

Final Environmental Report	Period Ending: 18th March 2008
Compiled By: Siobhan 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	<ul style="list-style-type: none"> – Due to technical problems the PO₄ analyser was off line for 5 days during the reporting period. Partech technician was on site on Monday the 10th of March and the required maintenance was undertaken. Meter now operating as required. – The composite sampler was in place to cover the shortfalls in the PO₄ analyser.
TSS	<ul style="list-style-type: none"> – The TSS analyser was operational during the reporting period. – The composite sampler is in place to cover any shortfalls in the TSS analyser.
Composite	– The composite sampler was operational during the reporting period.
Noise	<ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> – 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	<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	– Data displayed in the enclosed report.

1.2 Rainfall Data

06/03/2008	13.0	13/03/2008	7.4
07/03/2008	7.2	14/03/2008	16.0
08/03/2008	9.8	15/03/2008	8.6
09/03/2008	11.4	16/03/2008	0.0
10/03/2008	6.4	17/03/2008	0.0
11/03/2008	7.2	18/03/2008	0.8
12/03/2008	14.2		
Total Rainfall: 102mm			

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1.3 Summary

Environment	Comments
Surface Water	The aluminium exceedance from the previous reporting period remains open. See Section 2 below.
Groundwater	The groundwater data (Sonde) is within anticipated ranges. Groundwater monitoring was not carried out during the reporting period.
Dust	Awaiting results.
Weather	There was a total of 102mm of rainfall during the reporting period, with a temperature range of -3.4°C to 12.8°C
Noise	Elevated noise levels were recorded; this exceeded the noise limit of 65db. This was as a result of localised construction works in close proximity to the noise monitor and not from the main construction works.
Vibration	No vibration exceedances were recorded during the reporting period, based on the available results

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

2 Environmental Exceedences / Incidents / Complaints

Date	10 th March 2008
Location	SP1
Nature of Incident	A value of 205µg/l was recorded for total aluminium on the 10 th of March 2008. This value is marginally in exceedance of the site discharge limit of 200ug/l. This exceedance was caused by flooding and washout during rainfall at the site.
Actions Taken	<ol style="list-style-type: none"> 1. On going surveillance and maintenance of site drainage outside the main footprint area 2. Close monitoring of Total Aluminium will be carried out at SP1. 3. Reducing the extent of open drainage and un-surfaced areas outside the footprint area by additional piping and road surface works as feasible. 4. Storage and pumping back to Axonic's as much of the footprint waters as possible. 5. Investigation of further means to improve the drainage within the footprint area.
Category	Environmental Exceedance
Status	Open

Surface Water Monitoring Record Sheet																	
Conducted by										Approved by							
Name:										Name:							
Signed										Signed							
Determinant 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		
Settlement Pond Monitoring																	
SP1	06/03/2008	328	7.2	15.6	95.3	7.0			0.1			<LOD		69	239	0.73	215
SP1	07/03/2008	287	6.5	10.5	97.7	6.4			<LOD			0.010		29	128	0.03	193
SP1	10/03/2008	288	6.2	14.1	96.4	7.0			<LOD			0.090		25	118	0.07	204
SP1	11/03/2008	285	6.4	15.0	97.6	7.2			<LOD			0.570		48	170	0.15	205
SP1	12/03/2008	378	5.7	15.7	99.2	7.4			0.1			0.040		24	160	0.10	261
SP1	13/03/2008	399	6.2	16.7	99.1	7.3			<LOD			0.010		28	175	0.15	251
SP1	14/03/2008	414	6.1	19.0	99.1	6.3			<LOD			0.090		39	247	0.14	288
SP1	18/03/2008	407	6.5	20.9	101.6	7.4			0.2			<LOD		45	190	0.09	275
SP3	06/03/2008	363	9.2	4.4	98.0	6.9			0.5			0.030		39		<LOD	241
SP3	07/03/2008	339	7.3	34.8	99.2	6.4			<LOD			<LOD		4		0.05	228
SP3	10/03/2008	328	7.1	23.4	95.2	6.8			<LOD			0.030		49		<LOD	227
SP3	11/03/2008	347	7.9	12.0	97.1	7.7			0.1			0.420		50		0.02	241
SP3	12/03/2008	491	6.6	16.7	99.3	7.2			0.2			0.030		52		0.06	340
SP3	13/03/2008	431	7.5	7.7	98.4	7.1			0.2			0.020		58		0.02	282
SP3	14/03/2008	421	7.4	10.0	101.0	6.6			0.4			0.100		24		0.13	293
SP3	18/03/2008	413	6.9	6.7	101.7	7.3			0.5			0.170		36		0.03	285
SP1	10/03/2008	227		23.0		7.2	23	13		1.02	0.01	<0.005	<0.017	45	205	0.04	133
SP3	10/03/2008	229		2.0		7.2	13	14		2.13	0.02	<0.017	<0.017	43	412	0.04	154
SP1	18/03/2008	236		7.3		7.4	4	10		1.63	0.03	0.005	0.031	37	197	0.03	191
SP3	18/03/2008	237		5.4		7.3	<2	<10		2.23	0.02	0.039	0.035	21	148	<0.03	197
Additional Monitoring																	
D22	06/03/2008	270	8.5	5.4	108.1	6.4			<LOD			<LOD		23		0.07	178
D62	06/03/2008	208	10.5	0.6	104.4	4.3			0.1			0.100		30		0.06	138
D22	14/03/2008	345	6.1	4.3	98.9	6.2			<LOD			0.050		41		0.07	240
D62	14/03/2008	334	6.0	1.0	99.7	4.3			0.4			0.020		6		0.06	233
D22	18/03/2008	320	5.9	2.7	92.7	6.6			<LOD			0.030		29		0.06	223
D62	18/03/2008	299	4.8	0.8	71.2	4.5			0.2			<LOD		20		0.05	207
D22	18/03/2008	229		0.9		6.5	<2	38		0.70	0.04	0.041	0.017	49	64	0.12	152
D62	18/03/2008	228		0.3		4.4	<2	<10		<0.44	0.02	0.022	0.025	30	228	<0.03	144
Axonics Monitoring																	
Pre	06/03/2008	347		108.0		6.7			<LOD			>LOD		104		0.02	233
Post	06/03/2008	364		2.6		6.5			0.9			0.900		18	337	<LOD	234
Pre	07/03/2008	345		106.0		6.5			<LOD			0.200		148		0.03	231
Post	07/03/2008	363		3.7		6.4			0.5			0.170		28	248	<LOD	245
Pre	10/03/2008	347		36.4		6.7			<LOD			0.170		101		0.07	243
Post	10/03/2008	368		3.7		6.4			0.5			0.190		3	377	0.01	255
Pre	11/03/2008	351		60.0		7.8			<LOD			0.700		151		0.07	243
Post	11/03/2008	368		3.8		6.6			0.7			0.370		40	585	0.05	259
Pre	12/03/2008	372		43.9		7.2			0.2			0.160		106		0.06	252
Post	12/03/2008	391		5.1		6.8			0.5			0.150		30	823	<LOD	273
Pre	13/03/2008	367		26.1		7.0			<LOD			0.090		74		0.10	252
Post	13/03/2008	392		2.1		6.9			0.4			0.020		9	316	0.13	273
Pre	14/03/2008	406		152.0		6.6			<LOD			0.180		170		0.01	276
Post	14/03/2008	423		6.0		6.3			0.6			0.410		34	621	0.03	295
Pre	18/03/2008	408		31.7		7.7			<LOD			0.110		187		0.02	284
Post	18/03/2008	420		5.8		6.9			0.4			0.070		13	563	0.02	290
Pre Axonics	10/03/2008	233		0.9		6.8	30	0		2.44	0.04	0.126	0.017	27	1101	<0.03	163
Post Axonics	10/03/2008	238		0.1		6.4	2	<10		2.37	<0.01	0.149	0.020	<20	262	<0.03	173
Pre Axonics	18/03/2008	235		39.8		7.2	35	10		1.88	0.11	0.110	0.053	32	992	0.03	194
Post Axonics	18/03/2008	238		2.0		6.4	<2	<10		1.75	0.10	0.108	0.048	<20	531	<0.03	200

I.P. = In Progress
 Italics = Indicative Only
 < LOD = Below Limit of Detection
 > LOD = Above Limit of Detection
 Grey shaded areas denote parameters that cannot or were not analysed on-site or the lab.

