## 1. Abbreviations and Definitions

<b>Definitions for the Envir</b>	ronmental Risk Assessment								
Activity / Event	The specific operation being undertaken relating to the proposed hazard and risk.								
Hazard	The hazards category i.e. type of emission.								
Source	The pollutants from the activity taking place such as flaring.								
Pathway	The pathway the pollutant is taking such as air or unsaturated zones.								
Receptor	Those who it may have an adverse effect on i.e. surrounding residents, wildlife and habitats, designated sites.								
<b>Exposure Probability</b>	The chance of the hazard occurring without taking into account mitigation measures.								
Impact Severity	The impact of the hazard should it occur without taking into account mitigation measures.								
Risk Magnitude	A hazard that has been assessed and has been given a risk rating level pre-mitigation measures.								
Risk Management	Mitigation measures that will be put in place to control the risks so far as reasonably practicable.								
Residual Risk	A hazard that has been assessed and has been given a risk rating level post mitigation measures.								
Not Significant	The severity, together with the likelihood of the risk is not expected to cause any harm to the environment.								
Low	The severity, together with the likelihood of the risk has low potential to cause harm to the environment.								
Medium	The severity, together with the likelihood of the risk has moderate potential to cause harm to the environment.								
High	The severity, together with the likelihood of the risk has a high potential to cause harm to the environment.								

Table 1: Definitions

## 2. Methodology

The structure of the Environmental Risk Assessment follows the Environment Agency online guidance and uses a model known as the 'Source-Pathway-Receptor' model. The Environmental Risk Assessment shall:

- Identify the risk from the site;
- Assess risks and checking they are acceptable;
- Justify appropriate measures to control the risk (if needed); and
- Present the findings of the risk assessment.

The Environmental Risk Assessment has included the following categories which have been reviewed for applicability within the proposed operations.

- Accidents.
- Air Emissions.
- Noise and Vibration.
- Odour Emissions.
- Releases to Surface Water.

- Releases to Groundwater.
- Visible Emissions.
- Fugitive Emissions.
- Climate Change
- Global Warming Potential.



## 3. Scoring Criteria

In order to establish a risk rating for each Source-Pathway-Receptor (S-P-R) linkage both the Likelihood (Exposure Probability) and Consequence (Impact Severity) have been issued with a score using Table 2 and Table 3 respectively. The score is used in conjunction with Table 4 to provide an overall risk rating of the activity. All scores and risk ratings are provided on the basis that the mitigation measure are not in place.

The Residual Risk uses the same scoring system but does consider the proposed mitigation measures.

Likelihood	Descriptor
Very Low	Rarely encountered, never reported or highly unlikely.
Low	Infrequent occurrences.
Medium	Can be expected to occur several times per year.
High	Repeated Occurrences.

**Table 2: Scoring System Likelihood** 

Consequence	Descriptor
Very Low	Slight environmental effect that does not exceed a regulatory standard.
Low	Minor environmental effect, may breach a regulatory standard, localised to the point of release with no significant impact.
Medium	Moderate, localised effect on people and the environment in the vicinity of the incident.
High	A major environmental incident resulting in significant damage to the environment and harm to human health.

Table 3: Scoring System Consequence

The risk matrix presented in Table 4 provides a risk rating for each S-P-R linkage identified within this Environmental Risk Assessment.

Risk Rating		Consequence								
KI5	K Natilig	Very Low	Low	Medium	High					
þ	Very Low	Not Significant	Not Significant	Low	Low					
Likelihood	Low	Not Significant	Low	Medium	Medium					
(eli	Medium	Low	Medium	Medium	High					
<u> </u>	High	Low	Medium	High	High					

Table 4: Risk Matrix

Environmental risks are assigned a Not Significant, Low, Medium or High risk rating and coded using a colour coded system. A description of each risk rating is presented in Table 5 below.

Consequence	Acceptable	Descriptor
Not Significant	Acceptable	Near-certain that an incident will not occur, or the consequences would not be significant.
Low	Acceptable	Unlikely an incident will occur, or the consequences would be minor confined to the immediate area.
Medium	Tolerable	Activity can only take place provided that impacts are localised and risk remediation is readily
High	Unacceptable	The risk must be further reduced before the activity can commence.

**Table 5: Risk Rating Definition** 



ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
AC1	Transferring Substances:  • Spillages.  • Overfilling.  • Incorrect Connections.	Pathway  Vapours Carried on Wind. Flow by Gravity.	Receptor  See Receptor Table.	Probability  Medium	Medium	Medium	COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Drip trays used for the transfer or decanting of fuel/small volume liquids such as engine oil.  Emergency Response Plan for the site.  Groundwater monitoring (to be) in place with results reported in accordance with EA permit.  HDPE membrane is in place and the subject of visual inspection where possible.  Hydrogeological Impact Assessment concludes no significant impact.  Operations planned / designed to minimise transport and handling operations.  Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.  Qualified and competent site supervisor appointed.  Primary containment systems monitored / tested where required.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.	Risk  Not Significant
AC2	Poor Storage Arrangements of Hazardous Substances: • Poor management of chemicals resulting in leaks / evaporation / loss of product.	Vapours Carried on Wind. Flow by Gravity.	See Receptor Table.	Low	Medium	Medium	Where HDPE failure is suspected, non-intrusive testing shall be undertaken.  Chemicals segregated, stored correctly and sealed when not in use.  Competent personnel only to store / use chemicals.  COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Drip trays used for the transfer or decanting of fuel/small volume liquids such as engine oil.  Emergency Response Plan for the site.  Groundwater monitoring (to be) in place with results reported in accordance with EA permit.  HDPE membrane is in place and the subject of visual inspection where possible.  Hydrogeological Impact Assessment concludes no significant impact.  Operations planned / designed to minimise transport and handling operations.  Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.  Qualified and competent site supervisor appointed.  Primary containment systems monitored / tested where required.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.	Not Significant
AC3	Incompatible Substances coming into contact. (Unwanted Reactions / Runaway Reactions).	Vapours Carried on Wind. Flow by Gravity.	See Receptor Table.	Very Low	Medium	Low	Where HDPE failure is suspected, non-intrusive testing shall be undertaken.  Chemicals segregated, stored correctly and sealed when not in use.  Competent personnel only to store / use chemicals.  COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Emergency Response Plan for the site.  Fire awareness training / site induction for personnel.  Fire points, extinguishers and a fire water tank located around the site.  Groundwater monitoring (to be) in place with results reported in accordance with EA permit.  HDPE membrane is in place and the subject of visual inspection where possible.  Leak Detection and Repair Plan for the site.  Local Fire & Rescue Service notified of operations.  Operations planned / designed to minimise transport and handling operations.  Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.  Plant, tanks and pipework capped / plugged after breaking containment.  Primary containment systems monitored / tested where required.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	Not Significant



