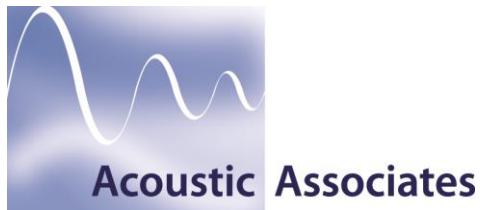


Acoustic Associates Sussex Ltd

Review of a Noise Impact Assessment relating to a Well Test Operation

Site: Balcombe-2z Lower Stumble Exploration Site,
Balcombe, West Sussex

Report No: WSCC/J1476/02/14
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1 Introduction

Acoustic Associates Sussex Ltd has been commissioned by West Sussex County Council to provide a review of a Noise Impact Assessment (Report Ref: PJ3171/13181) provided in support of a Planning Application by Cuadrilla Balcombe Limited. The application concerns proposed pre-test and testing activities at the Balcombe-2z Oil Well at the Lower Stumble Exploration Site at Balcombe in West Sussex. The Application Reference is WSCC/005/14/BA

General Comments

The Noise Impact Assessment has been examined and the following points have been considered:

- i) the appropriateness of the Standards used, e.g. National Planning Policy Framework, BS4142, BS5228, Design Manual for Roads and Bridges (DMRB)
- ii) the methodology employed for the noise assessment
- iii) the noise levels predicted to be 'received' at the positions of the nearest noise-sensitive receptors (NSRs), i.e. Kemps Farm and Kemps House
- iv) the recommended noise limits at the NSRs and how the predicted noise levels compare with these
- v) the depth of information provided regarding the plant and equipment that will operate at the Lower Stumble site and regarding the road traffic that will be associated with the Well Test
- vi) possible Planning Conditions that could be attached to the scheme, were Planning Consent to be granted

2 Appropriateness of Standards Used

The Standards and guidance referred-to in the noise impact assessment (hereafter called 'the assessment') include:

- National Planning Policy Framework (NPPF) 2012: esp. the Technical Guidance to the NPPF 2012
- BS4142: 1999; Method for rating industrial noise affecting mixed residential and industrial areas
- BS5228: 2009: Part 1: Noise and vibration control on construction and open sites
- Design Manual for Roads and Bridges (DMRB)

These are considered to be the appropriate Standards for use in an assessment of this type. One point which is worthy of mention, however, concerns the criterion used for evenings.

The noise guidelines of NPPF are considered to have been appropriately employed in the assessment for both daytime and at night. At the last paragraph of section 2.1 of the assessment, it is stated that the absolute noise limits of 55dB(A) daytime and 42dB(A) night time would be used (these are presumed to be $L_{Aeq,1\text{ hour}}$ values in line with the NPPF guidance). Since evenings are not specifically mentioned, it is presumed that there is an intention to abide by the NPPF guideline value of background level plus 10dB ($L_{A90} + 10\text{dB}$). This latter value is considered to be the appropriate criterion value to use for the evening periods (19:00 – 22:00), in line with NPPF guidance.

3 Methodology used for the Assessment

3.1 Road Traffic Noise

The assessment quotes DMRB with respect to the traffic noise impacts of the pre-testing and testing operations. Guidance is taken from Design Manual for Roads and Bridges (DMRB) volume 11, section 3, part 7: Noise and Vibration (2008). A later version of this same section is now available, dated November 2011 but the guidance is the same as in the earlier version in the areas referred-to by the assessment.

It is stated that where traffic volume increases by less than 25%, this is equivalent to an increase in traffic noise of less than 1dB and that such an increase would not be subjectively perceptible.

It is accepted that the increase in traffic for the testing operations, if confined to the 22 car movements plus 3 HGV movements per day provided-for in the assessment, would not give rise to a perceptible increase in traffic noise levels affecting the NSRs.

3.2 Pre-Test and Testing Activities

The prediction methodology with respect to the noise from the pre-test and testing operations at Lower Stumble and at the closest NSRs has been reviewed.

The predictions are based upon the methodology set out in BS5228 (see above) and using sound power data for similar items of plant to those intended for used at Lower Stumble but taken from previous noise data from other, similar sites.

Checks have been made upon the predictions for noise attenuation due to distance and to screening by intervening features and topography between the well site and the closest NSR. It is confirmed that the calculation procedures have been correctly carried out. Therefore, provided that the source noise levels are the same as those set out in the assessment, which in turn are based upon the Consultant's own noise data gathered from other, similar sites, then the assessment of noise at the NSR will be valid.

One item excluded from the noise assessment calculations (but mentioned in section 3.4 of the assessment) is the noise from the Flare. This is related to the burning-off of produced gas. It is argued in the assessment that since this is a variable source but one which is capable of being controlled in terms of noise emissions, the potential contribution to the noise, as received at the NSR is excluded from the prediction. Clearly, this is only valid if the noise levels generated are modest and make little or no difference to the received noise level at the NSR.

The level of noise generated by the Flare is not quantified. Instead, the assessment states, "Noise produced by flaring is variable, being dependent on gas flow rates to the burner and can vary between barely perceptible (with very low gas flows), to a more significant level with high gas flow rates". It is also stated, however, that this noise is controllable by either enclosing the flare or throttling back the flow during the sensitive night time period.