Groundwater Monitoring Record Sheet

Conducted by												Approved by			
Name:						Signed						Name			

Determinant Results

Location	Date	DO % Sat	Temp °C	Cond. uS/cm	pH	TDS mg l ⁻¹	Nitrate as NO ₃ mg l ⁻¹	Ammonia mg l ⁻¹	Aluminium ug l ⁻¹	BOD mg l ⁻¹	TSS mg l ⁻¹	Orthophos phate as P ug l ⁻¹	Total Hardness mg/l CaCO ₃	Nitrite as NO ₂ mg l ⁻¹	Arsenic ug l ⁻¹
MP 1															
MP 2															
MP 3															
MP 4															
MP 5															
MP 6															
MP 7															
MP 8															
MP 9															
MP 10a															
MP 11															

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

NO GROUNDWATER MONITORING DURING THE REPORTING PERIOD

Dust Monitoring Record Sheet				no... 1 of 1			
Conducted by			Approved by				
Name:		Signed		Name:		Signed	
Determinant Results							
	Date Positioned	Date Removed	Ref. Number	Date Dispatched	Date Returned	Weight (mg/sq.m/day)	Comments
Target (Consent) Limit: 350 mg m² d⁻¹ on as a 30 day average							
D1	12/06/2007	12/07/2007	137580	16/07/2007	26/07/2007	305	
D2	12/06/2007	12/07/2007	137581	16/07/2007	26/07/2007	241	
D3	12/06/2007	12/07/2007	137582	16/07/2007	26/07/2007	177	
D4	12/06/2007	12/07/2007	137583	16/07/2007	26/07/2007	179	
D1	12/07/2007	13/08/2007	140364	13/08/2007	17/08/2007	863	Algal growth
D2	12/07/2007	13/08/2007	140365	13/08/2007	17/08/2007	410	Algal growth
D3	12/07/2007	13/08/2007	140366	13/08/2007	17/08/2007	406	Algal growth
D4	12/07/2007	13/08/2007	140367	13/08/2007	17/08/2007	246	
D1	13/08/2007	13/09/2007	143627	14/09/2007	20/09/2007	NDP	NDP due to copper sulphate interference
D2	13/08/2007	13/09/2007	143628	14/09/2007	20/09/2007	NDP	NDP due to copper sulphate interference
D3	13/08/2007	13/09/2007	143629	14/09/2007	20/09/2007	NDP	NDP due to copper sulphate interference
D4	13/08/2007	13/09/2007	143630	14/09/2007	20/09/2007	NDP	NDP due to copper sulphate interference
D1	13/09/2007	15/10/2007	147427	17/10/2007	15/10/2007	242	
D2	13/09/2007	15/10/2007	147427	17/10/2007	15/10/2007	328	
D3	13/09/2007	15/10/2007	147427	17/10/2007	15/10/2007	320	
D4	13/09/2007	15/10/2007	147427	17/10/2007	15/10/2007	184	
D1	15/10/2007	23/11/2007	153945	26/11/2007	19/12/2007	142	
D2	15/10/2007	23/11/2007	153946	26/11/2007	19/12/2007	225	
D3	15/10/2007	23/11/2007	153947	26/11/2007	19/12/2007	530	Heavily Contaminated with peat, possibly vandilised. See Report
D4	15/10/2007	23/11/2007	153948	26/11/2007	19/12/2007	127	
D1	23/11/2007	23/12/2007	157412	04/01/2008	22/01/2008	68	
D2	23/11/2007	23/12/2007	157413	04/01/2008	22/01/2008	24	
D3	23/11/2007	23/12/2007	157414	04/01/2008	22/01/2008	214	
D4	23/11/2007	23/12/2007	157415	04/01/2008	22/01/2008	169	
D1	23/12/2007	23/01/2008	158975	24/01/2008	18/02/2008	280	
D2	23/12/2007	23/01/2008	158976	24/01/2008	18/02/2008	355	
D3	23/12/2007	23/01/2008	158977	24/01/2008	18/02/2008	295	
D4	23/12/2007	23/01/2008	158978	24/01/2008	18/02/2008	300	
D1	23/01/2007	25/02/2007	163401	25/02/2007	20/03/2008	471	
D2	23/01/2007	25/02/2007	163402	25/02/2007	20/03/2008	426	
D3	23/01/2007	25/02/2007	163403	25/02/2007	20/03/2008	765	
D4	23/01/2007	25/02/2007	163404	25/02/2007	20/03/2008	398	
D1	25/02/2008	25/03/2008	I.P.	28/03/2007	I.P.	I.P.	
D2	25/02/2008	25/03/2008	I.P.	28/03/2007	I.P.	I.P.	
D3	25/02/2008	25/03/2008	I.P.	28/03/2007	I.P.	I.P.	
D4	25/02/2008	25/03/2008	I.P.	28/03/2007	I.P.	I.P.	

NDP = No Determination Possible

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

Monitoring Results will be presented monthly

Noise Monitoring Record Sheet											no...	1	of	1
Conducted by							Approved by							
Name: Siobhan Quinn							Signed			Name:			Signed	
Determinant Results														
Location	Air Temp. (Max)	Air Temp. (Min)	Start Date	Time	Duration	Serial No.	Wind		Results dB			*Comments		
							Speed (m/s)*	Direction (Degrees)	L _{Aeq}	L _{Amin}	L _{Amax}			
Action Limit									60					
Target Limit									65					
N1	10.5	4.4	06/03/08	07:00:00	11:00:00	2343754	6.7	45.1	53.8	43.4	78.7			
N1	9.2	4.8	07/03/08	07:00:00	11:00:00	2343754	5.5	71.4	53.8	41.8	80.3			
N1	7.7	-0.7	10/03/08	08:00:00	10:00:00	2343754	5.1	103.8	69.6	63.2	82.7	High winds and stormy weather conditions on this date caused elevated noise readings		
N1	9.9	3.9	11/03/08	07:00:00	11:00:00	2343754	6.4	97.3	70.0	57.8	85.0	High winds and stormy weather conditions on this date caused elevated noise readings		
N1	9.1	3.9	12/03/08	07:00:00	11:00:00	2343754	7.4	95.6	63.7	39.8	84.7	High winds and stormy weather conditions on this date caused elevated noise readings		
N1	9.1	2.7	13/03/08	07:00:00	11:00:00	2343754	2.7	89.2	69.1	42.1	75.4	Construction works carried out in close proximity to noise meter.		
N1	9.3	1.7	14/03/08	07:00:00	11:00:00	2343754	1.3	174.7	67.9	63.6	73.2	Construction works carried out in close proximity to noise meter.		
N1	12.8	-3.4	18/03/08	08:00:00	10:00:00	2343754	0.2	97.9	53.0	41.3	78.6			

