

Final Environmental Report	Period Ending: 15 th October 2008
Compiled By: Siobhán Quinn & Aoife Reynolds	
Approved By: Tony Doyle	

1 Monitoring Data

1.1 Monitoring Equipment

Axonics	– Axonics plant operated as required for the majority of 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. o 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	– Weirs were operational during the reporting period.

1.2 Rainfall Data

02/10/08	6.240	09/10/08	13.260
03/10/08	2.925	10/10/08	23.790
04/10/08	22.035	11/10/08	0.195
05/10/08	0.000	12/10/08	0.000
06/10/08	2.535	13/10/08	2.730
07/10/08	14.430	14/10/08	0.000
08/10/08	0.195	15/10/08	5.070
Total Rainfall 93.41 mm			

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1.3 Summary

Environment	Comments
Surface Water	There was 1 no. exceedance during the reporting period. (See section 2)
Groundwater	The groundwater data (Sonde) is within anticipated ranges.
Dust	All dust levels were within the set limits.
Weather	There was a total of 93.41mm of rainfall during the reporting period, with a temperature range of 2.6°C to 17.0°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	7 th of October 2008
Location	SP1
Nature of Incident	A value of 362µg/l was recorded for total aluminium at SP1 on the 7 th of October 2008. This value is in exceedance of the site discharge limit for total aluminium of 200µg/l.
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 as much of the footprint waters as possible. 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																									
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	ug l ⁻¹	ug l ⁻¹
MP 1	02/10/2008	21.0	10.8	338	5.7	151	34	<2	74.0	<0.017	<0.44	2.083	5.0	<0.05	<0.5	<20	8	1.0	<1	<0.5	27660	0.8	2.159	<20	1549
MP 2	02/10/2008	9.9	10.3	274	5.8	123	10	172	80.8	<0.017	<0.44	0.601	2.0	<0.05	4.0	101	23	3.0	8	<0.5	12760	0.6	3.296	101	226
MP 3	02/10/2008	10.5	10.3	421	5.6	190	8	14	75.0	<0.017	<0.44	1.386	2.0	<0.05	<0.5	444	17	1.0	1	<0.5	107000	0.8	2.723	444	174
MP 4	02/10/2008	17.0	10.0	458	5.8	205	10	2	59.9	<0.017	<0.44	0.582	1.0	<0.05	<0.5	283	14	4.0	1	<0.5	53500	<0.5	0.407	<20	409
MP 5	02/10/2008	25.0	10.2	275	5.5	121	12	34	78.2	<0.017	<0.44	0.478	0.8	<0.05	2.0	939	17	3.0	3	<0.5	12020	<0.5	2.121	239	236
MP 6	02/10/2008	25.0	10.1	472	6.0	213	13	4	107.7	<0.017	<0.44	1.633	<0.5	<0.05	0.9	1427	12	1.0	2	<0.5	12060	<0.5	0.800	<20	324
MP 7	02/10/2008	9.9	10.7	383	5.7	172	17	2	59.9	<0.017	<0.44	0.829	1.0	<0.05	<0.5	283	14	4.0	8	<0.5	428	<0.5	3.085	<20	409
MP 8	02/10/2008	11.0	11.0	163	5.1	75	7	366	40.9	<0.017	<0.44	0.203	0.6	<0.05	3.0	960	35	2.0	5	<0.5	4074	0.6	0.543	203	79
MP 10a	02/10/2008	13.7	10.7	478	5.8	215	14	384	180.6	<0.017	<0.44	0.120	1.0	<0.05	9.0	897	26	2.0	7	<0.5	12060	<0.5	0.563	<20	3018
MP 11	02/10/2008	32.5	11.0	211	5.3	96	4	18	37.6	<0.017	<0.44	0.097	0.8	<0.05	35.0	301	113	0.6	11	<0.5	1204	<0.5	0.042	<20	10430
Graphs provided for MP1, MP2,MP4, MP6 and MP7 for: Temperature, Conductivity, and pH.																									

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	6.6	12.3	02/10/2008	08:00:00	14:00:00	2539533	5.9	156.5	52.3	83.5	40.8	
N1	4.0	10.7	03/10/2008	08:00:00	14:00:00	2539533	2.1	109.6	50.2	89.5	34.5	
N1	6.9	15.8	06/10/2008	08:00:00	14:00:00	2539533	4.2	175.0	50.3	83.5	34.5	
N1	9.5	13.8	07/10/2008	08:00:00	14:00:00	2539533	3.6	82.6	49.3	77.4	38.9	
N1	7.4	15.3	08/10/2008	08:00:00	14:00:00	2539533	2.5	48.3	48.7	76.0	35.1	
N1	10.4	14.2	09/10/2008	08:00:00	14:00:00	2539533	6.3	40.2	55.1	76.6	39.7	
N1	11.0	15.1	10/10/2008	08:00:00	14:00:00	2539533	4.8	34.2	52.1	70.0	41.8	
N1	9.0	14.3	13/10/2008	08:00:00	14:00:00	2539533	3.2	73.6	46.8	70.3	35.0	
N1	6.2	14.3	14/10/2008	08:00:00	14:00:00	2539533	1.3	88.1	48.1	73.5	33.2	
N1	6.7	12.6	15/10/2008	08:00:00	14:00:00	2539533	3.3	82.2	47.9	77.4	35.7	

* 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

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	6.6	12.3	02/10/2008	22:00:00	10:00:00	2539533	5.9	156.5	46.8	79.6	37.2	
N1	4.0	10.7	03/10/2008	22:00:00	10:00:00	2539533	2.1	109.6	51.2	74.4	36.5	
N1	6.9	15.8	06/10/2008	22:00:00	10:00:00	2539533	4.2	175.0	46.7	66.3	34.9	
N1	9.5	13.8	07/10/2008	22:00:00	10:00:00	2539533	3.6	82.6	44.7	74.0	37.6	
N1	7.4	15.3	08/10/2008	22:00:00	10:00:00	2539533	2.5	48.3	47.4	70.9	35.3	
N1	10.4	14.2	09/10/2008	22:00:00	10:00:00	2539533	6.3	40.2	52.7	76.3	39.6	
N1	11.0	15.1	10/10/2008	22:00:00	10:00:00	2539533	4.8	34.2	45.2	71.4	39.1	
N1	9.0	14.3	13/10/2008	22:00:00	10:00:00	2539533	3.2	73.6	43.0	68.3	36.5	
N1	6.2	14.3	14/10/2008	22:00:00	10:00:00	2539533	1.3	88.1	46.6	70.7	42.6	
N1	6.7	12.6	15/10/2008	22:00:00	10:00:00	2539533	3.3	82.2	42.9	66.8	35.4	

* 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)
02/10/2008	30.29	11.31	19.03	10.66	2.91	4.26
03/10/2008	19.03	9.31	14.09	9.83	3.10	4.08
04/10/2008	213.38	13.12	58.57	61.80	4.27	19.75
05/10/2008	40.97	3.50	20.81	13.28	4.27	7.62
06/10/2008	13.76	6.26	11.53	4.27	1.30	3.09
07/10/2008	68.42	11.12	36.49	17.06	3.10	9.02
08/10/2008	19.82	8.48	15.18	7.23	4.07	5.28
09/10/2008	38.12	9.31	19.52	14.50	4.48	7.91
10/10/2008	216.76	25.66	93.75	100.24	13.88	45.15
11/10/2008	36.16	16.99	24.16	14.81	7.73	10.36
12/10/2008	16.75	11.90	14.42	8.23	5.35	7.46
13/10/2008	20.64	8.81	12.28	16.08	2.38	6.06
14/10/2008	42.23	7.69	22.00	9.02	0.67	4.46
15/10/2008	42.23	8.48	27.50	10.38	4.91	6.14

Note: Negative values indicate low flow conditions.