ID		S-P-R Linkage		Exposure		Risk	Risk Management	Residual
10	Source	Pathway	Receptor	Probability	Severity	Magnitude		Risk
AC4	Fire Breakout: • Fire and Associated Fumes. • Use of Fire Water.	Vapours Carried on Wind. Flow by Gravity.	See Receptor Table.	Very Low	Medium	Low	Breaking containment of tanks and pipework systems shall minimised. Chemicals segregated, stored correctly and sealed when not in use. Competent personnel only to store / use chemicals. COSHH Assessments and SDS sheets in place for hazardous substances. COSHH Items stored appropriately in accordance with SDS and regulations. Emergency Response Plan for the site. Fire awareness training / site induction for personnel. Fire points, extinguishers and a fire water tank located around the site. Fire Risk Assessment shall be in place and will outline the control measure and procedures used to reduce the likelihood of a fii igniting. Gas detectors deployed with an alarm trigger of 5ppm / 7mg.m3 (EH40 WELs). Groundwater monitoring (to be) in place with results reported in accordance with EA permit. HDPE membrane is in place and the subject of visual inspection where possible. Leak Detection and Repair Plan for the site. Local Fire & Rescue Service notified of operations. Permit to work system implemented to authorise specific works i.e. hot/cold works. Plant, tanks and pipework tested for leaks prior to first use to confirm integrity. Plant, tanks and pipework tested for leaks prior to first use to confirm integrity. Plant, tanks and pipework cleaned / purged where possible prior to breaking containment. Primary containment systems monitored / tested where required. Qualified and competent site supervisor appointed. Records kept of complaints and subsequent mitigation imposed if necessary. Regular maintenance and inspections conducted as directed by written procedures. Secondary containment installed to prevent spill onto tertiary containment system (HDPE). Security measures implemented at site. Spillage response procedure for the site established. Suitable spillage kits available on site / transport vehicles. Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	e Not Significant
AC5	Impact from Fire: • Fire and Associated Fumes. • Use of Fire Water.	Vapours Carried on Wind. Flow by Gravity.	See Receptor Table.	Very Low	Medium	Low	Breaking containment of tanks and pipework systems shall minimised. Chemicals segregated, stored correctly and sealed when not in use. Competent personnel only to store / use chemicals. COSHH Assessments and SDS sheets in place for hazardous substances. COSHH Items stored appropriately in accordance with SDS and regulations. Emergency Response Plan for the site. Fire awareness training / site induction for personnel. Fire points, extinguishers and a fire water tank located around the site. Fire Risk Assessment shall be in place and will outline the control measure and procedures used to reduce the likelihood of a fir igniting. Gas detectors deployed with an alarm trigger of 5ppm / 7mg.m3 (EH40 WELs). Groundwater monitoring (to be) in place with results reported in accordance with EA permit. HDPE membrane is in place and the subject of visual inspection where possible. Leak Detection and Repair Plan for the site. Local Fire & Rescue Service notified of operations. Permit to work system implemented to authorise specific works i.e. hot/cold works. Plant, tanks and pipework tested for leaks prior to first use to confirm integrity. Plant, tanks and pipework cleaned / purged where possible prior to breaking containment. Primary containment systems monitored / tested where required. Qualified and competent site supervisor appointed. Records kept of complaints and subsequent mitigation imposed if necessary. Regular maintenance and inspections conducted as directed by written procedures. Secondary containment installed to prevent spill onto tertiary containment system (HDPE). Security measures implemented at site. Spillage response procedure for the site established. Suitable spillage kits available on site / transport vehicles. Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	e Not Significant



ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
שו	Source	Pathway	Receptor	Probability	Severity	Magnitude		Risk
AC6	Containment Failure of Exploration and Well Test Equipment. • Storage Tanks. • Pipework. • Wellhead. • Separator. • Any Other Equipment.	Vapours Carried on Wind. Flow by Gravity.	See Receptor Table.	Medium	High	High	COSHH Assessments and SDS sheets in place for hazardous substances. COSHH Items stored appropriately in accordance with SDS and regulations. Emergency Response Plan for the site. Fire awareness training / site induction for personnel. Fire points, extinguishers and a fire water tank located around the site. Fire Risk Assessment shall be in place and will outline the control measure and procedures used to reduce the likelihood of a fire ligniting. Gas detectors deployed with an alarm trigger of Sppm / 7mg.m3 (EH40 WELs). Groundwater monitoring (to be) in place with results reported in accordance with EA permit. HDPE membrane is in place and the subject of visual inspection where possible. Leak Detection and Repair Plan for the site. Local Fire & Rescue Service notified of operations. Plant, tanks and pipework tested for leaks prior to first use to confirm integrity. Plant, tanks and pipework cleaned / purged where possible prior to breaking containment. Primary containment systems monitored / tested where required. Qualified and competent site supervisor appointed. Records kept of complaints and subsequent mitigation imposed if necessary. Regular maintenance and inspections conducted as directed by written procedures. Secondary containment installed to prevent spill onto tertiary containment system (HDPE). Spillage response procedure for the site established.	
AC7	Surface Run-off Water:  • Overfill of Site Containment Ditch resulting in unauthorised offsite discharge of noncontaminated water.	Flow by Gravity.	See Receptor Table.	Low	Medium	Medium	Suitable spillage kits available on site / transport vehicles.  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.  Drip trays used for the transfer or decanting of fuel/small volume liquids such as engine oil.  Emergency Response Plan for the site.  Groundwater monitoring (to be) in place with results reported in accordance with EA permit.  HDPE membrane is in place and the subject of visual inspection where possible.  No discharge activities are being proposed.  Primary containment systems monitored / tested where required.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	Not Significant
AC8	Surface Run-off Water:  • Overfill of Site Containment Ditch resulting in unauthorised offsite discharge of contaminated water.	Flow by Gravity.	See Receptor Table.	Low	Medium	Medium	Drip trays used for the transfer or decanting of fuel/small volume liquids such as engine oil.  Emergency Response Plan for the site.  Groundwater monitoring (to be) in place with results reported in accordance with EA permit.  HDPE membrane is in place and the subject of visual inspection where possible.  No discharge activities are being proposed.  Primary containment systems monitored / tested where required.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	Not Significant



ID		S-P-R Linkage	B	Exposure	Impact	Risk	Risk Management	Residual
AC9	Onsite Spillages:  • Percolation through near surface and deeper formation to groundwater bodies.  • Percolation offsite through near surface and deeper formation to groundwater bodies.	Pathway  Flow by Gravity.	Receptor  See Receptor Table.	Probability  Medium	Medium	Medium	Drip trays used for the transfer or decanting of fuel/small volume liquids such as engine oil.  Emergency Response Plan for the site.  Groundwater monitoring (to be) in place with results reported in accordance with EA permit.  HDPE membrane is in place and the subject of visual inspection where possible.  Primary containment systems monitored / tested where required.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	Risk Not Significant
AC10	Vandalism • Various – acts of vandalism may cause fires, loss of containment from containers, damage to site equipment, etc.	Various - acts of vandalism may cause fires, loss of containment from containers, damage to site equipment, etc.	See Receptor Table.	Very Low	High	Low	Chemicals segregated, stored correctly and sealed when not in use.  COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Emergency Response Plan for the site.  Fire awareness training / site induction for personnel.  Fire points, extinguishers and a fire water tank located around the site.  Fire Risk Assessment shall be in place and will outline the control measure and procedures used to reduce the likelihood of a fire igniting.  HDPE membrane is in place and the subject of visual inspection where possible.  Local Fire & Rescue Service notified of operations.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Security measures implemented at site.  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	Not Significant
AC11	Spillage and Leaks as a result of vehicle related accidents: • System spillages and leaks as a result from Vehicle Related Accidents	Vapours Carried on Wind. Flow by Gravity.	See Receptor Table.	Low	Medium	Medium	COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Drip trays used for the transfer or decanting of fuel/small volume liquids such as engine oil.  Emergency Response Plan for the site.  Fire awareness training / site induction for personnel.  Fire points, extinguishers and a fire water tank located around the site.  Fire points, extinguishers and a fire water tank located around the site.  Fire Risk Assessment shall be in place and will outline the control measure and procedures used to reduce the likelihood of a fire ligniting.  Groundwater monitoring (to be) in place with results reported in accordance with EA permit.  HDPE membrane is in place and the subject of visual inspection where possible.  Local Fire & Rescue Service notified of operations.  Operations planned / designed to minimise transport and handling operations.  Regular maintenance and inspections conducted as directed by written procedures.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.  Trained persons to operate vehicles and site plant.  Vehicles shall drive on approved roads and follow site traffic management system.  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	Not Significant
AC12	Flooding:  Overfill of Site Containment Ditch resulting in unauthorised offsite discharge of non-contaminated water.  Overfill of Site Containment Ditch	Flow by Gravity.	See Receptor Table.	Very Low	Medium	Low	Emergency Response Plan for the site. Qualified and competent site supervisor appointed. Routine visual check on the containment ditch by operatives. Site designed to flood in the first instance before over spilling. Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).	Not Significant



