

Final Environmental Report	Period Ending: 29 th October 2008
Compiled By: Siobhán Quinn & Aoife Reynolds	
Approved By: Tony Doyle	

1 Monitoring Data

1.1 Monitoring Equipment

Axonics	– Axonics plant operated during the reporting period.
PO ₄	– The PO ₄ analyser was operational during the reporting period. – The composite sampler was in place to cover any shortfalls in the PO ₄ analyser.
TSS	– The TSS analyser was operational during the reporting period. – The composite sampler was in place to cover any shortfalls in the TSS analyser.
Composite	– The composite sampler was operational during the reporting period.
Noise	– There is a single noise monitoring location currently being used – N1. – The other location is visible from off-site and because of current protestor action it cannot be guaranteed that the equipment remains undisturbed.
Vibration	– There is a single vibration monitoring location currently being used – V1. – The other location is visible from off-site and because of current protestor action it cannot be guaranteed that the equipment remains undisturbed.
Sondes	– The results are displayed graphically. ○ Any unusual values are explained on the relevant graph.
Weather Station	– The majority of data used for this reporting period was taken from the on-site meteorological station. Due to a technical problem the rain gauge was not operational from the 21st of October. Therefore the rainfall data only, was taken from the Belmullet weather station from the period of the 21 st to the 29 th of October. – The rain gauge has now been repaired and is functioning as required.
Weirs	– Weirs were operational during the reporting period.

1.2 Rainfall Data

16/10/08	2.340	23/10/08	5.400
17/10/08	1.365	24/10/08	0.700
18/10/08	1.560	25/10/08	12.800
19/10/08	8.775	26/10/08	1.500
20/10/08	9.360	27/10/08	2.000
21/10/08	1.300	28/10/08	2.900
22/10/08	0.300	29/10/08	12.800
Total Rainfall 63.100mm			

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1.3 Summary

Environment	Comments
Surface Water	There was 1 no. exceedance during the reporting period. See section 2 below.
Groundwater	The groundwater data (Sonde) is within anticipated ranges.
Dust	All dust levels were within the set limits.
Weather	There was a total of 63.10mm of rainfall during the reporting period, with a temperature range of 1.5°C to 14.9°C.
Noise	All noise levels were within the set limits.
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 Exceedences / Incidents / Complaints

Date and Time	16 th & 28 th of October 2008
Location	SP1
Nature of Incident	During the reporting period the total aluminium values exceeded the 200µg/l limit. The values recorded on the 16/10/2008 was 201µg/l, 21/10/2008 150µg/l and on the 28/10/2008 247µg/l. These elevated values were as a of heavy rainfall events which gave intermittent exceedances.
Actions Taken	<ul style="list-style-type: none"> On going surveillance and maintenance of site drainage outside the main footprint area. Close monitoring of Total Aluminium will be carried out at SP1. Storage and pumping back to Axonic's of footprint waters. Continued implementation of agreed surface water actions.
Category	Environmental Exceedance
Status	Open

Surface Water Monitoring Record Sheet: Accredited Laboratory Results

[illegible]

Groundwater Monitoring Record Sheet

[illegible]

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

No Groundwater Monitoring undertaken During The Reporting Period.

Determinant Results							
	Date Positioned	Date Removed	Ref. Number	Date Dispatched	Date Returned	Weight (mg/m ² /day)	Comments
Target (Consent) Limit: 350 mg m² d⁻¹ on as a 30 day average							
D1	26/05/2008	26/06/2008	177618	02/07/2008	11/07/2008	191	
D2	26/05/2008	26/06/2008	177619	02/07/2008	11/07/2008	159	
D3	26/05/2008	26/06/2008	177620	02/07/2008	11/07/2008	1046	Very heavy peat like substance in jar
D4	26/05/2008	26/06/2008	177621	02/07/2008	11/07/2008	151	
D1	26/06/2008	25/07/2008	179466	30/07/2008	20/08/2008	52	
D2	26/06/2008	25/07/2008	179467	30/07/2008	20/08/2008	347	
D3	26/06/2008	25/07/2008	179464	30/07/2008	20/08/2008	87	
D4	26/06/2008	25/07/2008	179465	30/07/2008	20/08/2008	33	
D1	25/07/2008	25/08/2008	182830	29/08/2008	04/09/2008	86	
D2	25/07/2008	25/08/2008	182831	29/08/2008	04/09/2008	166	
D3	25/07/2008	25/08/2008	182833	29/08/2008	04/09/2008	41	
D4	25/07/2008	25/08/2008	182834	29/08/2008	04/09/2008	76	
D1	25/08/2008	25/09/2008	185830	26/09/2008	30/09/2008	135	
D2	25/08/2008	25/09/2008	185831	26/09/2008	30/09/2008	92	
D3	25/08/2008	25/09/2008	185832	26/09/2008	30/09/2008	102	
D4	25/08/2008	25/09/2008	185833	26/09/2008	30/09/2008	83	
D1	25/09/2008	24/10/2008	188708	24/10/2008	28/10/2008	233	
D2	25/09/2008	24/10/2008	188709	24/10/2008	28/10/2008	186	
D3	25/09/2008	24/10/2008	188710	24/10/2008	28/10/2008	155	
D4	25/09/2008	24/10/2008	188711	24/10/2008	28/10/2008	208	
NDP = No Determination Possible							
Monitoring Points are numbered clockwise through the Cardinal Marks (N, E, S, W)							
Monitoring Results will be presented monthly							

Monitoring Points are numbered clockwise through the Cardinal Marks (N, E, S, W)

Monitoring Results will be presented monthly

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	7.1	12.5	16/10/2008	08:00:00	14:00:00	2539533	3.0	115.2	46.1	69.9	34.1	
N1	6.7	12.5	17/10/2008	08:00:00	14:00:00	2539533	3.0	48.0	44.2	60.0	37.7	
N1	6.9	13.4	20/10/2008	08:00:00	14:00:00	2539533	6.0	76.5	52.4	79.0	35.1	Values impacted by high wind speeds
N1	6.2	11.1	21/10/2008	08:00:00	14:00:00	2539533	4.3	92.0	48.4	83.5	32.5	
N1	8.2	12.5	22/10/2008	08:00:00	14:00:00	2539533	5.0	52.0	52.3	75.4	36.6	Values impacted by high wind speeds
N1	6.9	14.9	23/10/2008	08:00:00	14:00:00	2539533	8.7	41.7	60.0	85.5	44.3	Values impacted by high wind speeds
N1	6.2	12.0	24/10/2008	08:00:00	14:00:00	2539533	5.5	57.3	54.9	71.5	47.0	
N1	5.1	9.4	27/10/2008	08:00:00	14:00:00	2539533	4.1	142.8	46.1	73.3	39.5	
N1	1.5	7.6	28/10/2008	08:00:00	14:00:00	2539533	4.0	167.5	50.4	78.3	36.8	
N1	1.9	10.6	29/10/2008	08:00:00	14:00:00	2539533	4.7	128.7	51.1	87.8	40.8	

