

Interim Environmental ReportPeriod Ending: 13th May 2009

Compiled By: Siobhán Quinn & Aoife Reynolds

Approved By: Tony Doyle

1 Monitoring Data

1.1 Monitoring Equipment

Axonics	– Axonics plant operated as required during the reporting period.
PO4	<ul style="list-style-type: none"> – The PO4 analyser was operational for the majority of the reporting period. However on the 10th of May the analyser mal-functioned and stopped operating. The technical error is currently being reconciled. – The composite sampler was in place to cover any shortfalls in the PO4 analyser.
TSS	– The TSS analyser was operational during the reporting period.
Composite	<ul style="list-style-type: none"> – The composite sampler was operational during the reporting period. – Where there is loss of continuous monitoring data due to instrument faults or other issues composite sample data is provided on the graphs.
Noise	– There is a single noise monitoring location currently being used – N1.
Vibration	– There is a single vibration monitoring location currently being used – V1.
Sondes	<ul style="list-style-type: none"> – The results are displayed graphically. <ul style="list-style-type: none"> ○ Any unusual values are explained on the relevant graph.
Weather Station	– The data used for this reporting period was taken from the on-site meteorological station.
Weirs	<ul style="list-style-type: none"> – Weirs were operational during the reporting period. – Weirs re-set on 28th of April. Reading error may have been caused by an electrical surge.

1.2 Rainfall Data

30/04/2009	0.000	07/05/2009	11.200
01/05/2009	15.800	08/05/2009	17.400
02/05/2009	3.200	09/05/2009	3.600
03/05/2009	1.400	10/05/2009	0.200
04/05/2009	6.400	11/05/2009	0.000
05/05/2009	11.200	12/05/2009	0.000
06/05/2009	14.000	13/05/2009	1.600
Total Rainfall 86.000mm			

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1.3 Summary

Environment	Comments
Surface Water	There were no exceedances during the reporting period.
Groundwater	The groundwater data (Sonde) is within anticipated ranges.
Dust	Dust results are all within limits.
Weather	There was a total of 86.00mm of rainfall during the reporting period, with a temperature range of 1.9°C to 12.5 °C.
Noise	All noise levels were within the set limits. Where values were affected by high wind speeds it is indicated on the table.
Vibration	No vibration exceedances were recorded during the reporting period, based on available results.

Note: All laboratory data generated on site should be considered indicative only.

2 Environmental Exceedances / Incidents / Complaints

No exceedances during the reporting period.

Surface Water Monitoring Record Sheet: Accredited Laboratory Results

	Date	Cond. μS/cm	Temp °C	Turbidity NTU	DO % Sat	pH pH units	TSS mg l ⁻¹	Ortho-phosphate as P μg l ⁻¹	Nitrate as N mg l ⁻¹	Nitrate as NO ₃ mg l ⁻¹	Total Phosphorus as P mg l ⁻¹	Ammonia as NH ₃ -N mg l ⁻¹	Nitrite as NO ₂ mg l ⁻¹	Aluminium (dissolved) μg l ⁻¹	Aluminium (total) μg l ⁻¹	Phosphate as PO ₄ -P mg l ⁻¹	TDS mg l ⁻¹
Action Limits		400		150		<3.5 or >7.5	25	40	1.5	4.0		0.2	0.025	100	135		
Target Limits		500		200		<3 or >8	35	70	2.6	6.0		0.5	0.05	150	200		
SP1	30/04/2009	255		3.5		7.4	<2	<10		<0.44	0.043	0.03	<0.017	I.P.	I.P.	<0.03	135
SP3	30/04/2009	315		1.6		7.3	<2	<10		<0.44	0.019	0.01	<0.017	I.P.	I.P.	<0.03	165
SP1	05/05/2009	254		4.3		6.9	<2	<10		<0.44	0.032	0.07	<0.017	I.P.	I.P.	0.03	135
SP3	05/05/2009	294		2.2		7.0	<2	<10		<0.44	0.020	0.02	<0.017	I.P.	I.P.	0.04	154
SP1	12/05/2009	I.P.		I.P.		I.P.	I.P.	I.P.		I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
SP3	12/05/2009	I.P.		I.P.		I.P.	I.P.	I.P.		I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
Additional Monitoring																	
Axonics Monitoring																	
Pre Axonics	30/04/2009	322		99.9		7.3	132	<10		1.04	0.032	0.08	0.02	I.P.	I.P.	<0.03	170
Post Axonics	30/04/2009	344		0.2		7.7	<2	<10		0.91	0.017	0.01	0.03	I.P.	I.P.	<0.03	177
Pre Axonics	05/05/2009	I.P.		I.P.		I.P.	I.P.	I.P.		I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
Post Axonics	05/05/2009	I.P.		I.P.		I.P.	I.P.	I.P.		I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
Pre Axonics	12/05/2009	I.P.		I.P.		I.P.	I.P.	I.P.		I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
Post Axonics	12/05/2009	I.P.		I.P.		I.P.	I.P.	I.P.		I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.	I.P.
I.P. = In Progress < LOD = Below Limit of Detection > LOD = Above Limit of Detection On site laboratory results included in Appendix 1 Grey shaded areas denote parameters that cannot or were not analysed on-site or the lab.																	

Groundwater Monitoring Record Sheet

[illegible]

Graphs provided for MP1, MP2, MP4, MP6 and MP7: Temperature, Conductivity, and pH.

No Groundwater Monitoring Undertaken During The Reporting Period.

Day Time Noise Monitoring Record Sheet

Determinant Results

Location	Air Temp. (Min)	Air Temp. (Max)	Start Date	Time	Duration	Serial No.	Wind		Results dB			*Comments
							Speed (m/s)*	Direction (Degrees)	L _{Aeq}	L _{Amax}	L _{Amin}	
Action Limit									60			
Target Limit									65			
N1	4.9	13.2	30/04/2009	08:00:00	14:00:00	2539533	3.2	259.7	I.P.	I.P.	I.P.	
N1	7.1	12.3	01/05/2009	08:00:00	14:00:00	2539533	6.3	216.2	52.6	81.5	38.6	
N1	5.8	12.7	02/05/2009	08:00:00	14:00:00	2539533	4.4	234.8	50.8	77.4	35.1	
N1	4.0	11.6	03/05/2009	08:00:00	14:00:00	2539533	4.0	269.7	46.7	76.6	32.7	
N1	8.7	11.6	04/05/2009	08:00:00	14:00:00	2539533	6.1	253.2	49.0	74.0	34.9	Values impacted by high wind speeds
N1	9.8	11.4	05/05/2009	08:00:00	14:00:00	2539533	6.5	243.6	52.7	78.2	42.6	Values impacted by high wind speeds
N1	6.8	11.4	06/05/2009	08:00:00	14:00:00	2539533	7.1	234.2	53.2	77.5	45.2	Values impacted by high wind speeds
N1	4.1	10.2	07/05/2009	08:00:00	14:00:00	2539533	8.0	228.7	58.3	84.9	42.2	Values impacted by high wind speeds
N1	5.3	11.3	08/05/2009	08:00:00	14:00:00	2539533	6.4	260.7	52.5	78.6	43.0	Values impacted by high wind speeds
N1	4.3	11.9	09/05/2009	08:00:00	14:00:00	2539533	3.8	247.1	47.0	69.2	40.1	
N1	2.5	13.2	10/05/2009	08:00:00	14:00:00	2539533	1.7	128.6	48.0	95.8	37.9	
N1	1.9	17.9	11/05/2009	08:00:00	14:00:00	2539533	3.1	124.5	50.3	73.4	37.9	
N1	4.8	16.8	12/05/2009	08:00:00	14:00:00	2539533	2.8	122.7	52.0	79.3	35.7	
N1	5.6	16.9	13/05/2009	08:00:00	14:00:00	2539533	3.3	125.0	51.5	75.0	36.3	

* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement).

