

Final Environmental Report	Period Ending: 26 th November 2008
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.
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. – Noise data for this report period is currently not available as there was a technical problem encountered during the installation of telemetry. This has since been restricted and it is not anticipated that this error will reoccur.
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. o 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. Data for the 23 rd through to the 26 th was taken from Belmullet weather station.
Weirs	– Weirs were operational during the reporting period.

1.2 Rainfall Data

13/11/08	6.435	20/11/08	2.145
14/11/08	3.900	21/11/08	0.780
15/11/08	2.535	22/11/08	8.580
16/11/08	5.460	23/11/08	5.655
17/11/08	8.385	24/11/08	2.500
18/11/08	0.780	25/11/08	0.400
19/11/08	0.390	26/11/08	0.500
Total Rainfall 48.445mm			

Final Environmental Report	Period Ending: 26 th November 2008
Compiled By: Siobhán Quinn & Aoife Reynolds	
Approved By: Tony Doyle	

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	All dust levels were within the set limits.
Weather	There was a total of 48.445mm of rainfall during the reporting period, with a temperature range of 5.5°C to 13.5°C. (These figures are based on the 13 th to the 26 th of November)
Noise	Noise data for this report period is currently not available as there was a technical problem encountered during the installation of telemetry resulting in data loss.
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

There were no reported 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	18/11/2008	245		5.5		7.7	<2	13		0.602	0.032	<0.005	<0.017	68	184	0.039	107
SP3	18/11/2008	320		5.4		7.8	<2	<10		1.230	0.020	0.030	<0.017	56	306	<0.030	138
Additional Monitoring																	
Axonics Monitoring																	
Pre Axonics	18/11/2008	308		289.0		7.4	165	23		1.262	0.236	0.030	<0.017	27	2319	0.070	134
Post Axonics	18/11/2008	318		1.7		7.2	<2	<10		1.329	0.037	0.007	<0.017	<20	139	<0.030	138
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																									
Location	Date	DO	Temp	Cond.	pH	TDS	BOD	TSS	Total Hardness	Nitrite as NO ₂	Nitrate as NO ₃	Phosphate as PO ₄	Arsenic	Mercury	Lead	Aluminium (total)	Zinc	Chromium	Copper	Cadmium	Iron	Tin	Ammonia	Aluminium, dissolved	Manganese, total
		% Sat	°C	uS/cm		mg l ⁻¹	mg l ⁻¹	mg l ⁻¹	mg/l CaCO3	mg l ⁻¹	mg l ⁻¹	mg l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	ug l ⁻¹	mg l ⁻¹		
MP 1																									
MP 2																									
MP 3																									
MP 4																									
MP 5																									
MP 6																									
MP 7																									
MP 8																									
MP 10a																									
MP 11																									
Graphs provided for MP1, MP2,MP4, MP6 and MP7: Temperature, Conductivity, and pH.																									

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

No groundwater monitoring during the reportin 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	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	
D1	24/10/2008	21/11/2008	191474	21/11/2008	27/11/2008	174	
D2	24/10/2008	21/11/2008	191475	21/11/2008	27/11/2008	167	
D3	24/10/2008	21/11/2008	191476	21/11/2008	27/11/2008	171	
D4	24/10/2008	21/11/2008	191477	21/11/2008	27/11/2008	180	
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	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

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	10.5	12.3	13/11/2008	08:00:00	14:00:00	2539533	4.7	58.9				
N1	10.6	13.5	14/11/2008	08:00:00	14:00:00	2539533	7.2	35.9				
N1	8.8	11.6	17/11/2008	08:00:00	14:00:00	2539533	6.4	70.2				
N1	8.7	11.1	18/11/2008	08:00:00	14:00:00	2539533	4.0	126.2				
N1	8.1	12.2	19/11/2008	08:00:00	14:00:00	2539533	4.0	104.4				
N1	10.0	11.9	20/11/2008	08:00:00	14:00:00	2539533	5.3	115.9				
N1	8.6	10.2	21/11/2008	08:00:00	14:00:00	2539533	6.0	142.4				
N1	6.5	10.2	24/11/2008	08:00:00	14:00:00	2539533	11.7	NA				Weather data taken from Belmullet Station
N1	6.9	11.2	25/11/2008	08:00:00	14:00:00	2539533	5.7	NA				Weather data taken from Belmullet Station
N1	9.7	11.4	26/11/2008	08:00:00	14:00:00	2539533	8.0	NA				Weather data taken from Belmullet Station

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

Due to technical error with the noise meter when telemetry was installed the noise data for this report period was not available.

NA = Data Not Available

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	10.5	12.3	13/11/2008	22:00:00	10:00:00	2539533	4.7	58.9				
N1	10.6	13.5	14/11/2008	22:00:00	10:00:00	2539533	7.2	35.9				
N1	8.8	11.6	17/11/2008	22:00:00	10:00:00	2539533	6.4	70.2				
N1	8.7	11.1	18/11/2008	22:00:00	10:00:00	2539533	4.0	126.2				
N1	8.1	12.2	19/11/2008	22:00:00	10:00:00	2539533	4.0	104.4				
N1	10.0	11.9	20/11/2008	22:00:00	10:00:00	2539533	5.3	115.9				
N1	8.6	10.2	21/11/2008	22:00:00	10:00:00	2539533	6.0	142.4				
N1	6.5	10.2	24/11/2008	22:00:00	10:00:00	2539533	11.7	NA				Weather data taken from Belmullet Station
N1	6.9	11.2	25/11/2008	22:00:00	10:00:00	2539533	5.7	NA				Weather data taken from Belmullet Station
N1	9.7	11.4	26/11/2008	22:00:00	10:00:00	2539533	8.0	NA				Weather data taken from Belmullet Station

* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement).
Due to technical error with the noise meter when telemetry was installed the noise data for this report period was not available.
NA = Data Not Available

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)
13/11/2008	28.58	11.70	21.61	13.58	5.13	10.24
14/11/2008	26.29	16.27	20.41	17.39	10.38	12.22
15/11/2008	26.29	14.42	18.17	13.88	7.23	9.64
16/11/2008	33.88	14.64	23.08	13.88	6.26	9.89
17/11/2008	36.93	16.03	26.11	15.13	6.26	10.51
18/11/2008	33.88	15.79	22.06	13.58	4.48	10.19
19/11/2008	17.49	12.50	15.18	9.83	6.74	9.00
20/11/2008	14.87	12.30	13.59	9.28	6.03	8.19
21/11/2008	35.01	9.66	21.29	9.83	3.10	6.64
22/11/2008	34.63	14.20	21.50	11.80	4.48	5.46
23/11/2008	37.72	14.64	24.61	11.80	3.10	7.48
24/11/2008	22.92	12.91	16.37	9.55	5.35	6.63
25/11/2008	12.91	7.24	9.83	6.50	2.38	4.67
26/11/2008	10.01	7.10	8.57	4.69	1.58	3.54

Note: Negative values indicate low flow conditions.

