

1 Monitoring Data

All monitoring data is presented in tabular form, see attached. The sonde data is presented graphically.

1.1 Rainfall Data

The weather data now being reported is generated by the on-site weather station.

Date	20-May-05	21-May-05	22-May-05	23-May-05	24-May-05	25-May-05	26-May-05
Rainfall (mm)	3.4	2.8	3.8	8.8	0	34.8	0.2

1.2 Summary

Environment	Comments
Surface Water	<p>Due to excavation, pumping activities on site and very heavy rainfall the following occurred:</p> <ol style="list-style-type: none"> 1. Orthophosphate coming off the site on Saturday 21-05-05 exceeded the trigger limit for a period of greater than eight hours. 2. TSS levels coming off site exceeded the action levels set since the 21-05-05. TSS trigger levels were exceeded on 21st, 23rd, 25th, 26th to present for periods greater than 8 hours <p>Details of these events are included in Section 2 below.</p> <p>Mayo County Council and the North Western Region Fisheries Board were informed of all occurrences (verbal or written communication depending on the duration) and a number of meetings and site visits were held with both bodies to discuss remedial actions.</p>
Groundwater	The sonde data downloaded is shown graphically.
Noise	<p>L_{Aeq} at N1 recorded between 52 and 55dB</p> <p>L_{Aeq} at N2 recorded between 38 and 48dB</p> <p>The results for both locations were below the 65 dB limit.</p>
Vibration*	There were no vibration events recorded during the reporting period
Dust	Dust pots will be taken down on the 3-06-05 and the results will be included when available.
Weather	There was a total of 53.8 mm of rainfall during the reporting period, with a temperature range of 4.8 to 13.9 °C

2 Environmental Incidents/Near misses/Complaints

There were 4 No. incidents recorded this week:

Incident 1

2 No. small grey fuel/oil drums were left adjacent to a pool of water beside the 2nd ramped entrance to the terminal footprint. During the night (inclement weather) one of the drums was blown over and the remaining contents (~ 1-2 litres) spilled into the standing water. At no time were any of the site drains at risk as the water was completely isolated from the surface water management system.

Incident 2

Infiltration into the southern settlement pond was pumped into the area of field next to the settlement ponds during the afternoon of May 20th. The intention of this action was to filter suspended solids from the water through the vegetation prior to entering the feeder drain. There was insufficient distance and vegetation coverage for this to be successful and as a result high suspended solids were recorded at SP1. Another person moved the pump outflow to the northern settlement pond during the morning of Saturday 21st May. On Monday 23rd May the foreman on returning to work placed the pump outflow into the carrier drain to SP1. This situation was discovered at 09:30 that morning after a visual inspection of the monitoring point and confirmed when the TSS and phosphate analysers had been downloaded. The incident was brought to Mayo County Councils attention at ~ 9.45am that morning by verbal communication with a written report to follow.

High P₀₄ readings were also recorded at very high levels over a period of 10 hours from 10pm 20th May to 10am 21st May. The probable cause of this spike would be that a rock phosphate adhering to the root systems of the felled trees in the windbreak was washed off into the carrier drains to the settlement pond. The situation was monitored at intervals throughout the course of the day and analyses were made. These two events whilst not actually related occurred concurrently.

Incident 3

On Tuesday 24th May a pump was activated to take water from the excavation area on the terminal footprint into the surface water drainage system and onto the northern settlement pond. The water being pumped was heavy laden with fine silt particles and was highly turbid. On discovering that this pump was contributing turbid water to the system it was switched off in order to contain the water within the excavation area.

Incident 4

At approximately 03:00 on the 25th May it began raining and continued to rain almost constantly for the next 18 hours. In those 18 hours approximately 34.8 mm of rain fell. Due to this weather there were large movements of water across the site. Drainage channels were scoured by the flows, increasing the concentration of suspended solids in the water on site. In addition the heavy rains released fines from the stoned areas on site and from the exposed mineral layer within the terminal footprint. Pumps were deployed around the site (including water from the terminal site) to take water out of the carrier drain to the settlement pond and pump it over vegetated areas, but these were insufficiently sized and the water overflowed the pumping area and filled the settlement pond. Turbid water laden with large concentrations of suspended solids then out

Weekly Environmental Report - Status Week Ending: Thur. 26th May 2005

Generated By: Sandra Barber

Checked By: Leslie Finnegan

flowed the settlement pond into the carrier drain to SP1. This situation continued until the rains eased and the settlement pond stopped over topping. However, turbid waters continued to flow off site via the interceptor drain, even after the pump from the terminal area was discovered as being the main contributor to the problem had been switched off.

Surface Water Monitoring Record Sheet											no...	1	of	1
Conducted by						Approved by								
Name: Sandra Barber					Signed					Name Leslie Finnegan		Signed		
Determinant Results														
	Date	Cond. µS/cm	Temp °C	Turbidity NTU	DO % Sat	TSS mg l ⁻¹	pH	Ortho- phosphate as P µg l ⁻¹	Ammonia as NH ₃ -N mg l ⁻¹	Ammonium as NH ₄ mg l ⁻¹	Nitrite as N mg l ⁻¹	Comments		
Action Limits		400		150		25	<3.5 or >7.5	40	0.2					
Target Limits		500		200		35	<3 or >8	70	0.5					
Settlement Pond Monitoring														
SP1	20-May-05	314	17.5	10.7	75		5.8							
SP3	20-May-05	235	16.4	171.0	80		6.4							
SP1	21-May-05	410	12.7	76.0	90		6.2							
SP3	21-May-05	315	11.4	51.0	75		6.5							
SP1 - Lab	23-May-05	256		58.5		79	7.0	39	< 0.005	< 0.01	< 0.005			
SP3 - Lab	23-May-05	232		43.3		40	7.0	68	< 0.005	< 0.01	< 0.005			
SP1	23-May-05	314	12.7	73.0	71		6.3							
SP3	23-May-05	280	12.0	43.6	70		6.8							
SP1	24-May-05	322	11.4	8.0	67		5.96							
SP3	24-May-05	355	11.1	70.0	59		6.74							
SP1	25-May-05	316	12.7	74.0	-		6.36							
SP3	25-May-05	322	11.9	176.0	59		6.43							
SP1	26-May-05	320	-	102.0	-		6.35							
SP3	26-May-05	325	-	204.0	-		6.39							
Additional Surface Water Monitoring														
D22	Sonde Data Presented Graphically													
D62	Sonde Data Presented Graphically													

