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Your ref:  
Our ref: ACP/2018/0001 AM/JMH  
Date: 27 March 2018

Dear Ms Walker

**APPLICATION: SCP/2018/0001  
TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT)  
REGULATIONS 2017 - SCOPING OPINION FOR PROPOSAL TO DRILL AND  
TEST TWO EXPLORATORY BOREHOLES ON LAND AT SUTTONS LANE,  
GREAT ALT CAR**

I refer to your letter of 4<sup>th</sup> January 2018 in which you request a scoping opinion for a proposal to drill and test two exploratory boreholes on land at Suttons Lane, Great Altcar.

As you will be aware there are certain requirements within the 2017 EIA Regulations that set out the information that an ES must contain. These are contained within Regulation 18 and Schedule 4 of the Regulations and any ES that you submit must address the requirements set out in those provisions.

Regulation 18 (3)a requires a description of the proposed development comprising information on the site, design, size and other relevant features of the development;-

The following information should be provided to address this requirement:-

- Details of the access from the public highway including location, dimensions and construction including details of any visibility splay required to ensure compliance with highway safety standards
- The location, layout, dimensions and construction of the drilling compound including details for the stripping of soils and their storage, the construction of the drilling compound including pollution prevention systems to be installed, details of load bearing surfacing materials to be imported and methods to be employed for the storage and treatment of intercepted surface water
- Details of the design of the site compound including perimeter fencing, location and design of buildings and details of other temporary infrastructure to be installed at different stages of the site including the height and design of any drilling rigs to be used.
- Details for the construction and drilling of each borehole including depths of drilling and proposed vertical and horizontal alignment of each borehole as projected to the surface and how these relate to subsurface geology and hydrogeology.
- The construction of each borehole including hole diameters, methods of casing and cementing including the measures to be taken to prevent pollution of ground or surface water resources during drilling or hydraulic fracturing operations. Details should be included of the testing that will be undertaken to

demonstrate the effectiveness of the works to ensure the integrity of the boreholes.

- The nature of the drilling muds used during drilling operations.
- The time periods taken to drill each borehole.
- Details of the hydraulic fracturing operations including the intervals of each borehole that will be subject to such operations
- The means of perforating the walls of the boreholes prior to fracturing operations
- Details of fracturing operations including the volumes and constituents of fluids to be used
- The sources of water to be used for fracturing operations
- The measures to be used to manage flow back water including details of storage, treatment and disposal including measures to manage any chemical, hydrocarbon or NORM contamination. There should be consideration of any potential to recycle flow back water in future fracturing treatments at the site.
- The measures to be taken to avoid blowouts, seismic impacts or other uncontrolled events.
- Details of the facilities that will be installed to monitor seismic impacts including the type and location of equipment to be installed and how collected information will be used to control the fracturing operations.
- Details of the proposed testing operations including equipment to be retained on site for well testing including measures to collect and manage any collected hydrocarbons and measures to control well pressures and any further flow back water.
- Details of the restoration phase of the development including for the plugging and abandonment of the boreholes
- The ES should also include information on the various solid and liquid wastes that would be generated during the various phases of the development including details of each waste stream, methods of management / storage and details of treatment / disposal.

## **Content of the ES Chapters**

The broad topic areas set out in your scoping request document are considered to be acceptable. The following comments are provided in relation to the detailed assessment that should be undertaken within each of these topic areas:

### **Ecology**

I would draw your attention to the responses from Natural England and the County Council's own Specialist Advisor on Ecology in relation to the likely impacts on ecology from the proposed development. However, the following key points should be taken into account in the preparation of the ecological chapter of your ES:-

European / Nationally designated sites: - The ES should thoroughly assess the potential to affect designated wildlife sites. European designated sites (SPA's and SAC's) fall within the scope of the Conservation of Habitats and Species Regulations 2017. Under Regulation 63 of these Regulations, an appropriate assessment needs to be undertaken in respect of any plan or project which is a) likely to have a significant effect on a European site (either alone or in combination with other plans

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or projects) and b) is not directly connected with or necessary to the management of the site. Should a likely significant effect be identified or be uncertain, the LPA may need to prepare an Appropriate Assessment in addition to consideration of impacts through the EIA process.