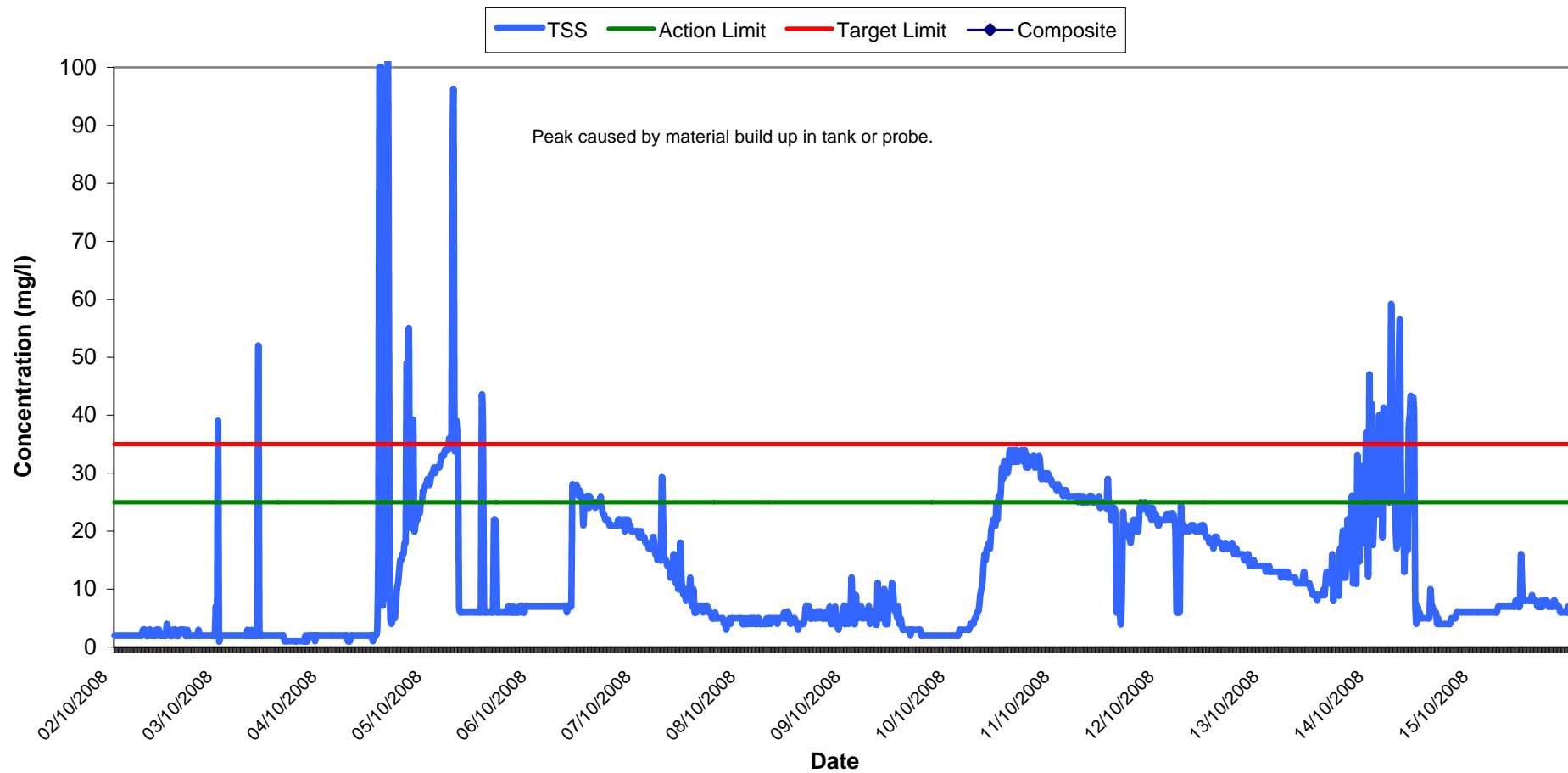
Vibration Monitoring Record Sheet

Determinant Results	
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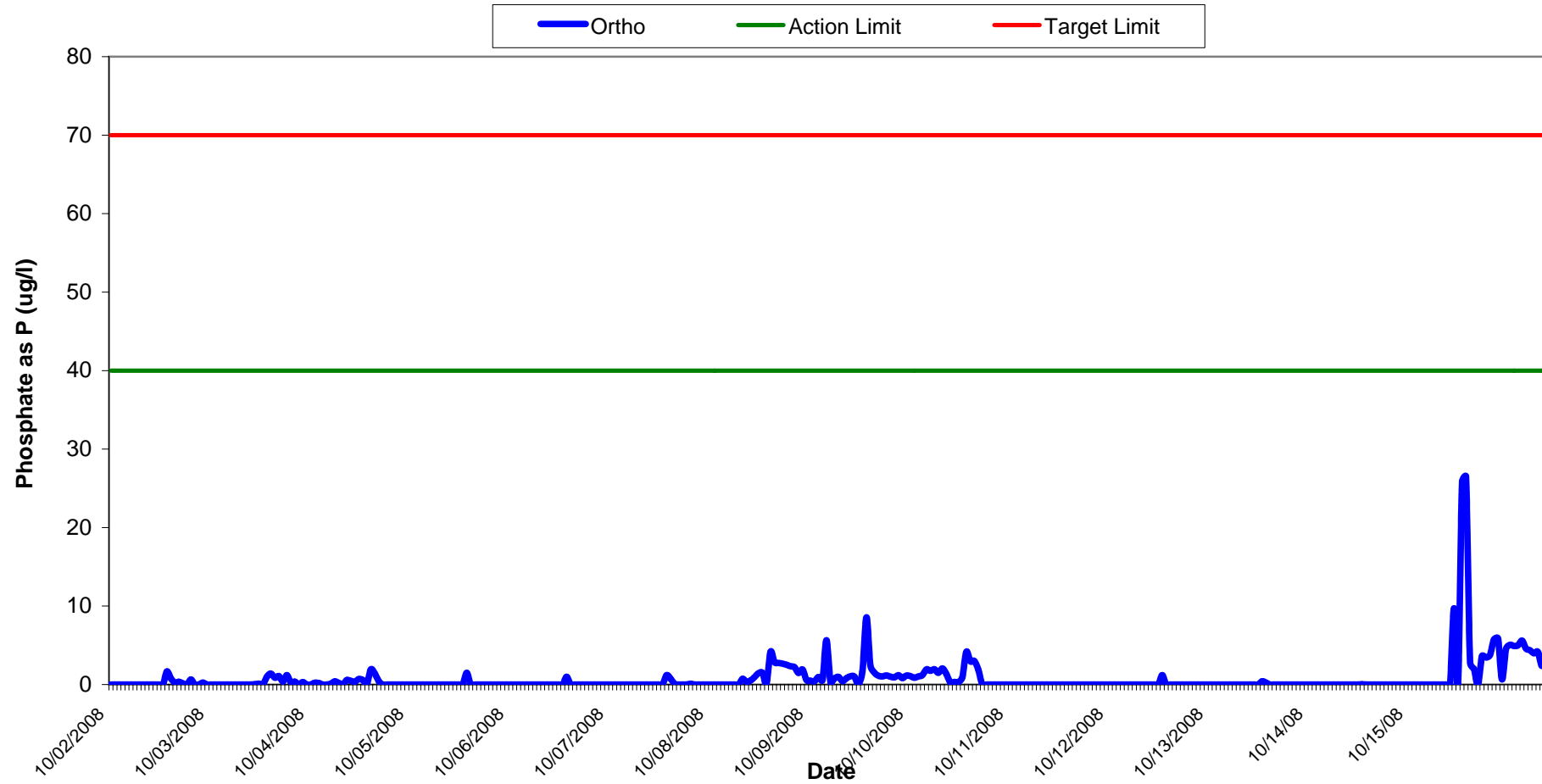
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Vibration meter was located at V1 only.