Note: LAB - Carried out by CLS Laboratories
 Grey shaded areas denote parameters that cannot be analysed on-site or the lab.
 Results detailed above are from on site grab samples only, Data recorded continuously is shown on the following graphs
 Graphs provided for SP1, SP2, D22 and D62 for: Temperature, Turbidity, pH, Conductivity, Orthophosphate, Total Suspended Solids and Total Ammonia
 pH Target and Action Limits to be approved by Statutory Authorities
 The replacement probe was delivered on the 19-05-05

Conducted by Approved by
 Name: Sandra Barber Name Leslie Finnegan
 Signed Signed

Determinant Results													
Location	Date	Cond. uS/cm	Temp °C	BOD mg l ⁻¹	DO % Sat	TDS* mg l ⁻¹	Phosphate as P mg l ⁻¹	pH	Total Hardness mg/l CaCO3	Nitrite as NO ₂ mg l ⁻¹	Nitrate as NO ₃ mg l ⁻¹	Phosphate as PO ₄ mg l ⁻¹	Ammonia mg l ⁻¹
MP 1													
MP 2													
MP 3	23-May-05	406	11.4	In Progress	39	855	0.71	5.9	101.1	<0.017	<0.44	2.18	
MP 4													
MP 5	23-May-05	426	10.6	7	60	169	0.461	6.1	153.8	<0.017	<0.44	1.416	
MP 6													
MP 7													
MP 8	23-May-05	435	11.5	5	40	299	0.245	6.2	134.3	<0.017	<0.44	0.753	
MP 9	23-May-05	234	13.0	<1	45	<4	0.189	6	67.4	<0.017	<0.44	0.579	
MP 10a	23-May-05	711	10.4	1	26	20980	<0.01	6.4	412.6	<0.017	<0.44	<0.03	
MEL BR4a	23-May-05	249	13.1	In Progress	28	1504	0.089	6.3	85.5	<0.017	<0.44	0.273	

Location	Date	TDS mg l ⁻¹	Arsenic ug l ⁻¹	Mercury ug l ⁻¹	Lead ug l ⁻¹	Aluminium ug l ⁻¹	Zinc ug l ⁻¹	Chromium ug l ⁻¹	Copper ug l ⁻¹	Cadmium ug l ⁻¹	Iron ug l ⁻¹	Tin ug l ⁻¹
MP 1												
MP 2												
MP 3	23-May-05	235	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress
MP 4												
MP 5	23-May-05	248	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress
MP 6												
MP 7												
MP 8	23-May-05	253	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress
MP 9	23-May-05	135	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress
MP 10a	23-May-05	427	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress
MEL BR4a	23-May-05	150	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress	In Progress

Note: Results detailed above are from on site grab samples only. Data recorded continuously is shown on the following graphs
 Graphs provided for MP1, MP2, MP4, MP6 and MP7 for: Temperature, Conductivity, and pH.