The proposed development is in close proximity to Down Holland Moss SSSI, Sefton Coast SSSI and SAC and the Ribble and Alt Estuaries SSSI, SPA and Ramsar site. The application site is also within an area that is considered to be functionally linked to the Ribble and Alt Estuaries SPA and Ramsar site in particular due to the use of the agricultural land by over wintering wildfowl which are one of the special interest features for which the SPA is designated. However, it should be noted that Down Holland Moss SSSI is designated for its geological interest and that there will be no direct impacts upon the special interest features of this area.

It appears from the scoping report that it is the intention to submit a Habitats Regulations Assessment signposting document presumably in recognition that the proposal has the potential to impact upon qualifying features of European sites. It is therefore important that the ES contains sufficient information, particularly on ornithology, to allow the impacts on the European site to be assessed. The applicant may wish to prepare a shadow Habitats Regulations Assessment. This should consider the potential for stand - alone and in combination effects with other developments in this area. It is also important that the other potential impacts of the development such as noise, lighting, water pollution and air quality issues are examined as part of any assessment of impacts on European wildlife sites.

**Regional / Local Sites:** The EIA will need to consider any impacts upon local wildlife and geological sites. The ES should include an assessment of the likely impacts on the wildlife and geodiversity interests of such sites. The assessment should include proposals for mitigation of any impacts and if appropriate compensation measures.

**Protected Species:** The ES should assess the impacts of all phases of the development on protected species (such as great crested newts, reptiles, birds, water voles, badgers and bats). The areas likely to be affected by the proposal should be thoroughly surveyed by competent ecologists for the presence of such species with surveys being undertaken at the correct time of year. The survey methods, results, impact assessments and appropriate mitigation strategies should be included within the ES. The methods used for such surveys should comply with recognised guidelines where these exist.

A licence from Natural England will be required to deliberately kill, capture, disturb or to take or destroy the eggs of a European Protected Species or to damage or destroy its breeding site or resting place. A licence can only be issued if Natural England is satisfied that three tests have been met in terms of the development being necessary to preserve public health or safety or for other reasons of overriding public interest, that there is no satisfactory alternative and where the development will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status. If any impacts on European protected species are identified, the ES should contain sufficient information to allow the planning authority to conclude that a licence could be granted.

Habitats and Species of Principal Importance: The ES should thoroughly assess the impact on habitats and or species listed as Habitats and Species of Principal Importance within the England Biodiversity List published under the requirements of s41 of the NERC Act 2006. To assess compliance Natural England advises that a habitat survey (equivalent to Phase 2 standard) is carried out on the site.

The scoping report notes that potential effects are loss of habitat and impacts on protected and notable species but appears to propose basing an assessment on an extended phase 1 habitat survey only. However, an extended Phase 1 habitat survey is a preliminary ecological appraisal as an aid to identifying key ecological features and thus informing the scope of further surveys. However, where the proposals have potential to impact upon protected and priority species, as is the case with this proposal, such preliminary ecological assessment alone is unlikely to provide the level of detail to inform the results of the EIA or enable determination of the planning application. The surveys that are undertaken should be sufficiently detailed to allow an accurate evaluation of the ecological value of the site to be made.

The ES should include the results of the extended Phase 1 Habitats survey carried out on land with the zone of influence of the proposals but also more detailed habitat survey of any semi natural habitats or other features with potential to support ecological significant species.

**Landscape:** The ES should include an assessment of landscape impacts. The general methodology for undertaking a landscape assessment as set out in your scoping document is acceptable.

