

Appendix B – Hazardous Substances Details

Assessment Stage	EC 2014/C 136/03 Stage Requirements	Response
1	Identify which hazardous substances are used, produced or released at the installation and produce a list of these hazardous substances.	<p>In summary, the following substances will be used at the installation:</p> <ul style="list-style-type: none"> • Anti-freeze and corrosion inhibitor such as Antifrogen N containing Monoethylene glycol (1,2-ethane diol) with corrosion inhibitors • Diesel – emergency generator fuel; • Lubricating Oils - Highly refined mineral oil (C15 - C50); • Natural Gas; • Phosphate based corrosion inhibitor such as OPTISPERSE HP3100 - Water based internal boiler treatment chemical (Contains Sodium Hydroxide); • Sodium Bisulphite; • Sodium Hydroxide; • Neutralising agent such as STEAMATE NA0880; • Sulphuric Acid; • Compressor Cleaner such as TURBOTECT 2020; • Bearing Oil;

- Raw Water

Of the above, the following are classed as hazardous materials as detailed in the relevant safety data sheets for the materials:

- **Anti-freeze and corrosion inhibitor such as Antifrogen N containing Monoethylene glycol (1,2-ethane diol) with corrosion inhibitors** (H302: Harmful if swallowed / H373: May cause damage to organs through prolonged or repeated exposure) (Hazardous components – Ethanediol)
- **Compressor Cleaner such as TURBOTECT 2020** (Proprietary mixture of non-ionic surfactant and emulsifier in deionised water solution) - Gas turbine compressor washing detergent (According to the classification provided by companies to ECHA in CLP notifications this substance is very toxic to aquatic life, is toxic to aquatic life with long lasting effects, causes serious eye damage, is harmful if swallowed, causes skin irritation, causes serious eye irritation and flammable liquid and vapour)
- **Diesel** (H351 – Suspected of causing cancer)
- **Natural Gas** (H220 – Extremely flammable gas / H280 – contains gas under pressure; may explode if heated)
- **Phosphate based corrosion inhibitor such as OPTISPERSE HP3100 - Water based internal boiler treatment chemical (Contains Sodium Hydroxide)** (H290 - May be corrosive to metals / H314 - Causes severe skin burns and eye damage / H318 - Causes serious eye damage)
- **Sodium Bisulphite** (H290 - May be corrosive to metals / H315 - Causes skin irritation / H319 - Causes serious eye irritation / H335 - May cause respiratory irritation / H402 - Harmful to aquatic life)
- **Sodium Hydroxide** (Caustic Soda) (H314 - Causes severe skin burns and eye damage / H315 – Causes skin irritation / H319 – Causes serious eye irritation)
- **Neutralising agent such as STEAMATE NA0880** - Blend of neutralising amines (H302 - Harmful if swallowed / H312 - Harmful in contact with skin / H332 - Harmful if inhaled / H314 - Causes severe skin burns and eye damage / H318 - Causes serious eye damage / H317 - May cause an allergic skin reaction / H335 - May cause respiratory irritation / H412 - Harmful to aquatic life with long lasting effects)

		<ul style="list-style-type: none"> • Sulphuric Acid (H314 - Causes severe skin burns and eye damage / H315 – Causes skin irritation / H319 – Causes serious eye irritation)
2	<p>Identify which of the hazardous substances from Stage 1 are 'relevant hazardous substances'</p> <p>Discard those hazardous substances that are incapable of contaminating soil or groundwater. Justify and record the decisions taken to exclude certain hazardous substances.</p>	<p>The following substances are considered to be capable of contaminating soil or groundwater and have therefore been considered as relevant hazardous substances (RHS) for the purpose of this assessment: RHS associated with the installation include:</p> <ul style="list-style-type: none"> • Compressor Cleaner such as TURBOTECT 2020 • Diesel • Sodium Bisulphite • Sodium Hydroxide • Sulphuric Acid <p>The anti-freeze and corrosion inhibitor, the natural gas, the phosphate-based corrosion inhibitor and the neutralising agent have not been assessed as RHS due to the amounts stored on site or their storage infrastructure and location means that there is no obvious source-pathway-receptor linkage.</p>
3	<p>For each relevant hazardous substance brought forward from Stage 2, identify the actual possibility for soil or groundwater contamination at the site of the installation, including the probability of releases and their consequences, and taking particular account of:</p> <ul style="list-style-type: none"> • the quantities of each hazardous substance or groups of similar hazardous substances concerned; • how and where hazardous substances are stored, used and 	<p>Chemicals:</p> <ul style="list-style-type: none"> • The compressor cleaning chemicals are stored within a wash skid which is self-contained and has secondary containment. bunded building, in the site chemical store which itself is bunded or within tanks with secondary containment. Buildings have impermeable floors and spillage kits. A hard, impermeable surface will underlie all chemical storage areas to prevent fugitive emissions to groundwater should spills/ leaks occur. • Spillages will pass through the surface water system via an interceptor to the local watercourse (The Swale). If spillages enter the foul system, then they will pass through to the D S Smith effluent treatment plant. • The site has a spillage procedure to ensure that any risk from spillages is minimised and they are cleaned up as soon as detected. D S Smith shall be notified immediately should any chemical spillages enter the foul system.