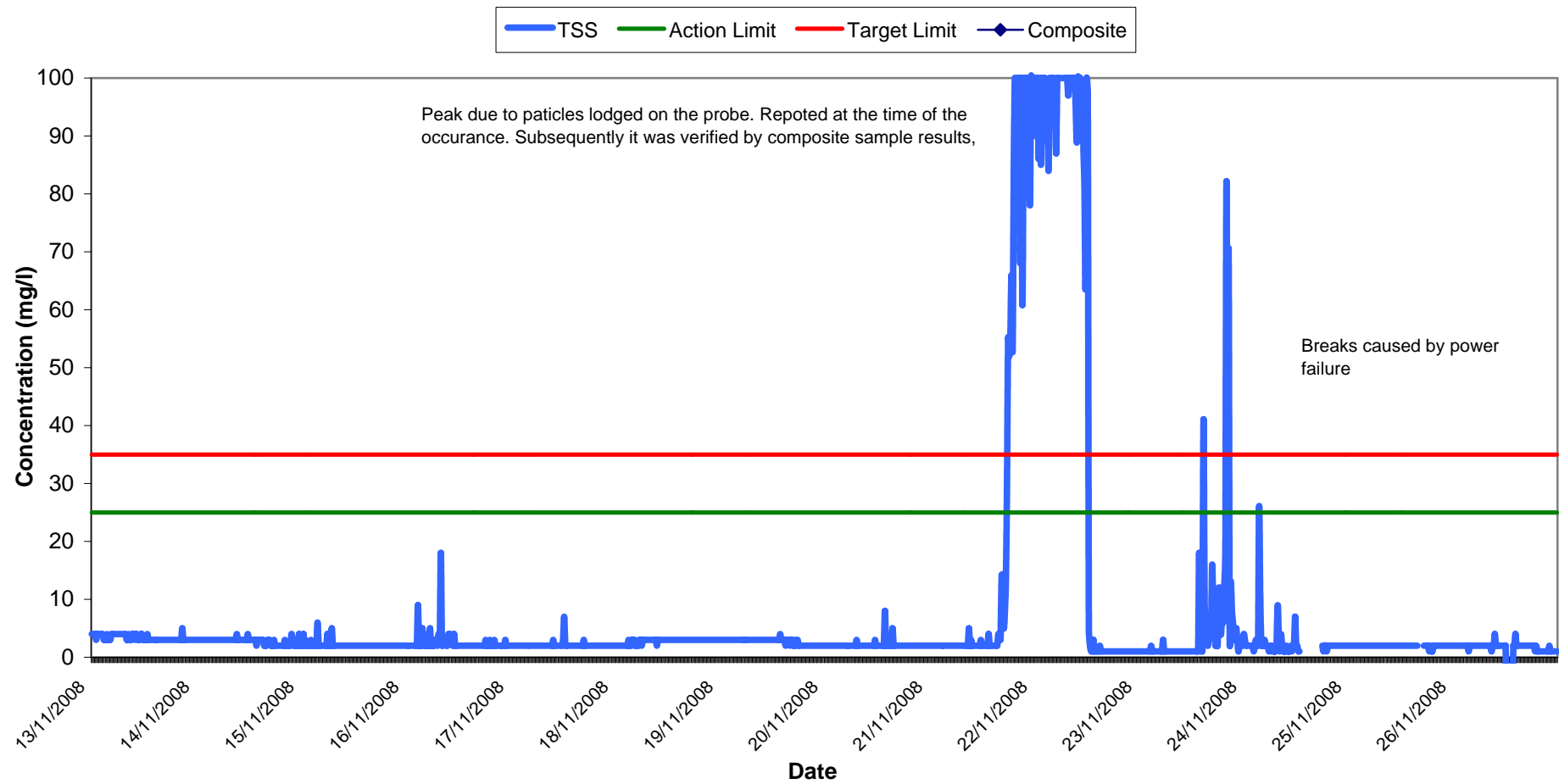
Vibration Monitoring Record Sheet

Determinant Results	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

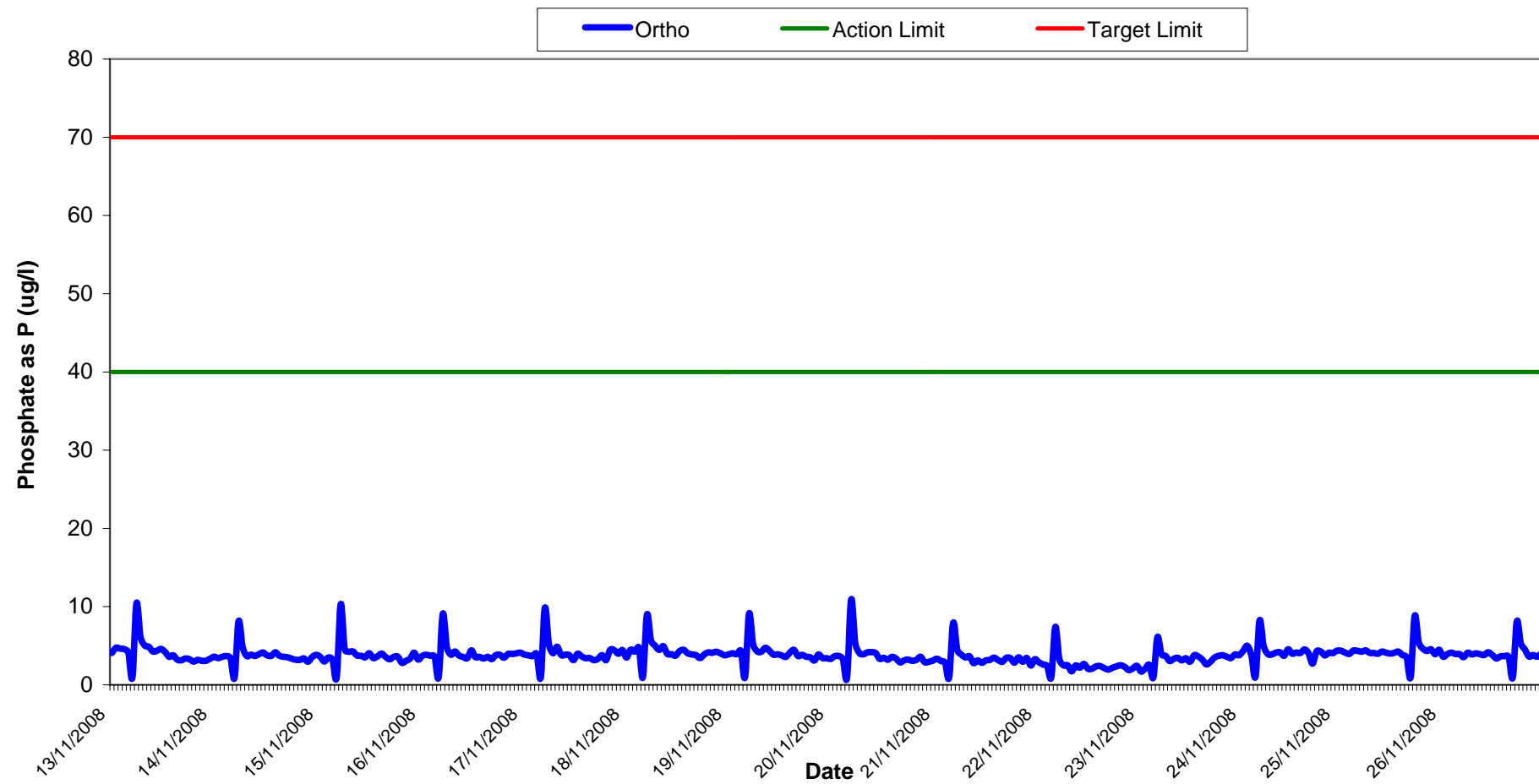
[illegible]

Vibration meter was located at V1 only.

