ISLAND GAS LTD.

APPLICATION UNDER SECTION 73 OF THE
TOWN AND COUNTRY PLANNING ACT (1990)
TO VARY CONDITION 2 OF PERMISSION 1/40/97/2
TO ALLOW THE CONTINUED USE OF
WELLSITES 5, 8, 11, 36, 41 AND 59
OF THE GAINSBOROUGH OILFIELD
FOR A FURTHER TWENTY YEARS

AT

LAND BETWEEN GAINSBOROUGH AND BECKINGHAM,
NOTTINGHAMSHIRE.

SUPPORTING STATEMENT

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1. INTRODUCTION

1.1. Background

The Gainsborough and Beckingham Oilfields were developed during the 1960s and represent one of the larger onshore oilfields in the United Kingdom. The two fields operate as one unit however, in planning terms, the fields are divided into three areas.

Those parts of the Gainsborough oilfield lying to the east of the River Trent lie within Lincolnshire and thus are controlled by permissions issued by Lincolnshire County Council.

The part of the Gainsborough field lying to the west of the River Trent, comprising of wellsites 5, 8, 11, 36, 41, 59 and 60 operates under permissions issued by Nottinghamshire County Council (NCC), whilst the sites of the Beckingham Oilfield operate under separate permissions issued by NCC.

This application relates solely to sites within Nottinghamshire and, for the purposes of this document, reference to 'the Oilfield' should be taken as meaning those parts of the field lying to the west of the River Trent which comprise of wellsites 5, 8, 11, 36, 41 and 59. Reference is also made to wellsite 60, although this wellsite is not included in this application.

Planning permission for the Gainsborough Oilfield was originally granted in the 1950s and was subject to relatively few conditions. In recognition of the need to apply updated conditions to mineral permissions granted in the 1950s, 60s and 70s, the Environment Act 1995 introduced introduced a requirement that all mineral planning consents granted after 1948 should be subject to review.

The initial review of the Gainsborough field was undertaken in 1997 and the field currently operates under conditions determined during this review (Ref: 1/40/97/2). In respect of the lifetime of the development, Condition 2 states that:

> *The use of the wells for oilfield operations shall cease on or before 31st December 2012 and the wells restored to agricultural use within six months of the cessation of use of that well for oilfield operations.*

Although production has gradually declined over the years, an economic quantity of oil is still being produced from the field, and the field is believed to be capable of sustaining such production beyond the current end date.

This application is therefore brought before NCC, as the appropriate Mineral Planning Authority (MPA) to vary Condition 2 and allow the retention of the oil field and the recovery of hydrocarbons for a further twenty years.

Future operations will not involve any further built development and the granting of such an extension will allow the full exploitation of the field to be achieved. Following the cessation of oilfield operations, the sites would be appropriately restored.

1.2. The Applicant

Island Gas Limited is part of the IGas Energy Group, an integrated energy company that produces oil, gas and electricity from a number of onshore oilfields in the United Kingdom. Its principal operations are focused on oil and gas fields in the northwest of England, North Wales, Hampshire, Surrey, West Sussex, Lincolnshire, Nottinghamshire and Leicestershire.

The company employs some 80 staff in the East Midlands Area and spends in excess of £1m annually on taking services from local companies to support its operations.

In the East Midlands the company has recently taken a number of apprentices for long term training, and it is envisaged that these apprentices will replace staff due for retirement in the near future.

1.3. Location and Description

As outlined above, the Gainsborough oilfield extends to the east and west of the River Trent and lies within Lincolnshire and Nottinghamshire respectively. It is situated in part beneath the town of Gainsborough and part beneath the land forming Beckingham Marshes.

The wellsites to which this application relates are situated on the western bank of the River Trent, 500m west of the centre of Gainsborough and some 2km southeast of Beckingham. This section of the oilfield consists of five outlying wellsites, which are connected to a Gathering Centre (wellsite 5) by means of underground pipelines. Wellsites 5, 8, 11 and 41 are located to the north of the A631, with sites 36 and 59 located to the south of the road. The location of the sites is shown on drawing numbers GBHO-01A and GBHO-02A, reproduced at Appendix 1.

The surrounding area consists largely of low-lying agricultural land with mature trees and hedgerows delineating the highway and some of the field boundaries. The bulk of residential properties are situated in Gainsborough and Beckingham with a number of industrial complexes scattered throughout the local area. The closest industrial premises, which are situated to the north of the oilfield, include a substantial timber yard operated by John Brash & Co., and T.W. Logistics, suppliers of ferroalloys and industrial minerals.

1.4. Geology and Hydrology

British Geological Survey (BGS) mapping shows the greater part of the oilfield to be underlain by Quaternary alluvium consisting mainly of silts and clays. These superficial deposits lie unconformably upon mudstones of the Mercia Mudstone Group.

Both the superficial and solid deposits are relatively impermeable and groundwater movement and the natural downward percolation of meteoric waters is limited. The land surrounding the oilfield is drained by a series of artificial ditches, the most significant of which is Beckingham Main Drain.

1.5. Gainsborough Oilfield

Production from the Gainsborough field contains both oil and gas. The gas cap is largely confined to the area to the east of the River Trent and dedicated gas wells produce gas, historically for sale to customers and latterly for electricity production.