to be transported around the installation;

• where they pose a risk to be released.

- All chemicals will be subject to appropriate storage and handling practices which are described and enforced through the site's Environmental Management System.

Oils:

- The oils are stored within double skinned tanks in a bunded area which are designed to meet the requirements of the Oil Storage Regulations (i.e bunds contain 110% volume of tank). The bunds in a building with impermeable floors and spillage kits.
- The diesel tank will be located within the emergency generator container which is self-bunded and will be on impermeable surface.
- A hard, impermeable surface will underlie all chemical storage areas to prevent fugitive emissions to groundwater should spills/ leaks occur.
- The site has a spillage procedure to ensure that any risk from spillages is minimised and they are cleaned up as soon as detected.
- All oils will be subject to appropriate storage and handling practices which are described and enforced through the site's Environmental Management System.

Material Specific Information:

Compressor Cleaner such as TURBOTECT 2020

- GT wash skid stored in 1000 litre purpose-built container which is stored on a purpose-built stand with secondary containment

Diesel:

- Diesel is stored in a dedicated 1,500 litre tank within the emergency generator container. The container itself will act as secondary impermeable containment.

Sodium Bisulphite

- stored in a dedicated 2,216 litre bunded tank within the water treatment building. Tank is located on impermeable surface and building acts as additional containment. Tank is made from stabilised copolymer polypropylene material.

Sodium Hydroxide

- stored in a 50-tonne tank in the old water treatment building on impermeable surface with sealed drainage.

Sulphuric Acid

- stored in a 50-tonne tank in the old water treatment building on impermeable surface with sealed drainage.

All process areas are located on hardstanding impermeable surfaces and all bunds provided for chemical and fuel storage tanks will be manually inspected to ensure they remain empty. All liquid reagent storage tanks will be bunded to 110% of the capacity of the storage tank. Bunds will be constructed to appropriate standards and lined with materials that are impervious to the content of the material they hold.

Likelihood of Accidental Release / Emission Occurring:

The combustion processes and water treatment process on site take place within buildings with impermeable surfaces and sealed drainage. Oils and chemicals are stored within tanks with secondary containment or within dedicated chemical stores. All RHS will be used within buildings and the site has a spillage procedure to ensure that any risk from spillages is minimised and they are cleaned up as soon as detected. Areas are subject to ongoing regular checks for any releases or spillages and records are kept of inspections as part of the site management system. Staff are trained to identify any potential issues and if identified, site management will be notified, and actions taken to resolve the issue. Based on the infrastructure, management systems and procedures in place, an accidental release or emission of any RHS used at the site is unlikely.

Likelihood of Receptor being Affected:

Based on the RHS identified above, the highest risk site for pollution from the facility would be the Swale watercourse which is approximately 200 metres from the site. There are direct discharges to the Swale from the site surface water system which has interceptors prior to the discharge and shutoff valves on the drainage system to contain any leaks or spillages if required. Contaminated process waters will discharge into the DS Smith drainage system and then into the DS Smith effluent treatment plant prior to discharge to the Swale. As described above, all chemicals and oils are used within buildings on impermeable surfaces with sealed drainage and stored within tanks with secondary containment or in

dedicated chemical stores. Based on the infrastructure, management systems and procedures in place, the likelihood of a receptor being affected is unlikely.

Based on the above assessments, the site-specific pollution potential is low.
