

Corrib Gas Pipeline Environmental Report	Period Ending:	30th November 2011
Compiled By:	Siobhan Sheridan & Carmel Carey	
Approved By:	Aoife Reynolds	

1 Monitoring Data

1.1 Monitoring Equipment

Noise	Two noise monitoring locations currently being used- AN2 and NSR1. The sound meters record in the 1/3 octave band.
Vibration	There is a single vibration monitoring point being used- V3
Weather Station	The data used for this reporting period was taken from the Terminal Site meteorological station.
TSS	The TSS analyser was operational during the reporting period
Sonde	The results are displayed graphically.
Discharge pipe flow	The results are displayed graphically.

1.2 Rainfall Data

Date	Rainfall mm	Date	Rainfall mm	Date	Rainfall mm
1/11/11	2.2	12/11/11	3.0	23/11/11	19.8
2/11/11	4.8	13/11/11	0.4	24/11/11	17.4
3/11/11	2.2	14/11/11	0.0	25/11/11	5.2
4/11/11	2.2	15/11/11	0.0	26/11/11	21.8
5/11/11	0.4	16/11/11	1.4	27/11/11	1.6
6/11/11	0.2	17/11/11	12.2	28/11/11	16.6
7/11/11	0.0	18/11/11	8.4	29/11/11	17.4
8/11/11	0.0	19/11/11	2.2	30/11/11	29.0
9/11/11	0.0	20/11/11	4.6		
10/11/11	0.0	21/11/11	0.8		
11/11/11	1.6	22/11/11	0.4		
Total rainfall 172.8mm					

1.3 Summary

Environment	Comments
Vibration	There were times where high levels of vibration was recorded. This was due to works being carried out in the vicinity of vibration meter on 29/11/11 and electrical interferences.
Weather	There was a total of 172.8mm of rainfall during the reporting period, with a temperature range of 1.3°C to 15.5°C
Noise	There have been ongoing power and technical issues in relation to noise meters which are currently being resolved.
Surface Water	There were no surface water exceedences during the month. There were no composite samples available between 7 th and 13 th due to a dry period of weather resulting in insufficient amount of flow through siltbuster. Due to a

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Environment	Comments
	power issue with the composite samplers, there were no samples available on 25 th , 26 th and 27 th November.
Groundwater Monitoring	Monitoring of groundwater undertaken during the reporting period does not show any unusual results.

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

2 Environmental Exceedances / Incidents / Complaint

2.1 Complaints

Date	Nature of complaint	Actions taken as a result of the complaint
01/11/11	At 12:50 a complaint was lodged re. non compliance with EMP in relation to noise	Noise meter installed at residence
07/11/12	At 12:09 a complaint was lodged re. Noise from site.	Noise meter installed at residence
08/11/12	Complaint re. Clanging of metal on metal noise from site.	Noise meter installed at residence

2.2 Exceedance

Date and Time	October
Location	Surface Water Discharge in North Eastern & Northern Area of Site in Aughooose
Nature of Incident	During the installation of the perimeter fence, ground was disturbed and as a result the water quality being discharged to the ditch at flume pipe north east was affected. A pump was installed in order to route the affected surface water run-off to the water treatment units (Siltbusters) prior to discharge through DL2. Once the fence erection was complete and there was no further ground disturbance, the pump was removed. Surface water monitoring has been undertaken in this area since the 19 th of August. The results of the monitoring show that apart from the short term disturbance during the fence erection, which included a period in September (when pumping was carried out), an exceedance occurred in the period 18-20 October, where the TSS values recorded were 122mg/L, 70mg/l and 87mg/L mg/l. This exceedance resulted from silt arising from the peat storage activities to the south and upslope of flume pipe north east. Discharge from the silt ponds in the peat storage area was then rerouted to the temporary settlement pond for treatment through the Siltbuster and discharge through DL2.
Actions Taken	<ul style="list-style-type: none"> Pumping arrangements have now been re-installed in the area of flume pipe north east (since 18th November) , and surface water run-off arising from that section of the site is being collected and routed through the temporary settlement pond and Siltbuster units before discharge through DL2. Installaton of a network of v-drains is taking place to collect

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	<p>surface water from the site perimeter wherever water is ponding.</p> <ul style="list-style-type: none"> • Surface water management in the peat storage area was improved following the silt discharge. Sediment control measures were installed in the form of silt fences and additional pumps were installed.
Category	Environmental Exceedance
Status	

2.3 Incidents

There were no incidents during the reporting period.

Surface Water Monitoring Results - Accredited Laboratory

Surface Water Monitoring Report - Accredited Laboratory												
	Date	Cond.	Turbidity	DO %	pH	TSS	Orthophosphate as PO ₄	Extractable HC/DRO (C8-C40) total and dissolved	PRO (C5-C12) total and dissolved	TOC	DIN (TON as N + Ammonia as N)	COD
		µS/cm	NTU	mg/l		mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Composites												
SB1	11/1/2011	246	0.8	68.3	7.5	9	<0.03	<200	<100	7.0	0.137	59
SB2	11/1/2011	246	0.6	68.3	7.4	2	<0.03	<200	<100	6.8	0.148	24
SB1	11/2/2011	248	6.0	66.4	7.4	2	0.08	<100	<100	13.5	<0.100	35
SB2	11/2/2011	367	2.3	68.1	7.4	2	<0.03	<100	<100	14.4	<0.100	48
SB1	11/3/2011	370	2.9	65.3	7.4	2	<0.03	<200	<100	15.2	<0.100	48
SB2	11/3/2011	353	5.4	68.5	7.3	5	<0.03	<100	<100	14.5	<0.100	59
SB1	11/4/2011	248	3.4	68.3	7.2	2	0.45	201	<100	13.3	0.161	52
SB2	11/4/2011	247	2.5	68.3	7.2	2	<0.03	<100	<100	12.5	0.022	50
SB1	11/5/2011	249	2.6	68.7	7.2	2	<0.03	168	<100	12.6	0.025	47
SB2	11/5/2011	247	1.7	68.3	7.1	2	<0.03	167	<100	12.5	0.027	44
SB1	11/6/2011	249	2.1	68.7	7.2	2	<0.03	222	<100	11.8	0.020	50
SB2	11/6/2011	249	1.4	68.4	7.1	2	<0.03	<100	<100	11.5	0.030	43
SB1	11/14/2011	486	1.1	65.2	7.3	2	<0.03	<100	<100	12.5	0.052	45
SB2	11/14/2011	485	1.1	67.1	7.4	<2	<0.03	<200	<100	13.4	0.040	45
SB1	11/15/2011	486	1.1	64.3	7.4	2	<0.03	<100	<100	12.3	0.155	39
SB2	11/15/2011	486	0.9	68.2	7.3	2	0.06	<100	<100	11.9	0.045	40
SB1	11/16/2011	487	0.9	68.3	7.4	3	<0.03	<100	<100	11.7	0.027	35
SB2	11/16/2011	485	1.0	68.5	7.2	3	<0.03	<100	<100	10.5	0.036	70
SB1	11/17/2011	398	1.2	65.4	7.3	2	0.53	<100	<100	15.9	<0.100	42
SB2	11/17/2011	406	1.0	68.3	7.3	2	<0.03	<100	<100	15.2	0.096	57
SB1	11/18/2011	394	0.9	68.3	7.1	2	<0.03	123	<100	20.7	0.421	84
SB2	11/18/2011	397	0.9	68.1	7.1	2	<0.03	<100	<100	11.2	0.374	67
SB1	11/19/2011	410	1.2	68.4	7.0	2	<0.03	135	<100	10.3	0.307	49
SB2	11/19/2011	372	0.8	67.9	7.0	2	<0.03	177	<100	8.7	0.306	86
SB1	11/20/2011	468	0.9	68.3	7.0	2	<0.03	155	<100	8.9	0.494	61
SB2	11/20/2011	478	0.9	67.8	6.9	2	<0.03	<100	<100	8.1	0.461	71
SB1	11/21/2011	388	1.6	68.5	7.3	7	<0.03	113	<100	17.3	0.026	75
SB2	11/21/2011	446	1.0	65.4	7.0	5	<0.03	<100	<100	8.9	0.256	55
SB1	11/22/2011	380	1.4	66.3	7.0	2	<0.03	<100	<100	15.1	0.153	59
SB2	11/22/2011	404	1.6	66.3	7.6	2	<0.03	<100	<100	16.8	0.021	127
SB1	11/23/2011	412	1.1	68.3	7.2	2	<0.03	<100	<100	7.4	0.227	20
SB2	11/23/2011	397	0.9	68.9	7.1	2	<0.03	<100	<100	7.7	0.305	11
SB1	11/24/2011	380	0.8	67.5	7.1	2	<0.03	<100	<100	6.7	0.355	45
SB2	11/24/2011	384	0.9	69.5	6.9	3	<0.03	<100	<100	6.5	0.253	14
SB1	11/28/2011	388	2.2	76.3	7.0	2	<0.03	<100	<100	8.7	<0.1	54
SB2	11/28/2011	394	2.4	70.2	7.0	2	<0.03	<100	<100	10.1	<0.1	88
SB1	11/29/2011	348	1.2	64.8	7.0	4	<0.03	<100	<100	6.1	0.269	48
SB2	11/29/2011	317	1.2	72.2	6.8	2	<0.03	<100	<100	4.5	0.173	55
SB1	11/30/2011	338	0.6	68.6	7.5	<2	<0.03	<100	<100	4.6	0.240	0
SB2	11/30/2011	332	0.6	61.5	6.6	<2	<0.03	150	<100	3.4	0.160	0
I.P.	= In Progress											
< LOD	= Below Limit of Detection											
> LOD	= Above Limit of Detection											
On site laboratory results included in Appendix 1												
	Grey shaded areas denote parameters that cannot or were not analysed on-site or the lab.											

