

CORRIB GAS DEVELOPMENT

Report for PMC Meeting dated 11th February 2009.

**Prepared by Mr. Padraic Walsh, Senior Engineer,
Project Manager for Mayo County Council.**

Water Quality – Carrowmore Lake

- Mayo County Council's Project Team has continued to monitor the surface waters in and around the Bellanaboy site. Summaries of the most recent verified results are attached, which are available on Mayo County Council Website www.mayococo.ie.
- The results show that in the last monitoring period the discharge of surface water from the Terminal Site has had no significant impact on the water quality of the Bellanaboy River and Carrowmore Lake.
- The results also show that the discharge of surface water from the Terminal Site has had no adverse impact on the quality of drinking water produced at the Erris Regional Water Supply Scheme at Barnatra.

Environmental Issues at the Bellanaboy Site

- Construction work at the terminal site is ongoing.
- Surface water runoff from the terminal footprint, the carrier drain road and other roads outside the terminal footprint, is treated by the axonics unit prior to discharge to the site drainage system.
- During the last two months the site experienced significant rainfall which resulted in two exceedances in water quality parameters. As outlined above, these exceedances have had no significant impact on the water quality of the Bellanaboy River and Carrowmore Lake.
- Specific work activities outside normal hours have commenced and will be ongoing over the next few months, subject to noise level restriction and the developer providing continuous noise monitoring which is submitted in a fortnightly report to Mayo County Council.
- A meeting took place on site on 13th January with representatives of the North Western Regional Fisheries Board. The water sampling points on site were inspected and the monitoring and results reporting procedures were discussed in detail.

Community Fund

- **The Bangor Angling Scheme** – (Budget €185,000).
The Planning phase of this project has been completed. Construction will commence mid-February and is expected to be substantially complete by the end of March.
- **Bellanaboy Village Scheme** – It is proposed to provide new footpaths and public lighting from terminal gate to Bellanaboy bridge on R314, length 1.32km. The estimate to carry out these works is €400,000, and this has been sent as an application for funding.

Transportation/Roads

- Deliveries of abnormal loads have been completed.
- R314 and L1202 – These works are due for completion by mid March.

CARROWMORE LAKE

Results from 18/11/08 to 13/01/09 (8 Samples taken)

Analysis by Bord na Mona Laboratory Newbridge, Co. Kildare

Parameter	Units	Average	Max	Min
Suspended Solids	mg/l	5	6	5
Turbidity	N.T.U	5	8	4
pH	pH units	7.2	7.6	7.1
Conductivity	uS/cm	156	301	123
Phosphate Total	mg/l P	<0.01	<0.01	<0.01
Phosphorous	mg/l P	<0.05	0.06	<0.05
Ammonia	mg/l NH ₃ -N	<0.02	0.03	<0.02
Nitrate	mg/l NO ₃ -N	<0.2	<0.2	<0.2
Nitrite	mg/l NO ₂ -N	<0.02	<0.02	<0.02
Total Aluminium	ug/l Al	142	236	84

ERRIS REGIONAL WATERWORKS (Final Treated Water)

Results from 4/12/08 to 2/02/09 (61 Samples)

Analysis carried out at Erris Regional Waterworks

Parameter	Units	Average	Max	Min	Drinking Water Limits
Colour	mg/l	3	10	0	<10 Haz
Turbidity	N.T.U	0.15	0.81	0	<2.0 NTU
Ph	pH units	7.3	8.4	6.5	6.5 – 8.5
Free Chlo/Res	mg/l	0.85	1.30	0.31	>0.3
Total Chlo/Res	mg/l	0.97	1.50	0.35	>0.3
Flourine	ppm	0.74	1.06	0.50	0.6-0.8
Total Aluminium	ug/l	23	125	5	200

BELLANABOY RIVER
(Upstream and Downstream of discharge from Terminal site)
Results from 18 /11 /2008 to 13/01/2009 (8 samples)
Analysis by Bord na Mona Laboratory Newbridge, Co. Kildare

Parameter	Units	BEL 1 (upstream)			BEL 2 (downstream)		
		Average	Max	Min	Average	Max	Min
Temp.	°C	6.1	9.4	2	6.5	9.5	2
Dissolved Oxygen	% Sat.	92	98	86	92	99	87
Suspended Solids	mg/l	5	5	5	5	6	5
Turbidity	N.T.U	3	7	2	4	8	2
pH	pH units	6.5	7.3	6.3	6.6	7.3	6.3
Conductivity	uS/cm	141	249	92	153	260	102
Total Dissolved Solids	mg/l	98	156	74	111	158	74
Phosphate	mg/l P	0.02	0.03	0.01	0.02	0.06	0.01
Total Phosphorus	mg/l P	<0.05	<0.05	<0.05	<0.05	0.06	<0.05
Ammonia	mg/l NH ₃ -N	0.03	0.10	0.02	0.03	0.11	0.02
Nitrate	mg/l NO ₃ -N	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Nitrite	mg/l NO ₂ -N	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Aluminium	ug/l Al	175	134	29	88	132	51

