8	
1/Nov/16		se	19	19	35.15	16.55	27.594									125	1	88	1	7.5	7.2	4.3	0.48	0.10	6.0	
2/Nov/16	6.20	calm	19	19	40.51	16.69	29.202																		5.8	
3/Nov/16	11.90	nw	19	19	37.19	19.05	26.372									78	2	77	9	7.5	7.1	3.7	0.64		5.8	
4/Nov/16		nw	19	19	27.78	12.98	21.719																		6.2	
5/Nov/16		sw	19	18	30.19	12.21	23.585																		6.1	
6/Nov/16		sse	19	19	32.10	3.64	22.698																		6.0	
7/Nov/16		ene	19	19	29.55	11.91	22.037																		5.9	
8/Nov/16	2.00	n	19	19	31.58	12.19	21.565									226	1	475		7.5	7.3	11.2	0.62	0.10	6.1	
9/Nov/16		nnw	19	18	53.99	3.43	20.161																		5.8	
10/Nov/16		wsw	19	18	28.65	2.27	21.555									249	5	388	4	7.4	7.3	9.0	0.88	0.88	5.9	
11/Nov/16		nnw	18	18	28.05	12.94	21.363																		6.0	
12/Nov/16		s	18	18	27.83	3.12	21.348																		6.1	
13/Nov/16		wsw	18	18	30.28	3.18	22.120																		6.0	
14/Nov/16		s	18	18	26.80	3.32	21.073																		5.4	
15/Nov/16		ese	18	18	25.69	2.82	21.248									240	1	429	6	7.4	6.2	8.4	0.24	0.10	6.0	

Table 1: 2016 Adelaide Daily Plant Summary

Date	Rainfall (mm)	Wind Direction	Temperature - Sewage Raw	Temperature - Sewage Final	Max Sewage Flow (10^3m^3/D)	Min Sewage Flow (10^3m^3/D)	Total Sewage Flow (10^3m^3/D)	Plant By-Pass Volume (10^3m^3)	Plant By Pass Hours	Plant By-Pass BOD (mg/L)	Plant By-Pass Suspended Solids (mg/L)	Plant By-Pass Ammonia (mg/L)	Plant By-Pass Temperature (C)	Plant By-Pass pH	Plant By-Pass Unionized Ammonia (mg/L)	BOD 5 Day Raw #2 (mg/L)	BOD 5 Day UV Channel (mg/L)	Suspended Solids Raw #2 (mg/L)	Suspended Solids UV Channel (mg/L)	pH Raw #2	pH Raw UV Channel	Total Phosphorus Raw #2 (mg/L)	Total Phosphorus UV (mg/L)	NH3 UV (mg/L)	DO Plant Effluent UV (mg/L)	E.Coli UV (MPN)
16/Nov/16	0.20	wnw	18	18	25.87	3.71	21.113																		5.4	
17/Nov/16	0.20	ne	18	18	25.33	3.10	20.808									214	1	245	3	7.5	7.2	7.8	1.26	0.10	6.0	
18/Nov/16		se	18	18	30.03	2.96	22.732																		5.9	
19/Nov/16		n	18	18	28.01	3.93	20.875																		5.3	
20/Nov/16	5.80	nw	17	17	28.26	2.68	21.001																		5.6	
21/Nov/16		nw	17	17	24.05	13.05	19.859																		6.0	
22/Nov/16		nw	17	17	27.85	3.77	20.091									269	1	383	1	7.5	6.9	9.0	0.24	0.10	6.0	
23/Nov/16	2.90	ese	17	17	25.87	2.16	19.990																		5.6	
24/Nov/16	2.90	ene	18	17	29.28	11.59	21.190									283	1	358	1	7.5	7.0	9.1	0.77	0.10	6.0	
25/Nov/16	4.60	wsw	17	17	27.17	15.41	20.150																		5.7	
26/Nov/16	1.70	s	19	17	61.00	15.21	23.429																		5.7	
27/Nov/16		s	20	17	27.71	15.39	22.127																		5.4	
28/Nov/16	2.00	ese	18	17	32.83	2.43	20.278																		5.8	
29/Nov/16	4.10	s	17	17	36.76	2.86	20.698									184	1	244	4	7.5	7.1	7.4	0.44	0.10	5.3	
30/Nov/16	1.20	n	17	18	42.38	13.94	21.526																		5.8	
1/Dec/16		sw	17	17	25.83	2.91	20.945									223	2	248	6	7.6	6.9	6.8	0.72	0.10	5.7	
2/Dec/16	5.30	w	17	17	26.24	11.23	24.029																		5.8	
3/Dec/16	3.80	sw	17	17	46.29	15.14	24.454																		5.7	
4/Dec/16	2.10	sw	17	17	31.67	3.66	23.951																		5.3	
5/Dec/16	1.20	wsw	17	17	32.15	15.14	23.697																		5.5	
6/Dec/16	2.80	ene	17	17	31.19	13.55	22.287									307	3	422		7.6	7.2	9.0	0.41	0.10	5.9	
7/Dec/16		wsw	17	17	40.65	15.28	22.287																		5.6	
8/Dec/16	3.50	w	17	16	28.49	4.46	21.254									259	3	316	4	7.5	7.2	7.1	0.65	0.10	5.9	
9/Dec/16	4.40	nnw	17	16	31.55	3.64	22.887																		6.0	
10/Dec/16	snow	w	16	16	48.11	3.25	22.173																		6.4	
11/Dec/16	4.40	w	16	16	40.65	2.55	22.331																		5.7	
12/Dec/16	2.10	w	17	16	27.46	3.39	20.672																		5.5	
13/Dec/16	0.40	sw	17	16	26.05	3.14	21.178									305	3	434	1	7.5	7.1	9.0	0.64	0.10	5.8	
14/Dec/16	0.70	wsw	16	16	32.67	14.82	20.525																		6.0	
15/Dec/16		w	16	16	48.06	2.46	20.345									231	3	326	4	7.5	7.0	7.3	0.83	0.10	5.9	
16/Dec/16	4.70	wsw	16	16	27.39	14.37	26.010																		6.1	
17/Dec/16	5.90	sw	16	15	28.92	3.30	18.537																		5.6	
18/Dec/16	1.30	nw	16	16	36.47	2.91	22.985																		4.9	
19/Dec/16		wsw	16	16	38.92	2.16	19.453																		5.1	
20/Dec/16		sw	16	16	29.65	11.12	20.538											425	1	7.5	7.0	9.0	0.52	0.33	5.9	
21/Dec/16		sw	16	16	25.35	11.82	20.713																		5.7	
22/Dec/16		wsw	16	16	27.08	13.37	20.648									340	1	88	1	7.7	6.6				5.6	
23/Dec/16	0.30	ssw	16	16	26.46	14.62	23.178																		6.0	
24/Dec/16	4.50	w	16	16	31.83	4.68	25.022																		5.0	
25/Dec/16	rain	ne	16	16	31.85	4.62	21.515																		5.2	
26/Dec/16	rain	s	16	16	62.22	4.27	36.950																		5.1	
27/Dec/16	0.20	n	16	16	53.24	24.37	27.329									177	3	247	6	7.9	7.1	6.0	0.40	0.42	5.5	
28/Dec/16		w	16	14	35.17	17.62	28.296																		5.9	
29/Dec/16	5.90	wsw	16	14	30.35	20.51	26.652											221	1	7.4	7.3				5.4	
30/Dec/16		w	16	14	72.75	20.60	26.367																		5.7	
31/Dec/16		s	16	14	29.10	17.53	25.504																		6.0	
Average			17.2	17.6	38.090	11.8	27.455	2.679	10.090	37.5	57.3	6.3	18.7	7.3	0.0	233	2	306	2	7.5	7.2	7.6	0.52	0.30	6.5	43
Total							10,049	5.358	20.2																	
Max			21.9	23.3	72.748	55.6	63.008	3.766	11.250							773	4.8	1212	9	8.2	8.4	13.5	1.26	2.40	9.6	134
Min			12.7	13.5	17.64	1.546	18.537	1.592	8.93							77.5	1	77	1	7.2	6.2	3.6	0.21	0.10	4	10
# of Samples			365	364	366	366	366	2	2	3	3	3	3	3	3	96	96	102	94	102	102	76	76	366	365	24

	Table 2: Adelaide 2016 Monthly Average Summary											
Date	Temperature (C)	Total Flow (ML/D)	BOD - Raw (mg/L)	Actual BOD - UV Channel (mg/L)	Objective BOD - UV Channel (mg/L)	Limit BOD - UV Channel (mg/L)	Actual BOD - UV Channel (kg/Day)	Objective BOD - UV Channel (kg/day)	Limit BOD - UV Channel (kg/day)	Suspended Solids - Raw (mg/L)	Actual Suspended Solids - UV Channel (mg/L)	Objective Suspended Solids - UV Channel (mg/L)
January	14.7	25.38	231	1	5	10	35	182	364	262	2	5
February	14.7	28.49	191	2	5	10	57	182	364	186	3	5
March	14.4	32.91	234	2	5	10	55	182	364	340	2	5
April	15.3	36.04	282	2	5	10	68	182	364	363	2	5
May	16.4	28.99	251	1	5	10	29	182	364	326	2	5
June	17.7	25.10	248	2	5	10	41	182	364	356	3	5
July	21.8	24.52	211	1	5	10	25	182	364	315	1	5
August	21.5	28.12	207	2	5	10	44	182	364	297	1	5
September	21.2	27.34	219	1	5	10	26	182	364	303	1	5
October	20.1	27.36	258	1	5	10	39	182	364	322	2	5
November	17.9	21.98	208	2	5	10	34	182	364	299	4	5
December	15.8	23.31	263	2	5	10	57	182	364	303	3	5
Average		27.84	231	1			41.2			306	2	
	light shading exceeds objective											
	dark shading exceeds compliance limits											

Table 2: Adelaide 2016 Monthly Average Summary											
Date	Limit Suspended Solids - UV Channel (mg/L)	Actual Suspended Solids - UV Channel (kg/day)	Objective Suspended Solids - UV Channel (kg/day)	Limit Suspended Solids - UV Channel (kg/day)	Actual NH3 (as N) - UV Channel (mg/L)	Unionised Ammonia - UV Channel (mg/L)	Objective Unionized Ammonia - UV Channel (mg/L)	Limit Unionized Ammonia - UV Channel (mg/L)	Phosphorus - Raw (mg/L)	Actual Phosphorus - UV channel (mg/L)	Objective Phosphorus - UV channel (mg/L)
January	10	54	182	364	0.11	0.002	0.08	0.1	7.0	0.53	0.7
February	10	98	182	364		0.001	0.08	0.1	6.6	0.43	0.7
March	10	80	182	364	0.35	0.002	0.08	0.1	6.7	0.50	0.7
April	10	88	182	364	0.47	0.003	0.08	0.1	6.1	0.53	0.7
May	10	52	182	364	0.10	0.000	0.08	0.1	8.8	0.45	0.7
June	10	82	182	364	0.39	0.002	0.08	0.1	9.0	0.50	0.7
July	10	25	182	364	0.48	0.003	0.08	0.1	8.2	0.53	0.7
August	10	39	182	364	0.12	0.001	0.08	0.1	7.3	0.44	0.7
September	10	36	182	364	0.68	0.004	0.08	0.1	7.5	0.52	0.7
October	10	51	182	364	0.51	0.004	0.08	0.1	8.2	0.57	0.7
November	10	80	182	364	0.20	0.001	0.08	0.1	7.8	0.62	0.7
December	10	70	182	364	0.18	0.001	0.08	0.1	7.7	0.60	0.7
Average		62.1			0.33				7.6	0.51	
	light shading exceeds objective limits										
	dark shading exceeds compliance limits										

Table 2: Adelaide 2016 Monthly Average Summary							
Date	Limit Phosphorus - UV channel (mg/L)	Actual Phosphorus - UV channel (kg/day)	Objective Phosphorus - UV channel (kg/day)	Limit Phosphorus - UV channel (kg/day)	Actual Geometric Mean E.Coli (ORGS./100MLS)	Objective Geometric Mean E.Coli (ORGS./100MLS)	Limit Geometric Mean E.Coli (ORGS./100MLS)
January	1.0	13.3	25.5	36.4			
February	1.0	12.1	25.5	36.4			
March	1.0	16.5	25.5	36.4			
April	1.0	19.2	25.5	36.4	14	150	200
May	1.0	13.1	25.5	36.4	31	150	200
June	1.0	12.5	25.5	36.4	65	150	200
July	1.0	13.0	25.5	36.4	31	150	200
August	1.0	12.4	25.5	36.4	22	150	200
September	1.0	14.2	25.5	36.4	13	150	200
October	1.0	15.6	25.5	36.4			
November	1.0	13.6	25.5	36.4			
December	1.0	13.9	25.5	36.4			
Average		14.1					
	light shading exceeds compliance limits						
	dark shading exceeds compliance limits						

Table 3: Adelaide 2016 Monthly Sample Count Summary - Raw					
Date	BOD (mg/L)	Suspended solids (mg/L)	NH_3 (as N) (mg/L)	Total Kjeldahl Nitrogen (TKN) (mg/L)	Phosphorus (mg/L)
January	8	8	7	4	8
February	8	8	5	4	5
March	9	9	5	5	5
April	7	8	4	4	4
May	9	9	5	5	5
June	8	8	8	4	7
July	8	8	8	4	7
August	9	9	9	5	8
September	6	9	5	4	5
October	8	8	4	4	6
November	9	9	8	5	9
December	7	9	7	4	7
Total	96	102	75	52	76

Table 4: Adelaide 2016 Monthly Sample Count Summary - UV Channel										
Date	BOD (mg/L)	Suspended solids (mg/L)	NH_3 (as N) (mg/L)	Un-ionized NH_3 (mg/L)	Nitrates (mg/L)	Phosphorus (mg/L)	pH	Temperature	Dissolved Oxygen	E.Coli
January	8	7	7	7	4	8	4	31	31	
February	8	7	5	5	4	5	4	29	29	
March	9	9	5	5	5	5	5	31	31	
April	7	7	4	4	4	4	4	30	30	4
May	9	9	5	5	5	5	4	31	31	5
June	8	8	8	8	4	7	4	30	30	4
July	8	7	8	8	4	7	5	29	30	4
August	9	8	9	9	5	8	4	31	31	5
September	6	9	5	5	4	5	5	30	30	4
October	8	7	4	4	4	6	4	31	31	
November	9	8	8	8	5	9	4	30	30	
December	7	8	7	7	4	7	5	31	31	
Total	96	94	75	75	52	76	52	364	365	26

Table 5: 2016 Adelaide Sludge Summary: Section 2										
Date	Aerators - Return Sludge (m3)	Waste - Return Sludge (m3)	Suspended Solids - Return Waste (mg/L)	Thickend Hauled Sludge (m3)	% Solids - Thickend Hauled Sludge	% Volatile Solids - Thickend Hauled Sludge	Hauled Primary Sludge (m3)	% Solids - Hauled Primary Sludge	pH - Hauled Primary Sludge	% Volatile Solids - Hauled Primary Sludge
1/Jan/16	18,994	839		94			24			
2/Jan/16	19,364	737		120			96			
3/Jan/16	17,493	621		72			48			
4/Jan/16	19,324	820		167			119			
5/Jan/16	19,194	833		312	3.96	74.9	143			
6/Jan/16	19,443	827	3,160	216			120			
7/Jan/16	19,491	904	4,086	215			137	3.46	5.8	89.5
8/Jan/16	19,164	861		163			116			
9/Jan/16	18,687	737		62			37			
10/Jan/16	18,295	719		65			41			
11/Jan/16	18,692	774		265			120			
12/Jan/16	18,498	777	3,620	121	3.97	75.8	97			
13/Jan/16	18,624	825		217			169			
14/Jan/16	18,506	834	3,760	291			206	4.59	5.7	89.0
15/Jan/16	20,614	844		158			1056			
16/Jan/16	20,618	808		131			73			
17/Jan/16	19,607	675								
18/Jan/16	20,068	853		217			98			
19/Jan/16	20,111	863	3,610	639	4.39	75.6	566			
20/Jan/16	20,173	860		242			170			
21/Jan/16	20,213	858	2,976	146			97	3.48	6.0	89.0
22/Jan/16	20,756	875		161			94			
23/Jan/16	18,930	794		113			1149			
24/Jan/16	20,502	754		790			732			
25/Jan/16	19,997	865		210			121			
26/Jan/16	19,919	861	2,810	272	4.05	75.0	167			
27/Jan/16	19,973	870		287			191			
28/Jan/16	19,879	834	2,814	610			566	3.35	6.0	89.5
29/Jan/16	23,305	927		234			161			
30/Jan/16	15,889	663		120			1077			
31/Jan/16	18,926	787		45			23			
1/Feb/16	18,736	1,431		620			500			
2/Feb/16	18,744	1,541	3,660	386	4.10	76.4	266			
3/Feb/16	18,897	1,615		385			290			
4/Feb/16	18,716	694	3,296	172			97	3.92	5.5	88.2
5/Feb/16	19,233	850		211			149			
6/Feb/16	18,586	825		72			48			
7/Feb/16	18,361	849					71			
8/Feb/16	18,548	759		712			642			
9/Feb/16	18,811	838	3,280	264	4.50	76.4	192			
10/Feb/16	19,517	761		799			704			
11/Feb/16	19,241	798	3,032	1263			1236	3.17	5.9	88.5
12/Feb/16	20,121	744		139			95			
13/Feb/16	19,402	772		347			324			
14/Feb/16	19,328	861		153			97			
15/Feb/16	18,783	841		493			457			
16/Feb/16	18,708	1,259	3,350	318	4.30	77.4	270			
17/Feb/16	19,105	1,548		913			716			
18/Feb/16	18,833	1,471	2,716	1104			1049	3.29	5.9	89.5
19/Feb/16	19,643	997		941			893			
20/Feb/16	23,572	907		244			195			
21/Feb/16	16,551	544								
22/Feb/16	20,341	783		265			168			
23/Feb/16	19,701	801	3,090	261	4.50	76.6	192			
24/Feb/16	19,781	1,568		290			242			
25/Feb/16	20,066	575	3,326	191			94	3.24	6.3	87.7
26/Feb/16	20,405	887		190			97			
27/Feb/16	19,002	824		119			96			
28/Feb/16	18,540	690		97			48			
29/Feb/16	19,134	807		192			111			
1/Mar/16	19,438	750	3,270	260	4.60	77.9	166			
2/Mar/16	18,473	1,475		576			484			
3/Mar/16	20,283	1,125	3,126	95			48	2.42	6.3	88.4
4/Mar/16	19,725	824		304			217			
5/Mar/16	18,887	693		118			96			
6/Mar/16	18,693	776		97			73			
7/Mar/16	19,133	1,555		283			215			
8/Mar/16	18,872	735	2,940	317	4.60	78.8	265			
9/Mar/16	19,521	832		315			187			
10/Mar/16	19,609	712	3,262	217			193	1.13	5.0	79.9
11/Mar/16	20,108	811		104			66			
12/Mar/16	19,533	769		88			66			
13/Mar/16	19,461	763		96			47			
14/Mar/16	18,576	750		259			192			
15/Mar/16	18,244	747	3,460	222	4.30	77.2	163			
16/Mar/16	18,123	1,579		409			315			
17/Mar/16	18,696	819	2,854	145			121	3.22	6.5	87.7
18/Mar/16	19,904	1,423		142			97			
19/Mar/16	19,811	863		160			105			
20/Mar/16	19,869	838		72			48			
21/Mar/16	19,941	806		262			192			
22/Mar/16	20,174	882	2,890	216	4.50	77.0	168	3.31	5.9	89.1
23/Mar/16	20,064	759		167			121			
24/Mar/16	19,935	840		238			169			
25/Mar/16	19,896	815		144			120			
26/Mar/16	19,879	820		72			48			
27/Mar/16	19,380	799		170			73			
28/Mar/16	20,315	772		231			119			
29/Mar/16	19,141	772	3,630	240	4.70	75.9	168			
30/Mar/16	19,849	869		216			170			
31/Mar/16	19,592	705	3,958	145			48	2.12	6.3	83.4
1/Apr/16	19,258	797		145			121			
2/Apr/16	21,077	905		142			71			
3/Apr/16	16,946	742		95			47			
4/Apr/16	18,861	724		286			168			
5/Apr/16	18,641	807	3,220	264	5.00	76.8	169			

Table 5: 2016 Adelaide Sludge Summary: Section 2										
Date	Aerators - Return Sludge (m3)	Waste - Return Sludge (m3)	Suspended Solids - Return Waste (mg/L)	Thickend Hauled Sludge (m3)	% Solids - Thickend Hauled Sludge	% Volatile Solids - Thickend Hauled Sludge	Hauled Primary Sludge (m3)	% Solids - Hauled Primary Sludge	pH - Hauled Primary Sludge	% Volatile Solids - Hauled Primary Sludge
6/Apr/16	19,278	834		243			133			
7/Apr/16	18,640	796	4,446	141			45	3.11	6.5	82.8
8/Apr/16	19,291	733		118			73			
9/Apr/16	18,519	770		116			70			
10/Apr/16	18,531	767		95			48			
11/Apr/16	18,533	804		193			121			
12/Apr/16	18,434	803	4,060	146	4.20	77.4	73			
13/Apr/16	18,271	848		219			146			
14/Apr/16	18,519	862	3,764	242			122	2.79	6.5	87.3
15/Apr/16	19,905	912		170			98			
16/Apr/16	18,965	907		72			48			
17/Apr/16	19,218	622		98			49			
18/Apr/16	19,252	841		338			194			
19/Apr/16	19,401	664	3,100	121	4.50	77.7	96			
20/Apr/16	19,157	859		144			72			
21/Apr/16	19,255	842	3,850	246			126	4.45	5.6	88.1
22/Apr/16	20,739	770		119			97			
23/Apr/16	19,842	833		96			72			
24/Apr/16	19,312	700		256			208			
25/Apr/16	19,838	820		97			73			
26/Apr/16	19,820	766	3,120	145	4.40	76.2	97			
27/Apr/16	19,379	1,546		429			290			
28/Apr/16	19,693	1,126	3,316	336			240	3.36	5.9	88.4
29/Apr/16	21,196	748		148			100			
30/Apr/16	20,437	817		139			114			
1/May/16	19,324	772		96			72			
2/May/16	19,139	1,314		314			219			
3/May/16	20,130	1,564	2,720	361	4.60	76.6	315			
4/May/16	20,610	799		239			181			
5/May/16	20,175	793	3,084	240			216	2.76	6.3	87.7
6/May/16	20,254	742		144			120			
7/May/16	19,275	783		73			48			
8/May/16	18,724	749		120			96			
9/May/16	19,195	888		194			73			
10/May/16	18,803	1,506	3,190	144	4.40	77.8	96			
11/May/16	19,168	932		190			120			
12/May/16	19,947	774	2,900	170			121	4.25	5.7	88.7
13/May/16	20,697	808		193			169			
14/May/16	19,804	828		72			48			
15/May/16	19,284	800		268			170			
16/May/16	19,395	718		190			156			
17/May/16	20,570	736	3,310	195	4.30	77.6	133			
18/May/16	20,039	862		191			149			
19/May/16	19,897	718	3,830	120			96	4.16	5.4	88.7
20/May/16	24,584	958		124			86			
21/May/16	18,291	661		73			49			
22/May/16	19,180	739		168			96			
23/May/16	17,968	770		97			72			
24/May/16	19,633	794	3,620	193			121			
25/May/16	20,131	754		243			183			
26/May/16	19,963	815	3,690	144			120	2.99	5.8	88.9
27/May/16	10,764	770		193			121			
28/May/16	28,286	857		72			48			
29/May/16	19,021	767		73			49			
30/May/16	18,715	703		266			145			
31/May/16	19,422	885	2,990	218	4.00	70.7	170			
1/Jun/16	19,306	804		78			72			
2/Jun/16	15,769	639	3,420	77			24	3.79	5.5	89.0
3/Jun/16	22,184	1,564		72			49			
4/Jun/16	15,507	138		24			48			
5/Jun/16	18,492	228		24			48			
6/Jun/16	18,682	720		120						
7/Jun/16	18,212	1,361	4,090	240	5.50	84.9	73			
8/Jun/16	17,704	1,513		82			48			
9/Jun/16	18,504	1,541	3,780	150				3.72	5.7	86.3
10/Jun/16	20,801	790		66						
11/Jun/16	19,747	728		25			48			
12/Jun/16	19,288	839		23			48			
13/Jun/16	16,423	1,506		275						
14/Jun/16	16,509	1,602	2,770	61	4.30	84.6				
15/Jun/16	16,833	1,433		139			49			
16/Jun/16	16,775	1,072	2,860	145			97	3.86	5.8	87.0
17/Jun/16	19,936	708		44						
18/Jun/16	18,725	824		22			48			
19/Jun/16	18,773	809		30			49			
20/Jun/16	18,720	1,361		218			37			
21/Jun/16	18,657	1,588	3,040	39	4.70	84.3				
22/Jun/16	18,848	1,222		88			20			
23/Jun/16	18,633	1,349	3,020	39			33	2.80	6.3	85.9
24/Jun/16	20,527	825		60			73			
25/Jun/16	22,061	802		63						
26/Jun/16	17,676	773		100			48			
27/Jun/16	19,199	1,584		40						
28/Jun/16	19,528	1,294	2,940	205	4.70	86.4	88	4.47	5.5	86.9
29/Jun/16	19,488	1,710		62			121			
30/Jun/16	18,609	1,538		58			188			
1/Jul/16	19,920	975								
2/Jul/16	19,318	809		336			316			
3/Jul/16	18,620	931		214			194			
4/Jul/16	17,715	1,745		183			121			
5/Jul/16	19,492	1,758	2,130	185	3.60	74.6	145	3.05	5.9	86.3
6/Jul/16	20,275	1,376		173			145			
7/Jul/16	19,615	1,576	2,430	141			121	3.13	6.0	86.2
8/Jul/16	20,092	1,120		35			24			
9/Jul/16	22,154	888					145			
10/Jul/16	17,866	827		203			170			