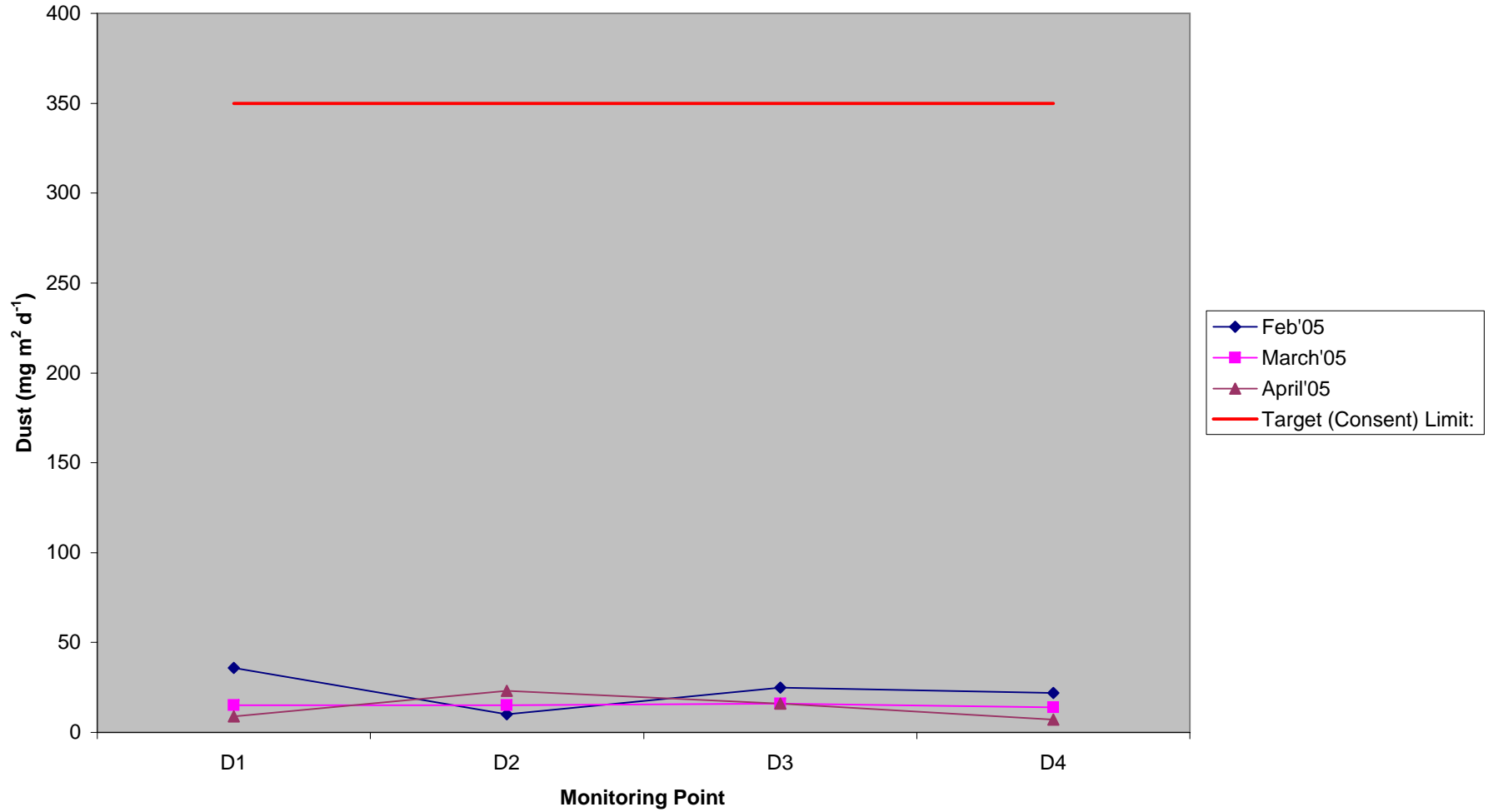
Noise Monitoring Record Sheet										no...	1	of	1
Conducted by							Approved by						
Name: Sandra Barber					Signed		Name: Leslie Finnegan					Signed	
Determinant Results													
Location	Air Temp.	Start Date	Time	Duration	Serial No.	Wind		Results dB			*Comments		
						Speed (m/s)*	Direction (Degrees)	L _{Aeq}	L _{Amin}	L _{Amax}			
Action Limit								60					
Target Limit								65					
N1	11.0	20/05/2005	07:45:29	12:00:00	2343753	5.0	88	54	47	84			
N1	9.5	21/05/2005	10:10:48	12:00:00	2343753	3.1	143	52	42	66			
N1	9.8	23/05/2005	08:38:19	12:00:00	2343753	4.7	159	55	47	75			
N1	10.8	24/05/2005	08:05:37	12:00:00	2343753	2.8	223	55	47	74			
N1	11.8	25/05/2005	08:00:32	12:00:00	2343753	4.7	103	54	47	75			
N2	11.0	20/05/2005	07:24:47	12:00:00	2343754	5.0	88	43	< 30	72			
N2	9.5	21/05/2005	09:57:25	12:00:00	2343754	3.1	143	38	< 30	61			
N2	9.8	23/05/2005	08:34:25	12:00:00	2343754	4.7	159	39	< 30	78			
N2	10.8	24/05/2005	08:38:50	12:00:00	2343754	2.8	223	40	< 30	69			
N2	11.8	25/05/2005	07:48:12	12:00:00	2343754	4.7	103	43	< 30	70			
N2	11.0	26/05/2005	08:10:15	12:00:00	2343754	6.2	28	48	33	72			