Night Time Noise Monitoring Record Sheet

Determinant Results

Determinant Results												
Location	Air Temp. (Min)	Air Temp. (Max)	Start Date	Time	Duration	Serial No.	Wind		Results dB			*Comments
							Speed (m/s)*	Direction (Degrees)	L _{Aeq}	L _{Amax}	L _{Amin}	
Action Limit									50			
Target Limit									55			
N1	4.9	13.2	30/04/2009	22:00:00	10:00:00	2539533	3.2	259.7	I.P.	I.P.	I.P	
N1	7.1	12.3	01/05/2009	22:00:00	10:00:00	2539533	6.3	216.2	44.3	69.0	34.8	Values impacted by high wind speeds
N1	5.8	12.7	02/05/2009	22:00:00	10:00:00	2539533	4.4	234.8	42.3	66.5	33.9	
N1	4.0	11.6	03/05/2009	22:00:00	10:00:00	2539533	4.0	269.7	48.1	75.3	35.7	
N1	8.7	11.6	04/05/2009	22:00:00	10:00:00	2539533	6.1	253.2	47.6	73.6	34.3	Values impacted by high wind speeds
N1	9.8	11.4	05/05/2009	22:00:00	10:00:00	2539533	6.5	243.6	49.1	72.3	41.1	Values impacted by high wind speeds
N1	6.8	11.4	06/05/2009	22:00:00	10:00:00	2539533	7.1	234.2	50.5	79.9	42.3	Values impacted by high wind speeds
N1	4.1	10.2	07/05/2009	22:00:00	10:00:00	2539533	8.0	228.7	51.1	81.1	41.7	Values impacted by high wind speeds
N1	5.3	11.3	08/05/2009	22:00:00	10:00:00	2539533	6.4	260.7	46.2	67.4	41.2	Values impacted by high wind speeds
N1	4.3	11.9	09/05/2009	22:00:00	10:00:00	2539533	3.8	247.1	44.5	63.6	39.3	
N1	2.5	13.2	10/05/2009	22:00:00	10:00:00	2539533	1.7	128.6	44.2	73.0	36.1	
N1	1.9	17.9	11/05/2009	22:00:00	10:00:00	2539533	3.1	124.5	44.7	68.6	37.4	
N1	4.8	16.8	12/05/2009	22:00:00	10:00:00	2539533	2.8	122.7	45.1	73.1	34.1	
N1	5.6	16.9	13/05/2009	22:00:00	10:00:00	2539533	3.3	125.0	44.8	76.9	34.9	

* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement).

Flow Weir Record Sheet**Determinant Results**

Date	SP1			SP3		
	Max (l/s)	Min (l/s)	Avg (l/s)	Max (l/s)	Min (l/s)	Avg (l/s)
30/04/2009	36.16	0.44	17.11	6.03	1.89	4.14
01/05/2009	116.77	7.69	31.72	35.86	5.13	12.77
02/05/2009	13.98	9.66	11.71	9.55	7.73	9.02
03/05/2009	11.31	6.53	9.71	9.02	4.27	8.21
04/05/2009	12.70	9.31	11.02	9.28	6.26	7.59
05/05/2009	25.34	10.93	19.54	10.66	6.03	8.55
06/05/2009	70.70	24.11	40.00	27.41	10.66	16.12
07/05/2009	51.71	19.56	33.74	18.05	10.94	13.56
08/05/2009	75.42	23.81	47.51	25.51	12.38	18.36
09/05/2009	23.81	16.51	19.79	14.19	10.10	12.01
10/05/2009	16.27	10.56	13.17	10.66	7.47	9.14
11/05/2009	10.01	4.88	8.50	9.55	5.57	6.81
12/05/2009	8.81	0.93	4.99	7.47	1.16	4.28
13/05/2009	6.67	0.76	4.20	5.13	1.58	3.24

Note: Negative values indicate low flow conditions.