ID	Source	S-P-R Linkage Pathway	Receptor	Exposure Probability	Impact Severity	Risk Magnitude	Risk Management	Residual Risk
AE1	Emissions to Air from Engine Exhausts including:  • Vehicles.  • Ancillary Plant (Generators).  • Main Plant (Drilling Rig / Workover Rig / Well Test Spread).	Emitted to air and carried on wind.	See Receptor Table.	High	Low	Medium	Air Quality Impact Assessment concludes no significant impact.  Equipment installed, serviced and maintained by competent and qualified contractors.  Generators assessed for compliance with Emission Limit Values.  Odour Management Plan implemented for the site, if required.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Sensitive Receptors in excess of 500 metres away from the development.  Trained persons to operate vehicles and site plant.  Vehicles and plant serviced and maintained in line with manufacturer requirements.  Vehicles and plant switched off when not in use.  Working personnel subject to a site induction covering odour management.	Not Significant
AE2	Emissions to Air from the Incineration of Natural Gas: • Flare Tip / Stack.	Emitted to air and carried on wind.	See Receptor Table.	High	Low	Medium	Air Quality Impact Assessment concludes no significant impact.  Combustion temperature managed to ensure efficient (>98%) combustion efficiency.  Combustion unit subject to approval by the EA.  Dedicated scrubbers in place to remove H <sub>2</sub> S from natural gas, if necessary.  Equipment installed, serviced and maintained by competent and qualified contractors.  Flare monitoring (to be) in place with results reported in accordance with EA permit.  H <sub>2</sub> S is not anticipated.  Odour Management Plan implemented for the site, if required.  Propane shall be used to increase the calorific value of the gas whilst heavy with Nitrogen(N <sub>2</sub> ) / Carbon Dioxide (CO <sub>2</sub> ) to encourage combustion.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Trained persons to operate flare unit.  Vehicles and plant serviced and maintained in line with manufacturer requirements.  Working personnel subject to a site induction covering odour management.	Not Significant
AE3	Emissions to Air from Well Test Spread / Cold Venting Operations: • Flare Tip / Stack.	Emitted to air and carried on wind.	See Receptor Table.	Medium	High	High	Air Quality Impact Assessment concludes no significant impact.  Combustion temperature managed to ensure efficient (>98%) combustion efficiency.  Combustion unit subject to approval by the EA.  Dedicated scrubbers in place to remove H <sub>2</sub> S from natural gas, if necessary.  Equipment installed, serviced and maintained by competent and qualified contractors.  Flare monitoring (to be) in place with results reported in accordance with EA permit.  H <sub>2</sub> S is not anticipated.  Odour Management Plan implemented for the site, if required.  Propane shall be used to increase the calorific value of the gas whilst heavy with Nitrogen(N <sub>2</sub> ) / Carbon Dioxide (CO <sub>2</sub> ) to encourage combustion.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Trained persons to operate flare unit.  Vehicles and plant serviced and maintained in line with manufacturer requirements.  Working personnel subject to a site induction covering odour management.	Not Significant



ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
10	Source	Pathway	Receptor	Probability	Severity	Magnitude	ных манаденен.	Risk
							Air Quality Impact Assessment concludes no significant impact.	
						Medium	Breaking containment of tanks and pipework systems shall minimised.	
	Emnissions to Air from Breaking of						Equipment cleaned / purged where possible prior to breaking containment.	
	Containment:						Plant, tanks and pipework capped / plugged after breaking containment.	
AE4	Storage Tanks.     Pipework.	Emitted to air and carried on wind.	See Receptor Table.	Medium	Low		Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.	Not Significant
	• Wellhead.						Odour Management Plan implemented for the site, if required.	
	• Separator.						Records kept of complaints and subsequent mitigation imposed if necessary.	
	Any Other Equipment.						Regular maintenance and inspections conducted as directed by written procedures.	
							Trained persons to operate vehicles and site plant.	
							Working personnel subject to a site induction covering odour management.	
	Emissions to Air from Produced Fluids on the Surface of Wellbore Equipment:						Cleaning and purging where possible prior to pulling out of hole.	
	Drilling Rig.	Emitted to air and carried on wind.	on wind. See Receptor Table. Medium	Medium			Odour Management Plan implemented for the site, if required.	Not Significant
AE5	Workover Rig.				Low	Medium	Records kept of complaints and subsequent mitigation imposed if necessary.	
	Drill Pipe.     Wellhead.					Volume of produced fluids on wellbore equipment is expected to be minimal.		
	Any Other Equipment.						Working personnel subject to a site induction covering odour management.	
		Emitted to air and carried on wind.	See Receptor Table.				Breaking containment of tanks and pipework systems shall minimised.	
				Medium			Equipment cleaned / purged where possible prior to breaking containment.	
					Low	Medium	Plant, tanks and pipework capped / plugged after breaking containment.	
							Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.	
AE6	Emissions to Air from the Storage of Sewage:						Odour Management Plan implemented for the site, if required.	
ALO	Sewage Tanks.	Enlitted to all and carried on wind.					Records kept of complaints and subsequent mitigation imposed if necessary.	Not Significant
							Regular maintenance and inspections conducted as directed by written procedures.	
							Tanks monitored and emptied as required.	
							Tanks self-contained / enclosed where necessary to limit emissions to air.	
							Working personnel subject to a site induction covering odour management.	
							Odour Management Plan implemented for the site, if required.	
							Records kept of complaints and subsequent mitigation imposed if necessary.	
	Emissions to Air from the Storage of General						Regular maintenance and inspections conducted as directed by written procedures.	
AE7	Waste:	Emitted to air and carried on wind.	See Receptor Table.	Medium	Low	Medium	Skips clearly marked to ensure waste segregation and avoid cross contamination.	Not Significant
	Waste Skips.						Skips monitored daily and emptied as required.	
							Skips self-contained / enclosed to prevent emissions.	
							Working personnel subject to a site induction covering odour management.	



ID	Source	S-P-R Linkage Pathway	Receptor	Exposure Probability	Impact Severity	Risk Magnitude	Risk Management	Residual Risk
	Jource	rathway	песерио	Trobability	Severity	Wagiiitaac	Compliance with planning authority noise limits.	Nisk
							Installation of acoustic barrier where required.	
							Loading/unloading operations planned for day light hours where possible.	
							Noise limits set by the planning authority shall be complied with.	
							Noise monitoring imposed if required.	
	Noise Releases from Engines including:						Periodic noise monitoring will take place during the development.	
NE1	Vehicles.     Ancillary Plant (Generators).	Atmosphere and Ground Vibrations.	See Receptor Table.	Medium	Medium	Medium	Records kept of complaints and subsequent mitigation imposed if necessary.	Not Significant
	Main Plant (Rig / Well Test Spread).						Regular maintenance and inspections conducted as directed by written procedures.	
							Trained operators to load / unload vehicles using MHE plant equipment.	
							Transport restrictions and hours of operation set by the planning authority shall not be breached.	
							Vehicles and plant serviced and maintained in line with manufacturer requirements.	
							Vehicles and plant switched off when not in use.	
							White noise reversing alarms fitted to site vehicles if required.	
							Compliance with planning authority noise limits.	
							Installation of acoustic barrier where required.	
	Noise Releases from the Incineration of Natural						Noise limits set by the planning authority shall be complied with.	
NE2	Gas:	Atmosphere and Ground Vibrations.	See Receptor Table.	Medium	Medium	Medium	Noise monitoring imposed if required.	Not Significant
	Flare Tip / Stack.						Periodic noise monitoring will take place during the development.	
							Records kept of complaints and subsequent mitigation imposed if necessary.	
							Regular maintenance and inspections conducted as directed by written procedures.	
						I	Compliance with planning authority noise limits.	
							Installation of acoustic barrier where required.	
							Loading/unloading operations planned for day light hours where possible.	
							Noise limits set by the planning authority shall be complied with.	
							Noise monitoring imposed if required.	
	Noise and Vibration from Drilling Operations including:						Operation will be short duration.	
NE3	Vehicles.	Atmosphere and Ground Vibrations.	See Receptor Table.	Low	Medium	Medium	Periodic noise monitoring will take place during the development.	Not Significant
1123	Ancillary Plant (Generators).     Main Plant (Drilling Rig and Equipment).	ranosphere and droand violations.	See neceptor radio.	2011	Wicaldin	Wicaldin	Records kept of complaints and subsequent mitigation imposed if necessary.	Not Significant
							Regular maintenance and inspections conducted as directed by written procedures.	
							Trained operators to load / unload vehicles using MHE plant equipment.	
							Transport restrictions and hours of operation set by the planning authority shall not be breached.	
							Vehicles and plant serviced and maintained in line with manufacturer requirements.	
							Vehicles and plant switched off when not in use.	
							White noise reversing alarms fitted to site vehicles if required.	
							Compliance with planning authority noise limits.	
							Installation of acoustic barrier where required.	
							Loading/unloading operations planned for day light hours where possible.	
							Noise limits set by the planning authority shall be complied with.	
							Noise monitoring imposed if required.	
							Periodic noise monitoring will take place during the development.	
NE4	Noise Releases from Ancillary Operations.	Atmosphere and Ground Vibrations.	See Receptor Table.	Low	Medium	Medium	Records kept of complaints and subsequent mitigation imposed if necessary.	Not Significant
1							Regular maintenance and inspections conducted as directed by written procedures.	
							Trained operators to load / unload vehicles using MHE plant equipment.	
							Transport restrictions and hours of operation set by the planning authority shall not be breached.	
							Vehicles and plant serviced and maintained in line with manufacturer requirements.	
							Vehicles and plant switched off when not in use.	
	1	1					White noise reversing alarms fitted to site vehicles if required.	