Surface Water Monitoring Results - Accredited Laboratory

	Date	Cond.	Turbidity	DO %	pH	TSS	Orthophosphate as PO4	Extractable HC/DRO (C8-C40) total and dissolved	PRO (C5-C12) total and dissolved	TOC	DIN (TON as N + Ammonia as N)	COD
		µS/cm	NTU	mg/l		mg/l	mg/l	ug/l	ug/l	mg/l	mg/l	mg/l
Grab Samples DL2												
DL2	11/1/2011	186	2.0	68.5	6.7	2	<0.03	<100	<100	7.4	0.018	26
DL2	11/2/2011	176	1.8	65.3	7.3	2	<0.03	<100	<100	9.1	<0.100	37
DL2	11/3/2011	124	2.4	65.6	7.1	2	<0.03	<100	<100	12.3	<0.100	53
DL2	11/4/2011	113	2.1	68.5	7.2	2	<0.03	<100	<100	13.2	<0.100	55
DL2	11/7/2011	263	1.6	68.3	7.0	2	<0.03	<100	<100	10.6	0.215	53
DL2	11/8/2011	171	1.9	68.5	7.0	2	<0.03	<100	<100	15.1	0.174	71
DL2	11/9/2011	264	2.3	68.5	6.9	2	<0.03	<100	<100	11.3	0.030	52
DL2	11/10/2011	249	1.8	65.2	6.9	2	<0.03	<100	<100	11.6	0.013	55
DL2	11/11/2011	298	1.8	64.8	7.0	5	<0.03	<100	<100	10.9	0.047	47
DL2	11/14/2011	361	1.3	68.7	7.3	3	<0.03	<100	<100	9.1	0.019	35
DL2	11/15/2011	301	1.8	67.3	7.2	2	0.05	<100	<100	11.8	0.033	47
DL2	11/16/2011	229	2.1	68.7	6.9	2	<0.03	<100	<100	15.0	0.061	88
DL2	11/17/2011	282	1.9	68.5	6.8	2	<0.03	<100	<100	12.6	0.053	148
DL2	11/18/2011	128	6.6	64.3	6.5	2	<0.03	<100	<100	14.6	<0.100	125
DL2	11/21/2011	348	1.2	68.7	6.7	<2	<0.03	<100	<100	10.9	0.167	85
DL2	11/22/2011	147	2.6	67.4	7.1	<2	<0.03	<100	<100	14.7	0.063	83
DL2	11/23/2011	315	2.4	66.3	6.8	<2	<0.03	<100	<100	10.9	0.032	60
DL2	11/24/2011	305	1.9	65.3	6.9	<2	<0.03	<100	<100	7.5	0.034	13
DL2	11/25/2011	340	0.9	65.7	6.8	4	<0.03	<100	<100	6.9	0.023	17
DL2	28/11/2011	231	1.1	54.8	7.1	34	<0.03	<100	<100	6.5	0.092	34
DL2	29/11/2011	222	1.6	71.0	7.0	4	<0.03	<100	<100	5.6	0.040	26
DL2	30/11/2011	152	25.0	54.9	6.9	9	<0.03	<100	<100	24.7	<0.100	108
Sruwaddacon Bay												
Sbay 1	11/22/2011	48200	0.4	66.3	7.9	2	0.05	<200	<100	2.0	0.069	1028
Sbay 3	11/22/2011	5550	2.2	65.2	6.9	8	0.04	<200	<100	13.6	0.477	264
Sbay 4	11/22/2011	3410	0.8	66.4	7.8	2	0.03	<200	<100	7.2	0.164	976
Sbay 6	11/22/2011	47600	0.6	66.4	8.0	2	0.08	<200	<100	1.7	0.198	1188
I.P.	= In Progress											
< LOD	= Below Limit of Detection											
> LOD	= Above Limit of Detection											
On site laboratory results included in Appendix 1												
	Grey shaded areas denote parameters that cannot or were not analysed on-site or the lab.											

Groundwater Monitoring Results - Accredited Laboratory																	
Location	Date	DO	Temp	Cond.	pH	TDS	BOD	Suspended Solids	Turbidity	Orthophosph ate as PO4 -P	Ammonia as NH3-N	Total Phosphorus as P	Nitrate as NO ₃	Nitrite as NO ₂	Phosphate as PO4	COD	Copper
		% Sat	°C	uS/cm	pH Units	mg/l	mg/l	mg/l	N.T.U	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l
GW1	10/11/2011	26	10.9	434	6.2	230	15	41	115.0	0.948	0.30	0.98	<0.44	<0.017	2.91	34	77
GW2	10/11/2011	18	10.4	477	6.2	254	18	876	785.0	0.245	2.52	2.54	<0.44	<0.017	0.75	76	19
GW3	10/11/2011	27	11.5	404	6.0	214	15	155	49.0	0.204	3.21	0.48	<0.44	<0.017	0.63	44	2
GW4	10/11/2011	29	11.6	432	6.3	229	12	108	89.0	0.188	0.65	0.22	<0.44	<0.017	0.58	30	3

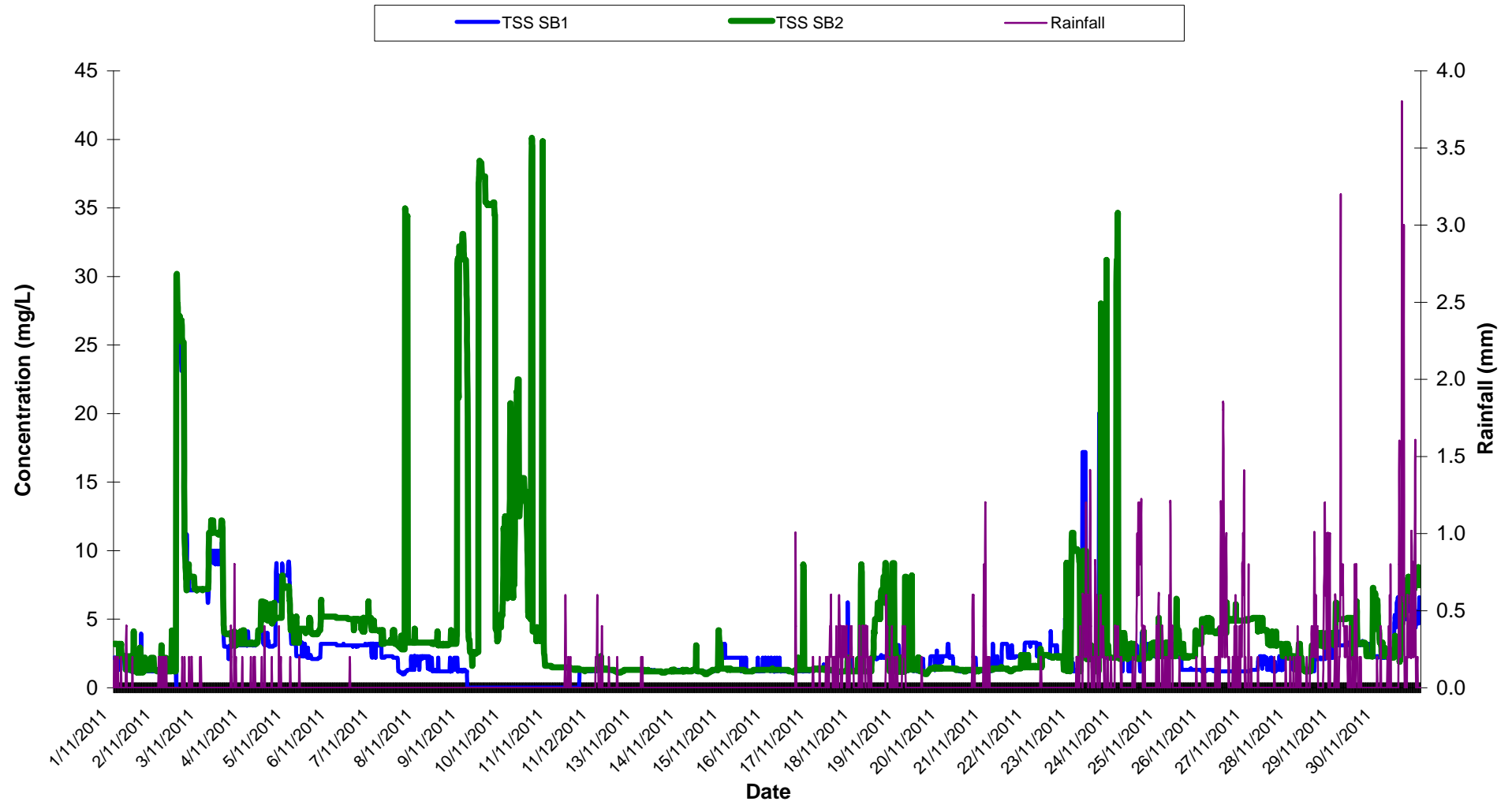
Location	Date	Arsenic, total	Chromium, total	Lead, total	Cadmium, total	Tin, total	Iron, total	Mercury	TOC	Total Hardness	Zinc	Extractable HC/ DRO (C8- C40) total and dissolved	PRO (C5- C12) total and dissolved	Total Phosphorus as P	Manganese	Chloride	Water Level
		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	mg/l	ug/l	ug/l	ug/l	mg/l	ug/l	mg/l	m
GW1	10/11/2011	19	10	27	6.0	<0.5	44510	<0.05	7.17	155	7	<100	<100	0.98	3857	49.6	3.4
GW2	10/11/2011	5	11	80	<0.5	<0.5	32230	<0.05	12.30	245	9	<100	<100	2.54	653	90.7	1.7
GW3	10/11/2011	6	3	8	<0.5	<0.5	89910	<0.05	4.89	25	5	<100	<100	0.48	246	55.5	2.7
GW4	10/11/2011	4	2	<0.5	<0.5	<0.5	55710	<0.05	4.46	118	8	<100	<100	0.22	940	60.1	2.3