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

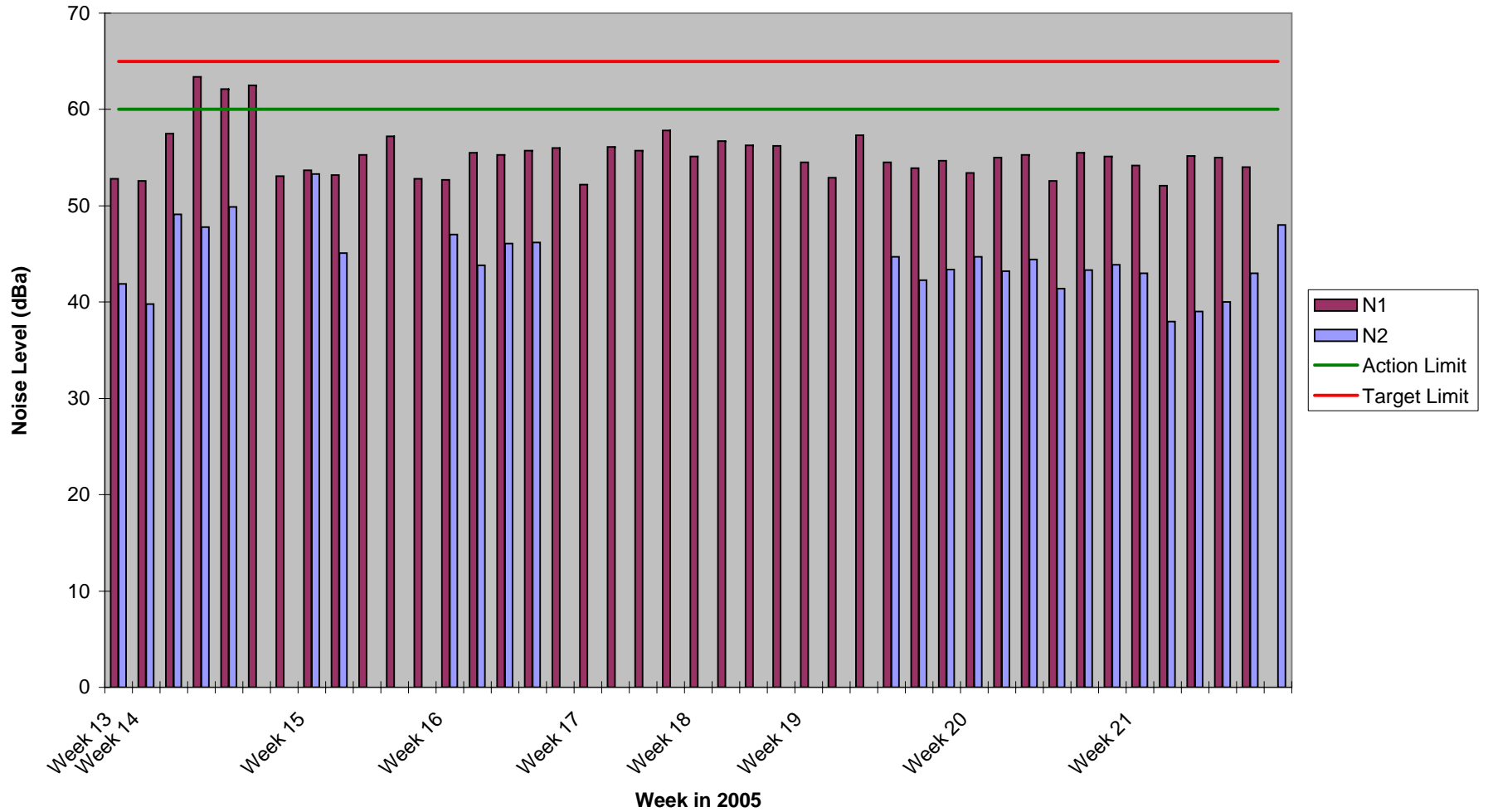
Dust Monitoring Record Sheet					no... 1 of 1		
Conducted by				Approved by			
Name: Sandra Barber		Signed		Name: Leslie Finnegan		Signed	
Determinant Results							
	Date Positioned	Date Removed	Ref. Number	Date Dispatched	Date Returned	Weight (mg/sq.m/day)	Comments
Target (Consent) Limit: 350 mg m² d⁻¹ on as a 30 day average							
D1	31/01/2005	02/03/2005	59793	02/03/2005	24/03/2005	36	
D2	31/01/2005	02/03/2005	59794	02/03/2005	24/03/2005	10	
D3	31/01/2005	02/03/2005	59795	02/03/2005	24/03/2005	25	
D4	31/01/2005	02/03/2005	59796	02/03/2005	24/03/2005	22	
D1	02/03/2005	01/04/2005	61907	01/04/2005	08/04/2005	15	
D2	02/03/2005	01/04/2005	61908	01/04/2005	08/04/2005	15	
D3	02/03/2005	01/04/2005	61909	01/04/2005	08/04/2005	16	
D4	02/03/2005	01/04/2005	61910	01/04/2005	08/04/2005	14	
D1	01/04/2005	04/05/2005	64400	04/05/2005	09/05/2005	9	
D2	01/04/2005	04/05/2005	64401	04/05/2005	09/05/2005	23	
D3	01/04/2005	04/05/2005	64402	04/05/2005	09/05/2005	16	
D4	01/04/2005	04/05/2005	64403	04/05/2005	09/05/2005	7	
D1	03/06/2005						
D2	03/06/2005						
D3	03/06/2005						
D4	03/06/2005						