The landscape assessment should cover the visual impacts during the site construction, drilling, fracturing and well testing phases and should include any works necessary to create an acceptable access to the site. The landscape assessment should assess the impacts of the development in terms of removal of any existing landscape features such as trees, hedgerows, field boundaries or ponds.

The landscape assessment should include an assessment of the development from sensitive receptors including representative residential properties, public highways and public rights of way. In particular it would appear appropriate to consider visual impacts from Down Holland Moss Lane, Old Moss Lane, Middle Moss Lane, Livesey's Lane, various points on the B5195 and from the A565 on the edge of Formby. In terms of residential properties, the most significantly affected would appear to be those in Great Altcar which have outlooks to the north and north east towards the application site. It may also be worth considering visual impacts from the residential properties on the edge of Formby which have outlooks towards the east. There may also be individual properties such as Formby's Farm which should be covered in any assessment of visual impacts.

There are relatively few public rights of way in the area from where significant views would be obtained but it would be important to consider any locations along the Cheshire Lines Path Trans Pennine Trail as well as footpath 83FP1 in Great Altcar.

The assessment within the ES should include a number of photomontages showing the visual impact of the development from the above locations

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The landscape assessment should also include an assessment of the impacts of any floodlighting that would be required particularly during the drilling phase. The lighting assessment should include a baseline survey of current lighting conditions and an assessment of glare / lighting impact on sensitive receptors.

**Seismic Impacts / Geological Issues:** It is noted that information on this topic area will be required to support an application for a Hydraulic Fracture Plan which must be made to the Oil and Gas Authority before any such operations can take place.

The ES should include an assessment of the probability and likely significance of any seismic events that might be triggered by hydraulic fracturing operations on this site. The assessment should include sufficient local and regional geological information to enable the subsurface geology including structure in the area to be explored to be adequately characterised. The ES should include the relevant information that was gathered from the 3D seismic survey that has previously been undertaken over this area. The information should include details of geological structures including faulting which may have implications for the drilling operations and induced seismicity from fracking operations. The information should seek to characterise the existing stresses on such faults and the risks that may result through the undertaking of hydraulic fracturing operations in proximity to such fault planes.

The ES should contain information on existing natural seismicity in the area having regard to historical information and monitoring carried out pre development.

The ES should include a description of the measures that will be employed to monitor seismic impacts during the fracturing operations and how such monitoring will be used to control fracturing operations in a manner to reduce seismic impacts to acceptable levels including details of the methodology of monitoring. Details of how the proposed traffic light system would operate should be provided.

The ES should examine the risks to the integrity of the boreholes and associated casings / environmental protection measures from any seismicity that may be triggered by hydraulic fracturing operations.

The ES should include information of how directional control of each borehole would be managed to ensure that there is no risk of sub surface collision of boreholes. In the event of boreholes merging, details should be provided in the ES of the measures to be employed to prevent ground contamination and for the subsequent abandonment of the borehole.

Although the risk of subsidence from fracturing and gas extraction operations is acknowledged to be low, it is considered that the ES should demonstrate how and why the risk is concluded to be low.

You will note that the EA have made a number of comments about the stability of the drilling pad and conductor casing:-

- It should be ensured that the construction of the well pad is sufficiently robust to withstand the loadings from the proposed plant and equipment and from

the HGV traffic. The EA suggest that a geotechnical assessment of ground conditions is undertaken to inform the site construction methods.

- The drilling cellar will be excavated into the Singleton Mudstone which are known to be gypsiferous in nature. The EA suggest that this may impact upon the degree of sulphate resistance in any concrete mix required to construct the drilling cellar / conductor casing. I assume that some geological information already exists in relation to the properties of the drift / solid geology below the proposed compound which could be used to address this point.

**Water Resources:** The EA have supplied a lengthy response in relation to impacts on water impacts which includes information on both planning and permitting issues.