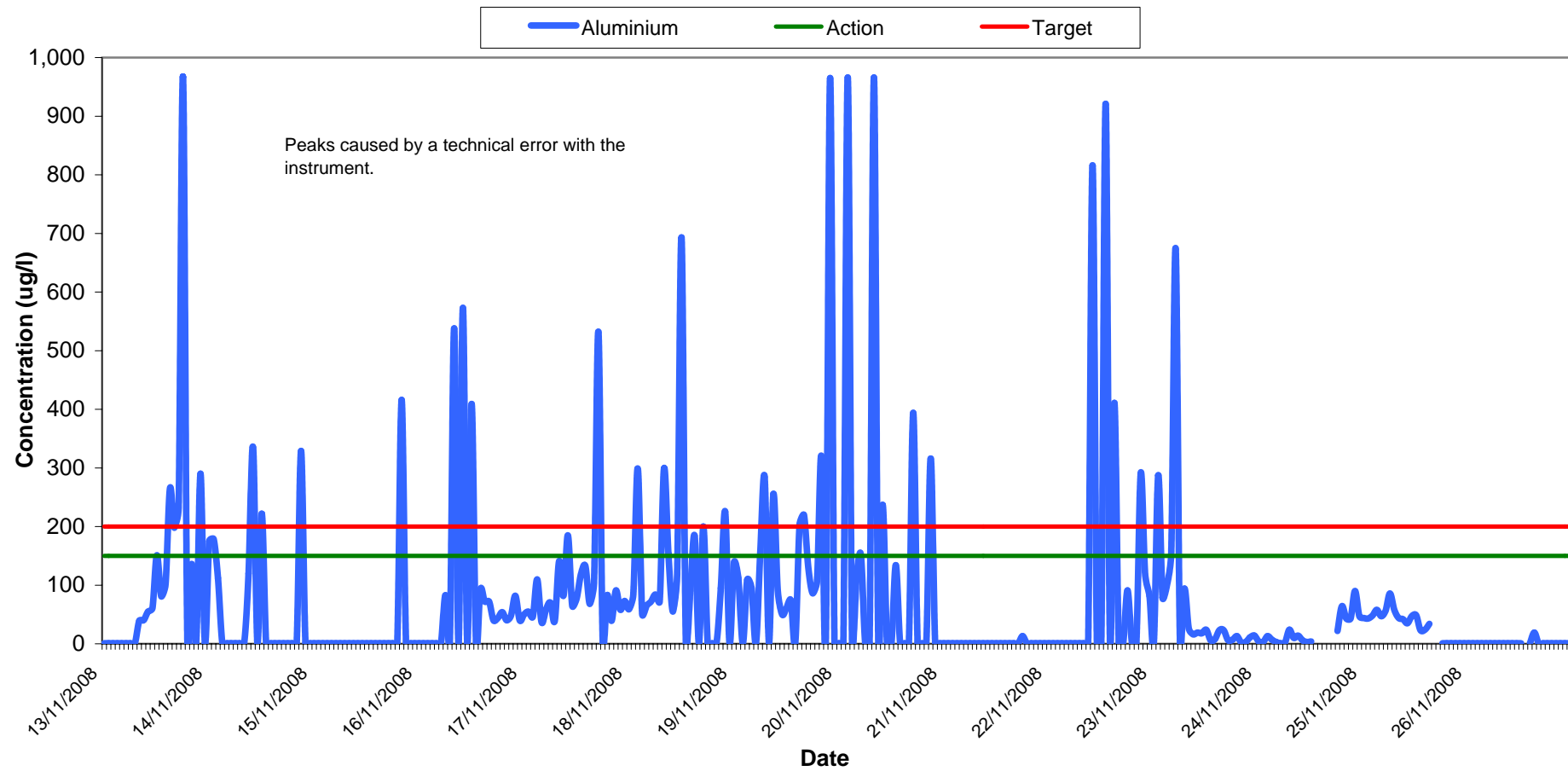
Total Suspended Solids Results at SP1 Wk 47-48



