

<b>Interim Environmental Report</b>	<b>Period Ending: 19<sup>th</sup> August 2009</b>
Compiled By: Siobhan Quinn & Catriona King	
Approved By: Aoife Reynolds	

## 1 Monitoring Data

### 1.1 Monitoring Equipment

Axonics	– The Axonic's plant was operational during the reporting period.
PO <sub>4</sub>	– The PO <sub>4</sub> analyser was operational for the majority of the reporting period. – The composite sampler was in place to cover any shortfalls in the PO <sub>4</sub> analyser.
TSS	– The TSS analyser was operational during the reporting period.
Composite	– 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	– The results are displayed graphically. ○ Any unusual values are explained on the relevant graph. ○ Internal memory failure gave a shortfall to the sonde monitoring in MP4 & MP7.
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

06/08/2009	4.200	13/08/2009	0.600
07/08/2009	7.400	14/08/2009	18.600
08/08/2009	1.400	15/08/2009	1.200
09/08/2009	3.600	16/08/2009	10.400
10/08/2009	2.400	17/08/2009	1.600
11/08/2009	0.800	18/08/2009	7.400
12/08/2009	0.600	19/08/2009	19.900
Total Rainfall 80.10mm			

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### 1.3 Summary

<b>Environment</b>	<b>Comments</b>
Surface Water	There were no exceedances during the reporting period.
Axonic's	An elevated value was determined for the post Axonic's discharge for aluminium. This value was investigated and improvements in the facility operation were completed. The values were not reflected in the aluminium value at SP1 on the same date.
Groundwater	The groundwater data (Sonde) is within anticipated ranges.
Dust	Dust results are all within limits.
Weather	There was a total of 80.10mm of rainfall during the reporting period, with a temperature range of 9.8°C to 18.2°C.
Noise	All noise levels were within the set limits. Where values were affected by high wind speeds it is indicated on the table. Technical faults were encountered with the noise meter during the reporting period. Data is not available for a partial period of the report.
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

[illegible]

## Groundwater Monitoring Record Sheet

[illegible]

No Groundwater Monitoring Undertaken in the Reporting Period.  
 Graphs provided for MP1, MP2, MP4, MP6 and MP7: Temperature, Conductivity, and pH.



## Day Time Noise Monitoring Record Sheet

Determinant Results
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Location	Air Temp. (Min)	Air Temp. (Max)	Start Date	Time	Duration	Serial No.	Wind		Results dB			*Comments
							Speed (m/s)*	Direction (Degrees)	L <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>Amin</sub>	
Action Limit									60			
Target Limit									65			
N1	10.2	17.1	06/08/2009	08:00:00	14:00:00	2539533	3.8	200.1	50.4	72.7	33.0	
N1	9.8	17.0	07/08/2009	08:00:00	14:00:00	2539533	3.5	187.7	50.1	89.4	30.0	
N1	12.3	16.6	08/08/2009	08:00:00	14:00:00	2539533	2.7	238.1	40.9	79.6	30.0	
N1	11.8	14.7	09/08/2009	08:00:00	14:00:00	2539533	2.7	182.5	45.8	72.9	30.0	
N1	13.6	16.7	10/08/2009	08:00:00	14:00:00	2539533	2.7	249.4	I.P.	I.P.	I.P.	
N1	13.0	15.8	11/08/2009	08:00:00	14:00:00	2539533	3.2	239.5	I.P.	I.P.	I.P.	
N1	12.9	16.0	12/08/2009	08:00:00	14:00:00	2539533	2.7	281.7	I.P.	I.P.	I.P.	
N1	11.5	16.2	13/08/2009	08:00:00	14:00:00	2539533	0.8	245.5	I.P.	I.P.	I.P.	
N1	11.7	16.0	14/08/2009	08:00:00	14:00:00	2539533	4.8	196.5	I.P.	I.P.	I.P.	
N1	13.1	16.6	15/08/2009	08:00:00	14:00:00	2539533	4.9	246.2	I.P.	I.P.	I.P.	
N1	12.7	16.3	16/08/2009	08:00:00	14:00:00	2539533	5.3	245.8	I.P.	I.P.	I.P.	
N1	13.2	18.2	17/08/2009	08:00:00	14:00:00	2539533	3.4	227.9	I.P.	I.P.	I.P.	
N1	13.4	16.9	18/08/2009	08:00:00	14:00:00	2539533	4.2	181.4	I.P.	I.P.	I.P.	
N1	13.2	17.4	19/08/2009	08:00:00	14:00:00	2539533	4.2	191.9	I.P.	I.P.	I.P.	

\* 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 <sub>Aeq</sub>	L <sub>Amax</sub>	L <sub>Amin</sub>	
Action Limit									50			
Target Limit									55			
N1	10.2	17.1	06/08/2009	22:00:00	10:00:00	2539533	3.8	200.1	41.1	70.5	30.0	
N1	9.8	17.0	07/08/2009	22:00:00	10:00:00	2539533	3.5	187.7	44.6	71.4	34.5	
N1	12.3	16.6	08/08/2009	22:00:00	10:00:00	2539533	2.7	238.1	37.3	78.2	30.0	
N1	11.8	14.7	09/08/2009	22:00:00	10:00:00	2539533	2.7	182.5	43.0	68.2	32.2	
N1	13.6	16.7	10/08/2009	22:00:00	10:00:00	2539533	2.7	249.4	I.P.	I.P.	I.P.	
N1	13.0	15.8	11/08/2009	22:00:00	10:00:00	2539533	3.2	239.5	I.P.	I.P.	I.P.	
N1	12.9	16.0	12/08/2009	22:00:00	10:00:00	2539533	2.7	281.7	I.P.	I.P.	I.P.	
N1	11.5	16.2	13/08/2009	22:00:00	10:00:00	2539533	0.8	245.5	I.P.	I.P.	I.P.	
N1	11.7	16.0	14/08/2009	22:00:00	10:00:00	2539533	4.8	196.5	I.P.	I.P.	I.P.	
N1	13.1	16.6	15/08/2009	22:00:00	10:00:00	2539533	4.9	246.2	I.P.	I.P.	I.P.	
N1	12.7	16.3	16/08/2009	22:00:00	10:00:00	2539533	5.3	245.8	I.P.	I.P.	I.P.	
N1	13.2	18.2	17/08/2009	22:00:00	10:00:00	2539533	3.4	227.9	I.P.	I.P.	I.P.	
N1	13.4	16.9	18/08/2009	22:00:00	10:00:00	2539533	4.2	181.4	I.P.	I.P.	I.P.	
N1	13.2	17.4	19/08/2009	22:00:00	10:00:00	2539533	4.2	191.9	I.P.	I.P.	I.P.	