SP1 (Discharge point from terminal site)
Results from to 18/11/09 to 13 /01/09 (8 Samples)
Analysis by Bord na Mona Laboratory Newbridge, Co. Kildare

Parameter	Units	SP 1		
		Average	Max	Min
Suspended Solids	mg/l	5	7	5
Turbidity	N.T.U	7	16	3
pH	pH units	7.4	7.7	7.2
Conductivity	uS/cm	267	345	201
Total Dissolved Solids	mg/l	183	218	142
Phosphate	mg/l P	<0.01	<0.01	<0.01
Total Phosphorus	mg/l P	<0.05	0.06	<0.05
Ammonia	mg/l NH ₃ -N	<0.02	<0.02	<0.02
Nitrate	mg/l NO ₃ -N	<0.2	<0.2	<0.2
Nitrite	mg/l NO ₂ -N	<0.02	<0.02	<0.02
Total Aluminium	ug/l Al	326	729	59

Axonics Water Treatment Units (Post-treatment Results)
Results from 18 /11 /2008 to 13/01/2009 (8 samples)
Analysis by Bord na Mona Laboratory Newbridge, Co. Kildare

Parameter	Units	Post-Treatment (8 Samples)		
		Average	Max	Min
Suspended Solids	mg/l	5	7	5
Turbidity	N.T.U	3	7	2
pH	pH units	6.7	7	6.6
Conductivity	uS/cm	348	417	308
Total Dissolved Solids	mg/l	203	242	173
Phosphate	mg/l P	<0.01	<0.01	<0.01
Total Phosphorus	mg/l P	<0.05	0.06	<0.05
Ammonia	mg/l NH ₃ -N	0.03	0.07	<0.02
Nitrate	mg/l NO ₃ -N	0.49	2.14	<0.2
Nitrite	mg/l NO ₂ -N	<0.02	<0.02	<0.02
*Total Aluminium	ug/l Al	452	1212	207

Bellanaboy Bridge Site

Report to the Project Monitoring Committee

11th February 2009

Works Undertaken

The following construction operations are ongoing:

- Operation of Axonics plant
- Environmental and geotechnical monitoring
- Civil's and foundations works
- Erection of structural steel
- Scaffolding erection
- Piping installation on pipe racks, on sleeperways and below ground.
- Building works.
- Electrical works including cable rack installation and cable installation.
- Process equipment deliveries and installation.
- Tankage grit blasting and painting.
- Testing of pipe work

Outlook from February 2009 Onwards:

- Continuation of environmental monitoring and Axonics operation.
- Continuation of civil and foundation works.
- Continuation of structural steel erection.
- Mobilisation of additional electrical resources.
- Continuation of electrical works
- Continuation of scaffolding erection
- Continuation of piping installation
- Continue building works
- Continued testing of pipe work.
- Continuation of installation of process equipment.
- Continuation of tankage grit blasting and painting.

ENVIRONMENTAL REPORT

Dust - Dust results of 172, 37, 144 and 39 mg/m²/day were recorded at D1, D2, D3 and D4 respectively for December.

Dust results of 295, 324, 261 and 324mg/ m²/day were recorded at D1, D2, D3 and D4 respectively for January. All values were within the limit of 350 mg/ m²/day.

Noise – All construction related noise levels recorded were below the agreed noise limits and any unusual values were attributed to activities

immediately adjacent to the monitoring location or elevated wind speeds.

Vibration monitoring – All vibration monitoring results were within guidance values.

Traffic – There were approximately 135 construction HGV movements during December and 102 in January.

Fuel – Approximately 269.63 m³ of fuel was delivered to site in December and January.

Waste – 6 skips of refuse (Canteen waste, etc.), 7 skips of cardboard/plastics, and 2 skip of metal waste were removed off site during December and January. The effluent holding tanks were emptied of approximately 1751m³ during December and January. There were 2 hazardous waste collections for the removal of oily waste and chemical waste for the same period.

Water Quality – All monitoring and sampling locations were accessible for download, recalibration and reinstallation during the months of December and January. A summary of the main surface water parameters measured for grab sampling during December and January (available range of lowest to highest) at SP1 is presented below:

pH (pH Units)

6.5 to 7.1

Suspended Solids (mg/l)

2 to 11

Orthophosphate (µg/l P)

10 to 30

Nitrite (mg/l NO₂)

0.017 to 0.019

Conductivity (µS/cm)

202 to 309

Turbidity (NTU)

4.5 to 14.8

Groundwater samples were taken and borehole monitoring equipment was downloaded for the months of December and January. A summary of the main groundwater parameters measured (range of lowest to highest) follows:

pH (pH Units)

5.2 to 6.6

Conductivity (µS/cm)

157 to 466

Nitrate (mg/l NO₃)

<0.44

Total Dissolved Solids (mg/l)

74 to 227

Complaints – There were no construction activity related complaints logged with SEPIL during the months of December and January.

Incidents – There were no environmental incidents during the months of December and January.

