

**EPP1(S)**

**APPEAL BY ISLAND GAS LTD, PORTSIDE  
ELLESMERE PORT**

**APPEAL REFERENCE APP/A0665/W/18/3207952**

**SUMMARY PROOF**

**SITE LOCATION AND POTENTIAL IMPACTS**

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## **Experience**

I am Colin Watson, I hold a Bachelor of Engineering Degree from Liverpool University. I have been a Chartered Engineer for thirty-five years, and am a Member of the Institute of Engineering Technology.

I have extensive experience in the management of industrial processes, large project management and the management of risk. Initially within the nuclear industry, I worked as a control specialist on uranium enrichment and spent fuel reprocessing facilities, and subsequently within the chemicals industry I broadened into facilities design, construction and operation. Latterly I was the global "Subject Matter Expert" for Project Management in a large multi-national corporation based locally.

I have recently been a PRINCE 2 practitioner and a member of the Project Management Institute, and have contributed to their global standards. More recently I have worked as a consultant, training multinational companies based around Europe on Project and Risk Management.

### **1. Scope of Evidence**

1.1. In my proof of evidence I address two topics:

- a) the description of the planning application, in particular the ambiguities and contradictions in the IGas case
- b) the location of the proposed development, what has changed since planning permission was initially granted, what had changed more recently and why the location is not sustainable given the risks it imposes on local employees and residents.

1.2. I note that the National Planning Policy Framework requires developments to meet social, environmental and economic needs at the same time. My evidence will demonstrate that this planning application does not, as a result of its location, satisfy these multiple criteria.

## 2. The Planning Application

- 2.1. The Application Form, and all of IGas's subsequent planning application documents, describe the proposed development in the same way, without specifying the extraction technique or mentioning an "acid squeeze", an "acid wash", nor any other form of stimulation.
- 2.2. The background to this planning application shows why the local community is concerned about this lack of clarity. The planning application in 2009 was for coal bed methane exploration with a plan showing a "*total vertical depth*" of 900m and the planning statement set a maximum depth "*in the coal seam*". When it was found that IGas had drilled to about 1,949m, the community was understandably upset. This is also why there is so much concern about a lack of specificity in the current application.
- 2.3. The Environment Agency ("EA") defines various uses of acid at oil and gas production sites which likens an "acid squeeze" to the activities it defines as "stimulation". The key element which makes a process "matrix acidisation" is that the "*pressure is above the geological formation pressure but below the formation fracturing pressure*", and as defined the only difference between an acid squeeze and matrix acidisation is the distance that the acid travels from the wellbore. The description of the development does not set out the extraction technique proposed. The Planning Statement "clarifies" by stating that the proposed development does not involve any hydraulic fracturing. The definition of hydraulic fracturing in the Infrastructure Act includes that it involves "*over 10,000 cubic meters of fluid*".
- 2.4. The Planning Statement does not say that the proposed development is for an "acid squeeze". It mentions acid once, at concentrations which seem to exclude an acid wash based on the EA definition document. The Statement of Case also does not describe the process or the pressure to be used. FFEP&U wrote to IGas a number of times to ask them to clarify what the proposed method of extraction actually was. After some back and forth, IGas stated the method of extraction proposed is "*perforation of the well casing and acid washing or, if required, an acid squeeze (applying the definitions of those terms by the Environment Agency)*." Before this, IGas had never said in any of the planning documents that they would potentially carry out an "acid squeeze".