ID	Source	S-P-R Linkage Pathway	Receptor	Exposure Probability	Impact Severity	Risk Magnitude	Risk Management	Residual Risk
NE5	Noise and Vibration from Drilling Operations including:  • Vehicles. • Ancillary Plant (Generators). • Main Plant (Workover Rig and Equipment).	Atmosphere and Ground Vibrations.	See Receptor Table.	Low	Medium	Medium	Compliance with planning authority noise limits. Installation of acoustic barrier where required. Loading/unloading operations planned for day light hours where possible. Noise limits set by the planning authority shall be complied with. Noise monitoring imposed if required. Operation will be short duration. Periodic noise monitoring will take place during the development. Records kept of complaints and subsequent mitigation imposed if necessary. Regular maintenance and inspections conducted as directed by written procedures. Seismic monitoring implemented. Trained operators to load / unload vehicles using MHE plant equipment. Transport restrictions and hours of operation set by the planning authority shall not be breached. Vehicles and plant serviced and maintained in line with manufacturer requirements. Vehicles and plant switched off when not in use. White noise reversing alarms fitted to site vehicles if required.	Not Significant
NEG	Noise and Vibration from Well Treatment Operations including: • Vehicles. • Ancillary Plant (Generators). • Main Plant (Workover Rig and Equipment).	Atmosphere and Ground Vibrations.	See Receptor Table.	Low	Medium	Medium	Compliance with planning authority noise limits.  Installation of acoustic barrier where required.  Loading/unloading operations planned for day light hours where possible.  Noise limits set by the planning authority shall be complied with.  Noise monitoring imposed if required.  Operation will be short duration.  Periodic noise monitoring will take place during the development.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Trained operators to load / unload vehicles using MHE plant equipment.  Transport restrictions and hours of operation set by the planning authority shall not be breached.  Vehicles and plant serviced and maintained in line with manufacturer requirements.  Vehicles and plants witched off when not in use.  White noise reversing alarms fitted to site vehicles if required.	Not Significant
NE7	Noise and Vibration Emissions from:  • Mechanical Failures.  • Mechanical Defects.	Atmosphere and Ground Vibrations.	See Receptor Table.	Low	Medium	Medium	Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Sensitive Receptors in excess of 500 metres away from the development.  Trained persons to operate vehicles and site plant.  Vehicles and plant serviced and maintained in line with manufacturer requirements.	Not Significant



ID	Source	S-P-R Linkage Pathway	Receptor	Exposure Probability	Impact Severity	Risk Magnitude	Risk Management	Residual Risk
OE1	Odour Emissions from the Incineration of Natural Gas: • Flare Tip / Stack.	Emitted to air and carried on wind.	See Receptor Table.	Medium	Medium	Medium	Air Quality Impact Assessment concludes no significant impact.  Combustion unit subject to approval by the EA.  Dedicated scrubbers in place to remove H <sub>2</sub> S from natural gas, if necessary.  Equipment installed, serviced and maintained by competent and qualified contractors.  Flare monitoring (to be) in place with results reported in accordance with EA permit.  H <sub>2</sub> S is not anticipated.  Odour Management Plan implemented for the site, if required.  Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.  Propane shall be used to increase the calorific value of the gas whilst heavy with Nitrogen(N <sub>2</sub> ) / Carbon Dioxide (CO <sub>2</sub> ) to encourage combustion.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Trained persons to operate flare unit.	Not Significant
OE2	Odour Emissions from Engine Exhausts including: • Vehicles. • Ancillary Plant (Generators). • Main Plant (Drilling Rig / Workover Rig / Well Test Spread).	Emitted to air and carried on wind.	See Receptor Table.	High	Low	Medium	Air Quality Impact Assessment concludes no significant impact.  Equipment installed, serviced and maintained by competent and qualified contractors.  Odour Management Plan implemented for the site, if required.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Vehicles and plant switched off when not in use.  Working personnel subject to a site induction covering odour management.	Not Significant
OE3	Odour Emissions from Well Test / Cold Venting Operations including: • Flare Tip / Stack.	Emitted to air and carried on wind.	See Receptor Table.	Low	High	Medium	Combustion temperature managed to ensure efficient (>98%) combustion efficiency.  Combustion unit subject to approval by the EA.  Dedicated scrubbers in place to remove H <sub>2</sub> S from natural gas, if necessary.  Equipment installed, serviced and maintained by competent and qualified contractors.  Flare monitoring (to be) in place with results reported in accordance with EA permit.  H <sub>2</sub> S is not anticipated.  Odour Management Plan implemented for the site, if required.  Propane shall be used to increase the calorific value of the gas whilst heavy with Nitrogen(N <sub>2</sub> ) / Carbon Dioxide (CO <sub>2</sub> ) to encourage combustion.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Trained persons to operate flare unit.  Vehicles and plant serviced and maintained in line with manufacturer requirements.  Working personnel subject to a site induction covering odour management.	Not Significant



ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
	Source	Pathway	Receptor	Probability	Severity	Magnitude		Risk
OE4	Odour Emissions from Breaking of Containment: • Storage Tanks. • Pipework. • Wellhead. • Separator. • Any Other Equipment.	Emitted to air and carried on wind.	See Receptor Table.	Medium	Low	Medium	Air Quality Impact Assessment concludes no significant impact.  Breaking containment of tanks and pipework systems shall minimised.  Equipment cleaned / purged where possible prior to breaking containment.  Plant, tanks and pipework capped / plugged after breaking containment.  Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.  Odour Management Plan implemented for the site, if required.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.	Not Significant
							Trained persons to operate vehicles and site plant.  Working personnel subject to a site induction covering odour management.	
OES	Odour Emissions from the Storage of Low Volume Odorous Products.	Emitted to air and carried on wind.	See Receptor Table.	Low	Low	Low	Air Quality Impact Assessment concludes no significant impact.  Chemicals segregated, stored correctly and sealed when not in use.  Competent personnel only to store / use chemicals.  Containers checked on delivery, pre-use and periodically for signs of damage/leaks.  Odour Management Plan implemented for the site, if required.  Odourless products used ahead of those which give rise to odour where practicable.  Products kept within their dedicated storage area when not in use.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Tanks monitored and emptied as required.  Tanks self-contained / enclosed where necessary to limit emissions to air.  Working personnel subject to a site induction covering odour management.	Not Significant
OE6	Odour Emissions from Produced fluids on the surface of wellbore equipment:  • Drilling Rig.  • Drill Pipe.  • Wellhead.  • Any Other Equipment.	Emitted to air and carried on wind.	See Receptor Table.	Low	Low	Low	Cleaning and purging where possible prior to pulling out of hole.  Odour Management Plan implemented for the site, if required.  Records kept of complaints and subsequent mitigation imposed if necessary.  Volume of produced fluids on wellbore equipment is expected to be minimal.  Working personnel subject to a site induction covering odour management.	Not Significant
OE7	Odour Emissions from the Use of / Decanting of Low Volume Odorous Products.	Emitted to air and carried on wind.	See Receptor Table.	Low	Low	Low	Air Quality Impact Assessment concludes no significant impact.  Chemicals segregated, stored correctly and sealed when not in use.  Competent personnel only to store / use chemicals.  Containers checked on delivery, pre-use and periodically for signs of damage/leaks.  Odour Management Plan implemented for the site, if required.  Odourless products used ahead of those which give rise to odour where practicable.  Products kept within their dedicated storage area when not in use.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Working personnel subject to a site induction covering odour management.	Not Significant



ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
10	Source	Pathway	Receptor	Probability	Severity	Magnitude	nisk Management	Risk
							Breaking containment of tanks and pipework systems shall minimised.	
							Equipment cleaned / purged where possible prior to breaking containment.	
							Plant, tanks and pipework capped / plugged after breaking containment.	
							Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.	
OE8	Odour Emissions from the Storage of Sewage:	Emitted to air and carried on wind.	See Receptor Table.	Medium	Low	Medium	Odour Management Plan implemented for the site, if required.	Not Significant
OLO	Sewage Tanks.	Efficient to all and carried on white.	See Neceptor Table.	Wediam	LOW		Records kept of complaints and subsequent mitigation imposed if necessary.	Not Significant
							Regular maintenance and inspections conducted as directed by written procedures.	
							Tanks monitored and emptied as required.	
							Tanks self-contained / enclosed where necessary to limit emissions to air.	
							Working personnel subject to a site induction covering odour management.	
							Odour Management Plan implemented for the site, if required.	
							Records kept of complaints and subsequent mitigation imposed if necessary.	
	Odour Emissions from the Storage of General						Regular maintenance and inspections conducted as directed by written procedures.	
OE9	Waste:	Emitted to air and carried on wind.	See Receptor Table.	Medium	Low	Medium	Skips clearly marked to ensure waste segregation and avoid cross contamination.	Not Significant
	Waste Skips.						Skips monitored daily and emptied as required.	
							Skips self-contained / enclosed to prevent emissions.	
							Working personnel subject to a site induction covering odour management.	
							Odour Management Plan implemented for the site, if required.	
							Records kept of complaints and subsequent mitigation imposed if necessary.	
	Odour Emissions from the Storage of Odorous Waste Products:						Regular maintenance and inspections conducted as directed by written procedures.	
OE10		Emitted to air and carried on wind.	See Receptor Table.	Medium	Low	Medium	Skips clearly marked to ensure waste segregation and avoid cross contamination.	Not Significant
	Waste Storage Tanks.     Waste Skips						Skips monitored daily and emptied as required.	
	Waste Skips.						Skips self-contained / enclosed to prevent emissions.	
							Working personnel subject to a site induction covering odour management.	
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ID	S-P-R Linkage			Exposure	Impact	Risk	Risk Management	Residual
שו	Source	Pathway	Pathway Receptor P			Magnitude	KISK Wallagement	Risk
SF1	Discharge of Surface Run-off Water: • Surface water run-off to soils and subsurface.	Flow by Gravity.	See Receptor Table.	Low	Medium	Medium	Discharge only permitted during low impact activities i.e. production / suspension.	Not Applicable
							Routine visual check on the containment ditch by operatives.	



Source Tribury Company (Company of the Control of t	ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
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Qualified and competents Size Significant or convertible to purpose for our by the Convertible Agency and asserted using MAGMAC methodology. Worstor boated entire that our double will make used with affirming that our double a		• Well Treatment Fluids.							
Substances that has approved for use by the Environment Agency and assessed using BAGIAGE methodology.  Water haard dirting flatile used within criting through manurar face (AGONI) apullars.  **Development of manurary and processors of the continuent of liveral and processors of the continuent of liveral and processors.  Completes genomed only to state? Use chemicals.  Complete genomed only to state? Use chemicals.  Completes genomed only to state? Use chemicals.  Complete genome and SSS states used on the state of the facility of the states of the facility of the states.  In place and the statiget of states where or decenting of facility on the states.  In place and the statiget of states use to certain integration where position.  How you disposed from to wait facility of the states of t									
Woter housed drilling fluid suide whilst drilling through near surface (-kitton) aguifars.  Breaking containment of lastes and pipework systems shall millimosed.  Chamilates suggested, strand connecting of seal when not in use.  Competent personnel only to strand y are deminish.  COSHI herms soved appropriately in excursion or with 505 and regolations.  Dis trans soved appropriately in excursing of the further containing of substances.  COSHI herms soved appropriately in excursing of fluid-input ulclume liquids such as seguire oil.  Emergency Response Plen for the site.  HOP mentures is in place and the subject of visual inspection where possible, this seguire oil standard substances.  Plant, tasks and pipework stead for leaks part of the site.  How by Granty.  See Reseptor Table.  Low Medium  M								Qualified and competent Site Supervisor appointed.	
breaking containment of tasks and gipework systems thail minimited.  Othermost segrepated, sored correctly and selected when rout in use.  Competent personnel only to store of use desided when rout in use.  Competent personnel only to store of use of selection place for fazardous substances.  COSHH items stored appropriately in accordance with SSS and regulations.  Or is trays used for the transfer or describing of fazel/small volume floating.  CoshH items stored appropriately in accordance with SSS and regulations.  Or is trays used for the transfer or describing of fazel/small volume floating stored appropriately in accordance with SSS and regulations.  Or is trays used for the transfer or describing of fazel/small volume floating stored appropriately in accordance with SSS and regulations.  Or is trays used for the transfer or described and substances in place and the single off a fazel small impection where possible.  Wydrageological Impact Assessment correlated are substanced and substances in place and the single off of fazel small impection where possible.  Wydrageological Impact Assessment correlated are substanced and substances.  Losi Described and Stepper float for the size.  Flant, turnis and pipework capped (phaged after breaking containment).  Not Significant  Plant, turnis and pipework capped (phaged after breaking containment).  Not Significant  Privary, containment stepper or containment and subsequent militageton impected in occasion, and subsequent militageton impected or precision.  Records seperation of social cap or the containment of the significant conducted as directed by written precedure.  Realized and competent site supervisor conducted as directed by written precedure.  Realized and competent site supervisor conducted and directed by written precedure.  Realized and competent site supervisor conducted as directed by written precedure.  Realized and competent site supervisor conducted as directed by written precedure.  Realized and competent site supervisor conducted and directed by								Substances shall be approved for use by the Environment Agency and assessed using JAGDAG methodology.	
Chemicals spregated, stored correctly and soaled when not in use.  Completed personnel only to store / use chemicals.  COSHH Abessments and SSS sheets in place for hazardous substances.  COSHH Abessments and SSS sheets in place for hazardous substances.  COSHH Abessments and SSS sheets in place for hazardous substances.  COSHH Abessment and SSS sheets in place for hazardous substances.  COSHH Abessment and SSS sheets in place for hazardous substances.  COSHH Abessment and SSS sheets in place for hazardous substances.  COSHH Abessment concludes no significant unjust such as angine oil.  It magneys (kepose) Plan for the size.  HOT memorane's in pace and the solibled of visual inspection where goosible.  Hydrogeological impact Assessment concludes no significant impact.  Las Detection and Repair Plan for the size.  Plant, talks and pipework tested for leaks prior to first use to confirm integrity.  Plant, talks and pipework cannot of purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to breaking containment.  Plant, talks and pipework clamed / purged where possible prior to br								Water based drilling fluid used whilst drilling through near surface (<400m) aquifers.	
Competent personnel only to store / use chemicals.  COSHH Assessments and SSS sheets in place for hazardous substances. COSHH Assessments and SSS sheets in place for hazardous substances. COSHH Assessments and SSS sheets in place for hazardous substances. COSHH Assessments and SSS sheets in place for hazardous substances. Dirp tray used for trade or decenting of fuel/neal volume liquids such as engine oil. Emergency Response Plan for the site. HIDE membrance is in place and the subject of visual inspection where possible. Hydrogeological Impact. Assessment concludes no significant impact. Leak Detection and Region Place and the subject of visual inspection where possible. Hydrogeological Impact. Assessment concludes no significant impact. Leak Detection and Region Place and the subject of visual inspection where possible. Hydrogeological Impact. Assessment concludes no significant impact. Leak Detection and Region Place and the subject of visual inspection where possible. Hydrogeological Impact. Assessment concludes no significant impact. Leak Detection and Region Place and Hydrogeological Impact. Leak Detection and Region Place and Place								Breaking containment of tanks and pipework systems shall minimised.	
COSHH Assessments and SIOS sheets in place for hazardous substances.  COSH trans stored appropriately in accordance with SIOS and regulations.  Only trays used for the transfer or decenting of fuel/small volume liquids such as engine oil.  Emergency Response Plan for the sist.  HOPE membrane is in place and the subject of visual inspection where possible.  Hydrogenological impact. Assessment concludes no significant impact.  Leak Detection and Repair Plan for the sist.  Plant, tanks and pipework steader for leaks prior to first use to confirm integrity.  Plant, tanks and pipework cleaned / purged where possible grint to breaking containment.  Not Significant  Medium  Me								Chemicals segregated, stored correctly and sealed when not in use.	
COSHI tems stored appropriately in accordance with SOS and regulations.  Orig rays used for the transfer or decenting of fuel/inmall volume liquids such as engine oil.  Emergency Reposse Plan for the site.  HPE membrane is in place and the subject of visual inspection where possible.  Hydrogeological impact Assessment concludes no significant impact.  Lask Delection and Repair Plan for the site.  Plant, tasks and pipework tested for feeks prior to first use to confirm integrity.  Stant, tasks and pipework capted plugged where possible prior to Preaking containment.  Plant, tasks and pipework capted plugged after breaking containment.  Plant, tasks and pipework capted plugged where possible prior to Preaking containment.  Primary containment systems monitored / tested where required.  Qualified and competent site supervior appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiany containment system (HDPP).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (-t in 1,000 annual probled).  Suitable spillage response procedure for the site essablished.  Suitable spillage kits available on site / transport vehicles.								Competent personnel only to store / use chemicals.	
Dip trays used for the transfer or decanting of fuel/snall volume liquids such as engine oil.  ### Circumdwater Emission (Percolation to soils  ### Circumdwater Emission (Percolation to soils)  ### Circumdwater								COSHH Assessments and SDS sheets in place for hazardous substances.	
Emergency Response Plan for the site.  ### Indigency Response Plan for the site.  #### Indigency Response Plan for the site.  ###################################								COSHH Items stored appropriately in accordance with SDS and regulations.	
HDPE membrane is in place and the subject of visual inspection where possible.  Hydrogeological impact Assessment concludes no significant impact.  Leak Detection and Repair Plan for the site.  Flow by Gravity:  See Receptor Table.  Medium  Mediu								Drip trays used for the transfer or decanting of fuel/small volume liquids such as engine oil.	
Flow by Gravity.  See Receptor Table.  Wedium  Medium								Emergency Response Plan for the site.	
Groundwater Emission (Percolation to soils and subsurface):  SE2  SE2  SE3  Groundwater Emission (Percolation to soils and subsurface):  Surface water run-off to soils and subsurface.  Flow by Gravity.  Flow by Gravity.  See Receptor Table.  Low  Medium  Not Significant  Plant, tanks and pipework capped / plugged after breaking containment.  Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.  Primary containment systems monitored / tested where required.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								HDPE membrane is in place and the subject of visual inspection where possible.	
Groundwater Emission (Percolation to soils and subsurface):  Surface water run-off to soils and subsurface):  Surface water run-off to soils and subsurface.  Flow by Gravity.  See Receptor Table.  Low  Medium  Medium  Medium  Medium  Medium  Medium  Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.  Primary containment systems monitored / tested where required.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								Hydrogeological Impact Assessment concludes no significant impact.	
Groundwater Emission (Percolation to soils and subsurface):  *Surface water run-off to soils and subsurface.  *Surface water run-off to soils and subsurface.  *See Receptor Table.  *See Receptor Table.  *See Receptor Table.  *Bow Medium Med								Leak Detection and Repair Plan for the site.	
SE2 and subsurface):  * Surface water run-off to soils and subsurface.  * See Receptor Table.  * Death tanks and pipework cleaned / purged where possible prior to breaking containment.  * Primary containment systems monitored / tested where required.  * Qualified and competent site supervisor appointed.  * Records kept of complaints and subsequent mitigation imposed if necessary.  * Regular maintenance and inspections conducted as directed by written procedures.  * Routine visual check on the containment ditch by operatives.  * Secondary containment installed to prevent spill unto tertiary containment system (HDPE).  * Site designed to flood in the first instance before over spilling.  * Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  * Spillage response procedure for the site established.  * Suitable spillage kits available on site / transport vehicles.								Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.	
Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.  Primary containment systems monitored / tested where required.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.	SE2		Flow by Gravity	See Recentor Table	Low	Madium	Medium	Plant, tanks and pipework capped / plugged after breaking containment.	Not Significant
Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.	JLZ			see Neceptor Table.	LOW	Wediaiii	Wiedidiii	Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.	Not Significant
Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								Primary containment systems monitored / tested where required.	
Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								Qualified and competent site supervisor appointed.	
Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								Records kept of complaints and subsequent mitigation imposed if necessary.	
Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								Regular maintenance and inspections conducted as directed by written procedures.	
Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								Routine visual check on the containment ditch by operatives.	
Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								Secondary containment installed to prevent spill onto tertiary containment system (HDPE).	
Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.								Site designed to flood in the first instance before over spilling.	
Suitable spillage kits available on site / transport vehicles.								Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).	
								Spillage response procedure for the site established.	
Where HDPF failure is suspected, non-intrusive testing shall be undertaken.								Suitable spillage kits available on site / transport vehicles.	
There has a subjected, non-intrastre testing shall be undertailed								Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	



ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
טו	Source	Pathway	Receptor	Probability	Severity	Magnitude	•	Risk
							Equipment installed, serviced and maintained by competent and qualified contractors.	
	Visible Emissions from Engine Exhausts including:						Records kept of complaints and subsequent mitigation imposed if necessary.	
VE1	Vehicles.	Gas and Particulate Matter Emissions	See Receptor Table.	High	Low	Medium	Regular maintenance and inspections conducted as directed by written procedures.	Not Significant
	<ul> <li>Ancillary Plant (Generators).</li> <li>Main Plant (Rig/Well Test Spread/Plant and</li> </ul>	Carried on Prevailing Winds.					Trained persons to operate vehicles and site plant.	
	Equipment).						Vehicles and plant serviced and maintained in line with manufacturer requirements.	
							Vehicles and plant switched off when not in use.	
							Combustion temperature managed to ensure efficient (>98%) combustion efficiency.	
							Combustion equipment shall be agreed by Environment Agency.	
							Combustion unit subject to approval by the EA.	
							Equipment installed, serviced and maintained by competent and qualified contractors.	
							Flare monitoring (to be) in place with results reported in accordance with EA permit.	
							Good phase separation upstream of incinerator to remove and prevent liquid carryover.	
	Natural Gas:					Medium	Incinerator units designed and constructed to industry standards / best available techniques.	
VE2		Gas and Particulate Matter Emissions	See Receptor Table.	Medium	Low		Incinerator units shall be of a shrouded and enclosed nature ensuring efficient combustion.	Not Significant
		Carried on Prevailing Winds.					Monitoring of combustion temperature shall be undertaken during periods of incineration.	
							Procedures established and communicated to operational personnel should the flow rate of gas exceed or fall below the incinerators flow range.	
							Propane shall be used to increase the calorific value of the gas whilst heavy with Nitrogen(N2) / Carbon Dioxide (CO2) to encourage combustion.	
							Records kept of complaints and subsequent mitigation imposed if necessary.	
							Regular maintenance and inspections conducted as directed by written procedures.	
							Trained persons to operate flare unit.	
							Lighting Assessment has been undertaken.	
							Lighting overspill shall be checked during regular external patrols.	
	Visible Emissions from Site Lighting:						Lighting systems shall be designed and installed to ensure light overspill is minimised.	
VE3	Light overspill from the site fixed lighting	Light emissions extending beyond the site boundary.	See Receptor Table.	High	Low	Medium	Where light overspill is identified, site management will adjust lighting systems to minimise light overspills.	Not Significant
	bour bourspin rom the site fixed fighting systems / mobile floodlights.	boundary.	See receptor rapie.				Where practicable, limit use of floodlights in areas where light overspill will impact on residentiual properties / local habitats.	
							Where practicable, use lighting systems with motion detection systems so lighting comes on when activated.	