\* 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)
06/08/2009	8.48	2.96	5.49	4.27	0.46	2.20
07/08/2009	11.70	3.23	7.45	7.47	0.46	5.25
08/08/2009	15.79	4.65	10.15	7.98	0.78	4.55
09/08/2009	8.81	3.23	4.67	3.28	0.67	1.67
10/08/2009	18.50	8.64	12.80	4.91	1.58	3.39
11/08/2009	8.64	3.05	5.04	4.07	0.46	1.50
12/08/2009	6.12	1.97	3.84	4.27	0.36	1.37
13/08/2009	5.11	2.25	3.52	3.47	0.46	1.73
14/08/2009	59.19	2.25	28.41	21.49	0.46	9.79
15/08/2009	44.82	11.90	20.59	15.76	4.07	9.97
16/08/2009	36.16	7.69	12.38	17.39	4.91	7.16
17/08/2009	34.26	8.00	15.93	13.88	4.07	7.40
18/08/2009	19.82	7.39	14.01	7.47	3.47	5.62
19/08/2009	191.67	13.98	58.01	58.80	7.23	19.98
<b>Note:</b> Negative values indicate low flow conditions.						



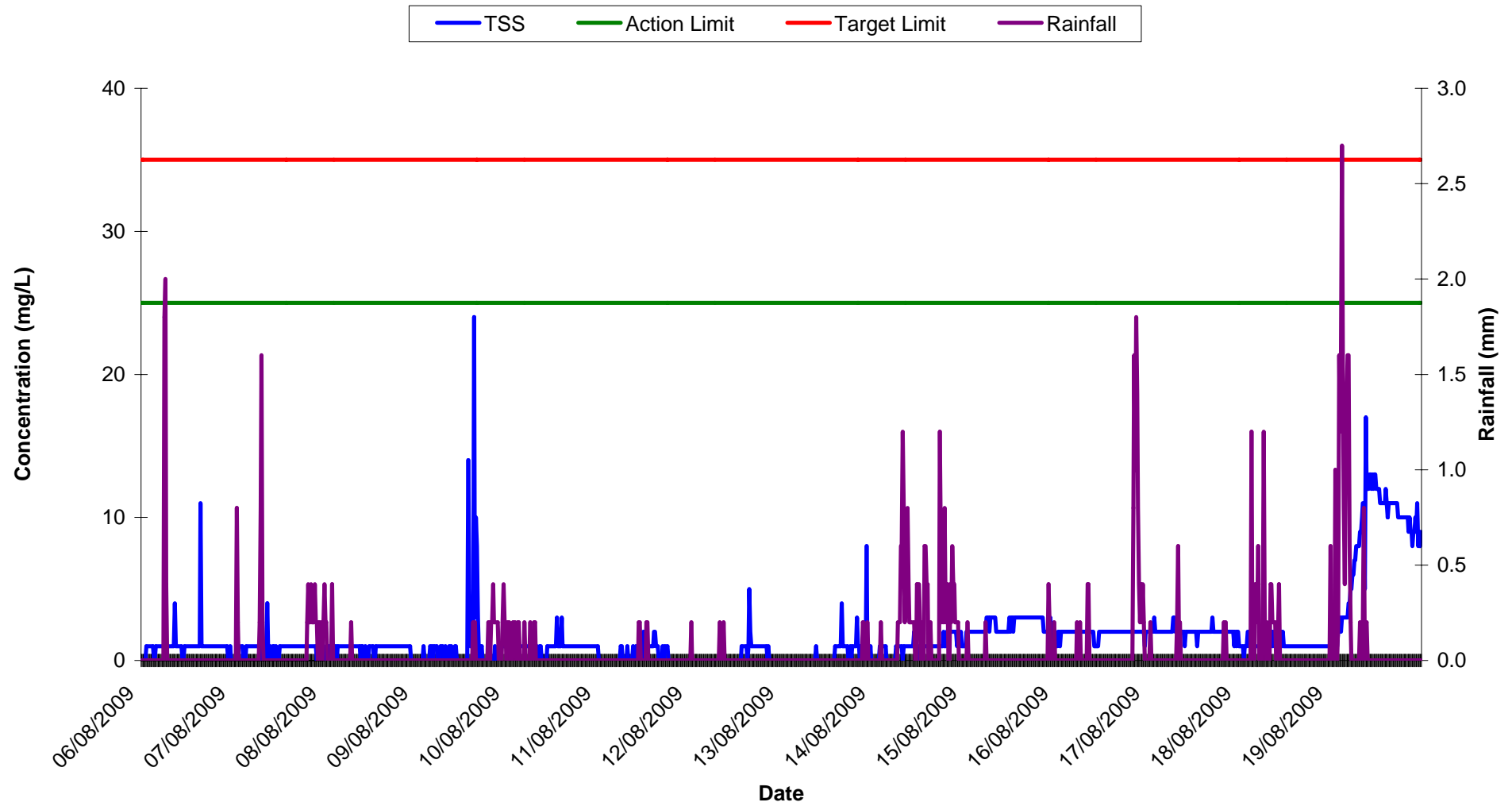
## Vibration Monitoring Record Sheet

Determinant Results	
1. <b>Demographics</b>	Age, Gender, Education, Income, Employment Status
2. <b>Attitudes</b>	Attitudes Toward Recycling, Environmental Awareness, Perceived Benefits
3. <b>Barriers</b>	Lack of Information, Lack of Time, Lack of Access, Cost
4. <b>Facilitators</b>	Community Programs, Government Incentives, Convenient Recycling Bins
5. <b>Behavioral Intent</b>	Willingness to Recycle, Frequency of Recycling, Recycling Volume

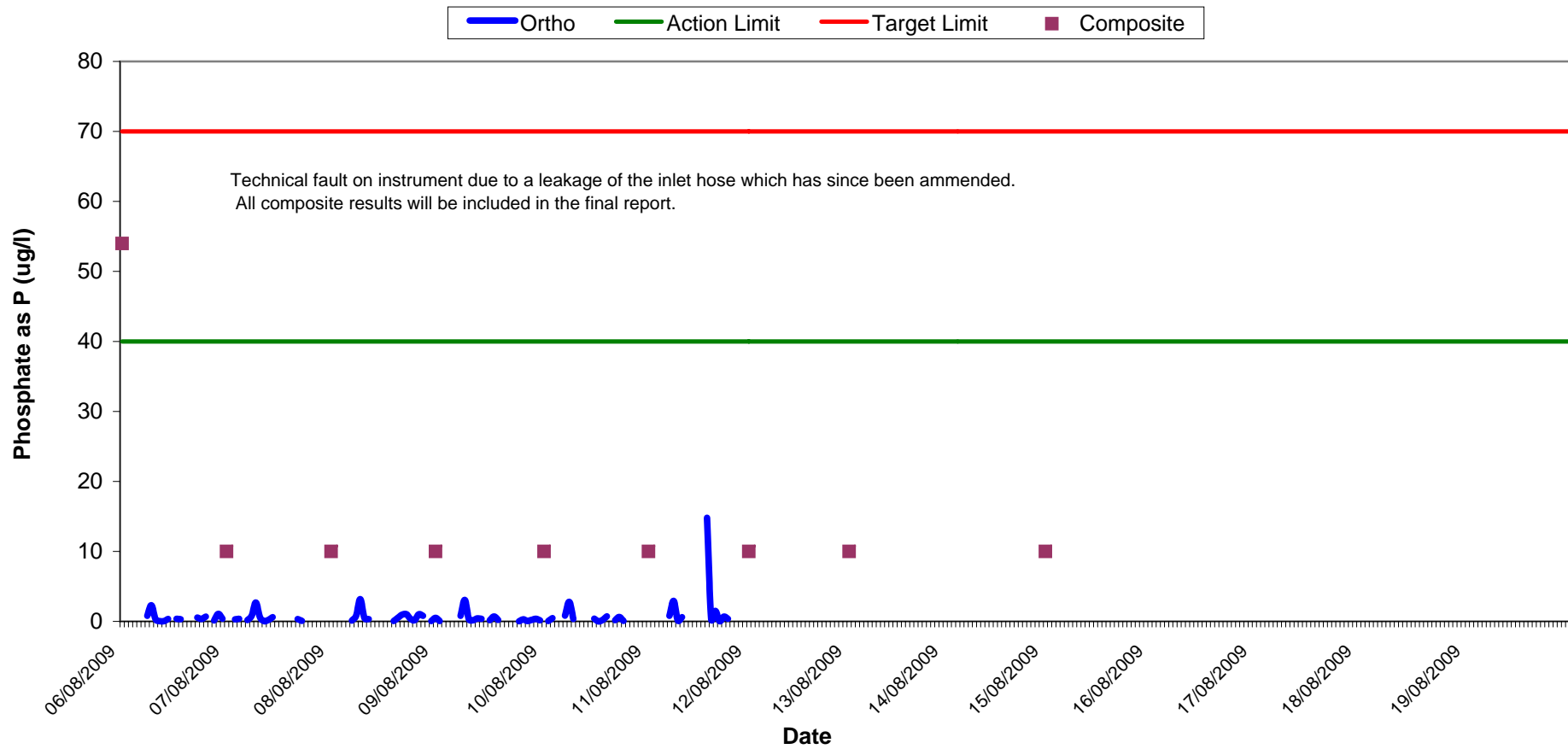
[illegible]