- 2.5. The Environmental Permit permits an acid squeeze to be applied *“not exceeding the fracture pressure of the formation”*. While this prevents acid fracturing, it does not prevent matrix acidisation. Accordingly, from the definitions presented when IGas refer to carrying out an “acid squeeze”, in line with the EA definition document and under the permit, this could amount to matrix acidisation. As a result, the inquiry should assess the proposed development on the basis that it includes matrix acidisation, unless the description of the development is changed to clarify the technique being permitted. Also, the possibility of unintentional acid fracking if the well has to be “locked in” cannot be excluded, and should be addressed.
- 2.6. The planning statement is also not specific as to what acid will be used: *“most commonly hydrochloric”* acid does not provide much reassurance when the alternative identified in the EA *“Use of acid information sheet”* is the highly reactive hydrofluoric acid, which is of real concern to the community.
- 2.7. Attempts to clarify have sometimes led to a conflict between the clarification and the actual documentation. For example the IGas Statement of Case refers to *“obtaining data on the unconventional hydrocarbon resource”*, but the in initial correspondence IGas referred to Pentre Chert as a *“conventional resource”*. Similarly in correspondence IGas stated that *“no artificial lift is required or proposed”* however the documentation provided to the EA clearly states that a nitrogen lift will be used.
- 2.8. We also note that the EA definition of an “acid wash” refers to *“plain water or weaker concentrations of acid usually HCl at 7%”*. This is at variance with the IGas planning statement to use 15% hydrochloric acid. Certainly the volumes of liquid intended seem to imply some form of stimulation as evidenced by Prof Smythe in his geological evidence.
- 2.9. In the Planning Statement there is no mention of what the various lorry movements during the DST and the EWT will comprise. Not knowing the quantities of acid, oil, spent acid, or formation water means that consultation with the consultees and the community has been incomplete.

2.10. Overall the lack of information in the planning application has left the community deeply suspicious that IGas will do whatever they choose to do. The evidence from Dr Szolucha demonstrates how this level of mistrust contributes to the application being socially unsustainable for this reason.

2.11 Throughout this Inquiry FFEP&U will use the terms Unconventional Oil and Gas to cover all the techniques of unconventional extraction, acid squeeze, matrix acidisation, hydraulic fracturing and acid fracturing, unless a specific technique is being discussed. At this Inquiry, individuals who give statements may unintentionally not differentiate between different types of unconventional exploration, and may refer to whatever IGas are planning as “Fracking”. That is not a reason to ignore their evidence, given the confusion sown by IGas’s failure to explain the extraction process.

### **3. The Location – Looking Back and looking Forward**

3.1. Ellesmere Port suffered significant decline through the latter part of the 1900’s leaving the town with a very significant “rust belt”. Many of these sites have been regenerated for residential purposes, in conjunction with the development of major out of town industrial parks to the South, East and West of the town.

3.2. The Ellesmere Port Development Board has developed a “*vision and strategic regeneration framework*” which is transforming the town and its environs. As a result, Ellesmere Port has enjoyed significant levels of investment, including the Cheshire College South and West Campus, the University of Chester Church of England Academy and the Ellesmere Port Sports Village.

### **4. Changes since the 2017 Planning Application**

4.1. When Planning Permission was initially granted in 2010, the area was substantially derelict land previously used for railway sidings servicing the docks. Since the 2017 planning application domestic residences have been built 320m from the site. Additionally there are now new businesses adjacent to the site: a petrochemical distribution facility has come into service some 100m from the site, and a retail caravan site some 50m from the site

- 4.2. The Development Board has identified the area of the site for future residential development. This fits in with the overall regeneration of Ellesmere Port where the “rust belt” is being converted to light industrial / residential development, and industrial development is being encouraged in the major sites to the East, the South and the West of the town. The Council Plan *“articulates a long term vision for a thriving borough through the delivery of new houses; creation of new jobs; investment in regeneration and key infrastructure projects; support to vulnerable individuals, families and communities; and encouragement of new businesses into the borough”*. This proposal conflicts with all of these goals, and as will be seen in the Economic Evidence it has the potential for a negative effect on new businesses entering the borough.

## **5. Unsustainable Location**

- 5.1. In even the safest and best-regulated development, any decision to grant permission must take into account what the impact would be if, despite the regulation and despite safety practices, something were to go wrong. This “residual risk” is relevant because the risk of an accident, including a major accident, can never be zero. The location is unusually complex from a receptor point of view, and in my evidence I list 24 receptors that have not been adequately assessed, the more important ones being:

5.1.1 a residential development 320m from the site, which from the aerial view afforded by Google Earth could be extended closer to the site over the timeframe of this development.

5.1.2 in addition to businesses and residences nearby, the site is 800 metres from a children’s play centre and 860 metres from the closest of two large residential homes for the elderly, including vulnerable people with poor mobility. The full impact on these receptors, particularly in an emergency situation, has not been adequately assessed.

- 5.2. Having been responsible for design and operation of hazardous installations I am concerned that the site does not offer multiple safe escape routes for either IGas employees, or for the businesses at the end of the cul-de-sac. At the time of writing Freedom of Information Requests indicate that consultation with the Emergency Services has not been undertaken to assure the efficient management of an incident, contrary to the requirement of the Borehole Regulations 1995. The poor access and egress to the site in the event of an emergency weighs in favour of the planning application being refused.