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

Flow Weir Record Sheet							
Conducted by			Approved by				
Name:	Signed		Name:				
Determinant Results							
Date	SP1			SP3			Comment
	Max (l/s)	Min (l/s)	Avg (l/s)	Max (l/s)	Min (l/s)	Avg (l/s)	
06/03/08	140.73	14.87	38.09	26.26	4.48	10.02	
07/03/08	80.31	33.88	46.75	21.49	7.98	13.21	
08/03/08	57.13	36.54	48.33	11.80	8.75	10.39	
09/03/08	95.43	36.16	46.28	28.57	3.87	12.40	
10/03/08	123.92	50.28	66.60	34.60	12.09	22.80	
11/03/08	50.28	32.42	41.13	19.75	10.10	15.71	
12/03/08	208.92	34.63	69.38	52.48	11.22	22.05	
13/03/08	89.33	30.64	45.64	19.06	6.26	12.83	
14/03/08	153.28	25.03	57.93	37.98	7.73	17.74	
15/03/08	140.73	60.76	84.72	43.68	22.93	29.77	
16/03/08	74.22	33.88	46.32	26.26	10.10	17.63	
17/03/08	36.54	25.34	32.35	15.44	7.73	13.68	
18/03/08	28.25	20.92	24.92	11.80	6.50	9.45	

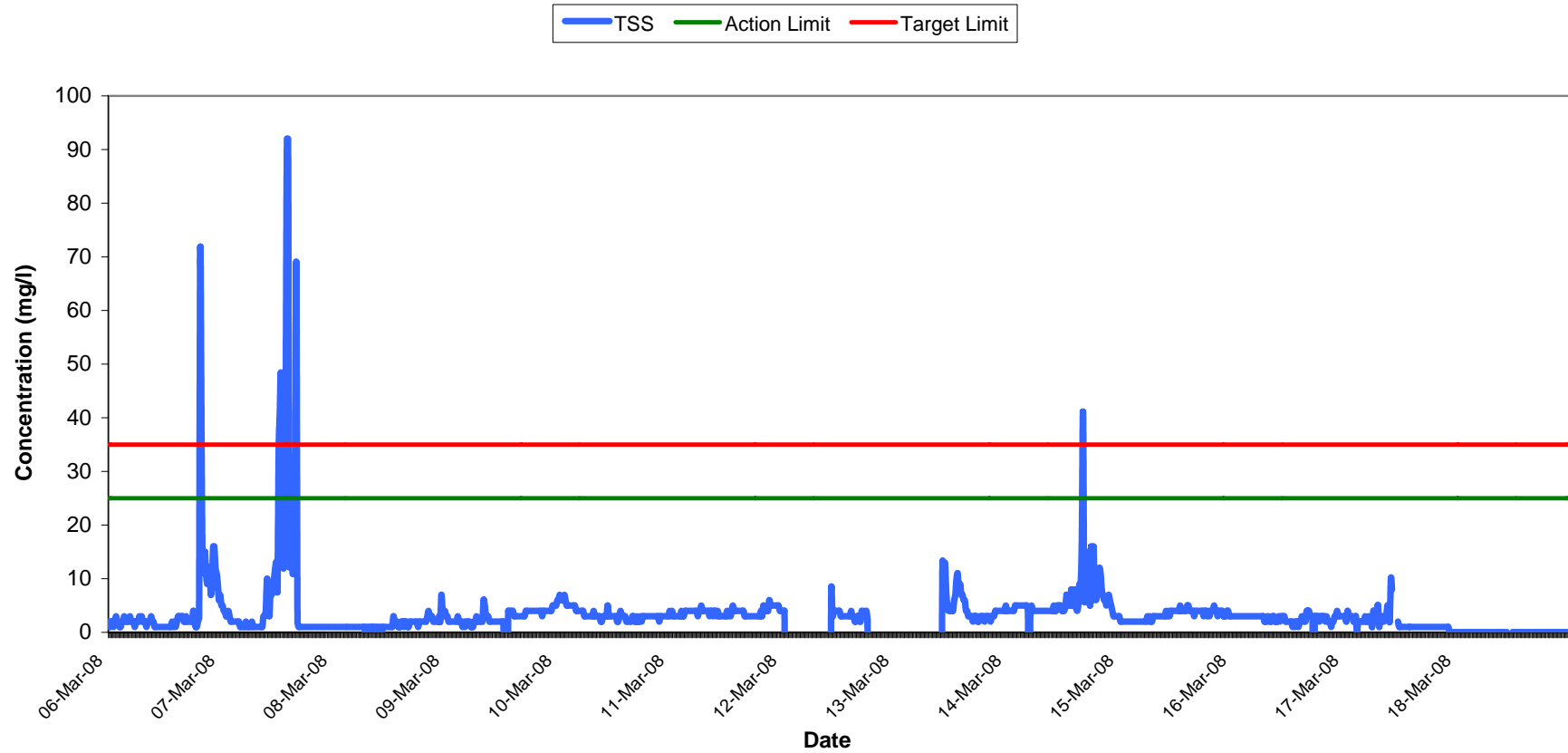
Negative values denote low flow

Vibration Monitoring Record Sheet		no...		1 of 1	
Conducted by			Approved by		
Name: Signed			Name: Signed		

