

Interim Environmental ReportPeriod Ending: 8th July 2009

Compiled By: Aoife Reynolds & Siobhán Quinn

Approved By: Tony Doyle

1 Monitoring Data

1.1 Monitoring Equipment

Axonics	<ul style="list-style-type: none"> – Upgrade works were undertaken on the Axonic's plant during the reporting period. This encompassed the installation of an upgraded clarifier and associated mixing tanks. To facilitate the works the operation of the plant was suspended. The low rainfall conditions enabled the works to be undertaken without having an impact on the discharge water quality at SP1.
PO ₄	<ul style="list-style-type: none"> – The PO₄ analyser was operational for the majority of the reporting period. – The composite sampler was in place to cover any shortfalls in the PO₄ analyser.
TSS	<ul style="list-style-type: none"> – The TSS analyser was operational during the reporting period.
Composite	<ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> – There is a single noise monitoring location currently being used – N1.
Vibration	<ul style="list-style-type: none"> – There is a single vibration monitoring location currently being used – V1.
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. ○ D22 & D62 sondes were removed on the 9th of June due to insufficient water flow in the drain.
Weather Station	<ul style="list-style-type: none"> – The data used for this reporting period was taken from the on-site meteorological station.
Weirs	<ul style="list-style-type: none"> – Weirs were operational during the reporting period. – Service of the weirs was undertaken on the 10th of June.

1.2 Rainfall Data

25/06/2009	0.00	02/07/2009	12.20
26/06/2009	2.00	03/07/2009	1.00
27/06/2009	0.00	04/07/2009	1.40
28/06/2009	2.40	05/07/2009	16.50
29/06/2009	0.00	06/07/2009	17.90
30/06/2009	4.60	07/07/2009	0.00
01/07/2009	0.80	08/07/2009	0.00
Total Rainfall 58.80mm			

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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	Dust results are all within limits.
Weather	There was a total of 58.80mm of rainfall during the reporting period, with a temperature range of 8.7°C to 23.2°C.
Noise	All noise levels were within the set limits. Where values were affected by high wind speeds it is indicated on the table.
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]

Graphs provided for MP1, MP2, MP4, MP6 and MP7: 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	20/02/2009	20/03/2009	207133	20/03/2009	25/03/2009	169	
D2	20/02/2009	20/03/2009	207134	20/03/2009	25/03/2009	162	
D3	20/02/2009	20/03/2009	207135	20/03/2009	25/03/2009	174	
D4	20/02/2009	20/03/2009	207136	20/03/2009	25/03/2009	183	
D1	20/03/2009	20/04/2009	210632	20/04/2009	29/04/2009	146	
D2	20/03/2009	20/04/2009	210633	20/04/2009	29/04/2009	101	
D3	20/03/2009	20/04/2009	210635	20/04/2009	29/04/2009	117	
D4	20/03/2009	20/04/2009	210636	20/04/2009	29/04/2009	115	
D1	20/04/2009	20/05/2009	214041	20/05/2009	25/05/2009	101	
D2	20/04/2009	20/05/2009	214042	20/05/2009	25/05/2009	98	
D3	20/04/2009	20/05/2009	214043	20/05/2009	25/05/2009	88	
D4	20/04/2009	20/05/2009	214044	20/05/2009	25/05/2009	98	
D1	20/05/2009	19/06/2009	217837	22/06/2009	22/06/2009	177	
D2	20/05/2009	19/06/2009	217839	22/06/2009	22/06/2009	114	
D3	20/05/2009	19/06/2009	217840	22/06/2009	22/06/2009	167	
D4	20/05/2009	19/06/2009	217841	22/06/2009	22/06/2009	167	
D1	19/06/2009	I.P.	I.P.	I.P.	I.P.	I.P.	
D2	19/06/2009	I.P.	I.P.	I.P.	I.P.	I.P.	
D3	19/06/2009	I.P.	I.P.	I.P.	I.P.	I.P.	
D4	19/06/2009	I.P.	I.P.	I.P.	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							

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	8.7	23.2	25/06/2009	08:00:00	14:00:00	2539533	2.3	123.5	45.9	78.0	30.0	
N1	13.2	20.7	26/06/2009	08:00:00	14:00:00	2539533	1.7	120.7	47.6	81.3	30.0	
N1	12.3	22.8	27/06/2009	08:00:00	14:00:00	2539533	1.5	186.9	50.0	69.1	30.0	
N1	12.4	23.2	28/06/2009	08:00:00	14:00:00	2539533	3.1	125.6	47.4	71.5	30.0	
N1	12.3	20.0	29/06/2009	08:00:00	14:00:00	2539533	2.6	164.3	49.8	78.2	34.2	
N1	11.9	18.0	30/06/2009	08:00:00	14:00:00	2539533	2.7	174.0	48.1	72.3	39.4	
N1	8.7	19.2	01/07/2009	08:00:00	14:00:00	2539533	1.0	146.0	46.0	73.0	30.0	
N1	14.1	19.5	02/07/2009	08:00:00	14:00:00	2539533	0.8	274.1	48.9	71.0	30.0	
N1	13.1	19.3	03/07/2009	08:00:00	14:00:00	2539533	3.3	180.2	46.6	74.3	30.0	
N1	11.4	18.3	04/07/2009	08:00:00	14:00:00	2539533	3.5	173.1	46.6	81.4	30.0	
N1	11.7	19.9	05/07/2009	08:00:00	14:00:00	2539533	2.6	168.6	50.5	75.4	35.9	
N1	11.1	17.9	06/07/2009	08:00:00	14:00:00	2539533	3.7	318.2	45.1	78.2	30.0	
N1	12.7	16.7	07/07/2009	08:00:00	14:00:00	2539533	4.8	335.3	44.2	68.3	30.0	
N1	11.2	16.6	08/07/2009	08:00:00	14:00:00	2539533	2.9	334.0	37.6	53.3	30.0	

* 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 _{Aeq}	L _{Amax}	L _{Amin}	
Action Limit									50			
Target Limit									55			
N1	8.7	23.2	25/06/2009	22:00:00	10:00:00	2539533	2.3	123.5	42.3	64.4	30.0	
N1	13.2	20.7	26/06/2009	22:00:00	10:00:00	2539533	1.7	120.7	41.2	65.0	30.0	
N1	12.3	22.8	27/06/2009	22:00:00	10:00:00	2539533	1.5	186.9	41.6	67.1	30.0	
N1	12.4	23.2	28/06/2009	22:00:00	10:00:00	2539533	3.1	125.6	45.0	70.5	30.0	
N1	12.3	20.0	29/06/2009	22:00:00	10:00:00	2539533	2.6	164.3	43.1	66.9	30.0	
N1	11.9	18.0	30/06/2009	22:00:00	10:00:00	2539533	2.7	174.0	44.6	72.7	38.7	
N1	8.7	19.2	01/07/2009	22:00:00	10:00:00	2539533	1.0	146.0	43.7	66.0	38.7	
N1	14.1	19.5	02/07/2009	22:00:00	10:00:00	2539533	0.8	274.1	42.5	64.0	30.0	
N1	13.1	19.3	03/07/2009	22:00:00	10:00:00	2539533	3.3	180.2	43.1	69.5	30.0	
N1	11.4	18.3	04/07/2009	22:00:00	10:00:00	2539533	3.5	173.1	42.6	76.7	30.0	
N1	11.7	19.9	05/07/2009	22:00:00	10:00:00	2539533	2.6	168.6	45.3	72.5	30.7	
N1	11.1	17.9	06/07/2009	22:00:00	10:00:00	2539533	3.7	318.2	43.0	74.9	39.2	
N1	12.7	16.7	07/07/2009	22:00:00	10:00:00	2539533	4.8	335.3	40.9	63.7	33.6	
N1	11.2	16.6	08/07/2009	22:00:00	10:00:00	2539533	2.9	334.0	41.3	60.1	30.8	