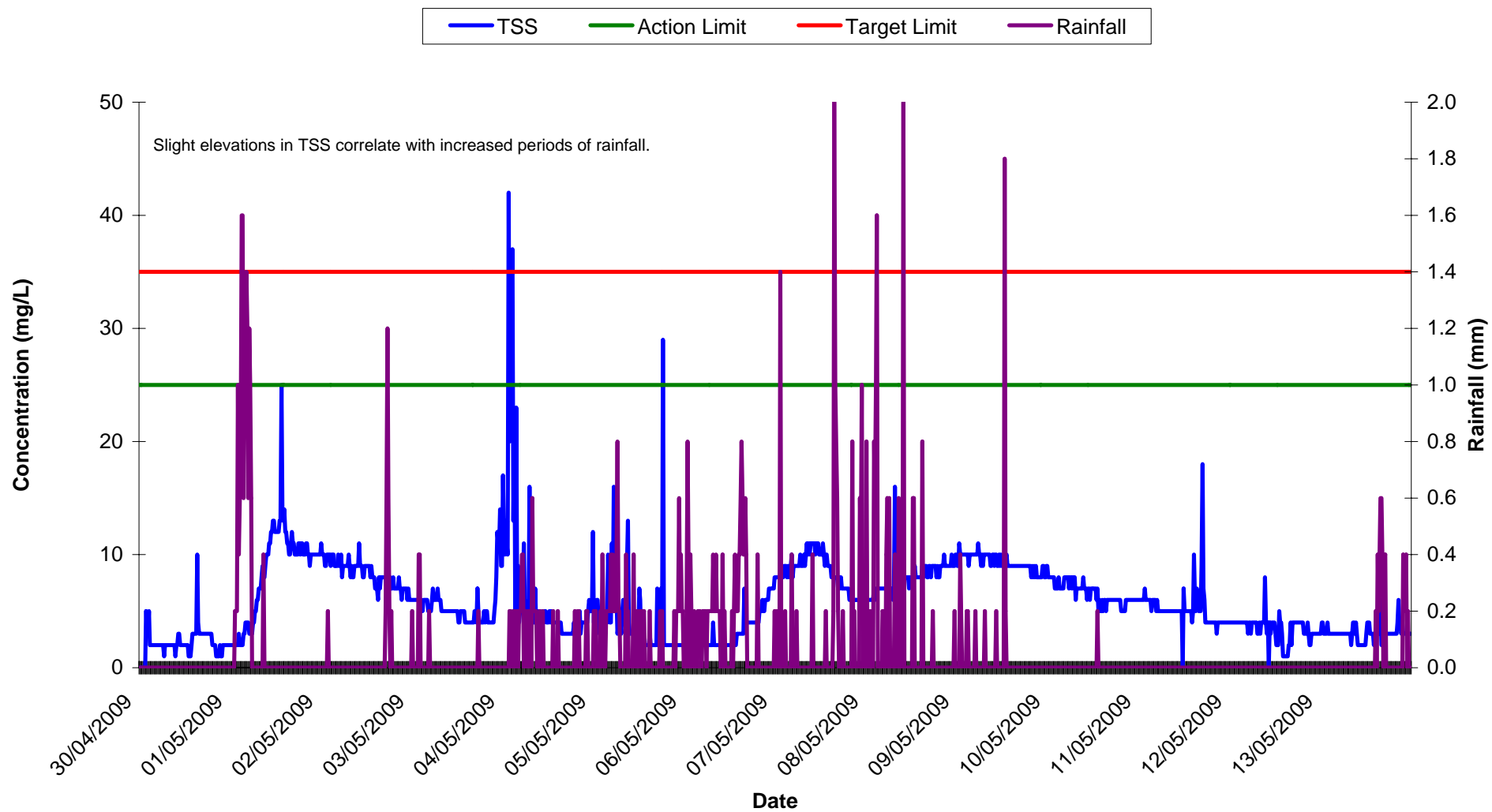
Vibration Monitoring Record Sheet

Determinant Results	
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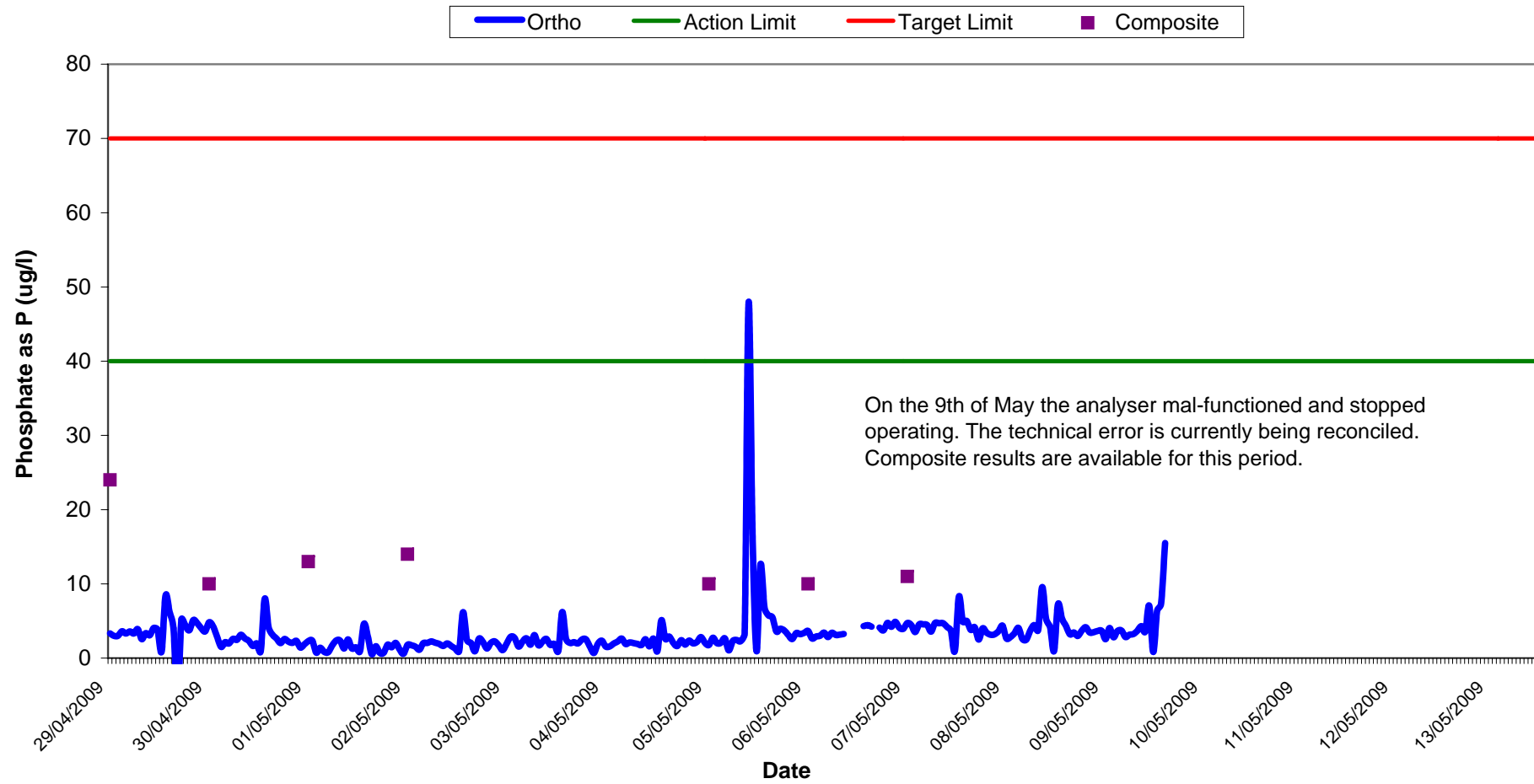
[illegible]

Vibration meter located at V1.

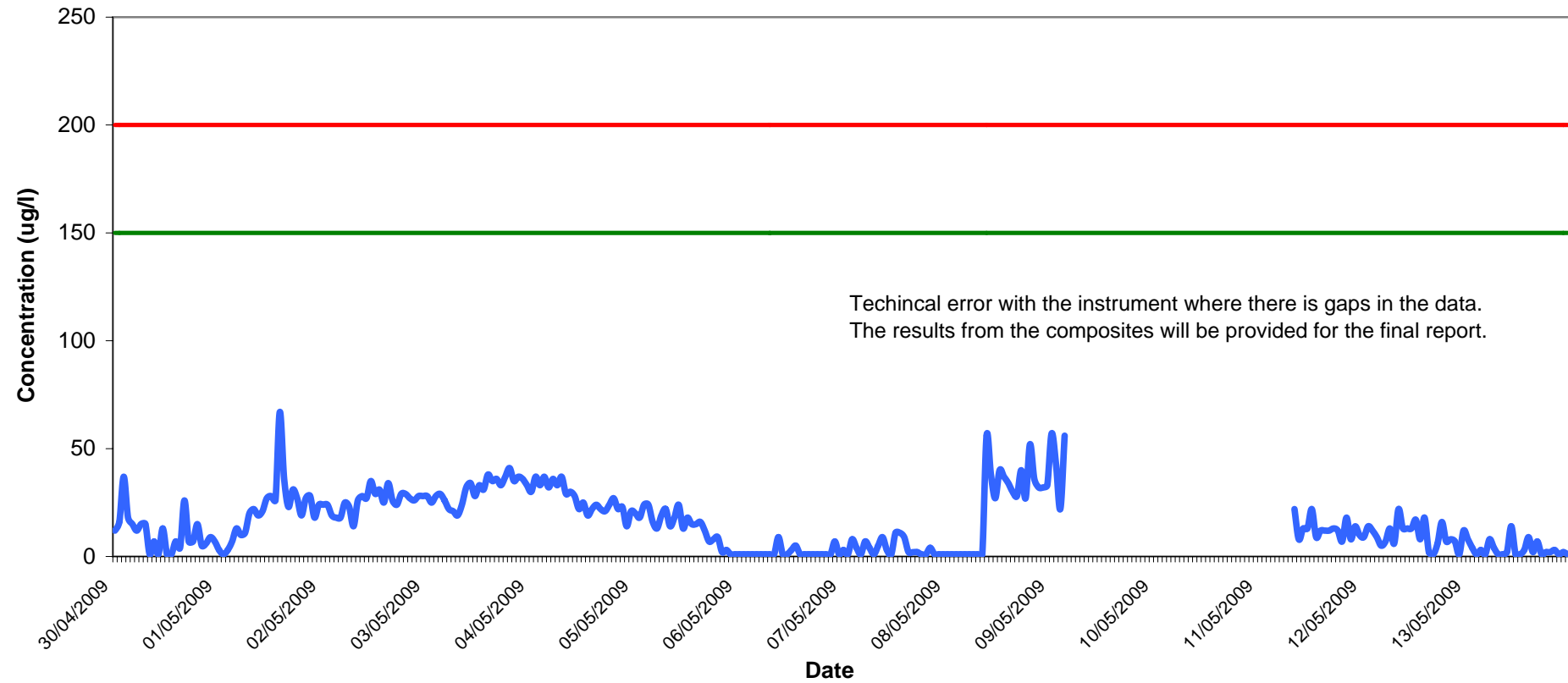
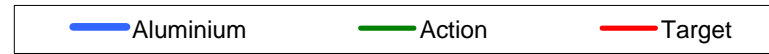
Total Suspended Solids at SP1 Week 18-19