Exceedances – There were 6 no total aluminium and 1 total suspended solid exceedances during December and January. The exceedances were dated as outlined below (limit is 200 ug/l):

Date	Total Al (µg/L)
04/12/2008	255
08/12/2008	175
16/12/2008	219
22/12/2008	226
07/01/2009	110
13/01/2009	261
22/01/2009	267
27/01/2009	203

The exceedances were marginal and attributed to heavy, persistent rainfall events. The site drainage was assessed and improvements were undertaken to ensure that sufficient storage capacity were available for water.

Necessary Environmental Works

- Continue operation of on-site surface water treatment plant.
- Removal of all waste and effluent from site on an as needs basis.
- Inspect, repair (when required) and recalibrate all in situ monitoring equipment.
- Monitor/sample and download water (surface and ground) quality monitoring devices.

Environmental Improvements

- Further training undertaken with Emergency Spill Response Team. Exercises were undertaken to assess site procedures and identify areas of improvement.

Water Quality Monitoring Graphs

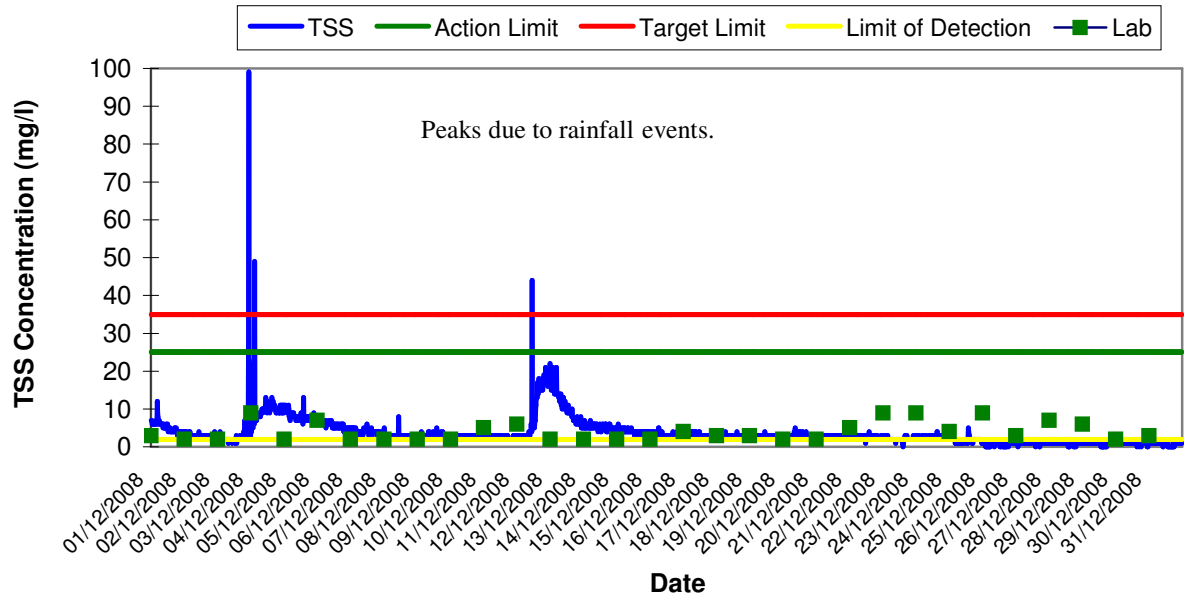
Graphs are attached for monthly continuous monitoring data at SP1 during December and January for total suspended solids, turbidity, and orthophosphate. Please see commentary below for each graph.

Total Suspended Solids: The graph shows two short term spikes during December and January. On the 22nd of January there was elevated TSS. This was as a result of a period of very heavy rainfall. The TSS limit was marginally over the 35mg/l limit for approximately an 8 hour period.