Table 5: 2016 Adelaide Sludge Summary: Section 2										
Date	Aerators - Return Sludge (m3)	Waste - Return Sludge (m3)	Suspended Solids - Return Waste (mg/L)	Thickend Hauled Sludge (m3)	% Solids - Thickend Hauled Sludge	% Volatile Solids - Thickend Hauled Sludge	Hauled Primary Sludge (m3)	% Solids - Hauled Primary Sludge	pH - Hauled Primary Sludge	% Volatile Solids - Hauled Primary Sludge
11/Jul/16	19,517	1,590		154			143			
12/Jul/16	19,650	1,640	2,770	82	3.90	71.2	16			
13/Jul/16	19,555	1,361		194			164			
14/Jul/16	18,984	1,726	2,960	162			144	4.42	5.9	64.9
15/Jul/16	22,370	1,082		55			24			
16/Jul/16	19,184	795								
17/Jul/16	19,960	726		184			162			
18/Jul/16	19,967	1,631		147			119			
19/Jul/16	18,344	1,672	2,670	230	4.60	70.3	207			
20/Jul/16	19,637	1,073					144			
21/Jul/16	19,128	927	2,830	84			24	3.24	6.1	79.4
22/Jul/16	19,874	682								
23/Jul/16	20,034	947		61			49			
24/Jul/16	19,443	860		142			93			
25/Jul/16	18,742	1,501		137			134			
26/Jul/16	17,916	1,504	3,000	168	4.30	72.2	115			
27/Jul/16	19,212	1,620		120			85			
28/Jul/16	18,676	1,564		134			117	2.64	6.0	84.4
29/Jul/16	18,875	1,063								
30/Jul/16	18,793	932		61			49			
31/Jul/16	21,437	977		165			144			
1/Aug/16	15,841	735		157			114			
2/Aug/16	19,338	1,579	2,730	72	5.50	75.2	49			
3/Aug/16	18,925	1,706		292			205			
4/Aug/16	19,126	1,697	2,300	223			182	3.68	6.0	79.4
5/Aug/16	20,824	1,001		239			217			
6/Aug/16	19,830	976		60			49			
7/Aug/16	19,104	767		163			109			
8/Aug/16	19,259	1,622		215			183			
9/Aug/16	19,040	1,806	2,010	144	4.00	73.4	31			
10/Aug/16	19,335	1,677		146			96			
11/Aug/16	20,485	1,056	2,160	105			94	1.45	6.1	84.8
12/Aug/16	19,658	930		92			70			
13/Aug/16	20,285	824					48			
14/Aug/16	20,117	951		110			48			
15/Aug/16	19,969	1,453		95			43			
16/Aug/16	19,171	1,723	3,090	190	4.90	66.7	155			
17/Aug/16	19,774	1,448		217			168			
18/Aug/16	19,846	949	2,330	106			81	3.60	5.6	73.4
19/Aug/16	20,393	869		82			72			
20/Aug/16	19,983	802		58			48			
21/Aug/16	20,119	741		191			162			
22/Aug/16	19,339	1,813		119			91			
23/Aug/16	19,319	1,575	2,630	167	4.00	69.3	140	1.25	6.2	81.3
24/Aug/16	19,202	1,714		156			118			
25/Aug/16	19,383	1,731	1,970	134			96	2.16	6.2	77.9
26/Aug/16	20,890	789		95			72			
27/Aug/16	19,282	933		164			153			
28/Aug/16	19,779	819		145			96			
29/Aug/16	19,471	1,655		126			68			
30/Aug/16	15,811	1,777	2,790	121	4.30	73.8	83			
31/Aug/16	17,645	1,526		159			112			
1/Sep/16	19,044	1,172	1,520	127			94	3.00	5.9	81.7
2/Sep/16	20,196	865		36			24			
3/Sep/16	19,155	834					75			
4/Sep/16	20,778	960		198			170			
5/Sep/16	19,018	871		312			259			
6/Sep/16	19,125	1,668	2,526	42	4.20	68.6	13			
7/Sep/16	19,156	1,826		199			163			
8/Sep/16	20,166	1,008	2,524	141			72	4.11	5.8	86.1
9/Sep/16	19,687	954		164			72			
10/Sep/16	19,133	977		71			48			
11/Sep/16	18,954	474		95			72			
12/Sep/16	18,221	810		137			45			
13/Sep/16	17,568	840	2,710	186	5.10	83.1	48			
14/Sep/16	18,089	977		57			24			
15/Sep/16	19,042	1,020	2,936	143			94	3.62	5.5	88.6
16/Sep/16	20,015	1,074								
17/Sep/16	19,287	827		110			87			
18/Sep/16	18,416	1,265		106			23			
19/Sep/16	18,671	1,632		186			48			
20/Sep/16	13,299	1,136	2,590	271	4.50	74.2	163			
21/Sep/16	13,306	907		303			96			
22/Sep/16	13,472	843	2,732	227			142	2.36	6.1	87.4
23/Sep/16	19,776	1,015								
24/Sep/16	19,467	777					48			
25/Sep/16	19,442	891		189			170			
26/Sep/16	19,495	1,570		171			120			
27/Sep/16	19,359	1,837	2,600	168	4.10	75.1	139			
28/Sep/16	20,246	892		221			191			
29/Sep/16	19,858	928	1,970	170			160	3.28	5.8	86.9
30/Sep/16	59,467	2,671		238			192			
1/Oct/16	15,528	735		71			48			
2/Oct/16	19,974	934		189			144			
3/Oct/16	19,438	1,652		217			182			
4/Oct/16	19,082	1,816	3,032	193	4.20	72.4	145	2.30	6.1	84.7
5/Oct/16	19,086	1,778		342			293			
6/Oct/16	20,202	722	2,012	190			169	2.29	6.4	85.4
7/Oct/16	20,791	739		32			22			
8/Oct/16	20,449	891		60			48			
9/Oct/16	19,910	790		162			143			
10/Oct/16	20,234	973		287			261			
11/Oct/16	19,535	1,737	2,352	143	4.40	73.8	121			
12/Oct/16	19,846	1,794		361			302			
13/Oct/16	19,709	1,661	2,716	159			137	2.61	6.3	86.1
14/Oct/16	20,053	927		34			22			

Table 5: 2016 Adelaide Sludge Summary: Section 2										
Date	Aerators - Return Sludge (m3)	Waste - Return Sludge (m3)	Suspended Solids - Return Waste (mg/L)	Thickend Hauled Sludge (m3)	% Solids - Thickend Hauled Sludge	% Volatile Solids - Thickend Hauled Sludge	Hauled Primary Sludge (m3)	% Solids - Hauled Primary Sludge	pH - Hauled Primary Sludge	% Volatile Solids - Hauled Primary Sludge
15/Oct/16	19,290	760		55			49			
16/Oct/16	18,528	862		67			48			
17/Oct/16	19,334	787		158			117			
18/Oct/16	19,085	894	2,900	169	3.90	74.1	144			
19/Oct/16	19,354	785		145			120			
20/Oct/16	19,117	880	3,278	147			122	2.93	6.0	86.3
21/Oct/16	19,797	1,426		28			10			
22/Oct/16	19,967	940		60			48			
23/Oct/16	19,577	806		191			169			
24/Oct/16	19,492	1,634		118			43			
25/Oct/16	19,775	804	2,560	128	5.60	86.0	97			
26/Oct/16	19,353	1,769		315			271			
27/Oct/16	19,945	912	2,782	197			165	3.18	6.2	84.9
28/Oct/16	20,879	956		48			24			
29/Oct/16	20,127	805		59			48			
30/Oct/16	19,660	780		60			48			
31/Oct/16	19,856	1,540		136			69			
1/Nov/16	19,713	1,548	3,168	263	4.20	75.1	197			
2/Nov/16	19,756	1,696		281			241			
3/Nov/16	20,420	744	2,840	239			220	2.50	6.3	83.9
4/Nov/16	20,915	847		134			119			
5/Nov/16	20,287	753					32			
6/Nov/16	19,351	801		27			16			
7/Nov/16	19,481	1,535		284			192			
8/Nov/16	19,833	893	2,516	279	4.10	74.1	253			
9/Nov/16	19,474	1,529		199			185			
10/Nov/16	19,798	924	2,474	214			193	3.03	6.3	85.1
11/Nov/16	20,926	846		135			125			
12/Nov/16	19,775	665		34			24			
13/Nov/16	19,442	842					49			
14/Nov/16	19,951	919		157			100			
15/Nov/16	19,695	918	3,806	238	3.90	70.3	192			
16/Nov/16	19,992	820		118			76			
17/Nov/16	19,713	883	2,470	133			111	2.68	5.9	86.3
18/Nov/16	20,944	816								
19/Nov/16	20,387	883		59			48			
20/Nov/16	19,633	706		58			48			
21/Nov/16	19,798	1,339								
22/Nov/16	20,443	751	3,702	110	4.80	74.2	24			
23/Nov/16	20,082	951					158			
24/Nov/16	19,622	1,661	3,324	202			169	4.12	6.2	87.3
25/Nov/16	20,404	787		146			120			
26/Nov/16	19,884	886		67			48			
27/Nov/16	19,432	730		35			24			
28/Nov/16	19,508	1,538		210			144			
29/Nov/16	19,193	1,822	3,604	337	3.90	74.6	270			
30/Nov/16	18,886	788		220			179			
1/Dec/16	20,075	932	2,848	119			96	2.12	6.1	82.7
2/Dec/16	20,548	924		115			95			
3/Dec/16	19,988	897		71			48			
4/Dec/16	18,968	866		72			49			
5/Dec/16	19,846	1,352		219			166			
6/Dec/16	19,682	1,133	3,048	127	4.10	75.5	97			
7/Dec/16	19,694	1,583		238			192			
8/Dec/16	19,684	892	2,448	214			180	2.63	6.7	85.2
9/Dec/16	22,989	975		190			143			
10/Dec/16	18,421	841		85			74			
11/Dec/16	20,177	798					64			
12/Dec/16	20,044	908		56			33			
13/Dec/16	20,287	1,404	3,500	243	4.90	85.9	185			
14/Dec/16	20,508	975		190			167			
15/Dec/16	20,553	802	2,624	300			237	2.59	6.6	88.2
16/Dec/16	24,868	1,154					216			
17/Dec/16	16,694	674								
18/Dec/16	19,259	838		63			49			
19/Dec/16	19,672	1,495		233			145			
20/Dec/16	19,273	1,571	2,904	264	4.20	76.0	221			
21/Dec/16	19,681	1,615		234			192			
22/Dec/16	19,603	1,575	2,506	242			197	2.45	6.3	87.9
23/Dec/16	20,912	1,103		203			192			
24/Dec/16	20,430	790					49			
25/Dec/16	19,244	835								
26/Dec/16	20,727	242		103			71			
27/Dec/16	19,636	830	4,086	211	4.80	84.3	160			
28/Dec/16	19,800	1,537		212			117			
29/Dec/16	19,878	1,475		133			72			
30/Dec/16	19,933	886		105			91			
31/Dec/16	20,564	688		59			48			
Average	19,521	1,022	3,025	184	4.41	76.3	146	3.10	6.0	85.5
Total				63,084			50,512			
Max	59,467	2,671	4,446	1263	5.60	86.4	1236	4.59	6.7	89.5
Min	10,764	138	1,520	22	3.60	66.7	10	1.13	5.0	64.9
# of Samples	366	366	100	342	51	51	345	54	54	54
Total Plant				113,596	3.83					

Table 6: Adelaide Pollution Control Plant Sludge Analysis											
Date	Solids (percent)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Lead (mg/L)	Manganese (mg/L)	Aluminum (mg/L)	Phosphorus (mg/L)
7-Jan-16	3.5	0.03	0.32	7.6	232	0.1	8.5	0.16	1.51	25.5	277
4-Feb-16	3.9	0.04	0.37	12.0	324	0.2	11.6	0.88	2.27	33.6	347
3-Mar-16	2.4	0.02	0.18	5.7	163	0.1	5.4	0.15	1.08	18.2	219
14-Apr-16	2.8	<0.01	0.19	6.8	135	0.2	6.5	0.23	1.13	27.8	229
5-May-16	2.8	0.03	0.24	6.8	271	0.2	6.3	0.16	0.98	22.2	312
2-Jun-16	3.8	0.04	0.40	11.3	291	0.2	11.0	0.30	1.58	32.3	377
7-Jul-16	3.1	0.04	0.37	9.7	453	0.2	10.1	0.20	2.14	30.3	385
11-Aug-16	1.5	0.01	0.17	4.0	137	0.1	4.7	0.17	0.93	19.8	129
15-Sep-16	3.6	0.03	0.34	9.9	241	0.2	12.0	0.24	1.82	35.2	324
6-Oct-16	2.3	0.03	0.28	6.9	256	0.2	7.9	0.25	1.72	23.8	224
3-Nov-16	2.5	0.04	0.40	7.6	375	0.2	7.7	0.17	2.51	27.2	325
8-Dec-16	2.6	0.04	0.43	8.0	397	0.2	7.3	0.14	2.09	28.7	349
average (mg/L)	2.9	0.03	0.31	8.0	273	0.2	8.3	0.25	1.65	27	291
average values (mg/Kg)		1.0	11	277	9,422	7	285	9	57	934	10,060
Limits for land application (mg/Kg)		**34**	**2,800**	**1,700**		**420**	**4,200**	**1,100**			

		Table 6: Adelaide Pollution Control Plant Sludge Analysis										
Date	Potassium (mg/l)	Arsenic (mg/L)	Cobalt (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Ammonia (mg/L)	TKN (mg/L)	Nitate (mg/L)	TOC %	Phenol (mg/L)	Hexavalent Cr (mg/L)
7-Jan-16			<0.01									
4-Feb-16			0.01									
3-Mar-16		0.017	0.19	0.0034		0.031						
14-Apr-16			<0.01									
5-May-16		0.018	0.01	0.0131		0.038						
2-Jun-16			0.01									
7-Jul-16			0.02									
11-Aug-16	52	0.021	0.02	0.0070	0.08	0.034	39	557	<0.4	0.87	2	
15-Sep-16												
6-Oct-16												
3-Nov-16		0.033		0.0071		0.043						
8-Dec-16												
average (mg/L)	52	0.022	0.04	0.008	0.08	0.037	39	557	<0.4	0.87	2	
average values (mg/Kg)	1,778	0.8	1.5	0.26	2.7	1.26	1,336.0	19,229	<13.8	8,720	69	<12
Limits for land application (mg/Kg)		**170**	**340**	**11**	**94**	**34**						

Table 7: Adelaide 2015 Nitrogen Analysis Report																	
Date	Free NH3 - #2 Section Raw	TKN - #2 Section Raw	ALKA - #2 Section Raw	Free NH3 - #2 Section Primary	TKN - #2 Section Primary	ALKA - #2 Section Primary	Free NH3 - #2 Section Secondary	TKN - #2 Section Secondary	NO3 - #2 Section Secondary	Free NH3 - UV Channel	Temperature - UV Channel	pH - UV Channel	Unionized NH3 - UV Channel	TKN - UV Channel	NO3 - UV Channel	NO2 - UV Channel	ALKA - UV Channel
1-Jan-16																	
2-Jan-16																	
3-Jan-16																	
4-Jan-16																	
5-Jan-16	23.5	43.7	280				0.1	2.0		0.10	17.40	7.00	0.0003	1.6	20.9	0.12	102
6-Jan-16																	
7-Jan-16	25.7									0.10	18.30	7.30	0.0007				
8-Jan-16																	
9-Jan-16																	
10-Jan-16																	
11-Jan-16																	
12-Jan-16	20.6	38.6	278				0.1	1.9		0.10	17.70	7.20	0.0005	1.6	19.2	0.13	109
13-Jan-16																	
14-Jan-16	21.5						0.1			0.10	18.10	7.30	0.0007				
15-Jan-16																	
16-Jan-16																	
17-Jan-16																	
18-Jan-16																	
19-Jan-16	20.6	46.3	279				0.1	1.9		0.10	17.00	7.10	0.0004	1.5	19.0	0.17	115
20-Jan-16																	
21-Jan-16																	
22-Jan-16																	
23-Jan-16																	
24-Jan-16																	
25-Jan-16																	
26-Jan-16	24.1	44.5	277				0.1	1.9		0.10	18.50	7.00	0.0004	1.5	21.5	0.12	91
27-Jan-16																	
28-Jan-16	22.8									0.15	17.90	8.40	0.0117				
29-Jan-16																	
30-Jan-16																	
31-Jan-16																	
1-Feb-16																	
2-Feb-16	19.5	39.9	266				0.1	1.7		0.1	18.3	7.1	0.0004	1.6	19.7	0.06	102
3-Feb-16																	
4-Feb-16	16.4									0.4	18.4	7.2	0.0022				
5-Feb-16																	
6-Feb-16																	
7-Feb-16																	
8-Feb-16																	
9-Feb-16	19.9	52.7	276				0.1	2.1		0.3	18.4	7.1	0.0014	2.1	19.2	0.4	114
10-Feb-16																	
11-Feb-16																	
12-Feb-16																	
13-Feb-16																	
14-Feb-16																	
15-Feb-16																	
16-Feb-16	38.4	55.3	316				0.1			0.3	18.8	7.1	0.0014		19.3	0.4	112
17-Feb-16																	
18-Feb-16																	
19-Feb-16																	
20-Feb-16																	
21-Feb-16																	
22-Feb-16																	
23-Feb-16	27.8	42.3	308				0.1			0.2	18.4	7.2	0.0012		15.3	0.3	153

Table 7: Adelaide 2015 Nitrogen Analysis Report																	
Date	Free NH3 - #2 Section Raw	TKN - #2 Section Raw	ALKA - #2 Section Raw	Free NH3 - #2 Section Primary	TKN - #2 Section Primary	ALKA - #2 Section Primary	Free NH3 - #2 Section Secondary	TKN - #2 Section Secondary	NO3 - #2 Section Secondary	Free NH3 - UV Channel	Temperature - UV Channel	pH - UV Channel	Unionized NH3 - UV Channel	TKN - UV Channel	NO3 - UV Channel	NO2 - UV Channel	ALKA - UV Channel
24-Feb-16																	
25-Feb-16																	
26-Feb-16																	
27-Feb-16																	
28-Feb-16																	
29-Feb-16																	
1-Mar-16	15.1	27.2	286				0.1			0.3	18.1	7.2	0.0018	1.9	15.1	0.4	164
2-Mar-16																	
3-Mar-16																	
4-Mar-16																	
5-Mar-16																	
6-Mar-16																	
7-Mar-16																	
8-Mar-16	17.5	57.5	289				0.1	1.9		0.1	19.4	7.2	0.0006	1.8	18.0	0.1	132
9-Mar-16																	
10-Mar-16																	
11-Mar-16																	
12-Mar-16																	
13-Mar-16																	
14-Mar-16																	
15-Mar-16	23.9	38.6	312				0.1	1.1		0.1	19.5	7.5	0.0012	1.1	13.2	0.0	123
16-Mar-16																	
17-Mar-16																	
18-Mar-16																	
19-Mar-16																	
20-Mar-16																	
21-Mar-16																	
22-Mar-16	19.1	48.8	289				0.1	2.4		0.1	19.4	7.1	0.0007	1.9	19.5	0.5	124
23-Mar-16																	
24-Mar-16																	
25-Mar-16																	
26-Mar-16																	
27-Mar-16																	
28-Mar-16																	
29-Mar-16	10.7	24.2	276				0.1	1.6		1.1	18.2	7.2	0.0058	2.2	11.4	0.7	174
30-Mar-16																	
31-Mar-16																	
1-Apr-16																	
2-Apr-16																	
3-Apr-16																	
4-Apr-16																	
5-Apr-16	13.9	27.3	285				0.1	1.5		0.2	18.0	7.3	0.0011	1.4	14.6	0.3	173
6-Apr-16																	
7-Apr-16																	
8-Apr-16																	
9-Apr-16																	
10-Apr-16																	
11-Apr-16																	
12-Apr-16	10.8	29.0	266				0.3			1.5	18.1	7.3	0.0103	2.9	9.9	0.6	188
13-Apr-16																	
14-Apr-16																	
15-Apr-16																	
16-Apr-16																	
17-Apr-16																	

Table 7: Adelaide 2015 Nitrogen Analysis Report																	
Date	Free NH3 - #2 Section Raw	TKN - #2 Section Raw	ALKA - #2 Section Raw	Free NH3 - #2 Section Primary	TKN - #2 Section Primary	ALKA - #2 Section Primary	Free NH3 - #2 Section Secondary	TKN - #2 Section Secondary	NO3 - #2 Section Secondary	Free NH3 - UV Channel	Temperature - UV Channel	pH - UV Channel	Unionized NH3 - UV Channel	TKN - UV Channel	NO3 - UV Channel	NO2 - UV Channel	ALKA - UV Channel
18-Apr-16																	
19-Apr-16	24.6	35.2					0.1			0.1	19.6	7.2	0.0006	1.5	16.6	0.1	
20-Apr-16																	
21-Apr-16			319														142
22-Apr-16																	
23-Apr-16																	
24-Apr-16																	
25-Apr-16																	
26-Apr-16	18.4	47.1	282				0.1			0.1	18.7	7.2	0.0006	1.6	19.6	0.1	133
27-Apr-16																	
28-Apr-16																	
29-Apr-16																	
30-Apr-16																	
1-May-16																	
2-May-16																	
3-May-16	16.0	38.1	274				0.1	1.9		0.1	16.1	7.1	0.0004	1.7	19.0	0.0	120
4-May-16																	
5-May-16																	
6-May-16																	
7-May-16																	
8-May-16																	
9-May-16																	
10-May-16	19.3	39.4	273				0.1	1.9		0.1	16.1	7.2	0.0005	1.8	19.4	0.2	120
11-May-16																	
12-May-16																	
13-May-16																	
14-May-16																	
15-May-16																	
16-May-16																	
17-May-16	17.9	37.2	116				0.1	1.8		0.1	16.1	7.1	0.0004	1.7	18.9	0.1	276
18-May-16																	
19-May-16																	
20-May-16																	
21-May-16																	
22-May-16																	
23-May-16																	
24-May-16	18.8	40.7	266				0.1	1.6		0.1	16.1	7.1	0.0004	1.6	19.5	0.1	106
25-May-16																	
26-May-16																	
27-May-16																	
28-May-16																	
29-May-16																	
30-May-16																	
31-May-16	19.7	69.0	268				0.1	1.9		0.1	16.1	7.0	0.0003	1.6	21.1	0.1	84
1-Jun-16																	
2-Jun-16	20.7						0.1			0.1	17.6	7.2	0.0005				
3-Jun-16																	
4-Jun-16																	
5-Jun-16																	
6-Jun-16																	
7-Jun-16	20.8	33.8	267				0.1	2.2		0.1	16.9	7.0	0.0003	1.7	14.6	0.0	109
8-Jun-16																	
9-Jun-16	20.0						0.1			0.1	16.5	7.3	0.0006				
10-Jun-16																	