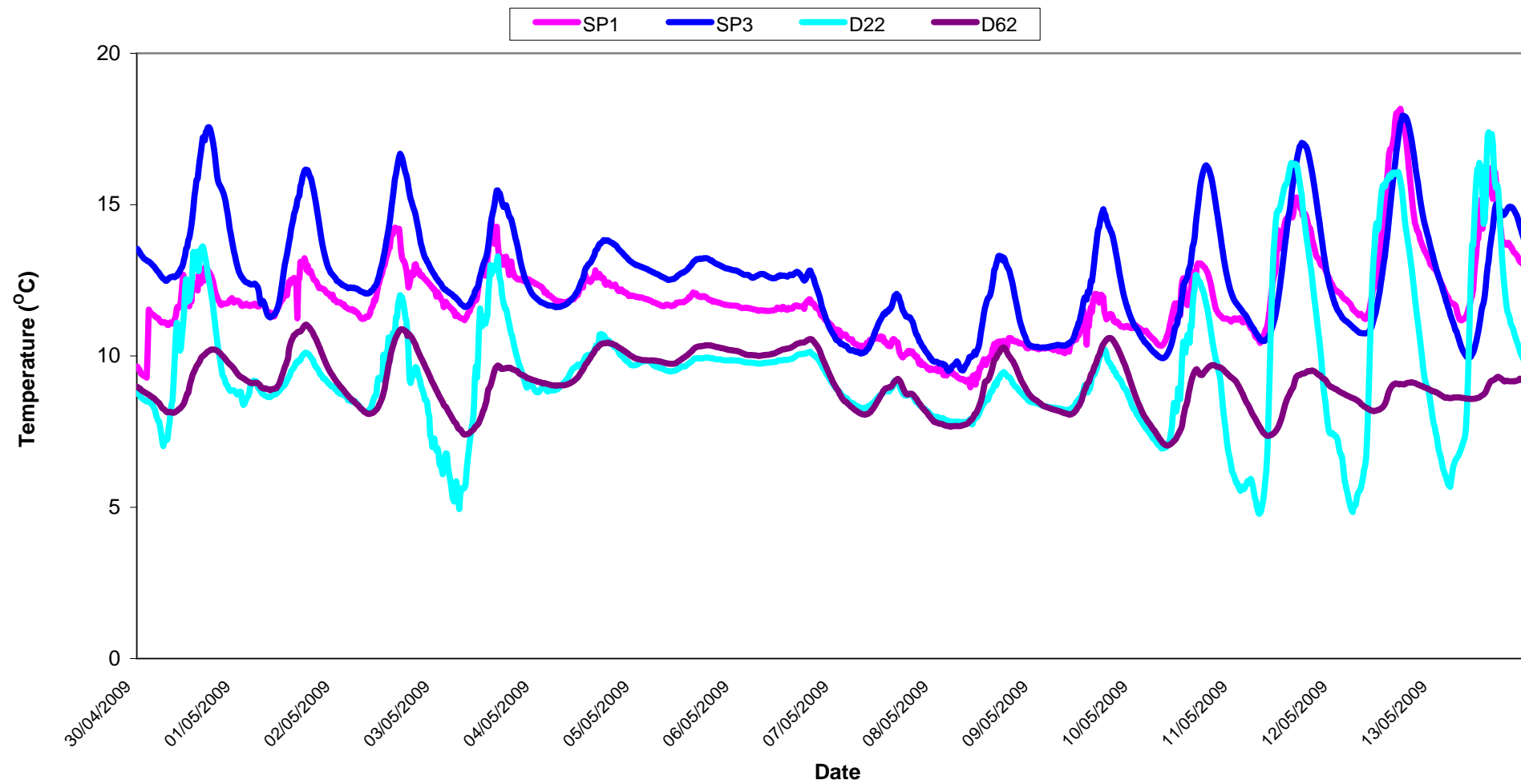
Orthophosphate Results at SP1 Wk 18-19



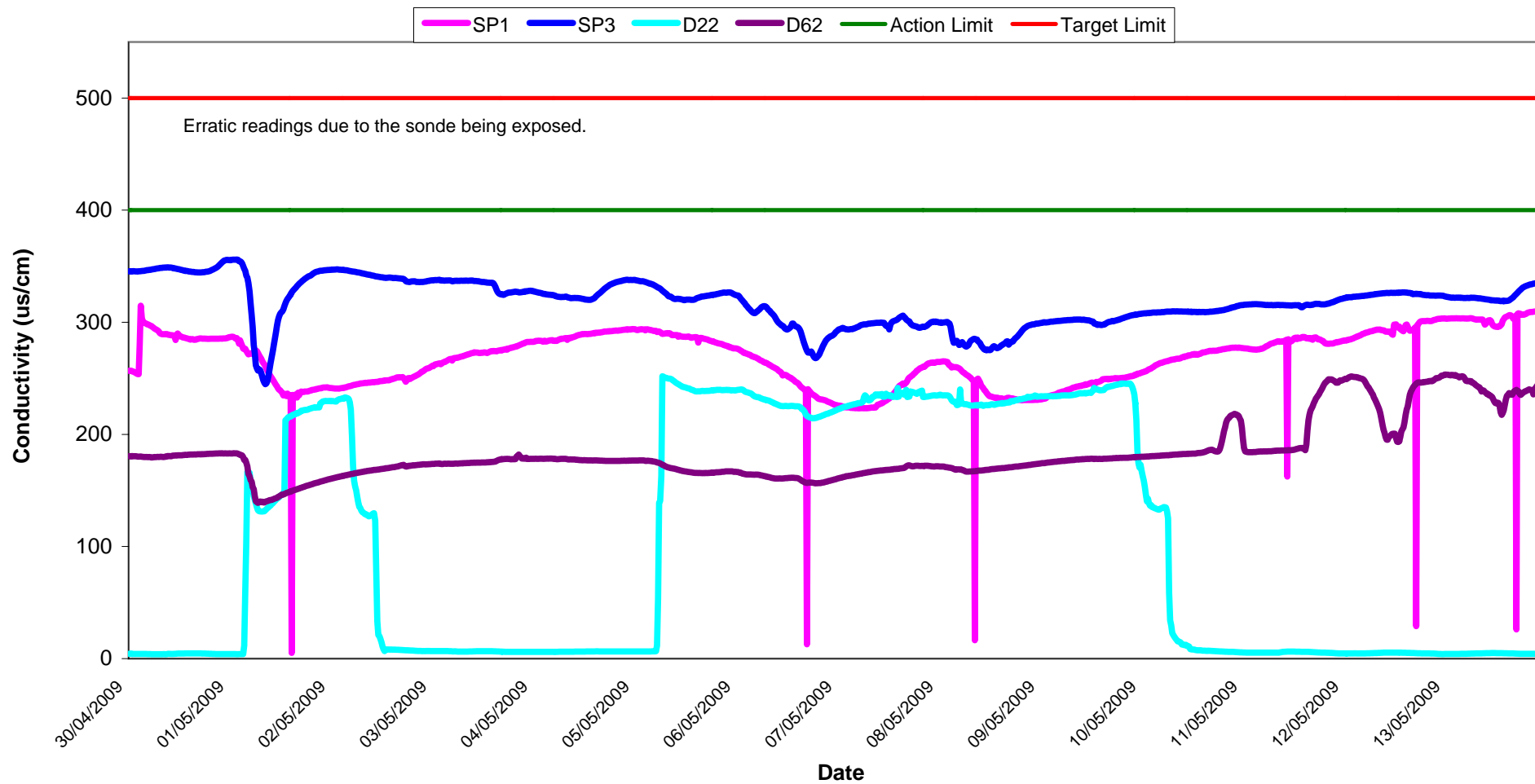
Aluminium Concentration at SP1 Wk 18-19