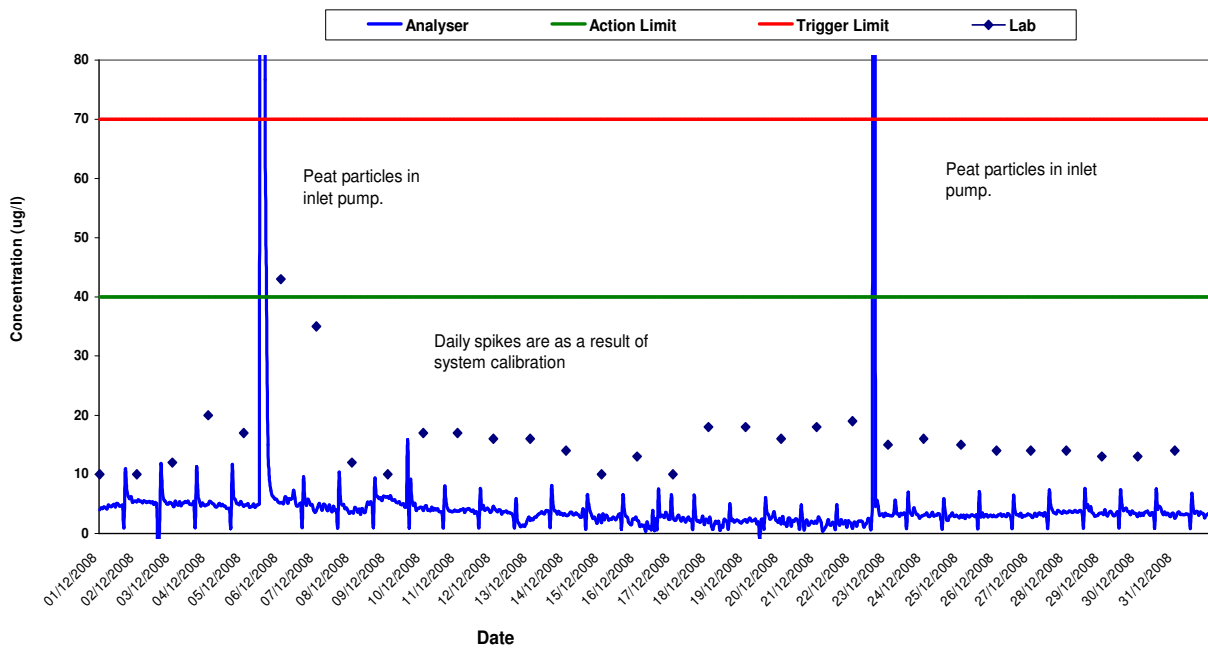
Turbidity: The graph showed a series of temporary short-term spikes over the two months. On site testing shows negligible values on these days indicating that the spikes are due to fluctuations in flow rates and material lodging in the probe.

Orthophosphate: The graphs shows a spike during the month of December and January which was, on investigation, found to be a false reading due to a technical errors with the instrument. The instrument specialist later rectified the problem as shown in the graphs.

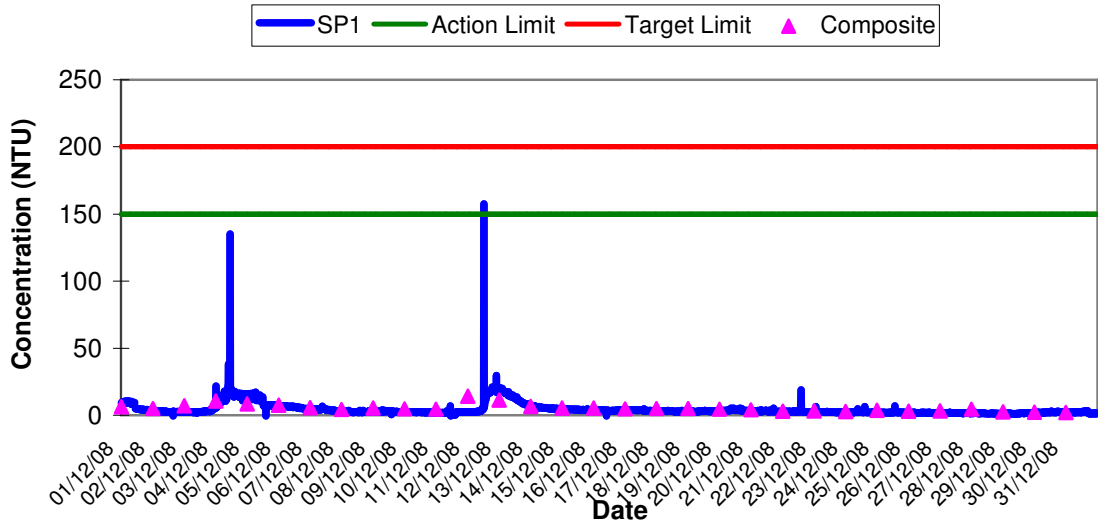
Total Suspended Solids Results at SP1 December 2008



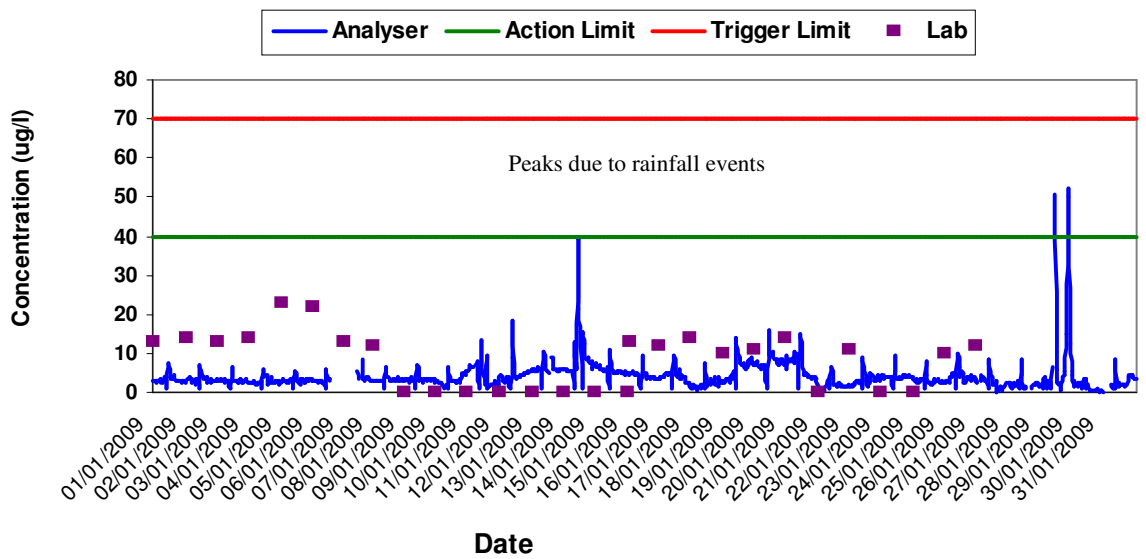
Orthophosphate Results at SP1 December 2008