Grey shaded areas denote parameters that cannot or were not analysed on-site or at the lab.

Day Time Noise Monitoring/Maximum hourly LAeq reported										
Location	Air Temp. (Min)	Air Temp. (Max)	Start Date and Time	Duration	Wind		Results dB			*Comments
					Speed (m/s)*	Direction (Degrees)	L _{Aeq}	L _{Amax}	L _{Amin}	
Action Limit							60.0			
Target Limit							65.0			
AN2	5.6	12.2	01/11/2011	1:00	4.4	178.1	54.9	69.6	33.0	
NSR1			01/11/2011	1:00						Technical error with noise meter
AN2	10.4	13.1	02/11/2011	1:00	8.9	144.7	61.1	78.4	41.5	Elevated noise levels due to high winds
NSR1			02/11/2011	1:00			68.6	85.8	43.2	
AN2	6.6	14.0	03/11/2011	1:00	5.7	165.6	57.8	84.7	30.0	
NSR1			03/11/2011	1:00			63.7	76.7	42.1	
AN2	3.3	11.0	04/11/2011	1:00	1.9	203.2	54.2	71.4	33.4	
NSR1			04/11/2011	1:00			52.9	75.8	30.6	
AN2	2.0	11.6	07/11/2011	1:00	2.5	160.6	56.4	80.7	31.8	
NSR1			07/11/2011	1:00			57.2	85.9	32.6	
AN2	5.8	10.9	08/11/2011	1:00	4.1	144.5	54.0	76.9	32.2	
NSR1			08/11/2011	1:00			61.0	76.9	34.3	
AN2	8.0	13.0	09/11/2011	1:00	4.4	146.2				Technical error with noise meter
NSR1			09/11/2011	1:00			55.9	78.9	33.5	
AN2	8.1	13.2	10/11/2011	1:00	5.0	143.2	53.5	75.8	35.1	
NSR1			10/11/2011	1:00			58.2	74.5	38.0	
AN2	9.7	14.2	11/11/2011	1:00	7.2	133.1	58.6	83.0	39.0	
NSR1			11/11/2011	1:00						Loss of data due to power failure
AN2	8.4	15.5	14/11/2011	1:00	4.6	139.6				Loss of data due to power failure
NSR1			14/11/2011	1:00						Loss of data due to power failure
AN2	7.6	11.1	15/11/2011	1:00	3.0	137.2	52.2	71.9	35.8	
NSR1			15/11/2011	1:00			58.9	76.2	40.6	
AN2	6.4	12.3	16/11/2011	1:00	3.3	151.4	55.6	74.4	31.5	
NSR1			16/11/2011	1:00			61.2	75.0	44.1	
AN2	6.8	13.2	17/11/2011	1:00	3.9	159.2				Loss of data due to power failure
NSR1			17/11/2011	1:00						Technical error with noise meter
AN2	11.2	13.4	18/11/2011	1:00	2.4	158.4				Loss of data due to power failure
NSR1			18/11/2011	1:00						Technical error with noise meter
AN2	2.0	10.6	21/11/2011	1:00	1.3	165.6	53.8	72.0	44.8	
NSR1			21/11/2011	1:00			58.9	76.2	40.6	Technical error with noise meter
AN2	2.1	12.6	22/11/2011	1:00	4.3	236.8	55.6	74.4	31.5	Loss of data due to relocating meter to NSR1
NSR1			22/11/2011	1:00			52.1	69.6	36.4	
AN2	8.2	12.6	23/11/2011	1:00	5.3	182.9				Loss of data due to relocating meter to NSR1
NSR1			23/11/2011	1:00						Loss of data due to power failure
AN2	6.0	10.8	24/11/2011	1:00	6.6	203.1				Technical error with noise meter
NSR1			24/11/2011	1:00			65.6	83.0	49.3	
AN2	4.5	7.7	25/11/2011	1:00	5.0	228.1				Loss of data due to power failure
NSR1			25/11/2011	1:00						Loss of data due to power failure
AN2	7.8	10.2	28/11/2011	1:00	4.9	183.1				Loss of data
NSR1			28/11/2011	1:00			58.8	78.4	43.5	
AN2	4.3	7.0	29/11/2011	1:00	3.9	227.6				
NSR1			29/11/2011	1:00			71.2	115.5	21.4	Elevated noise from localised noise source near meter
AN2	4.7	8.1	30/11/2011	1:00	6.0	206.2				
NSR1			30/11/2011	1:00			62.8	81.0	45.6	
* Wind speeds in excess of 5 m/s negatively impact noise readings (as per EPA Guidance Note on Noise Measurement).										
**Allowance of +/- 1.5dB accuracy of sound level meter (ref: IEC 61672 (2002-2005))										
The results show the maximum LAeq(1hr) for each day of monitoring										

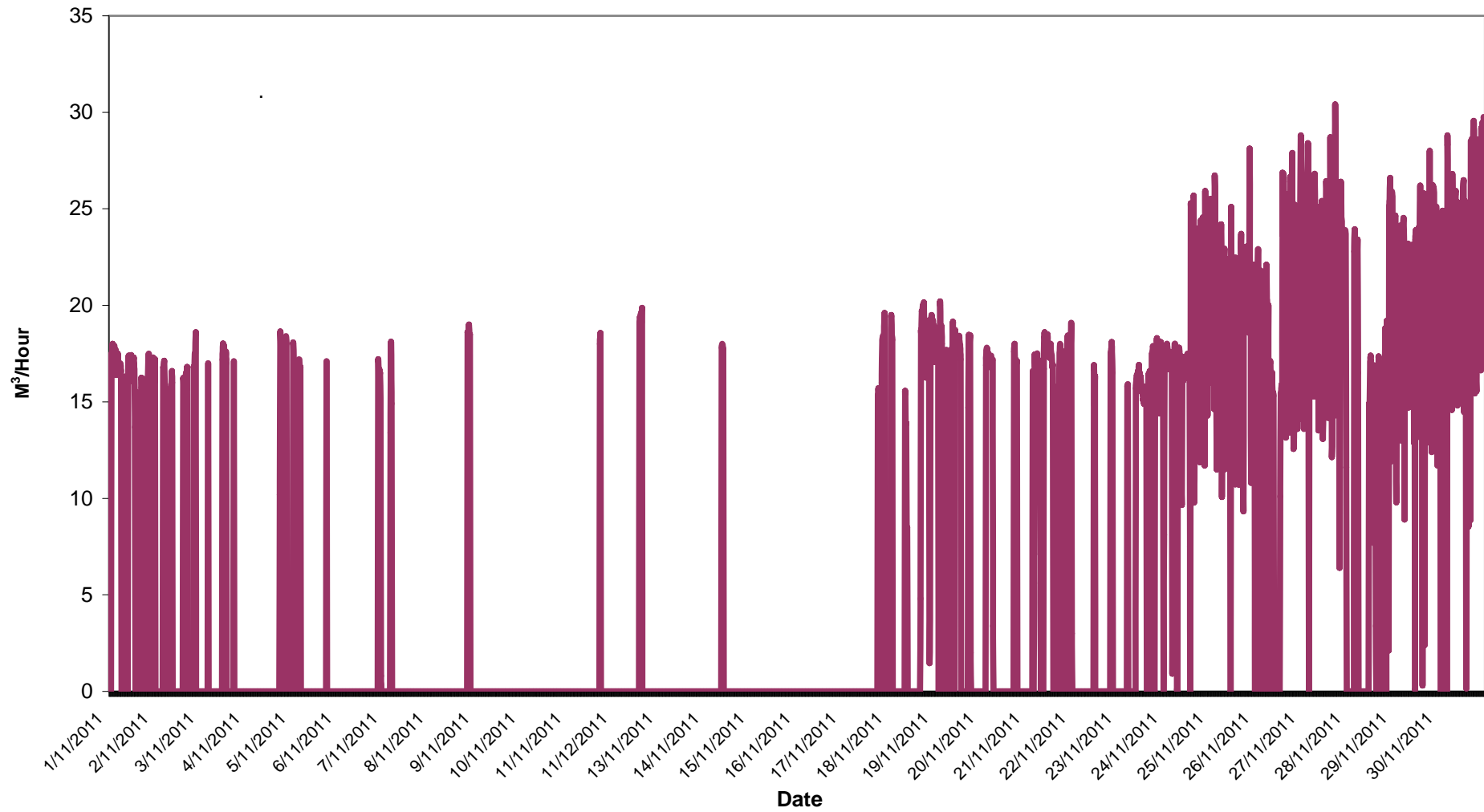
Vibration Monitoring Record Sheet			
Location	Date	PPV max (mm/s)	Comment
Minimum Criterion 8mm/s			
V3	01/11/2011	0.32	
V3	02/11/2011	0.32	
V3	03/11/2011	1.29	
V3	04/11/2011	1.37	
V3	07/11/2011	1.37	
V3	08/11/2011	1.37	
V3	09/11/2011	1.29	
V3	10/11/2011	9.08	Electrical interference
V3	11/11/2011	1.37	
V3	14/11/2011	3.86	
V3	15/11/2011	7.47	
V3	16/11/2011	1.60	
V3	17/11/2011	1.29	
V3	18/11/2011	1.45	
V3	21/11/2011	9.64	Electrical interference
V3	22/11/2011	8.76	Electrical interference
V3	23/11/2011		
V3	24/11/2011	4.18	
V3	25/11/2011	10.12	Electrical interference
V3	28/11/2011	3.29	
V3	29/11/2011	11.57	Elevated levels due to setup of permanent power supply to noise meter, housed at same location as vibration meter
V3	30/11/2011	6.51	