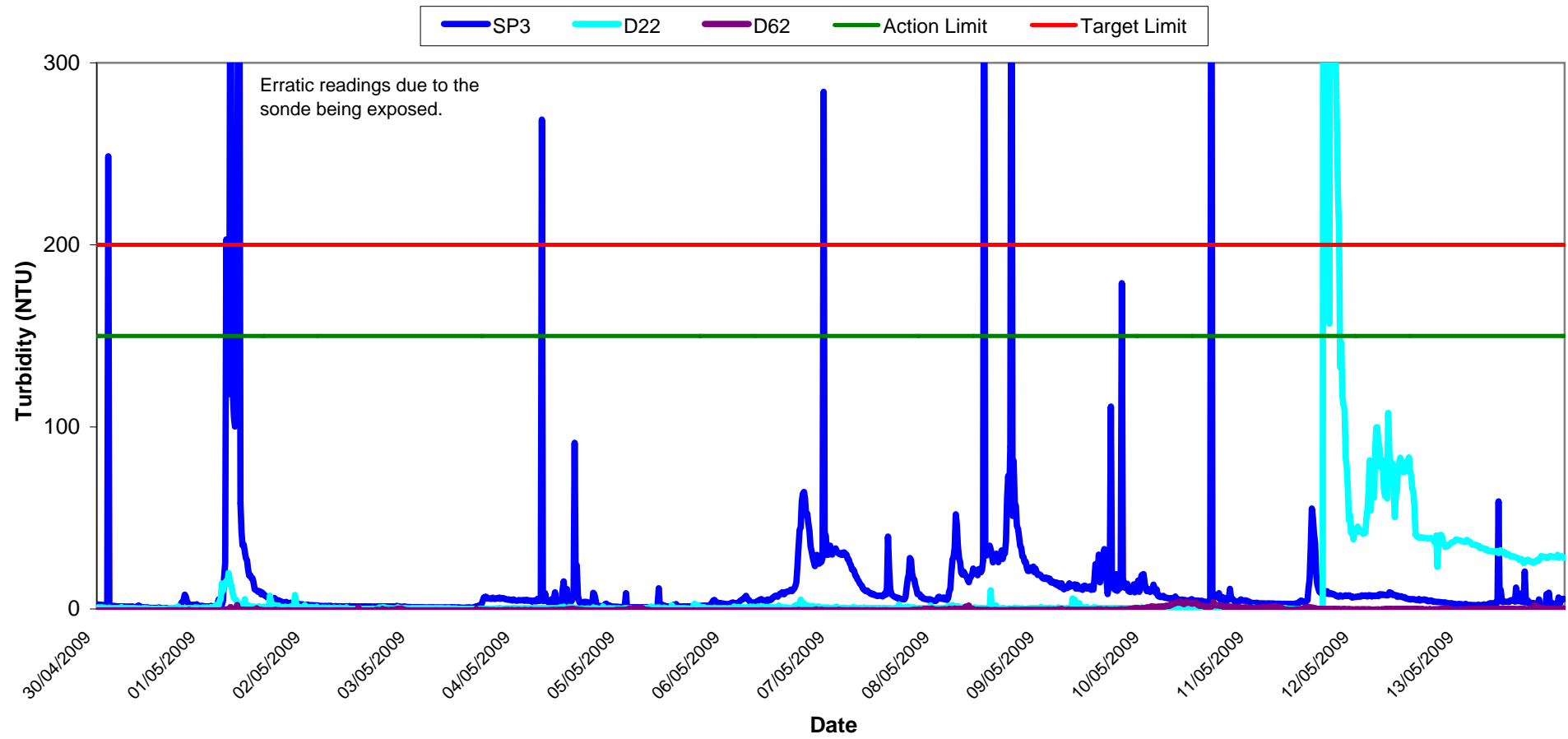
Temperature - Surface Waters
Wk 18-19



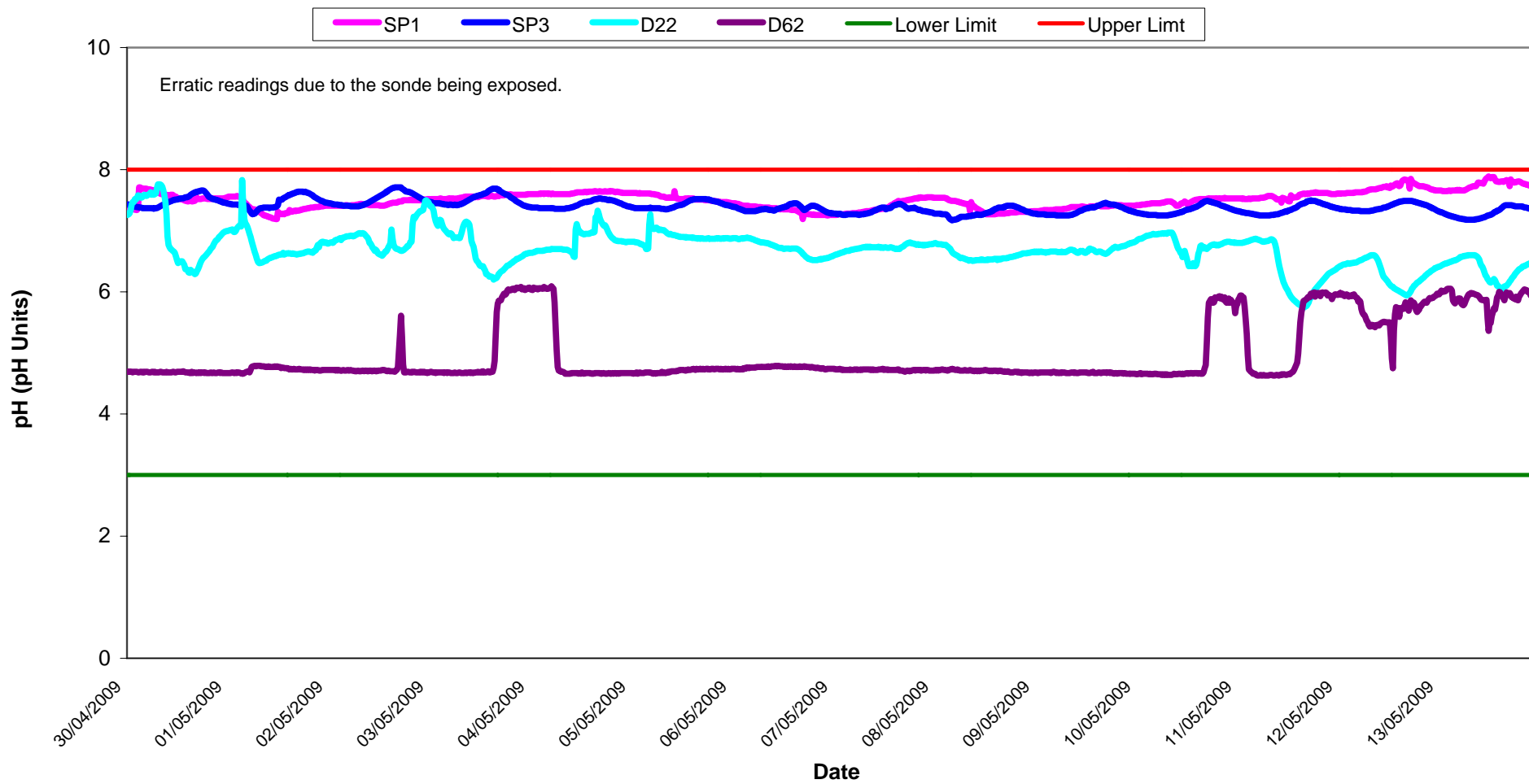
Conductivity - Surface Waters, Wk 18-19