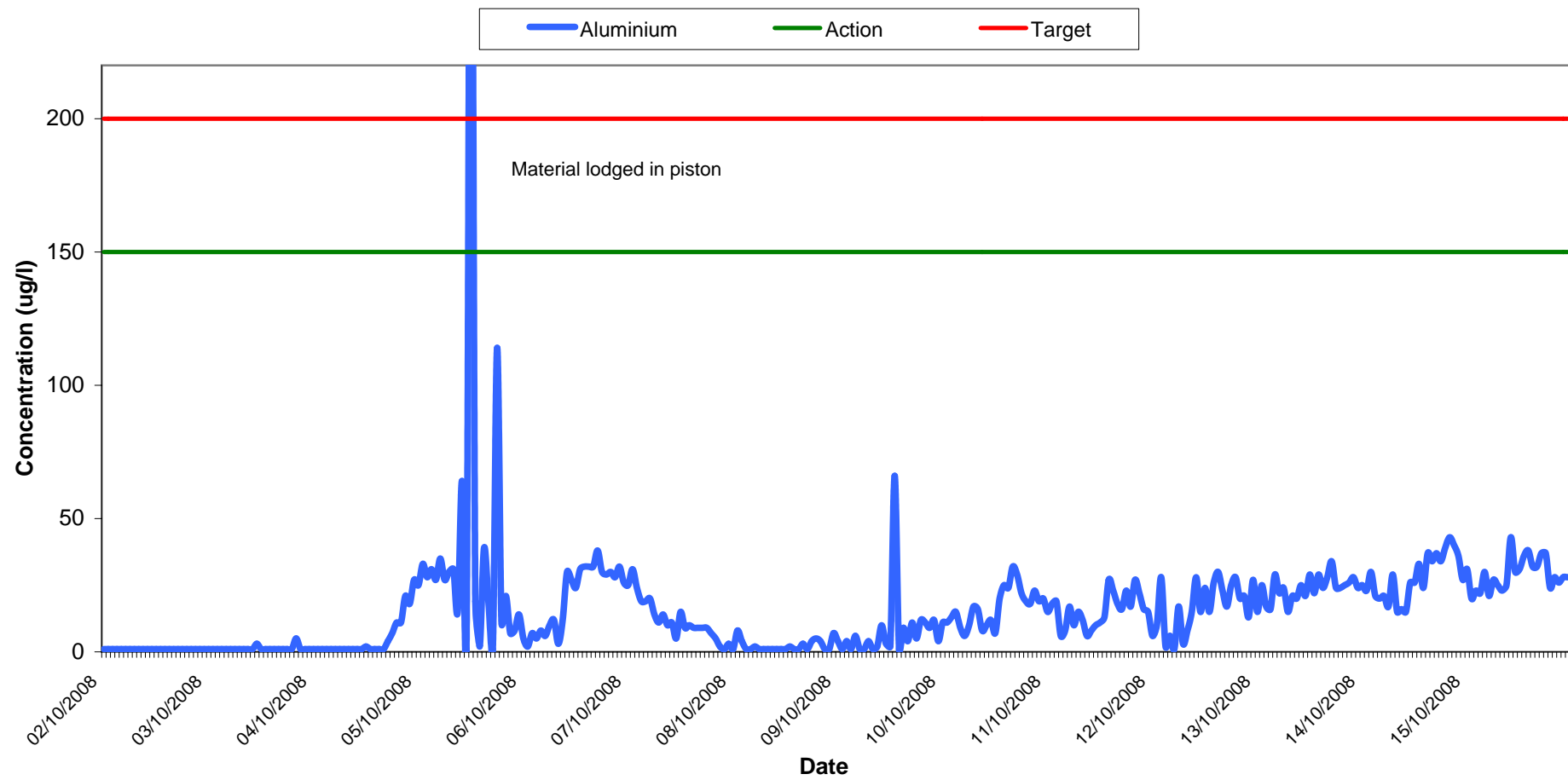
Total Suspended Solids Results at SP1 Wk 41-42