Total Suspended Solids November 2011

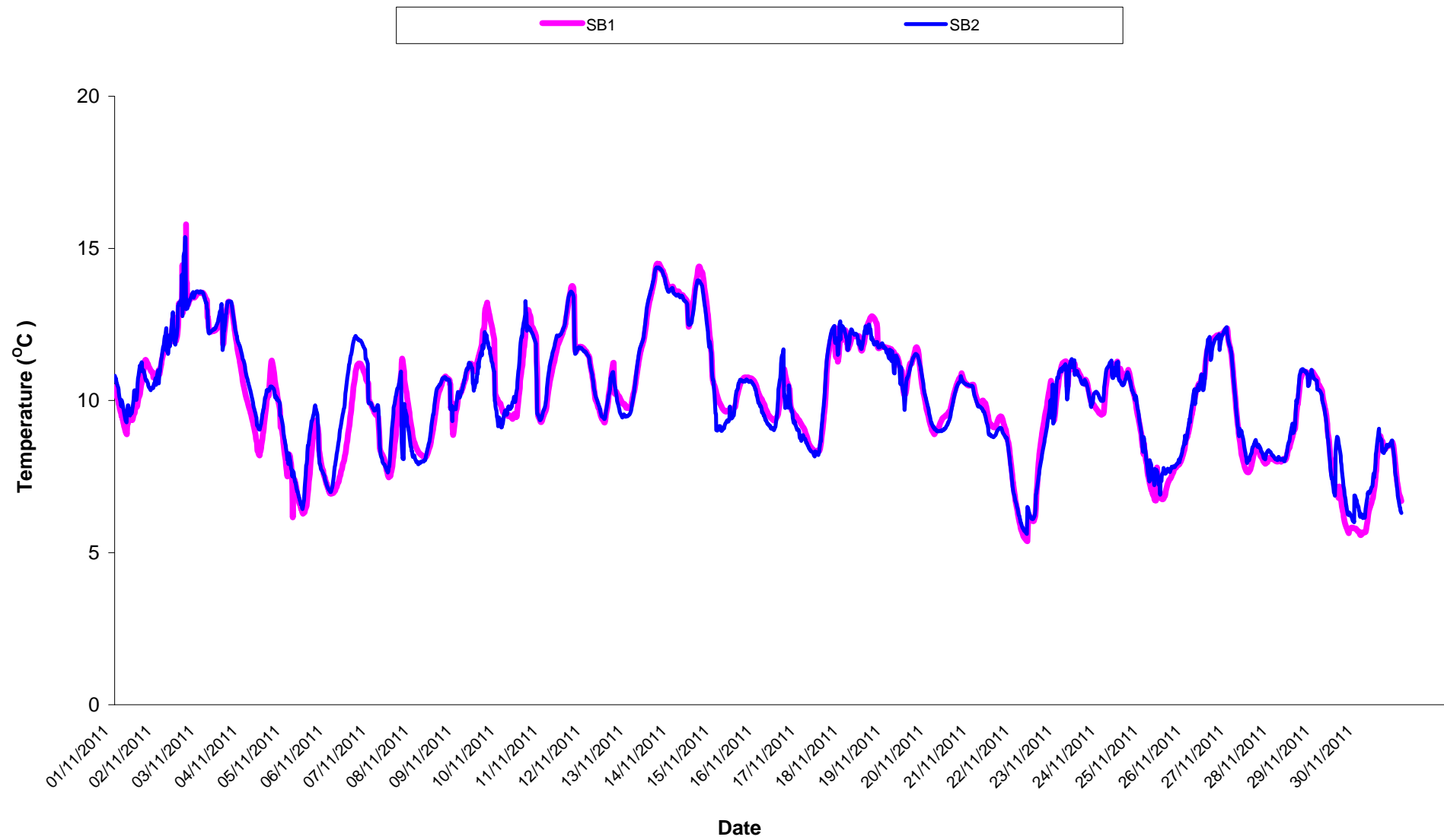


Surface Water Discharge November 2011

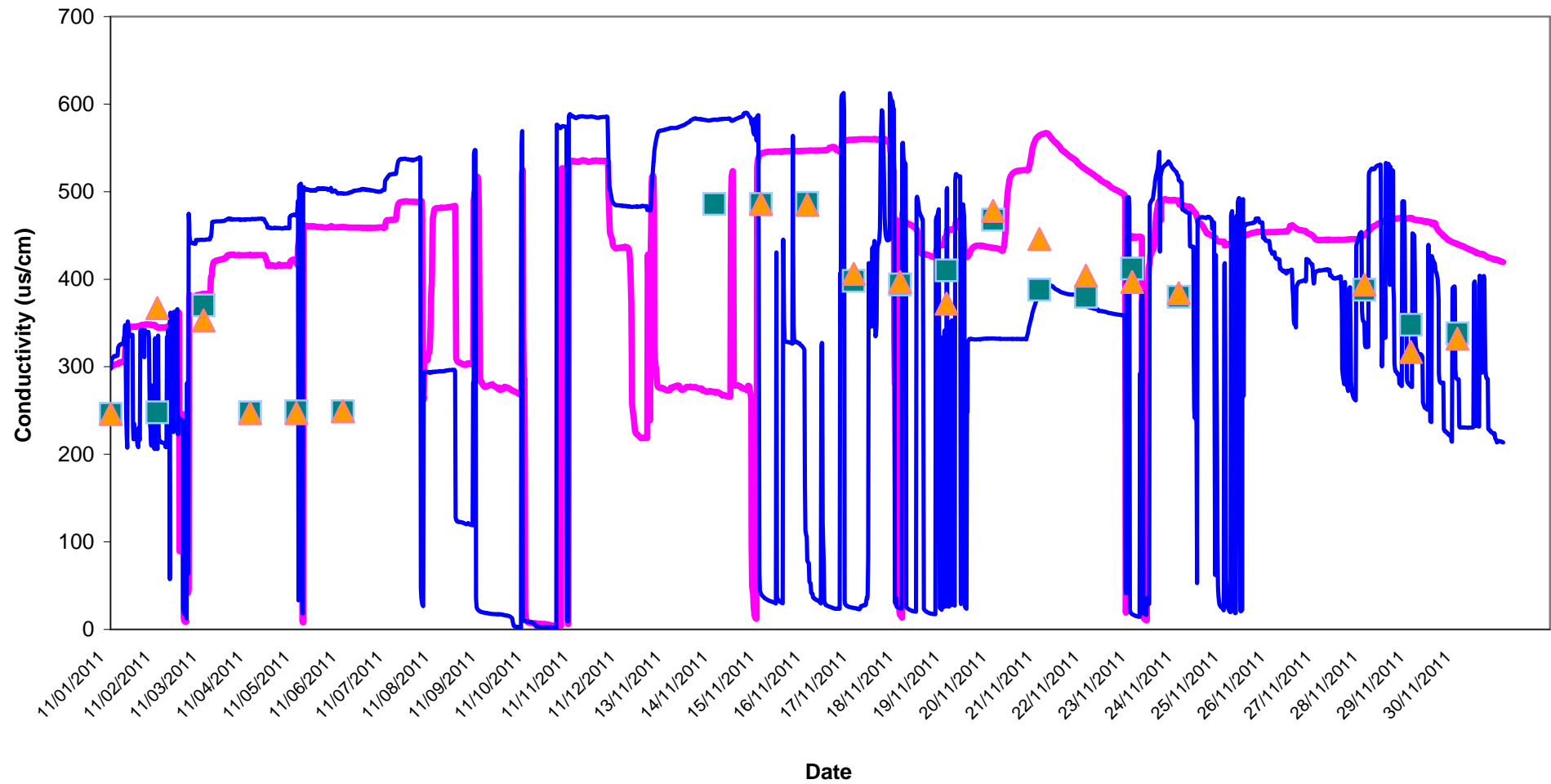
Water Discharge