ID	Source	S-P-R Linkage Pathway	Receptor	Exposure Probability	Impact Severity	Risk Magnitude	Risk Management	Residual Risk
							Borehole(s) design approved by the EA under the WR11 Process.	
							Borehole(s) design reviewed by an independent well examiner and the HSE.	
							Borehole(s) designed and constructed to industry standards.	
							Dedicated scrubbers in place to remove H <sub>2</sub> S from natural gas, if necessary.	
							Drilling mud provides over balanced weight to prevent gas to surface.	
							Emergency Response Plan for the site.	
							Fire awareness training / site induction for personnel.	
							Flare unit to have a permanent source of ignition i.e. pilot light.	
	Emissions of H <sub>2</sub> S from:						Gas detectors deployed with an alarm trigger of 5ppm / 7mg.m3 (EH40 WELs).	
FE1	Natural Gas released from the Wellbore.     Natural Gas released from Pipework /	Vapours / Fumes Carried on Wind.	See Receptor Table.	Low	Low	Low	H <sub>2</sub> S is not anticipated.	Not Significant
	Storage Tanks / Three Phase Separator.						Leak Detection and Repair Plan for the site.	
							Local Fire & Rescue Service notified of operations.	
							Loss circulation material available within drilling fluid for drilling activities.	
							Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.	
							Plant, tanks and pipework capped / plugged after breaking containment.	
							Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.	
							Primary containment systems monitored / tested where required.	
							Regular maintenance and inspections conducted as directed by written procedures.	
							Site based fire risk assessment in place and detailing the mitigation measures.	
							Borehole(s) design approved by the EA under the WR11 Process.	
							Borehole(s) design reviewed by an independent well examiner and the HSE.	
							Borehole(s) designed and constructed to industry standards.	
							Dedicated scrubbers in place to remove H <sub>2</sub> S from natural gas, if necessary.	
							Drilling mud provides over balanced weight to prevent gas to surface.	
							Emergency Response Plan for the site.	
							Fire awareness training / site induction for personnel.	
	Emissions of Natural Gas released from:						Flare unit to have a permanent source of ignition i.e. pilot light.	
	Wellbore.						Gas detectors deployed with an alarm trigger of 5ppm / 7mg.m3 (EH40 WELs).	
FE2	Flare Unit (Flame-out).     Pipework.	Vapours / Fumes Carried on Wind.	See Receptor Table.	Low	Low	Low	H <sub>2</sub> S is not anticipated.	Not Significant
	<ul><li>Storage Tanks.</li><li>Three Phase Separator.</li></ul>						Leak Detection and Repair Plan for the site.	
	ee mase separaton						Local Fire & Rescue Service notified of operations.	
							Loss circulation material available within drilling fluid for drilling activities.	
							Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.	
							Plant, tanks and pipework capped / plugged after breaking containment.	
							Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.	
							Primary containment systems monitored / tested where required.	
							Regular maintenance and inspections conducted as directed by written procedures.	
							Site based fire risk assessment in place and detailing the mitigation measures.	



ID	Source	S-P-R Linkage Pathway	Receptor	Exposure Probability	Impact Severity	Risk Magnitude	Risk Management	Residual Risk
FE3	Emissions from Well Test Equipment including: • Storage Tanks. • Pipework and connecting joints. • Wellhead. • Separator. • Any Other Equipment.		Receptor  See Receptor Table.	Probability  Low	Severity High	Magnitude Medium	Emergency Response Plan for the site.  Fire awareness training / site induction for personnel.  H <sub>2</sub> S is not anticipated.  Leak Detection and Repair Plan for the site.  Local Fire & Rescue Service notified of operations.  Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.  Primary containment systems monitored / tested where required.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.	Risk Not Significant
FE4	Emissions from Unexpected Chemical Reactions / Runaway Reactions.	Vapours / Fumes Carried on Wind.	See Receptor Table.	Very Low	Medium	Low	Site based fire risk assessment in place and detailing the mitigation measures.  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.  Chemicals segregated, stored correctly and sealed when not in use.  Competent personnel only to store / use chemicals.  COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Drip trays used for the transfer or decanting of fuel/small volume liquids such as engine oil.  Emergency Response Plan for the site.  Fire awareness training / site induction for personnel.  Fire points, extinguishers and a fire water tank located around the site.  HDPE membrane is in place and the subject of visual inspection where possible.  Leak Detection and Repair Plan for the site.  Local Fire & Rescue Service notified of operations.  Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.  Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Site based fire risk assessment in place and detailing the mitigation measures.  Spillage response procedure for the site established.	Not Significant
FE5	Dust and Mud Generated from: • Vehicles. • Site Operations.	Carried on Wind	See Receptor Table.	High	Low	Medium	Avoid certain activities that may present dust if high winds occur. High winds are defined as a strong breeze >25mph. (http. Operations planned / designed to minimise transport and handling operations.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Roads to / from the site are monitored for mud deposits. A road sweeping contractor will be arranged for road cleaning if required.  Vehicles shall drive on approved roads and follow site traffic management system.	Not Significant



ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
טו	Source	Pathway	Receptor	Probability	Severity	Magnitude	•	Risk
							Litter cleared routinely as part of working day.	
	Litter Generated from:						Provision of adequate refuse receptacles for both inside and outside working areas.	
FE6	Vehicles. Site Operations.	Carried on Wind	See Receptor Table.	High	Very Low	Low	Records kept of complaints and subsequent mitigation imposed if necessary.	Not Significant
	• Site Operations.						Skips monitored daily and emptied as required.	
							Skips self-contained / enclosed to prevent emissions.	
							Breaking containment of tanks and pipework systems shall minimised.	
							Chemicals segregated, stored correctly and sealed when not in use.	
							Competent personnel only to store / use chemicals.	
							COSHH Assessments and SDS sheets in place for hazardous substances.	
							COSHH Items stored appropriately in accordance with SDS and regulations.	
							Emergency Response Plan for the site.	
							HDPE membrane is in place and the subject of visual inspection where possible.	
							Leak Detection and Repair Plan for the site.	
							Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.	
	Emissions to Surface Water from:						Plant, tanks and pipework capped / plugged after breaking containment.	
	Leaks from process pipework.     Leaks from storage vessels.						Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.	
FE7	Leaks from site plant.	Flow by Gravity.	See Receptor Table.	Low	Medium	Medium	Primary containment systems monitored / tested where required.	Not Significant
	Leaks from welfare pipework.     Leaks from foul sewage pipework.						Qualified and competent site supervisor appointed.	
	• Site Flooding.						Records kept of complaints and subsequent mitigation imposed if necessary.	
							Regular maintenance and inspections conducted as directed by written procedures.	
							Routine visual check on the containment ditch by operatives.	
							Secondary containment installed to prevent spill onto tertiary containment system (HDPE).	
							Site designed to flood in the first instance before over spilling.	
							Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).	
							Spillage response procedure for the site established.	
							Suitable spillage kits available on site / transport vehicles.	
							Where HDPE failure is suspected, non-intrusive testing shall be undertaken.	
							Working personnel subject to a site induction covering odour management.	



ID	Source	S-P-R Linkage Pathway	Receptor	Exposure Probability	Impact Severity	Risk Magnitude	Risk Management	Residual Risk
FE8	Emissions to Groundwater from:  • Leaks from process pipework.  • Leaks from storage vessels.  • Leaks from plant.  • Leaks from welfare pipework.  • Leaks from foul sewage pipework.	Percolate to underlying Groundwaters.	Groundwater Bearing Formations.	Low	Medium	Medium	Breaking containment of tanks and pipework systems shall minimised.  Chemicals segregated, stored correctly and sealed when not in use.  Competent personnel only to store / use chemicals.  COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Emergency Response Plan for the site.  HDPE membrane is in place and the subject of visual inspection where possible.  Leak Detection and Repair Plan for the site.  Plant, tanks and pipework tested for leaks prior to first use to confirm integrity.  Plant, tanks and pipework capped / plugged after breaking containment.  Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.  Primary containment systems monitored / tested where required.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Regular maintenance and inspections conducted as directed by written procedures.  Routine visual check on the containment ditch by operatives.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Site designed to flood in the first instance before over spilling.  Site located within Flood Zone 1 (<1 in 1,000 annual probability of flooding).  Spillage response procedure for the site established.  Suitable spillage kits available on site / transport vehicles.  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.  Working personnel subject to a site induction covering odour management.	Not Significant
FE9	Emissions to Groundwater / Formations from the well:  • Drilling Fluid.  • Well Treatment Fluid (Non-Returns).  • Circulation / Suspension Fluid.	Flow by Gravity / Formation Pressures.	See Receptor Table.	High	Very Low	Medium	Borehole(s) design approved by the EA under the WR11 Process.  Borehole(s) design reviewed by an independent well examiner and the HSE.  Borehole(s) designed and constructed to industry standards.  COSHH Assessments and SDS sheets in place for hazardous substances.  Groundwater monitoring (to be) in place with results reported in accordance with EA permit.  Loss circulation material available within drilling fluid for drilling activities.  Qualified and competent site supervisor appointed.  Records kept of complaints and subsequent mitigation imposed if necessary.  Water based drilling fluid used whilst drilling through near surface (<400m) aquifers.	Not Significant