The field is generally regarded as one structure although there are discontinuities within the producing sandstone horizons such that the same sandstones are not continuous across the whole structure. As a result wells drilled into the structure have different characteristics depending on their geographical location.

The structure comprises of stacked sandstone reservoirs ranging from Namurian to Westphalian-C in age and occupies a central position within the Gainsborough Trough. The field is characterised by the large number of oil and gas bearing sandstones though due to faulting and sedimentological variation, their presence in the wells drilled on the field varies. The most important reservoir intervals are the Eagle sandstone (Westphalian B), the Donald sandstone (Westphalian A), the Flood Sandstone (Namurian) and the Condor.

2. SITE DETAILS

2.1. Wellsite 5

The wellsite centred at SK 811 896 lies approximately 300m to the north of the A631 and 175m to the west of the River Trent. It is roughly rectangular in shape and extends to 0.8ha., lying at an elevation of approximately 4m AOD. The extent and layout of the site are shown on drawing numbers GBH5-11A and GBH5-12A respectively which, along with photographs of the site, are reproduced at Appendix 2.

The site is accessed by a private roadway known as Ramper Road which runs north from the A631. The access to Ramper Road is secured by an electronically operated security gate set approximately 30m back from the junction with the A631. This road serves as the main access point to the oilfield, also allowing access to sites 8, 11 and 41.

The operational area of the site is secured by green palisade fencing to a height of 2.4m, with two principal vehicular access gates located along the western side of the operational area. Staff and visitor car parking is provided in the north eastern section of the site.

The site is well screened from the south and east by a belt of established, mixed species planting, and from the north by an established hedgerow. Views of the site from any public right of way are effectively limited by the numerous field boundary hedgerows and the screen planting present prevents view of the site from Gainsborough town.

The Gainsborough 5 wellsite is the operational centre for the Gainsborough and Beckingham fields as well as outlying oilfields including Bothamsall, Corringham, Egmanton, South Leverton, Rempstone, Long Clawson and Glentworth.

The site includes office buildings, pump houses, processing plant, storage facilities and one operational oil well. The principal purpose of the plant and machinery at the wellsite is the separation of the oil, gas and water, thus stabilizing the oil prior to it being exported by road to the refinery at Immingham.

The Gainsborough and Beckingham oilfields are connected to Gainsborough 5 wellsite by a system of underground pipelines which deliver the oil, gas and water mixture to the plant. The oil mixture from the outlying fields is delivered by road tanker. The site includes two principal pump houses, which house pumps that allow the movement of oil around the site and the re-injection of water into the hydrocarbon reservoir.

The process plant on Gainsborough 5 site comprises a series of pumps, heaters and separators. The incoming oil mixture from the Gainsborough and Beckingham fields is fed through a cold separator which removes the substantive part of the gas element. The gas is put into the ring main and transferred to the Gainsborough 1 site on Corringham Road Industrial Estate, where it is used to produce electricity.

The remaining oil, water and trace gas is passed through bath heaters which separates the oil gas and water. The oil, trace gas and water are passed onto a water knockout vessel where the water is removed. The oil is moved to a heater which removes any remaining traces of gas. The bulk of the remaining gas is used to fuel the bath heaters, with any surplus being sent via pipeline to wellsite 41 where it is vented to the atmosphere. The amount of gas vented is very small, averaging some 0.5% of the total gas produced.

Both the oil and produced water are temporarily stored on site in eight vertical tanks which are located in an impermeable bunded area located in the southeastern section of the site. In order to help maintain reservoir pressure, the produced water is re-injected into the reservoir via either wellsite 11 or 60.Oil imported to the site by road enters a receiving tank and is pumped through the processing plant to separate the oil, trace gas and water and the component parts are dealt with in a similar way to the fluids from the Gainsborough and Beckingham fields.

Buildings present include a small office complex in the northern section of the site, along with numerous smaller buildings which house electrical equipment and serve as workshops, stores etc, as shown on drawing number GBH5-12A.

The closest residential property lies 225m to the east, on the eastern bank of the River Trent. There is well defined tarmacadam surfaced footpath along the western bank of the River Trent some 80 metres from the north western corner of the site.

2.2. Wellsite 8

The wellsite, centred at SK 807 894, is located approximately 100m to the north of the A631, 625m to the west of the River Trent. It is roughly rectangular in shape and extends to 0.25ha., lying at an elevation of approximately 4m AOD. The extent and layout of the site are shown on drawing numbers GBH8-05A and GBH8-06A respectively which, along with photographs of the site, are reproduced at Appendix 3.

The site is accessed by a metalled roadway running east Ramper Road. The site is secured by concrete post and wire fencing, with gates close to its southeastern corner.

The site is in active production, with the plant present including a single nodding donkey and associated electrical gear. The main site electrical box is raised approximately two metres above ground level to ensure that it remains above any flood waters in times of flood. All produced fluids are transported to wellsite 5 by underground pipeline.

Views of the site from the A631 are screened by established hedgerows, both to the north and south of the site and bordering the highway. The closest residential property, the Trent Port public house, lies 650m to the southeast.

2.3. Wellsite 11

Gainsborough 11, centred at SK 807 900, is located approximately 700m to the north of the A631 and 75m to the west of the River Trent. It is roughly square in plan, extending to 0.13ha. and lying at an elevation of 4m AOD. The extent and layout of the site are shown on drawing numbers GBH11-07A and GBH11-08A respectively which, along with photographs of the site, are reproduced at Appendix 4.