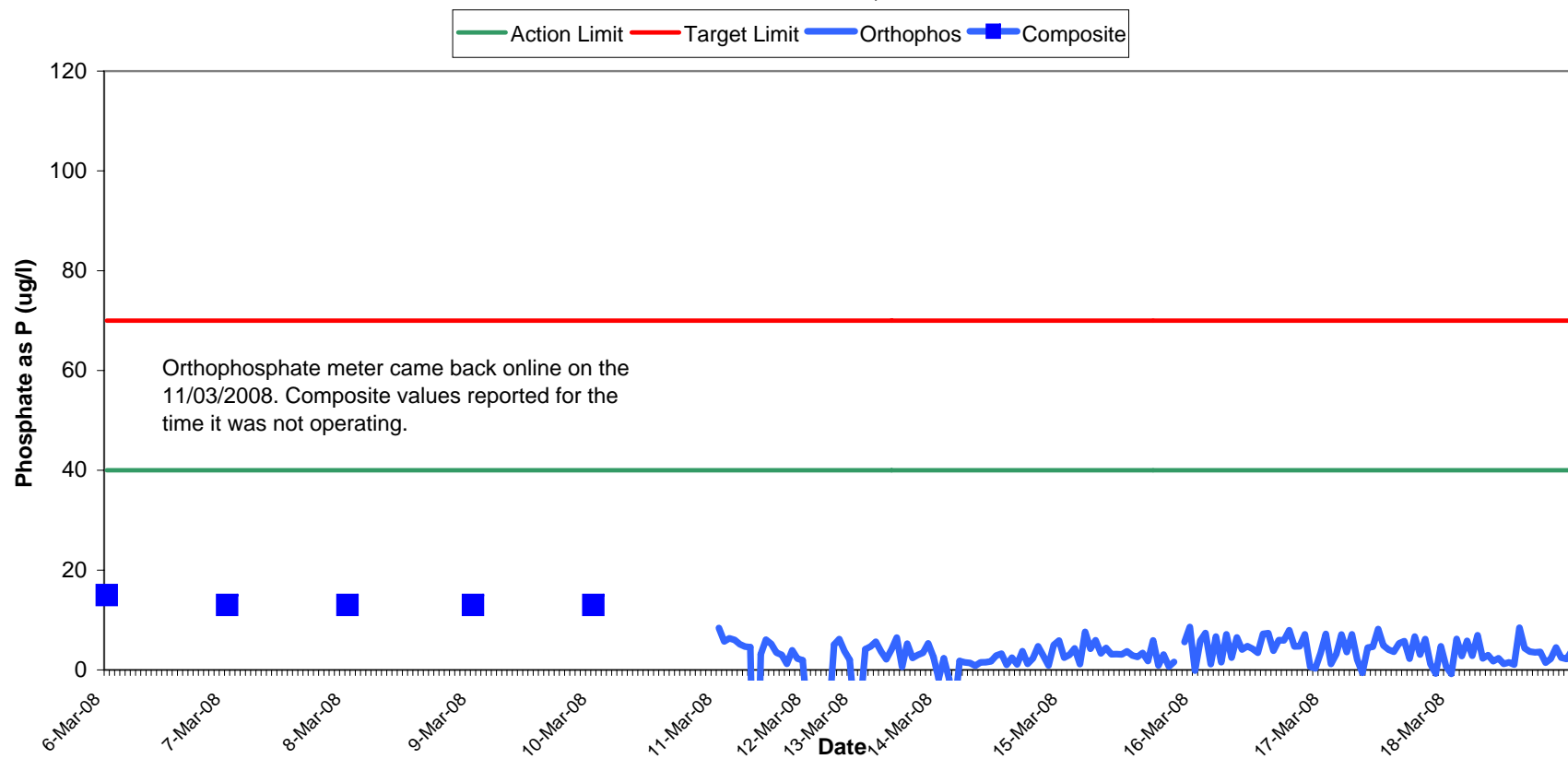
Determinant Results									
Location	Date Positioned	Date Removed	Event Date	Event Time	Peak Vector Sum	Tran PPV	Vert PPV	Long PPV	Comments
V1	03-Mar-08			9:16					Monitor Started
			03/03/2008	11:21	6.45	3.17	5.33	3.05	Sensor check
		07-Mar-08							Monitor Stopped for download
	07-Mar-08			9:14					Monitor Started
			07/03/2008	9:19	8.34	2.03	6.86	4.57	Sensor check
		09-Mar-08							Monitor Stopped & housed for wkend
	10-Mar-08			8:33					Monitor Started
			11/03/2008	3:28	80.4	42.2	22.5	68.6	Sensor check
		16-Mar-08		9:55					Monitor Stopped & housed for wkend
	18-Mar-08			08:39					Monitor Started
			18/03/2008	19:24	5.48	3.17	4.44	2.03	Sensor check
		19-Mar-08							

Vibration meter was located at V1 only.