Table 7: Adelaide 2015 Nitrogen Analysis Report																	
Date	Free NH3 - #2 Section Raw	TKN - #2 Section Raw	ALKA - #2 Section Raw	Free NH3 - #2 Section Primary	TKN - #2 Section Primary	ALKA - #2 Section Primary	Free NH3 - #2 Section Secondary	TKN - #2 Section Secondary	NO3 - #2 Section Secondary	Free NH3 - UV Channel	Temperature - UV Channel	pH - UV Channel	Unionized NH3 - UV Channel	TKN - UV Channel	NO3 - UV Channel	NO2 - UV Channel	ALKA - UV Channel
11-Jun-16																	
12-Jun-16																	
13-Jun-16																	
14-Jun-16	21.1	50.4	267				0.1	1.9		0.1	17.3	7.1	0.0004	1.7	12.5	0.1	114
15-Jun-16																	
16-Jun-16	17.8						0.1			2.0	17.2	7.3	0.0125				
17-Jun-16																	
18-Jun-16																	
19-Jun-16																	
20-Jun-16																	
21-Jun-16	19.8	61.0	259				0.1	2.1		0.2	18.3	7.1	0.0010	2.1	14.4	0.4	104
22-Jun-16																	
23-Jun-16	20.9						0.1			0.1	18.1	7.2	0.0006				
24-Jun-16																	
25-Jun-16																	
26-Jun-16																	
27-Jun-16																	
28-Jun-16	36.0	58.9	302				0.1	2.0		0.4	18.4	7.1	0.0018	2.4	9.0	0.4	117
29-Jun-16																	
30-Jun-16																	
1-Jul-16																	
2-Jul-16																	
3-Jul-16																	
4-Jul-16																	
5-Jul-16	29.0	53.7	274				1.3	3.0		2.4	22.5	7.1	0.0143	4.2	15.3	0.8	102
6-Jul-16																	
7-Jul-16	28.7						0.9			0.6	23.0	7.2	0.0049				
8-Jul-16																	
9-Jul-16																	
10-Jul-16																	
11-Jul-16																	
12-Jul-16	27.6	62.0	293				0.1	1.7		0.1	22.7	6.9	0.0004	1.7	16.7	0.2	80
13-Jul-16																	
14-Jul-16	18.0						0.1			0.1	22.5	7.2	0.0009				
15-Jul-16																	
16-Jul-16																	
17-Jul-16																	
18-Jul-16																	
19-Jul-16	26.1	46.3	292				0.1	1.7		0.1	19.8	7.0	0.0004	1.6	15.5	0.4	94
20-Jul-16																	
21-Jul-16	25.8						0.1			0.3	19.7	7.2	0.0015				
22-Jul-16																	
23-Jul-16																	
24-Jul-16																	
25-Jul-16																	
26-Jul-16	23.2	40.5	252				0.1	1.6		0.1	22.8	7.0	0.0005	1.4	17.1	0.2	81
27-Jul-16																	
28-Jul-16	20.5						0.1			0.1	23.1	7.2	0.0008				
29-Jul-16																	
30-Jul-16																	
31-Jul-16																	
1-Aug-16																	
2-Aug-16	15.4	51.6	254				0.1	1.3		0.1	20.7	7.1	0.0005	1.2	13.7	0.2	101
3-Aug-16																	

Table 7: Adelaide 2015 Nitrogen Analysis Report																	
Date	Free NH3 - #2 Section Raw	TKN - #2 Section Raw	ALKA - #2 Section Raw	Free NH3 - #2 Section Primary	TKN - #2 Section Primary	ALKA - #2 Section Primary	Free NH3 - #2 Section Secondary	TKN - #2 Section Secondary	NO3 - #2 Section Secondary	Free NH3 - UV Channel	Temperature - UV Channel	pH - UV Channel	Unionized NH3 - UV Channel	TKN - UV Channel	NO3 - UV Channel	NO2 - UV Channel	ALKA - UV Channel
4-Aug-16	18.6						0.1			0.2	21.3	7.3	0.0015				
5-Aug-16																	
6-Aug-16																	
7-Aug-16																	
8-Aug-16																	
9-Aug-16	21.3	36.6	252				0.1	1.7		0.1	21.4	6.8	0.0003	1.3	8.5	0.2	84
10-Aug-16																	
11-Aug-16	18.4						0.1			0.1	21.2	7.2	0.0009				
12-Aug-16																	
13-Aug-16																	
14-Aug-16																	
15-Aug-16																	
16-Aug-16	18.8	33.8	254				0.1	1.1		0.1	22.1	7.3	0.0013	1.3	13.0	0.4	116
17-Aug-16																	
18-Aug-16	17.4						0.1			0.1	22.4	7.5	0.0015				
19-Aug-16																	
20-Aug-16																	
21-Aug-16																	
22-Aug-16																	
23-Aug-16	23.5	34.4	265				0.1	1.4		0.1	22.0	7.1	0.0006	1.3	11.2	0.0	120
24-Aug-16																	
25-Aug-16	27.4						0.1			0.1	21.7	7.4	0.0016				
26-Aug-16																	
27-Aug-16																	
28-Aug-16																	
29-Aug-16																	
30-Aug-16	17.8	35.4	268				0.1	1.3		0.1	21.1	7.2	0.0007	1.2	13.8	0.0	124
31-Aug-16																	
1-Sep-16	20.1						0.1			0.1	20.9	7.4	0.0010				
2-Sep-16																	
3-Sep-16																	
4-Sep-16																	
5-Sep-16																	
6-Sep-16																	
7-Sep-16																	
8-Sep-16	18.2	33.8	238				0.3			2.3	21.8	7.2	0.0163	3.8	13.1	1.0	102
9-Sep-16																	
10-Sep-16																	
11-Sep-16																	
12-Sep-16																	
13-Sep-16	23.1	42.1	275				0.1			0.1	21.1	7.1	0.0005	1.2	15.1	0.3	95
14-Sep-16																	
15-Sep-16																	
16-Sep-16																	
17-Sep-16																	
18-Sep-16																	
19-Sep-16																	
20-Sep-16	20.0	31.4	267				0.1			0.1	21.2	7.1	0.0005	1.2	13.5	0.2	112
21-Sep-16																	
22-Sep-16																	
23-Sep-16																	
24-Sep-16																	
25-Sep-16																	
26-Sep-16																	

Table 7: Adelaide 2015 Nitrogen Analysis Report																	
Date	Free NH3 - #2 Section Raw	TKN - #2 Section Raw	ALKA - #2 Section Raw	Free NH3 - #2 Section Primary	TKN - #2 Section Primary	ALKA - #2 Section Primary	Free NH3 - #2 Section Secondary	TKN - #2 Section Secondary	NO3 - #2 Section Secondary	Free NH3 - UV Channel	Temperature - UV Channel	pH - UV Channel	Unionized NH3 - UV Channel	TKN - UV Channel	NO3 - UV Channel	NO2 - UV Channel	ALKA - UV Channel
27-Sep-16	24.0	49.8					0.7	2.7		0.8	20.2	7.1	0.0041	4.0	14.0	0.8	
28-Sep-16																	
29-Sep-16			273														94
30-Sep-16																	
1-Oct-16																	
2-Oct-16																	
3-Oct-16																	
4-Oct-16	20.4	38.9	264				0.1	1.7		0.1	21.4	7.3	0.0009	1.2	15.1	0.3	110
5-Oct-16																	
6-Oct-16																	
7-Oct-16																	
8-Oct-16																	
9-Oct-16																	
10-Oct-16																	
11-Oct-16	22.9	41.2	282				0.9	2.1		1.3	19.6	7.3	0.0096	2.4	9.8	0.6	129
12-Oct-16																	
13-Oct-16																	
14-Oct-16																	
15-Oct-16																	
16-Oct-16																	
17-Oct-16																	
18-Oct-16	24.8	42.4	275				0.1	1.5		0.3	20.4	7.2	0.0017	1.7	14.6	0.6	98
19-Oct-16																	
20-Oct-16																	
21-Oct-16																	
22-Oct-16																	
23-Oct-16																	
24-Oct-16																	
25-Oct-16	22.8	46.6	270				0.3	1.7		0.4	19.0	7.2	0.0022	1.8	14.6	0.5	102
26-Oct-16																	
27-Oct-16																	
28-Oct-16																	
29-Oct-16																	
30-Oct-16																	
31-Oct-16																	
1-Nov-16	24.1	39.8	271				0.1	1.6		0.1	18.9	7.2	0.0006	1.6	16.4	0.1	95
2-Nov-16																	
3-Nov-16																	
4-Nov-16																	
5-Nov-16																	
6-Nov-16																	
7-Nov-16																	
8-Nov-16	25.0	42.0	278				0.1	1.9		0.1	18.5	7.3	0.0007	1.8	17.9	0.2	97
9-Nov-16																	
10-Nov-16	21.9									0.9	18.3	7.3	0.0061				
11-Nov-16																	
12-Nov-16																	
13-Nov-16																	
14-Nov-16																	
15-Nov-16	25.0	49.6	277				0.1	2.1		0.1	18.3	6.2	0.0001	1.7	19.8	0.1	62
16-Nov-16																	
17-Nov-16	26.5									0.1	18.2	7.2	0.0005				
18-Nov-16																	
19-Nov-16																	

Table 7: Adelaide 2015 Nitrogen Analysis Report																	
Date	Free NH3 - #2 Section Raw	TKN - #2 Section Raw	ALKA - #2 Section Raw	Free NH3 - #2 Section Primary	TKN - #2 Section Primary	ALKA - #2 Section Primary	Free NH3 - #2 Section Secondary	TKN - #2 Section Secondary	NO3 - #2 Section Secondary	Free NH3 - UV Channel	Temperature - UV Channel	pH - UV Channel	Unionized NH3 - UV Channel	TKN - UV Channel	NO3 - UV Channel	NO2 - UV Channel	ALKA - UV Channel
20-Nov-16																	
21-Nov-16																	
22-Nov-16	25.1	45.0	272				0.1	1.6		0.1	17.1	6.9	0.0003	1.7	22.8	0.3	54
23-Nov-16																	
24-Nov-16	25.5						0.1			0.1	17.4	7.0	0.0003				
25-Nov-16																	
26-Nov-16																	
27-Nov-16																	
28-Nov-16																	
29-Nov-16	20.0	33.5	260				0.1	1.5		0.1	17.3	7.1	0.0004	1.5	22.3	0.1	72
30-Nov-16																	
1-Dec-16	26.5						0.1			0.1	17.2	6.9	0.0003				
2-Dec-16																	
3-Dec-16																	
4-Dec-16																	
5-Dec-16																	
6-Dec-16	23.1	45.8	274				0.1	1.8		0.1	16.8	7.2	0.0005	1.5	22.9	0.3	76
7-Dec-16																	
8-Dec-16	20.3						0.1			0.1	16.4	7.2	0.0005				
9-Dec-16																	
10-Dec-16																	
11-Dec-16																	
12-Dec-16																	
13-Dec-16	25.5	44.9	279				0.1	1.8		0.1	16.0	7.1	0.0004	1.7	24.3	0.2	71
14-Dec-16																	
15-Dec-16	21.9						0.1			0.1	15.7	7.0	0.0003				
16-Dec-16																	
17-Dec-16																	
18-Dec-16																	
19-Dec-16																	
20-Dec-16	25.8	42.0	270				0.1	1.9		0.3	15.5	7.0	0.0009	2.0	22.1	0.5	72
21-Dec-16																	
22-Dec-16																	
23-Dec-16																	
24-Dec-16																	
25-Dec-16																	
26-Dec-16																	
27-Dec-16	20.8	34.6	311							0.4	15.6	7.1	0.0015	2.2			95
28-Dec-16																	
29-Dec-16															18.2	0.2	
30-Dec-16																	
31-Dec-16																	
Average	21.8	42.8	273				0.2	1.8		0.3	18.9	7.2	0.002	1.8	16.6	0.3	112
Max	38.4	69.0	319				1.3	3.0		2.4	23.1	8.4	0.016	4.2	24.3	1.0	276
Min	10.7	24.2	116				0.1	1.1		0.1	15.5	6.2	0.000	1.1	8.5	0.0	54
STD	4.6	9.3	27				0.2	0.4		0.5	2.1	0.2	0.003	0.7	3.8	0.2	36
# of Samples	75	52	52	0	0	0	69	42	0	75	75	75	75	50	52	52	52

Table 8: Adealide Grab pH

Record Number	Sample Source 1	Cust Sample Reffernce No.	Customer	Sample Date	Analysis	Result	Unit	Sample Source 2
280290	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	1/5/2016	pH	7.03	pH units	GRAB
280520	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	1/12/2016	pH	7.16	pH units	GRAB
280746	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	1/19/2016	pH	7.08	pH units	GRAB
281000	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	1/26/2016	pH	7.03	pH units	GRAB
281236	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	2/2/2016	pH	7.08	pH units	GRAB
281478	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	2/9/2016	pH	7.09	pH units	GRAB
281694	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	2/16/2016	pH	7.12	pH units	GRAB
281921	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	2/23/2016	pH	7.21	pH units	GRAB
282114	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	3/1/2016	pH	7.17	pH units	GRAB
282345	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	3/8/2016	pH	7.2	pH units	GRAB
282792	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	3/17/2016	pH	7.23	pH units	GRAB
282843	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	3/22/2016	pH	7.14	pH units	GRAB
282996	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	3/29/2016	pH	7.21	pH units	GRAB
283194	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	4/5/2016	pH	7.26	pH units	GRAB
283425	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	4/12/2016	pH	7.29	pH units	GRAB
283662	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	4/19/2016	pH	7.21	pH units	GRAB
283917	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	4/26/2016	pH	7.2	pH units	GRAB
284164	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	5/3/2016	pH	7.1	pH units	GRAB
284376	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	5/10/2016	pH	7.18	pH units	GRAB
284612	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	5/17/2016	pH	7.11	pH units	GRAB
284836	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	5/24/2016	pH	7.14	pH units	GRAB
285097	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	5/31/2016	pH	7.01	pH units	GRAB
285352	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	6/7/2016	pH	7.03	pH units	GRAB
285610	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	6/14/2016	pH	7.1	pH units	GRAB
285900	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	6/21/2016	pH	7.05	pH units	GRAB
286168	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	6/28/2016	pH	7.06	pH units	GRAB
286372	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	7/5/2016	pH	7.06	pH units	GRAB
286591	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	7/12/2016	pH	6.91	pH units	GRAB
286829	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	7/19/2016	pH	7.04	pH units	GRAB
287084	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	7/26/2016	pH	6.99	pH units	GRAB
287285	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	8/2/2016	pH	7.1	pH units	GRAB
287520	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	8/9/2016	pH	6.84	pH units	GRAB
287868	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	8/16/2016	pH	7.07	pH units	GRAB
288050	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	8/23/2016	pH	7.08	pH units	GRAB
288306	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	8/30/2016	pH	7.18	pH units	GRAB
288477	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	9/6/2016	pH	7.19	pH units	GRAB
288684	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	9/13/2016	pH	7.09	pH units	GRAB
288951	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	9/20/2016	pH	7.12	pH units	GRAB
289146	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	9/27/2016	pH	7.14	pH units	GRAB
289409	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	10/4/2016	pH	7.19	pH units	GRAB
289621	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	10/11/2016	pH	7	pH units	GRAB
289894	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	10/18/2016	pH	7.05	pH units	GRAB
290117	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	10/25/2016	pH	7.08	pH units	GRAB
290344	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	11/1/2016	pH	7.03	pH units	GRAB
290584	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	11/8/2016	pH	7.12	pH units	GRAB
290821	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	11/15/2016	pH	6.73	pH units	GRAB
291042	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	11/22/2016	pH	6.78	pH units	GRAB
291254	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	11/29/2016	pH	6.91	pH units	GRAB
291463	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	12/6/2016	pH	7.1	pH units	GRAB
291701	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	12/13/2016	pH	7.06	pH units	GRAB
291885	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	12/20/2016	pH	6.96	pH units	GRAB
291994	ADELAIDE	ADELAIDE UV.	City of London - G. Gauld	12/27/2016	pH	7.05	pH units	GRAB

Table 9: Adelaide Secondary Bypass

Start Date	Start Time	Finish date	Finish time	Duration Hours	Volume in Cubic Metres	Cause for bypass	Reason for Bypass	Bypass Cause Descriptions	Reason for Bypass Descriptions
24-Mar-16	10:34 PM	25-Mar-16	7:30 AM	8.93	1,592	1, 7	C, D	1 - Heavy Precipitation	A - Avoid loss of life
31-Mar-16	10:35 PM	1-Apr-16	9:50 AM	11.25	3,766	1, 7	C, D	2 - Snow melt	B - Avoid personal injury
								3 - Equipment failure	C - Avoid danger to public health
								4 - Equipment maintenance	D - Avoid severe property damage
								5 - Sewer problem	E - Prior written acknowledgement
								6 - Power failure	
								7 - Exceed design capacity	

Table 10: Adelaide PCP

SCADA	SCADA As Found	SCADA As Left	Handheld/Strap On As Found	Handheld/Strap On As Left	%ERROR As Found	%ERROR As Left	Date	COMMENTS			
Dissolved Oxygen											
PCAD-2-ABN-AIT1A ppm	4.4	3.72	3.85	3.74	5.50%	-0.20%	Nov 6/15	calibrated to handheld from Adelaide			
PCAD-2-ABN-AIT2A ppm	2.92	2.88	4.29	2.9	-13.70%	-0.20%	Nov 6/15	cleaned,changed membrane and electolyte,air calibrated			
PCAD-2-ABN-AIT3A ppm	1.98	3.55	2.61	3.69	-6.30%	-1.40%	Nov 6/15	cleaned,changed membrane and electolyte,air calibrated			
PCAD-2-ABN-AIT4A ppm	4.78	6.01	5.82	6.3	-10.40%	-2.90%	Nov 6/15	cleaned,changed membrane and electolyte,air calibrated			
PCAD-2-ABN-AIT5A ppm	3.22	2.31	5.33	1.83	-21.10%	4.80%	Nov 6/15	cleaned,changed membrane and electolyte,air calibrated			
PCAD-2-ABN-AIT6A ppm	1.75	1.18	2.02	1.24	-2.70%	-0.60%	Nov 6/15	cleaned,changed membrane and electolyte,air calibrated			
Suspended Solids											
PCAD-2-ABN-MLSS ppm	1050		1450		-4.00%	0.00%		sensor is being removed - replaced with PCAD-S2-ABN-TSSO1			
ORP'S											
PCAD-ODC-AIT1	662	662	664	664	-0.04%	-0.04%	Oct 26/15	calibrated to a known solution			
PCAD-ODC-AIT2	656	656	521	521	2.70%	2.70%	Oct 26/15	calibrated to a known solution			
PSAD-ODC-AIT1	736	736	704	704	0.64%	0.64%	Oct 26/15	calibrated to a known solution			
PCAD-INLET					0.00%	0.00%	Oct 26/15	not in service			
Sensornet Dissolved Oxygen											
PCAD-S0-EFW-AIT02	5.53	5.53	5.82	5.82	-2.90%	-2.90%	Nov 6/15	cleaned calibrated to handheld from Adelaide			
Sensornet Suspended Solids											
	(SV)								OFFSET(FA)	NEW OFFSET(FN)	LAB (SR)
PCAD-S2-SLW-TSS01	3043		2862	1223	1.81%	#VALUE!	Nov 13/15	offset out of range (.5- 2) -calibrated to lab results	1.08	0.43	1223
PCAD-S2-FCL-TSS01	2616		1950	2168	6.66%	#VALUE!	Nov 13/15	offset changed based on lab results	1	0.94	2447
PCAD-S2-ABN-TSS01	1356		1410	2447	-0.54%	#VALUE!	Nov 13/15	offset changed based on lab results	0.72	1.15	2168
	TSS SCADA	TSS LAB	FNU SCADA	FNU LAB							
PCAD-S2-PCL-TSS02	103	89	78	75.5			Nov 9/15	TSS and FNU adjusted based on lab results			
PCAD-S2-PCL-TSS01	3.8	9	3.8	5.39			Nov 9/15	TSS and FNU adjusted based on lab results	FN=FA*(SR/SV)		
PCAD-S0-EFW-TSS01	120	181	109	116.8			Nov 9/15	TSS and FNU adjusted based on lab results			
Sensornet pH											
PCAD-S0-EFW-AIT01	7.2	7.05	7	7	0.00%	0.00%	Nov 9/15	changed cartridge and calibrated to a known solution			
Sensornet Ammonia											
	NH3 SCADA	(NH3) LAB	(K) SCADA	(K) LAB							
PCAD-S2-ABN-AIT01 (NH3)	3.1	4.7	16.3	17.8			Nov 9/15	calibrated to lab results			

Table 11: Adelaide PCP Calibration Data

Effluent Flow Meters	SCADA As Found	SCADA As Left	Span Calc Head	Span Empty Dist	Tape Measured (inches) As Found	Tape Measured (inches) As left	Calc measured value As found	Calc measured value As Left	%Error as found	%Error as Left	Date	COMMENTS
PCAD-2-FCL-EFM01 (m^3/d)	22,779	22,779	13	53.5	40.5	41.5	22,157.39	22,157.39	0.86%	0.86%	Nov 9/15	flume clean
PCAD-1-SWM-BFM01 (m^3/d)	1,604	1,604	3.25	44.75	41.5	41.5	2,584.20	2,584.20	-1.35%	-1.35%	Nov 9/15	tested with pail of water - not an actual bypass

TABLE 12 - ADELAIDE WORK ORDERS 2016

Order Number	Work Order Description	Equipment Description
2329390	PM ANNUAL GBM GRIT BASIN MIXER	VORTEX GRIT CHAMBER 1 MIXER
2329391	PM ANNUAL GBM GRIT BASIN MIXER	VORTEX GRIT CHAMBER 2 MIXER
2329392	PM BI- MONTHLY INLINE CHOPPER	2 SEC PSP INLINE CHOPPER
2329393	PM ANNUAL OVERHEAD DOORS	OVERHEAD DOORS
2329479	REPLACE CO MONITOR	ADELAIDE MECHANICAL DEPARTMENT
2329671	REMOVE DUCTWORK AND INSULATE	ADMINISTRATION BUILDING 1
2329745	CONNECT BLOWER RM LOOP	BOILER RECIRCULATION PUMP 3
2329924	REPLACE DECANT HOSE	2 SECTION SLUDGE HOLD TANK 1
2330196	KICKING OFF	1/2 SEC AERATION BLOWER 2
2330198	KICKING OFF	1/2 SEC AERATION BLOWER 3
2330305	ODOUR CONTROL FAN NOISY	2 SECTION SLUDGE HOLD TANK 1
2330306	PRESSURE GAUGE RUPTURED	TWAS LOADING PUMP 1
2330307	PRESSURE GAUGE RUPTURED	TWAS LOADING PUMP 2
2330359	PM ANNUAL RDT ROTATING DRUM	ROTATING DRUM THICKENER 1
2330424	PM ANNUAL LIFTING DEVICES	OVERHEAD CRANES
2330515	HEAT NOT WORKING	MAKE AIR UNIT - ROOF TOP
2330544	MATERIAL CART	MECHANICAL DEPT HAND TOOLS
2331423	REPLACE ROLLERS	OVERHEAD DOOR 2 - RDT BLDG
2331424	REMOVE AND REPLACE REEL CORD	OVERHEAD DOOR 3 - OPERATOR
2331425	REPLACE OPERATOR BELT	OVERHEAD DOOR 1 - RDT BLDG
2331578	IN ALARM	RDT 2 - POLYMER FLOW METER
2331685	REPLACE HELICAL GEAR UNIT	VORTEX GRIT CHAMBER 1 MIXER
2331750	COMPRESSOR FAILED	CHEMSCAN WATER QUALITY ANALYS
2332034	SOUTH DOOR HANDLE BROKEN	ADMINISTRATION BUILDING 1
2332289	PM ANNUAL SSP RETURN PUMP	1 SEC RETURN PUMP 1
2332290	PM ANNUAL SSP RETURN PUMP	1 SEC RETURN PUMP 2
2332291	PM ANNUAL GRC GRIT BAS CLASSIF	VORTX GRIT CHAMBR 1 CLASSIFIER
2332292	PM ANNUAL ABB AERTION BLOWER	VORTEX GRIT CHAMBER 1 BLOWER
2332293	PM ANNUAL GRC GRIT BAS CLASSIF	VORTX GRIT CHAMBR 2 CLASSIFIER
2332294	PM ANNUAL ABB AERTION BLOWER	VORTEX GRIT CHAMBER 2 BLOWER
2332295	PM ANNUAL SSP RETURN PUMP	2 SEC RETURN PUMP 1
2332296	PM ANNUAL SSP RETURN PUMP	2 SEC RETURN PUMP 2
2332297	PM ANNUAL SSP RETURN PUMP	2 SEC RETURN PUMP 3
2332298	PM ANNUAL SSP RETURN PUMP	2 SEC RETURN PUMP4
2332299	PM 120 DAY - POLY MAKEUP UNIT	RDT POLYMER MAKEUP UNIT
2332300	PM ANNUAL BACKFLOW PREVENTORS	BACKFLOW PREVENTORS
2332301	PM ANNUAL EXIT EMERGENCY LIGHT	EXIT & EMERGENCY LIGHTS
2332302	PM ANNUAL FIRE EXTINGUISHER	FIRE EXTINGUISHERS
2332347	REPLACE	WASH MACHINE
2332399	REPLACE UNIT HEATER FANS	ADMINISTRATION BUILDING 1
2332788	VALUE NOT CHANGING	2 SECTION-RAW SEWAGE TSS
2333137	CHECK PRESSURE GAUGES	2 SEC WASTE BOOSTER PUMP 1
2333138	CHECK PRESSURE GAUGES	2 SEC WASTE BOOSTER PUMP 2
2333151	PROBE VALUE LOCKED UP	2 SECTION AERATION AMMONIA
2333205	2015 UV STARTUP	ADELAIDE UV DISINFECTION
2333349	WON'T OPEN OR CLOSE	2-3 PRIMARY SLUDGE VALVE 'A'
2333608	POWER OFF TO BUILDING	INLET WORKS SEC 2 BUILDING 5
2333613	REPAIR FLUSHING WATER LINES	INLET WORKS SEC 2 BUILDING 5
2333614	FROZEN WATER LINE	INLET WORKS SEC 2 BUILDING 5
2333759	PM SEMI ANNUAL-HVAC MAU & AHU	MAKE UP AIR UNIT
2333761	PM SEMI ANNUAL-HVAC MAU & AHU	MAKE AIR UNIT - ROOF TOP
2333772	PM SEMI ANNUAL - HVAC BOILERS	WALLMOUNT CONDENSING BOILER 1
2333773	PM SEMI ANNUAL - HVAC BOILERS	WALLMOUNT CONDENSING BOILER 2