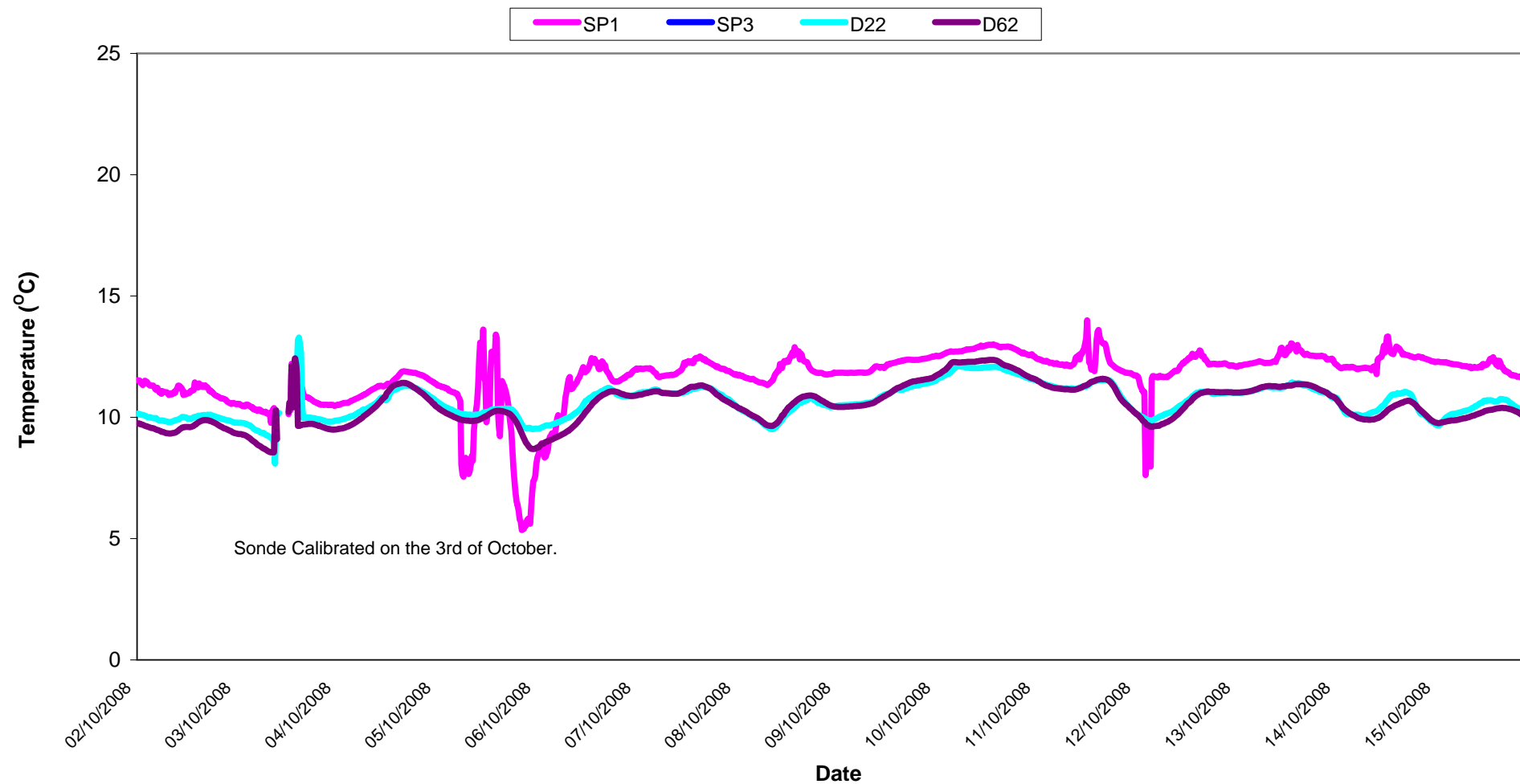
Orthophosphate Results at SP1 Wk 41-42



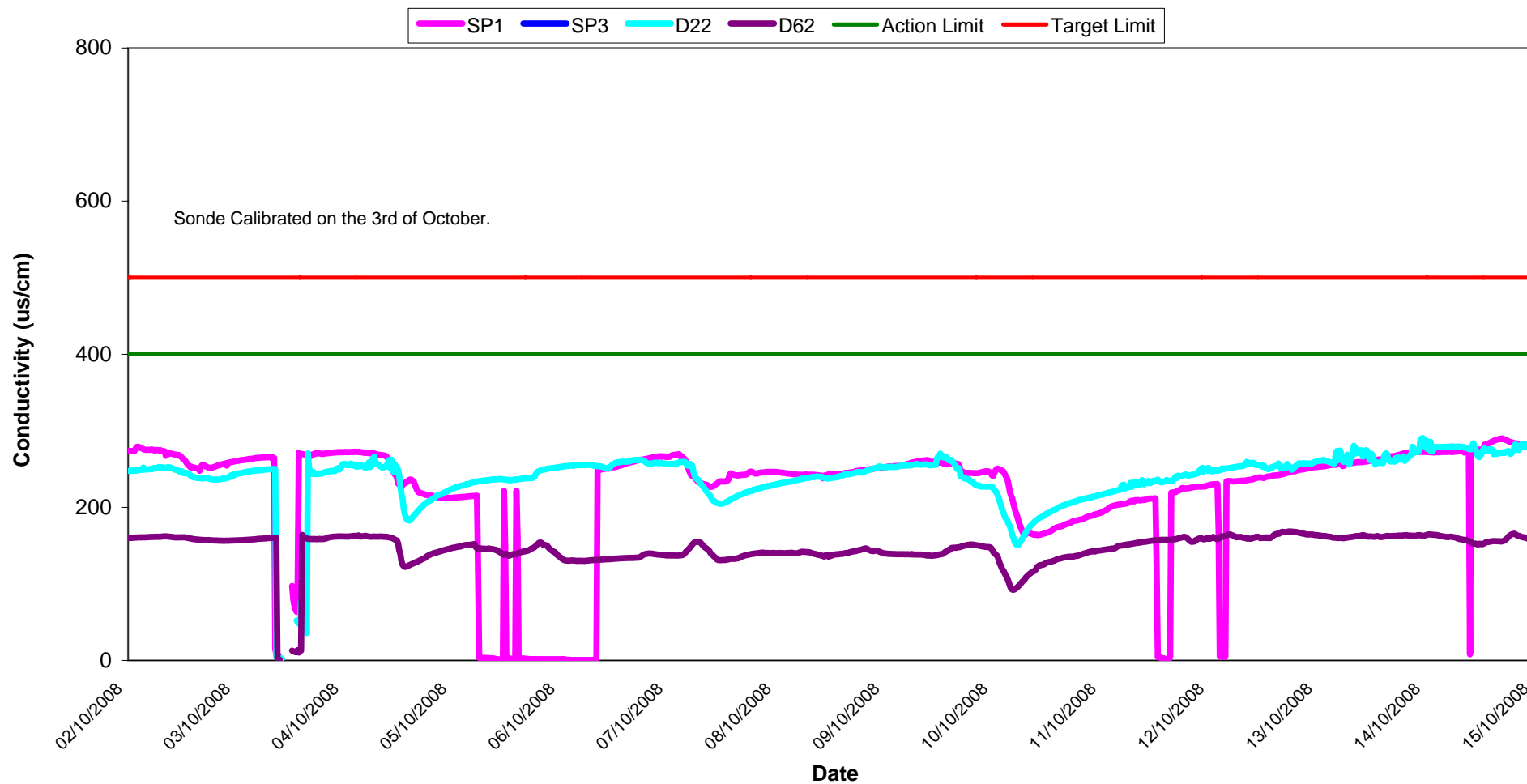
Aluminium Concentration at SP1 Wk 41-42