* 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)
25/06/2009	2.88	0.18	0.61	-0.53	-1.28	-0.98
26/06/2009	4.99	0.18	1.34	0.28	-1.28	-0.87
27/06/2009	5.23	2.79	4.28	0.36	-0.38	-0.02
28/06/2009	4.00	1.11	2.77	-0.13	-0.88	-0.51
29/06/2009	1.83	0.18	0.94	0.56	-1.13	-0.46
30/06/2009	0.36	0.18	0.24	0.56	0.46	0.52
01/07/2009	0.25	0.23	0.23	0.46	0.20	0.27
02/07/2009	0.84	0.20	0.33	8.23	0.13	1.17
03/07/2009	0.47	0.20	0.29	8.23	1.03	3.64
04/07/2009	5.23	0.20	0.92	5.57	0.56	3.58
05/07/2009	14.87	1.53	6.40	9.55	0.67	4.31
06/07/2009	110.62	4.00	22.59	34.60	2.91	14.39
07/07/2009	21.48	1.20	10.61	15.44	0.78	7.65
08/07/2009	10.56	2.55	7.75	9.83	2.73	7.86

Note: Negative values indicate low flow conditions.

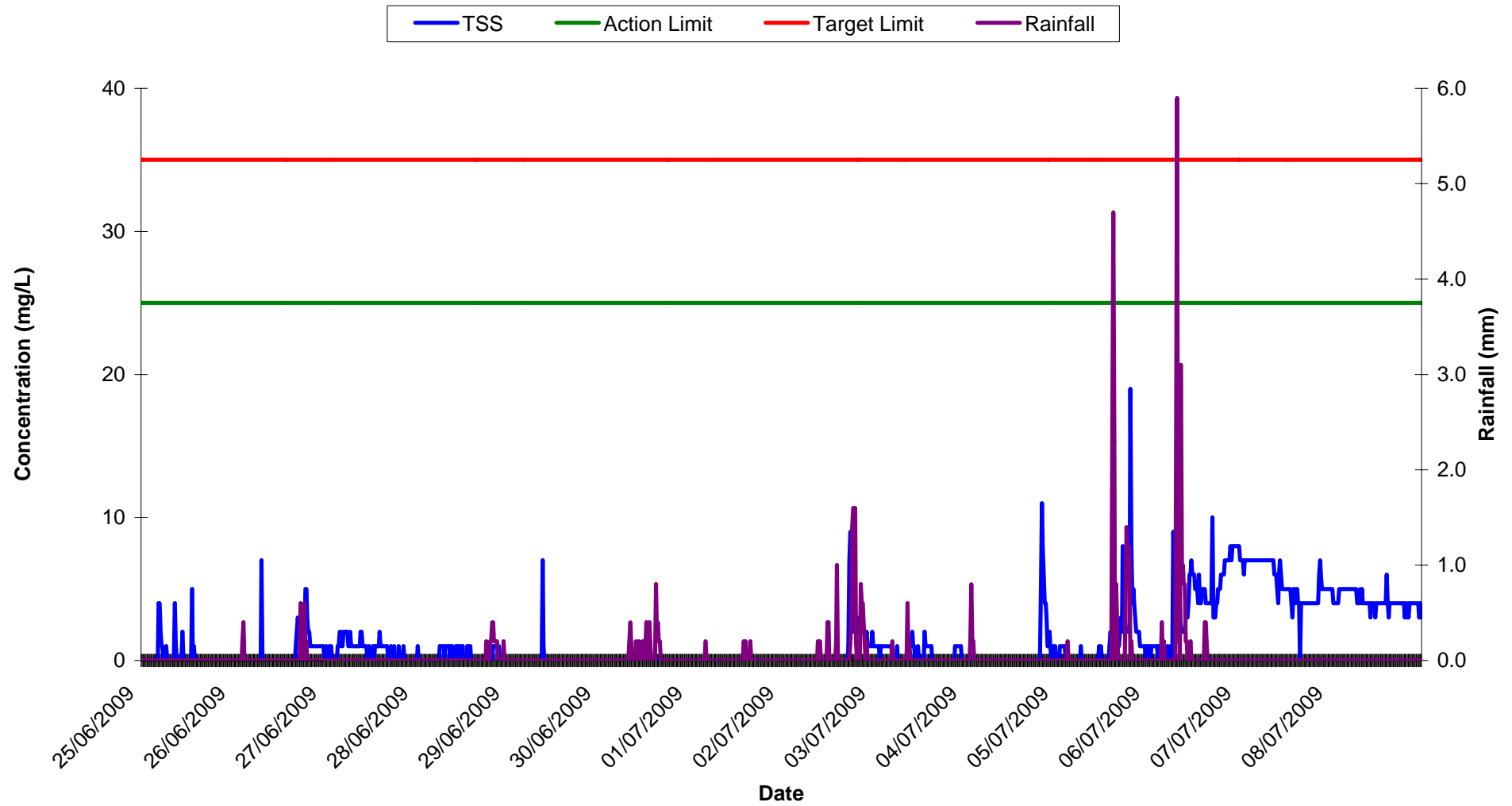
Vibration Monitoring Record Sheet

Determinant Results

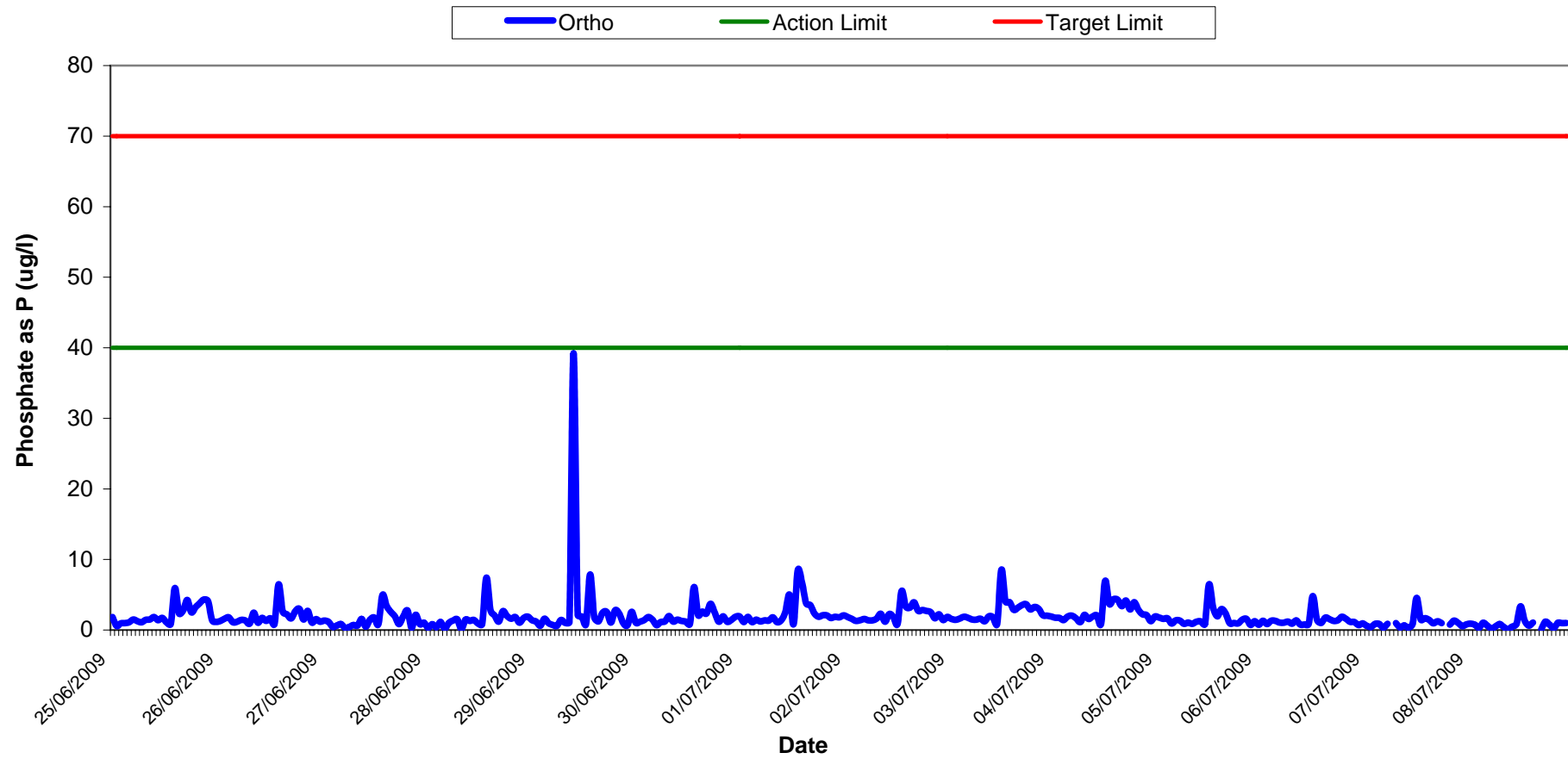
[illegible]

Vibration meter located at V1.

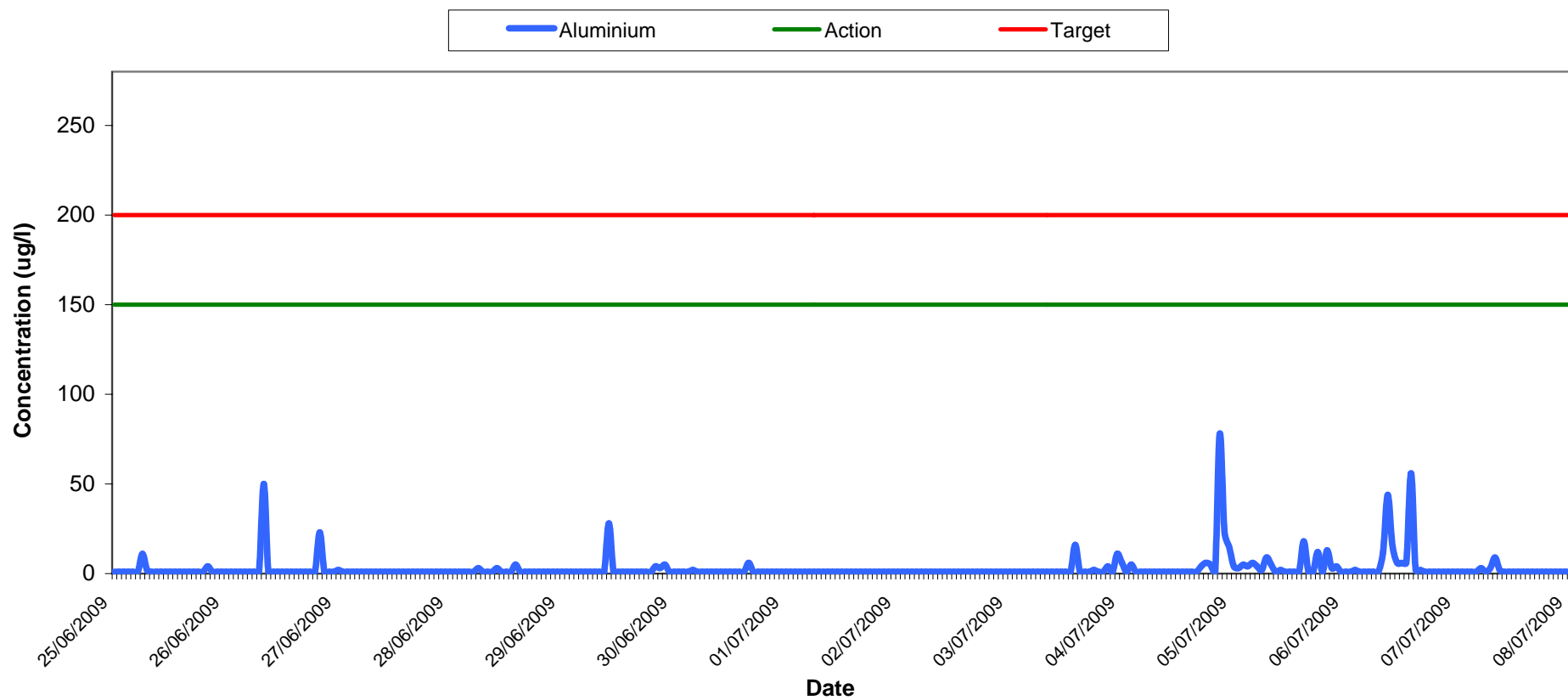
Total Suspended Solids at SP1 Week 26-27