There is a stated potential in the assessment for the flare to generate a significant level of noise. It may also be the case that if the noise from the flare were to prove problematic in terms of noise received at the NSR then it may not be possible to either enclose the flare or throttle back the flow quickly enough to avoid a noise nuisance being generated.

It is, therefore, requested that some further information regarding typical noise data for flares be provided so that an opinion can be provided as to whether provision needs to be in place for prompt attenuation of noise in the event that a high noise event should occur. It may be that, although the possible noise level is 'significant' it would still not make an appreciable difference to the received level at the NSR. This is not established in the assessment, however, and so further information is necessary.

Although it may be possible to limit noise levels at the NSR by Condition on the Planning Consent, some assurance is required that excess noise events will not give rise to a noise nuisance situation developing which is not capable of rapid resolution.

4 Noise levels Predicted at Noise Sensitive Receptors

With the exception of the noise from the flare, as mentioned in the previous section, predictions are provided for noise levels reaching the closest NSRs; Kemps House and Kemps Farm.

During the daytime (07:00 – 19:00), noise is predicted to be at a level of $L_{Aeq,1\text{ hour}}$ 37dBA during the pre-test activities phase. This is below the criterion level of $L_{Aeq,1\text{ hour}}$ 55dBA, as set by NPPF and so is considered to be compliant with the guidance.

During the daytime and at night during the testing activities phase, the noise is predicted to be at a level of $L_{Aeq,1\text{ hour}}$ 31dBA. This is below the criterion levels of $L_{Aeq,1\text{ hour}}$ 55dBA daytime and 42dBA at night, as set by NPPF and so is considered to be compliant with the guidance for daytime and night.

For evening periods, the guidance from NPPF is that the noise level, as received at the NSR, should not exceed a level 10dB higher than the L_{A90} background noise level.

Confirmation should be provided by the Applicant that the noise levels during the evening (19:00 – 22:00) will be compliant with the evening noise level criterion. This is likely to require a comparison between predicted noise levels at the closest NSR and the background noise levels for the appropriate times during the evening.

5 Depth of Information Provided with respect to Plant and Equipment

Only a small number of items of plant and equipment are predicted to be used, namely:

Work-over rig

Site generator

Bean pump

(it is assumed that the same site generator remains on site for the duration of the pre-test and testing works)

Sound power levels are provided for each item of plant or equipment and the noise assessment is based upon this noise data. We are able to confirm that the noise predictions based upon this source noise data are valid.

However, if a different and noisier item were either added-to or substituted for one of the items for which noise data is provided then this would clearly have an influence upon the noise at the NSR. It is, therefore, recommended that a noise Condition be appended to any Planning Consent that may be granted for the proposed pre-test and testing activities.

6 Planning Condition

It is proposed that a Planning Condition be attached to any Consent granted.

The appropriate wording of the Condition can remain similar, though slightly amended, to that used for the previous drilling operations:

The corrected* noise level for operational noise from the site shall not exceed 55dB(A) $L_{Aeq,1\text{ hour}}$ free-field between the hours of 07:00 – 19:00 Mondays to Fridays and 08:00 – 13:00 Saturdays; shall not exceed Background $L_{A90,15\text{ minutes}}$ + 10dBA evenings (19:00-22:00) and weekends and shall not exceed 42dB(A) $L_{Aeq,5\text{-minutes}}$ free-field at night (22:00-07:00). Noise levels shall be determined at the nearest residential premises.

* A 5dB correction shall be added if one or more of the following features occur:

- the noise contains a distinguishable, discrete, continuous note (whine, hiss, screech, hum, etc);
- the noise contains distinct impulses (bangs, clicks, clatters or thumps)
- the noise is irregular enough to attract attention

Reason: In the interests of residential amenity.

7 Summary

The noise impact assessment provided by the Applicant in support of an application for planning consent for well pre-test and testing operations at the Lower Stumble Hydrocarbons Exploration Site has been inspected.

On the basis of the inspection and appraisal of the information provided, it is concluded that the noise affecting nearby noise sensitive receptors, in particular Kemp's House and Kemp's Farm, **is likely to be** at a level which complies with the guidance criteria set by the National Planning Policy Framework 2012 document: Technical Guidance to the NPPF 2012: Paragraphs 30-31 Noise Standards.

However, further information is requested from the Applicant or his Noise Consultant on two matters before this can be confirmed. The two items where further information is requested are as below:

- i) Flare

There is a stated potential in the assessment for the flare to generate a significant level of noise. It may also be the case that if the noise from the flare were to prove problematic in terms of noise received at the NSR then it may not be possible to either enclose the flare or throttle back the flow quickly enough to avoid a noise nuisance being generated. It is, therefore, requested that some further information regarding typical noise data for flares be provided so that an opinion can be provided as to whether provision needs to be in place for prompt attenuation of noise in the event that a high noise event should occur. It may be that, although the possible noise level is 'significant' it would still not make an appreciable difference to the received level at the NSR. This is not established in the assessment, however, and so further information is necessary.

Although it may be possible to limit noise levels at the NSR by Condition on the Planning Consent, some assurance is required that excess noise events will not give rise to a noise nuisance situation developing which is not capable of rapid resolution.

ii) Evening Noise Levels at NSRs

Confirmation should be provided by the Applicant that the noise levels during the evening (19:00 – 22:00) will be compliant with the evening noise level criterion. This is likely to require a comparison between predicted noise levels at the closest NSR and the background noise levels for the appropriate times during the evening.