Monitoring Points are numbered clockwise through the Cardinal Marks (N, E, S, W)
Monitoring Results will be presented monthly

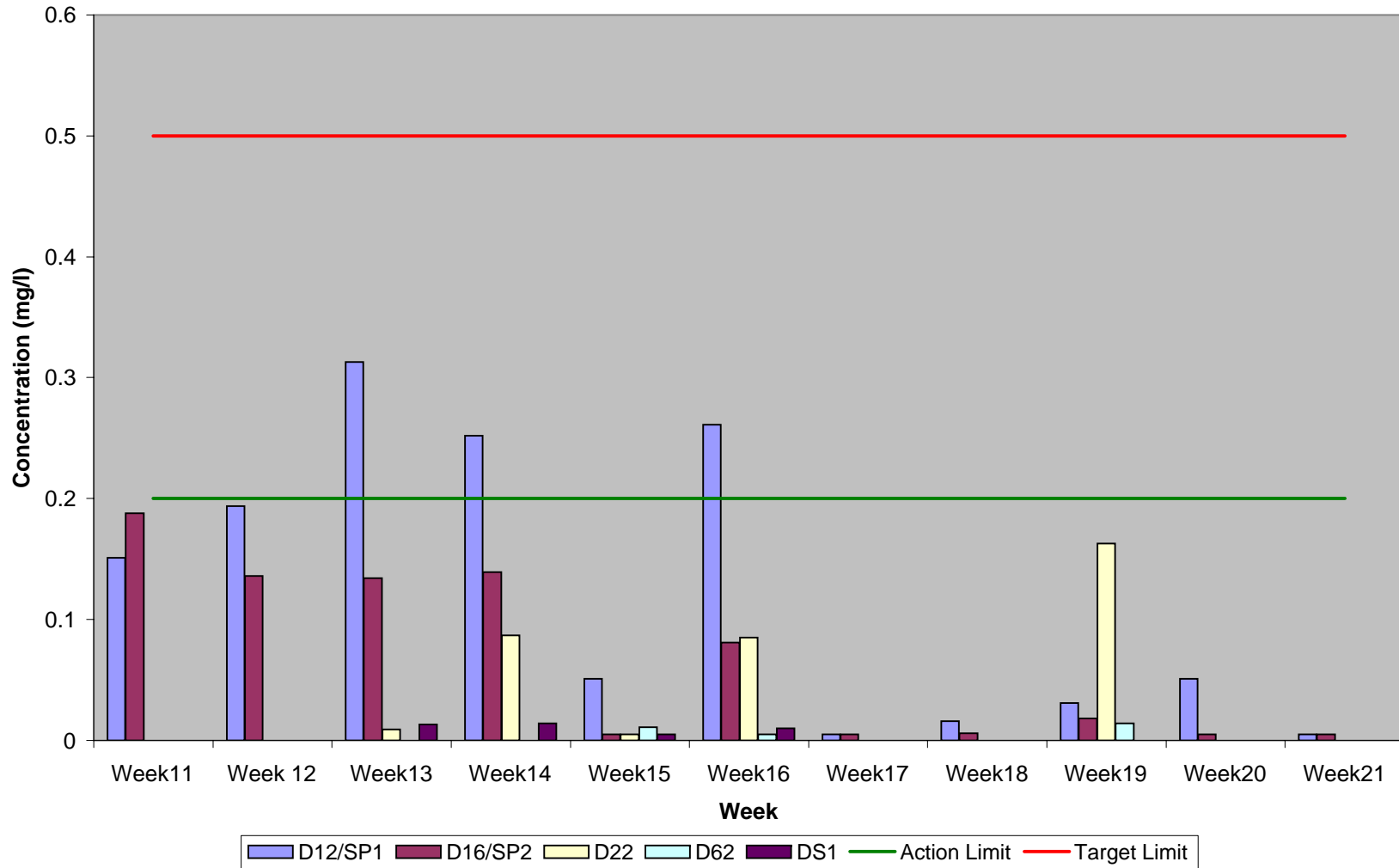
Dust Compiled Results 2005



Noise Monitoring Compiled Results 2005