TABLE 12 - ADELAIDE WORK ORDERS 2016

Order Number	Work Order Description	Equipment Description
2333774	PM SEMI ANNUAL - HVAC BOILERS	WALLMOUNT CONDENSING BOILER 3
2333815	INSTALL TEMPERATURE SENSOR	INLET WORKS SEC 2 BUILDING 5
2333849	FAIL TO CLOSE WHEN IN AUTO	2-3 PRIMARY SLUDGE VALVE 'A'
2334048	REPLACE MOTOR STARTER	BOILER RECIRCULATION PUMP 3
2334071	INSTALL PRIMARY VALVES	2 SEC PRIMARY CLARIFICATION
2334106	INSPECT AND TEST ROTORKS	2 SEC PRIMARY CLARIFICATION
2334493	DECANT HOSE BROKEN FROM COLD	2 SECTION SLUDGE HOLD TANK 1
2334740	REPLACE BROKEN LIGHT SWITCH	AREA LIGHTING
2334741	HALLWAY LIGHT BALLAST	MAIN BLDG & SITE LIGHTING
2334742	OUTSIDE LIGHT NOT WORKING	AREA LIGHTING FOR B02
2334744	HEATER NOT WORKING	SECTION 2 PSPS BUILDING 6
2334745	UPS IN RPU3 NOT WORKING	SCADA SYSTEM - ADELAIDE
2334867	PM BI- MONTHLY INLINE CHOPPER	2 SEC PSP INLINE CHOPPER
2335151	REPAIR EYEWASH STATION	INLET WORKS SEC 2 BUILDING 5
2335301	COVER OPENING IN BREAKER PANEL	PRIMARY INLET CHANNEL BLOWER
2335465	GEAR BOX NOISY	VORTX GRIT CHAMBR 2 CLASSIFIER
2335788	RAPID LEVEL CHANGE ALARM	2 SEC ALUM HOLDING TANK
2335797	CERTIFICATION	RETREVAL BLOCK 5 (1162)
2336278	REMOVE OLD PUMP	ADELAIDE POLLUTION CONTROL
2336279	INSTALL NEW METER WITH CLEAN-O	SLUDGE DENSITY METER
2336280	REPLACE MEDIA	SECTION 2 ODOUR CONTROL
2336556	DRIVE CHAIN NOISY	ROTATING DRUM THICKENER 2
2336679	VALUES INACCURATE	CHEMSCAN WATER QUALITY ANALYS
2336687	INSTALL CONTAINMENT SUMP FLOAT	2 SEC ALUM HOLDING TANK
2336765	GEAR BOX REPAIR	VORTEX GRIT CHAMBER 2 MIXER
2336832	MODULE IS CRACKED	ADELAIDE UV DISINFECTION
2337033	AIR SWITCH BROKEN	OVERHEAD DOOR 3 - OPERATOR
2337231	INSPECT PILOT LIGHTS	ADELAIDE ELEC / HVAC DEPT
2337290	REPAIR VALVE INTAKE VALVE	RDT SLUDGE FEED PUMP 3
2337525	REPLACE BELT PULLEYS	MAKE UP AIR UNIT
2337530	MESOCOSM PILOT-POTABLE WATER	STAFF FACILITIES BUILDING 4
2337619	PM ANNUAL PCLD PRIMARY DRIVE	1-1 PRIMARY DRIVE
2337620	PM ANNUAL PCLD PRIMARY DRIVE	1-2 PRIMARY DRIVE
2337621	PM ANNUAL PCLD PRIMARY DRIVE	1-3 PRIMARY DRIVE
2337622	PM ANNUAL PCLD PRIMARY DRIVE	1-4 PRIMARY DRIVE
2337623	PM ANNUAL PCLD PRIMARY DRIVE	2-1 PRIMARY DRIVE
2337624	PM ANNUAL PCLD PRIMARY DRIVE	2-2 PRIMARY DRIVE
2337625	PM ANNUAL PCLD PRIMARY DRIVE	2-3 PRIMARY DRIVE
2337626	PM ANNUAL PCLD PRIMARY DRIVE	2-4 PRIMARY DRIVE
2337627	PM ANNUAL FCLD FINAL DRIVE	2-1 FINAL COLLECTOR
2337628	PM ANNUAL FCLD FINAL DRIVE	2-2 FINAL COLLECTOR
2337629	PM ANNUAL FCLD FINAL DRIVE	2-3 FINAL COLLECTOR
2337630	PM ANNUAL FCLD FINAL DRIVE	2-4 FINAL COLLECTOR
2337631	PM ANNUAL - HVAC FANS	BLOWER RM EXHAUST FAN 'A'
2337632	PM ANNUAL - HVAC FANS	BLOWER RM EXHAUST FAN 'B'
2337711	PM ANNUAL - HVAC FANS	BLOWER RM EXHAUST FAN 'C'
2337712	PM ANNUAL - HVAC FANS	SCRUBBER EXHAUST FAN
2337713	PM ANNUAL - HVAC FANS	RDT SCRUBBER SUPPLY FAN 1
2337728	PM ANNUAL - HVAC FANS	RDT SCRUBBER SUPPLY FAN 2
2337859	REPLACE HOSES AND AIR LEAKS	PRIMARY INLET CHANNEL BLOWER
2337904	MESOCOSM FACILITY	ADELAIDE ELEC / HVAC DEPT
2337908	GRATING LOOSE	STAFF FACILITIES BUILDING 4
2338062	NOISY	2 SEC ALUM HOLD TNK TRANS PUMP

TABLE 12 - ADELAIDE WORK ORDERS 2016

Order Number	Work Order Description	Equipment Description
2338112	SPRAYBAR LEAKING	ROTATING DRUM THICKENER 1
2338361	SEWER FLUSHER EFW OUTLET	RDT BUILDING 2
2338470	SECURE GRATING	2 SECTION FINAL CLARIFIER
2338471	SECURE GRATING	SECTION 1 INLET WORKS
2338472	EXIT LIGHT OUT	INLET WORKS SEC 2 BUILDING 5
2338640	HOSE SPLIT	RDT SCRUBER 1 BLEACH METER PMP
2338651	INTAKE FILTERS DIRTY	ADELAIDE PCP AERATION BASIN
2338746	LEAK IN INLET BUILDING	2 SECTION EFFLUENT WATER
2339247	PURCHASE FILTERS	1/2 SEC AERATION BLOWER 2
2339350	INSPECT AND CLEAN	2 SEC FLUSHING WATER PUMP 1
2339351	MIXER NOISY	ROTATING DRUM THICKENER 3
2340372	REINSTALL SCRUBBER BOOSTER	BOOSTER FAN - 2 SECTION SHT
2340467	RUNNING TOILET	STAFF FACILITIES BUILDING 4
2340494	PINCH VALVE ISSUES	CHEMSCAN WATER QUALITY ANALYS
2340536	PM ANNUAL SRP SCRUBBER REC PMP	2 SEC SCRUBBER RECIRC PUMP A
2340537	PM ANNUAL SRP SCRUBBER REC PMP	2 SEC SCRUBBER RECIRC PUMP B
2340538	PM ANNUAL CMP CHEM METER PUMP	2 SEC SCRUBR BLEACH METER PUMP
2340539	PM BI- MONTHLY INLINE CHOPPER	2 SEC PSP INLINE CHOPPER
2340540	PM ANNUAL CMP CHEM METER PUMP	2 SEC ALUM METERING PUMP 1
2340541	PM ANNUAL CMP CHEM METER PUMP	2 SEC FERROUS METERING PUMP 2
2340542	PM ANNUAL STR FLUSH WAT STRAIN	2 SEC FLUSH WATER STRAINER 1
2340543	PM ANNUAL STR FLUSH WAT STRAIN	2 SEC FLUSH WATER STRAINER 2
2340544	PM 120 DAY - POLY MAKEUP UNIT	RDT POLYMER MAKEUP UNIT
2340545	PM ANNUAL CMP CHEM METER PUMP	RDT SCRUBER 1 BLEACH METER PMP
2340546	PM ANNUAL CMP CHEM METER PUMP	RDT SCRUBER 2 BLEACH METER PMP
2340547	PM ANNUAL SRP SCRUBBER REC PMP	RDT SCRUBBER 1 RECIRC PUMP
2340548	PM ANNUAL SRP SCRUBBER REC PMP	RDT SCRUBBER 2 RECIRC PUMP
2340575	PM ANNUAL-HVAC AIR CONDITIONER	DUCTLESS SPLIT HEAT PUMP
2341143	ADD REDUCER TO WATER LINE	SECTION 1EFFLUENT WATER
2341201	UWO TRAILER FEED	ADELAIDE ELEC / HVAC DEPT
2341412	PADDLES NOT ROTATING	VORTEX GRIT CHAMBER 2 MIXER
2342286	SYSTEM NOT STARTING	2 SEC VORTEX GRIT CHAMBERS
2342518	LEVEL TRANSMITTER NOT WORKING	SCRUBBER FOR INLET & HOLD TANK
2342561	REPLACE PUMP	RDT SCRUBER 1 BLEACH METER PMP
2342591	REPLACE LOADING FITTING	RDT SCRUBBERS
2342607	POTABLE WATER VALVE SPLIT	INLET WORKS SEC 2 BUILDING 5
2342939	RAIN WATER LEADER LEAK	STAFF FACILITIES BUILDING 4
2342964	PM ANNUAL CBB CHAN BASN BLOWER	PRIMARY INLET CHANNEL BLOWER
2342989	PM ANNUAL - HVAC DEHUMIDIFIER	DEHUMIDIFIER
2343116	NOT TURNING	LAUNDRY DRIER
2343255	WON'T GO TO LOCAL	2-3 PRIMARY SLUDGE VALVE 'A'
2343283	FAULTED	WASTE SLUDGE HOLD TANK - MIXER
2343443	IMPELLER OFF	ROTATING DRUM THICKENER 3
2343769	LOADING TOWER SWITCH KEYS	ADELAIDE POLLUTION CONTROL
2343773	OIL LOW	2 SEC PSP INLINE CHOPPER
2343805	FAULTY LIMIT	2-3 PRIMARY SLUDGE VALVE 'B'
2343865	OVERLOAD TRIP	TWAS LOADING PUMP 2
2343943	NOT STARTING	VORTX GRIT CHAMBR 1 CLASSIFIER
2344021	VARIOUS REPAIRS	ADELAIDE ELEC / HVAC DEPT
2344190	AIR CONDITIONER FAILED	ADMINISTRATION BUILDING 1
2344191	INSTALL LANDING AT INLET GREAS	SECTION 2 INLET WORKS
2344193	READING ZERO ON SCADA	SLUDGE DENSITY METER
2344394	CRACK IN SPRAY WATER LINE	ROTATING DRUM THICKENER 2

TABLE 12 - ADELAIDE WORK ORDERS 2016

Order Number	Work Order Description	Equipment Description
2344475	GAS ALARM LIGHTS NOT WORKING	INLET WORKS SEC 2 BUILDING 5
2344533	SYSTEM FAULT	SECURITY SYSTEM
2344541	RPU04 WIRING IDENTIFICATION	SCADA SYSTEM - ADELAIDE
2344607	POWER FAILURE	INLET WORKS SEC 2 BUILDING 5
2344688	CHAIN BROKEN	2-4 PRIMARY DRIVE
2344716	IN FAULT	2 SEC FINAL EFF PARSHALL FLUME
2344786	SIGNAL FAULT ALARM	1/2 SEC AERATION BLOWER 2
2344850	BOTH WILL NOT START	ROTATING DRUM THICKENERS (3)
2344980	VARIOUS STORM RELATED ISSUES	ADELAIDE ELEC / HVAC DEPT
2345222	LOW BATTERY CHECK LIMITS	1/2 SEC AER BLOWER 4INTAKE VLV
2345280	INLET VALVE SEIZED	1 SEC PRIMARY SLUDGE PUMP 1
2345297	PM ANNUAL ABB AERTION BLOWER	1/2 SEC AERATION BLOWER 1
2345298	PM ANNUAL ABB AERTION BLOWER	1/2 SEC AERATION BLOWER 2
2345299	PM ANNUAL ABB AERTION BLOWER	1/2 SEC AERATION BLOWER 3
2345300	PM ANNUAL ABB AERTION BLOWER	1/2 SEC AERATION BLOWER 4
2345301	PM BI- MONTHLY INLINE CHOPPER	2 SEC PSP INLINE CHOPPER
2345574	PRIMARY DISCHARGE LINE LEAK	CHEMSCAN WATER QUALITY ANALYS
2345939	LEVEL FLUCUATING	2 SEC SHT 1 LEVEL
2346034	DRIVE CHAIN BROKEN	2-4 PRIMARY DRIVE
2346186	UNDER VOLTAGE 3002 VFD	1/2 SEC AERATION BLOWER 2
2346352	GFCI KEEPS TRIPPING FOR DECANT	2 SECTION SLUDGE HOLD TANK 1
2346353	GFCI FOR DECANT TRIPPING	2 SECTION SLUDGE HOLD TANK 2
2346354	CHECK UPS IN PLANT	SCADA SYSTEM - ADELAIDE
2346743	WHEELS WORN OUT ON BOTH GATES	FENCELINE & GATES
2347375	KEEPS SHUTTING DOWN	RDT SCRUBBER 2
2347433	LEAKY FLANGE	RDT SCRUBBER 2
2347435	SEAL LEAKING	RDT SCRUBBER 2 RECIRC PUMP
2347596	UNLOAD CONNECTION LOOSE	2 SEC ALUM HOLDING TANK
2347645	REPLACE BROKEN BALL VALVE	SECTION 8 ODOUR CONTROL
2347656	PM ANNUAL CFP CHEM FEED PUMP	RDT POLYMER FEED PUMP 1
2347657	PM ANNUAL CFP CHEM FEED PUMP	RDT POLYMER FEED PUMP 2
2347658	PM ANNUAL CFP CHEM FEED PUMP	RDT POLYMER FEED PUMP 3
2347659	PM 120 DAY - POLY MAKEUP UNIT	RDT POLYMER MAKEUP UNIT
2347726	DECANT PUMP PLUG ARCHING	2 SECTION SLUDGE DISPOSAL
2347881	GRIT AUGER NOT STARTING	VORTX GRIT CHAMBR 2 CLASSIFIER
2348416	MLSS READING LOW	SENSORNET WQA IN 2 SECTION
2348451	WILL NOT OPEN	2-3 PRIMARY SLUDGE VALVE 'B'
2348771	GUARDRAIL GREASE CHANNEL	SECTION 2 INLET WORKS
2348907	ANNUAL INSPECTION DEFECTS	EXIT & EMERGENCY LIGHTS
2348949	NO WATER PESSURE TO EYEWASH	INLET WORKS SEC 2 BUILDING 5
2348969	A/C TRIPPING OUT	ADMINISTRATION BUILDING 1
2349338	SOLENOID STUCK OPEN	RDT SCRUBBER 1
2349343	MUW SOLENOID LEAKING-REPLACE	RDT SCRUBBER 1
2349423	MIXER MAKING NOISE	ROTATING DRUM THICKENER 3
2349892	PM SEMI ANNUAL - HVAC BOILERS	BOILER 1 - STAFF FACILITIES
2349918	PM BI- MONTHLY INLINE CHOPPER	2 SEC PSP INLINE CHOPPER
2349919	PM ANNUAL STP SLUDGE TRANS PMP	2 SEC SHT TRANSFER PUMP 1
2349920	PM ANNUAL STP SLUDGE TRANS PMP	2 SEC SHT TRANSFER PUMP 2
2349930	PM ANNUAL STP SLUDGE TRANS PMP	TWAS LOADING PUMP 1
2349931	PM ANNUAL STP SLUDGE TRANS PMP	TWAS LOADING PUMP 2
2349932	PM SEMI ANNUAL - HVAC BOILERS	BOILER 1 - ADMINISTRATION BLDG
2349933	PM SEMI ANNUAL-HVAC MAU & AHU	MAKE UP AIR UNIT
2349935	PM SEMI ANNUAL-HVAC MAU & AHU	MAKE AIR UNIT - ROOF TOP

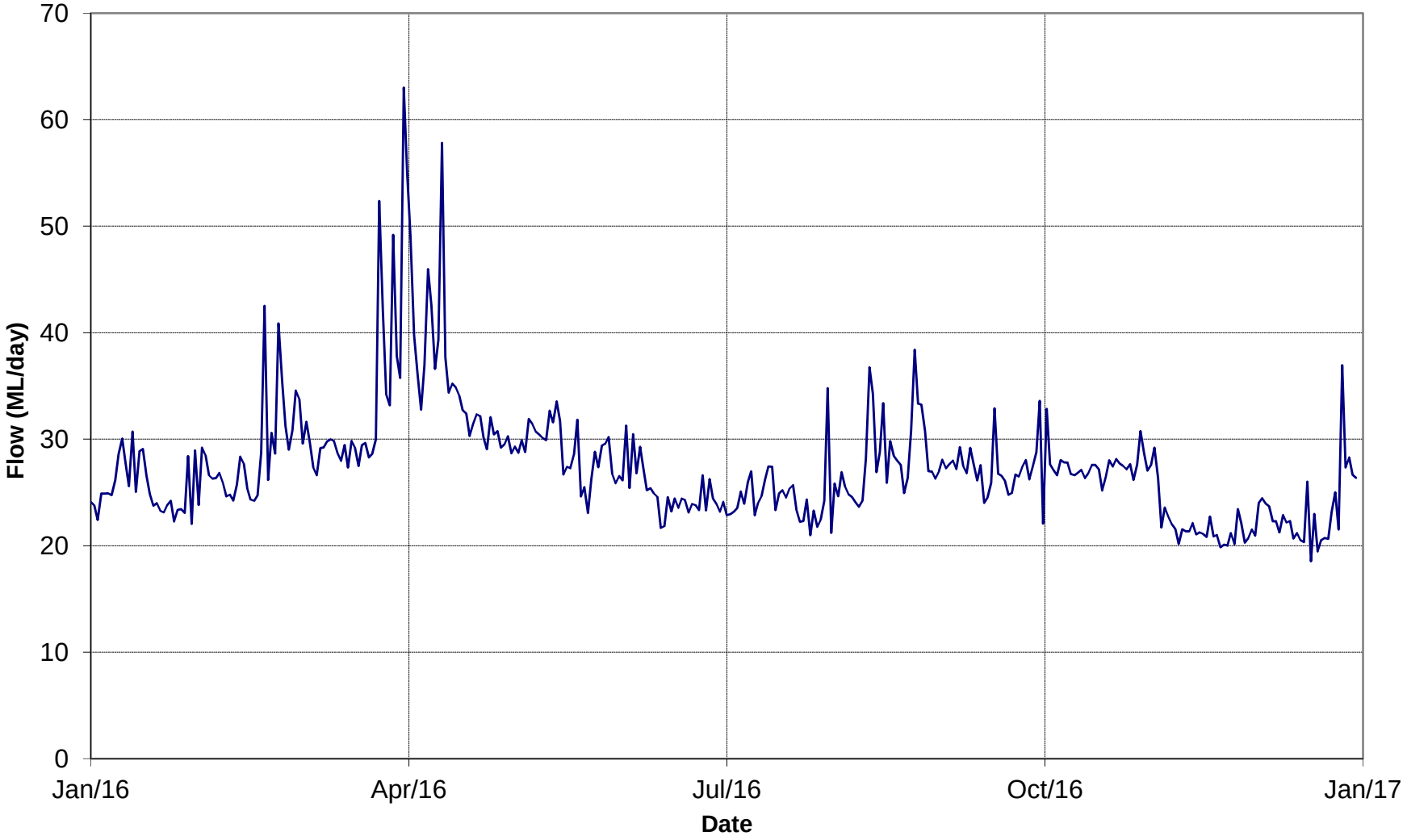
TABLE 12 - ADELAIDE WORK ORDERS 2016

Order Number	Work Order Description	Equipment Description
2349948	PM SEMI ANNUAL - HVAC BOILERS	WALLMOUNT CONDENSING BOILER 1
2349949	PM SEMI ANNUAL - HVAC BOILERS	WALLMOUNT CONDENSING BOILER 2
2349950	PM SEMI ANNUAL - HVAC BOILERS	WALLMOUNT CONDENSING BOILER 3
2349964	PM SEMI ANNUAL - HVAC BOILERS	BOILER 1 (SOUTH)
2349965	PM SEMI ANNUAL - HVAC BOILERS	BOILER 2 (NORTH)
2350049	REPLACE BATTERY	AERA BSN 3/4 AIR FLOW CNTL VLV
2350051	LEAKING BALL VALVE	2 SEC FLUSHING WATER PUMP 1
2350247	CLEAN CHEMSCAN-SHOW OPERATOR	WATER QUALITY ANALYSIS
2351076	READING VERY LOW	2 SECTION - WASTE TSS
2351211	WAS AND RETURN TSS	SCADA SYSTEM - ADELAIDE
2351335	EYEWASH STATION NO WATER FLOW	INLET WORKS SEC 2 BUILDING 5
2351337	CLEAN SLEEVES	ADELAIDE UV DISINFECTION
2351714	PIPE LEAKING	RDT SCRUBBER 1
2351988	EFFLUENT NH3 READING TOO HIGH	CHEMSCAN WATER QUALITY ANALYS
2351989	REPLACE THERMOSTATS	ADMINISTRATION BUILDING 1
2352081	PURCHASE FITTINGS	PRESSURE WASHER - XSTREAM 3600
2352168	HIGH TORQUE ALARM	2-1 FINAL COLLECTOR
2352252	PURCHASE 5% SODIUM HYPOCHLORID	CHEMSCAN WATER QUALITY ANALYS
2352457	HOLE IN CONCRETE AT UV	ADELAIDE UV DISINFECTION
2353117	REPLACE PUMP AND HOSE	CHEMSCAN PRIM EEF SAMPLE PMP
2353164	WILL NOT START	2 SEC WASTE BOOSTER PUMP 1
2353474	NOISY	RDT 3 - DRIVE
2354210	HEAT TRACE NOT WORKING	2 SECTION AERATION BASIN
2354448	PO4 AND NH3 INCORRECT	CHEMSCAN WATER QUALITY ANALYS
2354506	GAS SMELL	BOILER 1 (SOUTH)
2354628	NOT TURNING ON	UNIT HEATER 1A
2354747	NOT ACCURATE	2 SECTION AERATION MLSS
2355122	PURCHASE HEARING SIGNS	ADELAIDE POLLUTION CONTROL
2355155	HEARING PROTECTION SIGNS---4	SIGN MANUFACTURING
2355416	OIL LEAK	VORTEX GRIT CHAMBER 2 BLOWER
2355446	PM ANNUAL RDT ROTATING DRUM	ROTATING DRUM THICKENER 2
2355447	PM ANNUAL RDT ROTATING DRUM	ROTATING DRUM THICKENER 3
2355448	PM ANNUAL PSP PRIM SLUDGE PMP	1 SEC PRIMARY SLUDGE PUMP 1
2355449	PM ANNUAL PSP PRIM SLUDGE PMP	1 SEC PRIMARY SLUDGE PUMP 2
2355450	PM ANNUAL PSP PRIM SLUDGE PMP	2 SEC PRIMARY SLUDGE PUMP 1
2355451	PM ANNUAL PSP PRIM SLUDGE PMP	2 SEC PRIMARY SLUDGE PUMP 3
2355452	PM BI- MONTHLY INLINE CHOPPER	2 SEC PSP INLINE CHOPPER
2355453	PM ANNUAL EWP SPRAY WATER PMP	2 SEC FLUSHING WATER PUMP 1
2355454	PM ANNUAL EWP SPRAY WATER PMP	2 SEC FLUSHING WATER PUMP 2
2355455	PM ANNUAL SFP SLUDGE FEED PMP	RDT SLUDGE FEED PUMP 1
2355456	PM ANNUAL SFP SLUDGE FEED PMP	RDT SLUDGE FEED PUMP 2
2355457	PM ANNUAL SFP SLUDGE FEED PMP	RDT SLUDGE FEED PUMP 3
2355458	PM 120 DAY - POLY MAKEUP UNIT	RDT POLYMER MAKEUP UNIT
2355509	INSIDE AND OUTSIDE LIGHTS OUT	AREA LIGHTING
2355516	HEATING UNIT TRIPPING OFF	RDT BUILDING 2
2355668	BEARING NOISE	RDT SCRUBBER 2 RECIRC PUMP
2355669	REMOVE COVERS	ROTATING DRUM THICKENERS (3)
2355825	FROZEN WATER LINE	INLET WORKS SEC 2 BUILDING 5
2355910	PLUGGED	2 SEC FLUSHING WATER PUMP 1
2356187	REPLACE GFCI	EFFLUENT LIQUID SAMPLER
2356188	INSTALL IN-USE COVER	ADELAIDE UV DISINFECTION
2356585	POWER WASHER WON T START	ADELAIDE POLLUTION CONTROL
2356715	POOR OUTSIDE LIGHTING	AREA LIGHTING FOR B07