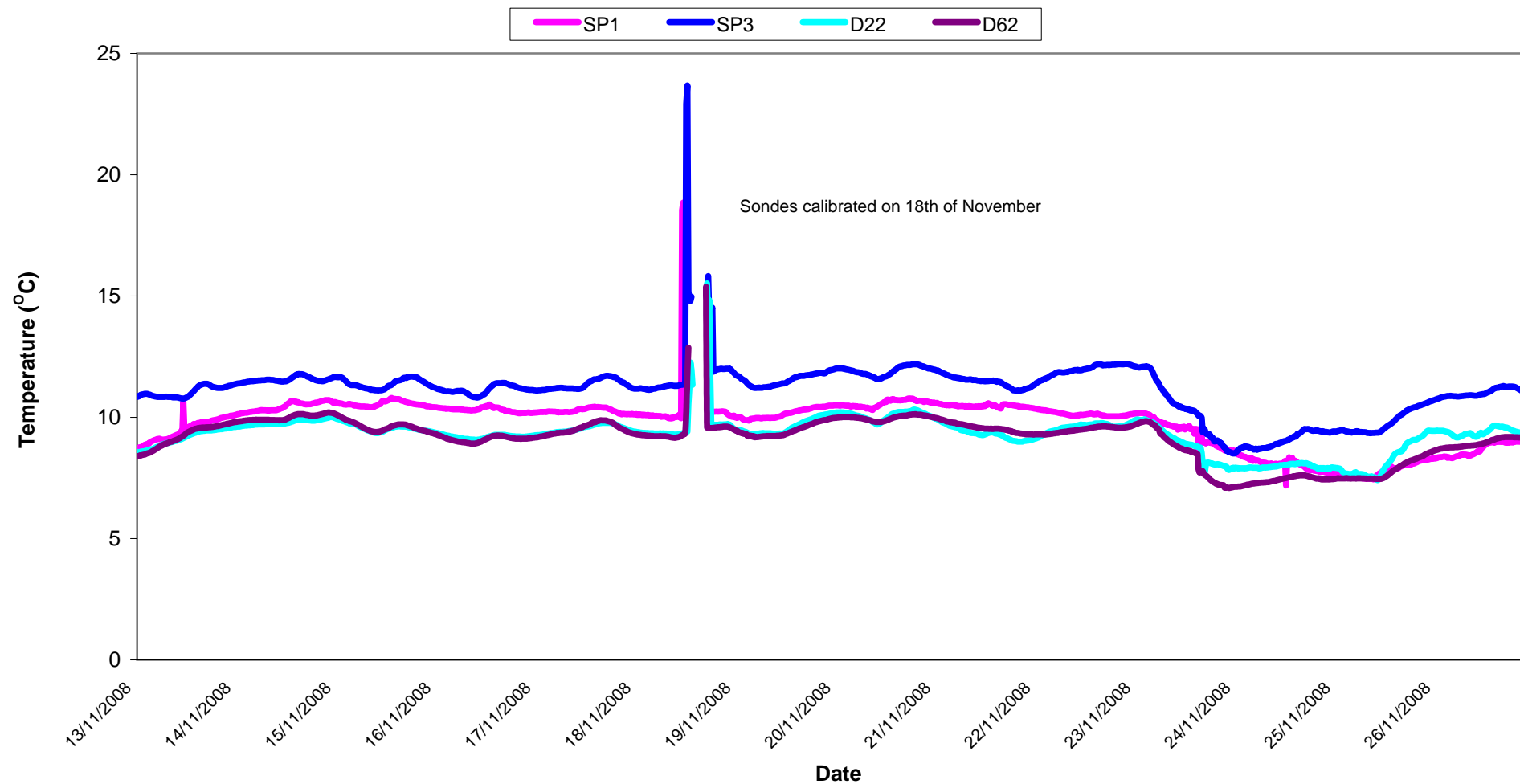
Orthophosphate Results at SP1
Wk 47-48



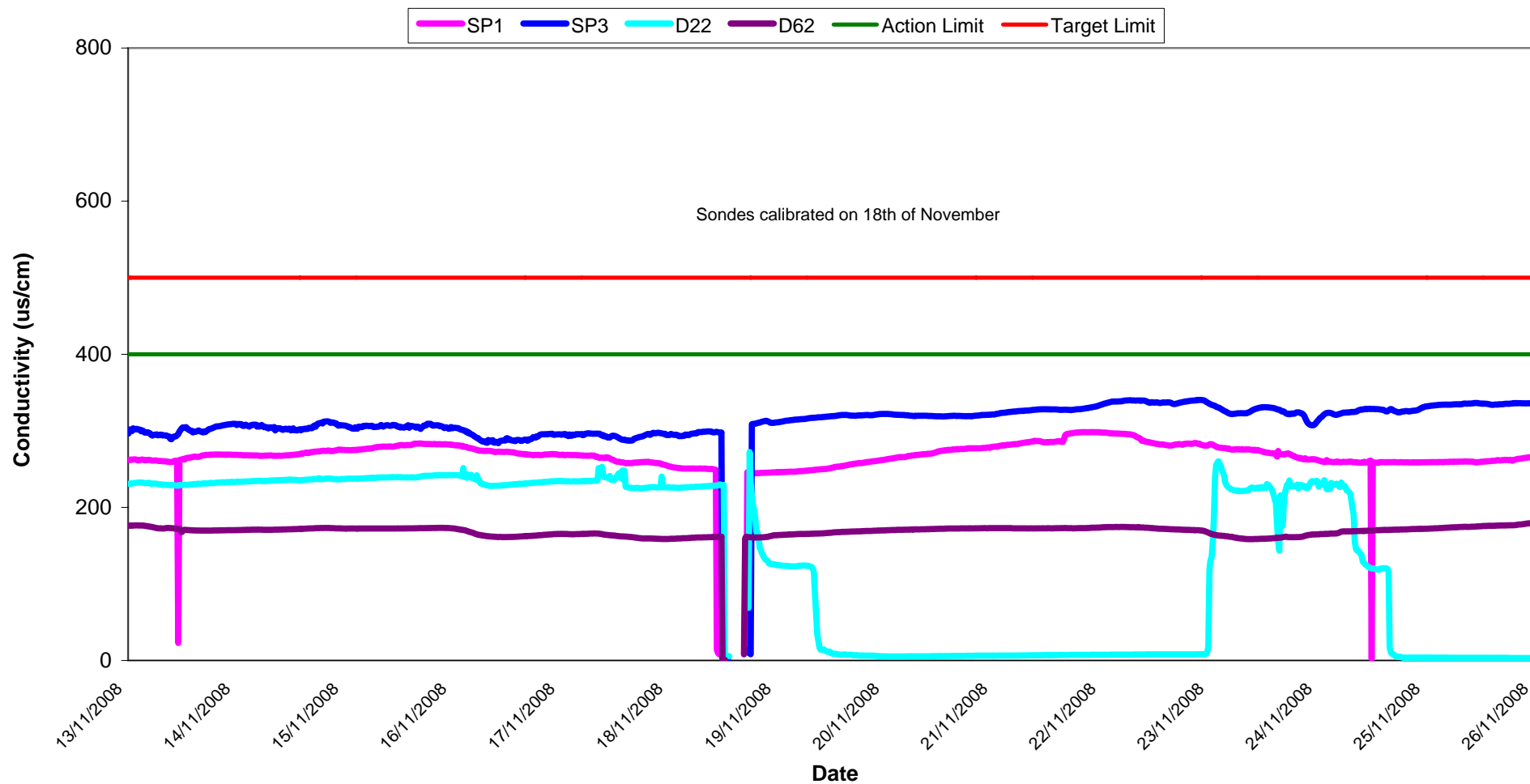
Aluminium Concentration at SP1 Wk 47-48