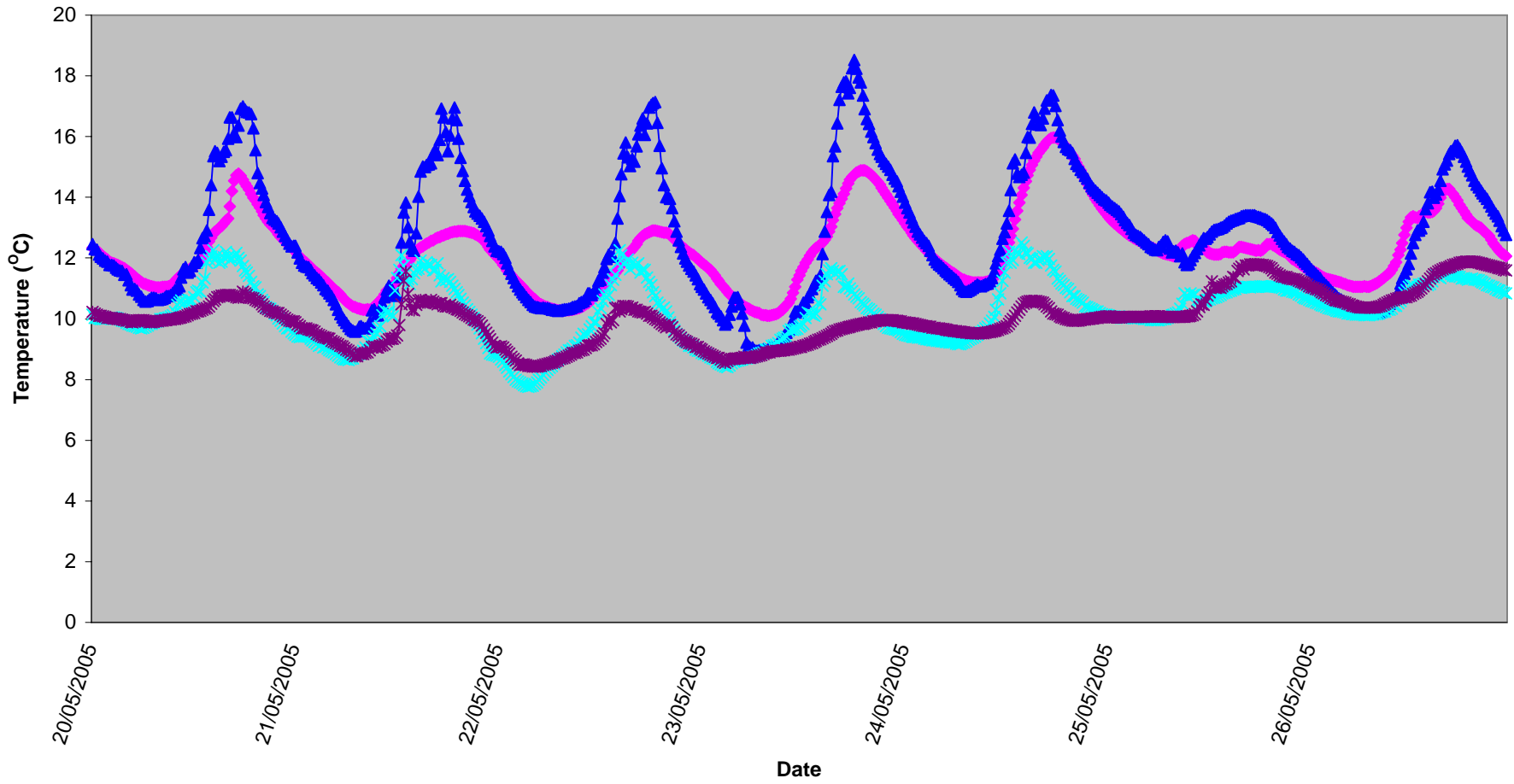


Ammonia as NH₃-N,
Compiled Results 2005

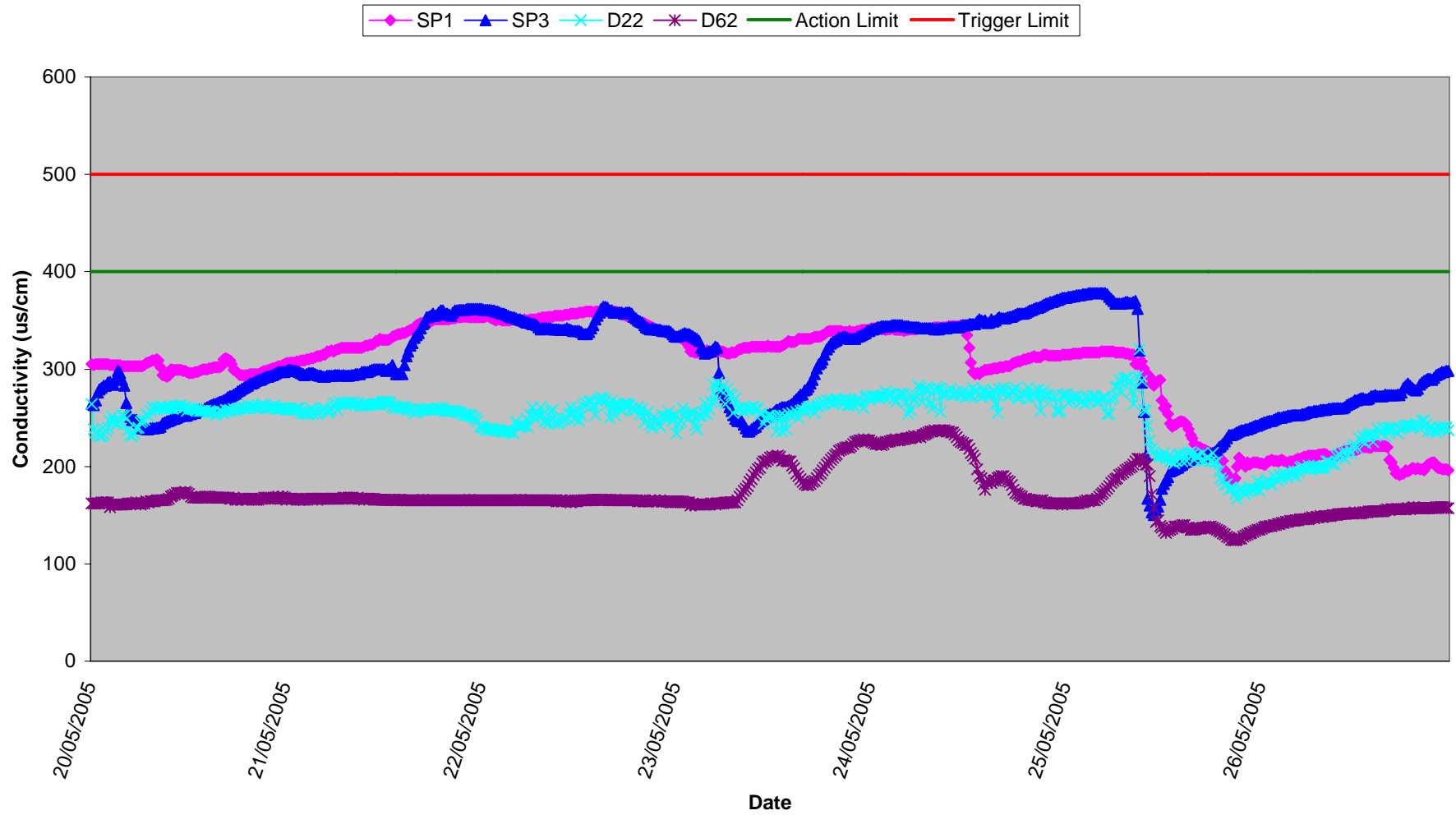


Surface Waters
Temperature, Week 21 2005

SP1 SP3 D22 D62

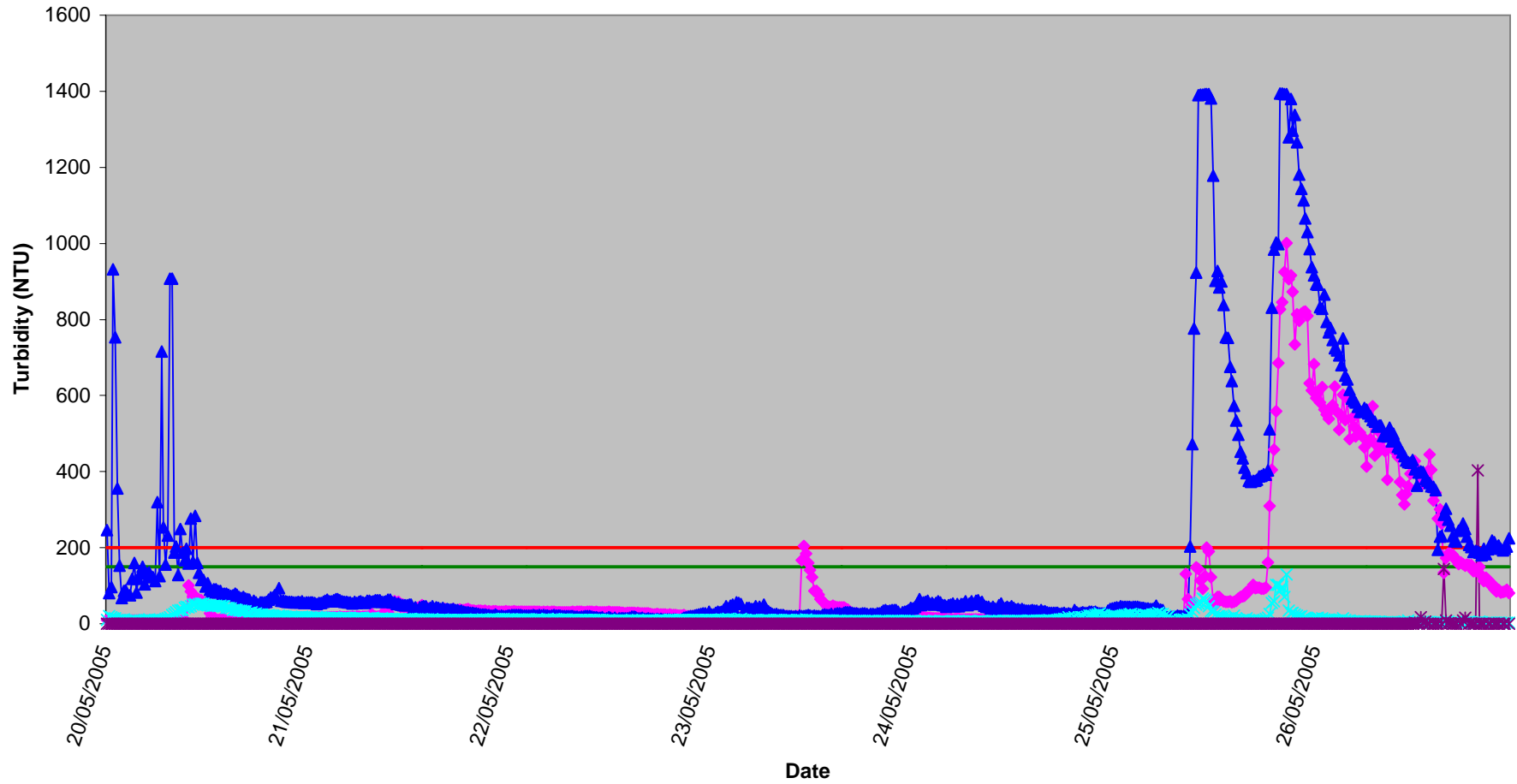