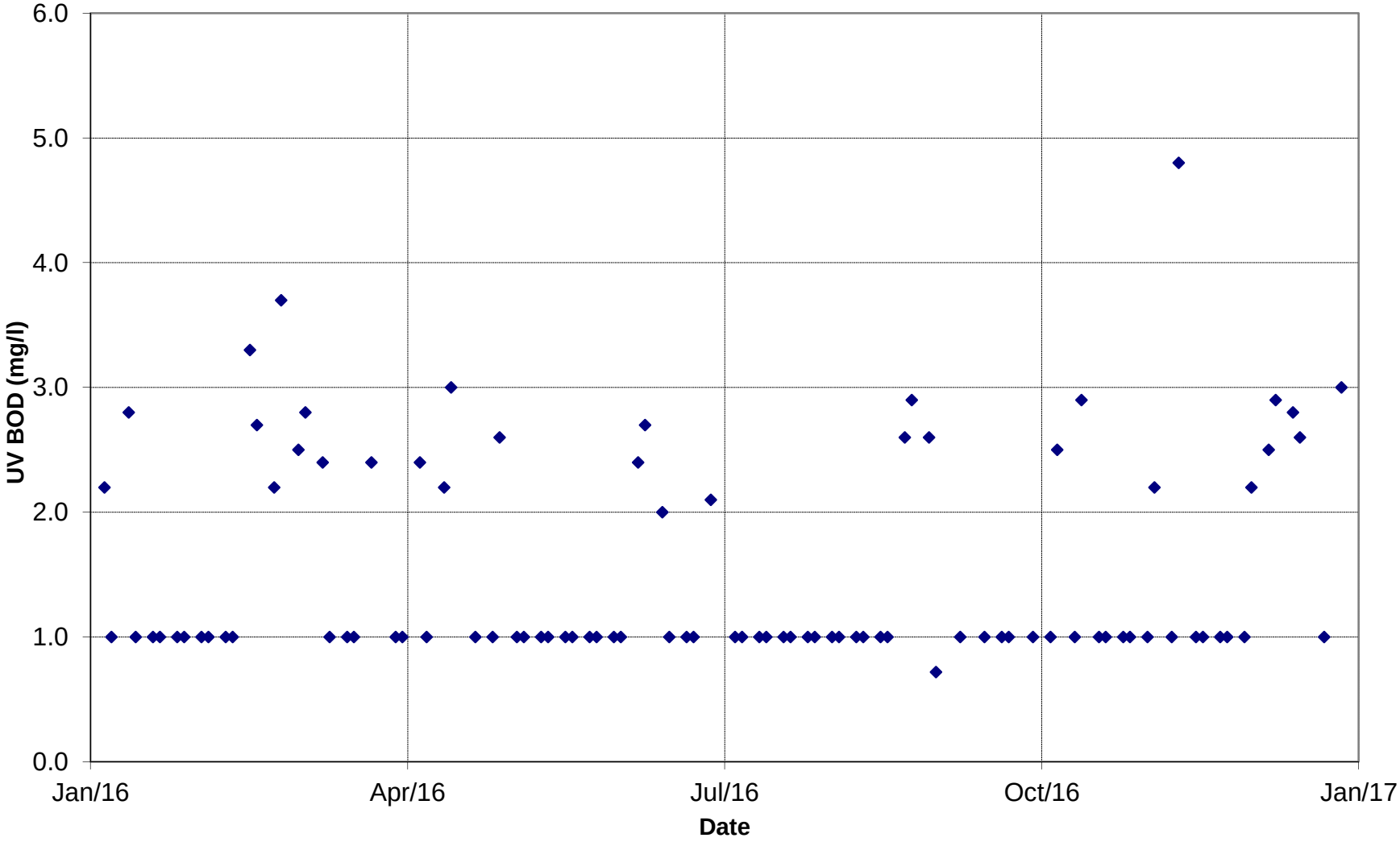
TABLE 12 - ADELAIDE WORK ORDERS 2016

Order Number	Work Order Description	Equipment Description
2357111	REPLACE SLINGS	MECHANICAL DEPT HAND TOOLS
2357288	PURCHASE FILTER MEDIA	2 SECTION AERATION BASIN
2357340	THERMOSTAT NOT WORKING	UNIT HEATER 1A
2357347	REPLACE PILOT LIGHT	2-3 PRIMARY DRIVE
2357348	PILOT LIGHT OUT	2-4 PRIMARY DRIVE
2357350	TECK CABLE PINCHED	2-1 PRIMARY DRIVE
2357491	EFW VALVE LEAK	2 SECTION EFFLUENT WATER
2357777	IMPROVE GURDING	2 SEC SHT TRANSFER PUMP 2
2357996	PM ANNUAL CBB CHAN BASN BLOWER	PRIMARY INLET CHANNEL BLOWER
2358005	PARTIALLY PLUGGED	2 SEC FLUSHING WATER PUMP 1
2358008	IMPROVE GUARDING	RDT SLUDGE FEED PUMP 2
2358354	IMPROVE GUARDING	2 SEC WASTE BOOSTER PUMP 1
2358355	IMPROVE GUARDING	2 SEC WASTE BOOSTER PUMP 2
2358447	DISCHARGE GAUGE ROTTED	2 SEC RETURN PUMP4
2358498	REMOVE FOUL AIR FAN FOR WINTER	2 SECTION SLUDGE DISPOSAL
2358611	VALVE SPLIT ON HOSE BIB	2 SECTION EFFLUENT WATER
2358614	ORDER REPLACEMENT FILTERS	1/2 SEC AERATION BLOWER 2
2358653	REPAIR INTAKE HOODS	SECTION 1 - BLOWERS (ALL)
2359287	REPAIR	2 SEC PSP INLINE CHOPPER
2359304	NO HEAT	MAKE UP AIR UNIT
2359326	REAGENT LINE PLUGGED?	CHEMSCAN WATER QUALITY ANALYS
2359396	UPGRADE GUARDING	2 SEC RETURN PUMP 2
2359403	UPGRADE GUARDING	2 SEC RETURN PUMP 1
2359671	REPLACE EXIT LADDER	ADMINISTRATION BUILDING 1
2359766	BELTS SQUEALING	MAKE AIR UNIT - ROOF TOP
2359910	PM ANNUAL RDT ROTATING DRUM	ROTATING DRUM THICKENER 1
2359911	PM ANNUAL GBM GRIT BASIN MIXER	VORTEX GRIT CHAMBER 1 MIXER
2359912	PM ANNUAL GBM GRIT BASIN MIXER	VORTEX GRIT CHAMBER 2 MIXER
2359913	PM BI- MONTHLY INLINE CHOPPER	2 SEC PSP INLINE CHOPPER
2359914	PM ANNUAL OVERHEAD DOORS	OVERHEAD DOORS
2359947	PM ANNUAL LIFTING DEVICES	OVERHEAD CRANES

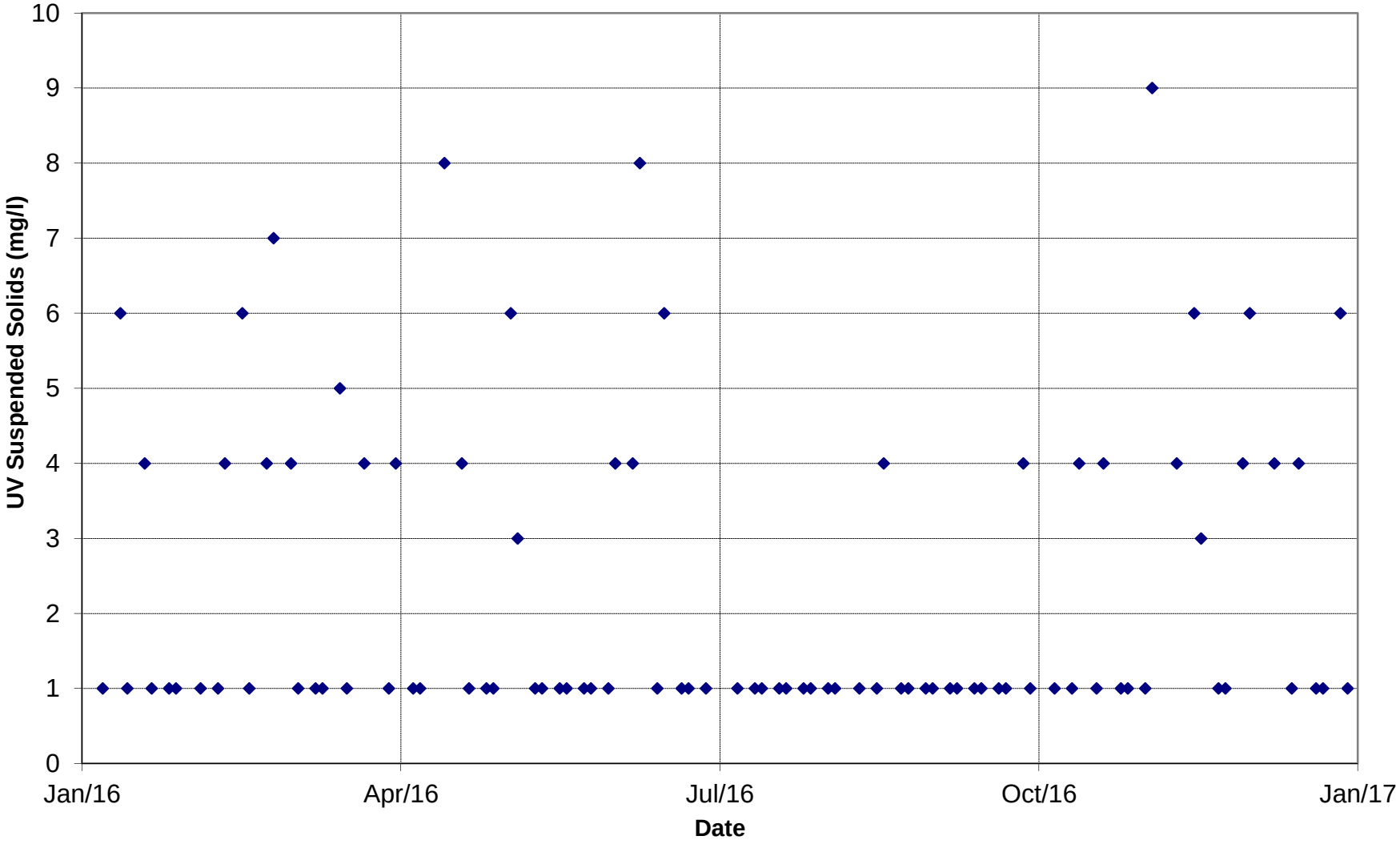
Adelaide Wastewater Treatment Plant: Flow

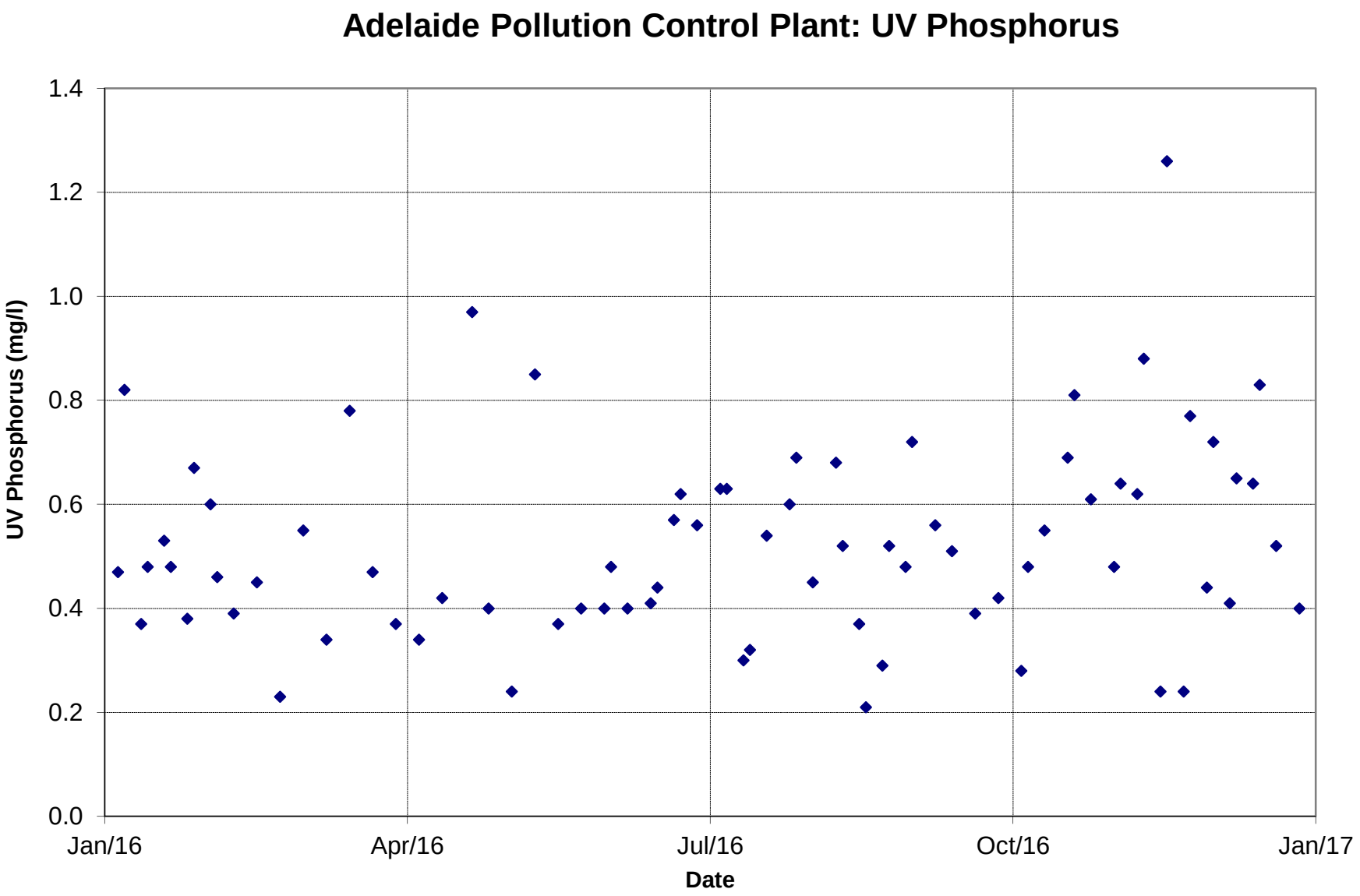


Adelaide Wastewater Treatment Plant: UV BOD

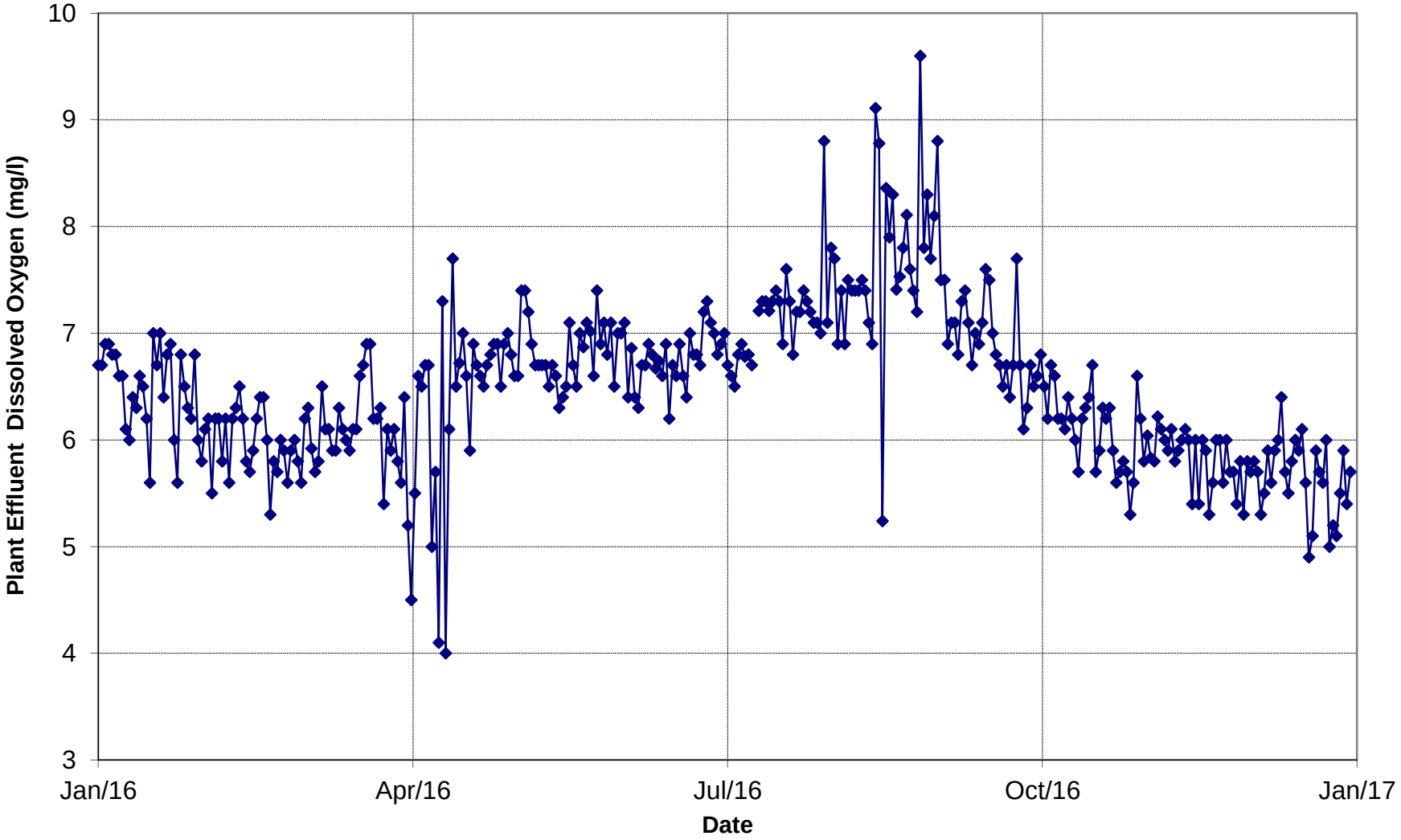


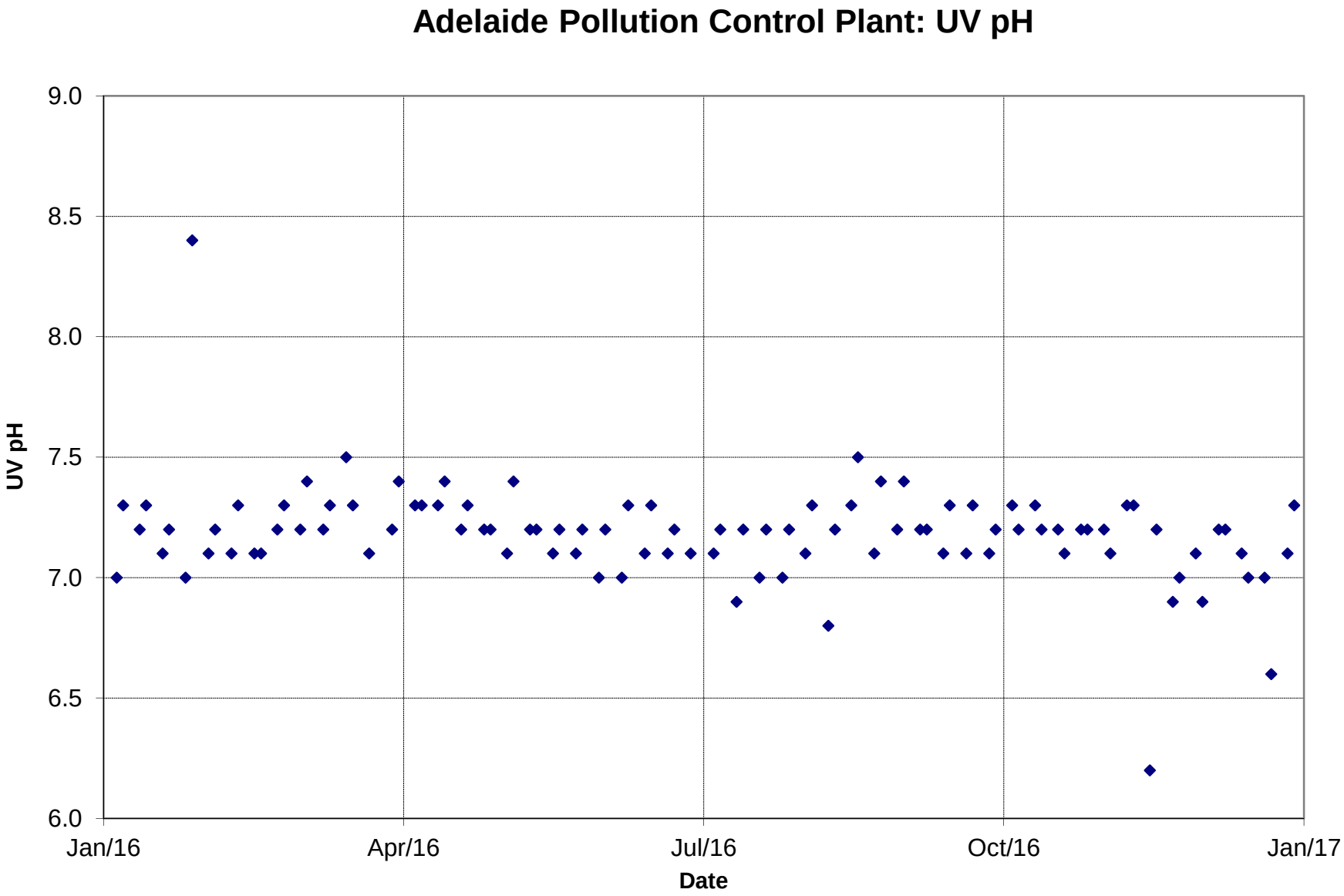
Adelaide Pollution Control Plant: UV Suspended Solids