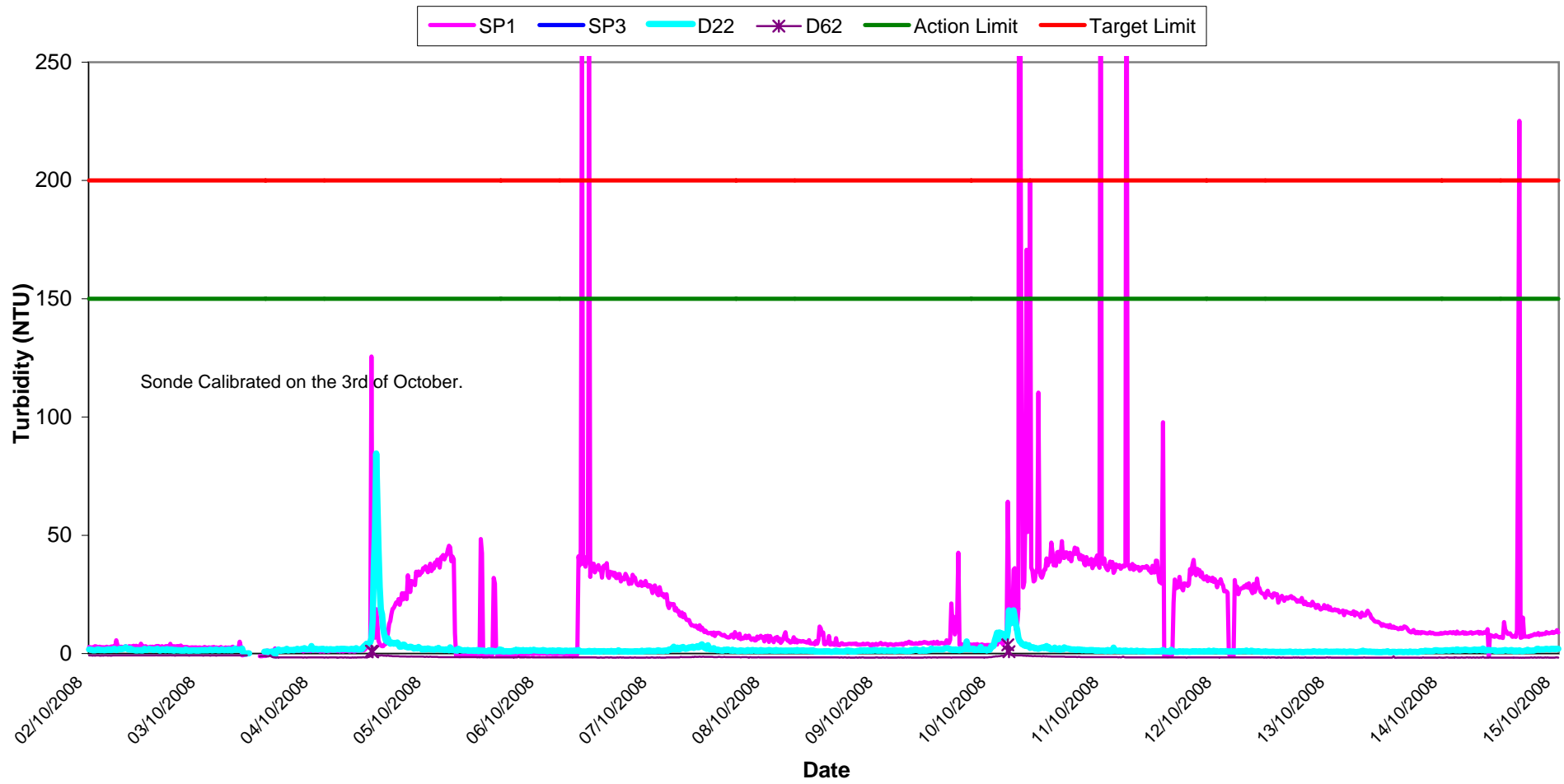
Temperature - Surface Waters Wk 41-42



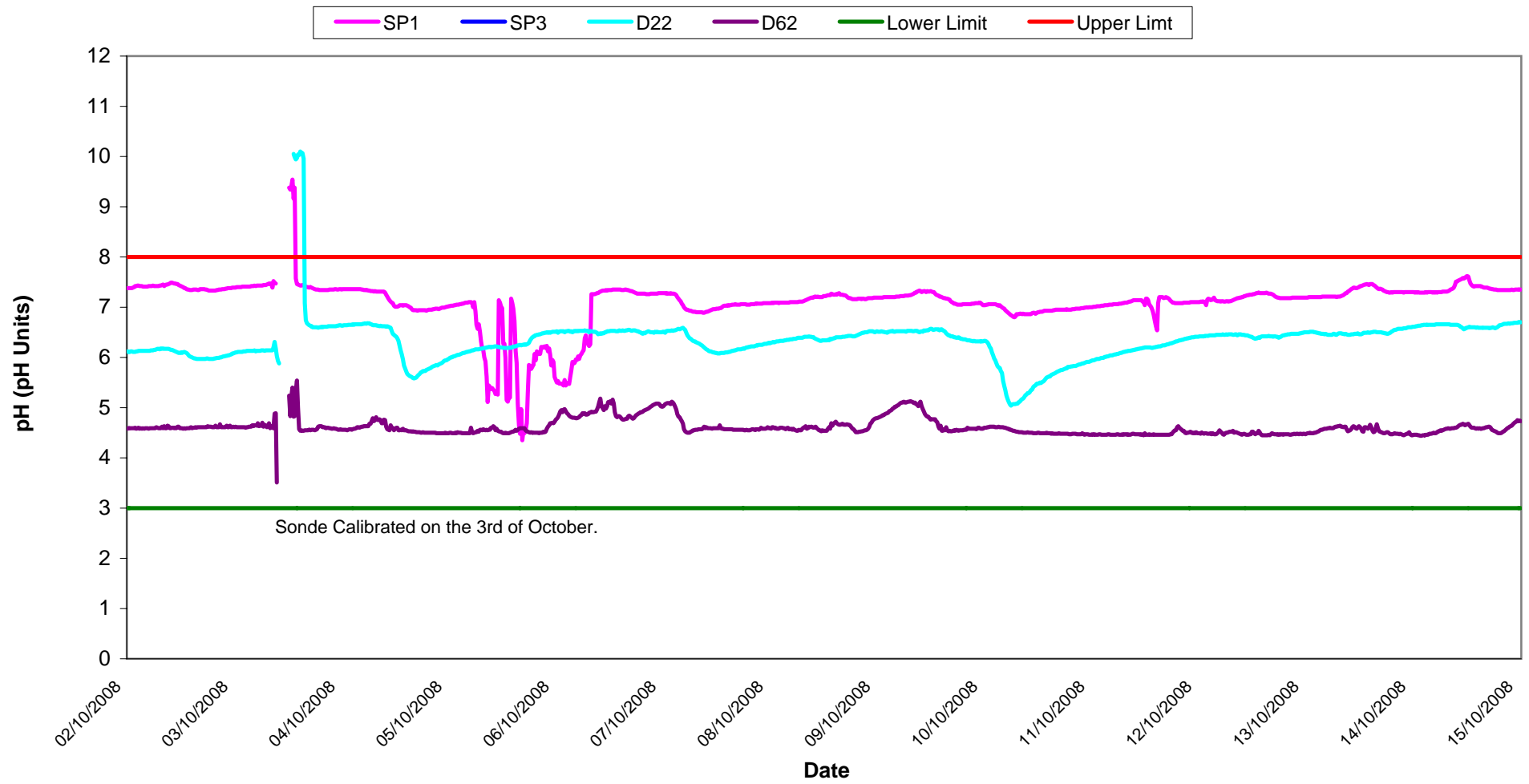
Conductivity - Surface Waters, Wk 41-42