Total Suspended Solids Results at SP1
Week 11-12, 2008

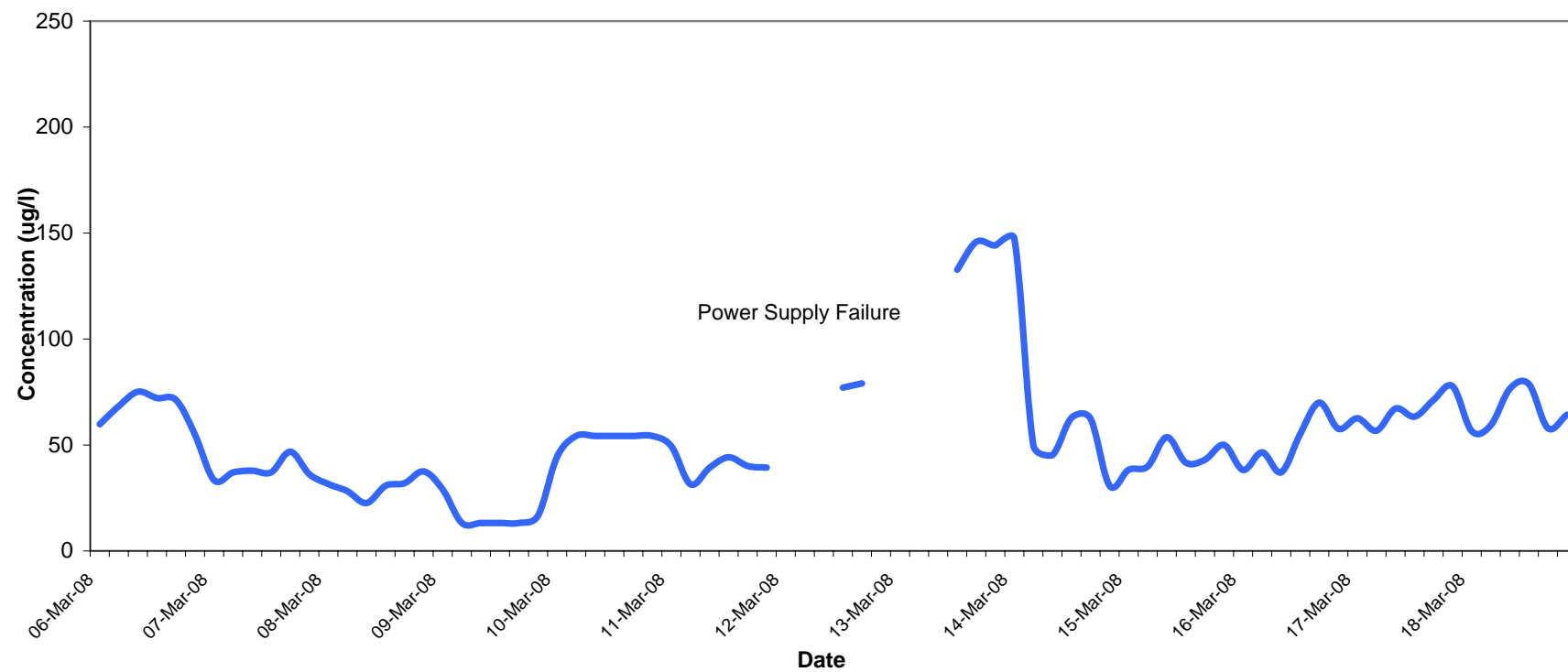


Orthophosphate Results at SP1 Week 12-13, 2008

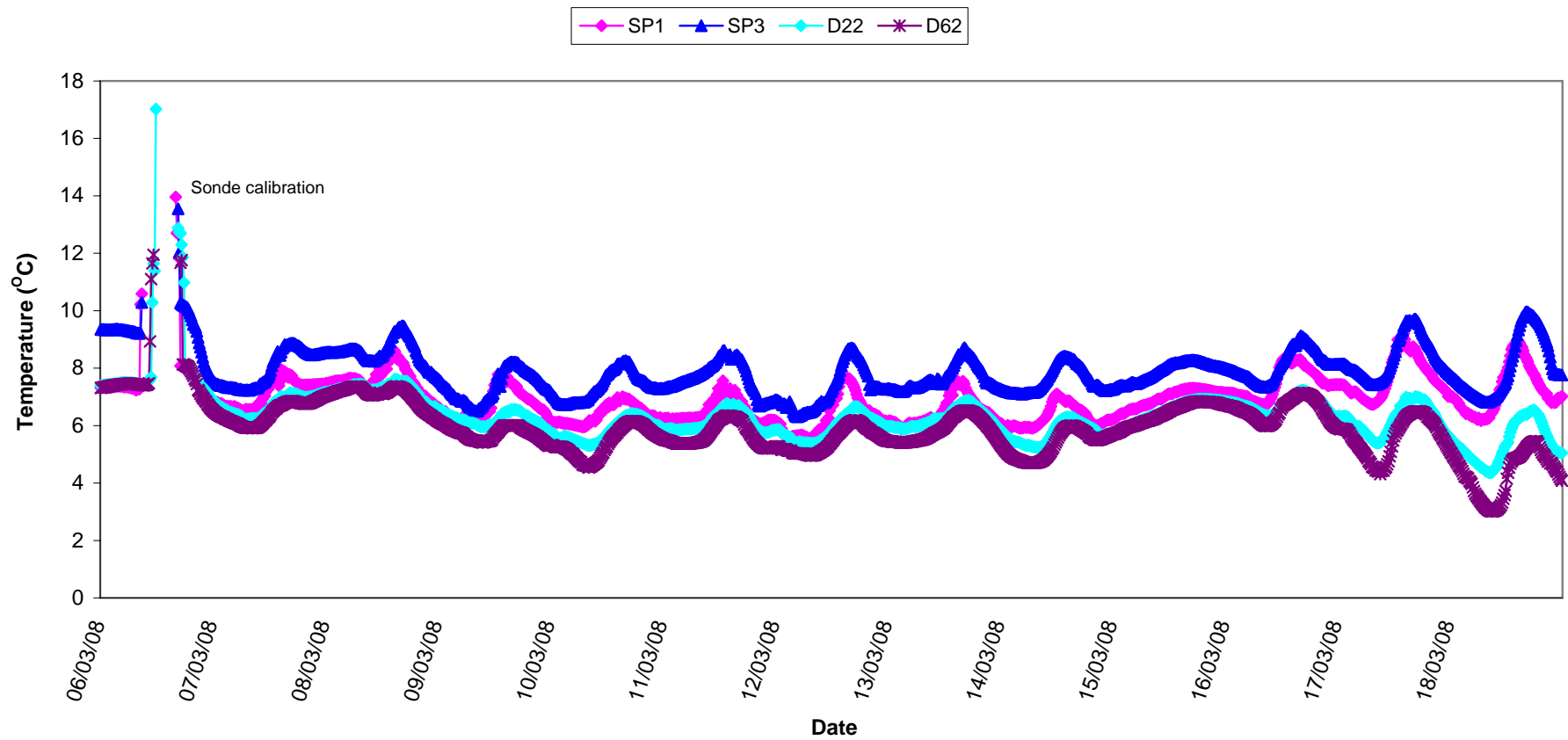


Aluminium Concentration at SP1 Week 11-12, 2008