ID		S-P-R Linkage		Exposure	Impact	Risk	Risk Management	Residual
טו	Source	Pathway	Receptor	Probability	Severity	Magnitude	nisk Management	Risk
FE10	Emission from Breaking of Containment:  • Storage Tanks.  • Pipework.  • Wellhead.  • Separator.  • Any Other Equipment.	Flow by Gravity. Vapours / Fumes Carried on Wind.	See Receptor Table.	Medium	Low	Medium	Breaking containment of tanks and pipework systems shall minimised.  COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Emergency Response Plan for the site.  HDPE membrane is in place and the subject of visual inspection where possible.  Hydrogeological Impact Assessment concludes no significant impact.  Plant, tanks and pipework capped / plugged after breaking containment.  Plant, tanks and pipework cleaned / purged where possible prior to breaking containment.  Records kept of complaints and subsequent mitigation imposed if necessary.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.  Working personnel subject to a site induction covering odour management.	Not Significant
FE11	Emissions from Onsite Spillages from:  o Oil.  • Formation Water.  o Drilling Fluids.  • Well Treatment Fluids.  • Ancillary Products.	Flow by Gravity. Vapours / Fumes Carried on Wind.	See Receptor Table.	Medium	Very Low	Low	COSHH Assessments and SDS sheets in place for hazardous substances.  COSHH Items stored appropriately in accordance with SDS and regulations.  Emergency Response Plan for the site.  HDPE membrane is in place and the subject of visual inspection where possible.  Hydrogeological Impact Assessment concludes no significant impact.  Records kept of complaints and subsequent mitigation imposed if necessary.  Secondary containment installed to prevent spill onto tertiary containment system (HDPE).  Where HDPE failure is suspected, non-intrusive testing shall be undertaken.  Working personnel subject to a site induction covering odour management.	Not Significant



ID	Event	Impact	Risk Management	
CC1	Increase in summer temperature (~7°C) and dryer summers.	Beautiful and the second of th	Use of dust suppressant sprays (water dampening) if dust is identified.	
		Dryer conditions may result in an increase of dust emissions from the site.	Where site remediation works or construction activities take place consider the use of less dusty material.	
		The surface temperature of plant and equipment may cause additional stress and expansion, particularly on	Ensure new equipment is designed to cope with foreseeable stress and expansion where possible.	
		pipework and fittings.	Undertake regular inspections followed by preventative maintenance on site plant and equipment.	
		Odour may become more prevalent from the storage of hydrocarbons and other materials.	Implementation of an odour management plan in line with permit conditions should odour arise causing impact on the surrounding	
			receptors.	
		Potential for an increase in fires, particularly wildfires on neighbouring land.	Maintain relationship with local fire authority and keep them updated over site inventory.	
			Continue to take note of the local news during hot conditions and sites vulnerable to wildfires.	
		Increase in energy demands for plant cooling units or personnel cooling units.	Where possible ensure plant and equipment can facilitate higher temperatures in the first instance.	
			Utilise onsite electricity production in the first instance where possible to facilitate cooling units.	
		Increase in water demands for dust suppression or site operations.	Ensure mains water supply and/or imported supply is capable of meeting site demand.	
			Utilise site surface water and spray over site for dust suppression.	
			Calculate the volume of water needed for operations with significant consumption.	
			Consider alternatives to water for well treatments where possible or plan works around seasons.	
CC2	Extreme variability with regards to winter	Colder temperatures could lead to the freezing of site systems such as pipework, plant and surface water management systems.	Where fluids have the potential to freeze within pipework, lagging shall be used.	
CC2		Damage to plant and equipment through repeated freezing and thawing of water.	Where fluids have the potential to freeze within pipework, lagging shall be used.	
		Damage to plant and equipment through repeated freezing and thawing of water.	Undertake regular inspections followed by preventative maintenance on site plant and equipment.	
	1	External flooding events leading to power loss or interruptions.	Utilise onsite electricity (gas) production in the first instance where possible and have a back up diesel system should mains power be	
			unavailable.	
CC3		External flooding events leading to site access and egress restrictions for emergency services, staff and deliveries.	Adopt suitable measures for managing surface water onsite including the availability of pumps to clear flooded areas near the site and on the site.	
		Internal flooding events leading to power loss or interruptions.	Utilise onsite electricity (gas) production in the first instance where possible and have a backup system should mains power be unavailable Ensure that suitable drainage arrangements and storage and back up storage (tanks) are available. Ensure electrical components are elevated when flooding becomes apparent.	
		Internal flooding events leading to infrastructure damage.	Ensure that suitable drainage arrangements and storage and back up storage (tanks) are available.	
			Undertake regular inspections followed by preventative maintenance on site plant and equipment.	
			Undertake a flood risk assessment and regularly review, taking note of historic events.	
		Internal flooding event leading to floodwater and surface waters being contaminated.	Ensure that suitable drainage arrangements and storage and back up storage (tanks) are available.	
			Undertake a flood risk assessment and regularly review, taking note of historic events.	
		Internal flooding events leading to drain and interceptor (where installed) to be overwhelmed.	Ensure that suitable drainage arrangements and storage and back up storage (tanks) are available.	
			Ensure interceptor is maintained, drainage channels are clear and seek alternative means of water disposal (tankered offsite)	
	Increase in sea level rises (~0.6m)	Permanent or frequent flooding at the site. (Wellsite is within 20 km of the Humber River.)	Undertake a flood risk assessment and regularly review, taking note of historic events.	
			Ensure the availability of emergency pumps should flooding be anticipated more foreseeable.	
			Protection of control and electrical systems.	
			Identification of 'flat bottom' tanks / equipment that have the potential to floating.	
		Localised impact on groundwater (<20km from the coastline) by increasing groundwater levels and artesian pressures.	Consideration of tidal reach.	
CC4			Consideration of artesian pressures whilst drilling through groundwater systems.	
			Undertake a flood risk assessment and regularly review, taking note of historic events.	
			Ensure the availability of emergency pumps should flooding be anticipated more foreseeable.	
			Protection of control and electrical systems.	
			Identification of 'flat bottom' tanks / equipment that have the potential to floating.	
CC5	River flow variability. (50% flow increase) or (80% flow decrease)	Potential to inhibit drainage and lead to localised flooding.	Ensure that suitable drainage arrangements and storage and back up storage (tanks) are available.	
			Discharge to surface water when permitted to do so, utilise additional storage where possible.	
			Undertake a flood risk assessment and regularly review, taking note of historic events.	
			Ensure the availability of emergency pumps should flooding be anticipated more foreseeable.	
			Protection of control and electrical systems.	
			Identification of 'flat bottom' tanks / equipment that have the potential to floating.	
			nuentaneation of hat bottom tanks / equipment that have the potential to modulig.	



Substance	Release over proposed development (t)			Impact	
Substance	CO <sub>2</sub>	CH₄	N <sub>2</sub> O	t CO₂ equivalent	
Global warming potential (relative to CO2, 100 years)	1	28	265		
Phase					
Phase 1 - Construction of the Weaverthorpe 1 Wellsite.	135	0.03	1.65	136	
Phase 2 - Drilling of Weaverthorpe-1 Well.	555	54	6.73	616	
Phase 3 - Workover and testing of Weaverthorpe-1 Well.	640	109	5.32	755	
Phase 4 - Decommissioning of the Weaverthorpe-1 Well and the restoration of the Weaverthorpe-1 Wellsite.	166	0.03	2.04	168	
Total	1,496	163	16	1,675	

Note: Values are rounded from many decimal places and therefore totals may not sum exactly

For reference, the data within the table has been reproduced from Table 6 of the Weaverthorpe Exploration Well Emissions Report.