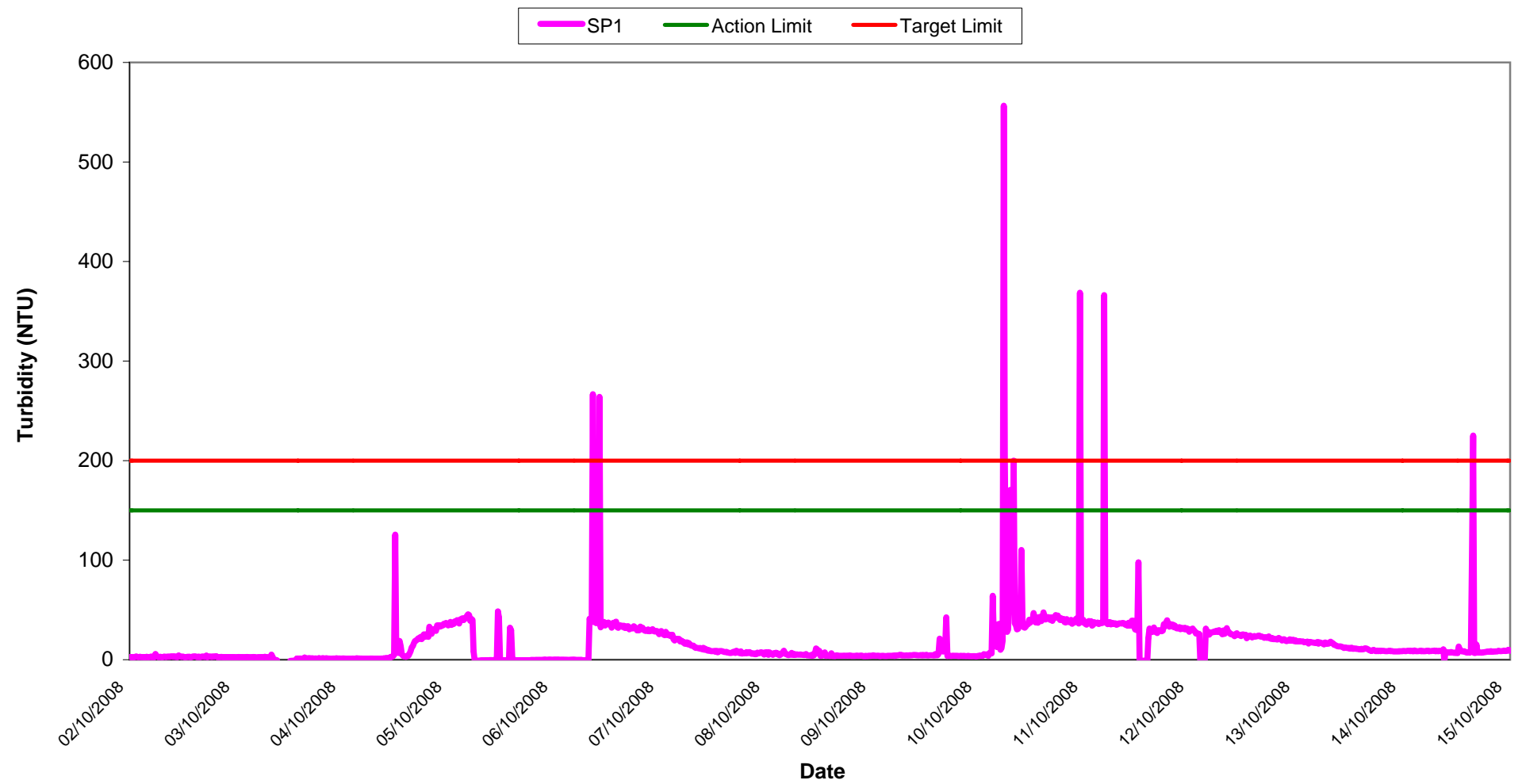
Turbidity - Surface Waters Wk 41-42



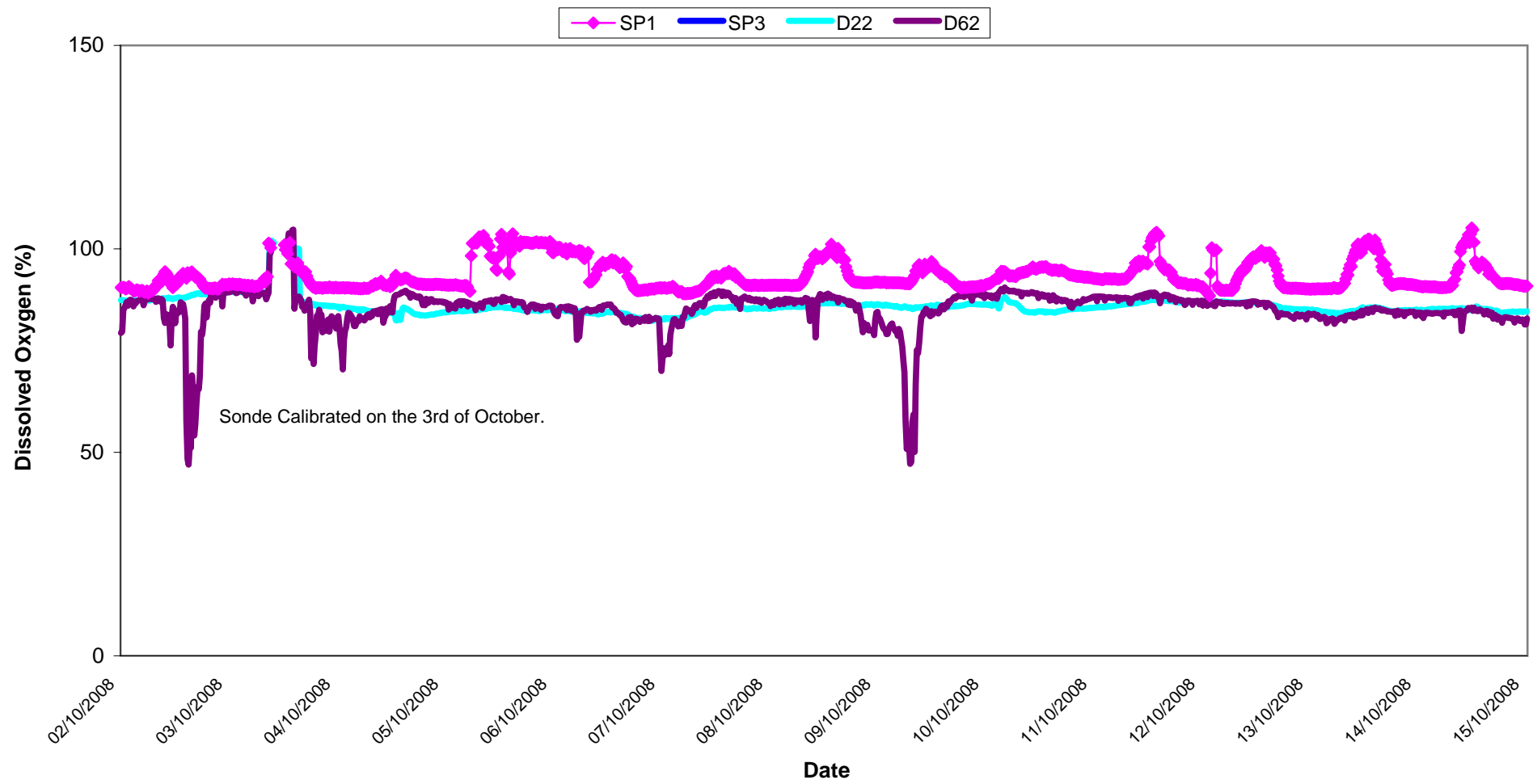
pH - Surface Waters Wk 41-42