Vibration meter located at V1.

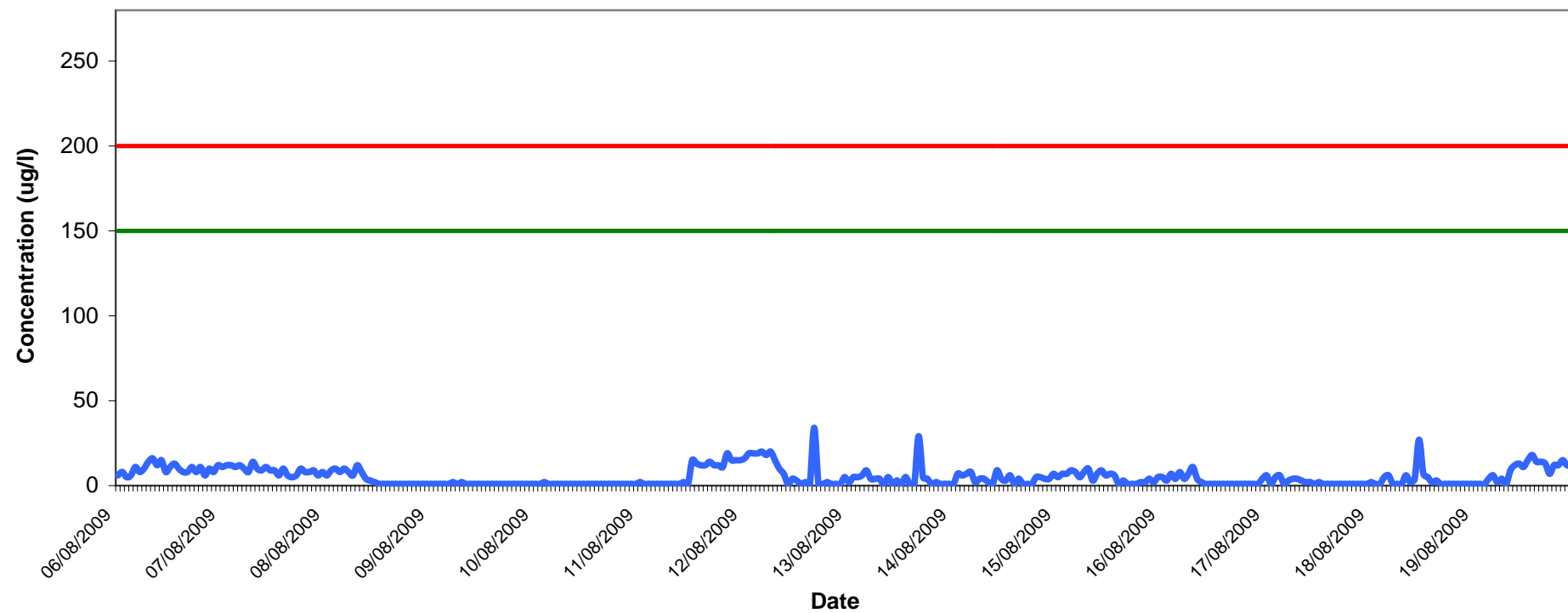
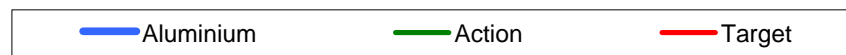
**Total Suspended Solids at SP1  
Week 32-33**



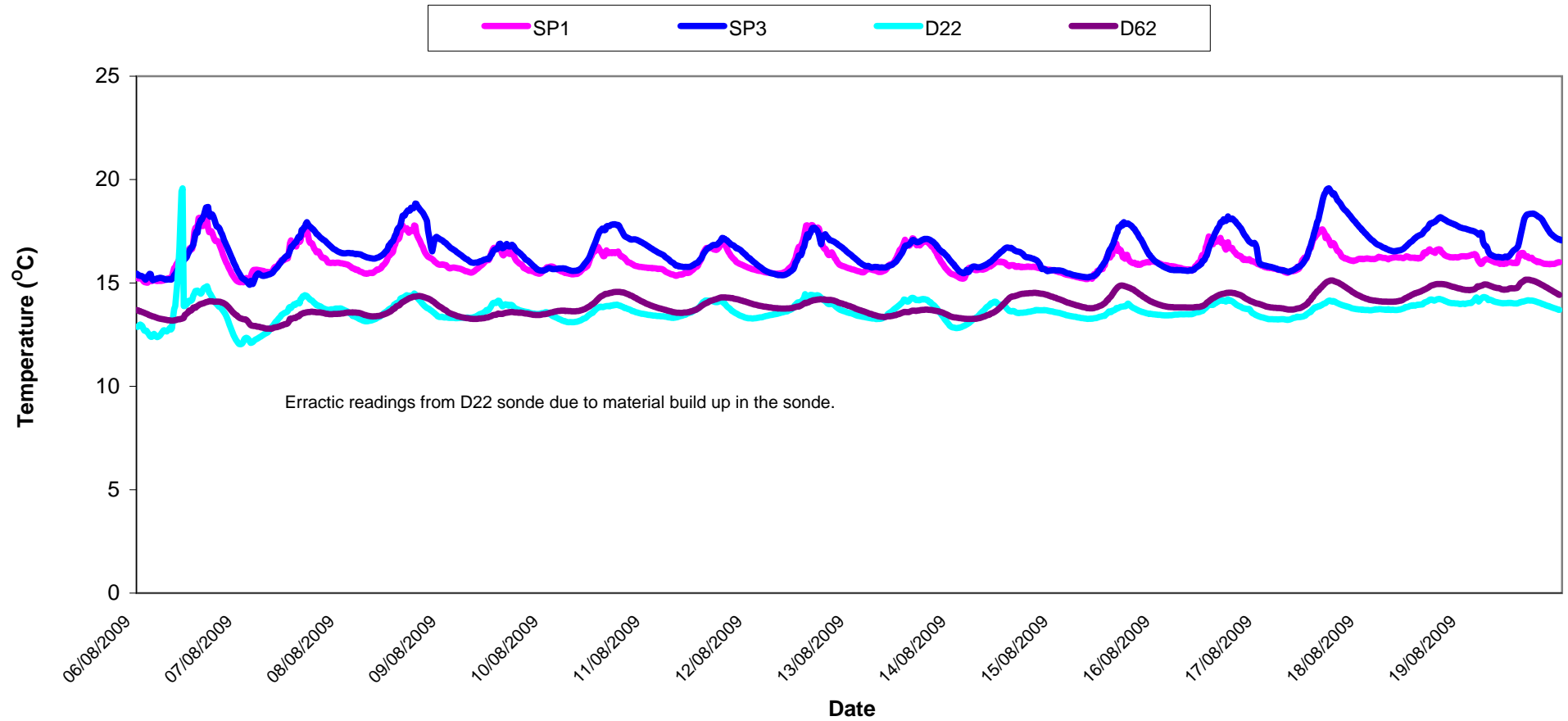
# Orthophosphate Results at SP1 Wk 32-33



