



Department of Communications, Energy and Natural Resources
Roinn Cumarsáide, Fuinnimh agus Acmhainní Nádurtha

22 December, 2011

Mr. Michael Crothers
Managing Director
Shell E & P Ireland Ltd
Corrib House
52 Lower Leeson Street
Dublin 2

Dear Michael,

As you are aware, Condition 2 of the Consent to Construct the Corrib Gas Pipeline granted on 25 February, 2011 pursuant to section 40 of the Gas Act, 1976 requires that

“The Corrib Gas Partners shall prepare management plans/procedures to ensure that the mitigation and monitoring controls identified in the Offshore EIS, the 2010 Offshore Supplementary Update Report, the Onshore EIS and Additional Information are appropriately managed and implemented, such management plans/procedures to include all matters required by these Conditions. The Corrib Gas Partners shall not undertake any works pursuant to this consent until they agree the management plans/procedures with the Department of Communications, Energy and Natural Resources (“DCENR”).

The Corrib Gas Partners shall comply with management plans and procedures agreed with DCENR and any other plans, procedures, conditions, directions or other obligations imposed by any relevant authority, which shall include the Minister, pursuant to these Conditions.”

On 15 July, 2011, this Department (‘DCENR’) indicated by letter that it was satisfied with the Environmental Management Plan (EMP) submitted by Shell E & P Ireland Ltd (SEPIL) on 8 July 2011 with respect to the proposed 2011 schedule of works i.e. the construction of the site compound at Aghoose and the conduct of offshore surveys.

Since the commencement of the permitted works, independent consultants engaged by DCENR (ENVIRON) have been monitoring activities, including undertaking site visits at Aghoose, to ensure compliance with both the conditions of the section 40 consent and SEPIL’s commitments as outlined in the 2011 EMP.

I understand that at some time in late October an incident was identified by Mayo County Council whereby untreated surface water from the peat storage area on the eastern side of the Aghoose compound was found to be discharged offsite at the

discharge point DL3 via the natural drainage channel. This discharge was not in compliance with the requirements of the EMP.

Furthermore, there was a considerable delay in this matter being brought to the attention of DCENR leading to a delay in ENVIRON being able to consider the implications of the incident with respect to DCENR's consents.

ENVIRON has undertaken an investigation and the attached report sets out its findings and recommendations in this regard.

While ENVIRON has found that the incident represents breaches of the EMP surface water drainage requirements in terms of both:

- Correct installation of drainage controls to ensure that run-off water is treated prior to discharge; and
- Non-compliance with the surface water discharge criteria defines in Appendix K of the EMP,

ENVIRON concluded that due to the limited duration of the incident and absence of visual peat siltation downstream of the DL3 discharge location, the environmental consequences of the incident were not significant on this occasion.

This incident has nevertheless highlighted procedural concerns resulting in recommendations from ENVIRON that SEPIL reviews its management control and training procedures to ensure that similar failures of procedure do not occur. Going forward any environmental incident, whether identified by SEPIL, or during inspections by third parties, must be reported immediately to DCENR.

A second issue has also been raised by ENVIRON in terms of non-compliance with noise monitoring requirements with respect to the works being undertaken at the Aghoose site. Condition 20 of the section 40 consent requires

“A detailed noise monitoring, prevention and mitigation programme for the construction phase shall be agreed by the Corrib Partners with DCENR and incorporated, as an overriding priority, within the management plans/procedures to be prepared under Condition (2)”

The current EMP sets out SEPIL's commitments with respect to noise monitoring i.e. it identifies two locations where noise monitoring will be undertaken and commits to undertaking additional noise monitoring in response to requests from residents.

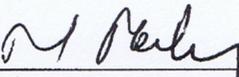
The attached report from ENVIRON indicates that SEPIL has not satisfied its commitments in this regard and due to the unreliability of its noise monitoring stations, it remains in continuing breach of the EMP with respect to its noise monitoring obligations. ENVIRON has made a number of recommendations in its reports to mitigate this breach and has recommended certain actions be undertaken by SEPIL by the beginning of January, 2012.