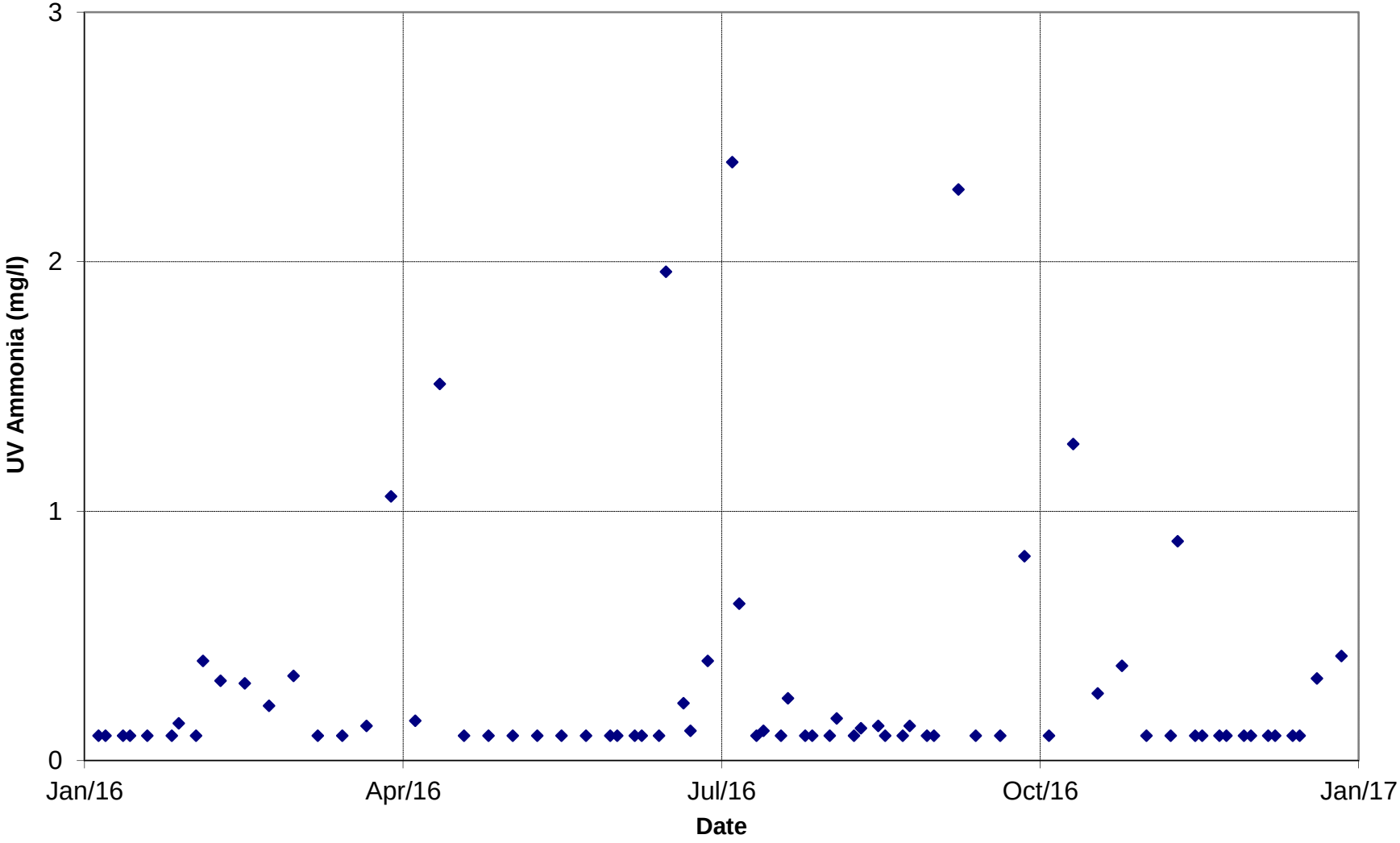

Adelaide Pollution Control Plant: UV Phosphorus
UV Phosphorus (mg/l)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

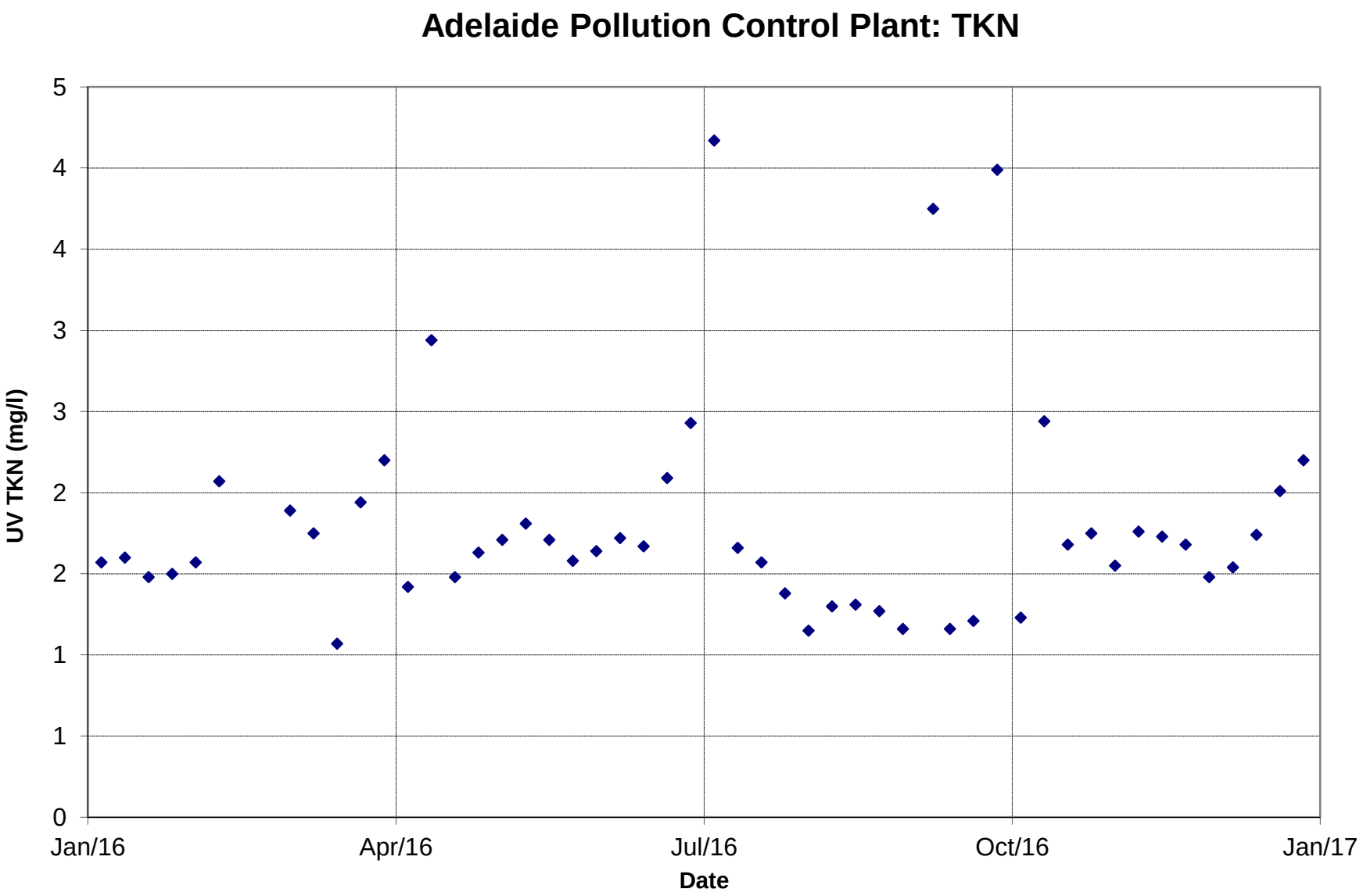
Adelaide Pollution Control Plant: Effluent Dissolved Oxygen

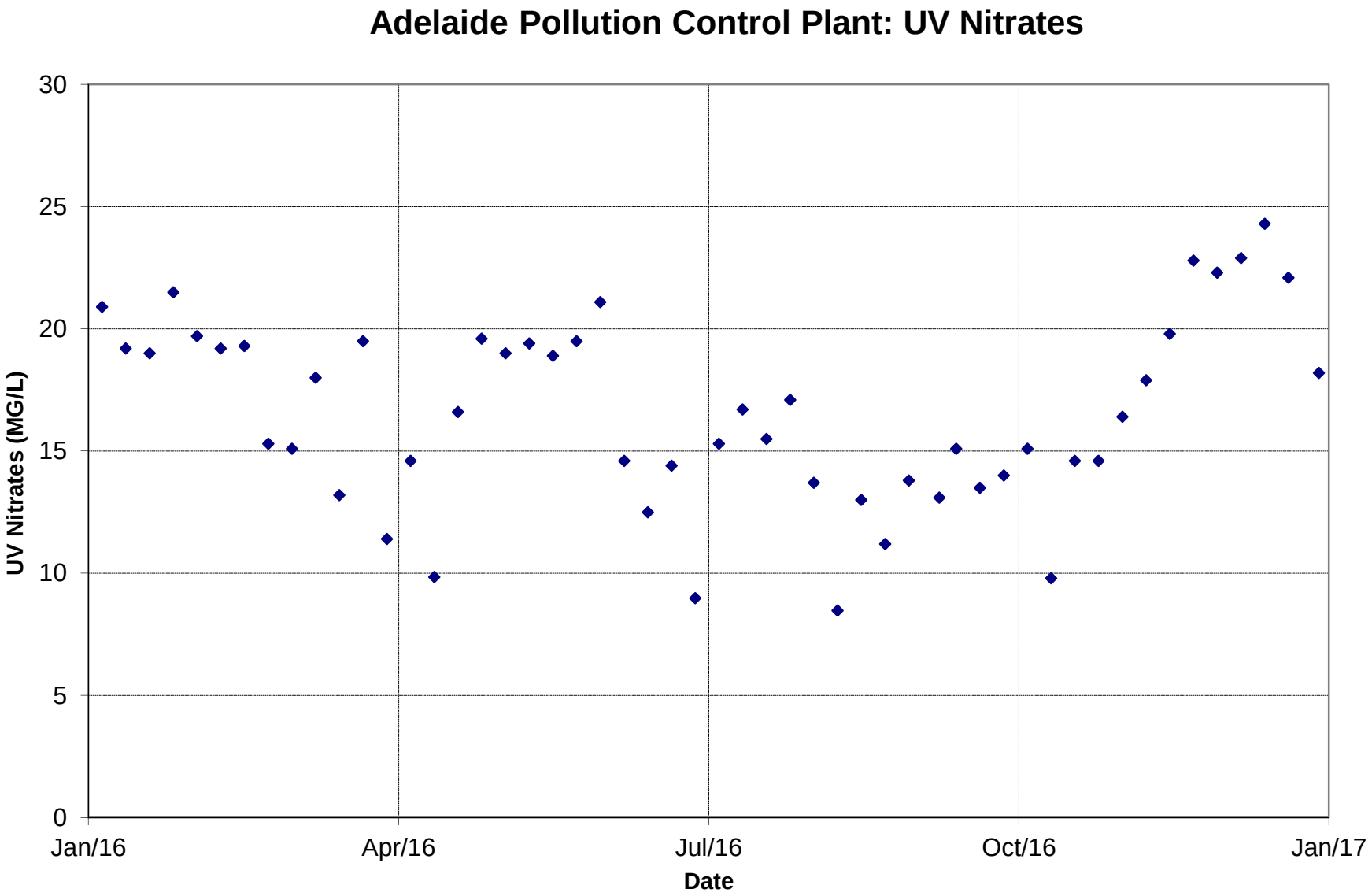


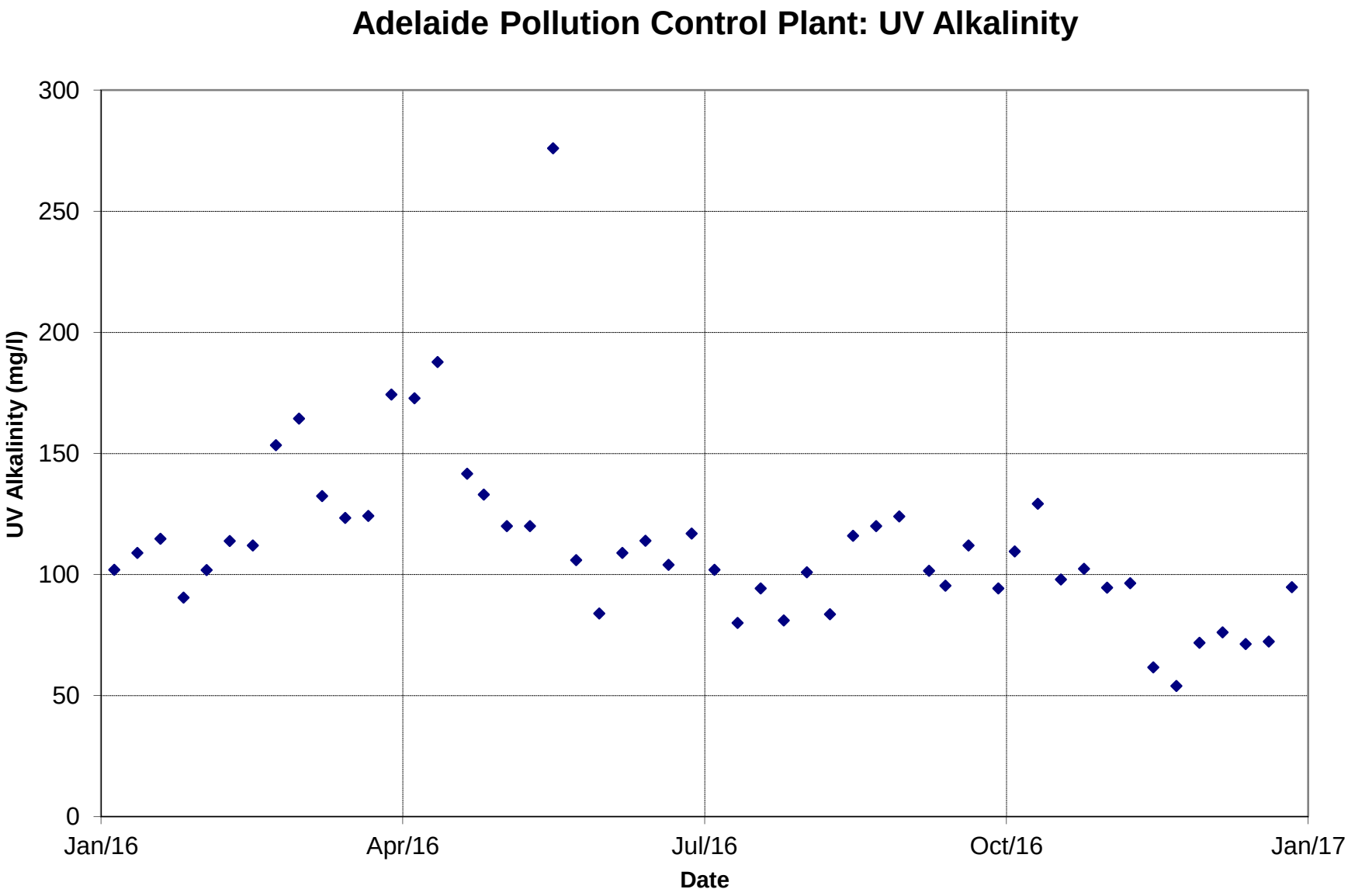

Adelaide Pollution Control Plant: UV pH
9.0
8.5
8.0
7.5
7.0
6.5
6.0
UV pH
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

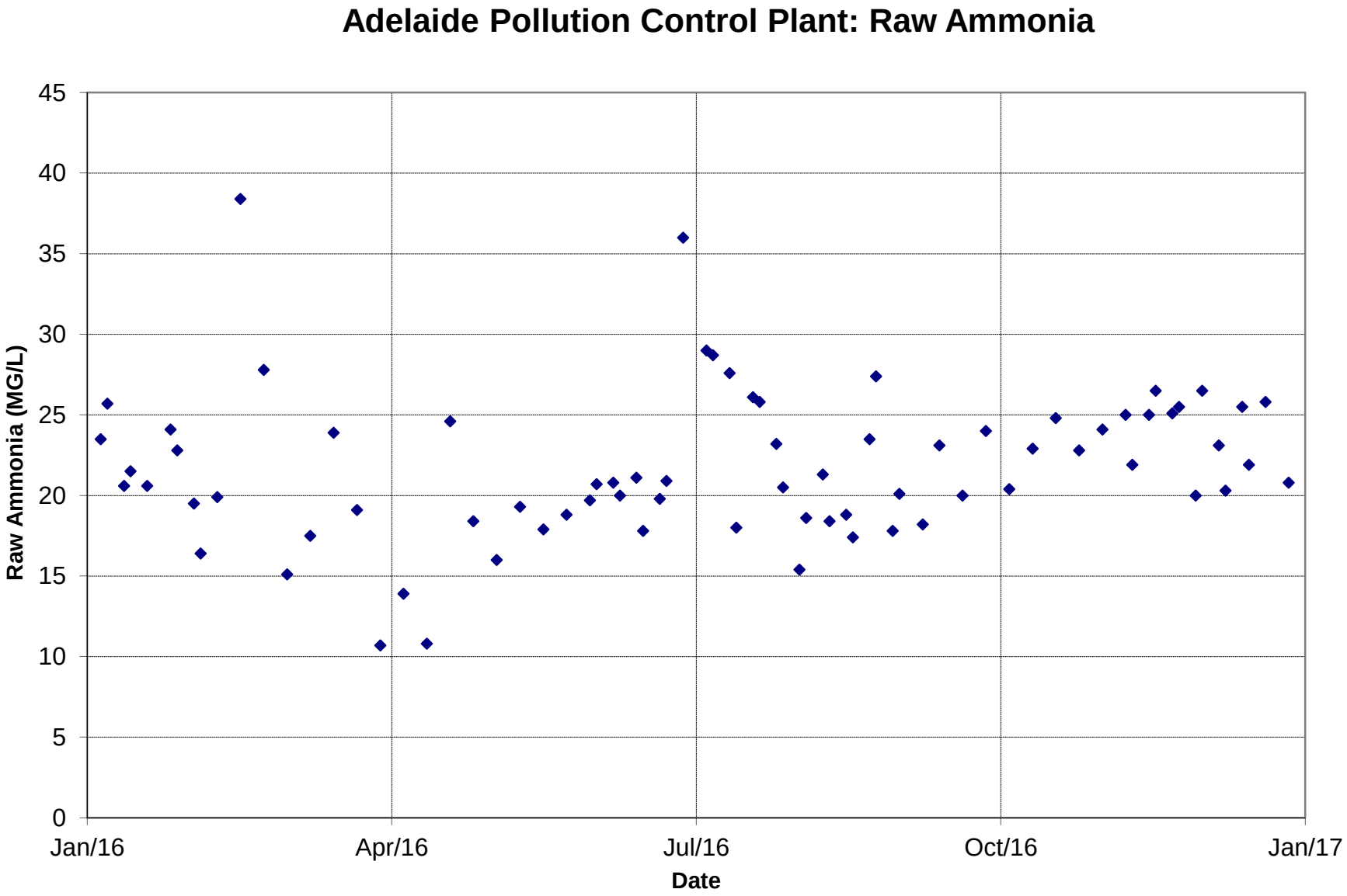
Adelaide Pollution Control Plant: UV Ammonia

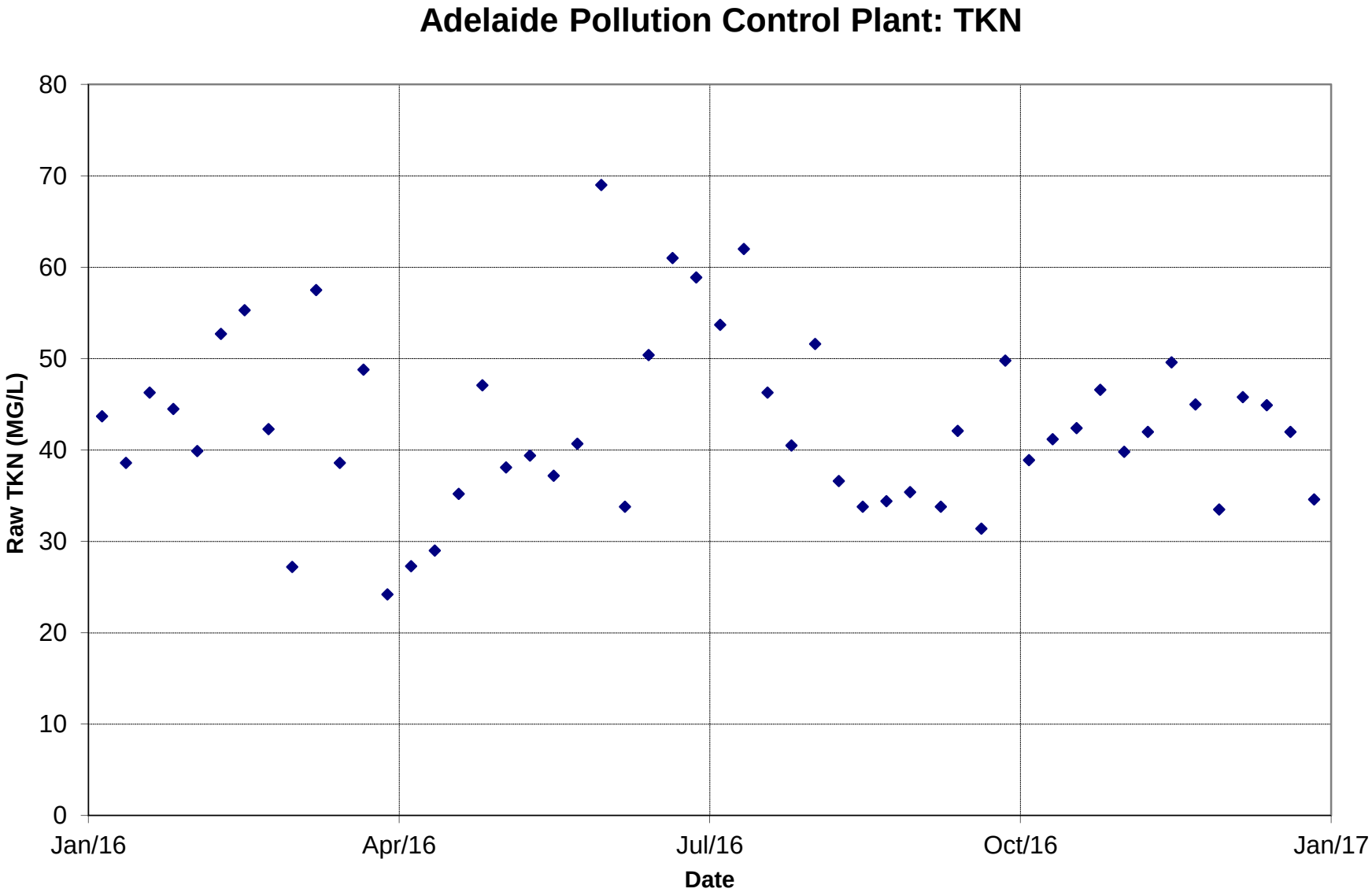


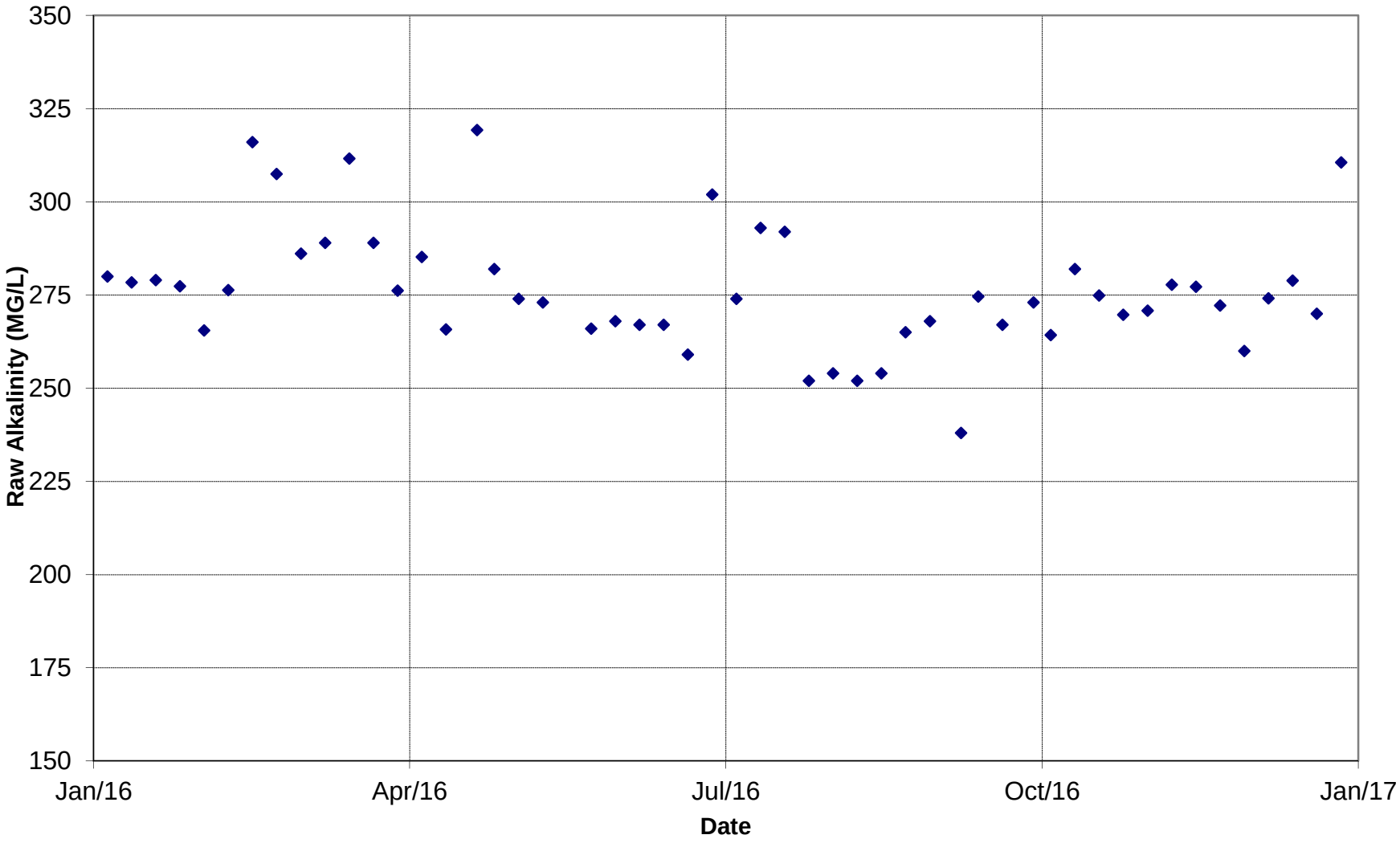

Adelaide Pollution Control Plant: TKN
UV TKN (mg/l)
5
4
4
3
3
2
2
1
1
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