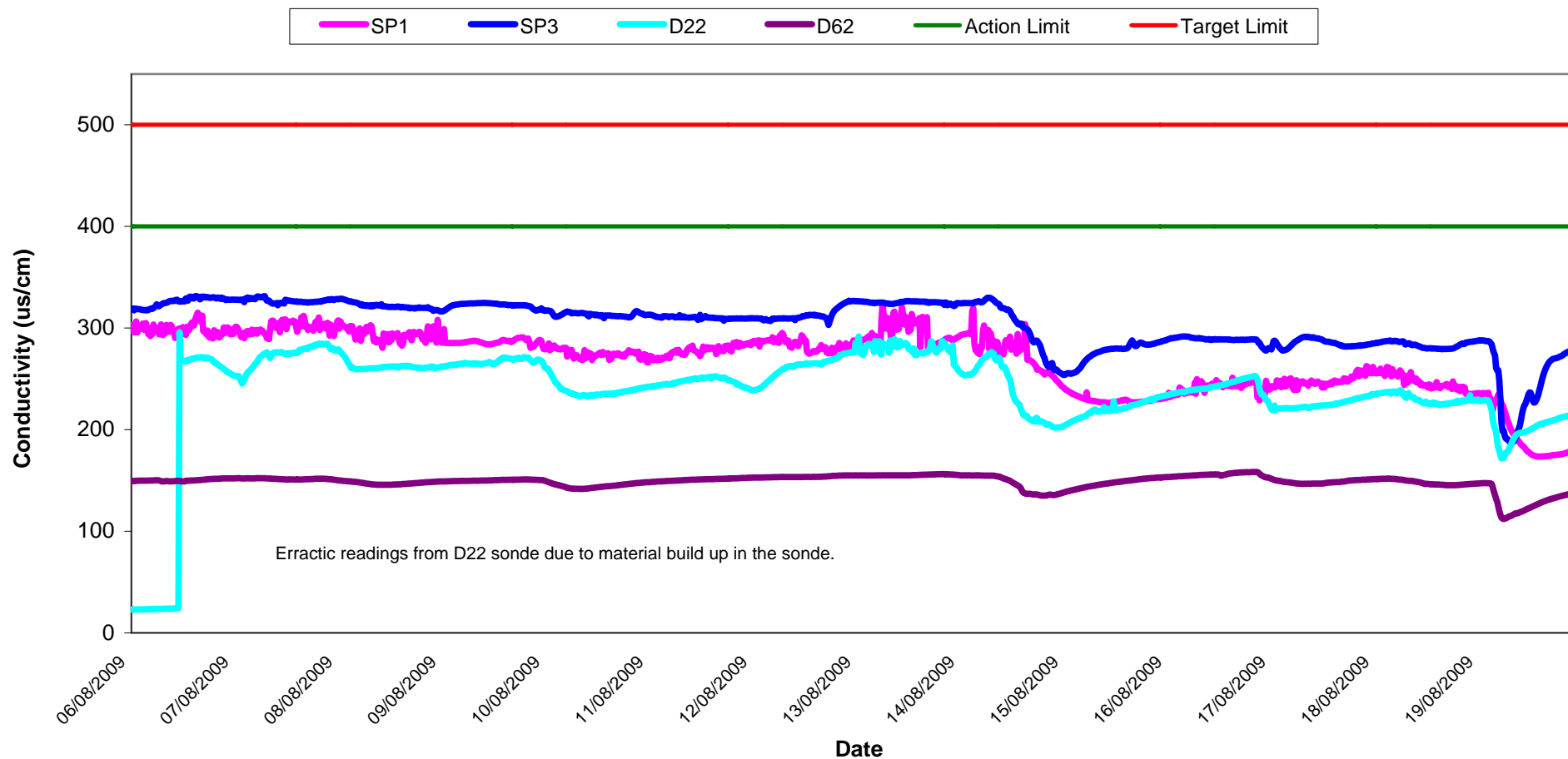
# Aluminium Concentration at SP1 Wk 32-33