Orthophosphate Results at SP1
Wk 26-27



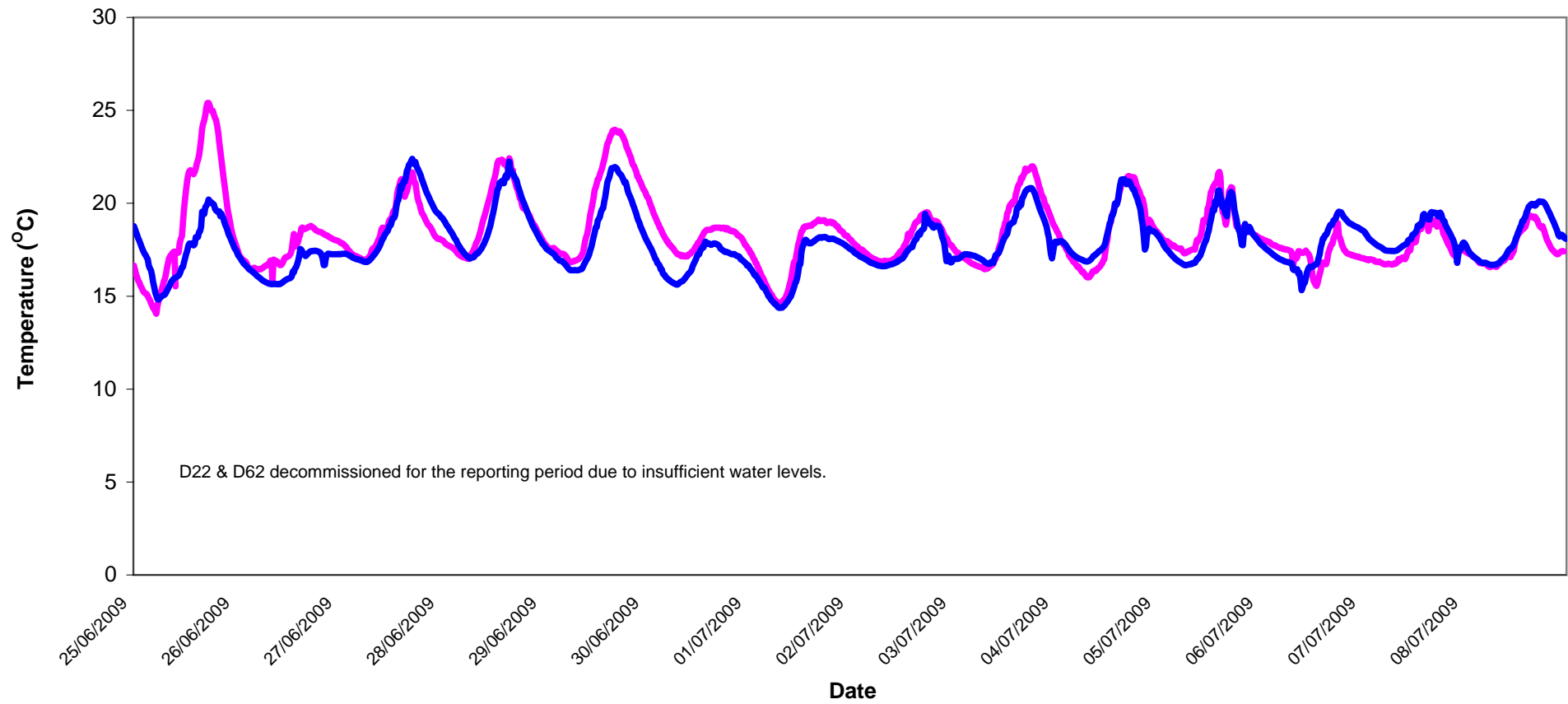
Aluminium Concentration at SP1 Wk 26-27



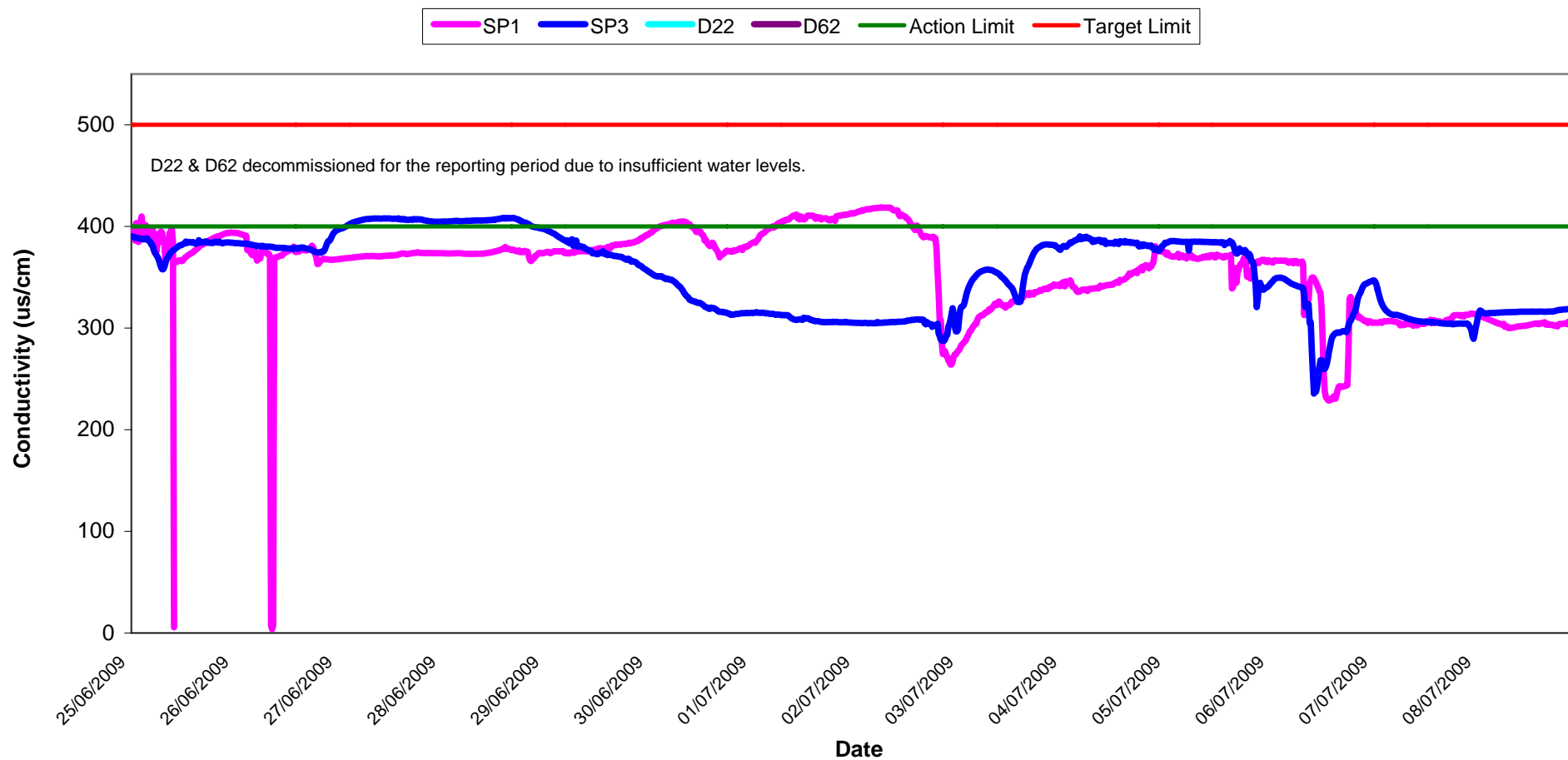