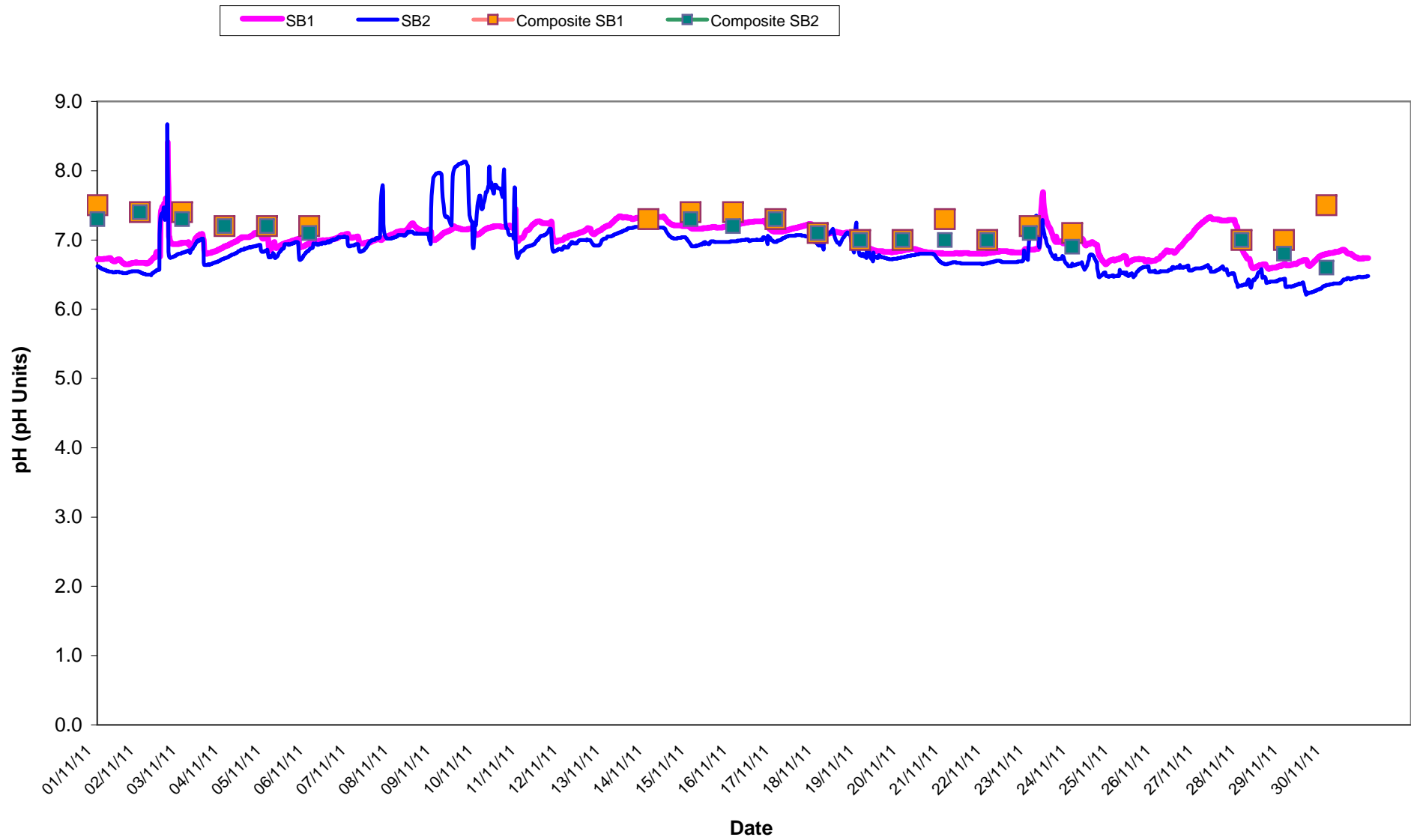
Temperature - Surface Water Discharge November 2011



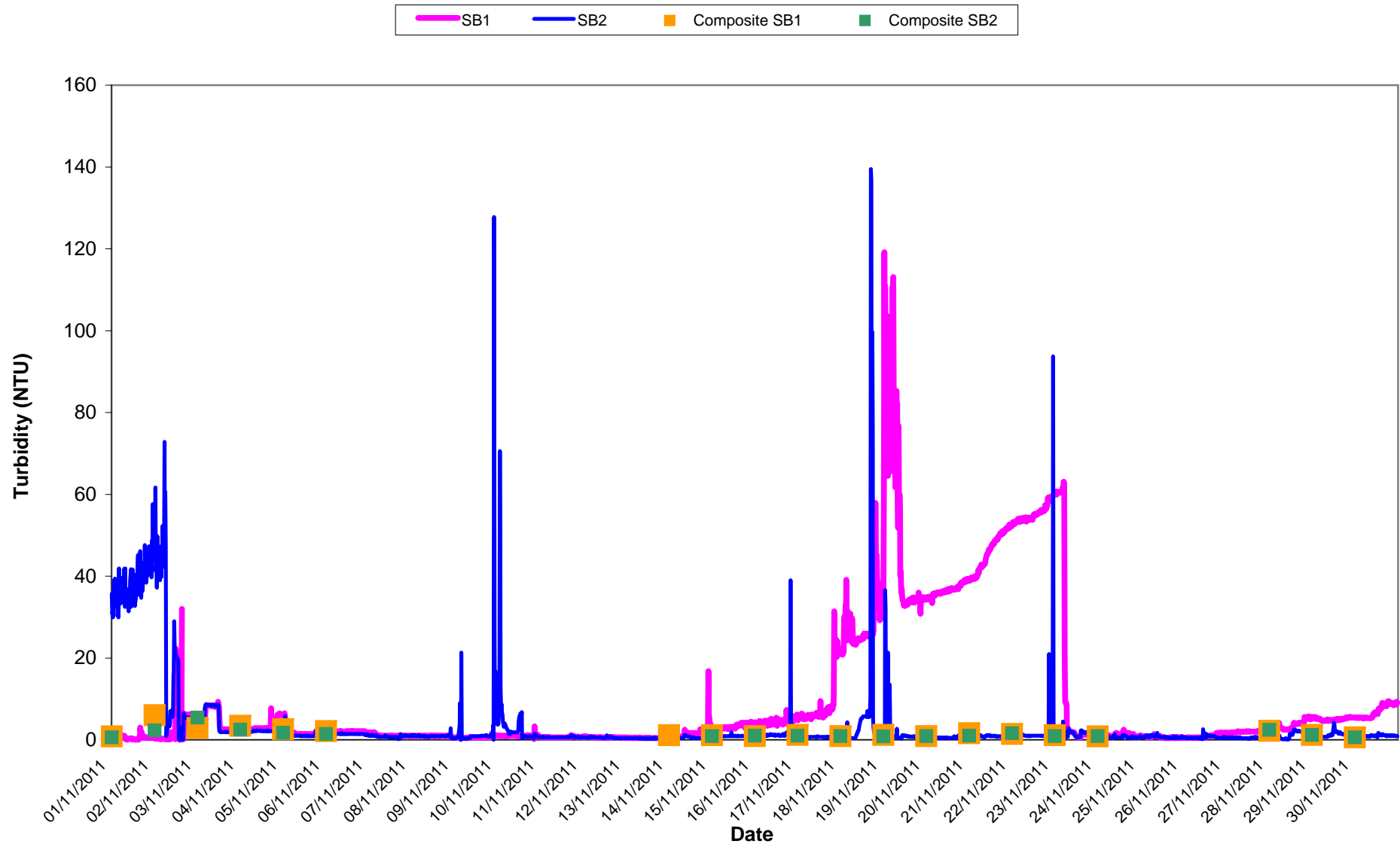
Conductivity - Surface Water Discharge November 2011



