Environmental Risk Assessment

Caswell Production Facility

Variation Application EPR/WP3633BB

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1 INTRODUCTION

1.1.1 This Environmental Risk Assessment has been carried out in support of a variation environmental permit EPR/WP3633BB for the installation located at Caswell, Towcester, Northants, NN12 8EQ.

1.1.2 It includes an assessment of the risk to the environment and human health from the activities carried out on site, including waste treatment and storage and incineration of waste to generate heat and electricity. The Environment Agency's 'Risk Assessments for your environmental permit' covers a range of environmental risks. Those aspects relevant to the operation of the proposed facility are covered within the following sections.

1.1.3 Section 2 describes the sensitive receptors in proximity to the facility.

1.1.4 Section 3 provides the environmental risk assessment of 'Amenity and Accident' hazards associated with the operation of the GHPF.

1.1.5 This document provides the relevant risk assessments covering the above aspects.

2 SENSITIVE RECEPTORS

2.1.1 The facility is situated at Caswell, Towcester, Northamptonshire, UK, NN12 8EQ at National Grid Reference SP 65100 51000.

2.1.2 The site is approximately 4.5km to the north west of Towcester town centre and roughly 14 km to the Southwest of Northampton City centre.

2.1.3 The facility has a rural setting, surrounded by agricultural land and individual residential properties. The nearest residential receptor is Caswell Farm located 250 m southeast of the facility. Blackbridge Farm is located approximately 700 m southwest of the facility. The village of Greens Norton is situated approximately 1.5km to the Southeast of the site.

2.1.4 The nearest sensitive receptor is Grub's Copse, an area of ancient woodland, located approximately 650 m north of the facility. Greens Norton Pocket Park Local Nature Reserve (LNR) is located approximately 2.5 km south of the Facility.

2.1.5 The nearest waterbody is an unnamed pond located approximately 120 m south of the site boundary, north of Caswell Farm. The pond is connected to a series of small ponds connected by Caswell Brook.

2.1.6 The topography of the site slopes gently from north to south towards Caswell Brook.

3 AMENITY AND ACCIDENTS

3.1.1 This section provides an assessment of risks to environmental amenity and from accidents that could arise from operation of the facility. The assessment has been completed in accordance with the EA's 'Risk Assessments for your environmental permit'1.

3.1.2 The scope of the assessment has covered the following aspects:

- Odour;
- Noise and vibration;
- Fugitive emissions;
- Visible emissions; and
- Accidents.

3.1.3 The fugitive emissions section covers fugitive emissions to water and fugitive emissions of VOCs and ammonia to air.

3.1.4 For each of the above, the approach to the assessment has followed the following four stage process:

- identify the hazards;
- assess the risks (assuming that any control measures proposed are in place);
- choose appropriate further measures to control these risks (if required); and
- present the assessment of overall risk.

3.1.5 Results of the assessment are provided in the following tables.

Table 3.2 Assessment of odour risks

Table 3.3 Assessment of noise and vibration risks

Table 3.4 Assessment of fugitive emission risks

Table 3.5 Visible emissions

Table 3.6 Accidents risk assessment and management plan

3.1.6 The risk assessment methodology has used a scoring mechanism whereby scores are assigned to:

- the likelihood of the hazard occurring; and
- the consequence of the hazard to the environment or human health.

3.1.7 Scores are assigned as low, medium or high.

3.1.8 The risk assessment has been completed by scoring the hazard areas outlined above using a risk matrix as shown in Table 3.1 below.

3.1.9 In completing the assessment, prevention and proposed control measures are assumed to be in place. Where relevant, details of these measures are identified within the assessment.

