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To **Oliver Meek**

Dept: Development Planning

**PROPOSED DEVELOPMENT: To develop a hydrocarbon wellsite and drill up to two exploratory hydrocarbon wells (one vertically and one horizontally) by use of a drill rig together with associated ancillary works. The proposed development will be carried out in four phases:**

- **Phase 1: Wellsite construction;**
- **Phase 2: Drilling of up to two exploratory wells for hydrocarbons including potential shale gas (the first one vertical and the second one horizontal);**
- **Phase 3: Suspension of wells and assessment of drilling results;**
- **Phase 4: Site decommissioning, well abandonment and restoration.**

**1. LOCATION:** Land off Springs Road Misson.

**2. APPLICANT:** Island Gas Limited

**3. DATA REVIEWED:**

- 3.1 - IGas Reg22 Response Letter
- 3.2 - Appendix C Noise Contour Plans
- 3.3 - Technical Note C – Supplementary Ecological Information – FPCR – April 2016

**4. Existing Site:** Commercial premises selling ex-army trucks, vehicles, plant and equipment

**5. Noise Impacts:**

The additional noise studies relate to noise impacts on ecological receptors associated with the nearby SSSI with particular reference to the Long Eared Owl. The FPCR report makes reference to the US Fish and Wildlife Service Guidance which suggests disturbance may occur when project generated sounds exceed ambient nesting conditions by 20-25dB.

A baseline noise survey was carried out over the period 13<sup>th</sup> March 2015 to 19<sup>th</sup> March 2015. This revealed that the noise climate is one typical of a rural area, remote from any major noise sources. Consequently, the background and ambient noise levels during the day and night are very low, with recorded ambient noise levels as low as 21dB L<sub>Aeq,T</sub> recorded during the night time baseline survey.

The applicant has provided noise contours for each of the four drilling rigs under consideration as they are unable to specify which drilling rig will be used in the drilling operations at this stage.

Noise contour plans have been submitted for 4 rigs which show the following worst case noise levels within the SSSI as follows:

- The Drillmec HH-220 when fully enclosed has a maximum noise level of 40-45dB in North West corner of the SSSI when fully enclosed.
- The T-208, T-49, and the Bolden 92 Rigs all have maximum noise levels of 45-50dB in North West corner of the SSSI with partial screening/enclosures applied.

It is notable that the spread of noise from the HH-220 rig with a full enclosure is notably less than the other rigs, presumably because of the higher level of noise mitigation applied to the rig. Noise levels from the other 3 rigs fall within the 45-50dB noise band; which when compared to existing ambient noise levels through the night-time which fall as low as 21dB, gives an operational level of 24-29dB above the existing ambient level, thereby exceeding the US Fish and Wildlife Service Guidance. It may therefore be appropriate to consider full enclosures of the other rigs if practicable to determine if this reduces the noise impact on the SSSI to within a more acceptable range.

If full enclosures of the other three rigs are not feasible then other mitigation options should be considered in conjunction with these rigs. The FPCR report indicates in Para 4.53 that additional mitigation could be incorporated into the design and layout of the site upon confirmation of which rig is to be used, however there is a degree of uncertainty as to what form this mitigation could take as it may be impracticable to 'screen' the noise adjacent to the receptor due to nesting heights and the extent of the SSSI that would need to be screened. Therefore greater clarity should be given as to what 'additional' options for noise mitigation may be available over and above the proposed mitigation already included in the modelling for each rig and what potential reduction this may provide. This will then help to inform if any of the rigs should be excluded from the selection process.

The FPCR report recommends caution when referencing 'A' weighted noise levels which is a weighting scale representative of the human hearing range. The hearing range of ecological receptors including birds will be different to that of humans and the report indicates that nocturnal birds have greater sensitivity through the mid-frequencies and may therefore be more sensitive to operational noise than human receptors. Therefore such ratings could be misleading as a guide to noise impact on ecological receptors. Therefore due to this uncertainty and the limited evidence base for impact magnitude on the types of birds effected, it would be prudent for a precautionary approach to be adopted.

### **Conclusions and Recommendations:**

It would be prudent to ask the applicant to confirm what further methods of mitigation are available to reduce noise levels from the other three rigs to less than 45dB at the nearest boundary to the SSI. This will assist in determining if any of the rigs should be discounted.

If approval is granted, my previous recommendations; recommending that the contractor submit a noise management plan in advance of construction works should extend to include controls to noise levels within the SSSI. In addition it is recommended that my recommendation to undertake noise monitoring during the first week of drilling operations to



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assess the actual noise levels at the nearest receptors should also include the SSSI to determine compliance with any agreed noise limits (Limits to be agreed with NCC Ecologist Nick Crouch).