It is accessed by a metalled track which runs west from the site, which then joins a roadway running along the eastern bank of Beckingham Main Drain. This track gives access to Old Trent Road to the north and wellsites 41 and 5 to the south. The A631 is accessed via wellsite 5.

The site includes an active water re-injection well and is secured by green palisade fencing. Aside from the wellhead and associated valves, no plant is present and the wellhead is secured by means of a steel cage. Produced water is supplied from wellsite 5 by underground pipeline.

The closest residential property lies 150m to the east, on the eastern bank of the River Trent. Views of the site from the east are obscured by established planting along the site's eastern boundary and the Trent's flood bank itself, although the site is visible from users of the footpath which runs along this bank.

2.4. Wellsite 36

The wellsite, centred at SK 804 891, is located approximately 50m to the south of the A631, 900m to the west of the River Trent. It is roughly square in shape and extends to 0.16ha., lying at an elevation of approximately 3m AOD. The extent and layout of the site are shown on drawing numbers GBH36-06A and GBH36-07A respectively which, along with photographs of the site, are reproduced at Appendix 5.

The site is accessed by a metalled roadway running south from the A631. The site is currently used for oilfield monitoring purposes and, aside from the wellhead, associated pipework and security cage, no plant is present.

Views of the site are limited by the planting running along the southern bank of the A631 and a hedgerow planted along the western boundary of the site. The closest residential property, the Trent Port public house, lies 875m to the east however the intervening A631 and its associated vegetation serve to limit views of the wellsite from this property.

2.5. Wellsite 41

The wellsite centred at SK 806 897 is located approximately 400m to the north of the A631 and some 600m to the west of the River Trent. It is roughly rectangular in plan and extends to 0.18ha., lying at an elevation of approximately 4m AOD. The extent and layout of the site are shown on drawing numbers GBH41-06A and GBH41-07A respectively which, along with photographs of the site, are reproduced at Appendix 6.

Wellsite 41 is an active site accessed by a metalled roadway which runs north and then west from wellsite 5. It is secured by green chain link fencing, with gates along the northern boundary. Plant present includes a single nodding donkey and associated electrics, and a gas vent and associated above ground pipework. Produced fluids and the supply of the gas to the vent are transferred to or from the site by underground pipeline.

Views of the site are limited by established screen planting along the western and northwestern boundaries, whilst a mature hedgerow to the north of the access track prevents views of the site from the north. The closest residential property lies 700m to the east, on the eastern bank of the River Trent.

2.6. Wellsite 59

The wellsite centred at SK 808 891 is located approximately 100m to the south of the A631, 550m to the west of the River Trent. It is roughly square in shape and extends to 0.12ha., lying at an elevation of approximately 3m AOD. The extent and layout of the site are shown on drawing numbers GBH59-06A and GBH59-07A respectively which, along with photographs of the site, are reproduced at Appendix 7.

Wellsite 59 is currently used for oilfield monitoring purposes and is accessed by a metalled roadway running east then south from wellsite 36. The site is secured by chain link fencing with the main access gates on the northern boundary. Aside from the wellhead, associated pipework and security cage, no plant is present. Views of the site from the east are prevented by an established hedgerow along the site's eastern boundary. The closest residential property, the Trent Port public house, lies 525m to the east however the intervening A631 and its associated vegetation serve to limit views of the wellsite from this property.

3. OPERATIONS DESCRIPTION

3.1. General

Oil is currently extracted from well sites 5, 8 and 41, with all produced fluids being transported directly to wellsite 5 by underground pipeline. Wellsites 11 and 60 are used as a re-injection well for produced fluids, which are separated at wellsite 5 prior to being transported to the injector well by underground pipeline. In addition to producing oil, wellsite 41 also contains a gas vent although the volumes of gas vented are minimal as the bulk of the produced gas is used to fuel the process plant at wellsite 5. Wellsites 36 and 59 are currently used for oilfield monitoring purposes.

3.2. Oil Production

The oil is brought to the surface by the use of a beam pump commonly known as a nodding donkey, which consists of an electric motor attached to the nodding donkey, which is in turn attached to a system of cranks and arms which converts the rotary mechanism of the motor to a vertical reciprocating motion to drive the pump shaft.

The pump itself is located at the bottom of the borehole and consists of a series of valves which pump the oil which collects into the bottom of the borehole through perforations in the borehole casing. The speed and travel of the pump controls the amount of fluids that are pumped. The nodding donkeys operate 24 hours per day 365 days per year apart from routine or breakdown maintenance.

The nodding donkey is mounted on a concrete plinth and over a sump of concrete construction that is referred to as a well cellar and houses the oil well head and isolation valves. The well cellars are of impervious construction and are designed to provide spill containment during well head maintenance operations.

The wells are designed with three concentric casings of different diameters to address bursting, collapse, buckling and tensile loading, with a safety factor designed in for each. The casing design is based on site sub-surface data collected from geological surveys and this helped determine the size, strength and setting depths of the casing.

The area surrounding the well cellar on each site is of concrete construction, with the remaining operational area of the wellsites being surfaced with compacted hardcore.