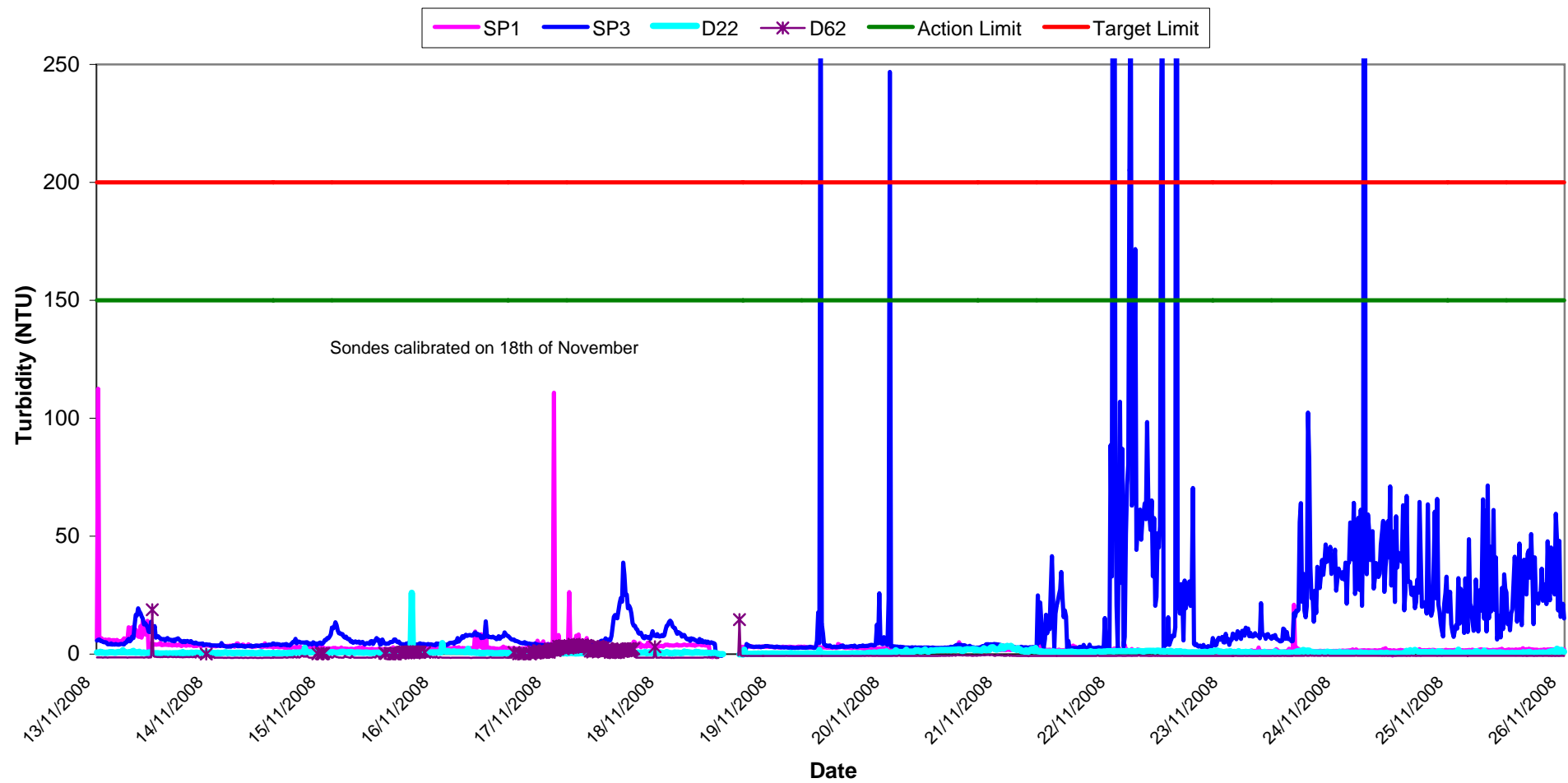
Temperature - Surface Waters Wk 47-48



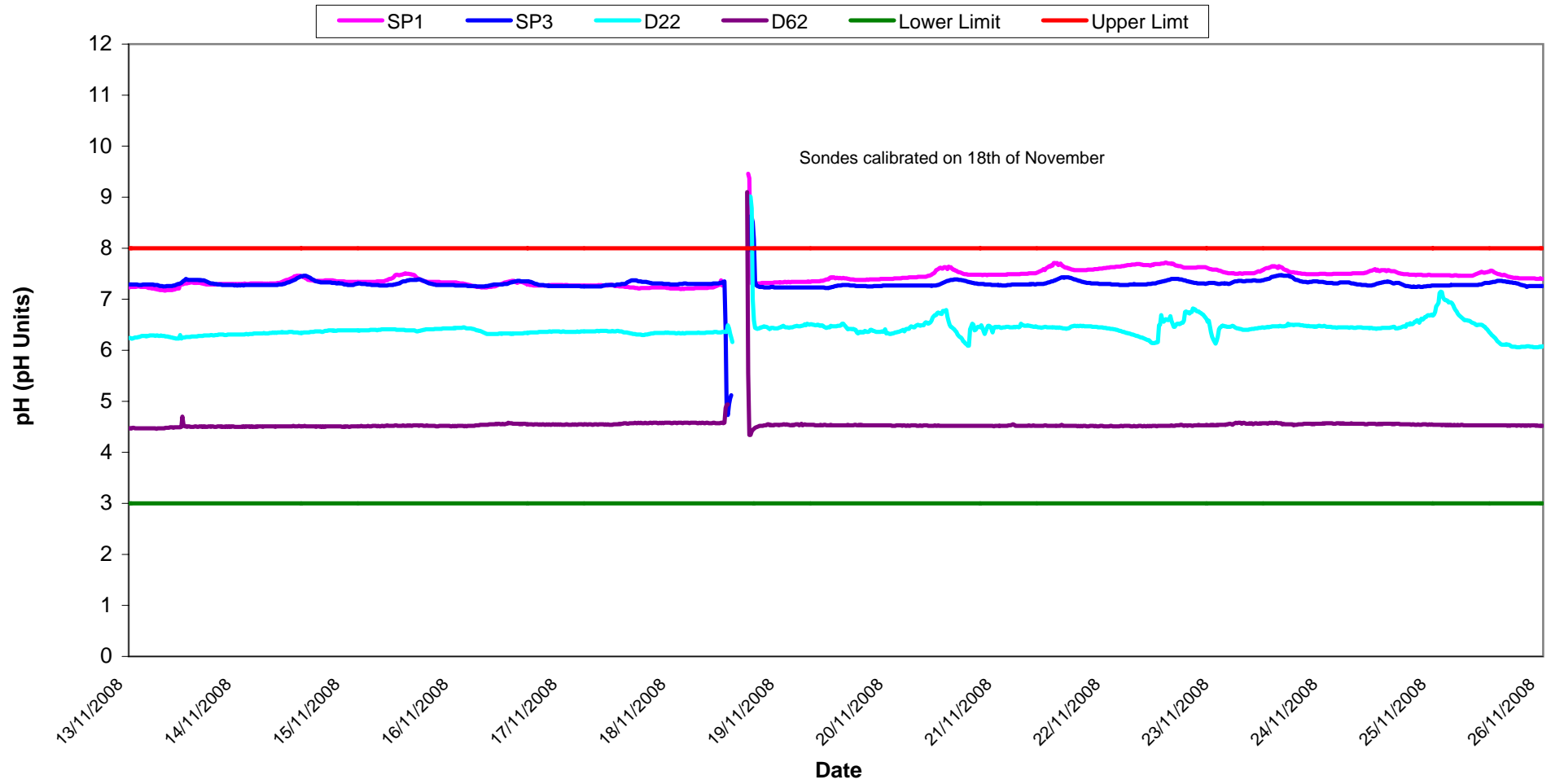
Conductivity - Surface Waters, Wk 47-48