The following issues are relevant to the planning stage and particularly the production of the ES:-

The ES should include a hydrogeological risk assessment. This should address any existing contamination issues that might be present on the site and also any ground and surface water contamination issues that might arise from the proposed activities. The assessment will need to identify all potential pathways for the migration of contamination and all potential ground and surface water receptors thereby allowing potential impacts to be identified and mitigation measures proposed. As a minimum, sensitive groundwater and surface water receptors should include any aquifers (including the underlying principal aquifer and all groundwater bearing strata found at depth), licenced abstractors and unlicensed private water supplies and surface waters fed by ground water.

The ES should contain the details for the construction of the boreholes including the mitigation measures to prevent transfer of fluids between different geological formations and prevent uncontrolled discharge of groundwater from the wellhead.

The EA advise that groundwater in the Singleton Mudstones may contain significant pollutants such as chlorides, sulphides or hydrocarbons which have the potential to pollute the Permo Triassic aquifer if allowed to discharge into it. It is therefore essential that any boreholes through the Singleton Mudstones are drilled and cased to prevent the transmission of fluids to other strata.

The drilling techniques employed should not allow the pollution of sensitive aquifers by the use of inappropriate drilling fluids or by allowing poor quality groundwater to discharge from one aquifer to another. The physical and chemical characteristics of the drilling fluids used for different stages of the boreholes should be explained in the ES.

Surface water: The ES should explain the method of construction of the drilling compound including the type and specification of the impermeable liner to be installed, methods of protection against puncture and type and thickness of cover materials.

The ES should explain the methods to be used to store, treat and dispose of all water that is captured within the site compound. The EA have also noted that this area could be subject to rising groundwater issues during periods of heavy rainfall

which could exert an upward pressure on any lateral storage ditches thereby reducing the volume of storage.

The EA note that shallow groundwater may potentially be perched over the site. Consideration should be given to groundwater control during construction of the conductor casing to prevent escape and possible contamination of surface waters.

An assessment should be made of the volume of water that will be intercepted during a maximum rainfall event to ensure that on site storage is sufficient. Consideration should be given to on site treatment to allow intercepted water to be discharged to a surface water course thereby avoiding the additional traffic that would be generated from an offsite treatment option.

The ES should explain the implications of proposed fracking operations in terms of water resources. This should include the volumes and sources of water to be used and any additives that are to be used to facilitate hydraulic fracturing. The methods to be used for the storage (and if proposed, on site treatment) of any flow back waters should also be explained including for the treatment of any naturally occurring radioactive materials that may be present within the flow back water.

**Flood Risk:** The site is located within Flood Zone 3 (area at highest risk of flooding). The ES should therefore include a flood risk assessment. The FRA should demonstrate that the development would be safe without increasing flood risk elsewhere and should address the sequential and exception tests within paragraphs 102 and 103 of the NPPF. A topographical survey of the site should be used to establish the existing ground levels in AOD and to compare them to the predicted flood levels on the site.

**Cultural Heritage:** The approach to cultural heritage as set out in your scoping document is considered to be general acceptable with the following exceptions:

- The area of investigation should be agreed with Historic England and the County Council. The desk based assessment should be undertaken to the standards and guidance set out by the Chartered Institute for Archaeologists. The Lancashire Historic Environment Record and other relevant data sources set out in the ClfA 'Standards and Guidance for Historic Environment Desk – based Assessment (January 2017) should be used.
- The methodology for the assessment of impact on cultural heritage also needs to include reference to the Lancashire Historic Environment Record *and* other relevant sources.

**Noise:** The ES should include an assessment of noise impacts. The noise assessment should be based upon background noise levels undertaken at positions that are representative of the nearest noise sensitive properties to the proposed site. Given that drilling activities are proposed to be undertaken on a 24hr 7 day per week basis, the background noise survey should be undertaken over all periods over which drilling activities would be undertaken.

The ES should also contain a prediction of the noise levels that would be generated by the activities on the site. Given the distinct phases of the development, information should be provided on the noise levels that would be generated for each

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phase of the development. The noise information should cover both absolute noise levels and also any development noise that would have particular tonal or impulsive characteristics.