3.3. Production Rates and Lifetime

The BGS assessed the reserves of the Gainsborough and Beckingham oilfields in 1966 as 13 mmbbl and 6.5 Bcf of associated gas and record that, by 1982, some 3,584,710 bbls and 2,493,720 bbls of oil had been produced from the Gainsborough and Beckingham fields respectively.

To date, production from the field has been some 12 mmbbl and, as a result of increased recovery techniques compared to the early onshore operations, it is anticipated that overall recovery will be greater than originally calculated.

As long as oil prices remain high it is anticipated the field will produce for at least another 20 years. At its peak the field produced some 1,200 bbls per day but production is currently less than 20% of that level and the water produced has steadily increased from the early 1970s.

The sites to which this application relates produce only a small part of the field production but are vitally important in the overall picture as some of the wells are used for water injection and Gainsborough 5 will remain the main gathering station for the foreseeable future.

3.4. Security and Site Monitoring

The remote sites are unmanned however the active sites receive regular, scheduled visits, whilst those sites which are not currently producing receive less frequent monitoring visits. Unauthorised access to the sites is prevented by security fencing, with the main gates being of sufficient size to allow access by HGVs.

At wellsites 8 and 41, security is backed up by an alarm system consisting of motion detectors which are linked to 24 hour monitoring undertaken by a third party raise an alarm at wellsite 5. In the event of excess pressure at the well head, an automatic shutdown system is in place.

As it operates as the operational centre for a number of remote oilfields, wellsite 5 is manned 24 hours per day, 365 days per year.

Normal staffing hours are between 0700 and 1700 Monday to Friday and 0700 to 1300 on Saturday, with reduced staff outside of these hours to deal with maintenance issues as an when they arise.

3.5. Surface Water and Waste Disposal

Rainwater collecting in the site sumps is periodically pumped to a road tanker for transport to wellsite 5 for processing. Areas of impermeable hardstanding on wellsite 5 are collected by a series of drains and passed through an interceptor before being discharged into the local watercourse, a process which is approved in the relevant Environmental Permit. Foul drainage is collected in a cess pit, which is emptied on a regular basis by a third party contractor.

All waste materials arising from any site maintenance operations undertaken are removed from site and transported to the wellsite 5 for collection and appropriate off-site recovery or disposal.

3.6. Site Maintenance

Vegetation growth within the operational areas is kept to a minimum by means of the spot applications of herbicides and all working areas are subject to regular inspections in accordance with IGas Energy's preventative maintenance system.

3.7. Environmental Permitting

The site is subject to a permit issued by the Environment Agency. The Permit, number HP3839MZ, relates to; *"The loading, unloading or handling of, the storage of, or the physical, chemical or thermal treatment of crude oil"*. The Permit is regularly updated resulting from minor site changes and through compliance notices and there is a full audit, including site inspections, at least once a year.

4. RESTORATION AND AFTERCARE

4.1. Restoration

Following the permanent cessation of activities at the site, and in compliance with Condition 3 of the existing permission, all plant and machinery will be removed from the site and the well(s) plugged in accordance with current best practice.

Owing to the dispersed nature of the wellsites and the varied influence of the immediate surrounding areas and habitats, the restoration of each wellsite will be undertaken separately in accordance with a scheme to be agreed with the MPA.

Given the nature of the surrounding area it is envisaged that the majority of the sites will be restored to agriculture.

4.2. Aftercare

An appropriate period of aftercare will be undertaken to ensure the successful regeneration of the sites.

5. PROPOSED VARIATION OF CONDITION

5.1. Existing Condition

Condition 2 currently states that:

> *The use of the wells for oilfield operations shall cease on or before 31st December 2012 and the wells restored to agricultural use within six months of the cessation of use of that well for oilfield operations.*

5.2. Proposed Variation

It is predicted that this oilfield has life of twenty years but, as with any underground mineral extraction, this is based on best estimates from seismic data and performance of the reservoir over a period of time. In addition all hydrocarbons produced in the UK are subject to global economic factors which can extend or limit the life of the oilfield. In order to allow for this uncertainty, it is proposed to retain the oilfield and continue oilfield operations for a further twenty years.

Accordingly this application seeks to vary the wording of Condition 2 to read:

> *The use of the wells for oilfield operations shall cease on or before 31st December 2032 and the wells restored to agricultural use within six months of the cessation of use of that well for oilfield operations.*

6. TRANSPORT

6.1. General

Wellsites within the Gainsborough and Beckingham Oilfields are linked by a network of underground pipelines which allow the transfer of produced fluids between each site. Wellsite 5 operates as a Gathering Centre for the two fields and a number of remote oilfields.

Whilst all produced fluids from the Gainsborough and Beckingham field are conveyed to wellsite 5 by pipeline, fluids from the outlying oilfields are imported by HGV tanker. Following initial processing, oil is exported from the site by HGV tanker and transported for further processing at the refinery at Immingham.

A Transport Statement covering the operations at wellsite 5 was produced by BSP Consulting in May 2012 and is reproduced in full at Appendix 10.

6.2. Access

Access to wellsite 5 is via Ramper Road, a dedicated roadway running north from the A631. The A631 runs between Bawtry (and on to the A1) and Beckingham in the west, through Gainsborough, joining with the A15 at Caenby Corner. From here, the A15 runs north to the M180, or south to the A46 at Lincoln. Access to other wellsites in the field is via private roadways.