Turbidity - Surface Waters Wk 47-48

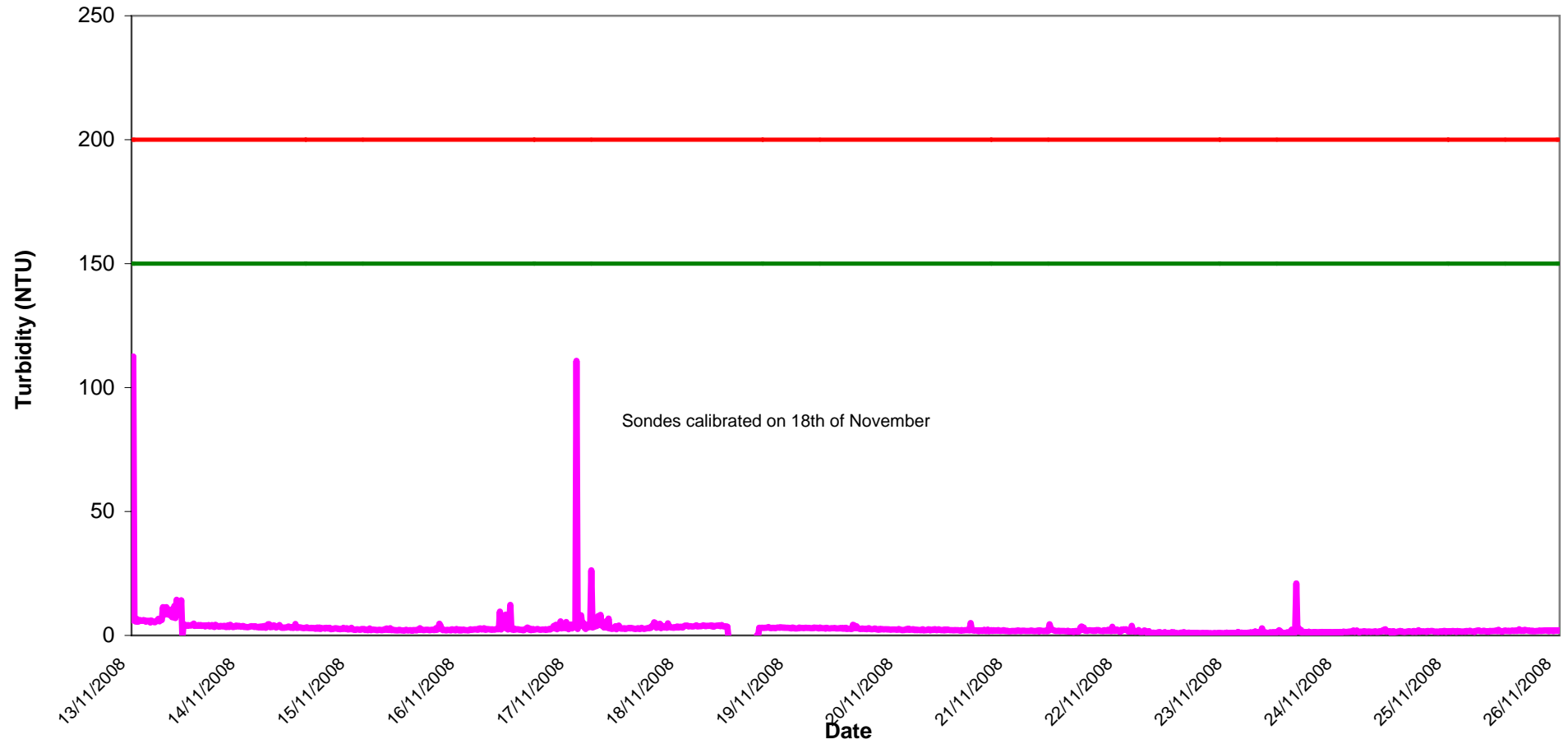


pH - Surface Waters Wk 47-48

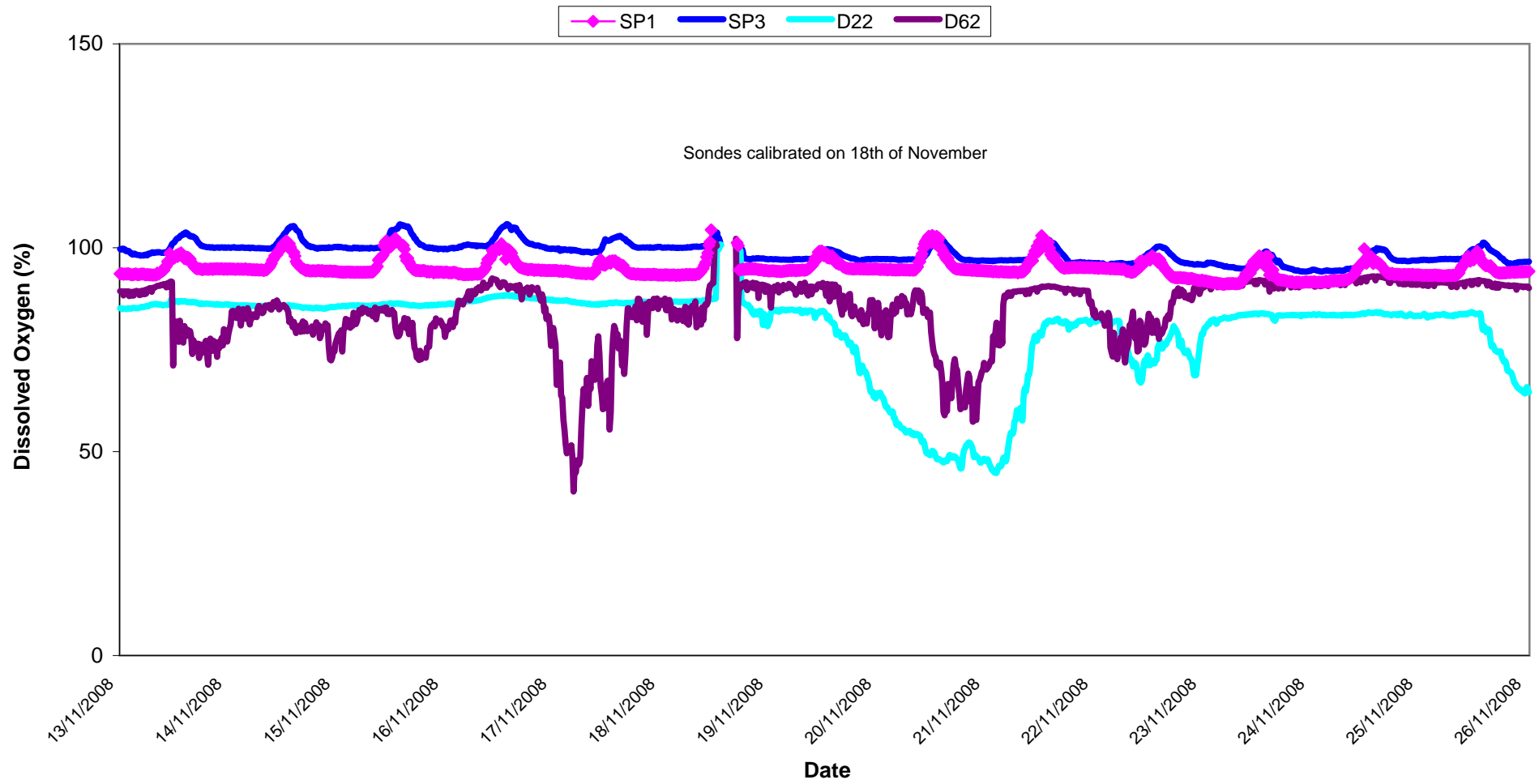


Turbidity - Surface Waters @ SP1, Wk 47-48