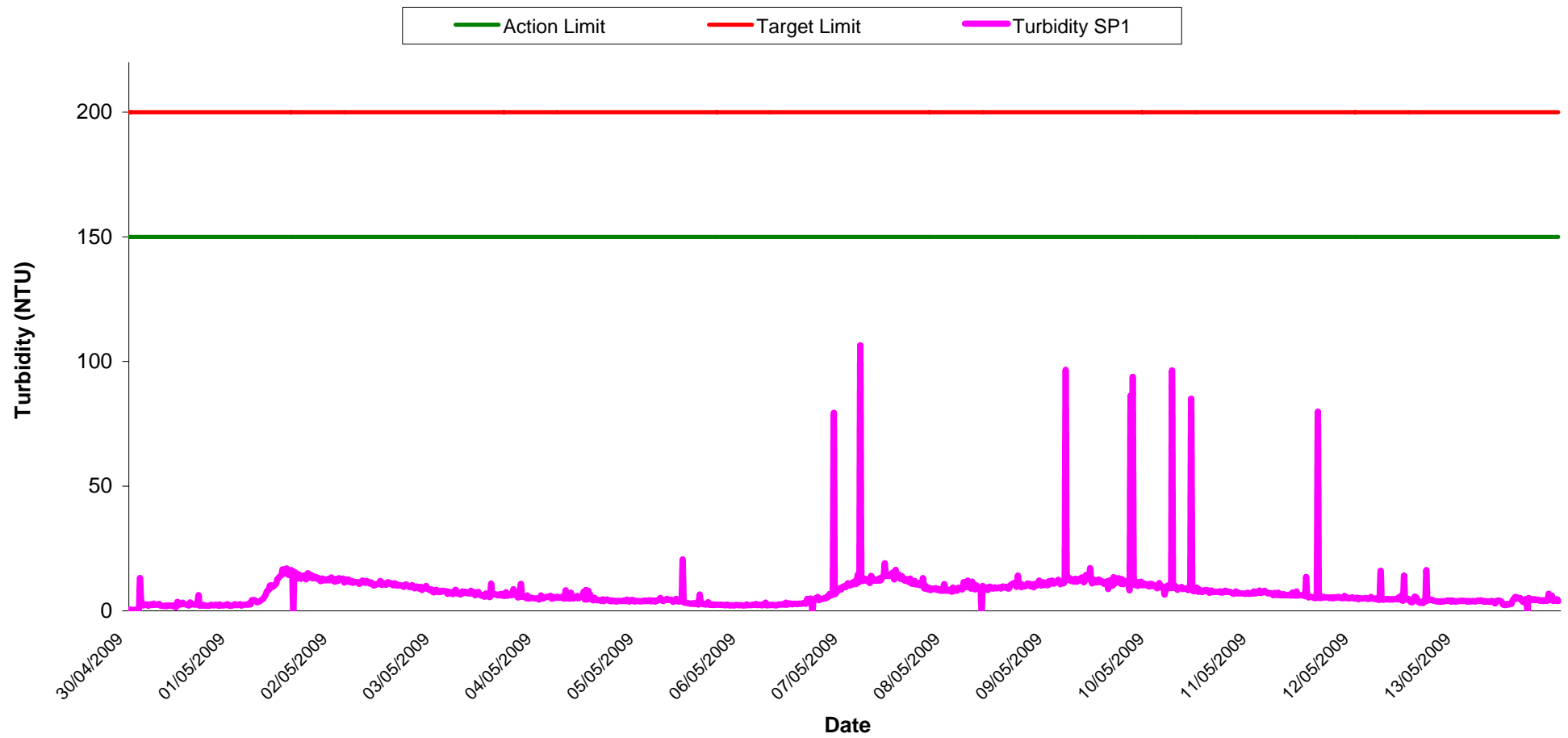
Turbidity - Surface Waters Wk 18-19



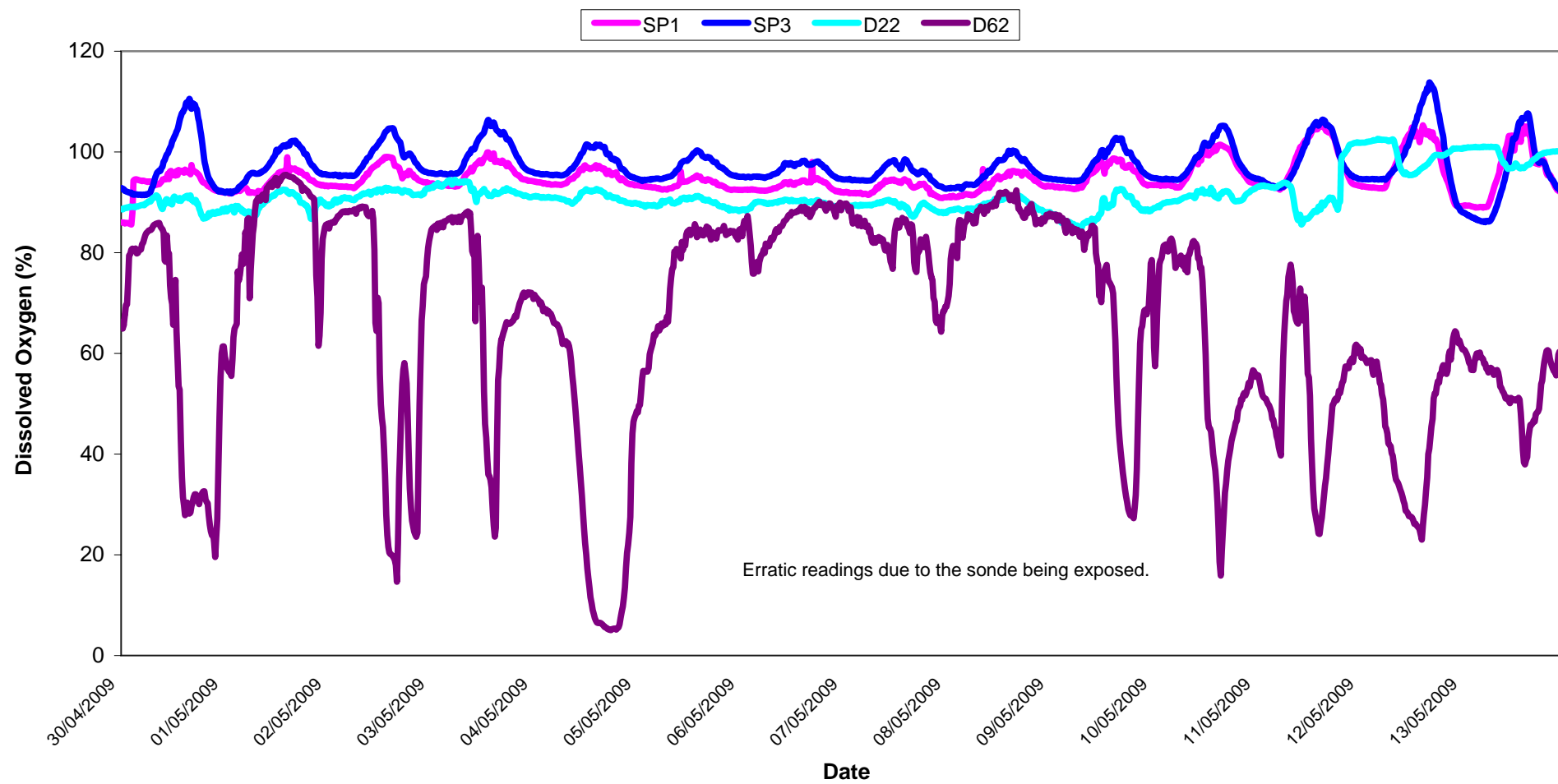
pH - Surface Waters Wk 18-19