* 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	
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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	7.1	12.5	16/10/2008	22:00:00	10:00:00	2539533	3.0	115.2	46.2	97.5	32.9	
N1	6.7	12.5	17/10/2008	22:00:00	10:00:00	2539533	3.0	48.0	45.3	72.1	36.2	
N1	6.9	13.4	20/10/2008	22:00:00	10:00:00	2539533	6.0	76.5	48.8	62.1	38.7	Values impacted by high wind speeds
N1	6.2	11.1	21/10/2008	22:00:00	10:00:00	2539533	4.3	92.0	43.8	66.2	36.2	
N1	8.2	12.5	22/10/2008	22:00:00	10:00:00	2539533	5.0	52.0	60.9	84.2	49.7	Values impacted by high wind speeds
N1	6.9	14.9	23/10/2008	22:00:00	10:00:00	2539533	8.7	41.7	48.6	71.6	40.3	
N1	6.2	12.0	24/10/2008	22:00:00	10:00:00	2539533	5.5	57.3	61.7	87.2	43.1	Values impacted by high wind speeds
N1	5.1	9.4	27/10/2008	22:00:00	10:00:00	2539533	4.1	142.8	46.1	71.3	39.1	
N1	1.5	7.6	28/10/2008	22:00:00	10:00:00	2539533	4.0	167.5	44.8	71.4	34.8	
N1	1.9	10.6	29/10/2008	22:00:00	10:00:00	2539533	4.7	128.7	48.8	73.5	42.3	

* 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	
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Date	SP1			SP3		
	Max (l/s)	Min (l/s)	Avg (l/s)	Max (l/s)	Min (l/s)	Avg (l/s)
16/10/2008	14.64	5.86	11.16	6.98	0.56	4.06
17/10/2008	14.42	8.32	10.22	9.02	2.21	4.15
18/10/2008	12.91	9.48	11.57	6.26	3.87	5.35
19/10/2008	25.34	9.31	14.58	7.73	3.28	4.39
20/10/2008	30.29	3.90	21.56	14.50	3.10	6.69
21/10/2008	27.59	2.10	14.49	9.02	0.36	5.10
22/10/2008	39.73	9.48	14.45	13.88	3.28	5.84
23/10/2008	183.37	40.56	97.18	63.32	10.38	35.92
24/10/2008	43.95	24.72	30.54	20.09	9.55	14.15
25/10/2008	253.55	24.42	93.42	125.02	16.41	47.86
26/10/2008	51.23	23.22	33.95	25.51	11.51	17.04
27/10/2008	28.58	20.37	23.69	18.72	8.75	11.99
28/10/2008	36.16	16.03	24.53	16.41	2.91	8.87
29/10/2008	79.69	15.33	36.28	20.79	3.10	10.93

Note: Negative values indicate low flow conditions.