Table 3-1: Risk Matrix

Consequence	Probability			
	High	Medium	Low	Very Low
High	High	Medium	Low	Low
Medium	Medium	Medium	Low	Very Low
Low	Low	Low	Low	Very Low
Not significant	Low	Very Low	Very Low	Very Low

Table 3-2: Odour Risk Assessment and Management Plan

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall Risk?
Odour emissions from storage of raw materials and new equipment	Caswell Farm located 250m south east Blackbridge Farm located approximately 700 m southwest	Air	The nature of the proposed changes will not introduce new substances. Where practicable, all new equipment will be located within buildings. There are numerous extraction points within the facility that will extract building emissions and release to atmosphere providing dispersion to reduce the risk of odour. The new storage tank for concentrated acid waste will be located outside and will be fully bunded to contain 110% of the tank content in compliance with CIRIA guidance[1] and industry standard. The new acid waste storage tank will be subject to routine checks as part of daily site inspections and will undergo maintenance inspections and checks as per the planned maintenance system. The site does not have a history of odour complaints. The potential for odour will therefore remain the same as the currently permitted facility.	Low	Low	Low

Table 3-3: Noise and Vibration Risk Assessment and Management Plan

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall Risk?
Noise and vibration from operation	Caswell Farm located 250 m southeast Ancient Woodland (650 m north) and Greens Norton Pocket Park LNR (2.5 km south)	Air	Operational noise is expected to be similar to the current site operations. The variation proposes to include the removal and addition of emission points, and the existing noise management measures will remain appropriate. Nevertheless, during routine site inspections any unusual or increase in noise will be noted and actioned accordingly. The noise generating operations at the facility operate continuously, however noise emissions are limited as most equipment is located in a building reducing the noise at receptors. The main external plant is the ETP and storage tanks. The site does not have a history of noise complaints. Overall, the risk of noise emitting from the facility is proposed to be similar or lower as the currently permitted facility.	Low	Low	Low

[1] CIRIA C736F

Table 3-4: Fugitive Emissions Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall Risk?
To Air						
Dust	Caswell Farm located 250m south east Blackbridge Farm is located approximately 700 m southwest	Air	There are no significant dust-generating activities or dusty materials used or stored within the facility. All new equipment will be subject to the same maintenance routine as the current permitted facility The site does not have a history of dust complaints, however should there ever be a dust complaint this would be investigated and managed in accordance with the EMS complaint procedure. The risk of dust emissions is currently very low and this is not expected to change as a consequence of this variation.	Very Low	Very Low	Very Low
To Water						
Leak of chemical storage	Caswell Brook 100 m south	Water	The concentrated waste stream is currently collected within barrels and when full the barrels are transported to the existing storage area. The variation proposes to allow the concentrated acid to be pumped directly a new centralised storage tank located to the south of Building 3A and Building 3C. This will reduce the risk of accidents leading to spillage of this waste. The risk of leak of chemical storage is therefore considered to be the same or lower than the current permitted facility. The new acid tank will have a capacity of 12,000 L, and will be fully bunded to contain 110% of the tank content in compliance with CIRIA guidance[2] and industry standard. The bund is covered and therefore rainwater will not accumulate within the bund. Spill kits will be available to contain and clean up any spills. The bund will be subject to routine inspections to detect for any signs of deterioration, and repairs will be made as necessary.	Low	Low	Low
Litter						
Waste Release	Caswell Brook 100 m south Caswell Farm located 250m south east Blackbridge Farm is located approximately 700 m southwest	Air	The site does not produce significant quantities of wastes for disposal. As a result of the removal of the wet scrubber, the waste scrubber liquor will no longer be generated and disposed of. However the replacement dry scrubbers will require replacement of the scrubber cartridges. These will be changed under a maintenance contract with the dry scrubber supplier, who will also be responsible for removal and disposal of the used cartridges. There is no onsite storage of spent cartridges. All wastes cartridges will be removed from the installation on the same day as the maintenance visit avoiding storage of the waste onsite. All staff are trained in waste management procedures by their supervisors.	Very Low	Very Low	Very Low
Pests						
Flies and other pests or vermin	Caswell Farm located 250m south east Blackbridge Farm is located	Land/Air	The facility is not attractive to pests. This will not change as a result of the variation, as no new raw materials are being introduced. All hardstanding areas will be regularly swept and maintained in good working order.	N/A	N/A	N/A