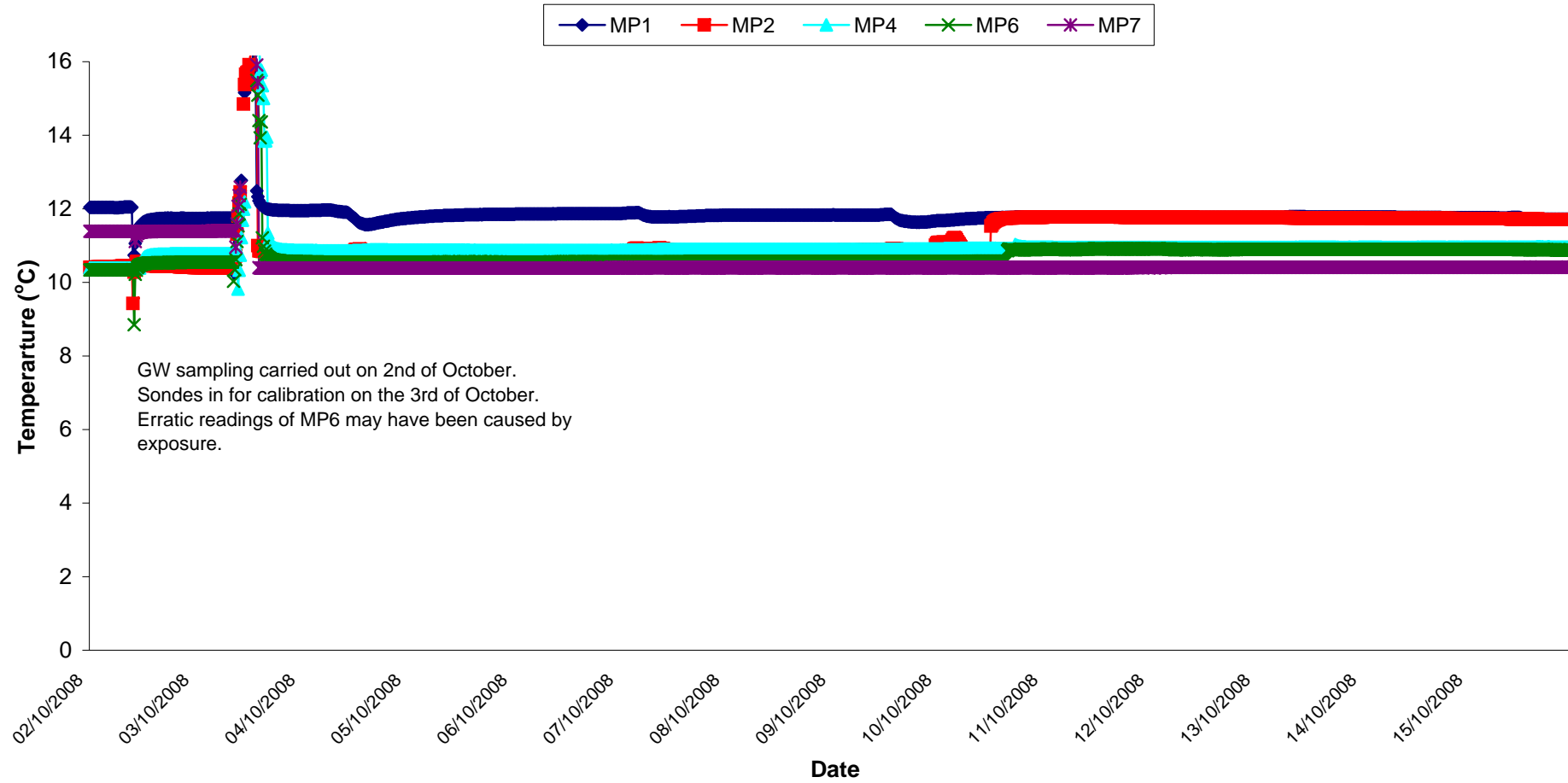
Turbidity - Surface Waters @ SP1, Wk 41-42



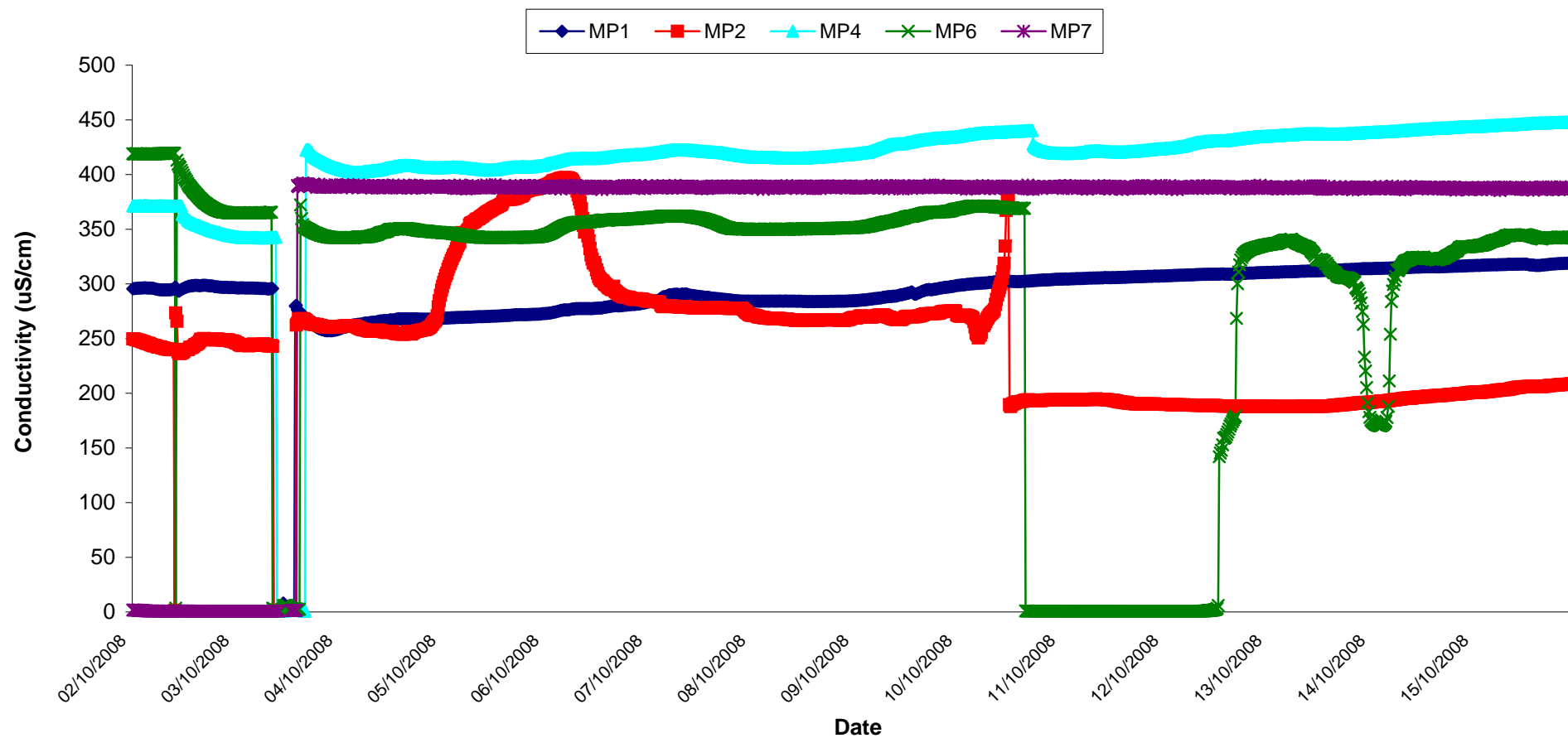
Dissolved Oxygen - Surface Waters, Wk 41-42