The predicted noise levels and measured background noise levels should be incorporated into a noise model to predict operational noise levels at the nearest sensitive receptors to establish whether these would meet noise levels specified in National Planning Practice Guidance for Minerals.

The noise chapter of the ES should include details of the mitigation measures that will be required to reduce noise levels to acceptable levels.

**Air Quality:** The ES should contain an assessment of the impacts of the development on local air quality. The assessment methodology as set out in the scoping request is considered to be generally acceptable subject to the following:-

- The ES should contain a summary of existing background air quality in the local area around the proposed site. The background data collected should be sufficient to allow comparison against the key air quality impacts of the development
- A prediction of the likely air quality impacts of the development. This should include fugitive / point source dust emissions from HGV's travelling on unsurfaced haul roads, exhaust emissions from on site plant and equipment and air quality impacts arising from the flaring of any gas that may be burnt through on site flaring.
- Consideration should also be given to assessment of radon, methane and organic compounds.

**Highways and Transport:** The ES should include a highways and transport assessment. The methodology set out in the scoping document is considered to be generally acceptable with the following comments:-

- The ES should include a breakdown of the numbers of vehicles associated with each stage of the operation together with the size of vehicles to be used. The information should include details of any abnormal loads that might be required.
- The ES should include information on the background traffic levels on the highways that are proposed to be used to access the development site. This should include motor vehicles and vulnerable road users (pedestrians, cyclists and horse riders).
- The ES should include information on existing highway conditions (road dimensions, accident records, swept path analysis of any significantly constrained sections of highway) and demonstrate that all sections of highway and affected junctions can operate effectively and safely.
- Suttons Lane to be used to access the site is part of an adopted highway. However, no carriageway or footway is constructed and therefore the ES should demonstrate that this road will be of a suitable standard to be used as an access to the site.
- If Broad Lane is to be used as a secondary access to the site, the suitability of this road and its junction with the B5193 should also be assessed

**Public Health:** The ES should include a chapter to examine possible impacts on public health arising from the development. This section should summarise key information and conclusions relating to human health impacts contained in other sections of the ES such as air quality, waste, emissions to air without undue duplication. Sufficient information should be provided to allow Public Health England to fully assess the potential impacts of the development on public health including identification of offsite human receptors that may be affected, summarising risk assessments, proposed mitigation measures and residual impacts. The range of issues that Public Health England would expect to be addressed are receptors, impacts arising from construction and decommissioning, emissions to air and water during drilling, fracturing and testing phases and contamination / waste.

**Greenhouse Gas Emissions:** I note from your scoping report that you consider that this issue is not of sufficient importance for it to be a significant environmental effect of the development and should therefore be scoped out of the ES. However, this issue is a significant concern in relation to hydrocarbon exploration developments and therefore I do consider that there is some merit in including this topic within the ES.

This chapter of the ES should contain an analysis of the greenhouse gas emissions that would be produced from the development in terms of vehicle movements, use of resources and man-made materials and emissions from the drilling, fracturing and well testing activities themselves. The analysis should include greenhouse gas emissions arising from any flaring or fugitive sources during these activities.

The analysis for each aspect of the project should be based upon recognised Government guidance for the calculation and reporting of greenhouse gas emissions, including use of the latest United Nations Inter Governmental Panel on Climate Change conversion factors for calculating CO2 equivalent.

At section 4.6 of your scoping document, I have noted the other considerations and issues that you propose to scope out of your ES. Whilst there would not be a separate chapter on these topics within your ES, I note that you intend to provide some commentary on these matters elsewhere within your planning application. This is considered acceptable. I would however draw your attention to the additional requirements that were introduced in the 2017 EIA Regulations particularly Regulation 18(5) relating to competence and expertise in preparing the ES.

Please do not hesitate to contact the case officer, Jonathan Haine if you wish to discuss further the content of any ES or submit a draft ES for initial consideration.

Yours sincerely

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