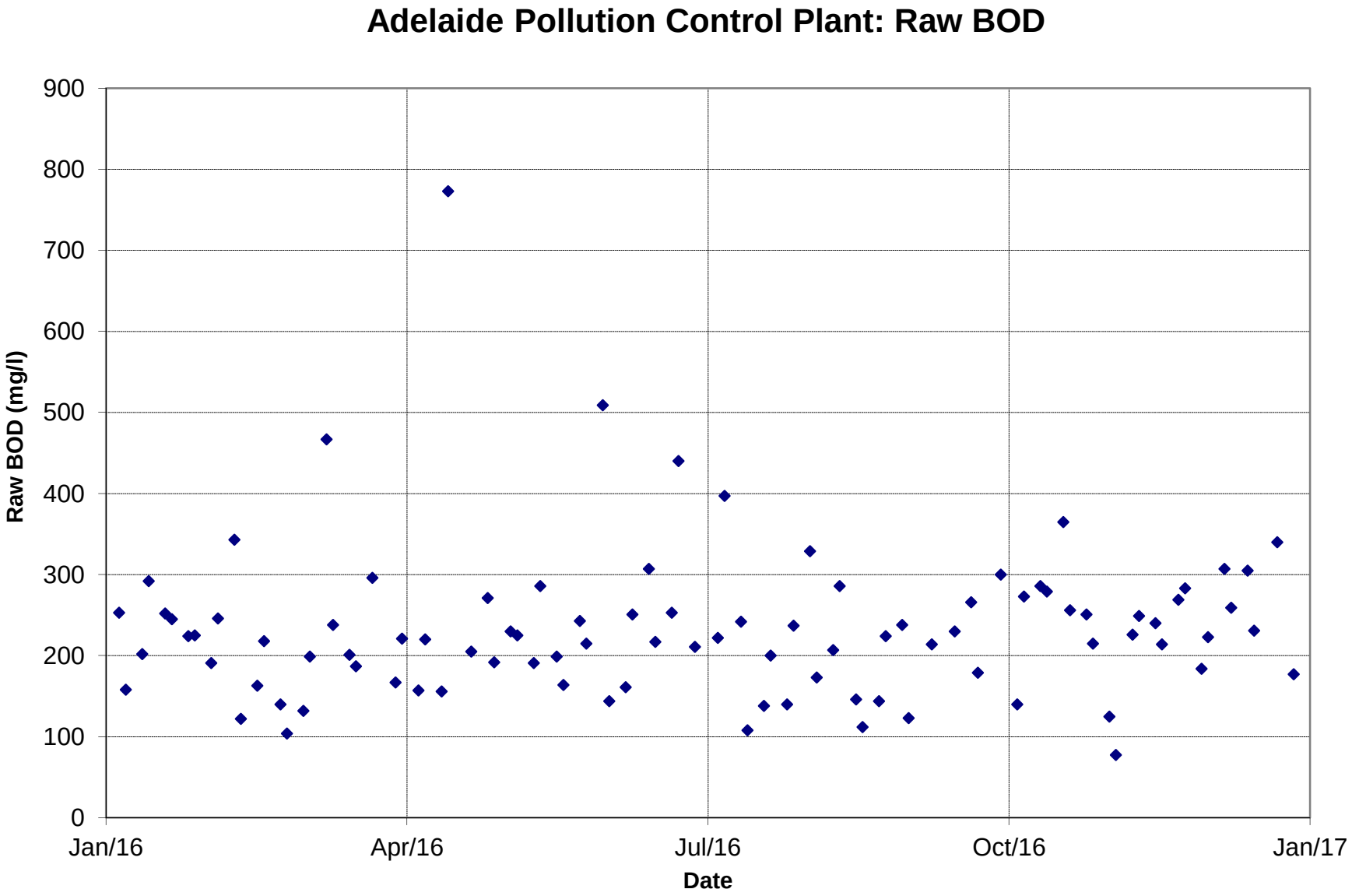

Adelaide Pollution Control Plant: UV Nitrates
UV Nitrates (MG/L)
30
25
20
15
10
5
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

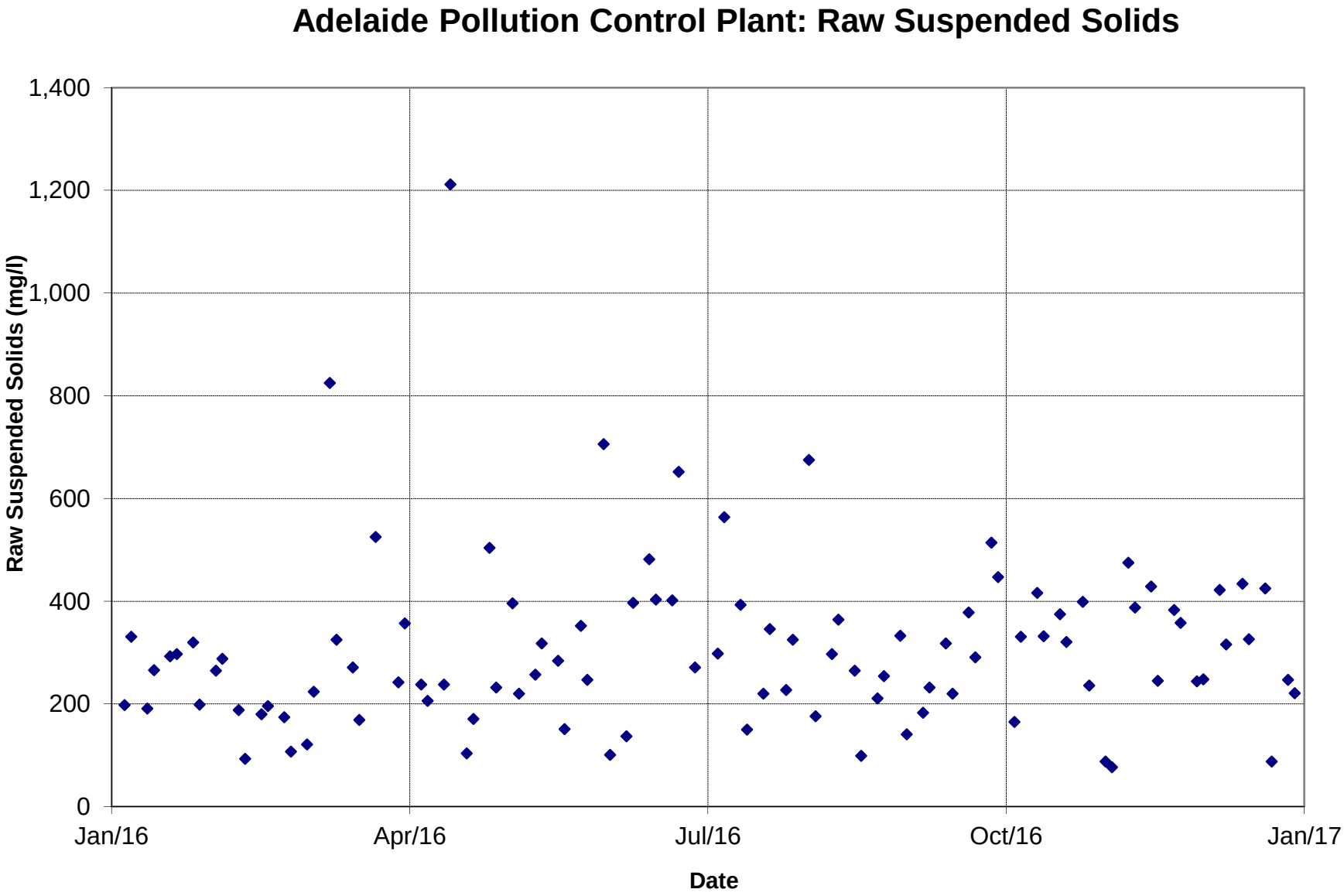

Adelaide Pollution Control Plant: UV Alkalinity
UV Alkalinity (mg/l)
300
250
200
150
100
50
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

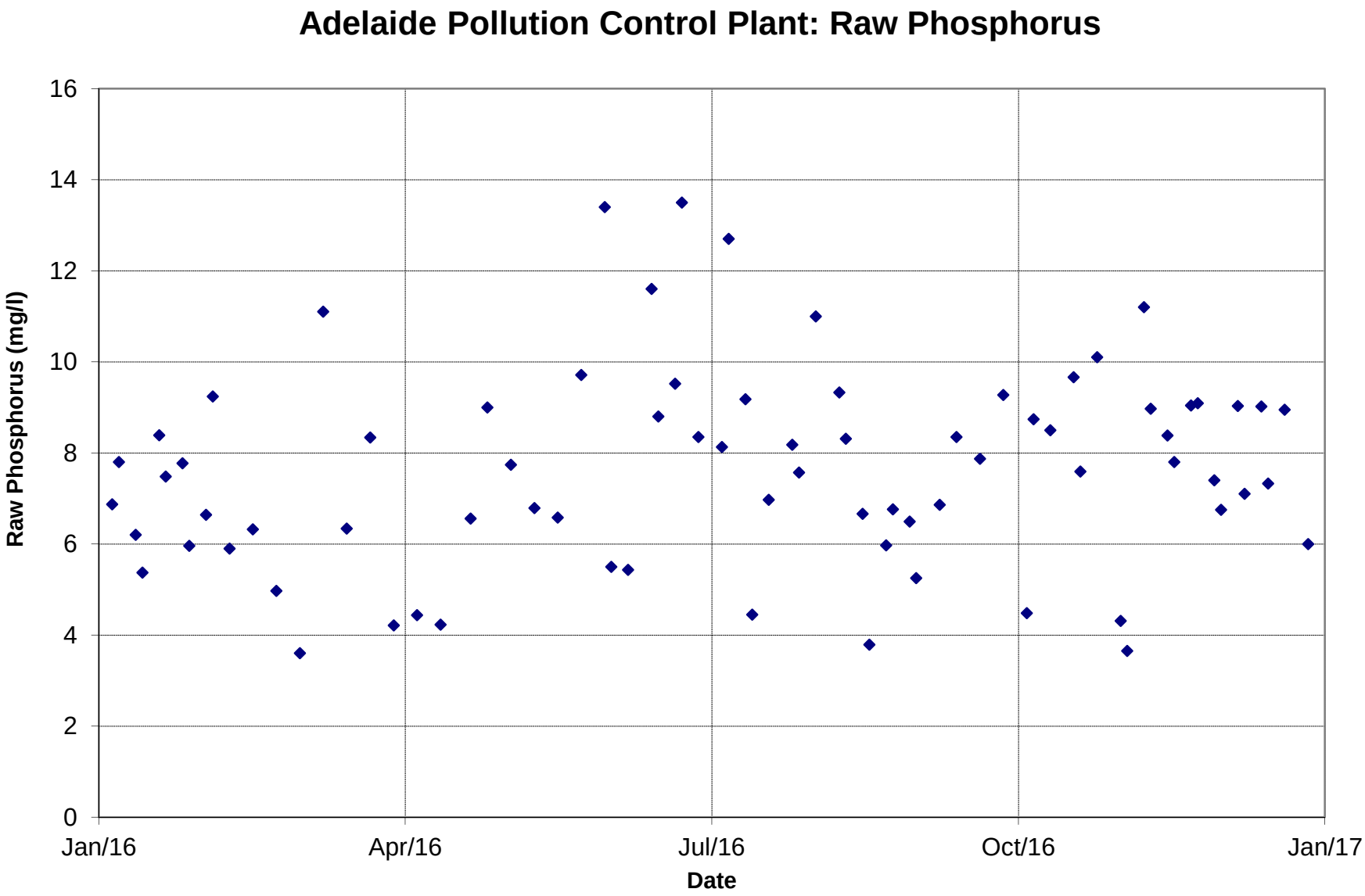

Adelaide Pollution Control Plant: Raw Ammonia
Raw Ammonia (MG/L)
45
40
35
30
25
20
15
10
5
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

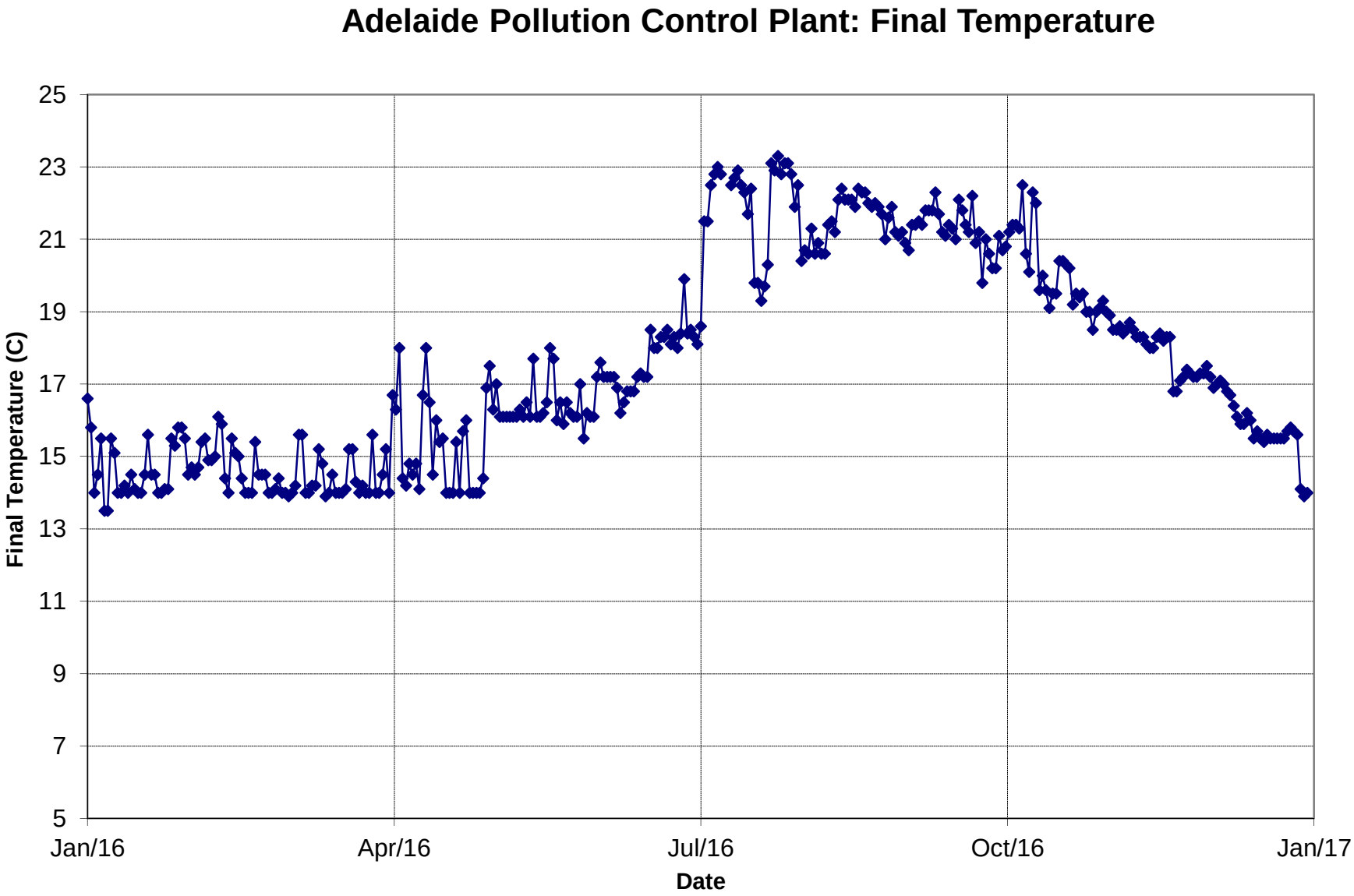

Adelaide Pollution Control Plant: TKN
Raw TKN (MG/L)
80
70
60
50
40
30
20
10
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

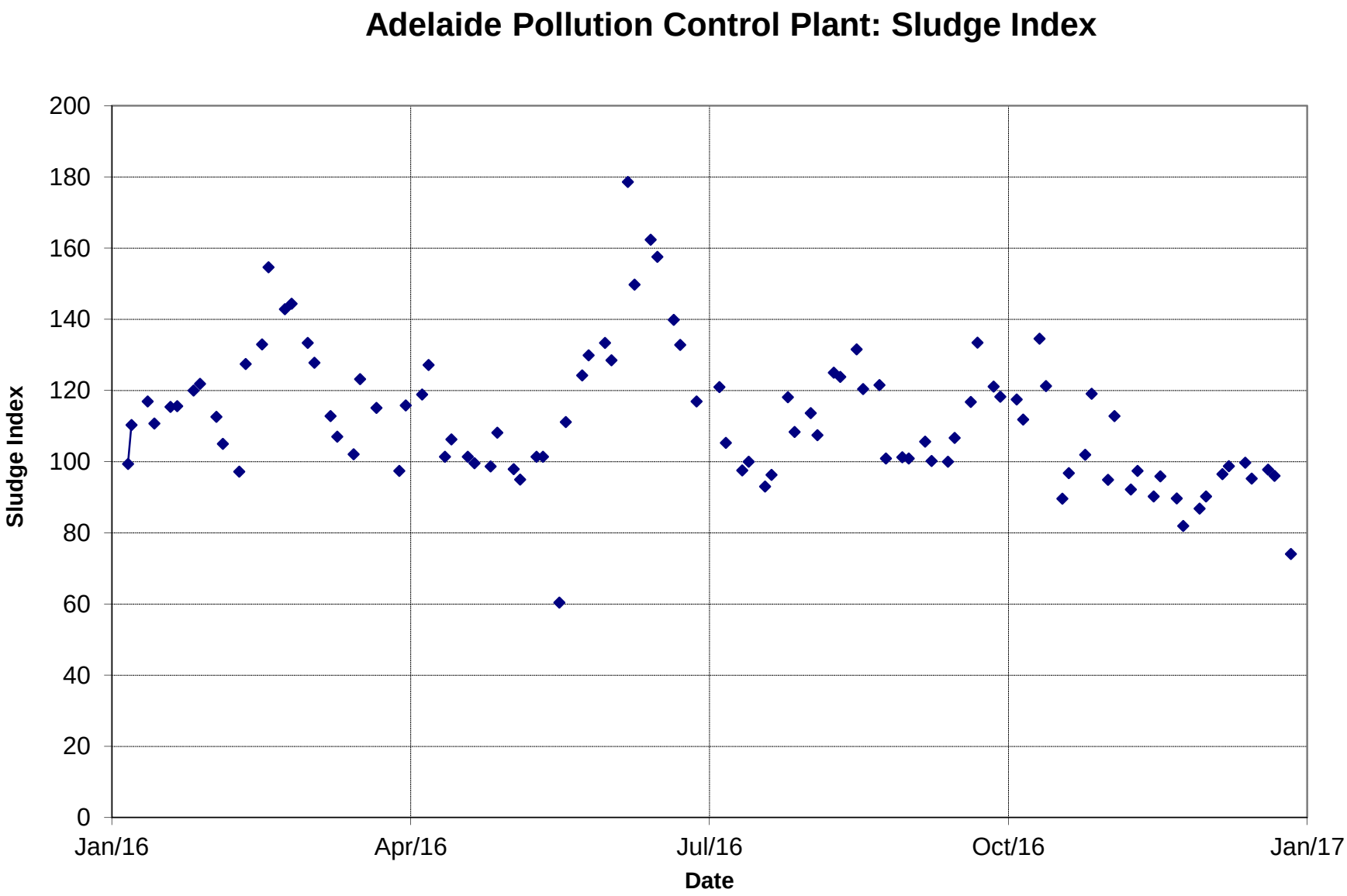

Adelaide Pollution Control Plant: Raw Alkalinity
Raw Alkalinity (MG/L)
350
325
300
275
250
225
200
175
150
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

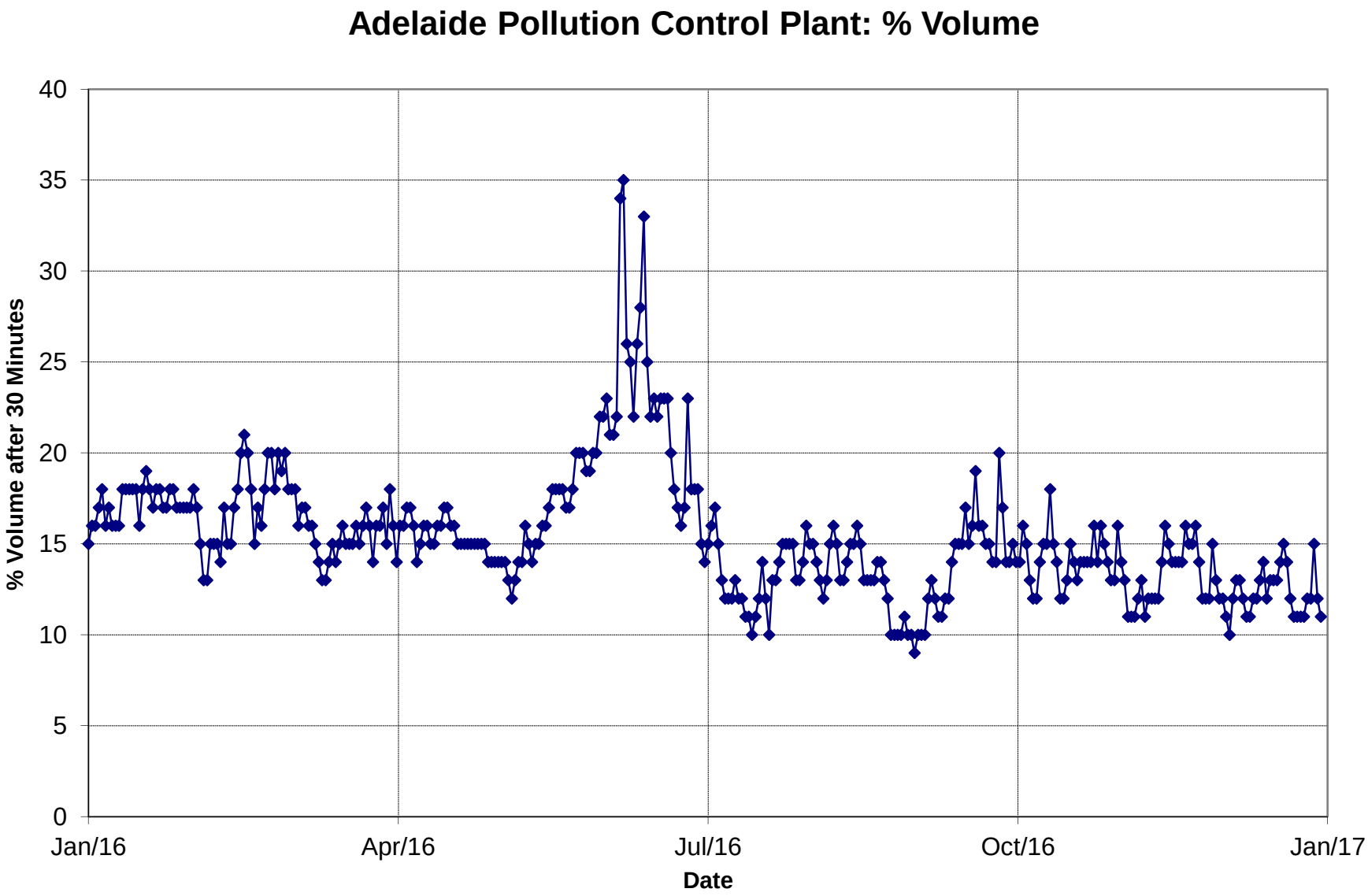

Adelaide Pollution Control Plant: Raw BOD
Raw BOD (mg/l)
900
800
700
600
500
400
300
200
100
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