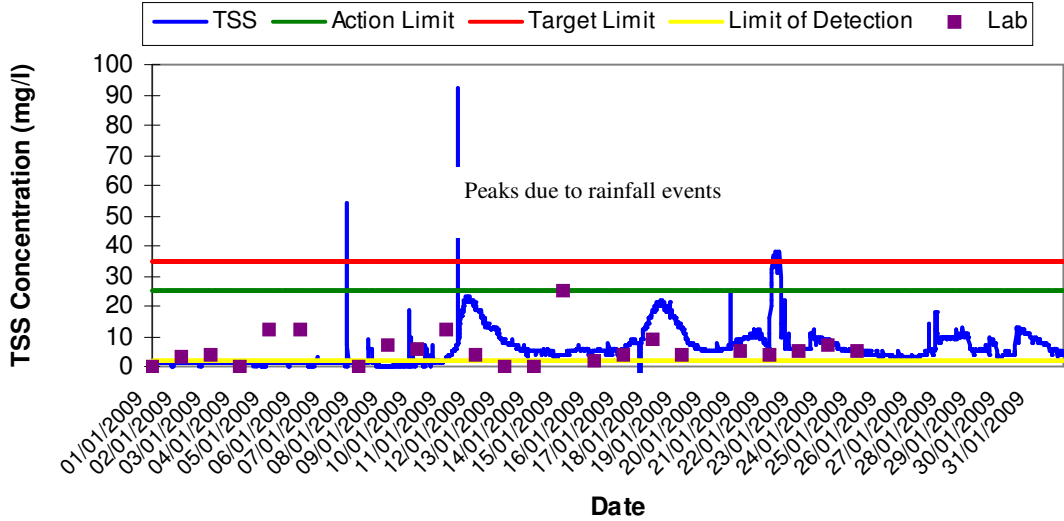
Turbidity Results at SP1 December 2008



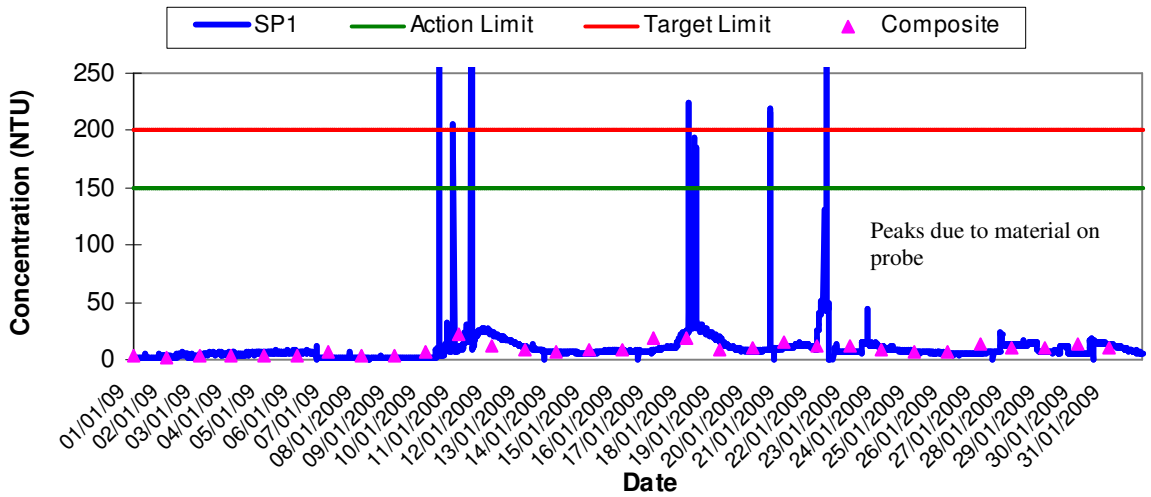
Orthophosphate Results at SP1 January 2009