Temperature - Surface Waters

Wk 26-27

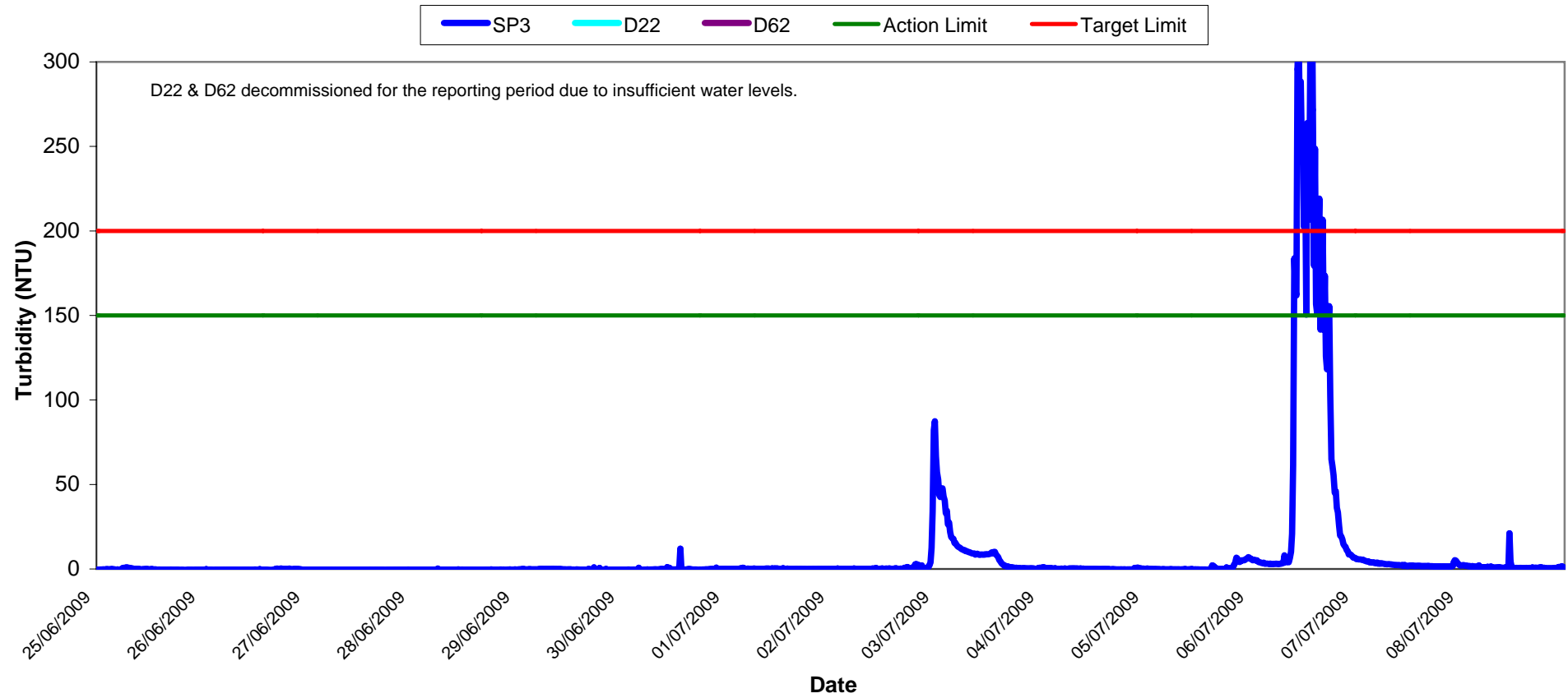
SP1 SP3 D22 D62



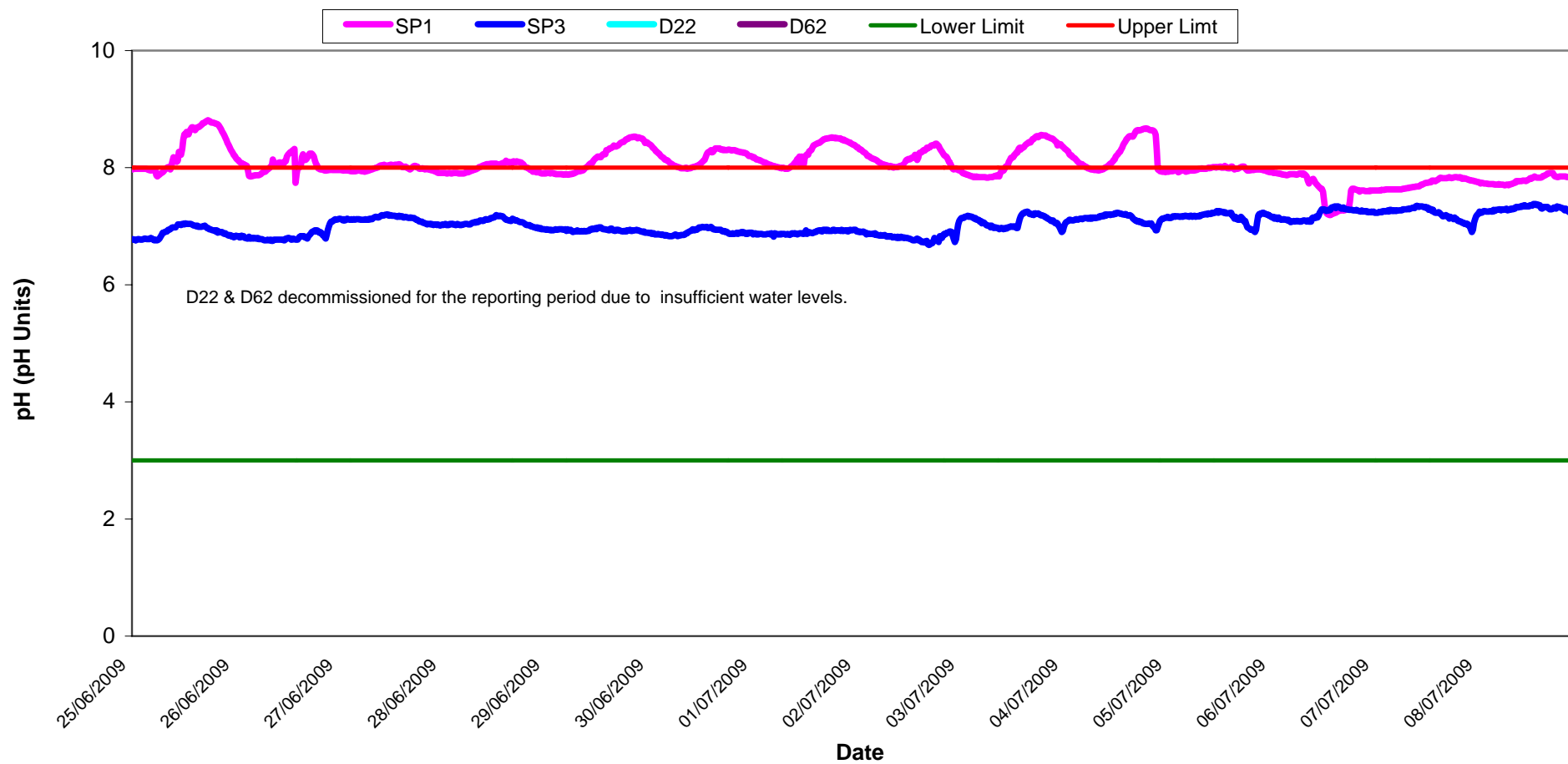
Conductivity - Surface Waters, Wk 26-27