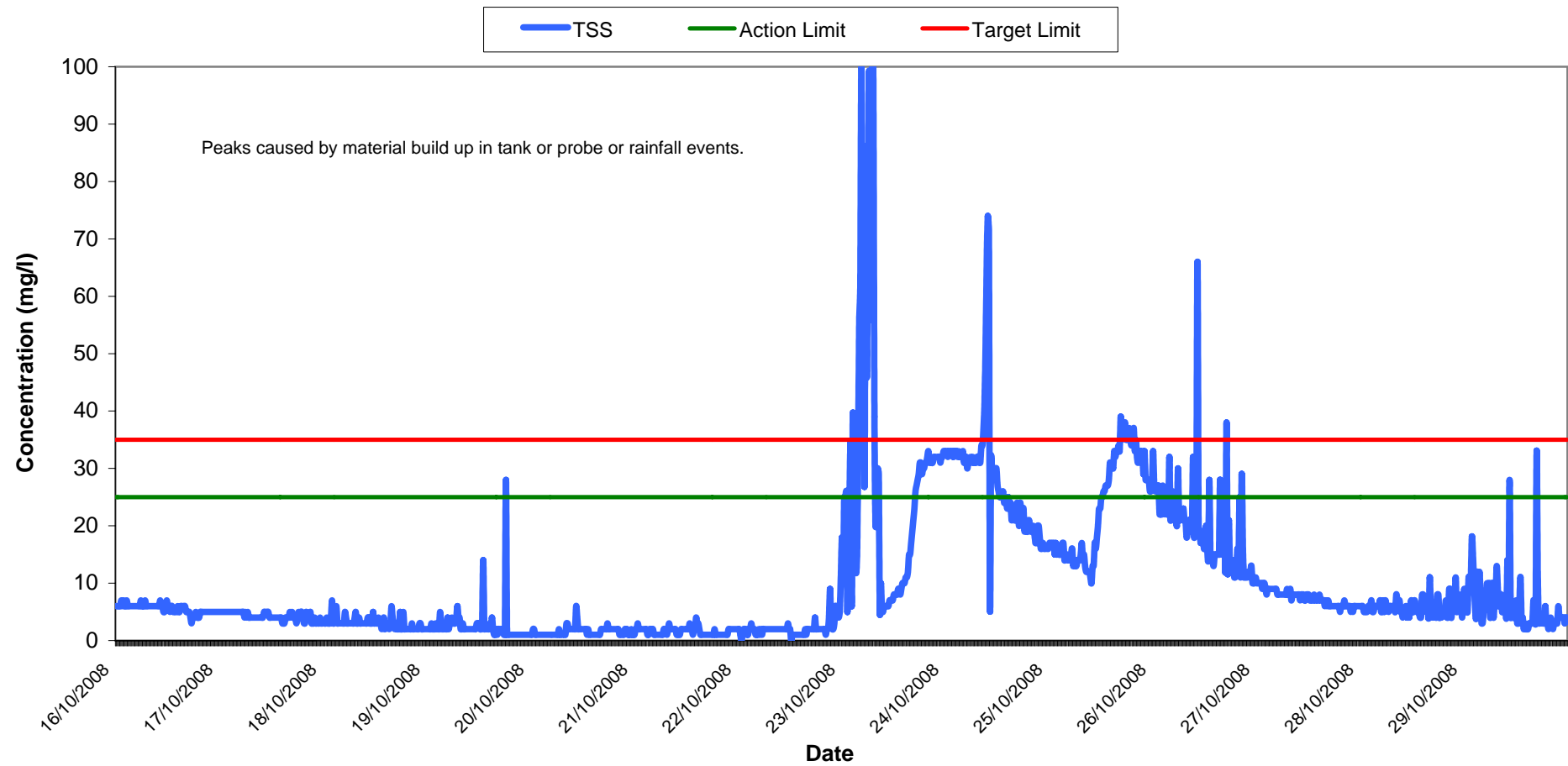
Vibration Monitoring Record Sheet

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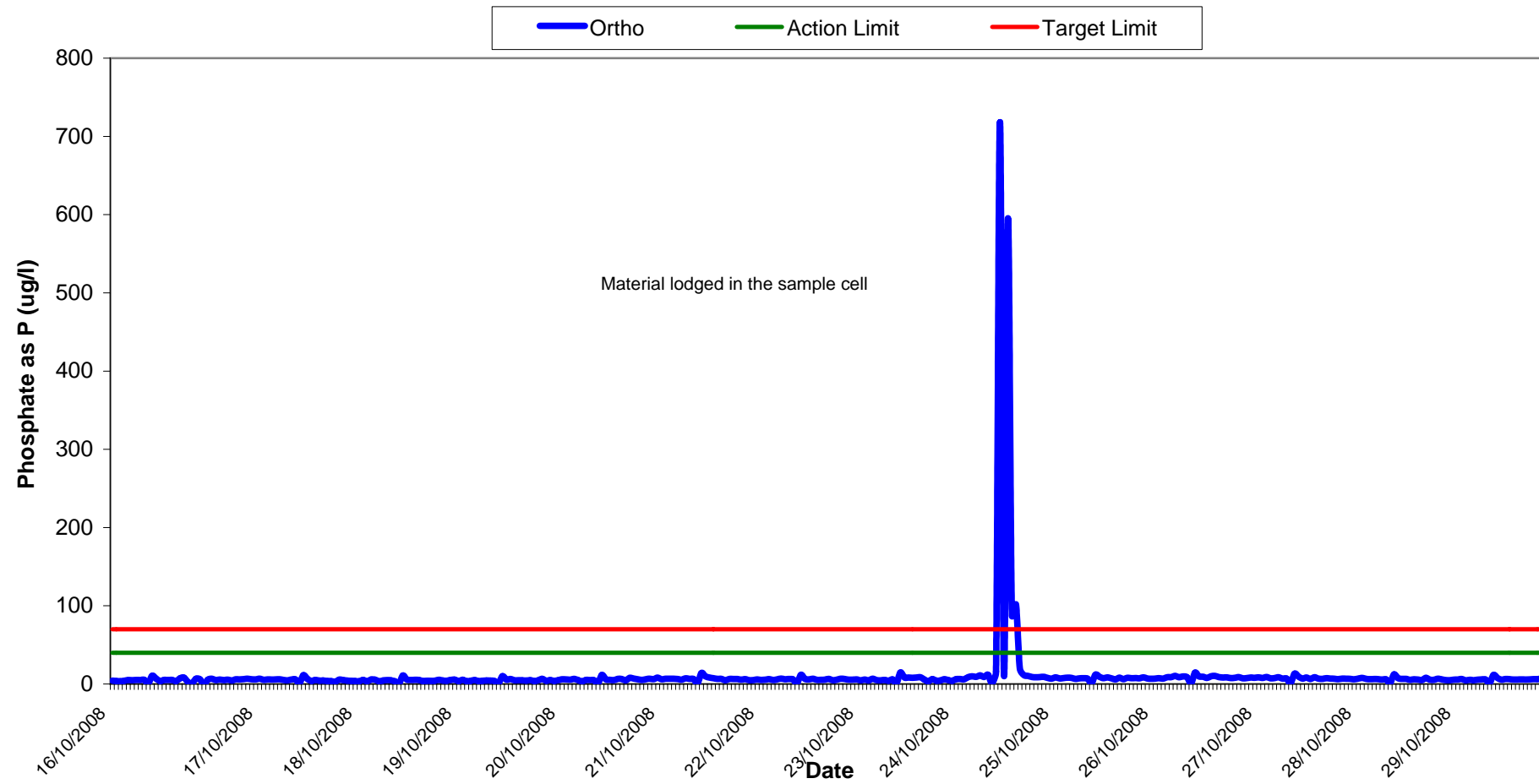
[illegible]

Vibration meter was located at V1 only.

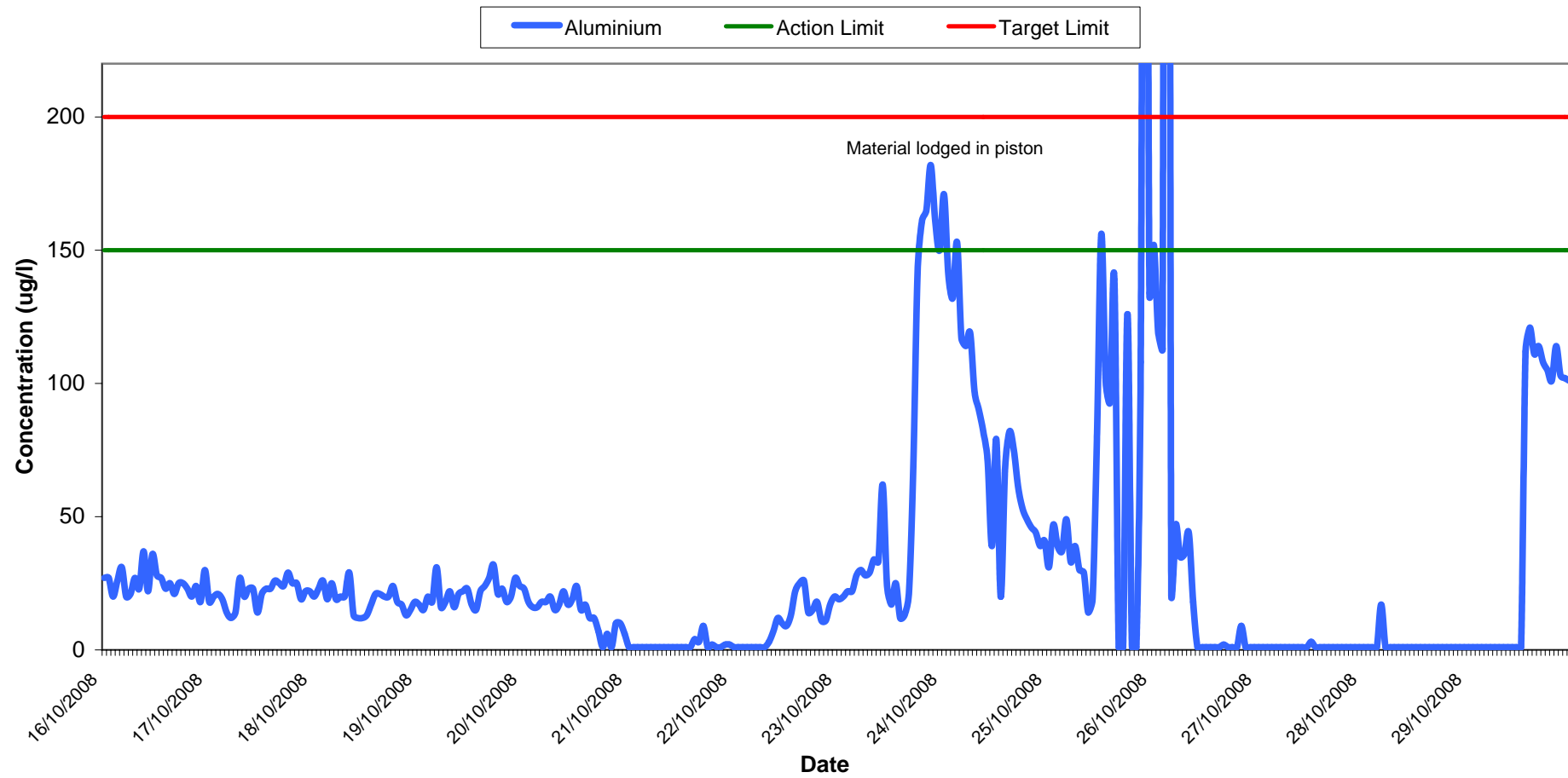
Total Suspended Solids Results at SP1 Wk 43-44