Total Suspended Solids Results at SP1 January 2009



Turbidity Results at SP1 January 2009



Srahmore Peat Repository
WL 0199-01

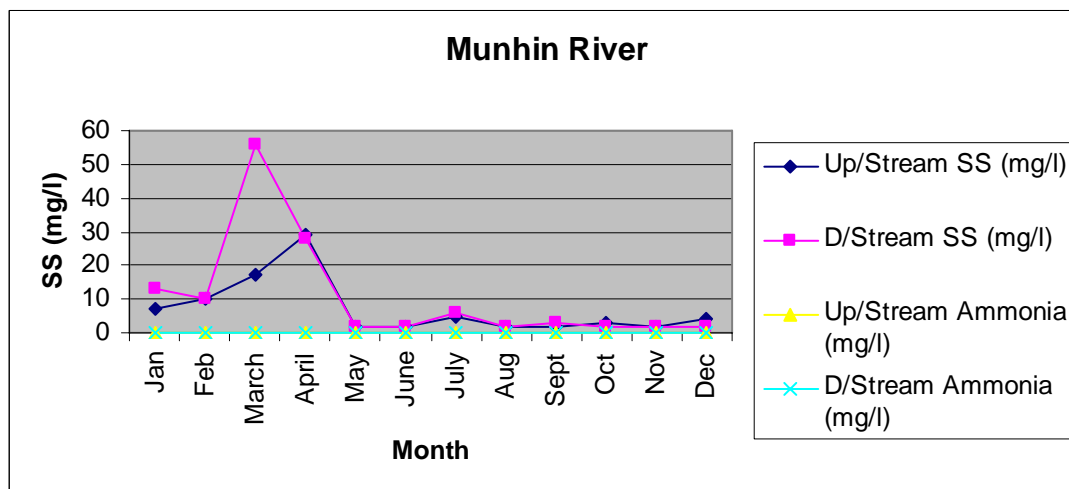
Environmental Management System Up-Date No. 37(09/02/09)

Decommissioning and Rehabilitation

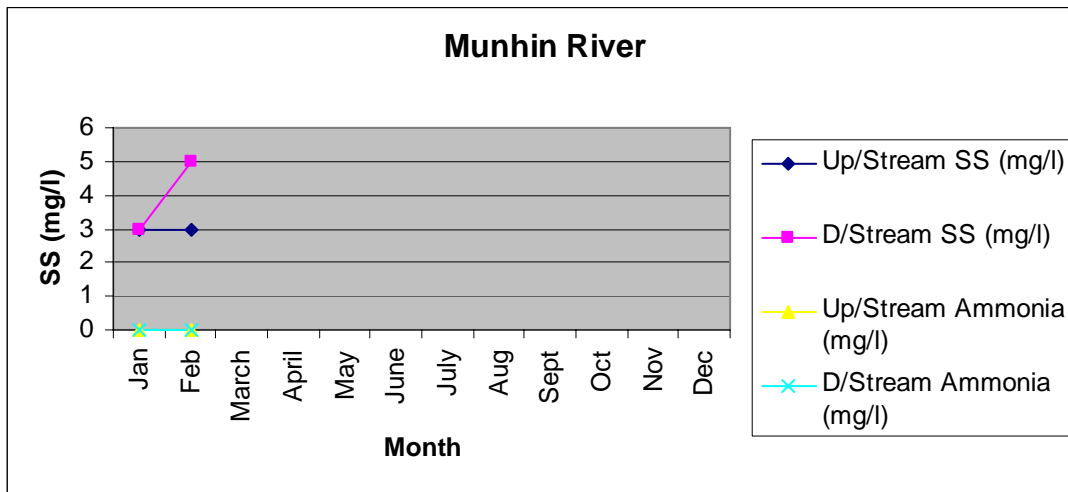
Environmental Monitoring:

- There were No non-compliances at the site since the last meeting
- There were No complaints received at the site since the last meeting.
- There were No incidents recorded at the site since the last meeting.