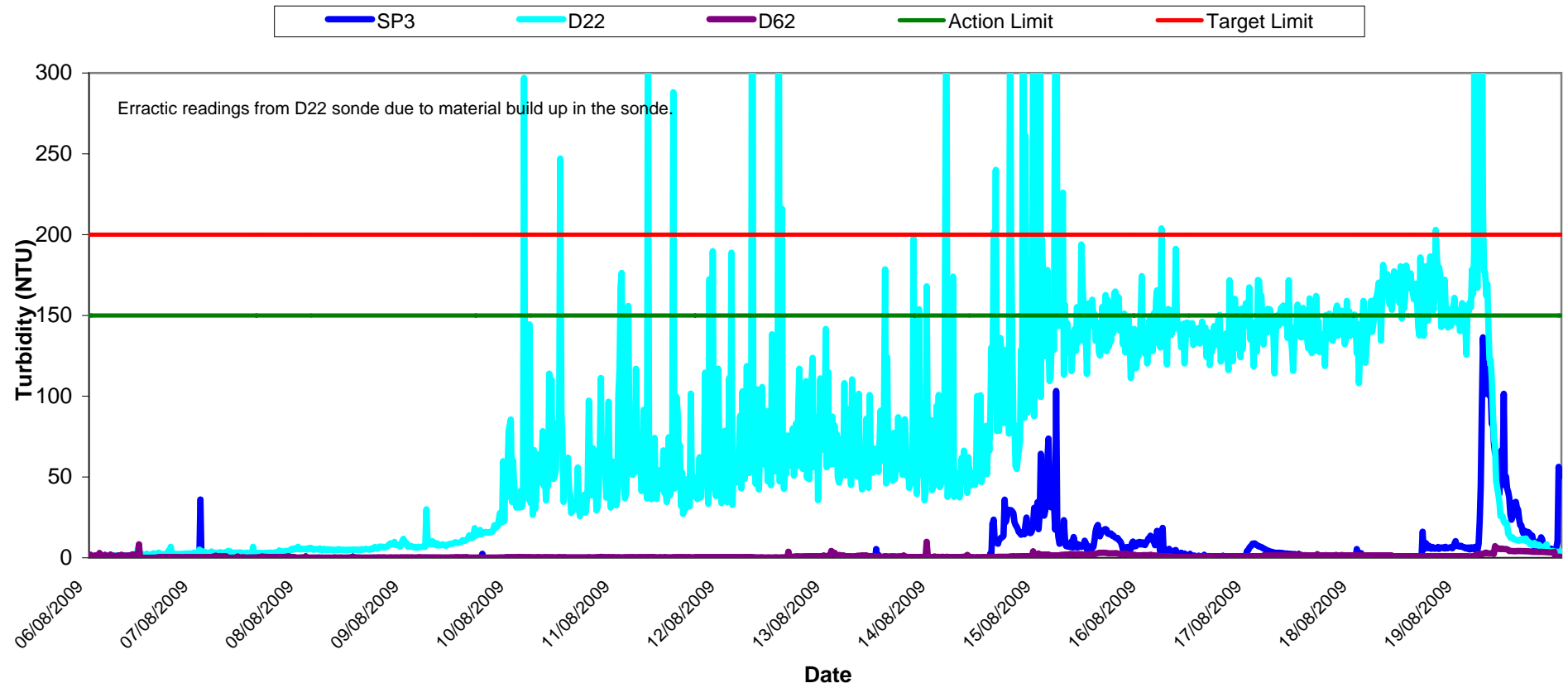
# Temperature - Surface Waters Wk 32-33



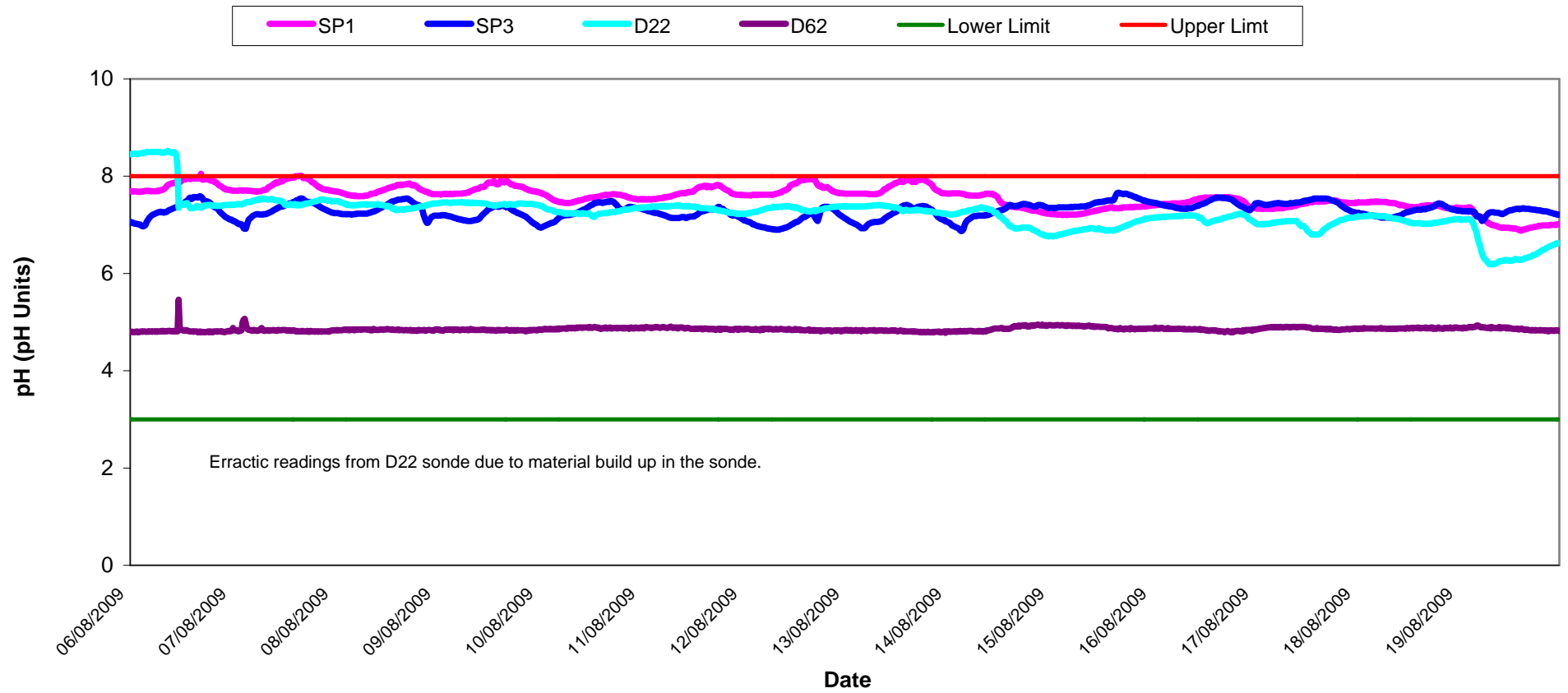
# Conductivity - Surface Waters, Wk 32-33