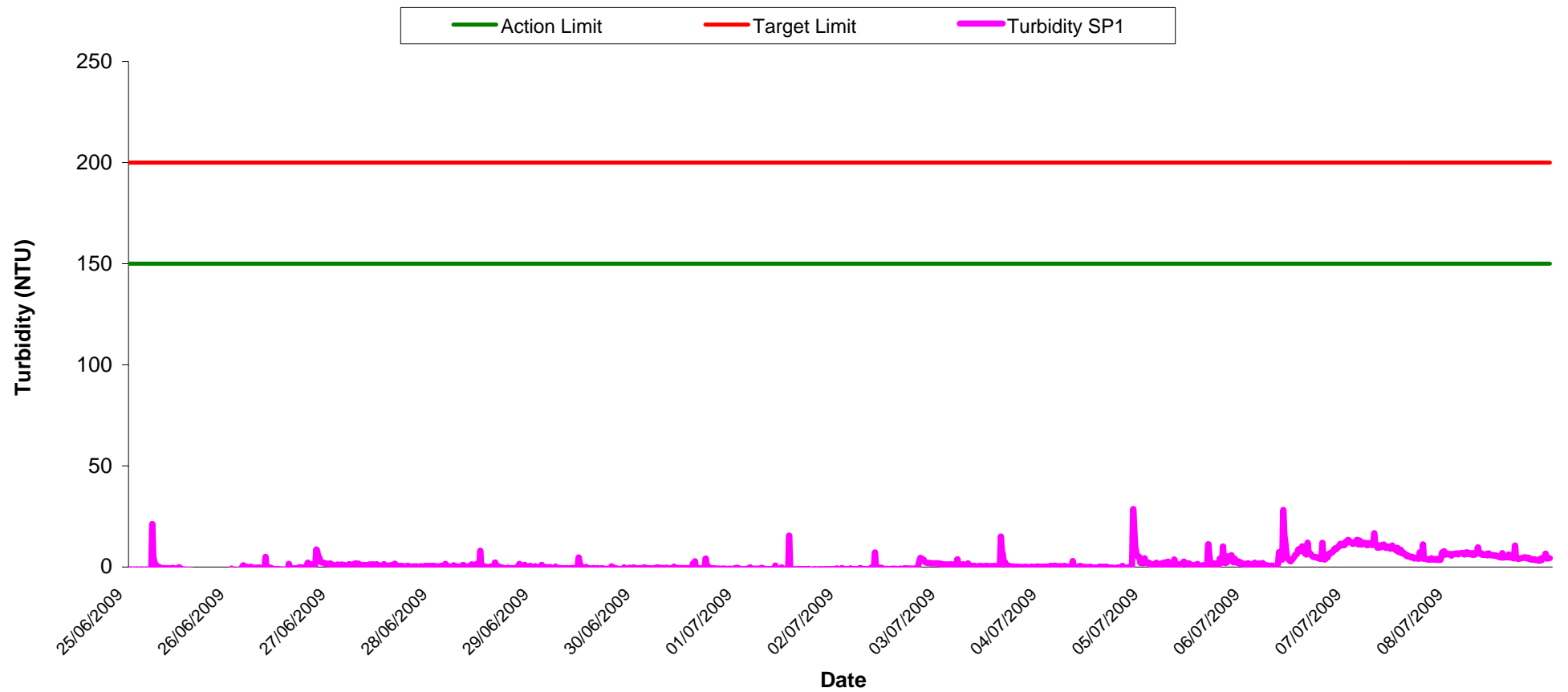
Turbidity - Surface Waters Wk 26-27



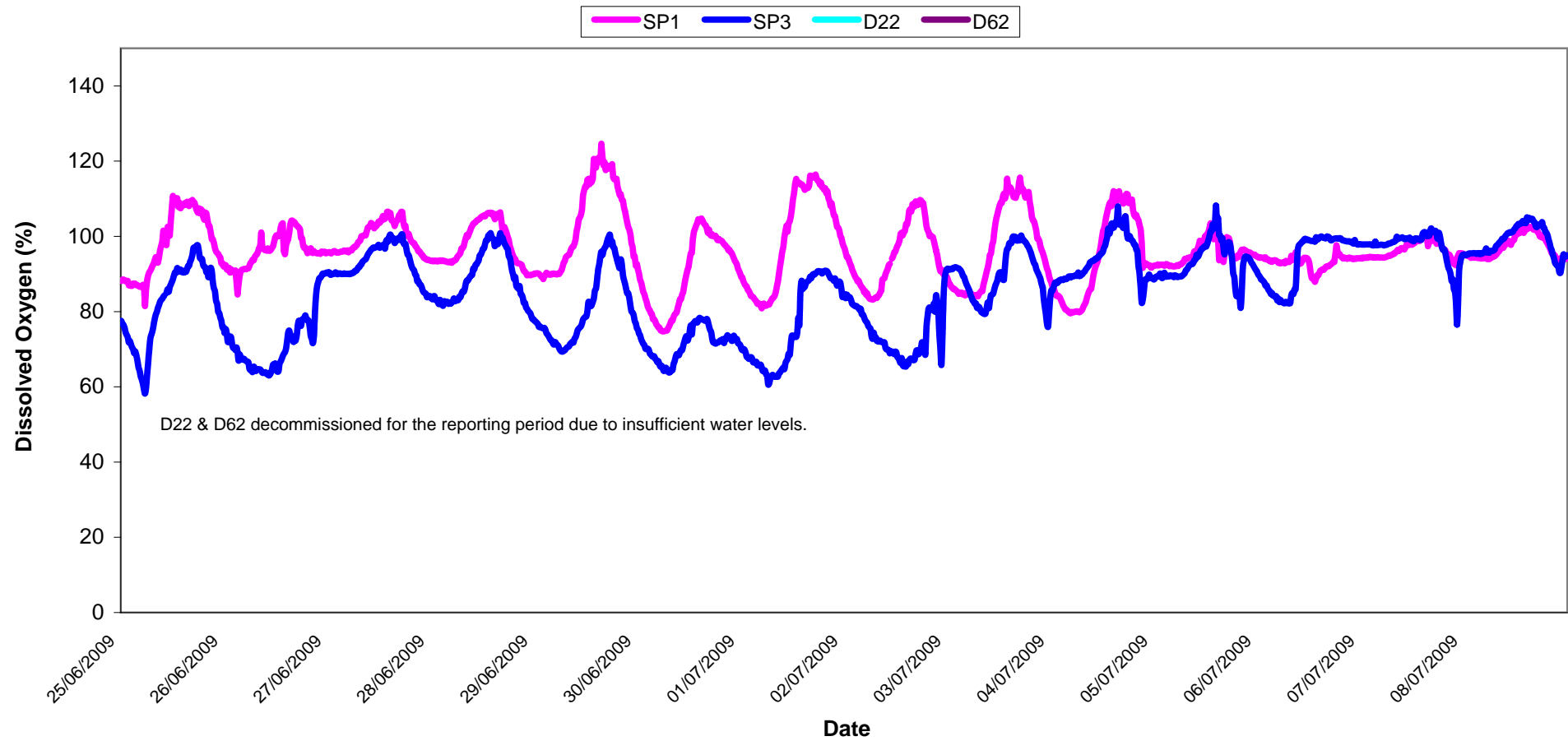
pH - Surface Waters Wk 26-27