6.3. Vehicle Movements

In order to establish the existing traffic flows on the A631, an automatic traffic count was undertaken immediately to the east of the site access.

On average, HGV movements associated with the import of produced fluids from outlying oilfields and the export of oil to the refinery consist of 24 tanker movements per day (i.e. 12 trips in and 12 trips out per day).

In addition to this there will be an additional 20 HGV movements (i.e. 10 trips in and 10 trips out) per 5½ day week, associated with movement of produced water from and to remote wellsites, suction tankers cleaning sumps and tank bunds and HGVs supplying maintenance materials.

Wellsite 5 is also the base for maintenance staff and operations managers, and trips associated with this equate to around 50 light vehicle movements per day (i.e. 25 trips in and 25 trips out per day). Trips to and from Wellsite 5 will be significantly lower on Saturday afternoons, Sundays and bank holidays, when trips would be confined to those which are essential to ensure that the sites are operating safely.

The potential impact of the traffic associated with the oilfield operations was assessed in terms of the percentage of the total traffic on the local highway network. This showed that the oilfield operations generate an insignificant amount of traffic (less than 30 two-way trips per hour and significantly less than 10% of the base traffic). As the operations are not anticipated to change in the foreseeable future, it is considered that then impact of traffic movements on the local highway network will remain low.

6.4. Capacity and Safety

A capacity assessment for the site access junction confirmed that there remains a large amount of spare capacity.

A highway safety and accident analysis, using road traffic accident records for the latest 5 year period has shown that there are currently no particular highway safety issues within the study area, and as the traffic associated with the oilfields is insignificant, it is not considered that that the on-going oilfield operation is detrimental to highway safety.

6.5. Transport Conclusions

The oilfield is served by a dedicated access from the ‘A road’ network and has operated without transport related incident for a significant period of time. The retention of the wellsites will not lead to an increase in the number of transport movements and therefore, and in light of the technical data contained within the Transport Statement, it is considered that the on-going operations are acceptable in highway and transport terms.

7. NOISE

7.1. General

A noise impact assessment was undertaken by URS during early 2012 and is reproduced in full at Appendix 8.

The assessment considered the cumulative noise impact of the existing operational wellsites and of the oil processing activities at wellsite 5 and the measured and predicted noise levels compared with current guidelines at the closest neighbouring residential property. As aspects of the oilfield can be operational on a 24 hour basis, the assessment was undertaken with regard to the day and night time noise level criteria.

7.2. Potential Noise Impacts

Both measured and predicted noise levels experienced at the closest receptor were considered under typical worst case downwind propagation conditions using site specific source noise levels. This has demonstrated that the appropriate noise level criteria are not exceeded at the closest neighbouring noise sensitive property during either the day or night time periods.

7.3. Transport Related Noise

Data from the traffic survey undertaken by BSP Consulting (contained within the Transport Statement reproduced at Appendix 10) and details of the existing site vehicle movements were used to determine the change in road traffic noise levels as a result of the oilfield operations. The change in road traffic noise levels was shown to be negligible and it is therefore concluded that there is no noise impact from vehicular movements associated with the oilfield.

8. LANDSCAPE AND VISUAL IMPACT

8.1. Landscape Character

The general landscape of this area is outlined in detail in the Bassetlaw Landscape Character Assessment. The wellsites sit within the Trent Washlands Policy Zone 25 - Beckingham River Meadowlands.

This is a completely flat landscape which is generally less than 5 metres AOD, with a regular and geometric field pattern throughout. Land use consists of arable crops, with some improved pasture in the centre of the area and a narrow strip of unimproved pasture to the edge of the river. Significant woodland cover is almost absent.

The greater part of the RSPB Reserve is not open to the public although a viewing platform has recently been installed in its western section. The creation of the Reserve has introduced localised impacts upon the local landscape, with a number of hedgerows being grubbed out and several polished steel wind pumps being installed.

The wellsites making up the oilfield have been present for in excess of 50 years and have gradually become integrated within the landscape. Aside from the wellsites, industry in the immediate vicinity of the oilfield is limited to the timber yard/mineral suppliers to the north of wellsite 11. To the south, a substantial flour mill dominates the southwestern area of Gainsborough, whilst the Power Station at West Burton has a significant impact upon the wider landscape.

Field boundary hedgerows are generally poor and out grown with an open base and are predominantly Hawthorn. Roadside hedgerows are more intact, mainly Hawthorn with mature trees including Ash and Oak. The numerous, straight watercourses tend to follow field boundaries.

Overhead power lines pass through the area and, in places, dominate the landscape. Long distance views are frequently possible to the north and the south however views to the east are constrained by Gainsborough and views to the west by constrained by rising topography and wooded ridge lines.

The landscape condition is described as moderate with an emphasis to “conserve and reinforce” and the landscape sensitivity is defined as moderate. Given the limited extent of the development associated with the oil wells, coupled with the existing screening and limited transport movements, the well sites do not have a significant impact on the local landscape.

8.2. Visual Impact

Owing to its plant, buildings and storage tanks, wellsite 5 arguably gives rise to the most potentially significant visual impact of all the wellsites. The site is however well screened from the south and east by a belt of established, mixed species planting, and from the north by an established hedgerow.

Views of the site from any public right of way are effectively limited by the numerous field boundary hedgerows, and the screen planting prevents views of the site from Gainsborough.