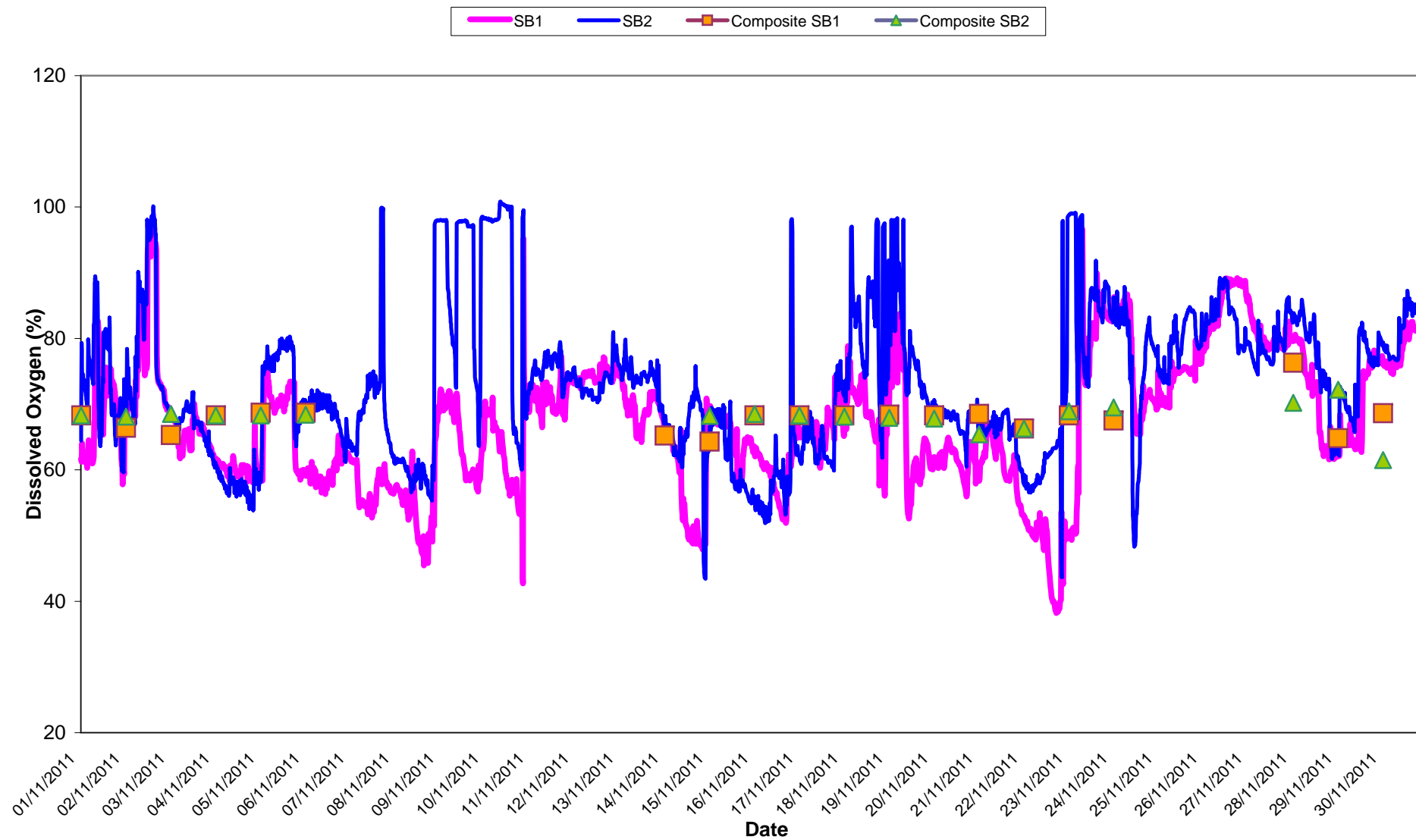
pH - Surface Water Discharge November 2011



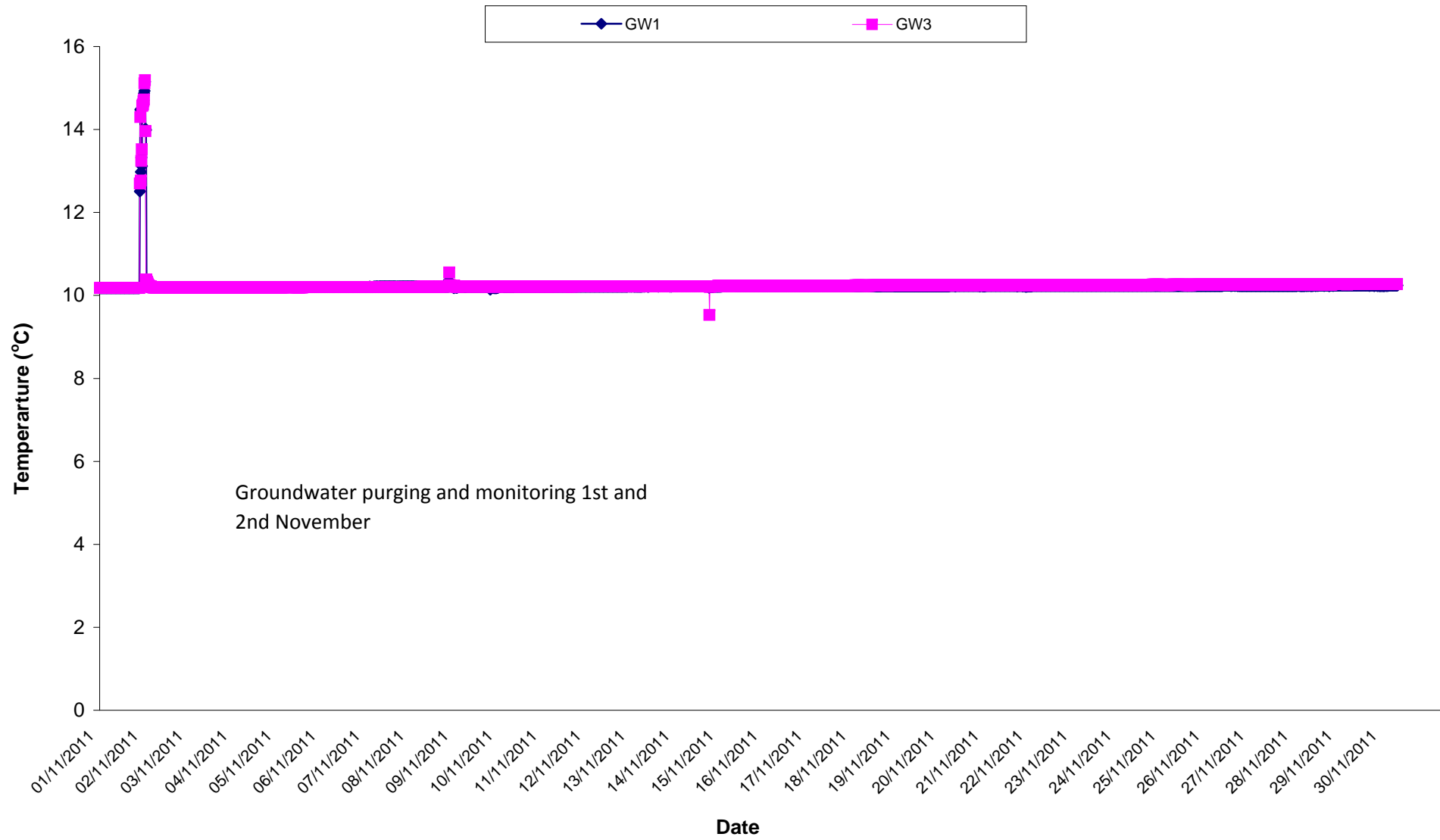
Turbidity- Surface Water Discharge October 2011