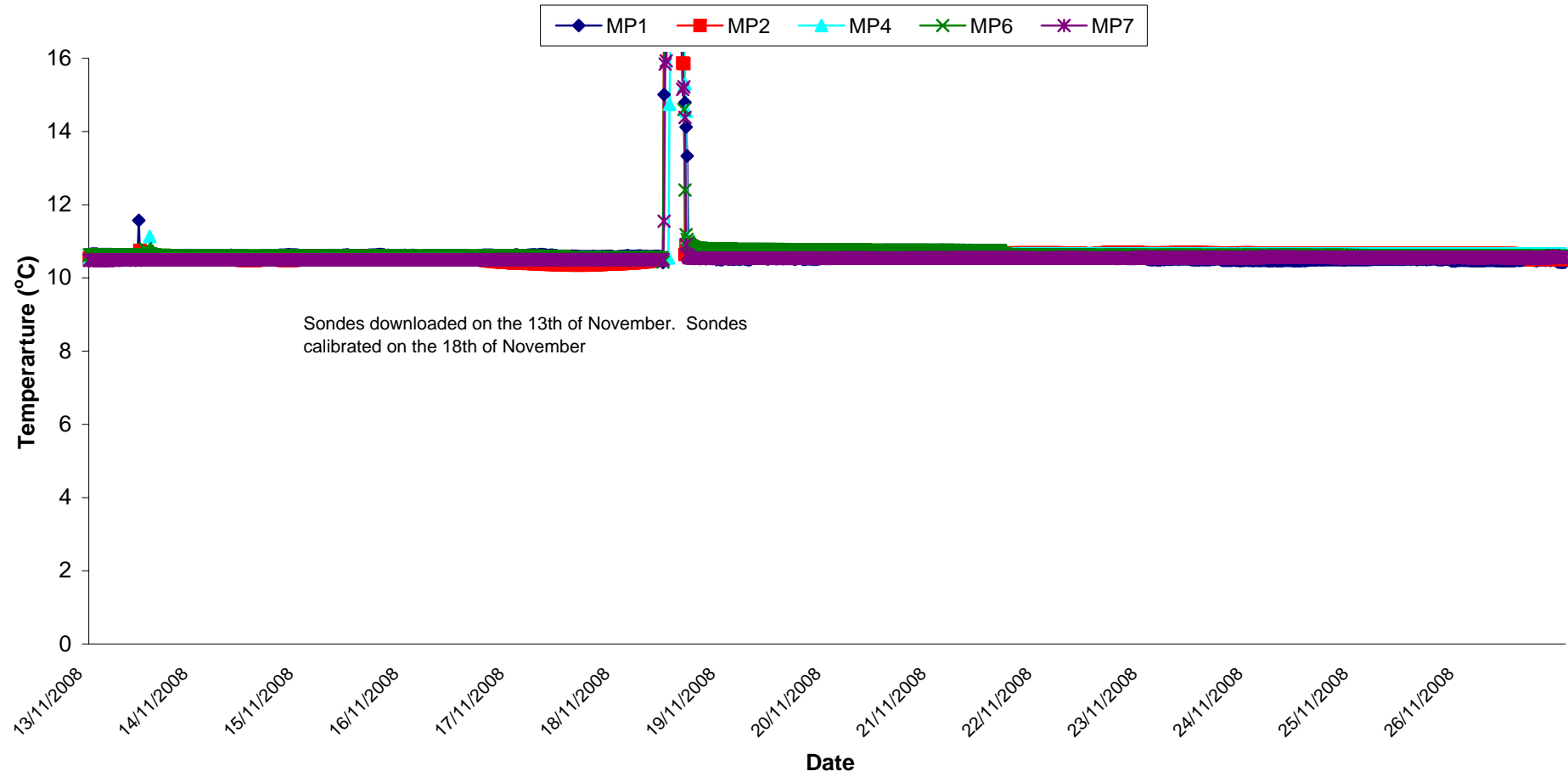
SP1 Action Limit Target Limit



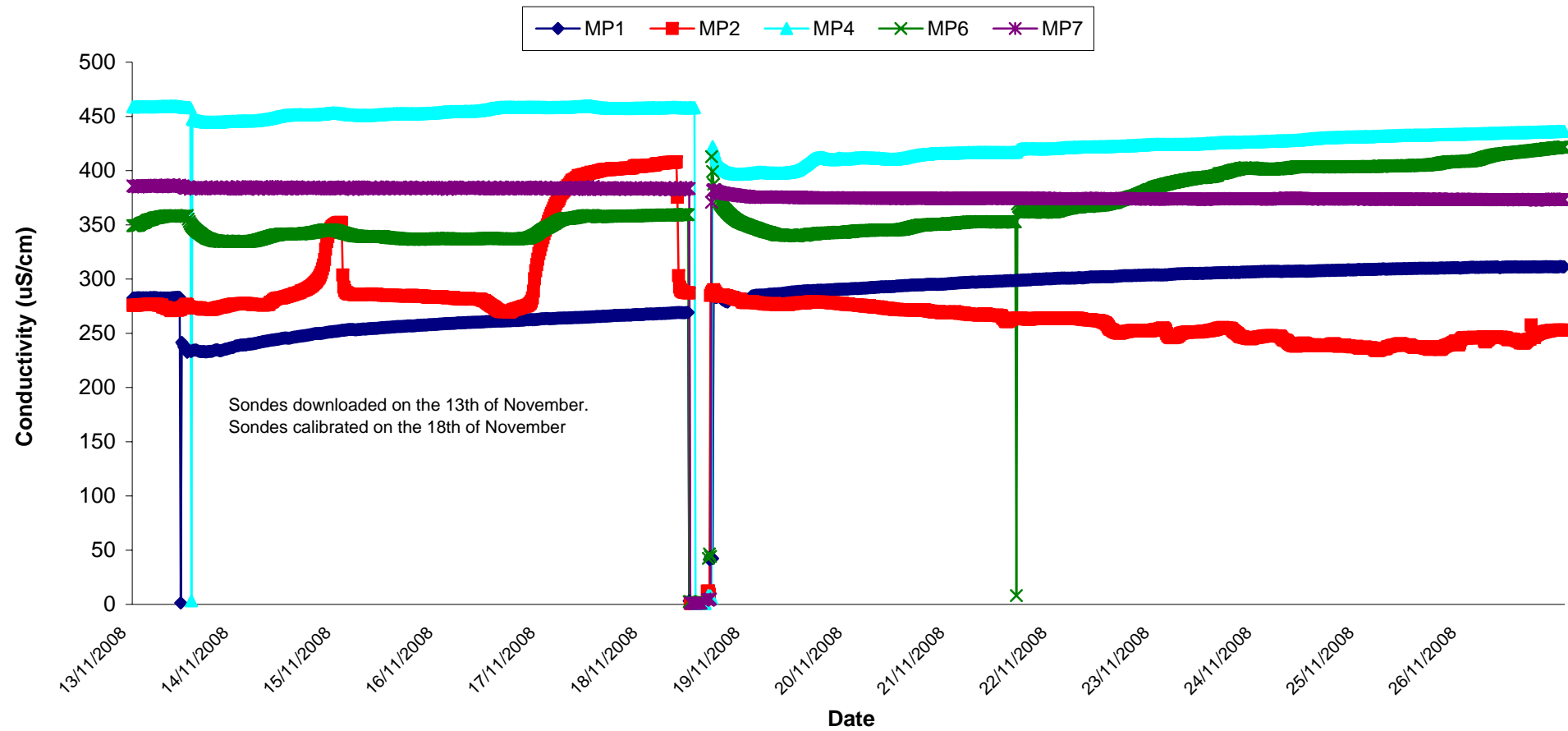
Dissolved Oxygen - Surface Waters, Wk 47-48