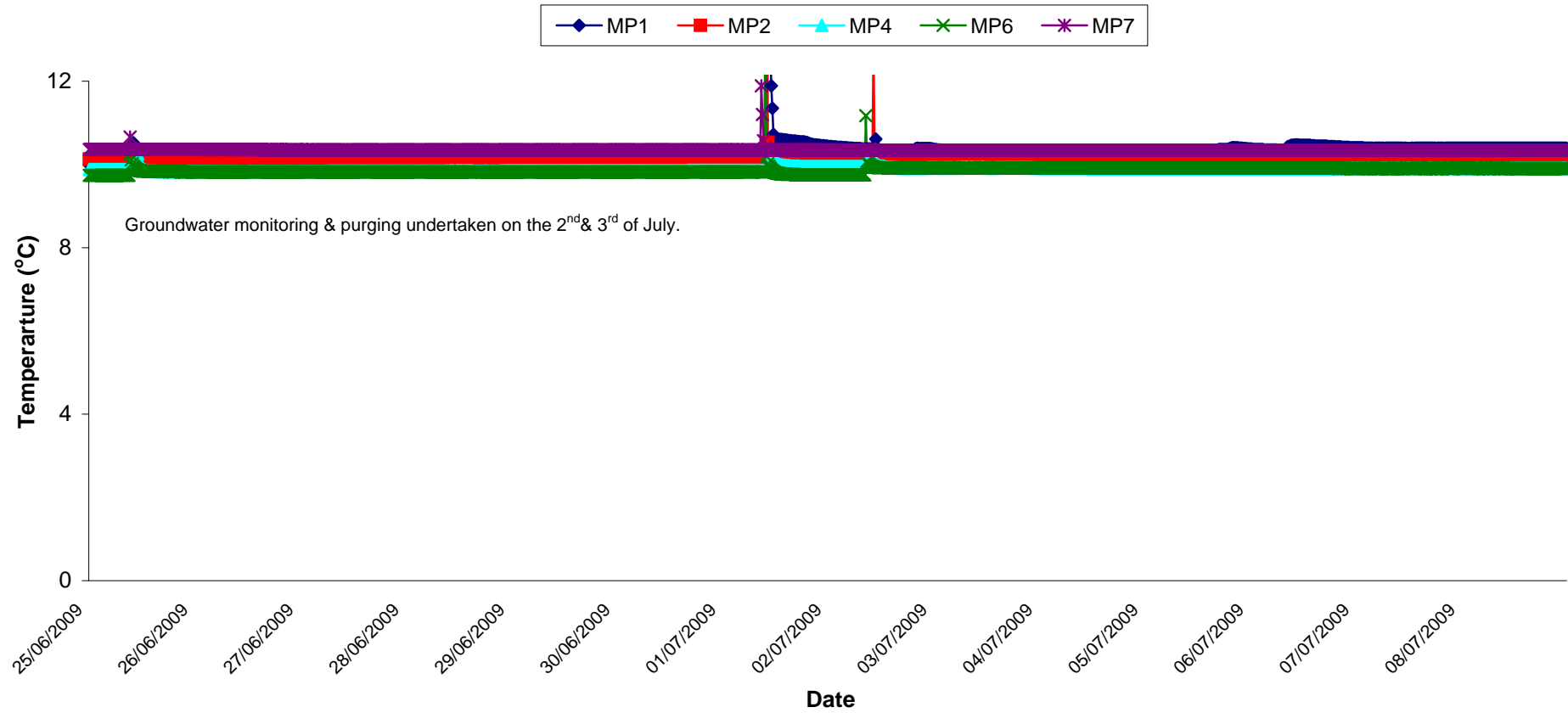
Turbidity - Surface Waters @ SP1, Wk 26-27



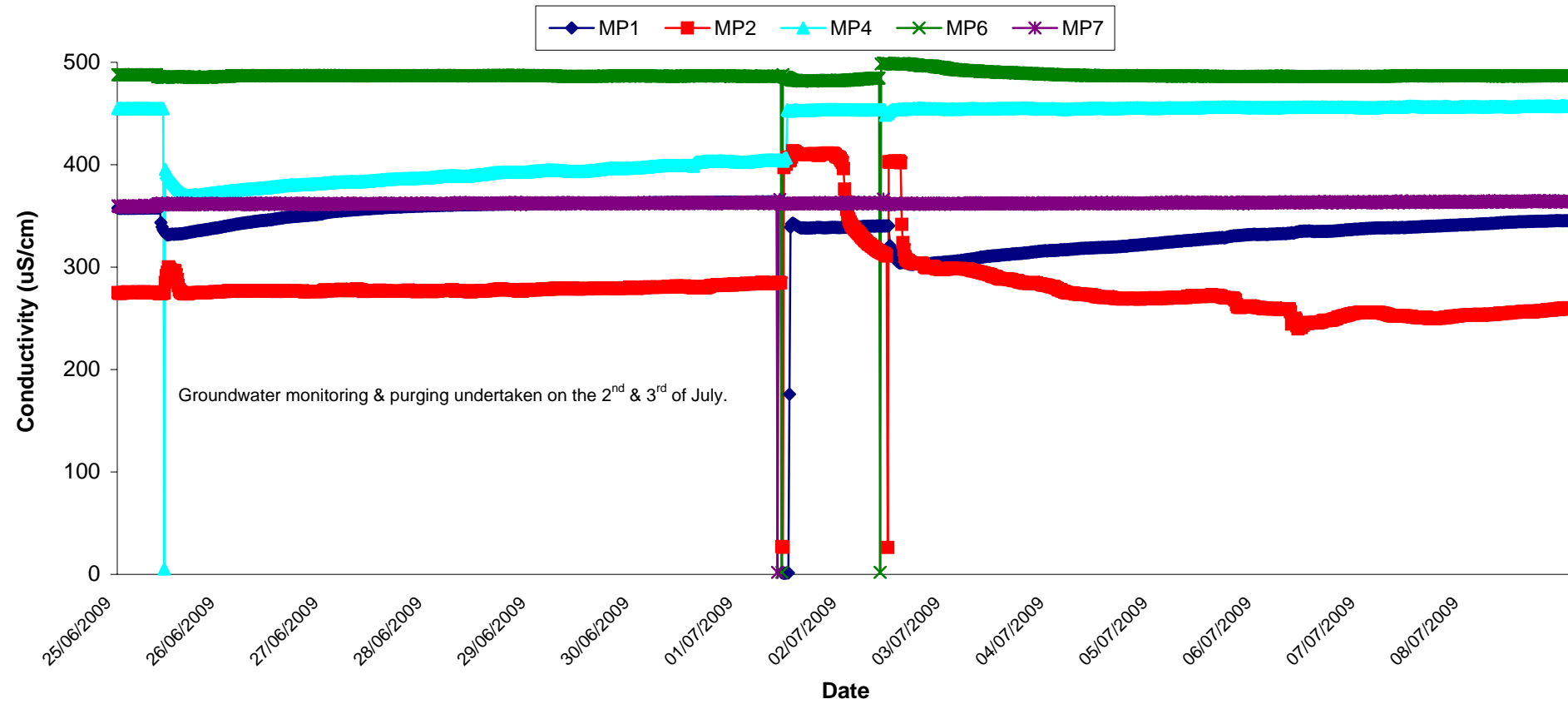
Dissolved Oxygen - Surface Waters, Wk 26-27