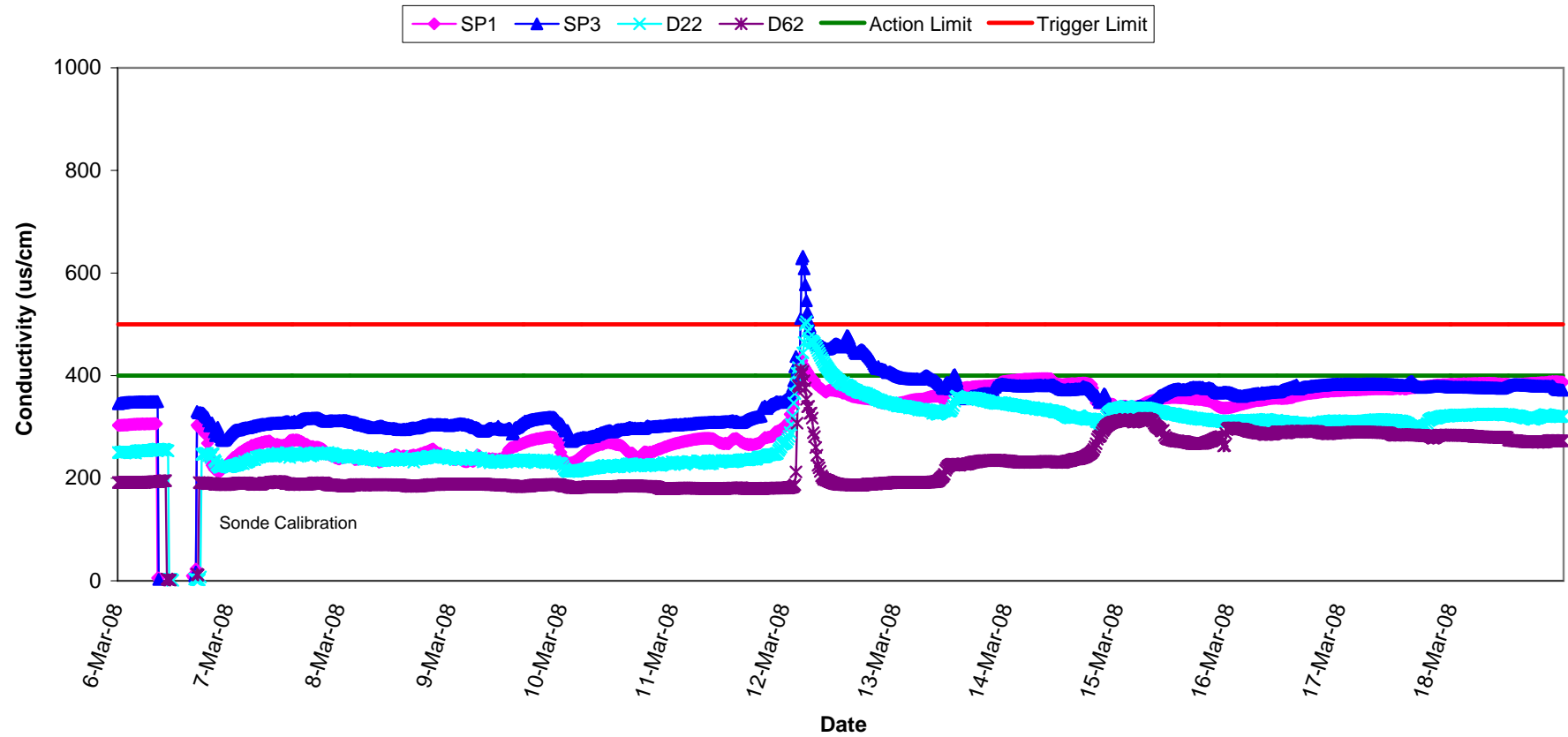
Aluminium



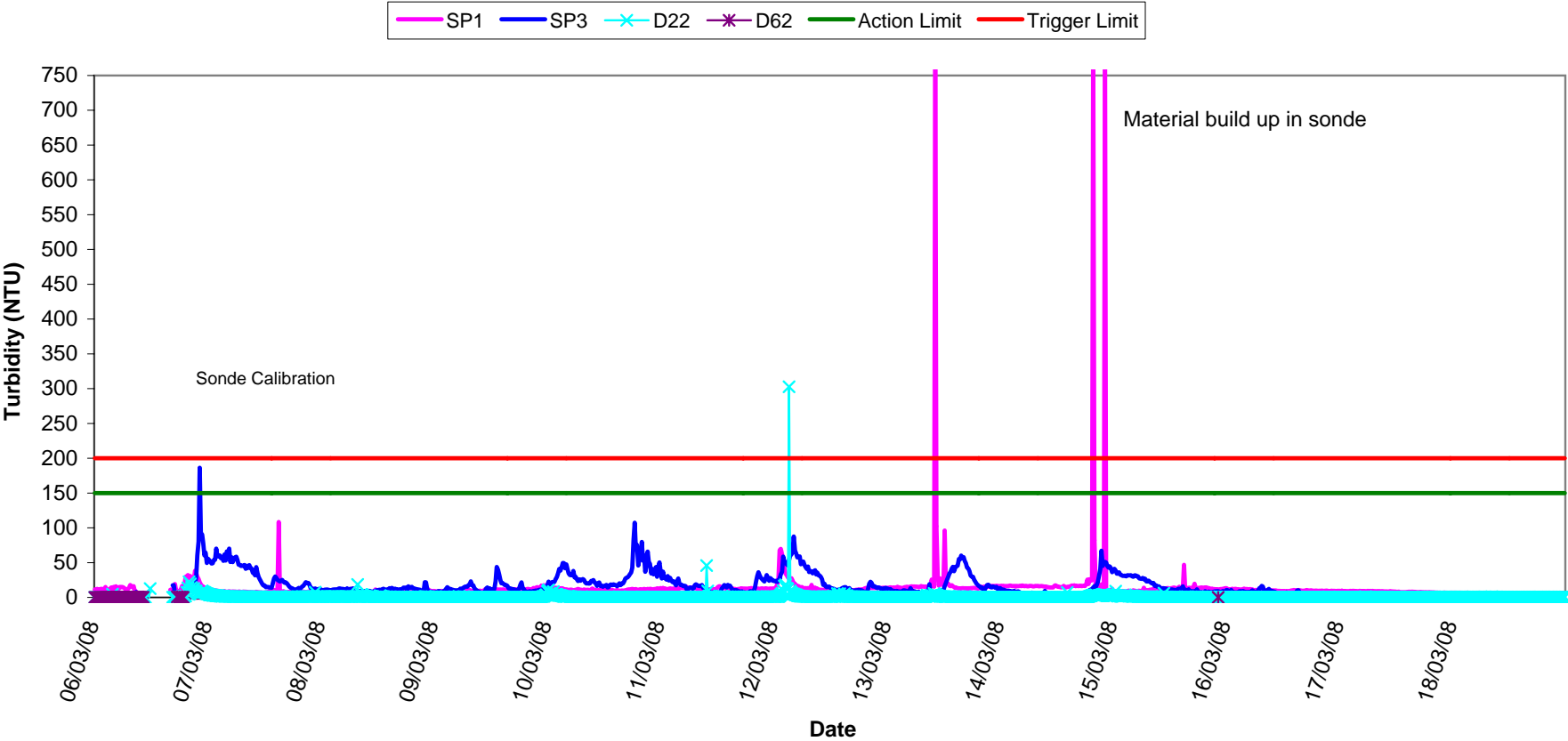
Temperature - Surface Waters,
Week 11-12, 2008



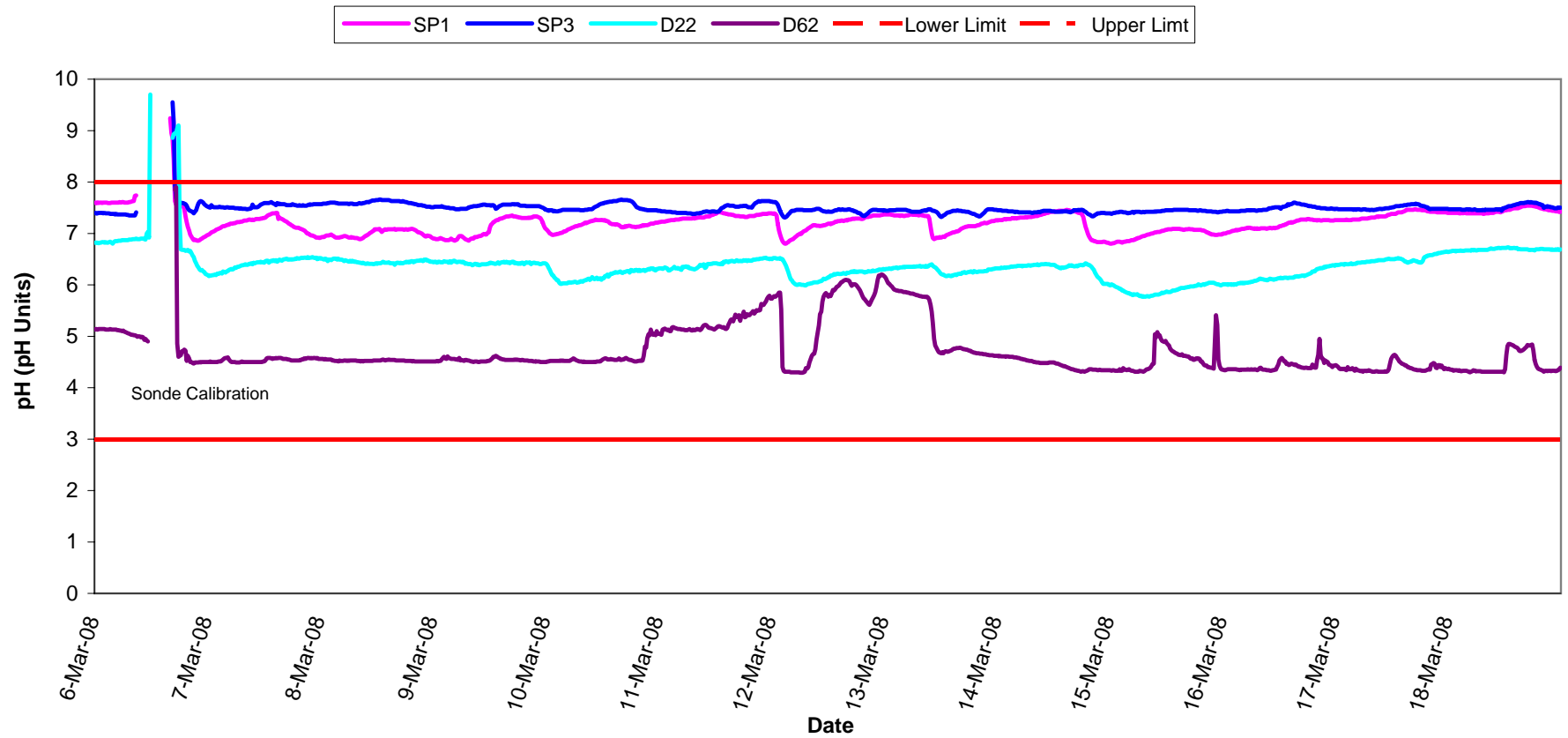
Conductivity - Surface Waters, Week 11-12, 2008