Surface Waters Conductivity, Week 21 2005



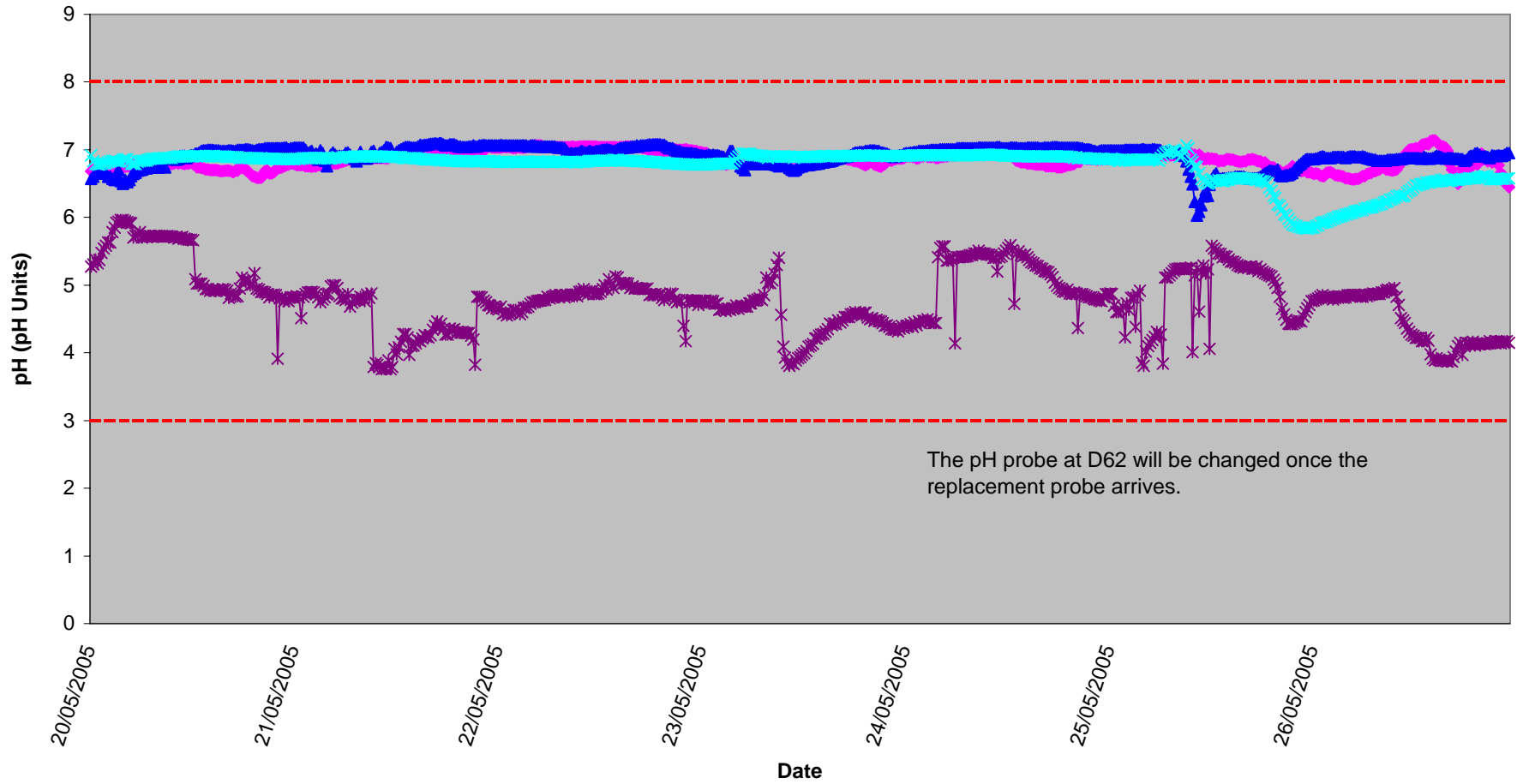
Surface Waters Turbidity, Week 21 2005

SP1 SP3 D22 D62 Action Limit Trigger Limit



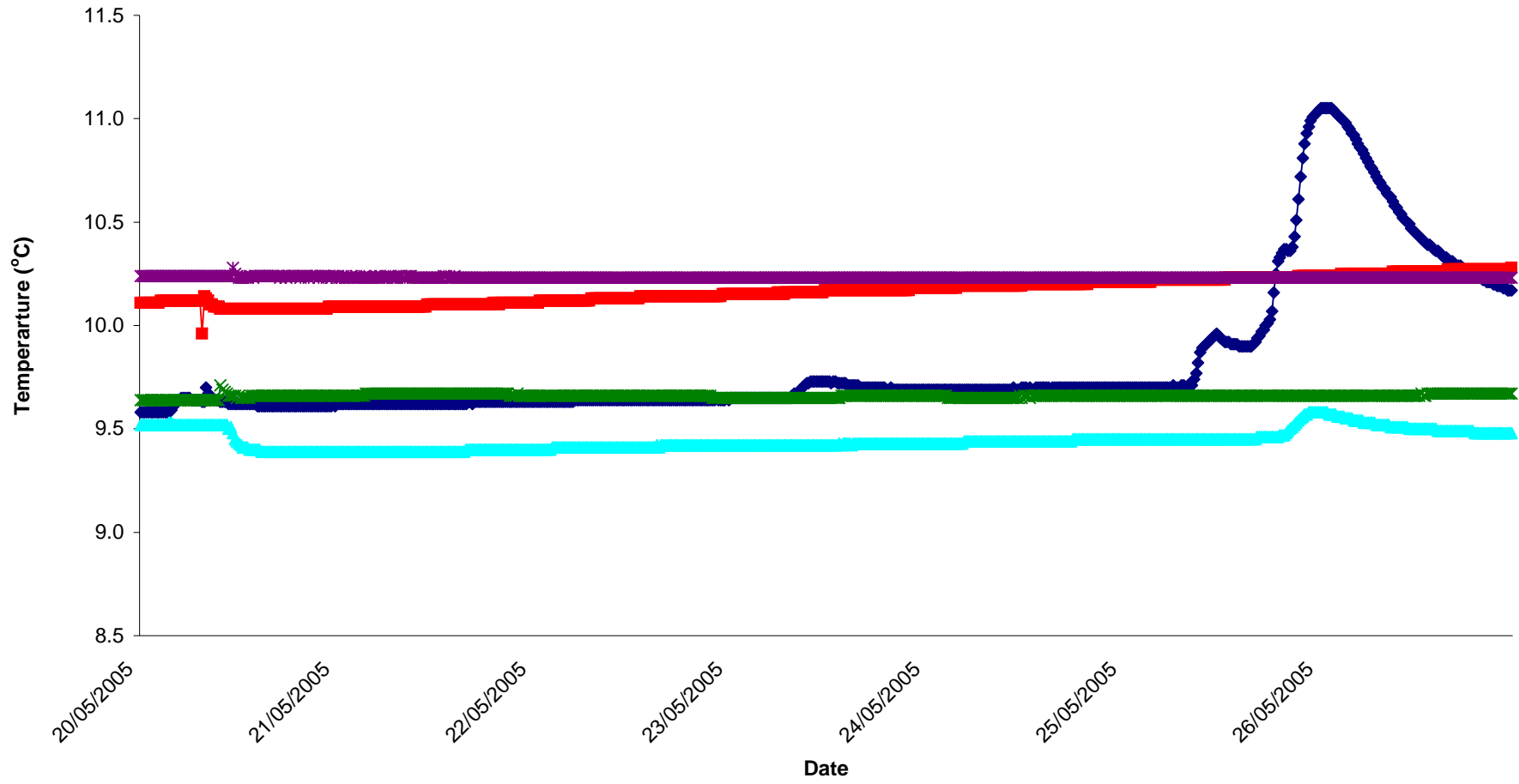
Surface Waters pH, Week 21 2005