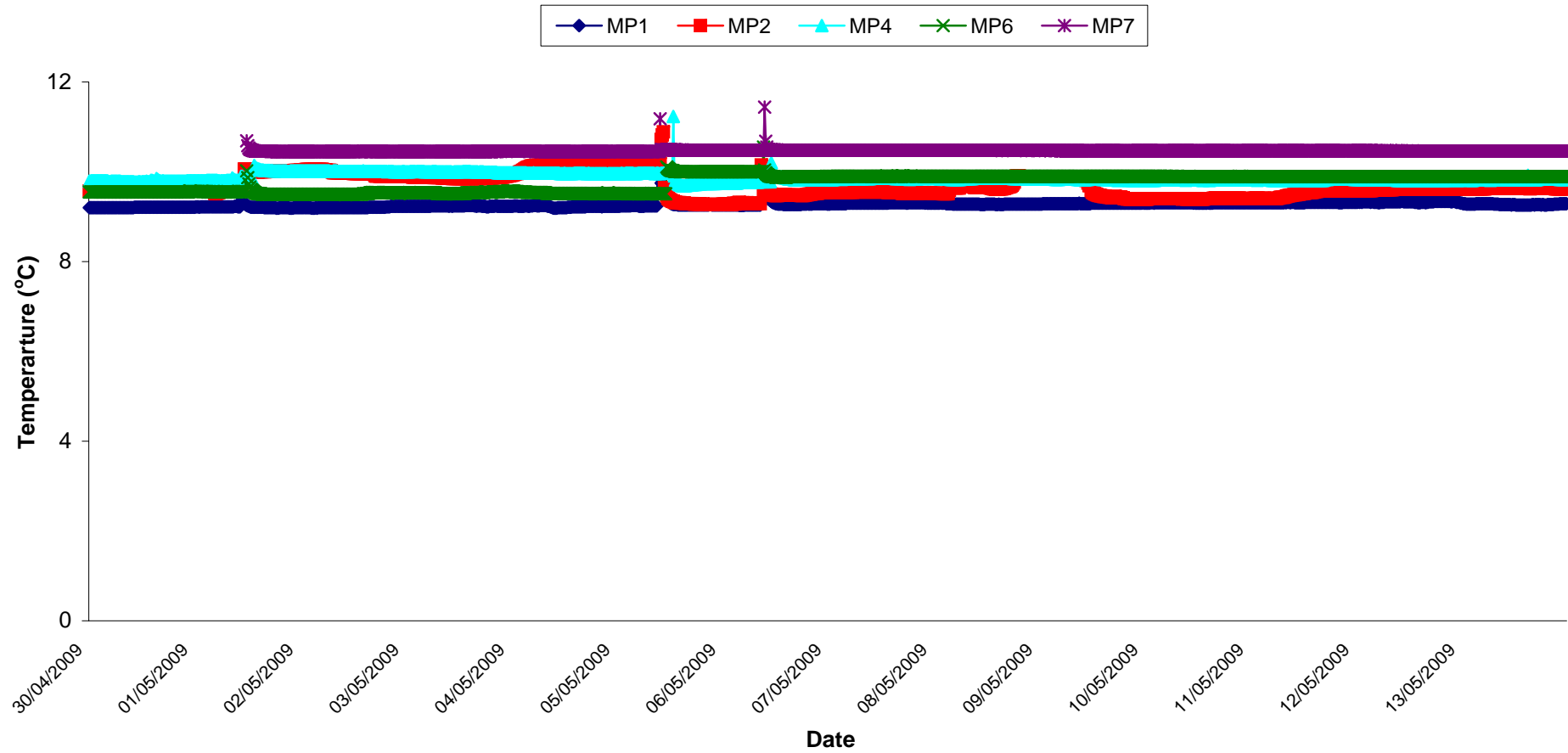
Turbidity - Surface Waters @ SP1, Wk 18-19



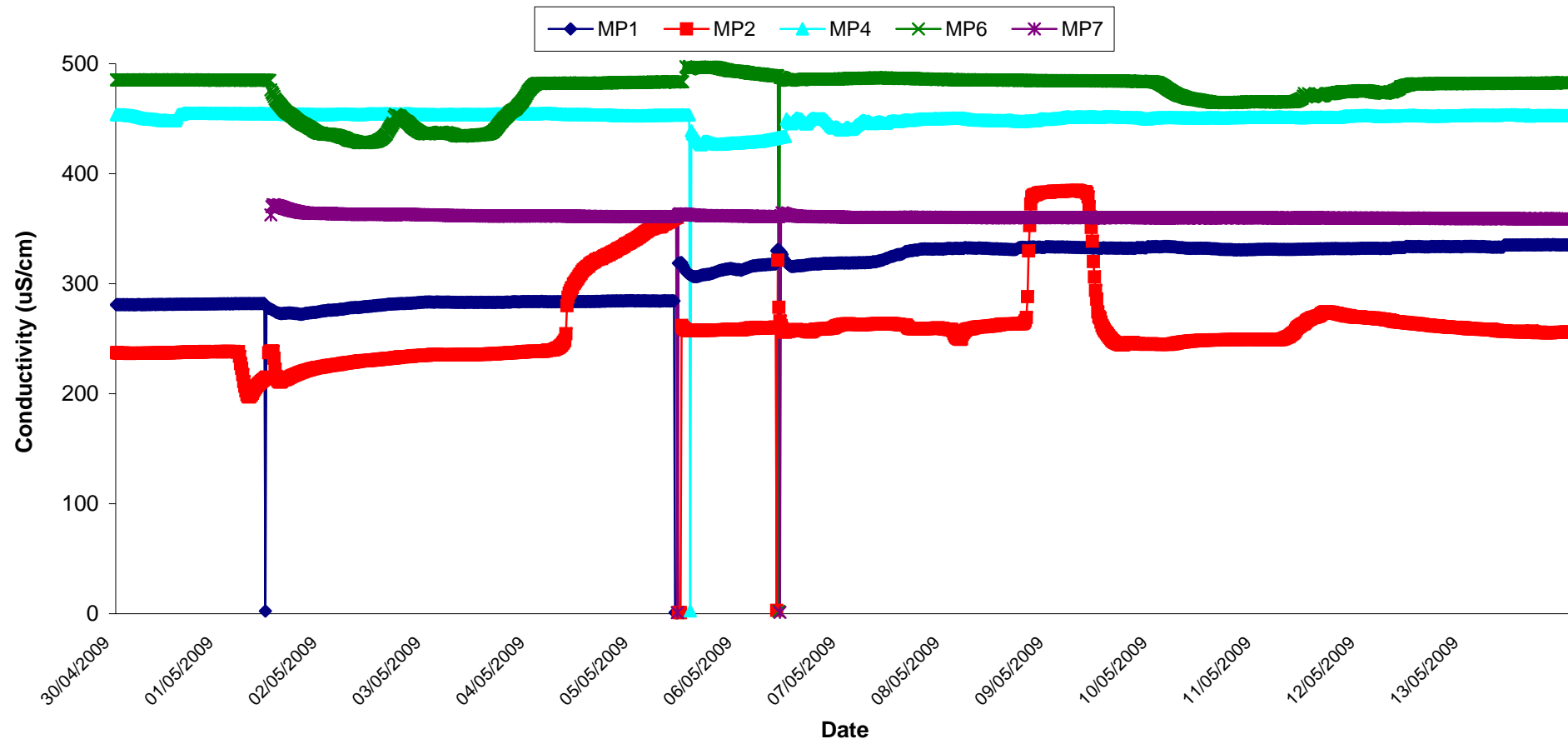
Dissolved Oxygen - Surface Waters, Wk 18-19