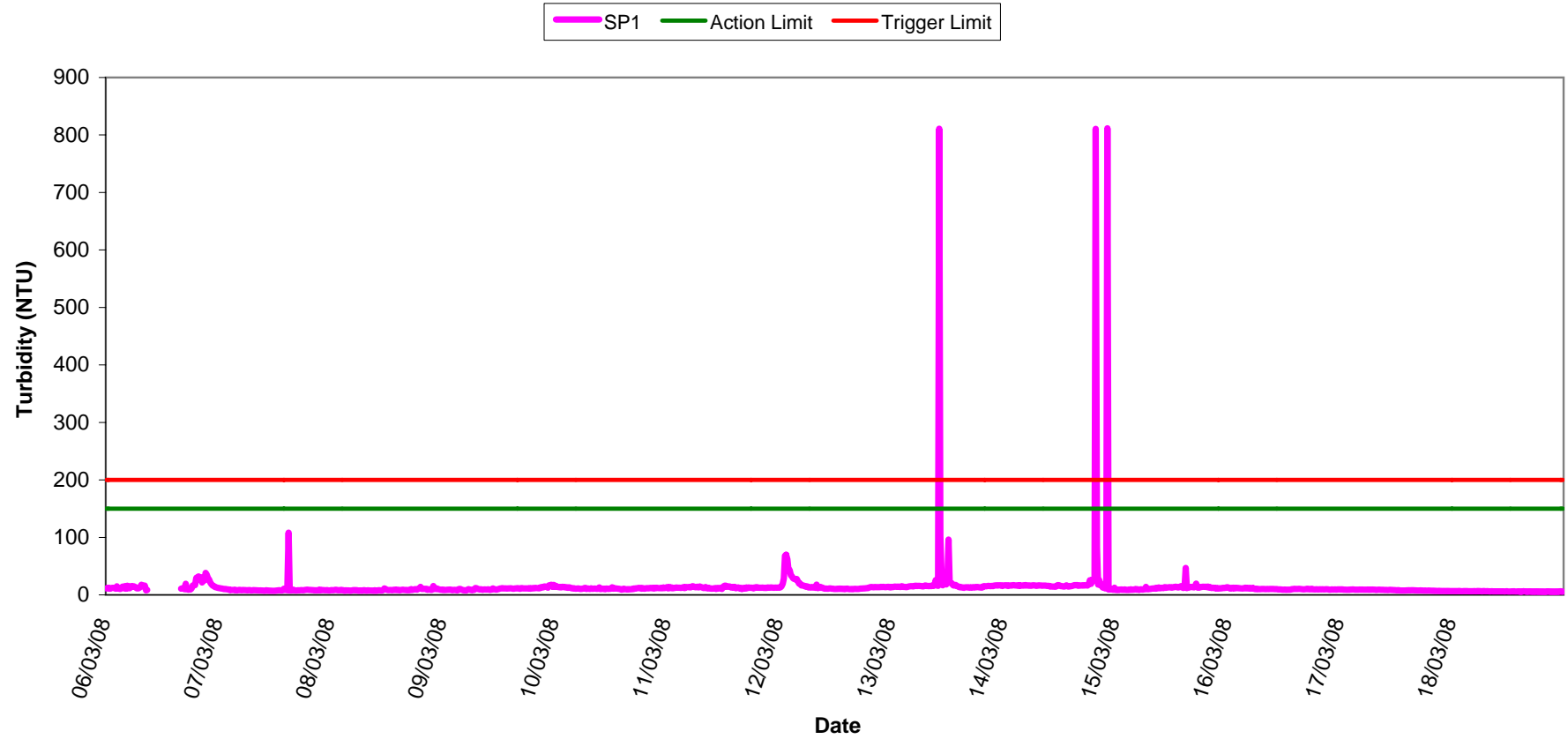
Turbidity - Surface Waters,
Week 11-12, 2008



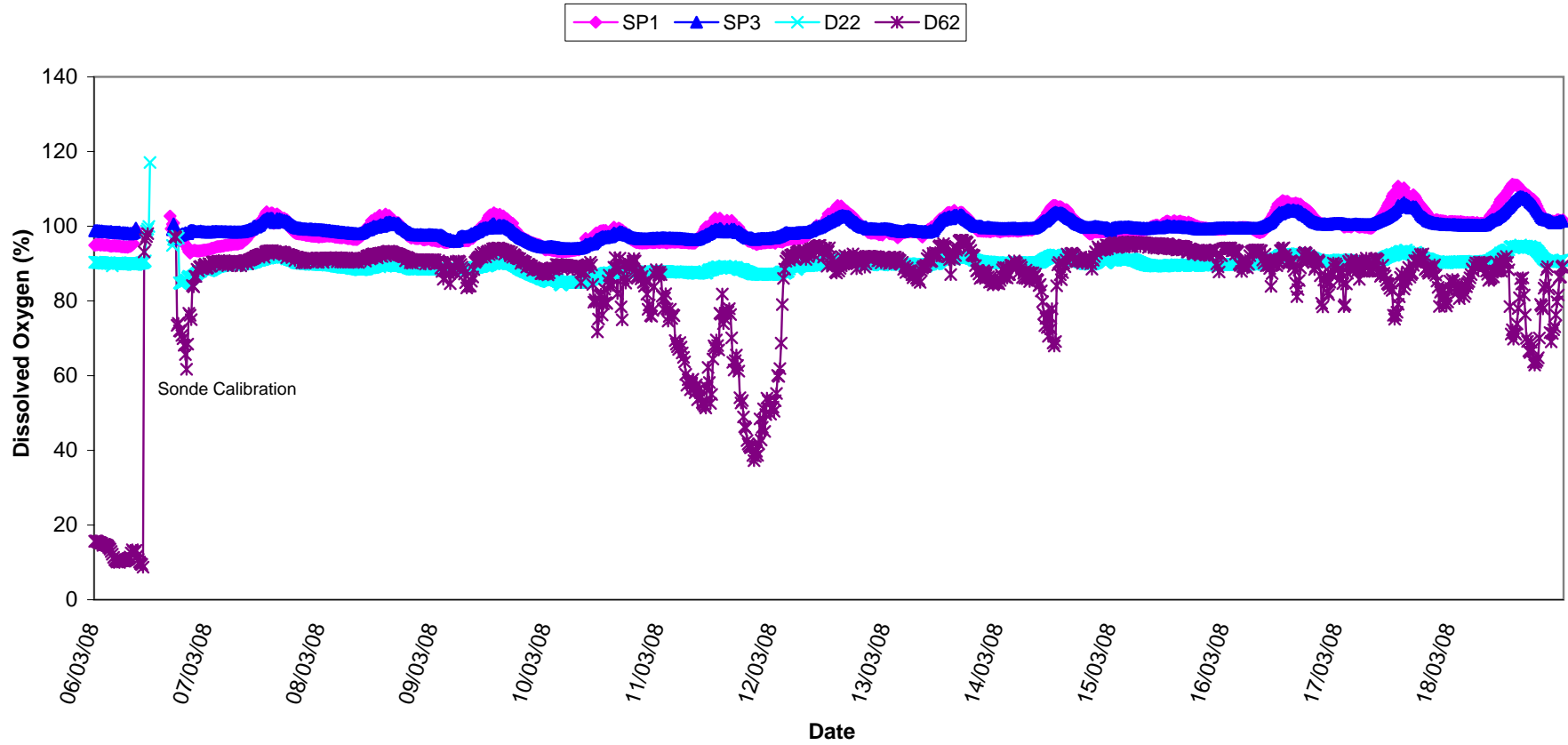
**pH - Surface Waters,
Week 11-12, 2008**