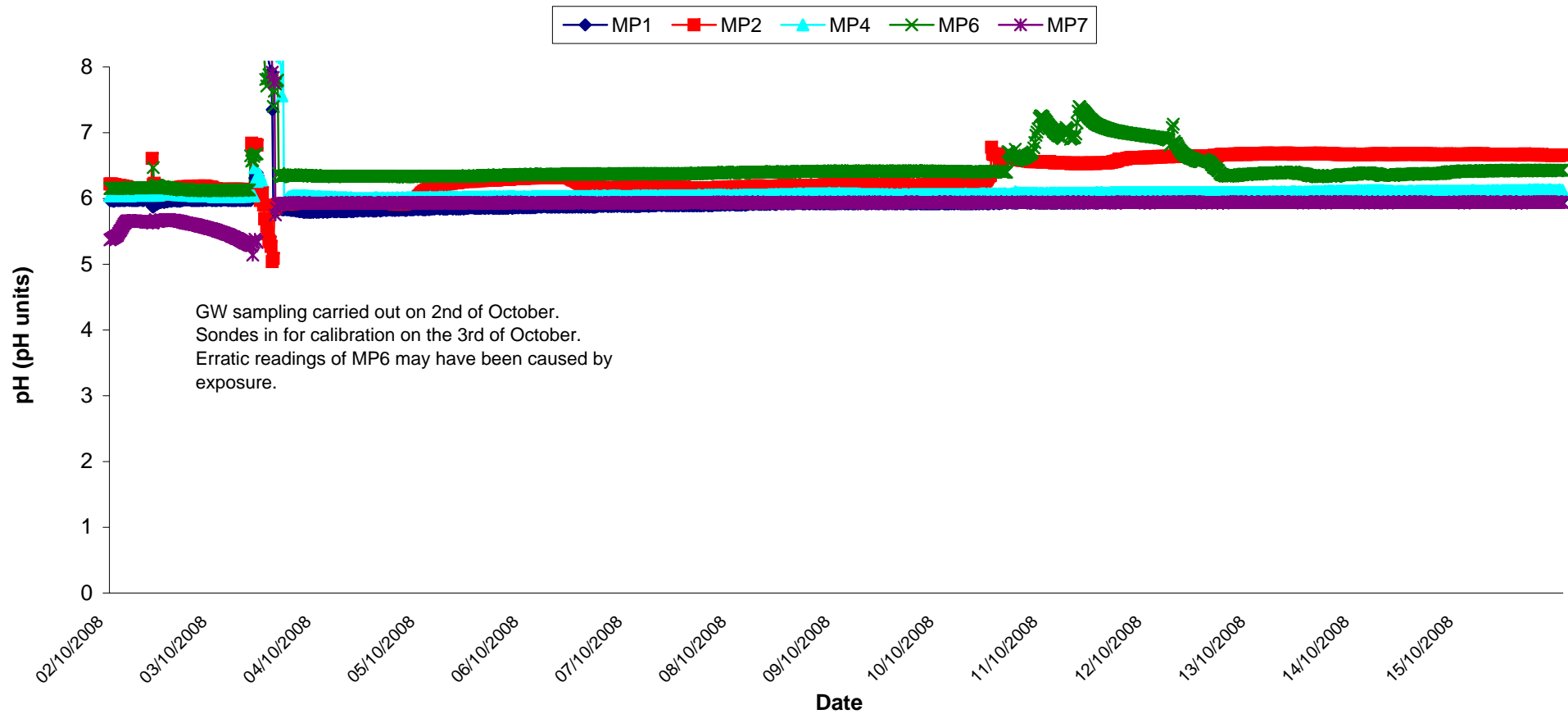
Temperature - Groundwaters Wk 41-42



Conductivity - Groundwaters Wk 41-42



pH - Groundwaters Wk 41-42



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	02/10/2008	262	11.4	7	89.2	7.2			<LOD			0.04		22	95	0.23	185
SP1	03/10/2008	256	10.4	6	88.7	7.8			<LOD			0.16		17	99	0.15	178
SP1	06/10/2008	257	12.3	59	89.2	7.0			<LOD			<LOD		67	375	0.11	160
SP1	07/10/2008	228	12.5	16	93.8	7.2			<LOD			0.04		20	161	0.20	140
SP1	08/10/2008	238	13.2	54	91.9	6.8			<0.1			<0.005		250	146	0.039	152
SP1	09/10/2008	265	12.5	16	93.6	6.7			0.210			0.017		27	190	0.045	170
SP1	10/10/2008	192	13.4	49	93.0	6.8			<0.1			0.020		50	310	0.076	113
SP1	13/10/2008	260	13.5	32	89.7	6.9			<LOD			0.39		44	202	0.36	163
SP1	14/10/2008	254	14.0	15	91.0	6.9			0.60			0.02		46	180	0.43	225
SP1	15/10/2008	255	13.2	17	87.8	7.2			0.40			0.11		41	179	0.19	211
SP3	02/10/2008	360	11.8	5	92.4	6.9			0.30			<LOD		<LOD		<LOD	238
SP3	03/10/2008	357	11.3	4	91.5	7.4			0.50			0.17		<LOD		0.03	134
SP3	06/10/2008	341	13.3	6	92.2	6.9			0.40			1.88		20		0.03	209
SP3	07/10/2008	287	14.2	10	98.7	6.8			0.10			0.10		<LOD		0.03	174
SP3	08/10/2008	330	13.1	8	93.8	6.9			0.319			<0.005		180		<0.03	199
SP3	09/10/2008	324	13.4	14	94.5	6.8			0.414			0.022		29		<0.03	198
SP3	10/10/2008	246	13.6	162	96.6	6.7			0.194			<0.005		134		0.178	150
SP3	13/10/2008	309	14.6	7	93.6	6.9			<LOD			1.71		37		0.04	190
SP3	14/10/2008	291	14.8	7	100.0	6.8			0.60			0.03		43		0.04	248
SP3	15/10/2008	311	13.1	5	90.5	7.1			0.60			0.24		52		0.49	265
Additional Monitoring																	
D22	03/10/2008	234	9.8	3	83.7	6.7			<LOD			0.25		49		0.08	153
D22	07/10/2008	206	11.8	3	85.7	6.4						0.44		42		0.145	129
D62	03/10/2008	180	9.2	2	84.8	6.3			<LOD			0.28		29		0.06	104
D62	07/10/2008	147	11.4	2	90.1	5.3						0.03		28		0.087	87
Axonics Monitoring																	
Pre	02/10/2008	368		124		6.9			<LOD			0.36		546		<LOD	242
Post	02/10/2008	377		3		6.6			0.40			0.98		<LOD	297	0.04	248
Pre	03/10/2008	380		43		7.3			<LOD			1.01		129		0.08	246
Post	03/10/2008	379		3		6.6			0.50			0.76		<LOD	237	0.04	244
Pre	06/10/2008	334		34		6.9			<LOD			<LOD		107		0.02	205
Post	06/10/2008	342		3		6.7			0.40			0.18		<LOD	157	0.02	221
Pre	07/10/2008	340		164		6.8			<LOD			0.29		444		0.03	207
Post	07/10/2008	338		4		6.6			0.50			0.18		<LOD	268	0.02	206
Pre	08/10/2008	314		128		6.8			0.342			0.115		1320		0.060	190
Post	08/10/2008	331		5		6.6			0.333			0.147		150	263	<0.03	199
Pre	09/10/2008	320		154		6.8			0.371			0.138		177		0.057	194
Post	09/10/2008	333		6		6.7			0.389			0.178		36	310	0.057	203
Pre	10/10/2008	307		152		6.7			0.359			0.153		>LOD		0.030	187
Post	10/10/2008	328		13		6.2			0.352			0.152		430	497	<0.03	199
Pre	13/10/2008	313		39		6.9			<LOD			0.47		174		0.04	191
Post	13/10/2008	322		12		6.8			0.10			0.36		83	>LOD	0.09	197
Pre	14/10/2008	291		85		6.8			<LOD			0.25		233		0.04	247
Post	14/10/2008	304		4		6.5			1.10			0.14		<LOD	466	0.05	257
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
	Grey shaded areas denote parameters that cannot or were not analysed on-site.																
	= Indicative Only																
	= tests undertaken in external lab																
< LOD	= Below Limit of Detection																
> LOD	= Above Limit of Detection																