Although health and safety concerns are paramount, the site lighting has been designed so as to avoid light spillage outside of the site's boundaries.

Whilst medium distance views of the site are possible from the west, there are no feasible public viewpoints in this direction and the site is easily lost against the backdrop of Gainsborough town. The green palisade fencing has been carefully selected not only to improve the security of the site but also to reduce any perceived visual impact by softening the impact of the plant, rendering it virtually imperceptible in medium and long distance views.

Although relatively close to the A631, wellsite 8 is well screened from the highway by roadside vegetation. Established hawthorn dominated hedgerows border the site to the north and the south and prevent views from these directions, whilst views from the east are prevented by more distant hedgerows. The site remains open to the west but, as with wellsite 5, there are no feasible public viewpoints in this direction and the site is not discernible any potential long-distance views from Beckingham.

Wellsite 11 is perhaps the most visible of the sites from any identified public viewpoint, with views of the site being possible from the footpath which runs along the top of the western flood bank of the River Trent. Screen planting to the east, and an established hedgerow to the south, help to prevent views of the site from residential properties immediately to the east of the Trent. A combination of the lack of any significant plant, coupled with the elevation of the flood bank itself help to prevent views from other areas of Gainsborough.

As with wellsite 5, the green palisade fencing helps to integrate the site into its surroundings and, when viewed in context with the nearby timber yard, the site is virtually invisible in the wider landscape.

By virtue of its plant, including a nodding donkey and vent stack, wellsite 41 has the potential for moderate localised impact. Its location well away from any public viewpoint, coupled with established screen planting immediately to the west and nearby agricultural hedgerows, serve to limit any impact. Whilst the vent stack extends to approximately ten metres above ground level, it's is largely screened by the surrounding vegetation in all but short distance views.

Wellsites 36 and 59 lie to the south of the A631 and are effectively screened from the highway by dense and varied vegetation along the road's southern boundary. Wellsite 36 is screened from the west by mature screen planting, whilst views of wellsite 59 from the east are prevented by the tree-lined route of the A631 and by an established hedgerow along the site's eastern boundary. Both sites remain open to the south however there are limited public viewpoints in this direction.

Whilst not part of this application, wellsite 60, which lies approximately 250m to the west of wellsite 41, must be considered in terms of the potential for cumulative visual impact. The wellsite has only low level wellhead gear installed and is surrounded by a post and wire fence which is indistinguishable from agricultural fences in the area. Accordingly its visual impact is negligible and does not add to any impact that the oilfield may have.

Although the land to the west of the wellsites sites is largely open, the distance to any feasible receptors, including the viewing platform within the RSPB Reserve, effectively mitigates any potential for visual impact.

Overall, whilst the individual sites and plant present may have the potential for limited visual impact, a combination of well-planned and established screening, existing hedgerows and the western Trent flood bank, the sites are well screened from any sensitive viewpoints. Given the variety of land uses within the area, including industrial areas, the town of Gainsborough and a significant public highway, the sites are easily absorbed within the local landscape. As no further built development is proposed within this application, this situation will remain unchanged and the oilfield's impact on the landscape will remain minimal.

9. FLOOD RISK

9.1. General

A Flood Risk Assessment covering the oilfield was undertaken by Thomas Mackay Ltd. in June 2012 and is reproduced in full at Appendix 9. In order to provide a robust assessment, the FRA also takes wellsite 60 into consideration.

It has been undertaken in line with guidance contained within the National Planning Policy Framework and its production included a site visit and a review of information provided by the EA. As there is to be no new development at the site, the Sequential Test is not applicable.

9.2. Flood Risk and Flood Protection

The oilfield is at risk of fluvial/tidal flooding from the River Trent and is considered to be in Flood Zone 3b (Functional Floodplain). It is surrounded by Beckingham Marshes, which are used as a designated flood storage area to reduce flood risk and alleviate flooding in Gainsborough. The area is protected from the River Trent by an earth bund flood defence, which is designed to be overtopped in floods which exceed the 1 in 10 year return period.

Data provided by the EA show that the oilfield has flooded historically, with instances recorded in 1947, 1977 and 2000. The flood risk posed by surface water, sewers and groundwater are not considered to be significant however the oilfield could be at risk of flooding from localised failure of pumps operated by the internal drainage board. These risks are managed and are consequently considered to be low.

9.3. Flood Action Plan

The site is covered by the EA Floodline Warnings Direct and staff have already signed up to receive advanced warnings of possible flooding. A flood action plan is already in place for the oilfield defining the operational procedures to be undertaken in the event of a flood warning being issued. The FRA has formalised the flood evacuation procedures to ensure that staff can be made aware of the route to be taken to obtain safe egress during a flood evacuation.

9.4. Flood Risk Conclusions

As there will be no changes to the existing development or operations at the oilfield as a result of this application, there will be no change to flood risk at either the wellsites or elsewhere.

Whilst the oilfield is anticipated to flood to significant depths, the combination of existing mitigation measures in place and the advanced flood warning provides ample time for the flood procedures to be implemented and the site evacuated when appropriate.

The use of the oilfield and the mitigation measures which have been put in place are considered to be appropriate for the level of flood risk in accordance with the National Planning Policy Framework and therefore no additional measures are deemed to be required.