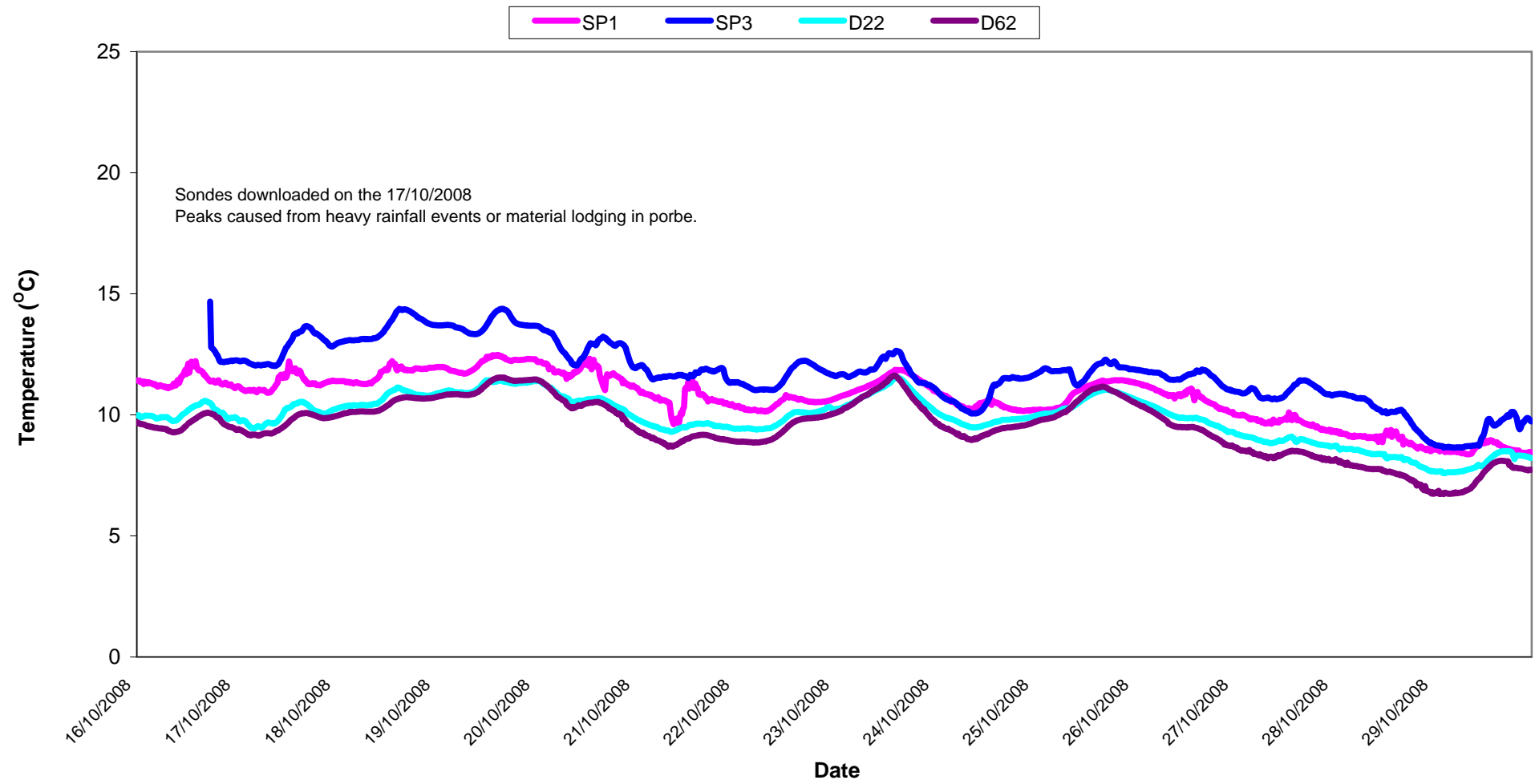
Orthophosphate Results at SP1 Wk 43-44



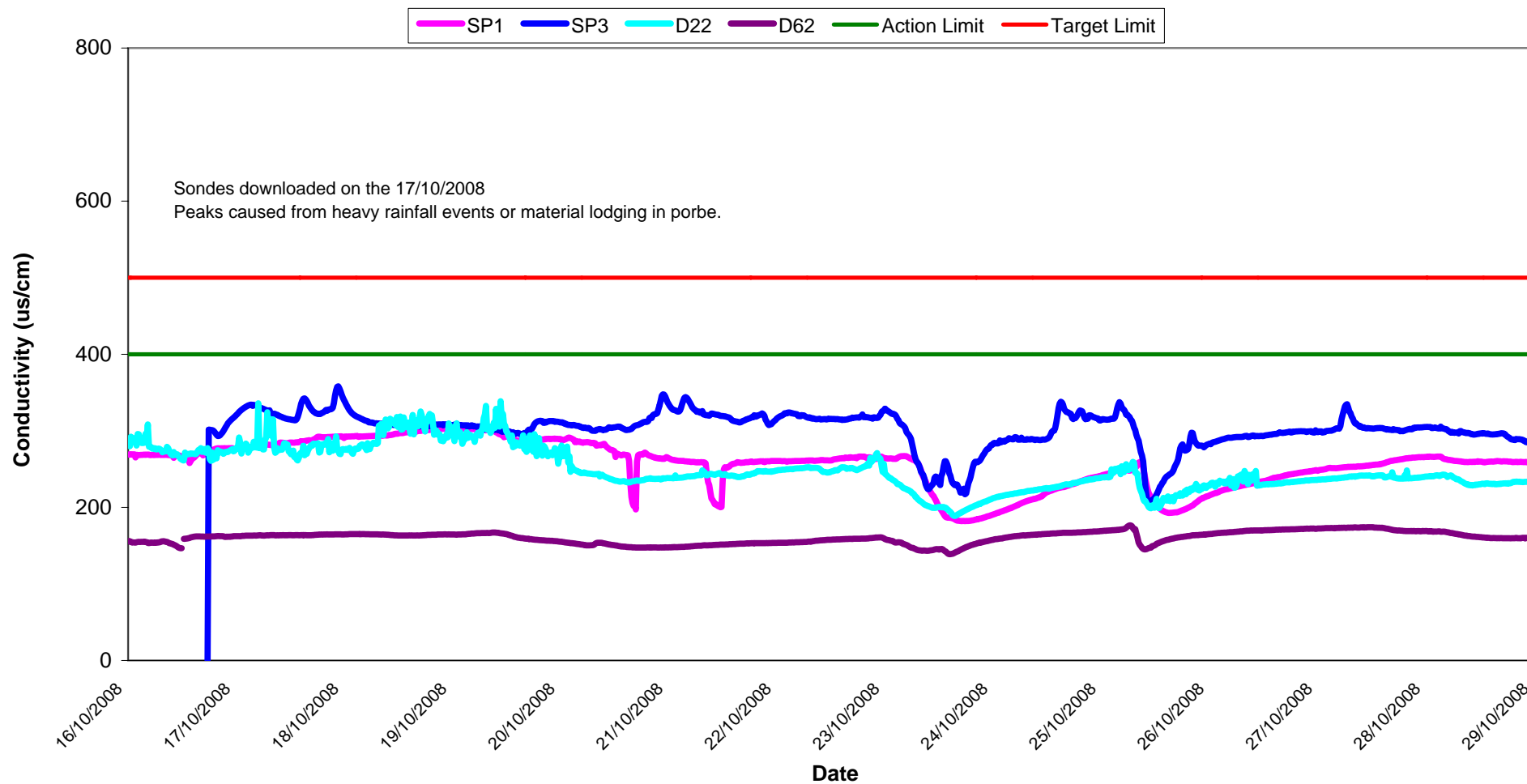
Aluminium Concentration at SP1 Wk 43-44