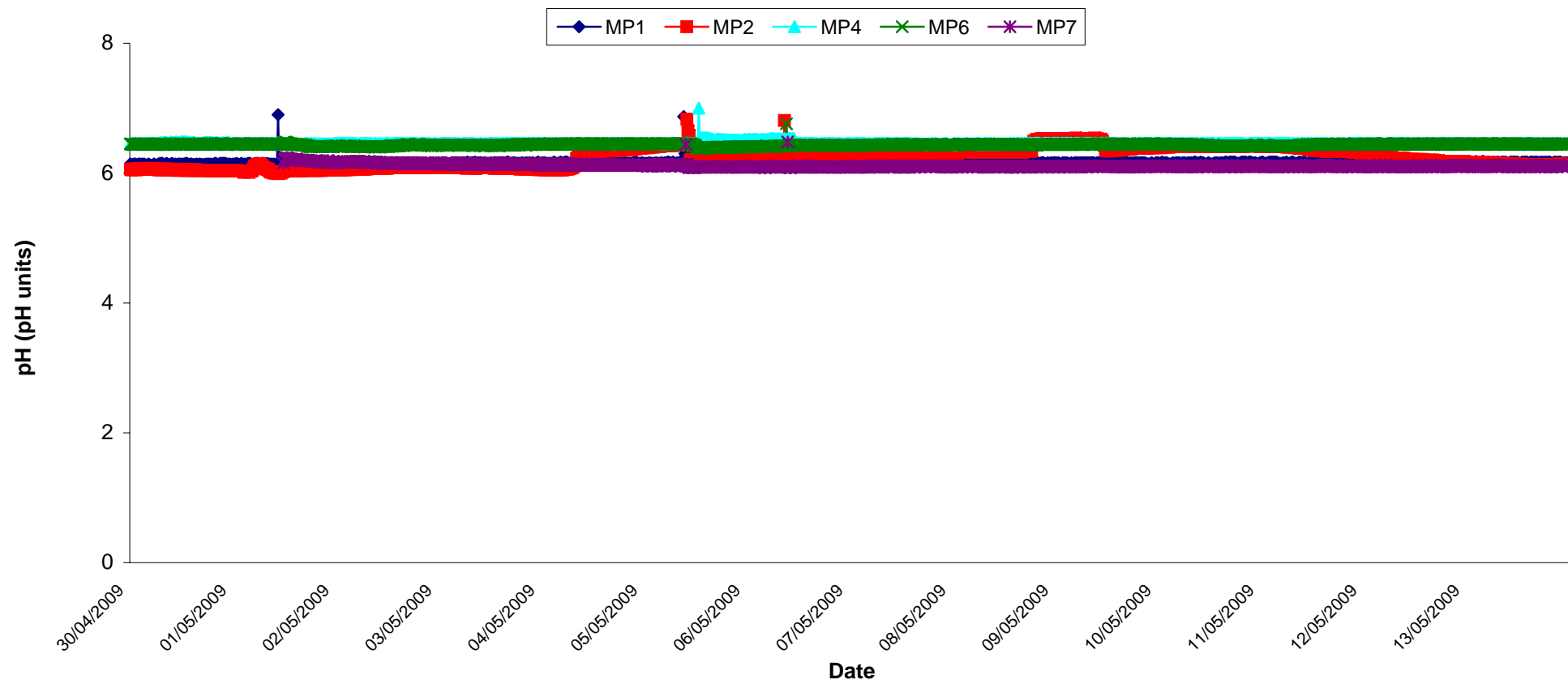
Temperature - Groundwaters Wk 18-19



Conductivity - Groundwaters Wk 18-19



pH - Groundwaters Wk 18-19



Appendix 1

Appendix 1: Surface Water Monitoring Record Sheet- Onsite Monitoring

	Date	Cond. µS/cm	Temp °C	Turbidity NTU	DO % Sat	pH	TSS mg l ⁻¹	Ortho- phosphate as P µg l ⁻¹	Nitrate as N mg l ⁻¹	Nitrate as NO ₃ mg l ⁻¹	Total Phosphorus as P mg l ⁻¹	Ammonia as NH ₃ -N mg l ⁻¹	Nitrite as NO ₂ mg/l	Aluminium (dissolved) ug/l	Aluminium (total) ug/l	Phosphate as PO ₄ mg/l	Total dissolved solids mg/l
Settlement Pond Monitoring																	
SP1	30/04/2009	288	12.8	12.7	89.0	6.4			<LOD			<LOD		<LOD	45	1.25	213
SP1	01/05/2009	254	12.1	16.6	89.7	6.7			<LOD			<LOD		29	93	1.00	181
SP1	05/05/2009	286	12.1	11.2	90.9	6.4			<LOD			0.06		<LOD	129	>LOD	200
SP1	06/05/2009	255	11.7	8.0	91.1	6.4			0.1			<LOD		<LOD	112	1.18	179
SP1	07/05/2009	220	11.5	30.5	91.0	6.5			<LOD			<LOD		35	162	1.01	125
SP1	08/05/2009	234	10.4	23.7	90.4	6.5			<LOD			<LOD		32	95	1.13	129
SP1	11/05/2009	278	11.3	14.5	92.3	7.1			<LOD			0.03		27	174	0.25	205
SP1	12/05/2009	300	13.1	10.1	88.1	6.7			<LOD			0.12		38	316	0.21	200
SP1	13/05/2009	288	13.1	9.7	100.5	7.1			<LOD			0.58		22	117	0.04	198
SP3	30/04/2009	346	16.4	3.9	104.7	6.8			<LOD			<LOD		38		0.03	244
SP3	01/05/2009	254	11.6	65.4	93.0	6.9			<LOD			0.03		71		0.03	180
SP3	05/05/2009	304	12.8	4.6	95.3	6.6			0.2			<LOD		<LOD		<LOD	222
SP3	06/05/2009	292	12.6	12.0	95.1	6.3			0.3			0.01		22		0.01	210
SP3	07/05/2009	303	11.3	12.4	96.4	6.9			<LOD			0.04		30		0.04	216
SP3	08/05/2009	274	10.6	31.7	93.9	6.6			0.1			<LOD		31		0.02	203
SP3	11/05/2009	320	12.1	8.4	91.9	7.1			0.5			0.02		<LOD		<LOD	224
SP3	12/05/2009	333	10.7	11.3	95.7	6.7			0.5			0.18		31		0.05	222
SP3	13/05/2009	325	11.3	8.5	98.5	7.3			<LOD			0.04		30		0.01	214
Additional Monitoring																	
D22	01/05/2009	206	10.1	7.1	87.7	6.9			0.1			0.16		22		0.05	151
D62	01/05/2009	163	10.7	3.4	90.7	5.8			0.5			<LOD		<LOD		0.03	80
D22	12/05/2009	268	6.2	2.7	102.1	6.7			<LOD			>LOD		27		0.07	178
D62	12/05/2009	210	8.3	0.9	89.9	6.0			0.1			0.47		35		0.06	122
Axonics Monitoring																	
Pre	30/04/2009	350		107.0		6.9			<LOD			0.12		317		0.04	244
Post	30/04/2009	361		5.6		6.7			0.4			<LOD		21	277	0.02	251
Pre	01/05/2009	348		425.0		6.9			<LOD			0.15		936		0.04	239
Post	01/05/2009	360		21.7		6.8			0.2			<LOD		36	274	0.01	246
Pre	05/05/2009	331		130.0		6.8			<LOD			0.38		>LOD		0.02	228
Post	05/05/2009	345		5.0		6.8			0.3			<LOD		<LOD	185	<LOD	235
Pre	06/05/2009	320		669.0		6.5			<LOD			1.52		>LOD		0.14	225
Post	06/05/2009	338		6.3		6.5			0.6			0.02		<LOD	230	0.02	235
Pre	07/05/2009	309		>LOD		7.0			<LOD			0.45		>LOD		0.04	220
Post	07/05/2009	328		6.4		6.9			0.7			0.02		<LOD	238	<LOD	231
Pre	08/05/2009	312		>LOD		6.8			<LOD			0.86		>LOD		0.21	223
Post	08/05/2009	331		11.5		6.7			0.2			<LOD		40	272	0.04	233
Pre	11/05/2009	328		167.0		6.9			<LOD			0.61		459		0.02	230
Post	11/05/2009	338		8.9		6.8			0.3			<LOD		42	286	0.03	235
Pre	12/05/2009	336		61.9		6.7			<LOD			0.07		>LOD		0.02	223
Post	12/05/2009	346		3.9		6.7			0.7			0.29		<LOD	381	<LOD	230
Pre	13/05/2009	349		935.0		7.2			<LOD			1.63		>LOD		0.09	230
Post	13/05/2009	361		5.8		6.5			0.3			0.42		<LOD	334	<LOD	237
Pre	13/05/2009	349		935.0		7.2			<LOD			1.63		>LOD		0.09	230
Post	13/05/2009	361		5.8		6.5			0.3			0.42		<LOD	334	<LOD	237
Grey shaded areas denote parameters that cannot or were not analysed on-site.																	
= Indicative Only																	
= Below Limit of Detection																	
= Above Limit of Detection																	