SP1 SP3 D22 D62 Lower Limit Upper Limit



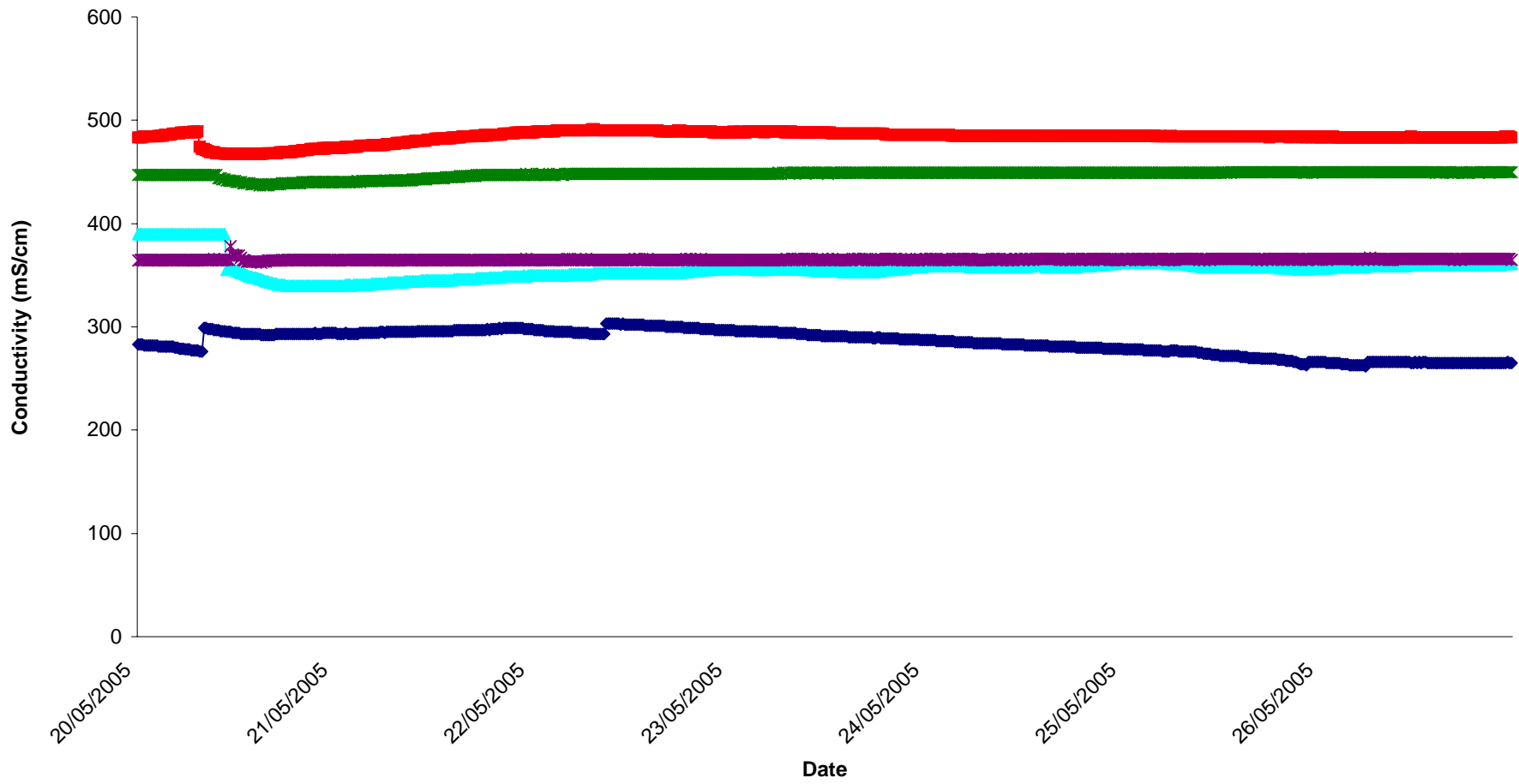
Groundwaters Temp, Week 21 2005

◆ MP1 ■ MP2 ▲ MP4 × MP6 * MP7



Groundwaters Conductivity, Week 21 2005

MP1 MP2 MP4 MP6 MP7



Groundwaters pH, Week 21 2005

MP1 MP2 MP4 MP6 MP7