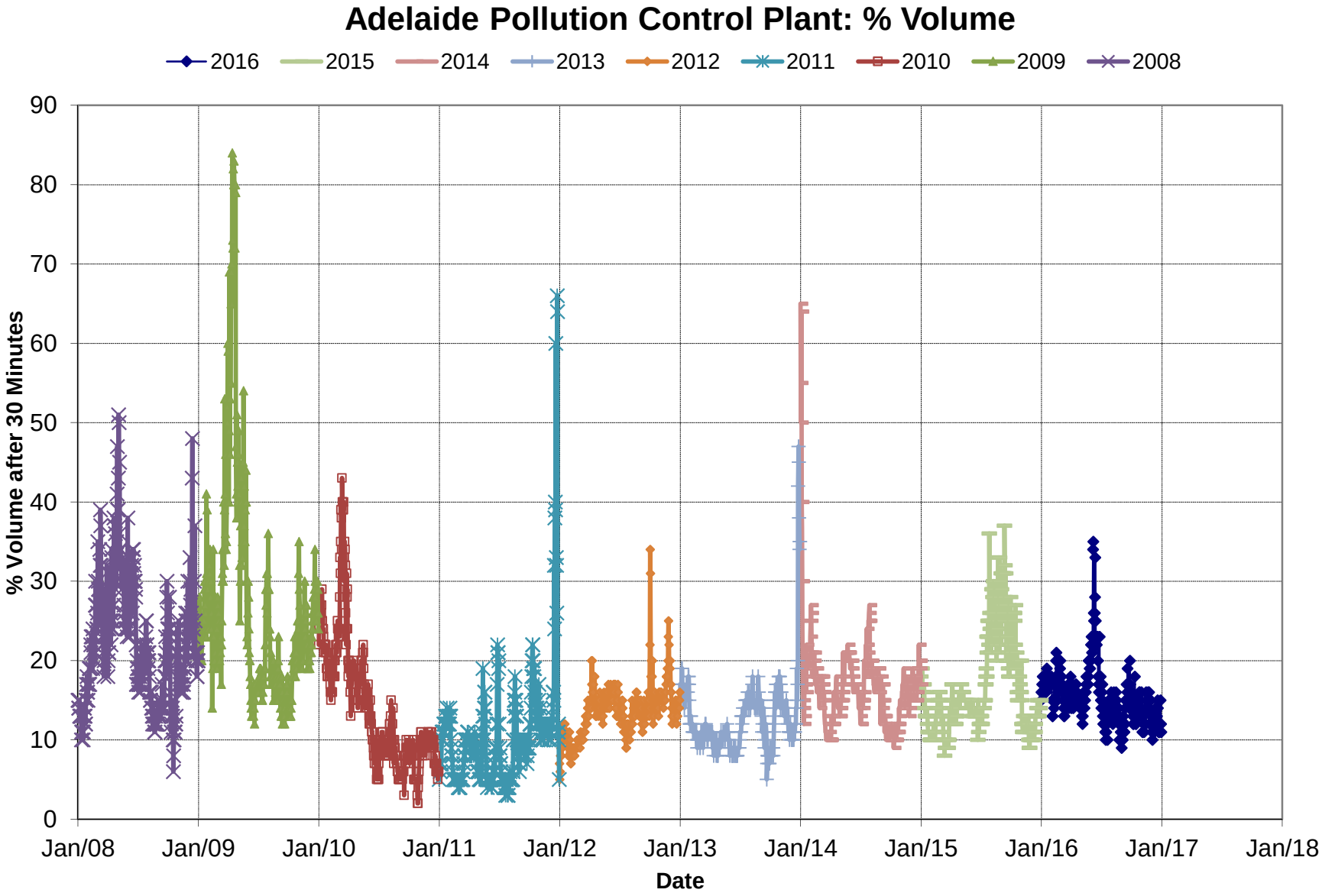

Adelaide Pollution Control Plant: Raw Suspended Solids
Raw Suspended Solids (mg/l)
1,400
1,200
1,000
800
600
400
200
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

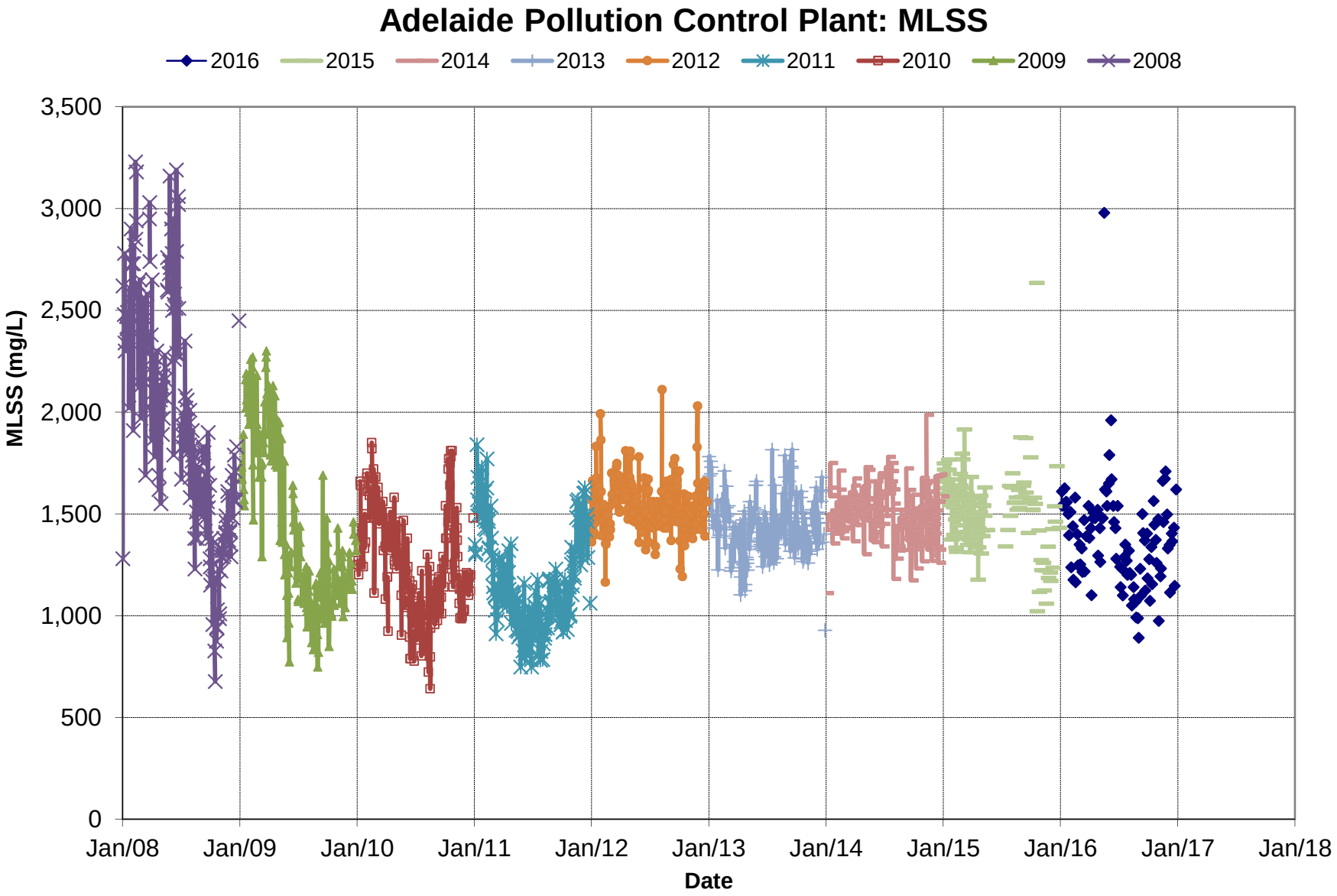

Adelaide Pollution Control Plant: Raw Phosphorus
Raw Phosphorus (mg/l)
16
14
12
10
8
6
4
2
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

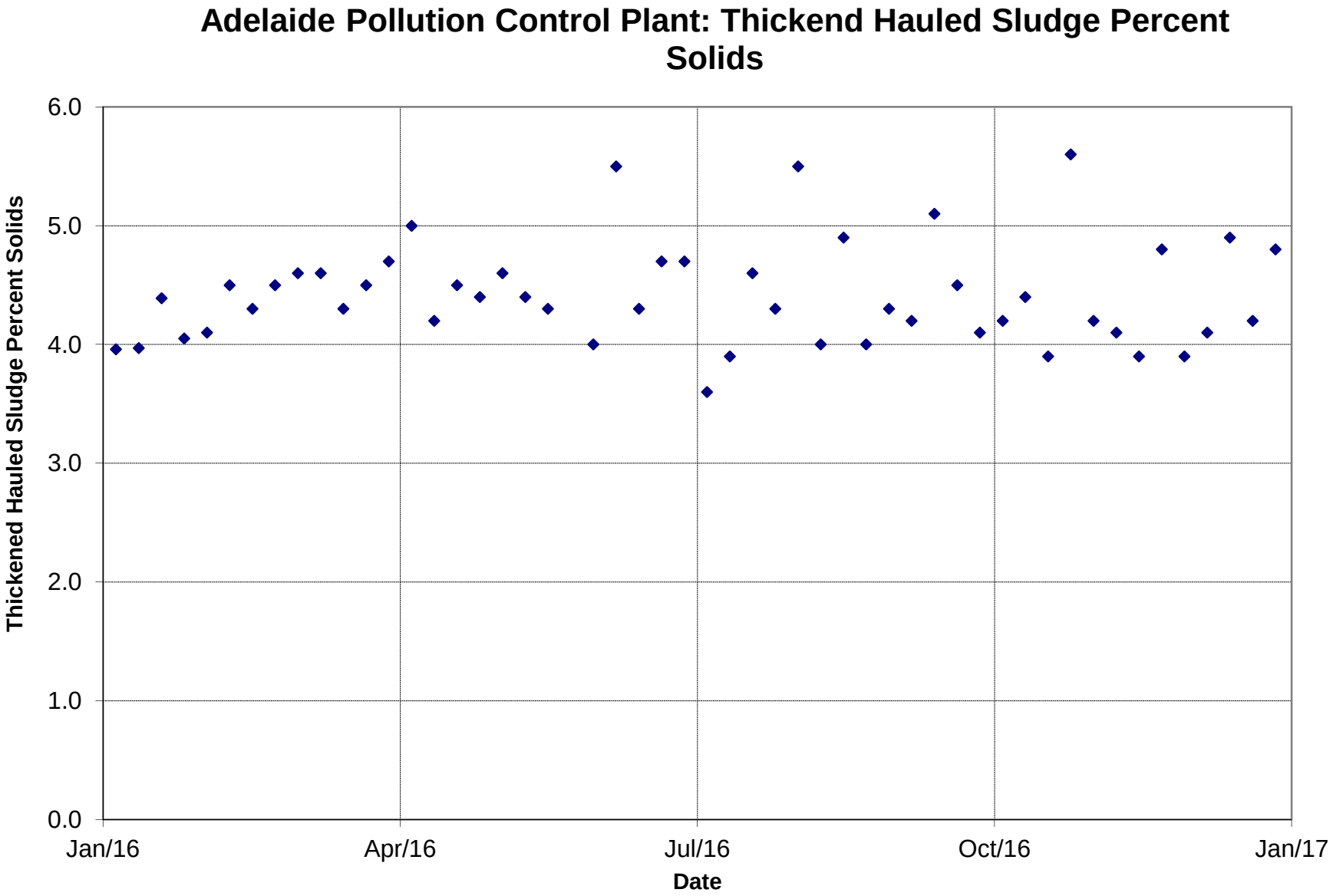

Adelaide Pollution Control Plant: Final Temperature
Final Temperature (C)
25
23
21
19
17
15
13
11
9
7
5
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date


Adelaide Pollution Control Plant: Sludge Index
Sludge Index
200
180
160
140
120
100
80
60
40
20
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

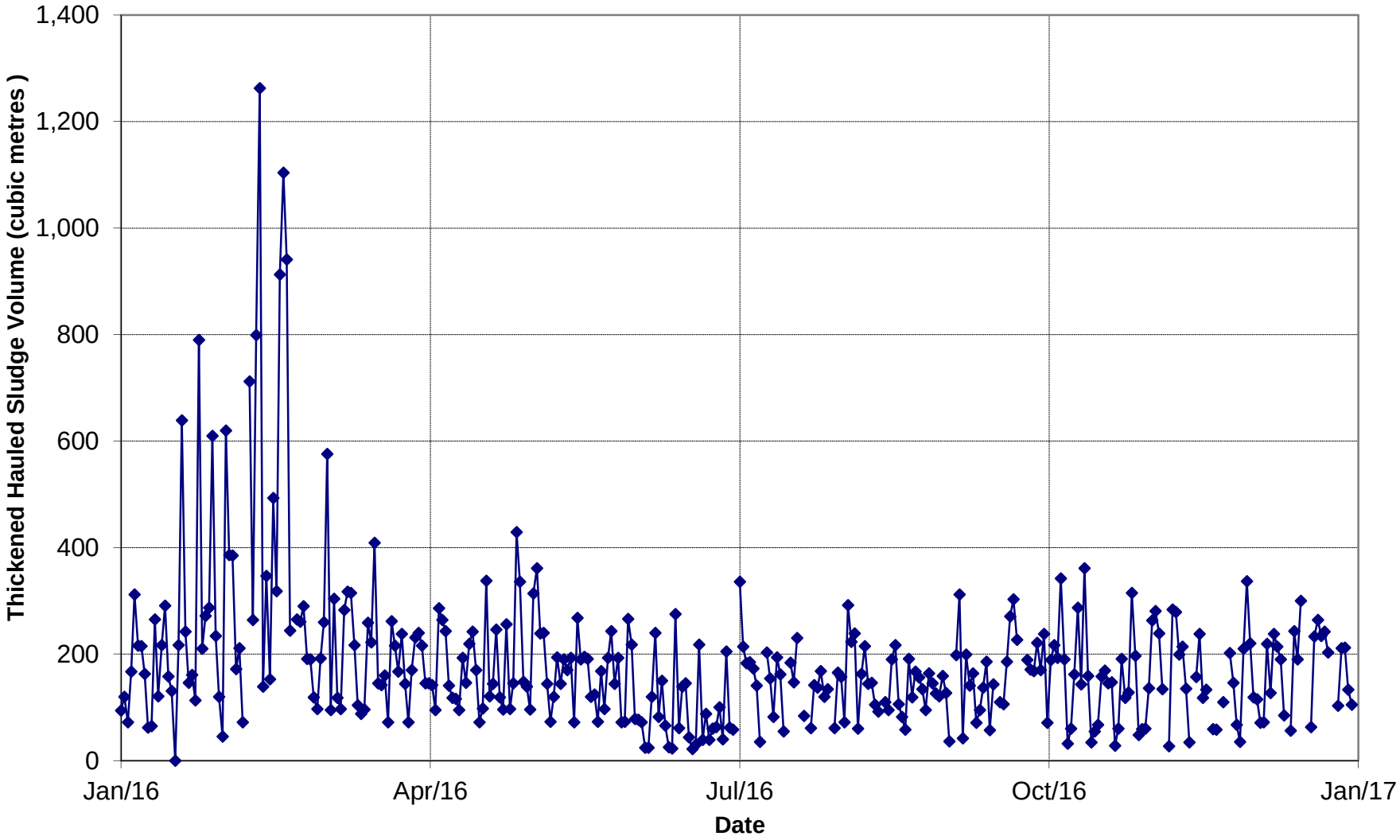

Adelaide Pollution Control Plant: % Volume
% Volume after 30 Minutes
40
35
30
25
20
15
10
5
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date


Adelaide Pollution Control Plant: % Volume
2016
2015
2014
2013
2012
2011
2010
2009
2008
% Volume after 30 Minutes
0
10
20
30
40
50
60
70
80
90
Jan/08
Jan/09
Jan/10
Jan/11
Jan/12
Jan/13
Jan/14
Jan/15
Jan/16
Jan/17
Jan/18
Date

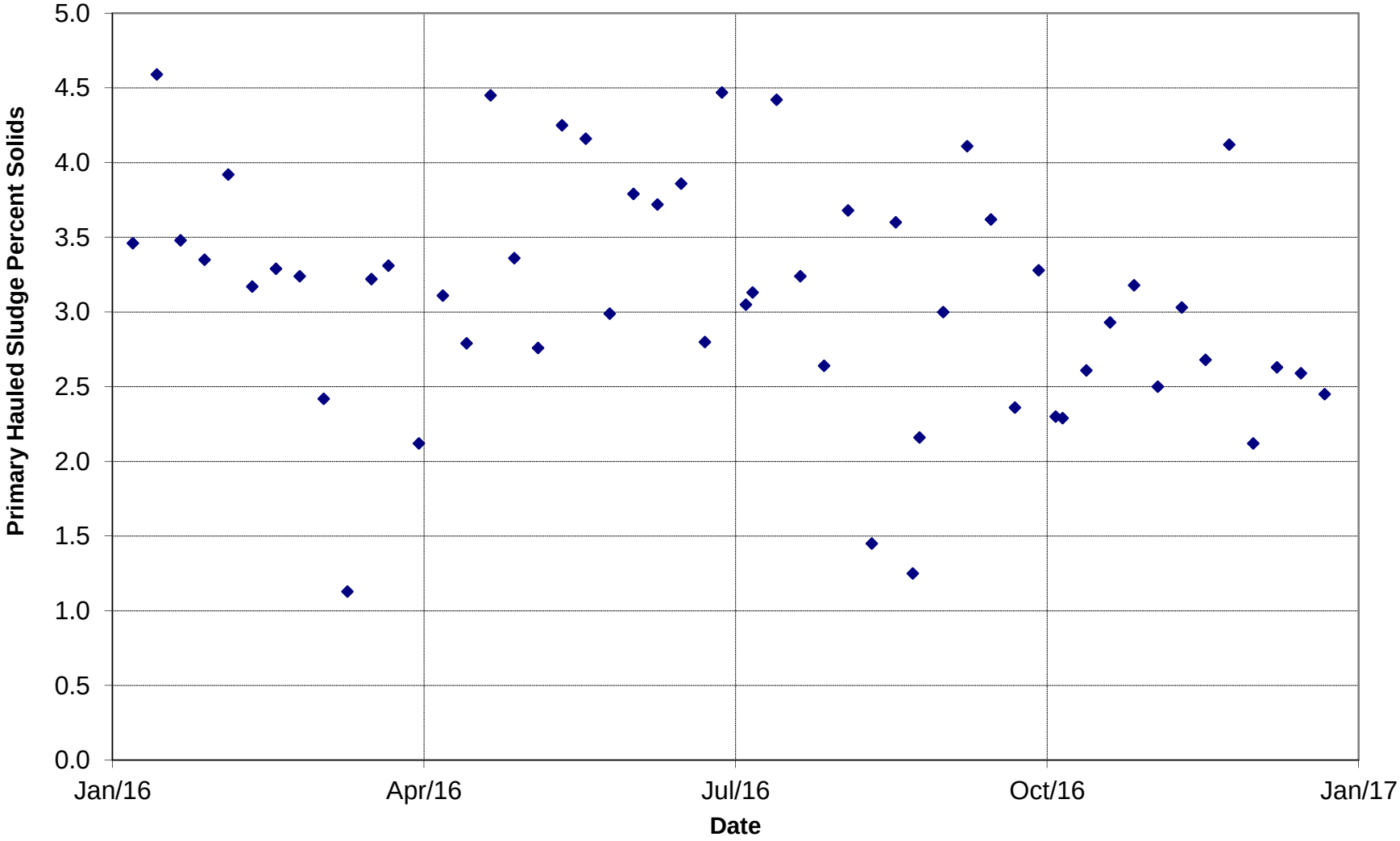

Adelaide Pollution Control Plant: MLSS
2016
2015
2014
2013
2012
2011
2010
2009
2008
3,500
3,000
2,500
2,000
1,500
1,000
500
0
MLSS (mg/L)
Jan/08
Jan/09
Jan/10
Jan/11
Jan/12
Jan/13
Jan/14
Jan/15
Jan/16
Jan/17
Jan/18
Date

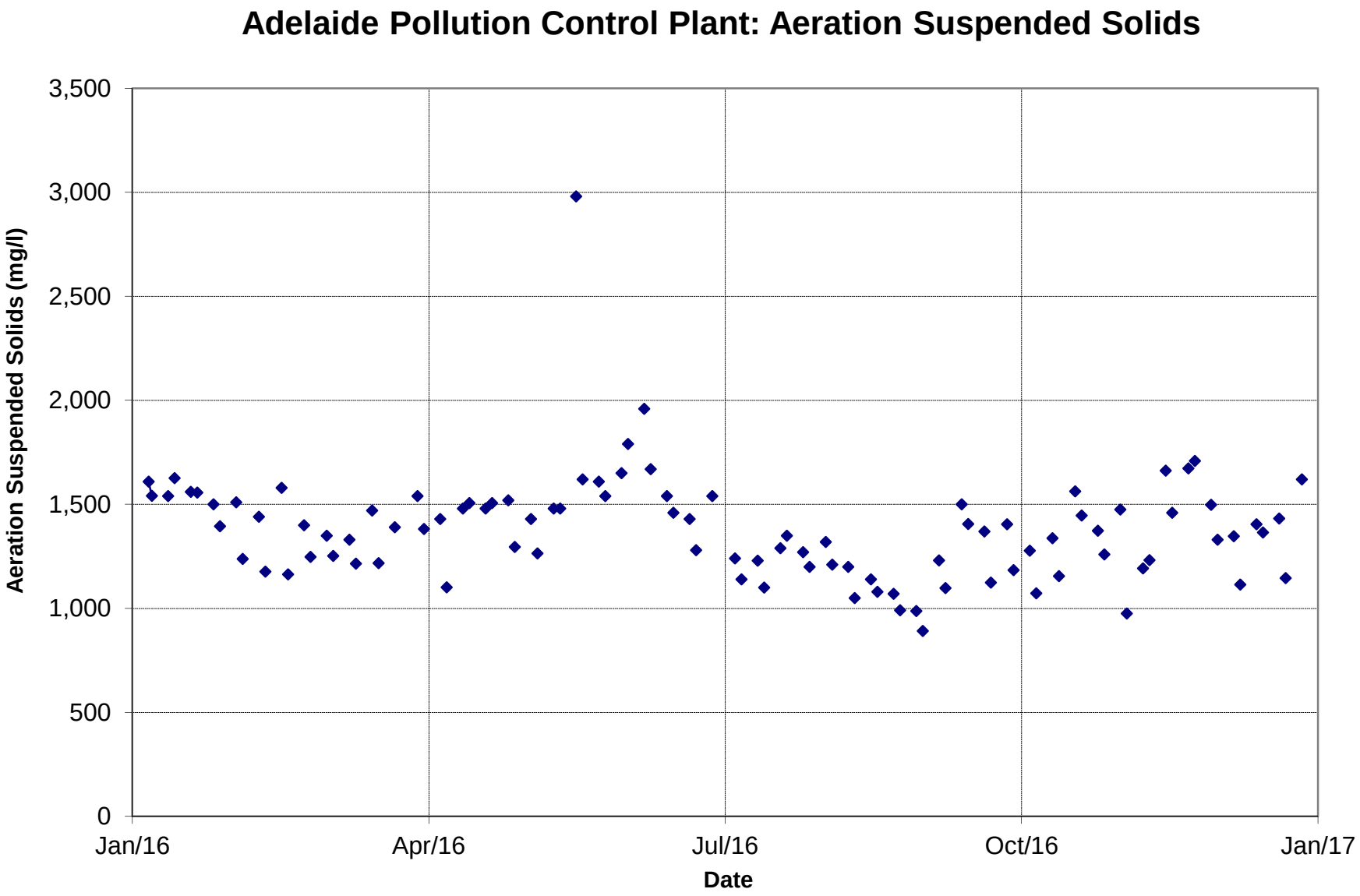

Adelaide Pollution Control Plant: Thickend Hauled Sludge Percent Solids
Thickened Hauled Sludge Percent Solids
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date

Adelaide Pollution Control Plant: Thickend Hauled Sludge Volume



Adelaide Pollution Control Plant: Primary Hauled Percent Solids




Adelaide Pollution Control Plant: Aeration Suspended Solids
Aeration Suspended Solids (mg/l)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Jan/16
Apr/16
Jul/16
Oct/16
Jan/17
Date