# Turbidity - Surface Waters Wk 32-33

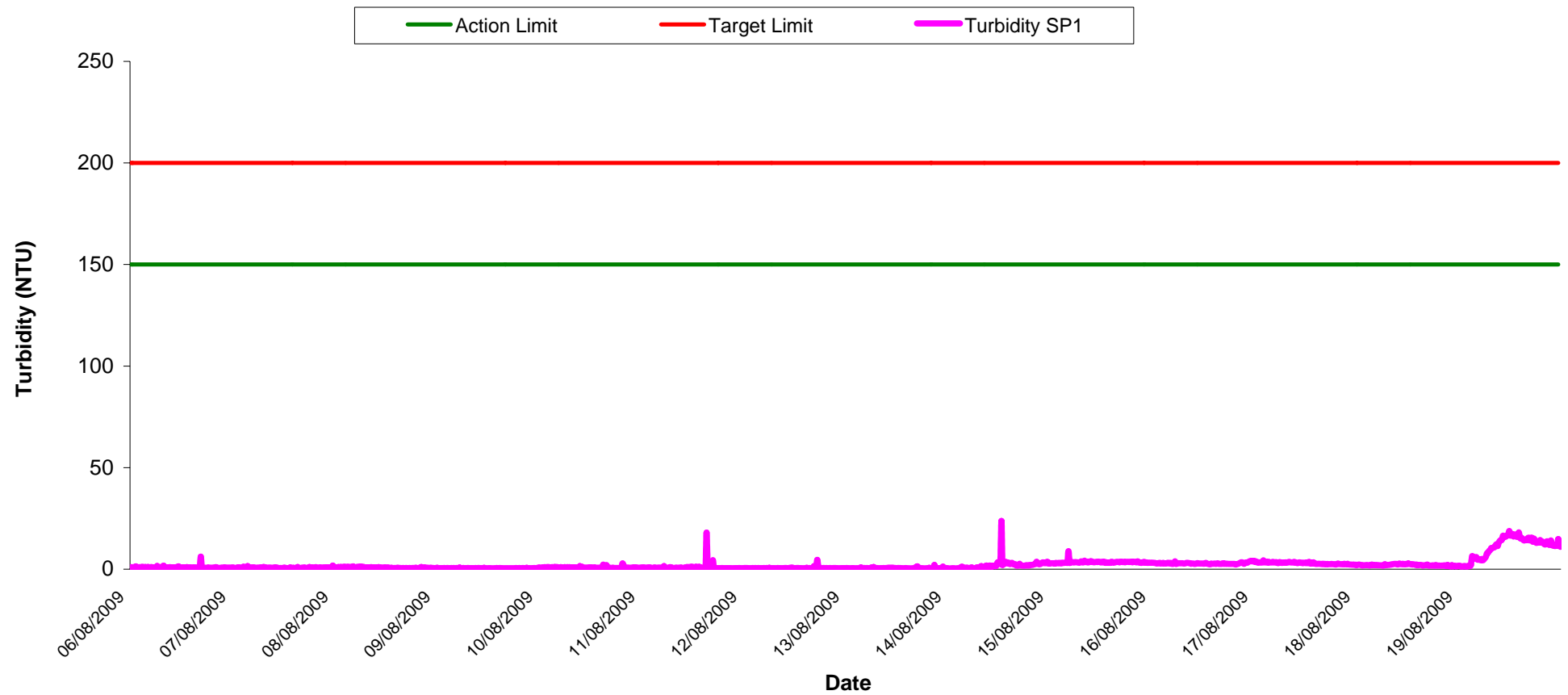


# pH - Surface Waters Wk 32-33

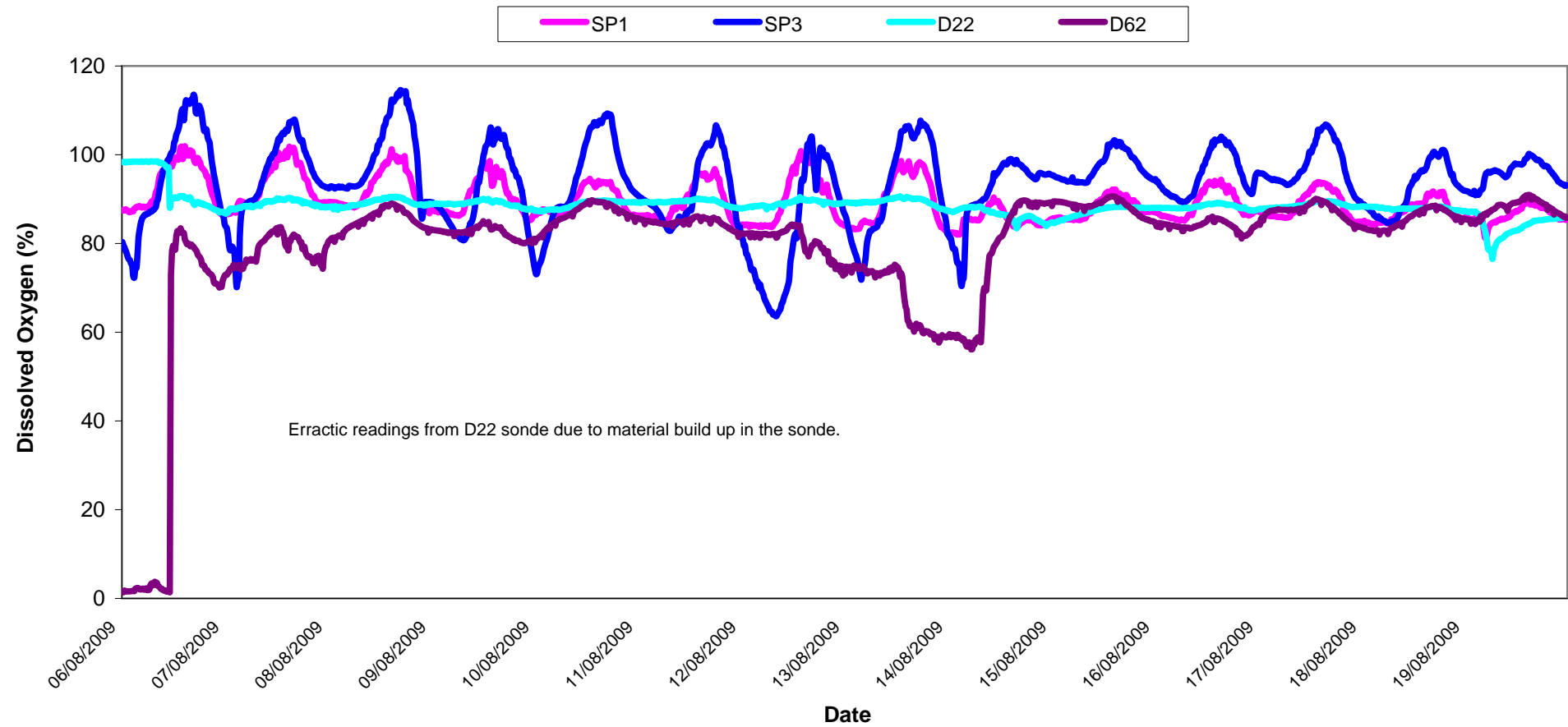




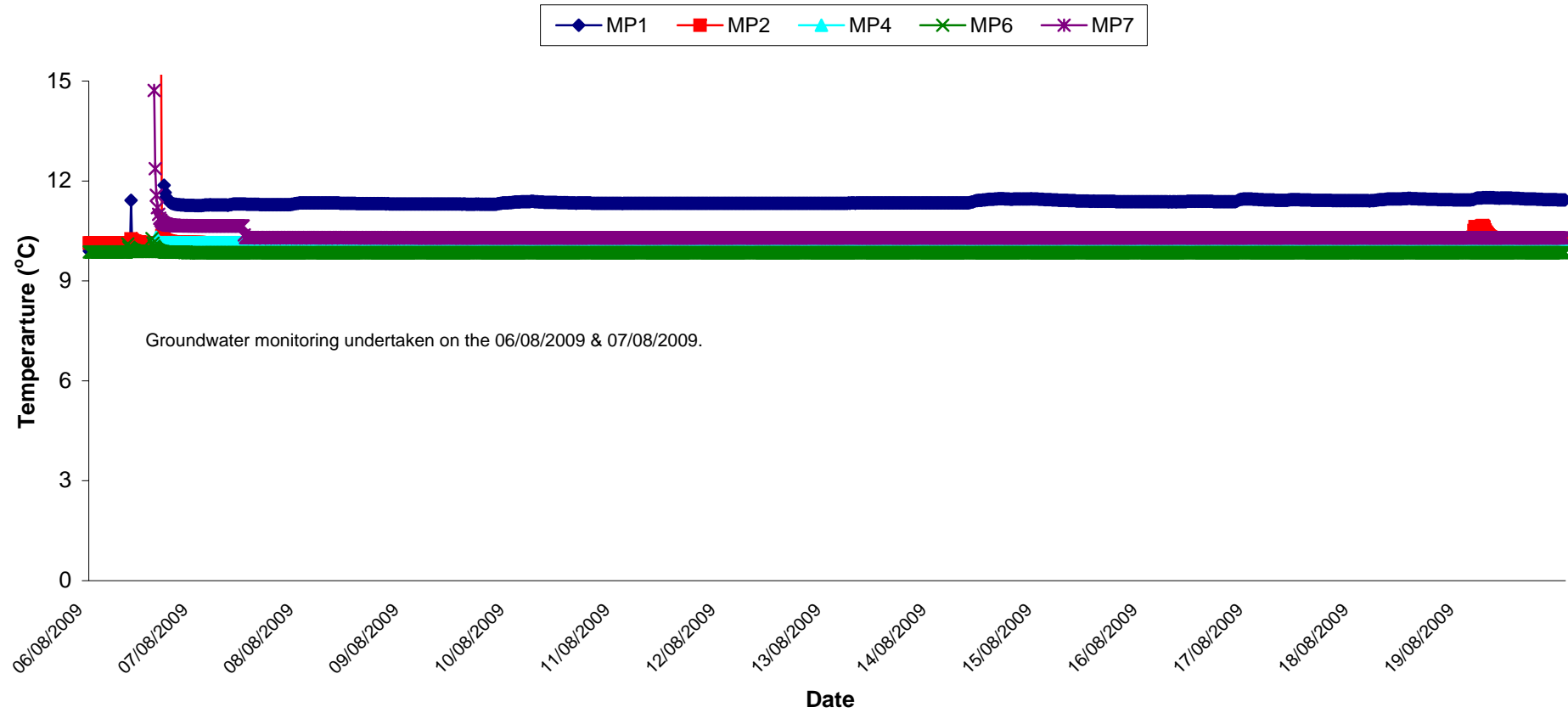
# Turbidity - Surface Waters @ SP1, Wk 32-33