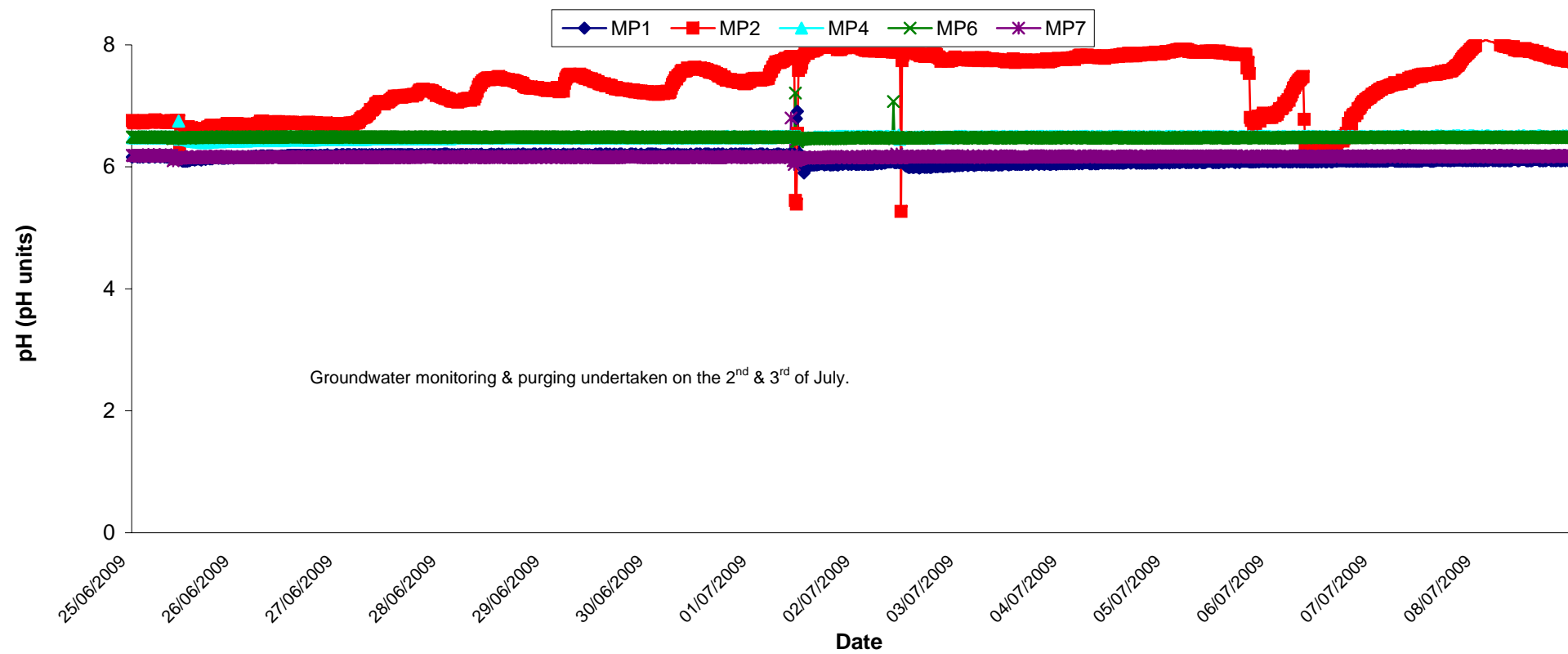
Temperature - Groundwaters Wk 26-27



Conductivity - Groundwaters Wk 26-27



pH - Groundwaters Wk 26-27



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 ⁻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	25/06/2009	369	17.2	4.2	93.8	6.6			0.30			0.0		<LOD	23	0.76	244
SP1	26/06/2009	380	17.1	3.7	86.8	6.7			<LOD			0.4		<LOD	28	0.96	250
SP1	29/06/2009	381	17.3	3.7	93.8	6.7			<LOD			0.0		<LOD	24	0.43	252
SP1	30/06/2009	391	17.8	3.3	82.2	7.1			0.20			0.0		<LOD	62	0.83	268
SP1	01/07/2009	408	15.5	4.5	82.4	6.8			0.20			<LOD		<LOD	36	0.69	274
SP1	02/07/2009	414	16.9	3.6	84.1	7.4			0.02			0.1		<LOD	<LOD	0.16	279
SP1	03/07/2009	316	18.3	4.8	91.2	6.3			0.10			0.1		<LOD	31	0.05	214
SP1	06/07/2009	340	17.5	36.1	90.6	7.2			0.20			0.6		<LOD	29	0.02	230
SP1	07/07/2009	219	17.6	16.4	93.7	6.6			<LOD			0.1		<LOD	62	0.33	313
SP1	08/07/2009	214	17.0	12.6	94.0	7.2			<LOD			0.7		<LOD	35	0.19	308
SP3	25/06/2009	381	16.1	3.9	85.0	6.4			0.10			0.0		<LOD		0.06	251
SP3	26/06/2009	384	16.0	3.5	64.7	6.5			<LOD			0.1		<LOD		0.05	254
SP3	29/06/2009	381	16.7	2.9	71.8	6.7			0.40			<LOD		<LOD		0.07	253
SP3	30/06/2009	327	19.6	4.4	69.9	7.0			0.30			0.5		<LOD		0.10	219
SP3	01/07/2009	311	15.0	5.0	63.9	6.5			0.40			0.1		<LOD		0.02	209
SP3	02/07/2009	307	16.9	3.7	70.5	7.1			0.10			<LOD		<LOD		0.02	206
SP3	03/07/2009	343	17.7	17.4	83.8	6.3			0.30			1.0		<LOD		0.02	231
SP3	06/07/2009	306	16.3	13.8	91.6	7.0			<LOD			0.3		<LOD		0.01	207
SP3	07/07/2009	219	14.5	6.8	87.5	6.3			<LOD			0.2		33		0.46	314
SP3	08/07/2009	222	17.0	4.4	95.0	7.2			0.50			<LOD		<LOD		0.04	319
Additional Monitoring																	
D22	02/07/2009	269	14.7	15.6	26.0	6.9			<LOD			0.1		23		0.07	183
D22	07/07/2009	84	15.1	7.3	89.9	6.4			<LOD			0.0		<LOD		0.05	275
D62	02/07/2009	210	15.2	6.7	84.6	5.8			0.03			0.4		22		0.03	142
D62	07/07/2009	84	15.4	2.4	85.7	6.4			<LOD			0.0		29		0.02	184
Axonics Monitoring																	
Pre	25/06/2009	No sample as plant not operational															
Post	25/06/2009	No sample as plant not operational															
Pre	26/06/2009	401		25.9		6.8			<LOD			0.5		102		0.06	266
Post	26/06/2009	426		7.4		6.2			<LOD			0.4		25	31	0.81	28