10. OTHER POTENTIAL ENVIRONMENTAL IMPACTS

10.1. Contamination and Groundwater Protection

Operations at all operational sites are carried out under a Pollution Prevention and Control permit issued by the Environment Agency. The Permit No HP3839MZ allows, amongst other processes, the loading unloading or handling of, the storage of, or the physical chemical or thermal treatment of crude oil, the storage of raw materials and the transport of production fluids between wellsites.

Compliance with this permit, along with IGas Energy's in house safety procedures, ensure that the risk of contamination occurring are reduced to a minimum.

10.2. Dust

The activities carried out at the site do not give rise to significant levels of dust and operational experience throughout the United Kingdom has shown that plant identical to that installed at the site can operate in close proximity to sensitive receptors without cause for concern.

The only potential for dust nuisance is from vehicles accessing the site however the potential for dust generation is minimised by maintaining all areas accessible by vehicles in an appropriate condition.

10.3. Ecology

Operational areas of all wellsites are surfaced with aggregate and are consequently of negligible ecological value. Peripheral grassed areas are maintained at least annually or more frequently if required.

The oilfield lies immediately to the east of the Beckingham Marshes Reserve, with the nearby wellsite 60 lying within the Reserve's boundaries.

The Reserve represents a major habitat creation project on the River Trent floodplain, undertaken as a partnership between the RSPB and the Environment Agency. The principal aim of the development is to revert 92 ha. of low lying grassland to floodplain grazing marsh through modification of the water management regime. The area is bounded to the north by the Old Trent Road, to the south by the A631 and to the east by Beckingham Main Drain. The eastern extent of the reserve is shown on drawing GBHO-02A.

The creation of the reserve is on-going, and includes the creation of a series of new ditches and pools. Once established, this area will support a variety of breeding waders, waterfowl, water voles, brown hares, dragonflies, barn owls and hobbies.

The existing operation at the wellsite have been undertaken for a considerable period of time without undue impact on the surrounding area and the contained nature of the sites and their access tracks prevents encroachment into any potentially sensitive areas.

The applicant enjoys a good working relationship with the RSBP, and dialogue has been on-going since the concept of the Reserve was brought forward by the RSPB. The applicant endeavours to inform the Society of all substantial planned works which may potentially affect the reserve, prior to their commencement.

10.4. Statutorily Designated Sites

A search of the MAGIC database and Natural England's "Nature on the map" identified only one statutorily designated site within 500m of any of the wellsites.

This site, the Moat at Dog Island, is a Scheduled Monument which lies, at closest, 150m to the southeast of Gainsborough 5 wellsite. The earthworks consist of a three sided moat, with the River Trent forming the fourth, eastern side. It is understood to represent the remains of a homestead moat and, although present, the remains of a 19th century brick building within the area of the moat are excluded from the scheduling.

Given the contained nature of the operations and the extensive screening which is present between the nearest wellsite and Dog Island, it is considered that the oilfield operations will have no impact upon this site.

10.5. Public Rights of Way

The oilfield is not crossed by any public rights of way and the closest footpath is Beckingham FP10, which follows the western embankment of the River Trent.

The recently installed viewing platform within the western section of the RSPB Reserve affords limited public access to the area, however this lies a significant distance from the wellsites and has negligible impact on this potential point of access.

Aside from potential views of the sites, the operations carried out across the oilfield do not have the potential to impact upon any identified public right of way.

10.6. Archaeology and Cultural Heritage

The application does not call for any additional built development and therefore there will be no impact upon any archaeological resource.

11. CUMULATIVE IMPACT

It is recognised that, although the impact of the individual sites is minimal, the perceived cumulative impact of a number of sites in close proximity to each other could be significant and this is considered below.

Although outside of this application, there are a number of other wellsites in the local area which may lead to an increase in the development's cumulative impact. In comparison to Gainsborough and its associated industries, those oil wells forming part of the Gainsborough Oilfield to the east of the River Trent have minimal impact on the local environment and so can be discounted in considering potential cumulative impact.

There are a number of oil wells to the west, which together form the Beckingham Oilfield, however the majority of these wells are some distance from the area being considered in this review and, owing to the limited inter-visibility between the oilfield, it is considered that there will be minimal cumulative impact arising.

Within the oilfield itself, the cumulative impact of the site is reduced by the numerous intervening hedgerows, which help to break up the landscape and give opportunities to screen apparatus. As produced fluids are transported between sites by underground pipeline the impact of inter-site transport is negligible and the tracks which serve the site are virtually indistinguishable from agricultural tracks.

Wellsite 60, although falling outside the scope of this application, is located within 250m of wellsite 41 and, as such must be considered part of the same development for the purposes of assessing potential cumulative impact. Wellsite 60 is a small wellsite extending to around 0.23ha. which includes no significant plant or fencing and therefore can be considered to be of minimal impact.

The total area of land occupied by all sites in the immediate area, including wellsite 60, is 1.86ha. This is set in a landscape of some 55ha. and therefore the oil wells only represent some 3.4% of land use. This small amount of land use is considered to have a negligible impact on either its immediate environs or the wider area.

12. PLANNING POLICY

12.1. Policy Framework

NCC has responsibility for all mineral planning control within the County and is considered to be the competent authority in respect of this application. The site lies within the Bassetlaw District and, whilst not necessarily relating directly to oil and gas applications, policies contained within the Local Development Framework (LDF) have also been considered where relevant.