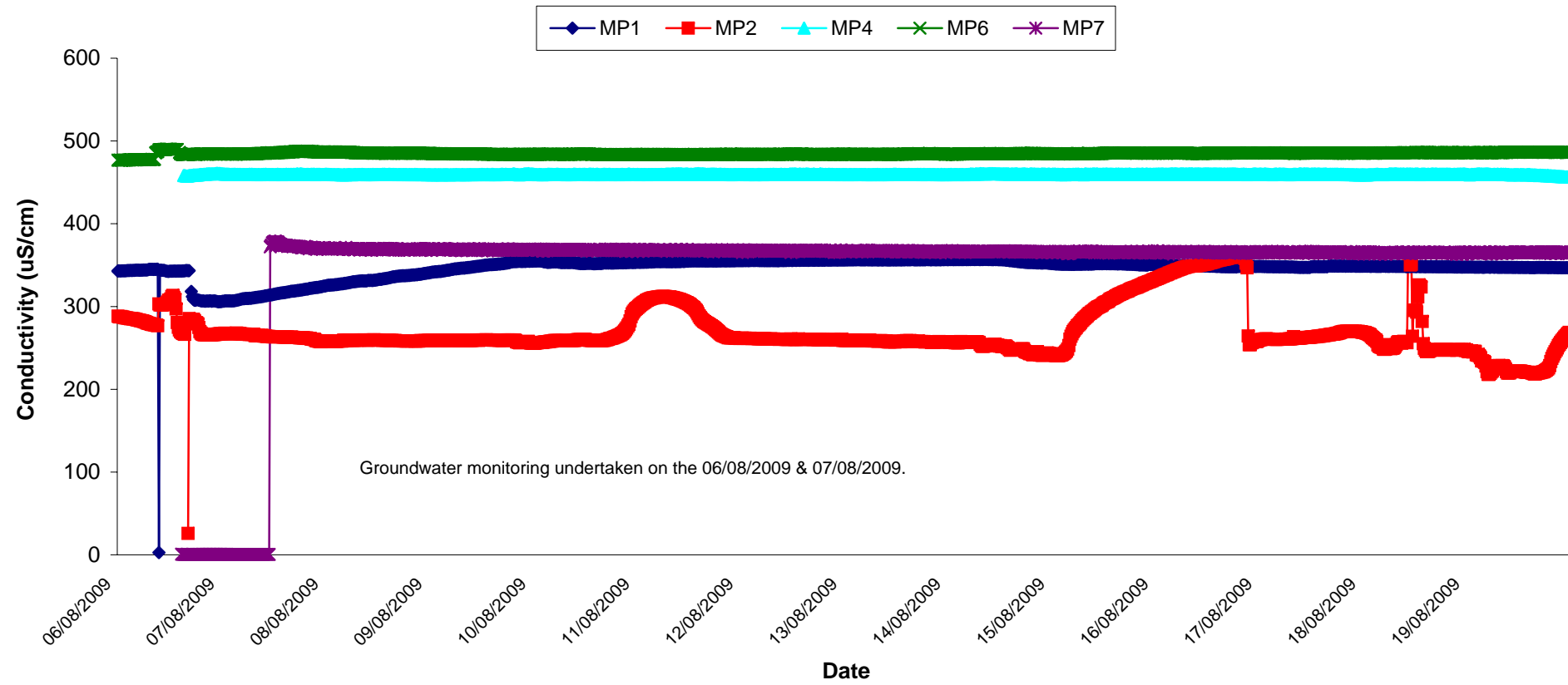
# Dissolved Oxygen - Surface Waters, Wk 32-33