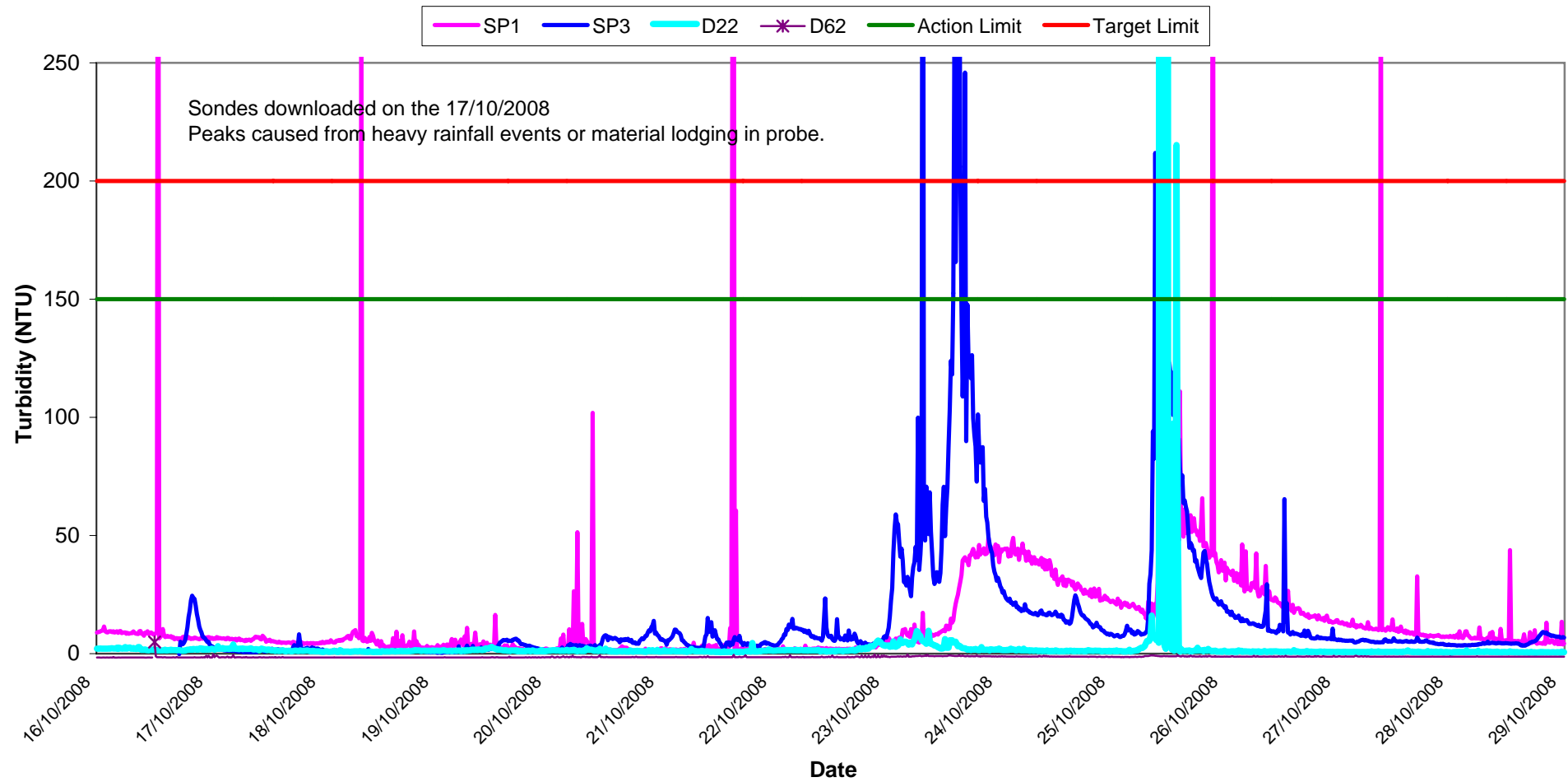
Temperature - Surface Waters Wk 43-44



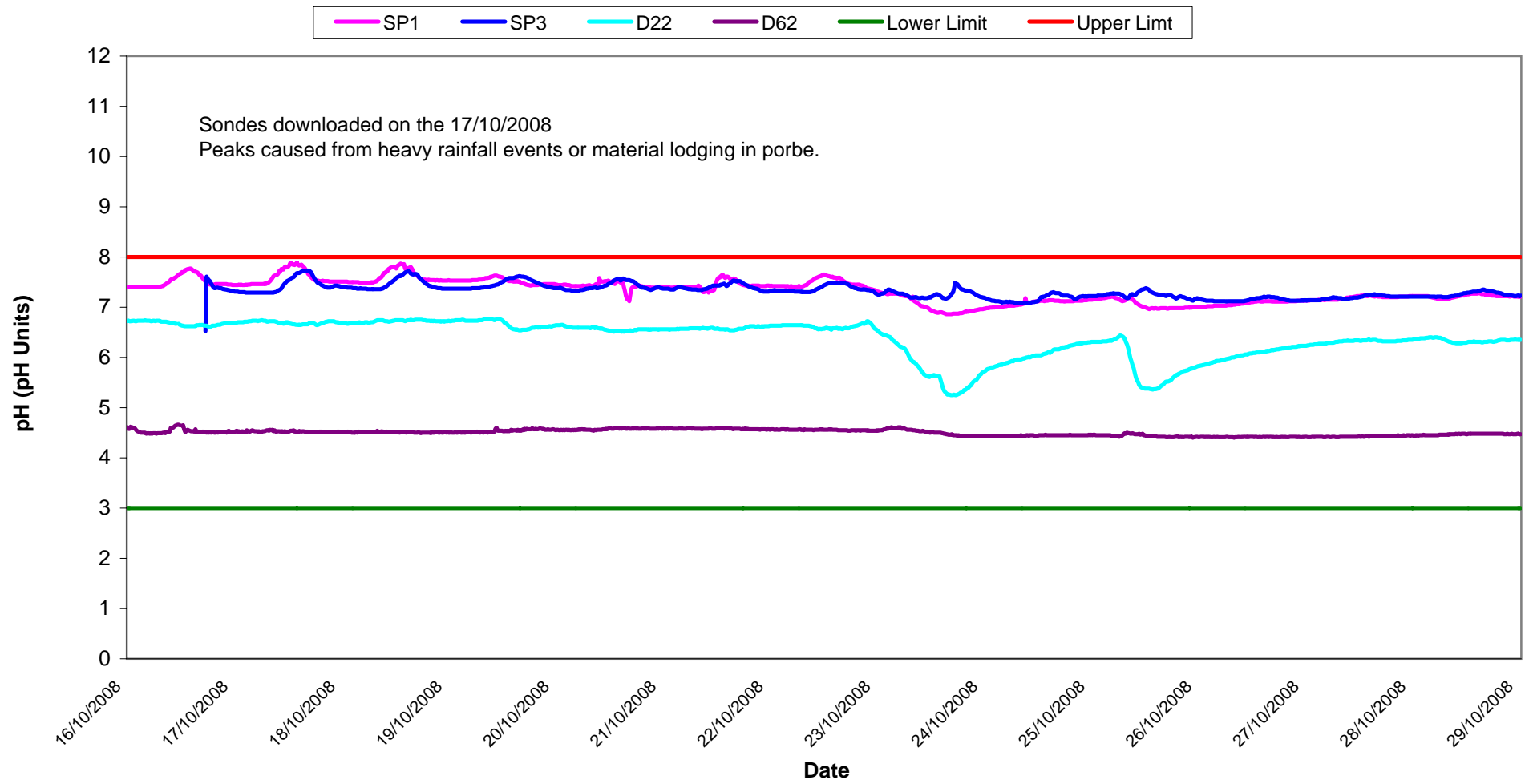
Conductivity - Surface Waters, Wk 43-44