The occurrence of any breach of the EMP is a matter of concern for the Department. Should there be future incidents of continuing non-compliance, or material incidents resulting in significant environmental impact in breach of the conditions of consent and EMP commitments, the Department will consider measures up to and including

requiring the cessation of works until such time as compliance with the statutory permissions can be demonstrated.

I would welcome early confirmation that SEPIL has satisfactorily addressed the issues identified in ENVIRON's reports and demonstration that SEPIL is complying with the requirements of the Section 40 consent and its 2011 EMP commitments.

Yours sincerely



Michael Manley
Assistant Secretary

16/12/2011

Orla Ryan
Petroleum Affairs Division
Department of Communication Energy & Natural Resources
29 – 31 Adelaide Street
Dublin 2
Ireland

Our Ref: JJH/JJH/L_UK2216942_2 Issue 1

Dear Orla

Re: Corrib Environmental Incident 001, Surface Water Discharge, October 2011

Introduction and Background

In relation to surface water management during the construction of the Corrib gas pipeline it is a requirement of the Environmental Management Plan (EMP) that:

“Run off generated on-site, or within the temporary working area, will be collected and treated by attenuation, settlement and high rate clarification prior to discharge to the receiving environment”.

During the current phase of construction, and in order to meet this EMP requirement, it has been agreed with DCENR and Mayo County Council that all run-off water from the Aghoos compound will be routed to a water treatment system (via onsite settling ponds) prior to discharge at discharge location DL2 (see attached figure). A natural drainage ditch runs along the eastern side of the Aghoos compound, leaving the site at discharge location DL3, which comprises a small setting pit at the outfall. During periods when potential silted water from disturbed land areas are routed to DL3 (for example during erection of the site fencing in the north-east perimeter of the site), water from this pit is pumped to main surface water treatment facilities prior to final discharge from DL2.

An incident was first identified by Mayo County Council in late October 2011 whereby surface water from the peat storage area on the eastern side of the Aghoos compound was found to be discharged off site at discharge point DL3 via the natural drainage channel. Furthermore, the pump to direct water from DL3 to the site surface water treatment system was not in place at the time. As such, runoff water from disturbed areas on the site (i.e. the eastern peat storage area) were being discharged offsite untreated. This was not in compliance with the requirements of the EMP. Upon identification of this issue, the discharge from the peat storage area was re-routed to the site settling ponds and surface water treatment system as required. These immediate corrective actions were implemented in good time and prior to ENVIRON's next site visit in early November 2011. However, notification of the incident having occurred was not provided to ENVIRON until late November.

Following notification of the incident, ENVIRON confirmed that the immediate corrective actions had been implemented and further requested that SEPIL provide a formal report to describe:

- What happened (e.g. how, why and where the drainage channel was installed and discharged to)

- What corrective action was undertaken (rectification of the drainage and actions taken to prevent re-occurrence)
- Monitoring undertaken (and results) and assessment of significance of the unauthorised release on the receiving environment.

This report was provided for review on the 15 December 2011.

SEPIL Incident Report

The SEPIL Incident Report provides an overview of the sequence of events (although we note that dates are not always provided). The report also provides an assessment of the environmental significance of the non-compliance and an overview of corrective actions. These are summarised and discussed below.

Assessment of Significance

The Incident Report provides details of monitoring data from DL3 from August 2011 through to the end of November 2011. These identify elevated levels of Total Suspended Solids (TSS) in discharged waters from DL3 in the period 18th to 20th October 2011 (the time of the incident) which are out of compliance with discharge levels set in the EMP (see Table below).

	EMP Discharge Criteria		Monitored TSS at DL3 (mg/l)		
	Criteria	95 th ile (Upper Tier Limit)	18/10/11	19/10/11	20/10/11
TSS (mg/l)	50	70	122	70	88

The Incident Report provides a reasonable assessment of the significance of these exceedances and concludes that resultant increases suspended sediment in receiving surface waters was not significant.