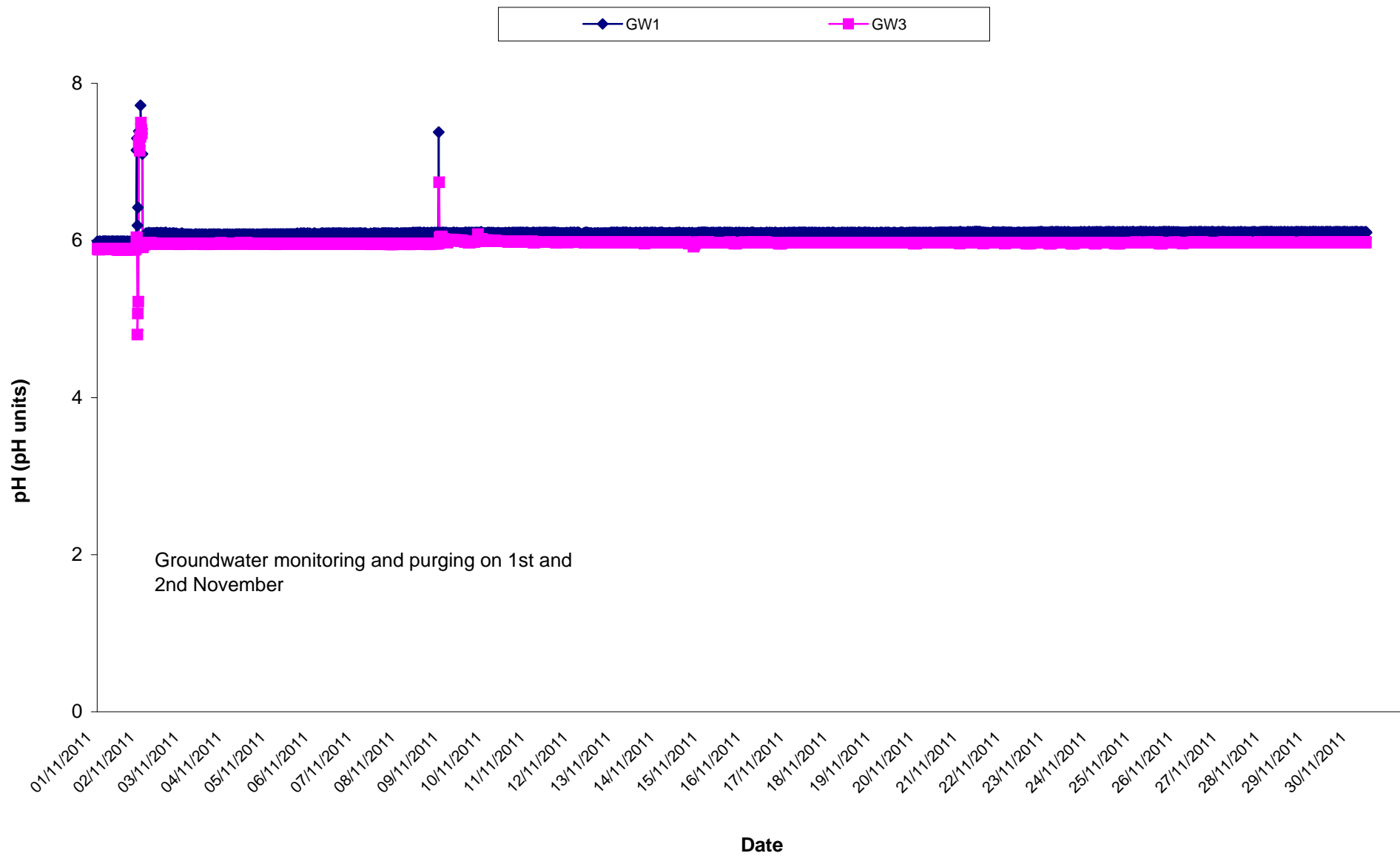
Dissolved Oxygen - Surface Water Discharge November 2011



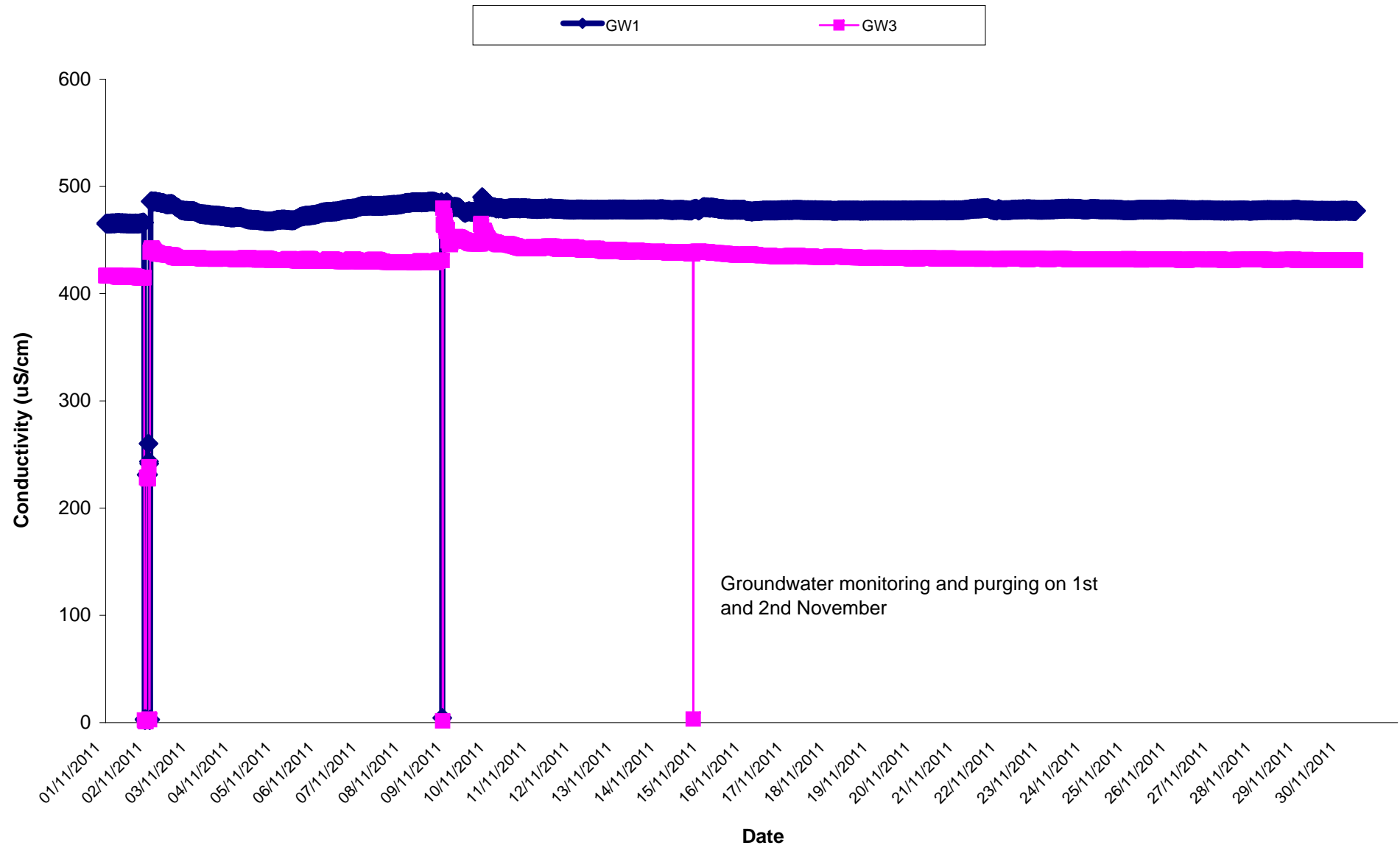
Temperature - Groundwaters November 2011



pH - Groundwaters November 2011



Conductivity - Groundwaters November 2011



Appendix 1

Appendix 1: Surface Water Monitoring Record Sheet- Onsite Monitoring

	Date	Temp	DO	Cond.	Turbidity	pH
		oC	% Sat	µS/cm	NTU	
Grab samples						
DL 2	01/11/2011	10.1	72.1	213	5.1	6.1
DL 2	02/11/2011	12.1	37.4	210	3.9	6.2
DL 2	03/11/2011	12.3	43.1	163	5.6	6.1
DL 2	04/11/2011	10.0	36.0	158	5.0	6.2
DL 2	07/11/2011	9.4	26.6	293	5.3	5.8
DL 2	08/11/2011	9.3	21.9	197	4.5	6.2
DL 2	09/11/2011	10.2	17.1	298	3.3	6.4
DL 2	10/11/2011	9.2	19.1	295	2.8	6.0
DL 2	11/11/2011	11.1	27.5	354	4.0	6.0
DL 2	14/11/2011	12.0	46.6	397	4.7	5.9
DL 2	15/11/2011	10.4	18.4	345	5.2	6.0
DL 2	16/11/2011	11.3	15.4	323	7.7	5.8
DL 2	17/11/2011	10.6	22.4	286	19.6	6.2
DL 2	18/11/2011	11.9	65.3	170	19.4	6.3
DL 2	21/11/2011	11.1	80.8	394	4.4	6.2
DL 2	22/11/2011	8.2	45.7	200	7.5	6.2
DL 2	23/11/2011	11.9	80.8	404	7.3	6.2
DL 2	24/11/2011	11.5	80.6	317	4.3	6.4
DL 2	25/11/2011	8.5	83.4	370	11.8	6.1
DL 2	28/11/2011	9.6	47.3	271	5.0	6.0
DL 2	29/11/2011	10.1	86.9	261	4.0	6.0
DL 2	30/11/2011	8.0	91.1	152.0	5.1	6.9
Sruwaddacon Bay						
SBAY1	22/11/2011		66.3	OR	6.7	8
SBAY3	22/11/2011		65.2	6500	41.8	8
SBAY4	22/11/2011		66.4	OR	11.4	8
SBAY6	22/11/2011		66.4	OR	14.0	8
<div> <div></div> <div>Grey shaded areas denote parameters that cannot or were not analysed on-site (results given are from CLS Labs).</div> </div>						
= Indicative Only			OR = Over-range			

Appendix 2

Ecological Monitoring Summary Report – November 2011

1. MONITORING PERIOD

This report summarises the ecological monitoring activities undertaken during November 2011 which included:

- Monitoring during construction at Aughooose;
- Ongoing weekly bird monitoring of the Sruwaddacon Bay area and onshore pipeline area in general;
- Ongoing non-avian faunal monitoring (general, pre-construction and during construction);
- Walkover and inspections at Glengad.

2. HABITATS/VEGETATION

2.1 Aughooose

During the site inspections at Aughooose in November, it was noted that further progress had been made in the removal of the vegetation layer to the peat storage areas. The transfer of the vegetation was observed to be continuing to work well, as had been noted previously in October.