[2] CIRIA C736F

	approximately 700 m southwest					

Table 3-5: Visible emissions Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall Risk?
Visible emissions from operation	Caswell Farm located 250m south east Blackbridge Farm is located approximately 700 m southwest Ancient Woodland (650 m north) and Greens Norton Pocket Park LNR (2.5 km south)	Air	The variation will introduce new emission points. However, the new emissions are at ambient temperature and moisture. Visible emissions are therefore not expected. .	Very Low	Very Low	Very Low

Table 3-6: Accident Risk Management Plan

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall Risk?
Operator error	Caswell Farm located 250m south east Blackbridge Farm is located approximately 700 m southwest Ancient Woodland (650 m north) and Greens Norton Pocket Park LNR (2.5 km south)	Variable – dependent on nature of the error	All operational staff will be fully trained against the site operating procedures which cover normal, abnormal and emergency operating conditions. Training will include raising awareness of key plant parameters and the potential implications of failure to control operations as designed and the associated potential impact on the environment	Low	Variable depending upon nature of incident	Low
Loss of power	Air	Air	The facility is design with fail safe systems. Where relevant these measures have been incorporated within the refurbished areas. In the event of a loss of power, back up generators are capable of maintaining operations for 24 - 48 hours or operate to shut the plant down.	Low	Low	Low
Fire causing emissions to air	Caswell Farm located 250 m southeast Ancient Woodland (650 m north) and Greens Norton Pocket Park LNR (2.5 km south)	Air	There will be no changes to fire alarms, detection/suppression systems as a result of the variation. Staff are trained in emergency fire procedures and actions to take in the event of a fire at the site. The proposed changes to not significantly change the fire risk from the permitted activities and therefore the risk will not change as a result of the variation.	Low	Low	Low
Failure to contain firewater	Caswell Brook 120 m south Caswell Farm located 250 m southeast Ancient Woodland (650 m north) and Greens Norton Pocket Park LNR (2.5 km south)	Water	There will be no change to the firewater procedure, and therefore the risk will not change as a result of the variation. Fire response systems are implemented to ensure a rapid response thereby addressing the fire at the earliest point. Staff are trained in emergency fire procedures and actions to take in the event of a fire at the site. Firewater from firefighting would enter the drains and discharge to the effluent treatment plant. In the event of a fire, the processes on site would shutdown and therefore process water would cease to be generated. The effluent treatment plant can be put in recirculation mode which would avoid a discharge and would hold firewater onsite.	Low	Low	Low
Vandalism	Air/water/land Depending on nature of incident: Caswell Farm located 250 m southeast Ancient Woodland (650 m north) and Greens Norton Pocket Park LNR (2.5 km south)	Various	Security fencing, gates and full time security is in place. There will be no changes to the security measures as a result of the variation.	Low	Variable depending upon nature of incident	Low

Flooding	Caswell Brook 120 m south Caswell Farm located 250 m southeast Ancient Woodland (650 m north) and Greens Norton Pocket Park LNR (2.5 km south)		The site is not located in Flood Zone 1 and is not at risk of flooding. This will not change as a result of the variation, as there will be no new structures outside of Flood Zone 1.	Low	Medium	Low

4 CONCLUSION

4.1.1 This Environmental Risk Assessment has been prepared to evaluate the potential risks relating to amenity and accidents arising from the proposed variation to environmental permit EPR/WP3633BB for the installation at Caswell, Towcester, Northants, NN12 8EQ.

4.1.2 The results of the ERA have shown that the risk of odour, noise and vibration, fugitive emissions, and accidents will not significantly change as a result of the variation and range from ‘very low to ‘low’ .