Based on the assessment provided, the limited duration of the incident and the absence of visual peat siltation downstream of the DL3 discharge location, we conclude that the actual environmental consequences of the incident were not significant in this instance.

Remedial Actions

Immediate remedial actions undertaken by SEPIL were to re-route runoff water from the eastern peat storage area to the site water treatment system.

Other actions identified in the Incident Report are:

- Re-installation of the pumping arrangement at DL3.
- Surface water management in the peat storage area has been augmented including silt fencing and additional pumps.
- The surface water treatment system is being up-scaled to include additional Siltbuster units and filtration units.
- A network of v-drains will be installed to collect surface water from the site perimeter wherever water is pooling (this work will be undertaken in accordance with provisions outlined in the geo-technical risk register).
- The augmenting and up-scaling of the surface water management system including the verification of adequate pumping facilities and providing additional local water retention capacity to ensure that adequate water retention and handling capacity is maintained as required for the upcoming earthwork activities. This will include the provision of temporary/permanent settlement ponds/tanks.

ENVIRON concurs that the above actions (some of which were being planned in any case) are appropriate. However, in addition to these actions we further recommend that SEPIL reviews their management control and training procedures to ensure that similar failures of procedure do not re-occur. Such procedures will be reviewed by ENVIRON during site visits.

Conclusions

We make the following conclusions:

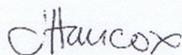
- The incident represents breaches of the EMP surface water drainage requirements in terms of both:
 - Correct installation of drainage controls to ensure that run-off water is treated prior to discharge
 - Non-compliance with the surface water discharge criteria defined in Appendix K of the EMP.
- Based on the assessment provided, the limited duration of the incident and the absence of visual peat siltation downstream of the DL3 discharge location, we conclude that the environmental consequences of the incident were not significant in this instance.
- There was a significant delay in the incident being reported to DCENR.
- ENVIRON concurs that both the immediate corrective actions and longer term improvement actions being implemented by SEPIL are appropriate, although we note that additional corrective actions related to improved procedural controls are also required.

Recommendations

We make the following recommendations:

- In addition to the corrective actions being implemented by SEPIL, we further recommend that SEPIL reviews their management control and training procedures to ensure that similar failures of procedure do not re-occur. Such procedures will be reviewed by ENVIRON during site visits.
- All environmental incidents, whether identified by SEPIL or during inspections by third parties, must be reported immediately to DCENR.
- ENVIRON proposes to increase its frequency of site visits to ensure that the environmental management controls are being fully implemented by SEPIL.

Yours sincerely



Jonathan Hancox
Senior Manager

16/12/2011

Orla Ryan
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29 – 31 Adelaide Street
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Ireland

Our Ref: JJH/JJH/L_UK2216942_3 Issue 1

Dear Orla

Re: Corrib Gas Pipeline Consent Monitoring: Noise Monitoring at Aghoos

Introduction and Background

Noise monitoring around the Aghoos compound during construction is required in line with the requirements of the Environmental Management Plan (EMP). Monitoring results are reported by SEPIL to DCENR via weekly and monthly monitoring reports.

This letter report outlines ENVIRON's current findings on the status of noise monitoring and control.

Current EMP Requirements

The current (2011) EMP requires that noise monitoring be undertaken at two locations on the south eastern and western side of the Aghoos site at locations known as AN1 and AN2. It is a further requirement of the EMP that additional noise monitoring will be undertaken in response to requests from residents.

The EMP also requires that noise levels at the nearest noise sensitive receptor (the nearest sensitive receptor for the Aghoos compound is defined in the ES is AN2 on the eastern perimeter of the site) will not exceed:

Day 0700 – 2000 Hours	Overall Limit 65dB LAeq (1hr)
Night 2000 – 0700 Hours	Target level for design: 35dB LAeq (1hr)
Calm night limit:	40dB LAeq (1hr)
Overall night limit:	45dB LAeq (1hr)

In addition to the above requirements of the EMP, SEPIL applies a day time Action Trigger Level of 60dB LAeq (1hr).