2.2 Glengad

A walkover and site inspection of habitats at Glengad was undertaken by the Project ecologist and her associate ornithologist on 22nd November, including:

- The reinstated areas of agricultural grassland located where the temporary working areas had been during landfall works in 2009;
- The reinstated cliff at the landfall;
- The shoreline immediately to the west and north of the landfall;
- The clay cliff face at the Sand Martin colony

3. BIRDS

3.1 Aughooose/Sruwaddacon Bay

Weekly low water and high water counts have continued in the Sruwaddacon Bay area, as scheduled. To summarise:

- Brent Goose numbers have increased to over 220 individuals during November. The numbers have remained high since early in the month. The numbers are somewhat higher than at this time in recent years. Brent Geese continue to increase in number with anecdotal information suggesting a clear increase in the numbers passing through Strangford Lough. It

is understood that counts are being tabulated and may be published in the near future (IBRG).

- Increasing numbers of wading birds:
 - Good numbers of Oystercatcher in particular;
 - Ringed Plover and Dunlin numbers also increased, and were present in their usual feeding areas within Sruwaddacon Bay;
 - Both Godwit species have persisted in the area in small numbers (<10) during November
- A Male Hen Harrier was recorded at Glengad, moving through the area (16/11/2011).
- No avoidance or disturbance events were recorded from the vicinity of works at Aughooose. In particular, during the loading and unloading of stone close to the northern perimeter fence of the compound, ornithologists observed numbers of Ringed Plover feeding undisturbed - less than 150m from the site fence.

3.2 Winter inspection of the Sand Martin colony at Glengad

On Tuesday 22nd November 2011 the Sand Martin colony at Glengad was inspected by the Project Ecologist and her associate ornithologist to assess the status of the nest burrows present and the condition of the clay cliff. The Sand Martins had departed for their African wintering grounds in late August and early September.

It is typical that some burrows are lost to erosion during the 'off-season' as a result of storms, frost and rainfall etc. This was particularly noticeable in the winter of 2010/11 when the prolonged freezing conditions probably exacerbated the losses already incurred as a result of wave action during storms. The Sand Martins nest in a shallow seam near the top of the low muddy cliff at Glengad and over time the burrowing faces become undercut. When the Sand Martins return each year there is a period of re- and fresh-excavation required to renew the colony.

In keeping with observations from recent years, the colony was unchanged (in terms of the number of viable nest burrows present) from the end of the breeding season to the November site visit. During the November 2011 inspection, cracks and gaps, also tears in the cliff top edge vegetation were observed along parts of the cliff at the colony. Further erosion and loss of burrows is expected during the coming winter months. In recent years, when it has occurred, the loss and partial loss of burrows has been observed to have taken place in the early part of the year (January to March).

4. NON-AVIAN FAUNA

4.1 Monitoring surveys

The current phase of “during construction” and “pre-construction” faunal surveys commenced in October, with surveys expected to be completed in December.

- 1 Fauna surveys of the entire Bay area, with emphasis on otters. This repeat survey follows on from earlier surveys of these areas which were completed in July 2011. Following the methodology of previous surveys, otter activity is being monitored by search for otter spraints (droppings) and other signs, including checks on otter or other mammal activity at known burrows and continued search for additional or new burrows. The current full survey of the Bay area which commenced in late October continued in November and, weather permitting, will be concluded in December 2011. As determined from results so far during the present survey of otter activity within the Bay area, otter presence is confirmed in all parts of the Bay as before. Badger presence has also been confirmed, with badger presence at Glengad and the upper afforested reaches of Sruwaddacon Bay. Monitoring of badger and otter activity at Glengad has continued.
- 2 The surveys have placed emphasis on the ongoing works areas at Aughoose. In particular, the zone of influence (in relation to otters) has been checked regularly. Otter activity remains as previously reported, and they continue to utilise the shoreline areas at Aughoose and the Leenamore River. No active /breeding holts have been identified in the area adjacent to, or in the vicinity of, the works at Aughoose.
- 3 General fauna surveys have been conducted in conjunction with the otter surveys in the vicinity of the works at Aughoose.
- 4 A further survey was conducted at Glengad, in November to check for presence of any mammal burrows/resting places along vegetated drains in the field to the south of the location of Site Compound 2. Signs were found of use of the field and drain/field boundary areas by both badger and fox. No badger setts were found, and no signs of other species of mammal were identified in the field.
- 5 Site inspections at Aughoose were conducted in relation to faunal mitigation measures, including inspections of the outside of the perimeter fence. A few places where larger mammals might attempt to breach the mammal proofing measures were noted and brought to the attention of site staff. These have been, and are being, addressed. (See also under site inspections at 5).

4.2 Non-avian faunal observations made during the bird surveys

The following observations were made by ornithologists when using high quality optics during bird monitoring surveys of the Sruwaddacon Bay area:

- Otter mid-channel to the north of the Leenamore inlet (15/11/2011)
- During surveys in mid-November, a group of Common Seals were observed hauled up at low water on sandbank north of Glengad (near Sandy Pt.).
- Two sightings of a foraging Common Seal (16/11/2011): in channel near the sandbank at the western end of the Bay, and just northwest of the Aughooose compound at high water

5. AUGHOOSE SITE INSPECTIONS

Site inspections at Aughooose were undertaken by the Project ecologist on 8th and 22nd November.

The main purpose of these site inspections was to:

- Inspect the peat storage areas, and the currently stored surface vegetation layer
- Inspect the ongoing removal of vegetation layer to the peat storage areas and the condition of surface vegetation in storage
- Check the screening and wildlife proofing on the palisade security fence (both inside and outside the compound) in relation to required avian and non-avian mitigation measures. It was noted that considerable effort has been put into fulfilling these requirements.

Additional site inspections, with regard to faunal mitigation measures in particular, were undertaken by other members of the Project ecologist's team during November.

Corrib Onshore Pipeline
Monthly Archaeological Report
Aughoose Site

DoAHAG Licence number: 11E0214
DoAHAG Metal detection Licence ref: 11R0090
Director: James Kyle

Month Ending: 30th November 2011

COURTNEYDEERY 
Heritage Consultancy

IAC Irish Archaeological
Consultancy

1.0 General Review of Works

1.1 Stage (i) Works

Works commenced Monday the 25th of July 2011.

2.0 Staffing Levels

The following licenced archaeologists are present to monitor all ground breaking and excavation:

Site Director – James Kyle,
Archaeologist - David Bayley.

All plant machinery is provided by Roadbridge Ltd.

3.0 Areas Investigated

Construction works were carried out on several areas of the Aughoose site these were monitored under strict archaeological supervision (Plate 1-7). These works (Figure 1) comprised:

- The construction of further v-ditches to assist drainage and link to the existing network of lagoons/silt ponds, in advance of future works continued (Plate 1).
- The removal of the surface vegetation of peat into turves, this enabled its transport and safe storage. This activity took place in advance of the main site access road works (Plate 2).
- The bulk excavation of peat to facilitate the construction of the next phase of the main site access road and new compound area (Plate 3).
- Bulk excavation of peat for both the northeast and northwest shear keys was carried out, with a peat stone matrix employed as part of the construction of each shear key (between 0.30m and 0.50m of peat was left *in situ* at the base of the excavation) (Plate 4 and 5).
- Auxiliary temporary drainage works (Plate 6).

In addition to the above; all construction works which had any impact on the peat and the underlying residual ground substrate were monitored and nothing of archaeological significance was revealed.

4.0 Projected Future Work and Staff

Archaeological monitoring will be undertaken during the construction phase of the project to determine the presence (if any) of below ground archaeological features. This will be conducted by two licenced archaeologists, James Kyle and David Bayley, on a week on; week off rotational basis.

5.0 Reporting

The monthly report records the extent of works requiring archaeological monitoring and in the event of archaeological material being revealed will record, photograph and map any new discovery. As part of the licensing requirement a final report will be completed upon the cessation of ground breaking and excavation works. This report will describe in detail the results of the archaeological monitoring programme and will be sent to the statutory authorities in accordance to the licensing agreement.

6.0 Location of Artefacts and Samples

To date no artefacts or samples have been retrieved from site.

7.0 Information any Unforeseen Difficulties

Bulk excavation was suspended on the 24th and the 29th of November due to the 3-day mean rainfall limits having been exceeded. Archaeological monitoring of the turving process continued through out each of these days, excavation recommenced on the following day in each case.

8.0 Health and Safety Issues

Both on site archaeologists have been inducted after receiving the requisite conflict management training and manual handling training.

Summary

Nothing of an archaeological significance has been uncovered as a result of works on site to date.



Plate 1: V-ditch at north-eastern end of new compound area, facing northwest



Plate 2: Turving, central area of site, facing west-northwest



Plate 3: Backfilling of main compound excavation, facing north.



Plate 4: North-west shear key excavation, facing north



Plate 5: Continuation of north-west shear key excavation, facing north. Note peat became deeper and less stable as excavation progressed to the northwest.



Plate 6: Drain excavation on northern side of access road, facing southwest.