5.3. There are a number of characteristics that come together to make the location unsustainable. I set out a list of 22 of these in my proof.

## 6. Risk Above Ground

6.1. IGas quotes *“There are no unusually complex or hazardous environmental effects associated with the intended development”*. This industry is regulated by the Health and Safety Executive Hazardous Installations Directorate for the obvious reason that it is hazardous. I review the incident rates for the Oil and Gas industry off-shore in the North Sea, and on-shore in the United States, and find that they both have a blowout rate of between 0.17% and 0.2%. Approximately 90% of these accidents happen during well completion, the activity that IGas is proposing in this application.

6.2. IGas claim that *“The natural gas produced during the DST and EWT is not expected to contain hydrogen sulphide (H<sub>2</sub>S)”*. The geological evidence demonstrates that hydrogen sulphide exists in this area. Hydrogen sulphide is both explosive and toxic. Liaison with the emergency services should have been undertaken at the appropriate time in the planning process. This is an unacceptable risk to both the Emergency Services and the Public.

6.3. Accidents do happen as was the case in the local refinery explosion on 23 Aug 2018, which was coincidentally a couple of weeks after the Planning Committee refused an application to develop a University Faculty on the Stanlow site.

6.4. All the evidence demonstrates that Oil and Gas exploration is a risky business. IGas has not made public an effective risk analysis for this planning application. Indeed it claims *“There are no unusually complex or hazardous environmental effects associated with the intended development”* (CD2.4 Page 18). This would not appear to align with the evidence.

6.5. A cumulative risk analysis of the site has not been undertaken. The effects of a well explosion on the explosives store or the adjacent petroleum distribution centre, or vice versa has not been considered.

6.6. My evidence demonstrates that the planning application poses an increase in risk to local employees and the general public, particularly given the distances from neighbouring businesses and the cul-de-sac location. This weighs in favour of the planning application being refused.

## **7. Safe Distance between Well and People**

7.1. From experience elsewhere in the world a setback distance is required to prevent undue risk to local employees and residents. Due to the immaturity of the UOG industry in this country, a national setback distance has yet to be agreed. In the absence of a national ruling, the precedent of 500m accepted by Inspector Elizabeth Ord when reviewing the North Yorkshire plan should be considered as sound guidance.

7.2. There are a significant number of businesses and residences within the setbacks discussed who would potentially require evacuation in the event of a blowout / explosion which weighs in favour of the planning application being refused.

## **8. Other Matters**

8.1. In section 8 of my Proof I address the location of the site 270 m from the Mersey Estuary wildfowl RAMSAR site which has local, regional and continental significance. I set out the local concerns with Natural England's consultation response.

8.2. In section 9 of my Proof I address Groundwater. The Geological evidence will demonstrate that the area has many other geological features that weigh against development in this location, including the potential for contamination of groundwater. There are so many unknowns that the Precautionary Principle should apply. This weighs in favour of this planning application being refused.

## **9. Conclusion**

- 9.1 The ambiguous nature of the application, and the failure of subsequent attempts to clarify it, is of great concern. The inquiry should assess the proposed development on the basis that it includes matrix acidisation, unless the description of the development is changed to clarify the technique being permitted and place specific conditions on it being met.
- 9.2 The Council has put a lot of effort into regenerating Ellesmere Port, and there has been much infrastructure investment, residential development, and the development of major out of town business parks. This has led to the expansion of domestic residences currently to 320m from the site, and a strategic vision for residential development around the site of the well. Clearly times have moved on and the well is potentially a hindrance to future development. In this respect it is economically unsustainable and should weigh in favour of this application being refused.
- 9.3 This location is unusually complex from a receptor point of view. There are safety concerns over the site. All the evidence demonstrates that UOG exploration is a risky business. IGas has not made public an effective risk analysis for this Planning application. A full cumulative risk analysis has not been undertaken. The effects of a well explosion on the explosives store or the adjacent petroleum distribution centre, or vice versa has not been considered. The planning application does pose an increase in risk to the general public, particularly given the distances from neighbouring businesses and the proposed development's position on a cul-de-sac. All this weighs in favour of the planning application being refused.

**Colin D Watson**

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