Monitoring Locations

During initial site preparation activities at the Aghoos compound a single noise monitoring station (AN2) was installed adjacent to the eastern boundary of the site. A second monitoring station was installed in mid-October, denoted as "NSR". The location of this station was confirmed during ENVIRON's 8th November site visit as being approximately 200m from the western boundary of the

Aghoos compound, at a private residence. We note that the location is different from, and replaces, the 'AN1' station identified in the EMP. The location has been visited by ENVIRON and appears to be appropriately sited, although a formal amendment to the EMP is required.

Following noise complaints received from a local resident SEPIL agreed to install noise metering equipment at a private property on the northern side of the Bay. SEPIL has reported that this monitoring meter has now been installed.

In addition to these monitoring locations, ENVIRON has previously recommend that a new monitoring station be located on the northern boundary of the compound. This, in combination with monitoring locations NSR and AN2, would enable triangulation of noise monitoring data around the compound. We understand that this additional monitoring location will be installed shortly. We recommend that given the level of noise complaints from the resident on the northern side of the bay that this meter is set up to allow short time period data logging (e.g. 5 minute rather than 15 minute as used on the other existing monitors) to enable detailed analysis of noise data to investigate any future noise complaints.

Reliability of Monitoring Meters

Initial noise monitoring from AN2 had proved reliable, and continuous noise monitoring was successfully performed from September 2011 through to mid-October 2011. However, in the period since mid-October the reliability of the NSR and AN2 monitors has significantly deteriorated. To illustrate this point a summary of the periods in November 2011 during which the monitors at AN2 and/or NSR were not operational is provided below.

Meters operability	No. Days (5 day working weeks)			
	W/E 9/11/11	WE 16/11/11	WE 23/11	WE 30/11
Both NSR and AN2 operable	4	3	0	0
Only one meter operable	1	1	2	4
Both AN2 and NSR inoperable	0	1	3	1

This level of unreliability means that SEPIL is not meeting its requirements for noise monitoring under the EMP. In addition, the lack of available data makes confirmation that the project is in compliance with it noise criteria impossible.

The reliability issues appear to be mainly due to power supply issues and SEPIL is looking to rectify this by providing mains supply to these meters. In the case of NSR, this requires negotiation with the occupier of the residence to enable the meter to be connected to the domestic mains supply. We understand that these negotiations are in progress, and we strongly support this initiative.

We make the following recommendations to improve the reliability of noise monitoring:

- If mains supply cannot be agreed at NSR this meter could reasonably to relocated to AN1 (as originally planned for in the 2011 EMP), where electrical supply could be provided from the Aghoos site utilities.
- Reliable power supply for the new noise meter to be installed on the northern perimeter of the Aghoos compound needs to be ensured. If power sources other than electrical supply from the onsite utilities is envisaged the reliability of this must be demonstrated to ENVIRON's satisfaction (on behalf of DCENR).
- SEPIL needs a supply of back-up noise meters that can be used when meters are rendered inoperable by other technical problems. We understand that SEPIL has placed such back-up meters on order.

Given the importance of noise related issues in the local community and the duration over which the reliability issues have been ongoing, we recommend that SEPIL implements the above actions as a matter of urgency. Specifically we recommend that alternative, reliable power supplies are made available as soon as possible and we consider that this can be realistically achieved by the beginning of January 2012.

Reported Noise Levels

During November 2011 the reported daily maximum $L_{Aeq}(1hr)$ sound levels were regularly above the 60 $dB_{L_{Aeq}(1hr)}$ Action Level and occasionally above the 65 $dB_{L_{Aeq}(1hr)}$ limit. To illustrate this point the recorded noise levels at NSR during November 2011 are summarised as follows:

Days NSR operable	Daily Maximum > 60 $dB_{L_{Aeq}(1hr)}$		Daily Maximum > 65 $dB_{L_{Aeq}(1hr)}$	
	No. Days	Per cent	No. Days	Per cent
14	7 ¹	50%	3 ¹	21%

¹ Includes one instance where the recorded level was adversely influenced by high wind speed

It is possible that at least some of the above elevated noise recordings may be related to non-project related noise sources. However, this is difficult to determine within the context of available information and in particular the lack of reliable monitoring at NSR and AN2.