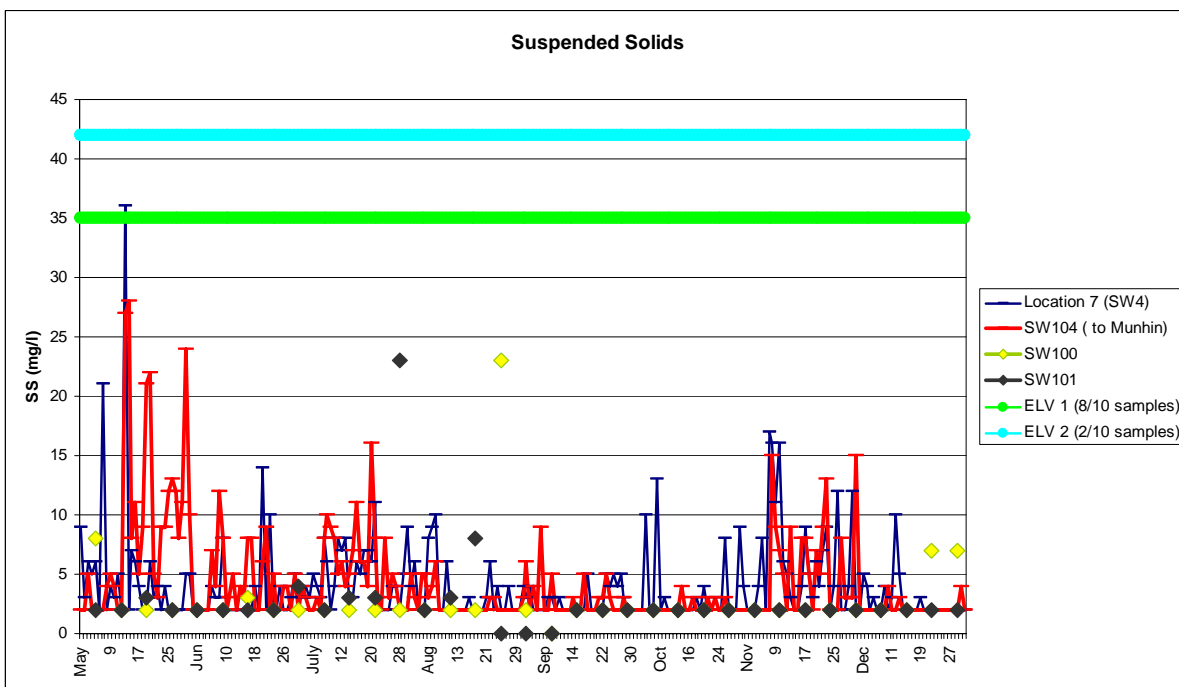
Monitoring Results: Munhin River (2008)



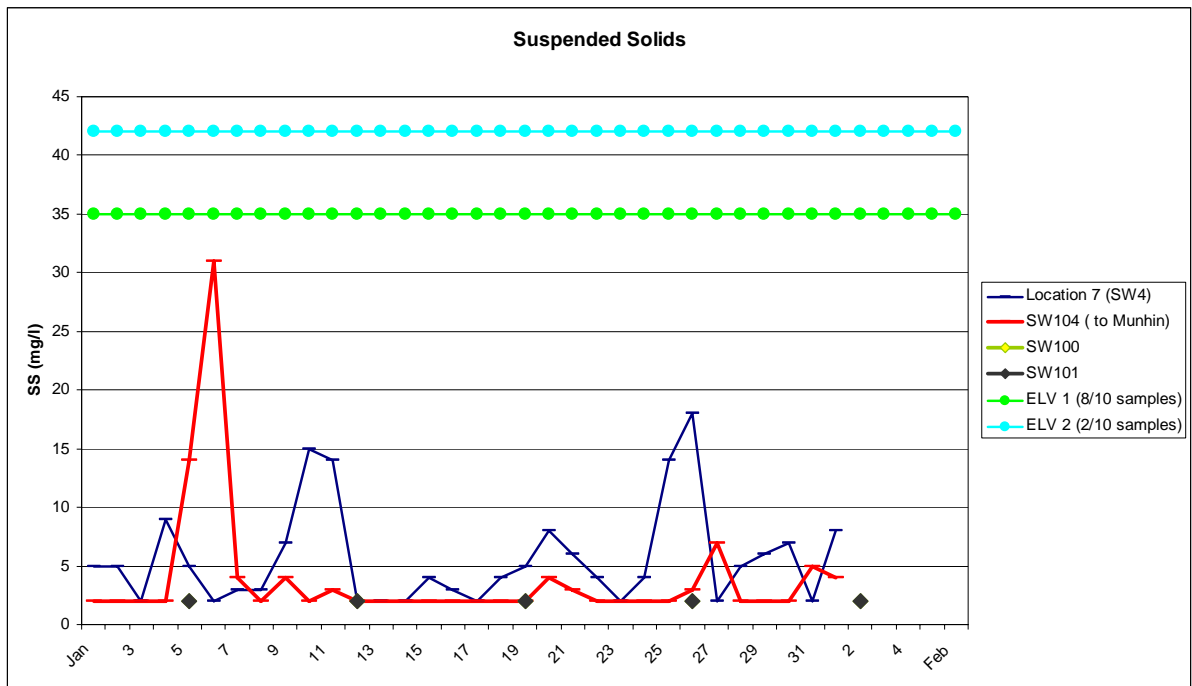
Monitoring Results: Munhin River (2009)



Monitoring Results: SW4/104/100&101 (2008)



Monitoring Results: SW4/104/100&101 (2009)



The average SS mg/l for SW4 for 2008 was 5.8mg/l and 4.6mg/l at the discharge from the site to the Munhin at SW104

Srahmore Site Update:

Personnel:

On Site

		Tractor & General Oper.		Environmental	0
BnM (Engineering)	0	Fitters	0	Archaeological	0
Site Admin & Mgt.	1	Electricians	0		
		Site Supervisors	0		
		Excavator & Shovel	0		
TOTAL EMPLOYED					1

Contractors

Security	0	Catering	0		
TOTAL EMPLOYED					0

Off Site

Head Offices Staff	1			BnM (Support)	1
Environmental Officer	1				
TOTAL EMPLOYED					3

OVERALL TOTAL EMPLOYED					4
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On-going work:

Environmental monitoring as per waste licence WL 0199-01

As of the 9th February 2009, the Srahmore site is Compliant.