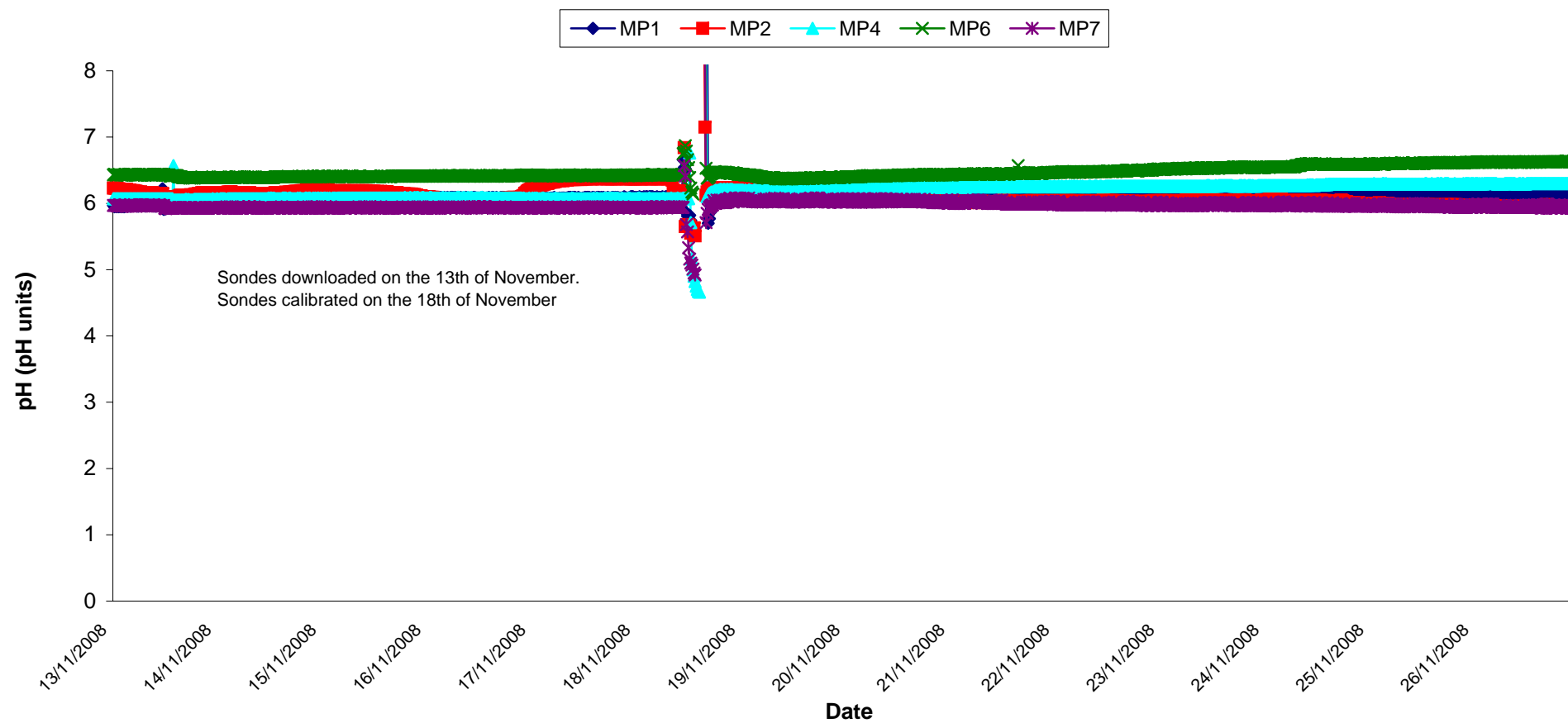
Temperature - Groundwaters Wk 47-48



Conductivity - Groundwaters Wk 47-48



pH - Groundwaters Wk 47-48



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	13/11/2008	265	10.7	14.4	90.5	6.9			<LOD			<LOD		57	174	0.06	166
SP1	14/11/2008	270	11.2	9.4	89.5	6.8			0.1			<LOD		30	192	<LOD	180
SP1	17/11/2008	281	11.6	13.4	88.3	6.7			<LOD			<LOD		20	114	<LOD	187
SP1	18/11/2008	169	11.3	6.5	93.2	6.9			<LOD			0.30		36	158	0.09	169
SP1	19/11/2008	258	10.0	10.6	96.8	7.1			0.3			0.03		23	146	0.16	166
SP1	20/11/2008	272	11.9	17.8	89.1	6.9			0.2			0.03		<LOD	116	0.01	184
SP1	21/11/2008	292	10.6	12.7	89.5	7.0			0.1			0.02		24	189	0.03	200
SP1	24/11/2008	273	9.0	6.5	90.8	7.3			<LOD			0.02		33	117	0.04	186
SP1	25/11/2008	262	9.1	10.1	90.4	7.1			0.6			<LOD		24	162	<LOD	180
SP1	26/11/2008	290	9.8	8.9	89.4	6.1			0.5			<LOD		38	97	0.32	190
SP3	13/11/2008	315	11.2	22.9	92.5	6.7			0.2			<LOD		35		<LOD	212
SP3	14/11/2008	316	11.7	8.4	92.1	6.7			0.3			0.14		41		0.01	213
SP3	17/11/2008	315	11.4	10.4	91.8	6.6			<LOD			0.03		<LOD		0.01	211
SP3	18/11/2008	212	12.1	7.0	92.4	6.3			0.5			0.24		27		0.05	212
SP3	19/11/2008	338	11.3	6.5	97.4	7.4			0.7			0.67		<LOD		0.02	226
SP3	20/11/2008	340	12.8	5.2	92.8	6.8			0.3			<LOD		<LOD		<LOD	228
SP3	21/11/2008	342	11.9	5.6	92.4	7.1			0.4			0.02		<LOD		<LOD	232
SP3	24/11/2008	347	9.0	10.7	92.3	7.1			0.1			0.07		28		<LOD	235
SP3	25/11/2008	352	10.3	13.3	94.8	7.5			0.2			1.46		34		<LOD	236
SP3	26/11/2008	352	11.1	7.6	92.7	6.2			0.4			0.01		56		<LOD	232
Additional Monitoring																	
D22	18/11/2008	233	9.3	2.2	87.0	6.5			<LOD			0.20		40		0.08	157
D62	18/11/2008	180	9.7	1.1	87.3	5.9			0.3			0.24		15		0.03	110
D22	26/11/2008	260	9.9	6.4	84.1	6.4			0.4			0.63		42		0.03	171
D62	26/11/2008	198	9.7	4.0	84.5	4.4			0.9			0.01		21		<LOD	124
Axonics Monitoring																	
Pre	13/11/2008	306		303.0		6.8			<LOD			0.19		385		0.03	203
Post	13/11/2008	316		15.7		6.6			0.2			<LOD		48	>LOD	<LOD	211
Pre	14/11/2008	312		>LOD		6.7			<LOD			0.36		>LOD		0.09	209
Post	14/11/2008	329		7.6		6.7			0.5			<LOD		27	497	0.02	319
Pre	17/11/2008	315		94.3		6.8			<LOD			0.26		200		0.01	213
Post	17/11/2008	332		12.5		6.7			0.3			0.08		21	531	0.02	223
Pre	18/11/2008	215		43.8		6.8			<LOD			0.10		41		0.01	215
Post	18/11/2008	224		2.0		6.7			0.8			0.02		<LOD	268	0.06	224
Pre	19/11/2008	338		329.0		6.7			<LOD			1.13		372		0.02	230
Post	19/11/2008	350		8.4		6.3			0.4			0.05		<LOD	261	0.02	239
Pre	20/11/2008	333		137.0		7.0			<LOD			0.13		289		0.01	223
Post	20/11/2008	237		8.8		6.9			0.3			<LOD		28	392	0.01	237
Pre	21/11/2008	338		266.0		7.0			<LOD			0.13		273		<LOD	226
Post	21/11/2008	358		6.3		6.8			0.5			<LOD		<LOD	511	<LOD	239
Pre	24/11/2008	359		143.0		7.0			<LOD			0.15		441		0.02	243
Post	24/11/2008	368		2.2		6.8			<LOD			0.02		<LOD	122	0.01	250
Pre	25/11/2008	355		123.0		7.2			<LOD			0.10		298		0.03	240
Post	25/11/2008	359		4.1		6.8			0.6			0.02		<LOD	395	<LOD	231
Pre	26/11/2008	358		90.5		6.4			<LOD			0.04		320		<LOD	235
Post	26/11/2008	368		6.1		6.4			0.4			0.06		33	375	0.03	243
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																	