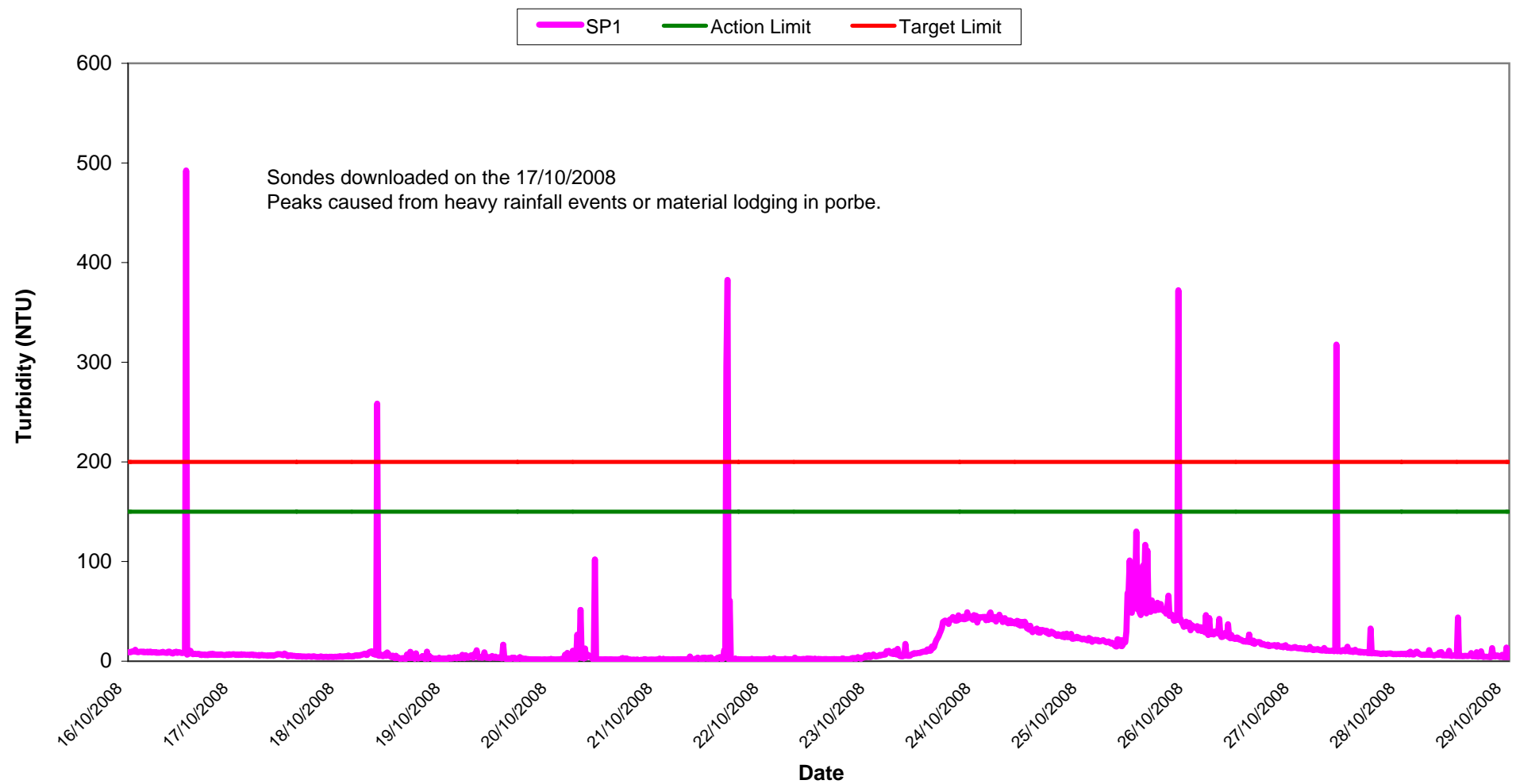
Turbidity - Surface Waters Wk 43-44



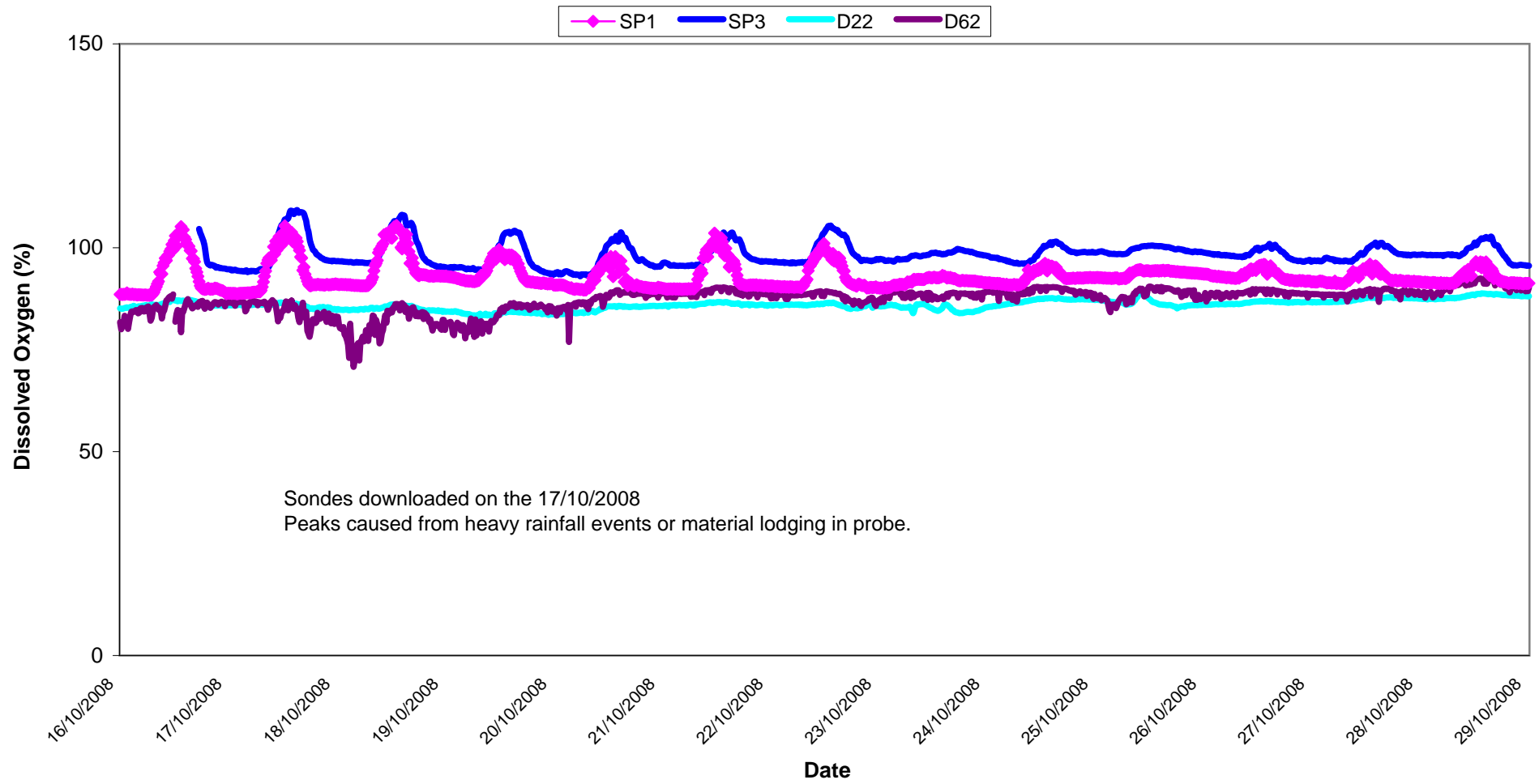
pH - Surface Waters Wk 43-44