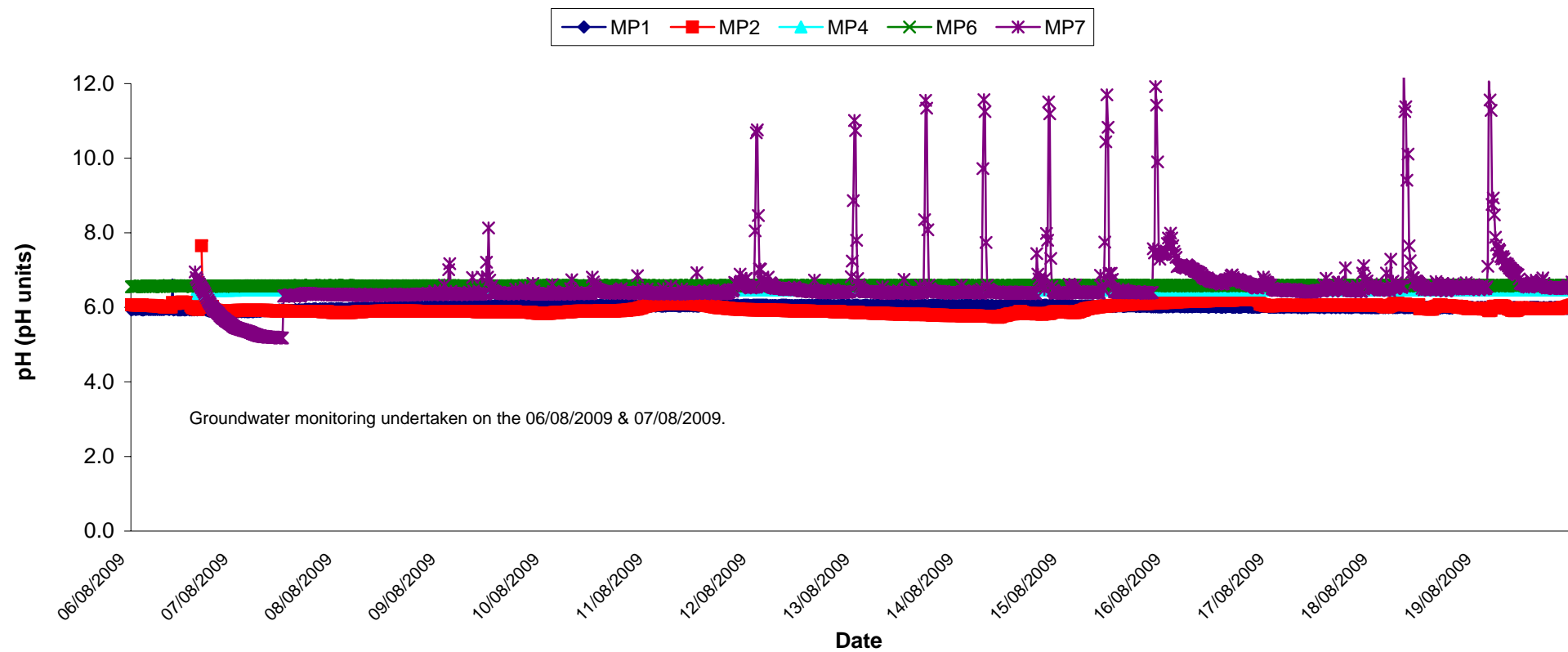
# Temperature - Groundwaters Wk 32-33



# Conductivity - Groundwaters Wk 32-33



# pH - Groundwaters Wk 32-33



# **Appendix 1**

## Appendix 1: Surface Water Monitoring Record Sheet- Onsite Monitoring

	Date	Cond. µS/cm	Temp oC	Turbidity NTU	DO % Sat	pH	TSS mg l <sup>-1</sup>	Ortho-phosphate as P µg l <sup>-1</sup>	Nitrate as N mg l <sup>-1</sup>	Nitrate as NO <sub>3</sub> mg l <sup>-1</sup>	Total Phosphorus as P mg l <sup>-1</sup>	Ammonia as NH <sub>3</sub> -N mg l <sup>-1</sup>	Nitrite as NO <sub>2</sub> mg/l	Aluminium (dissolved) ug/l	Aluminium (total) ug/l	Phosphate as PO4 mg/l	Total dissolved solids mg/l
Settlement Pond Monitoring																	
SP1	06/08/2009	353	16.2	4.3	96.0	6.6			<LOD			0.570		24	43	0.14	239
SP1	07/08/2009	352	16.0	4.8	94.6	6.9			0.10			1.420		<LOD	23	0.41	243
SP1	10/08/2009	338	15.9	3.4	91.2	6.8			<0.44			<0.005		<LOD	39	0.19	230
SP1	11/08/2009	296	15.7	4.2	90.3	7.0			<0.44			<0.005		<LOD	64	0.03	202
SP1	12/08/2009	288	15.9	4.6	89.7	6.9			<0.44			<0.005		20	44	<0.03	194
SP1	13/08/2009	315	16.6	4.1	98.5	6.8			<LOD			0.100		<LOD	55	0.81	208
SP1	14/08/2009	274	15.9	2.8	90.0	6.8			<LOD			0.020		<LOD	34	0.71	185
SP1	17/08/2009	251	16.1	>LOD	90.9	7.0			<LOD			0.680		28	76	0.03	172
SP1	18/08/2009	219	16.6	5.5	91.2	7.2			<LOD			0.180		50	54	1.27	195
SP1	19/08/2009	205	16.3	>LOD	88.7	6.5			<LOD			0.280		41	89	0.58	139
SP3	06/08/2009	322	16.2	3.1	97.7	6.6			0.60			0.010		<LOD		0.03	217
SP3	07/08/2009	316	15.9	1.5	94.1	7.1			0.60			0.300		<LOD		0.04	214
SP3	10/08/2009	304	15.8	3.5	91.4	6.9			0.60			<0.005		<LOD		<0.03	206
SP3	11/08/2009	300	15.9	3.9	84.1	6.7			1.10			<0.005		<LOD		<0.03	203
SP3	12/08/2009	299	16.3	3.1	76.3	7.0			0.59			0.008		41		<0.03	203
SP3	13/08/2009	311	16.3	5.8	96.6	6.8			0.20			0.330		<LOD		0.02	210
SP3	14/08/2009	311	16.0	3.1	88.3	6.8			0.30			0.300		<LOD		0.05	210
SP3	17/08/2009	289	15.9	5.7	92.4	7.1			<LOD			>LOD		32		0.02	194
SP3	18/08/2009	282	17.5	2.2	94.0	7.2			0.30			0.660		46		0.05	187
SP3	19/08/2009	213	16.3	>LOD	93.1	6.5			0.20			0.180		64		0.02	136
Additional Monitoring																	
D22	06/08/2009	275	19.5	5.4	97.1	7.1			0.30			<LOD		<LOD		0.03	186
D22	13/08/2009	285	14.2	4.8	88.2	6.0			1.90			0.370		31		0.04	192
D62	06/08/2009	174	13.3	1.1	56.6	5.7			<LOD			<LOD		36		0.02	100
D62	13/08/2009	176	13.8	1.9	81.0	6.2			0.10			0.510		41		0.04	102
Axonics Monitoring																	
Pre	06/08/2009	314		>LOD		7.0			<LOD			0.350		45		0.05	213
Post	06/08/2009	329		8.1		6.9			<LOD			0.230		46	>LOD	0.03	222
Pre	07/08/2009	311		>LOD		7.1			<LOD			0.910		117		0.03	211
Post	07/08/2009	327		3.3		7.0			<LOD			2.030		<LOD	324	0.85	221
Pre	10/08/2009	279		>LOD		6.8			0.85			0.267		78		0.04	188
Post	10/08/2009	296		2.9		6.8			0.77			0.310		<LOD	258	<0.03	200
Pre	11/08/2009	295		>LOD		6.8			0.08			0.435		59		0.10	199
Post	11/08/2009	320		2.9		6.6			0.08			0.400		<LOD	270	<0.03	218
Pre	12/08/2009	301		>LOD		7.0			0.99			0.399		75		0.09	205
Post	12/08/2009	317		2.8		6.6			0.93			0.421		36	262	<0.03	215
Pre	13/08/2009	307		>LOD		6.8			<LOD			1.780		46		0.02	207
Post	13/08/2009	321		5.8		6.7			0.20			0.860		32	>LOD	0.04	316
Pre	14/08/2009	305		>LOD		7.0			<LOD			0.790		116		0.03	205
Post	14/08/2009	323		4.0		6.9			0.60			0.670		26	313	1.09	217
Pre	17/08/2009	269		>LOD		7.2			<LOD			0.870		165		0.06	180
Post	17/08/2009	285		3.0		6.7			0.40			0.400		<LOD	207	0.04	188
Pre	18/08/2009	276		>LOD		7.2			<LOD			1.060		107		0.21	183
Post	18/08/2009	298		3.6		6.7			0.20			0.420		23	218	0.02	198
Pre	19/08/2009	259		>LOD		6.7			<LOD			0.770		256		0.09	173
Post	19/08/2009	286		9.3		6.6			0.80			0.410		26	176	0.03	190
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																	