Reporting Requirements

To date, noise data has been manually downloaded from the noise monitors. We understand that SEPIL is investigating the use of telemetry to automatically/remotely download data and we strongly support this as it will facilitate rapid identification of both noise level compliance issues and meter operability problems. We note that the use of telemetry is first dependent on the resolution of the power supply issues discussed above.

The weekly and monthly monitoring reports present the maximum 1 hour L_{Aeq} recorded each day at NSR and AN2. This allows basic assessment of compliance with the noise limit set in the EMP. However, we make the following comments:

- In our opinion the apparent frequency with which noise levels appear to exceed the Action Level indicate that:
 - Greater attention needs to be paid to investigate and control noise events above the Action Level.
 - Greater detail on noise reporting to DCENR would be beneficial, either providing all hourly values or at least all values in excess of the Action Level within the weekly and monthly monitoring reports.
- The reported hourly data is based on splitting the day into 24 discrete consecutive 1 hour periods and presenting the daily maximum L_{Aeq} recorded from these one hour periods. ENVIRON has previously recommend that SEPIL investigates the potential to provide rolling 1 hour averages rather than discrete sequential 1 hour values. In response to this SEPIL provided a briefing note explaining the rationale for the use of sequential hour data rather than rolling 1 hour. After reviewing this note ENVIRON accepts that any potential underestimation of maximum 1 hour L_{Aeq} is small (the theoretical maximum under reporting is 3dB and in reality much smaller) and that the use of sequential hour data is common practice. We therefore accept the continued use of sequential hourly data, although the potential for minor under reporting again emphasises the need to pay further attention to exceedances of the Action Level.

Conclusions

We make the following conclusions:

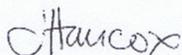
- The unreliability of the NSR and AN2 monitoring equipment means that SEPIL is not meeting its requirements for noise monitoring under the EMP.
- The lack of available monitoring data during periods when the noise monitoring stations are inoperable makes confirmation that the project is in compliance with its noise criteria impossible.
- Available noise monitoring data from November 2011 reveals that Action Levels are regularly exceeded at NSR and the noise limit has been occasionally exceeded. While it is possible that at least some of the above elevated noise recordings may be related to non-project related noise sources, this is difficult to determine within the context of available information and in particular the lack of reliable monitoring at NSR and AN2.

Recommendations

We make the following recommendations:

- In relation to the reliability of noise monitoring stations we recommend that:
 - If mains supply cannot be agreed at NSR this meter could reasonably be relocated to AN1 (as originally planned for in the 2011 EMP) where electrical supply could be provided from the site utilities.
 - A reliable power supply for the new noise meter to be installed on the northern perimeter of the Aghoos compound needs to be ensured. If power sources other than electrical supply from the onsite utilities is envisaged the reliability of this must be demonstrated to ENVIRON's satisfaction (on behalf of DCENR).
 - SEPIL needs a supply of back-up noise meters that can be used when meters are rendered inoperable by other technical problems. We understand that SEPIL has placed these on order.
 - Alternative, reliable power supplies for noise monitoring stations are made available as soon as possible and we consider that this can be realistically achieved by the beginning of January 2012.
- We recommend that the new monitoring meter to be installed on the northern perimeter of the Aghoos compound should be set up to allow short time period data logging (e.g. 5 minute rather than 15 minute as used on the other existing monitors) to enable detailed analysis of noise data to investigate any future noise complaints from residents on the northern side of the bay.
- In the light of available recorded noise levels, particularly at NSR, we recommend that:
 - SEPIL pays greater attention to investigate and control noise events above the Action Level.
 - Noise reporting to DCENR within the monthly and weekly monitoring reports is expanded in detail by either providing all hourly values or, as a minimum, all values in excess of Action Level within the weekly and monthly monitoring reports.

Yours sincerely



Jonathan Hancox, Senior Manager