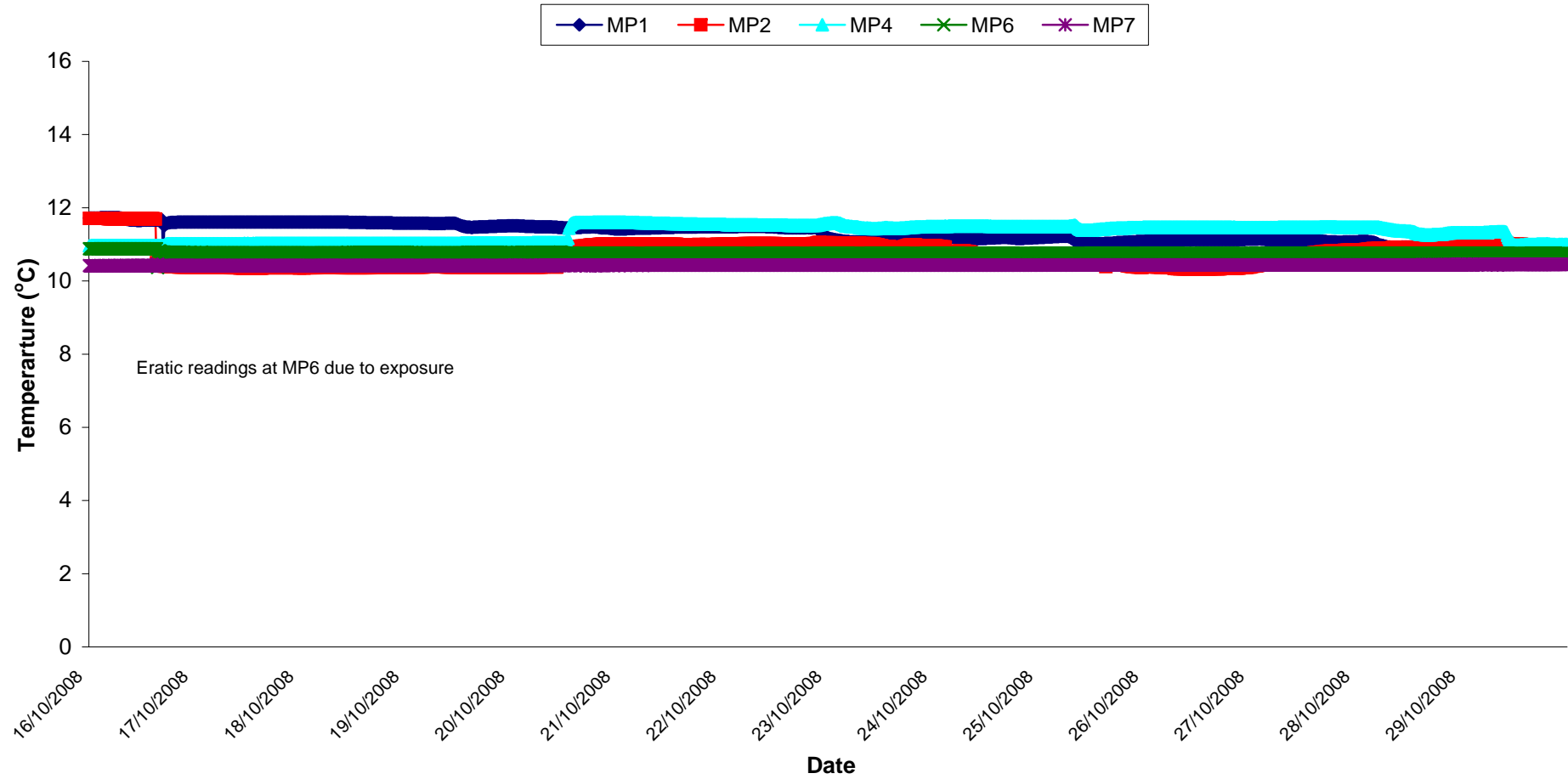
Turbidity - Surface Waters @ SP1, Wk 43-44



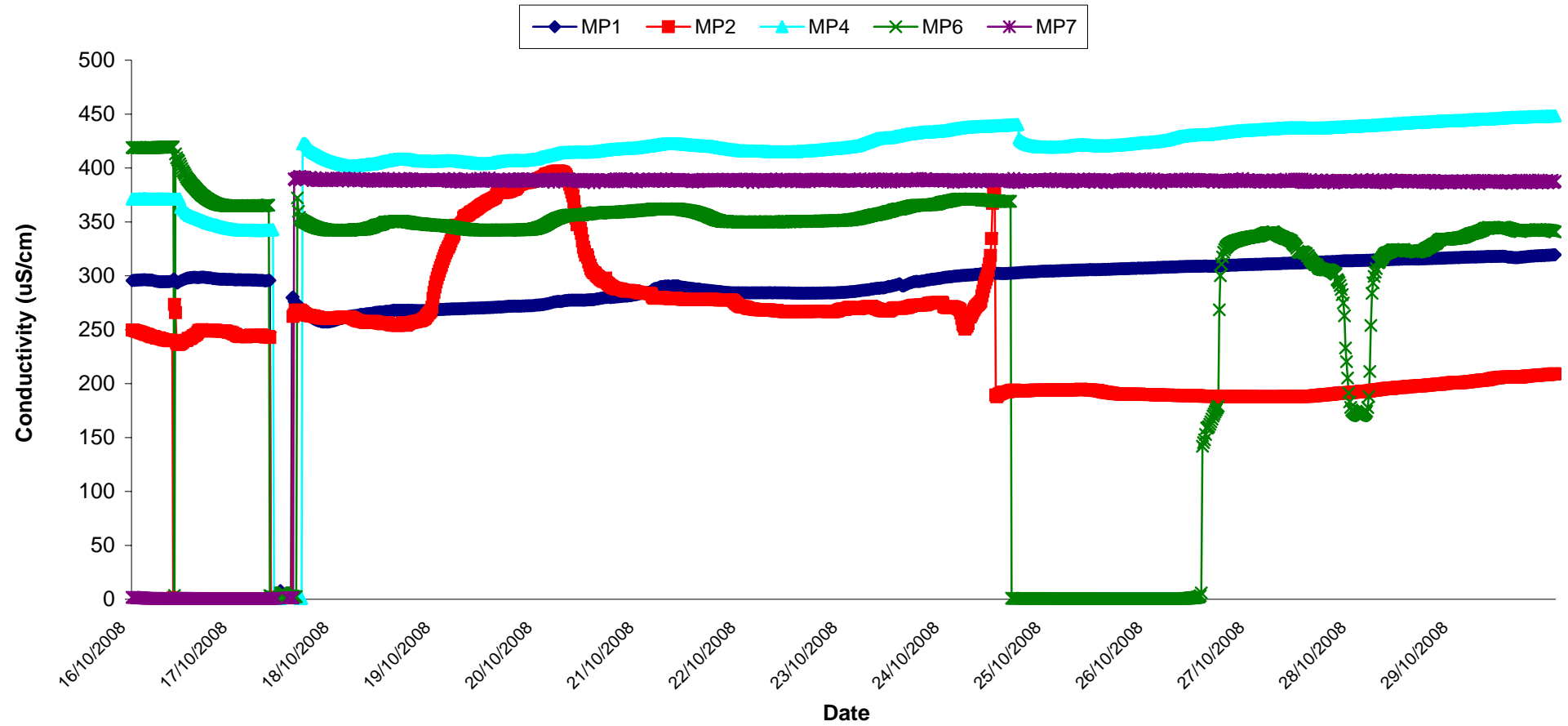
Dissolved Oxygen - Surface Waters, Wk 43-44