In addition to the above, account has been taken of National planning policy in the form of the National Planning Policy Framework (NPPF), which was published in March 2012. The majority of Minerals Planning Guidance Notes and Minerals Policy Statements were cancelled with the publication of the NPPF.

12.2. Minerals Local Plan

The Nottinghamshire Minerals Local Plan (MLP) was adopted on 5th December 2005 following several periods of public consultation and a public inquiry. Following a submission by the County Council, the Secretary of State directed that, with seven exceptions, all MLP policies be saved until replaced by new adopted policies. None of the seven exceptions are considered to have any direct relevance to this application.

Of the retained policies, Chapter 13 of the MLP, '*Oil, Coalbed Methane and Mine Gas'* is consider to be the most relevant chapter to this application and highlights that, in addition to contributing to the local economy, the Government receives considerable revenues in the form of taxes and royalties from oil production and that, despite the relative insignificance of onshore oil, it remains a cheap and economic resource to exploit when compared to its North Sea counterpart.

At paragraph 13.16 the MLP recognises that, in land-use terms, oil is very economical and the environmental impacts associated with its extraction are normally limited.

Policy M13.3 OIL PRODUCTION states that:

> *Proposals for the production, processing or transport of oil will be permitted provided that they are:*
>
> *(a) consistent with an overall scheme enabling the full development of the resources;*
>
> *(b) there are no unacceptable impacts on the environment and to residential amenity.*

The operations across the oilfield are undertaken in line with current best practice and the retention of the oilfield for a further period of time will ensure that the resources will be developed fully.

At Paragraph 13.29 of the MLP, it is recognised that *'Boreholes often pass through other underground mineral resources, which can give rise to a number of problems.'*

Policy M13.6 *'BOREHOLES – CONFLICTS WITH OTHER UNDERGROUND MINERAL RESOURCES'* states that:

> *Where proposals for borehole exploration and production coincide with areas containing other underground mineral resources the County Council will need to be satisfied that their exploitation will not be unreasonably affected.*

Despite the presence of other potential underground resources, the oilfield operates without impact upon any other mineral resource.

POLICY M13.7 RECLAMATION OF OIL AND METHANE SITES

> *Where planning permission for oil and methane development is granted, conditions will be imposed requiring the site to be restored back to its original use as soon as practical once the development is no longer required.*

As previously identified, each individual site will be restored to the most beneficial afteruse, with due regard being given to the surrounding area and habitats present.

12.3. Nottinghamshire Emerging Policy

NCC is currently preparing new minerals planning guidance in the form of their Minerals and Waste Development Framework (MWDF). The Minerals Core Strategy will set out overall approach to future mineral extraction in the County, with the Minerals Development Control Policies Document being prepared at the same time. These documents will set out policies for controlling development and making sure environmental standards are met.

Evidence gathering is now underway, with an aim of having the finalised MWDF adopted by 2013. Given the relatively early stage of the emerging MWDF, there are currently no emerging policies with direct relevance to this application.

12.4. Bassetlaw Local Development Framework

Bassetlaw District Council's Local Plan has now been replaced by the LDF, with the Core Strategy and its Development Control policies and Proposals Map, being adopted by the Council in December 2011.

The Core Strategy contains broad policies to cover development throughout the District until 2028. As Bassetlaw is not the MPA, the Core Strategy does not contain any policies specific to minerals developments and is therefore of limited relevance to this application.

12.5. National Planning Policy Framework

The National Planning Policy Framework, published on 27th March 2012, sets out the Government's planning policies for England and how these are expected to be applied. Whilst the Framework does not set any specific policies in relation to the retention of minerals sites such as those at Gainsborough, it nevertheless contains guidance on matters which have relevance to the development.

The NPPF is a material planning consideration in the determination of planning applications but does not change the statutory status of the Development Plan as being a starting point for decision making. At the heart of the NPPF is a presumption in favour of sustainable development.

Section 13, '*Facilitating the sustainable use of minerals*', addresses issues which must be assessed when considering minerals applications. The NPPF recognises that minerals are essential to support sustainable economic growth and our quality of life and the importance of ensuring a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs. In addition, it recognises that minerals are a finite natural resource, and can only be worked where they are found.

With particular reference to minerals paragraph 142 notes that *'minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide….energy and goods our country needs'*.

Paragraph 144 states that *'When determining planning applications, local planning authorities should: give great weight to the benefits of the mineral extraction, including to the economy;……'*

Production from the Gainsborough/Beckingham Oilfields makes a significant contribution to the overall viability of oil extraction throughout the East Midlands, which supports a considerable number of jobs and eases the Country's reliance on imports.

Accordingly the proposed retention of the oilfield in order to maximise the recovery of an important energy mineral without the need for any further development is considered to be in line with the aims of the NPPF.

The Technical Guidance accompanying the NPPF provides additional guidance to local planning authorities to ensure the effective implementation of the planning policy set out in the NPPF in relation flood risk and minerals matters, including guidance on noise and dust.

This guidance retains key elements of numerous Planning Policy and Minerals Policy Statements and Minerals Planning Guidance Notes, which are considered necessary and helpful in relation to their relative policy areas.

Where relevant the guidance has been taken into consideration throughout this document, with issues regarding noise, dust and flood risk and other potential environmental concerns being addressed in line with the procedures outlined within the NPPF.