CORRIB GAS DEVELOPMENT

PROJECT MONITORING COMMITTEE

Minutes of the Project Monitoring Committee Meeting held on 10th December 2008 at 5.30pm in the Park Inn Hotel, Mulranny, Co. Mayo.

Present:

Chairman:

Mr. D. Mahon, County Manager
Mr. Gerry Costello, Shell E & P Ireland Limited
Mr. Brendan Butler, Shell E & P Ireland Limited
Mr. Tony Doyle, Shell E & P Ireland Limited
Ms. Aoife Reynolds, Shell E & P Ireland Limited
Mr. Denis Strong, NPWS, DoEHLG
Mr. Dick McKeever, Dept. Agriculture, Fisheries & Food
Mr. Vincent Roche, North Western Regional Fisheries Board
Garda James Gill, Garda Síochana
Mr. Seamus Gaughan, Community Representative
Mr. Kieran Lynn, Mayo County Council
Mr. Peter Hynes, Mayo County Council
Mr. Richard Cosgrove, Bórd na Móna

Apologies:

Mr. Gerard McDonnell, Community Representative
Mr. Nicholas Whyte, Community Representative
Ms. Agnes McLaverty, Shell E & P Ireland Limited
Mr. Ciarán Ó hÓbáin, Dept. CENR
Mr. Ray Smith, EPA

In attendance:

Ms. Susan Shannon, Social Investment Representative, Shell E & P Ireland Limited
Ms. Muriel Finnerty, Mayo County Council

1. Minutes

The Minutes of the Project Monitoring Committee Meeting, held on 15th October 2008 and already circulated, were approved having been proposed by Mr. Roche and seconded by Mr. Costello.

2. Matters arising

There were no matters arising.

3. Water Quality – Carrowmore Lake

Mr. Lynn outlined to the meeting the up to date position in relation to water quality of Carrowmore Lake and he confirmed that the discharge of surface water from the Terminal Site has had no significant impact on the water quality of the Bellanaboy River and Carrowmore Lake. Summaries of the most recent results and Mr. Lynn's report are available on the Mayo County Council website – www.mayococo.ie Following discussions on the report it was agreed that personnel from the NWRFB, Mayo County Council and SEPIL would meet on site.

4. Updates:

Roadworks/Transportation.

Mr. Lynn informed the meeting that deliveries of heavy/long loads are continuing.

Bord na Móna

The report on the Shrahmore Peat Repository, which had already been circulated, was noted. A copy of this report is available on www.mayococo.ie

5. Update on Terminal

Mr. Butler updated the meeting on the Terminal building as set out in report dated 10th December 2008 – copy of which is available on www.mayococo.ie He indicated that the project is two-thirds complete with 950 people employed at present.

6. Environmental Issues

Mr. Doyle outlined to the meeting the current position in respect of environmental issues, as set out in report circulated on the Bellanaboy Bridge Site – copy of which is available on www.mayococo.ie He indicated that there were no serious matters arising on site during the period covered in the report.

7. Community Fund

The position in relation to the projects being carried out under the Community Fund was outlined, as set out in report prepared by Mr. Lynn – copy of which is available on www.mayococo.ie.

- ❑ Attawalla – project complete
- ❑ Bellanaboy Community Group Scheme – project complete
- ❑ Glencullen River Scheme – project complete
- ❑ Bangor Angling Scheme –
Mr. Gaughan indicated that a meeting is being arranged between Mayo County Council and Officers of the Angling Club in order to clarify any outstanding issues.
- ❑ Bellanaboy Village scheme –
Mr. Costello informed the meeting that this project is still under consideration.

The Chairman outlined details of the recently established North West Mayo Community Forum and indicated that the element relating to socio-economic development of the North West Mayo Region would be undertaken by Mayo County Council as the lead Authority. He also outlined the importance of making this happen quickly, which will give tangible benefit for the community as a whole, and he asked for the co-operation and support of the PMC in this task. This was agreed by each Agency present.

Address by Social Investment Advisor (SEPIL)

Ms. Susan Shannon, Social Investment Advisor with SEPIL addressed the meeting and outlined details of social investment by Shell in the Erris region.

She informed the meeting that while investment from the fund does not cover infrastructure in the area, it is hoped it would mirror the investment fund recommended in the Cassells Report and provide sustainable projects. Proposals submitted to SEPIL are evaluated by an Advisory Panel, (which consists of representatives of Mayo County Council, County Enterprise Board, Leader, Údarás na Gaeltachta and the Council for the West), and this Panel makes recommendations to the Shell Management Team on projects considered suitable for funding . Ms. Shannon advised the meeting that €1.4m has been committed to social investment in the area since 2006.

8. Local Issues

There were no issues raised.

9. Any other business

There were no matters raised.

It was agreed that the next meeting of the PMC will take place on 11th February 2009 in Castlebar.

This concluded the business of the meeting.