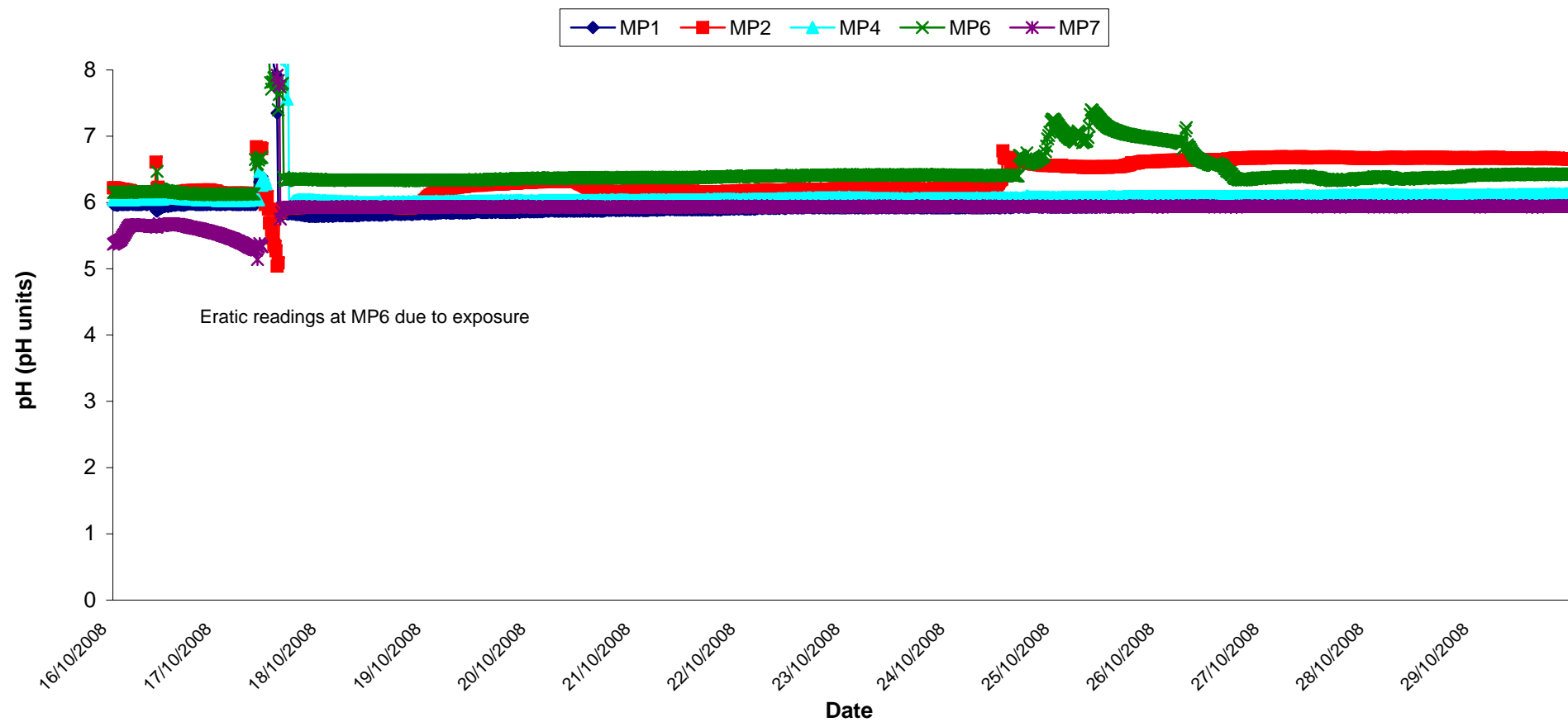
Temperature - Groundwaters Wk 43-44



Conductivity - Groundwaters Wk 43-44



pH - Groundwaters Wk 43-44



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	16/10/2008	229	11.8	19	91.9	7.5			0.8			0.04		32	230	0.15	207
SP1	17/10/2008	295	11.2	20	94.4	7.1			0.3			0.29		<LOD	122	0.60	226
SP1	20/10/2008	300	12.8	9	92.5	6.7			<LOD			0.01		32	120	0.68	200
SP1	21/10/2008	256	11.5	5	97.5	7.2			0.7			<LOD		21	122	0.13	179
SP1	22/10/2008	284	11.6	9	96.1	7.2			<LOD			<LOD		29	178	0.47	180
SP1	23/10/2008	229	12.2	16	92.4	7.4			0.2			<LOD		21	183	0.44	142
SP1	24/10/2008	242	10.8	58	90.9	6.2			<LOD			0.49		76	387	0.16	164
SP1	28/10/2008	282	9.4	12	93.8	6.7			<LOD			0.01		70	197	0.69	182
SP1	29/10/2008	254	8.6	19	92.5	7.3			0.2			0.04		39	183	0.08	162
SP3	16/10/2008	275	14.0	8	102.0	7.5			1.0			0.07		29		0.10	239
SP3	17/10/2008	305	12.4	5	95.4	7.4			0.7			0.93		24		0.04	258
SP3	20/10/2008	337	12.5	6	94.8	6.9			<LOD			0.29		36		0.05	223
SP3	21/10/2008	343	11.7	15	97.2	7.1			5.5			0.02		38		0.11	228
SP3	22/10/2008	345	11.4	12	96.3	7.1			<LOD			<LOD		<LOD		0.05	233
SP3	23/10/2008	264	12.9	47	95.1	7.2			<LOD			0.07		84		0.27	178
SP3	24/10/2008	318	10.3	34	93.0	6.4			<LOD			0.10		45		0.27	212
SP3	28/10/2008	329	10.2	10	96.9	6.9			0.1			0.40		55		0.19	211
SP3	29/10/2008	306	8.9	17	94.6	7.1			1.0			0.01		45		0.03	197
Additional Monitoring																	
D22	16/10/2008	240	11.4	35	83.8	6.4			<LOD			0.69		48		0.19	202
D22	22/10/2008	365	10.6	5	86.7	6.9			<LOD			<LOD		43		0.38	179
D62	16/10/2008	184	10.8	2	84.8	5.3			1.2			0.14		32		0.16	106
D62	22/10/2008	179	9.7	3	86.9	5.9			0.8			0.11		<LOD		0.33	104
Axonics Monitoring																	
Pre	15/10/2008	298		95		6.8			<LOD			0.19		>LOD		0.05	251
Post	15/10/2008	306		5		6.6			<LOD			0.13		19	291	0.06	260
Pre	16/10/2008	296		>LOD		6.7			<LOD			0.61		>LOD		0.13	248
Post	16/10/2008	317		8		6.6			1.3			0.20		<LOD	237	0.02	267
Pre	17/10/2008	300		>LOD		7.0			<LOD			1.60		>LOD		0.03	254
Post	17/10/2008	323		11		6.3			0.4			0.25		<LOD	287	0.10	273
Pre	20/10/2008	342		>LOD		7.0			>LOD			>LOD		>LOD		2.16	229
Post	20/10/2008	365		21		6.9			<LOD			0.26		35	396	0.13	242
Pre	21/10/2008	343		>LOD		7.0			>LOD			2.11		>LOD		0.80	226
Post	21/10/2008	360		10		6.8			<LOD			0.16		<LOD	278	0.07	238
Pre	22/10/2008	346		>LOD		7.0			>LOD			1.00		>LOD		0.47	231
Post	22/10/2008	363		30		6.8			2.0			0.12		27	446	0.04	241
Pre	23/10/2008	352		>LOD		6.9			>LOD			>LOD		>LOD		2.71	235
Post	23/10/2008	406		36		6.8			<LOD			0.18		41	641	0.20	270
Pre	24/10/2008	341		211		6.5			<LOD			0.66		434		0.35	226
Post	24/10/2008	357		7		6.4			2.4			<LOD		<LOD	234	0.20	239
Pre	28/10/2008	321		>LOD		7.0			>LOD			0.59		>LOD		0.85	209
Post	28/10/2008	349		17		6.8			1.6			0.15		<LOD	312	0.20	223
Pre	29/10/2008	332		579		6.8			>LOD			0.39		>LOD		0.16	212
Post	29/10/2008	346		8		6.5			0.2			0.08		<LOD	255	0.08	223
	Grey shaded areas denote parameters that cannot or were not analysed on-site.																
	= Indicative Only																
< LOD	= Below Limit of Detection																
> LOD	= Above Limit of Detection																