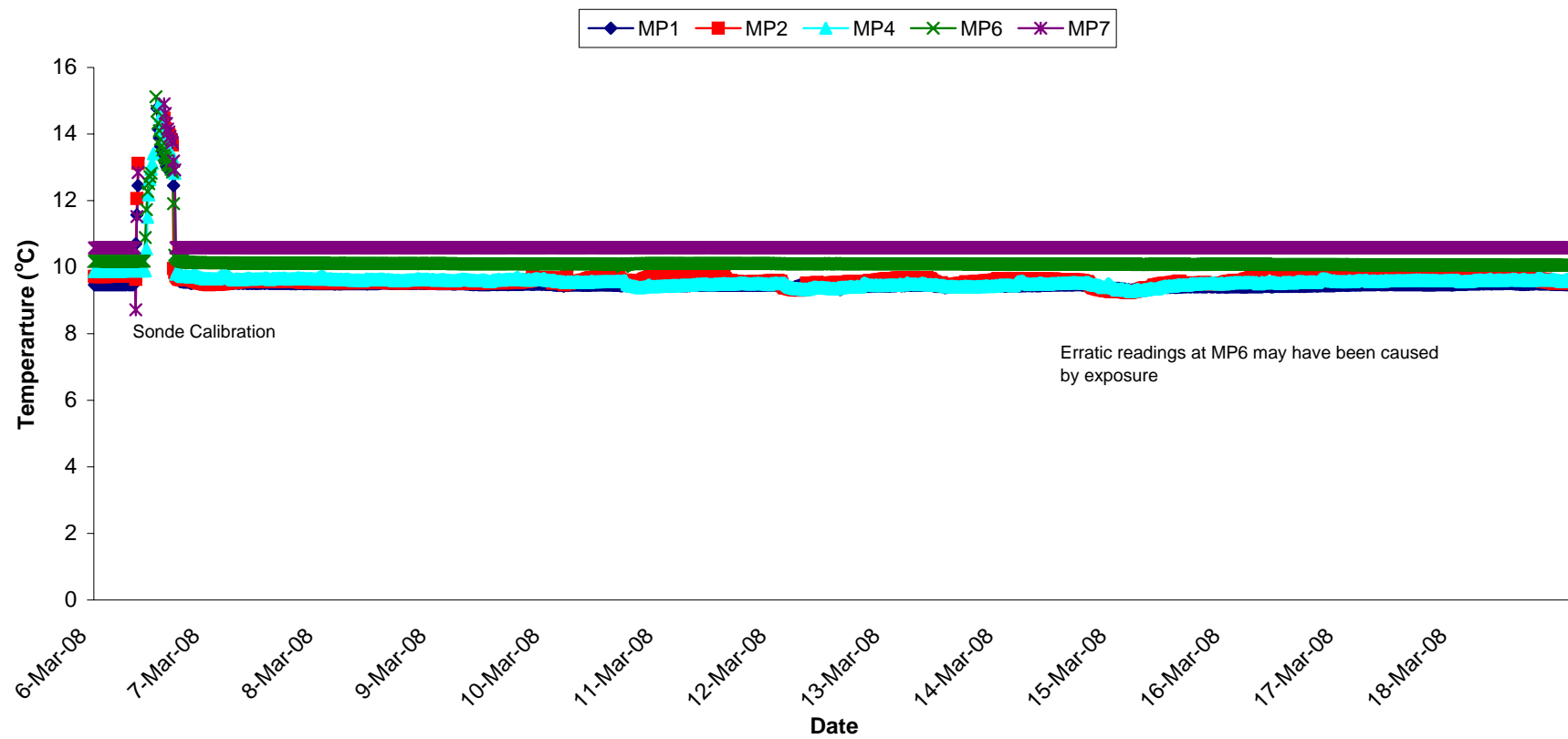
**Turbidity - Surface Waters @ SP1,
Week 11-12, 2008**



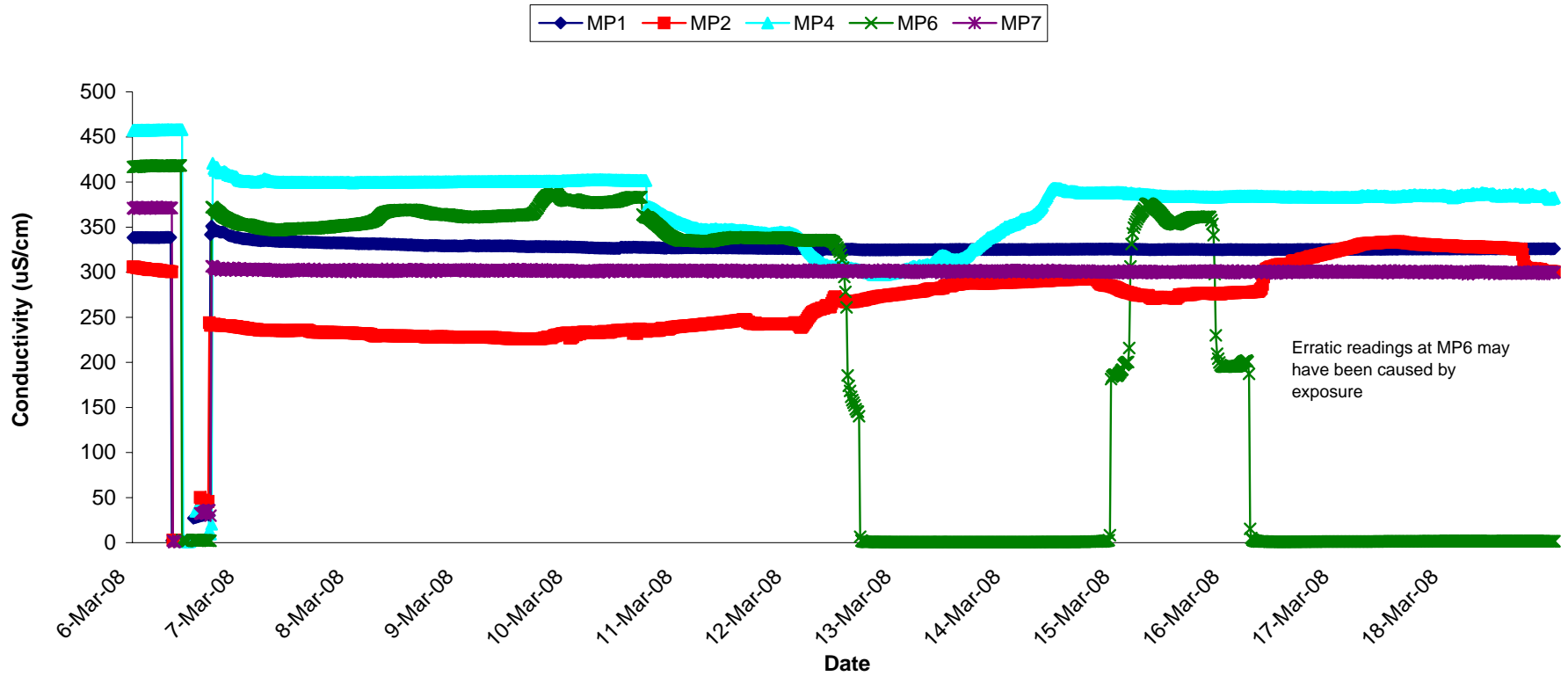
**Dissolved Oxygen - Surface Waters,
Week 11-12, 2008**



Temperature - Groundwaters Week 11-12, 2008



Conductivity - Groundwaters Week 11-12, 2008



pH - Groundwaters Week 11-12, 2008

MP1 MP2 MP4 MP6 MP7

