WEALDEN WORKS 3Rs PERMIT VARIATION APPLICATION

Appendix F Site Condition and IED Baseline Report

JER8584
Wealden 3Rs Application
Site Condition Report
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Quality Management

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1 INTRODUCTION

1.1 Background

1.1.1 Britaniacrest Recycling Limited (BRL) intends to submit an application to the Environment Agency (EA) to vary the current permit (EPR/CB3308TD) situated at Former Wealden Brickworks, Langhurst Wood Road, Horsham, West Sussex, RH12 4QD. The permit currently covers the operation of a waste transfer station with a capacity to accept up to 200,000 tonnes per annum (tpa) of household, and commercial and industrial waste. The application to vary the permit will seek to permit the Wealden 3Rs facility which will combine a waste transfer station, mechanical sorting plant and energy recovery facility. The Wealden 3Rs facility accept the same total quantity of waste.

1.1.2 Under the Environmental Permitting (England and Wales) Regulations 2016, the Wealden 3Rs facility will be regulated as a Part A1 installation and requires permit to operate from the Environment Agency. To support the application for the permit variation, there is a requirement to provide an Industrial Emissions Directive (IED) Baseline Report as well as a Site Condition Report.

1.1.3 This report has been prepared in accordance with the European Commission Guidance concerning baseline reports required under the IED and also the Environment Agency's H5 Horizontal Guidance.

1.1.4 The Industrial Emissions Directive (IED), Article 22, paragraphs 2 to 4, contains provisions for the definitive cessation of activities involving the use, production or release of Relevant Hazardous Substances (RHS) in order to prevent and tackle potential soil and groundwater contamination from such substances. A key tool in this respect is the establishment of a 'baseline report' where an activity involves the use, production or release of RHS and having regard to the possibility of soil and groundwater contamination. The report will form the basis for a comparison with the state of contamination upon definitive cessation of activities. Where information produced pursuant to other national or union law reflects the state at the time the report is drawn up, that information may be included in, or attached to, the baseline report.

1.1.5 RPS has prepared this report based on information and data available at the time of preparation of the report.

1.2 Overview of IED Requirements

1.2.1 Article 22(2) IED specifies that a baseline report should contain at least the following information:

1. information on the present use and, where available, on past uses of the site; and
2. where available, existing information on soil and groundwater measurements that reflect the state at the time the report is drawn up or, alternatively, new soil and groundwater measurements having regard to the possibility of soil and groundwater contamination by those hazardous substances to be used, produced or released by the installation concerned.

1.2.2 The EU guidance follows an eight stage process, covering the following main elements:

- Stages 1-3: to decide whether a baseline report is required;
- Stages 4-7: to determine how a baseline report has to be prepared; and
- Stage 8: to determine the content of the report.

1.3 Key Objectives

1.3.1 The key objectives of this report are to:

- Establish the environmental setting of the site and determine its environmental sensitivity;
- Identify activities that are currently undertaken at the site, including the identification of Relevant Hazardous Substances and preventative measures implemented to protect land and groundwater;
- Establish the extent of historical contamination in the soil and groundwater in areas where current and/or future processes may include similar potentially contaminating substances;
- To identify the Site Conditions at the site at the point of varying the permit for the facility (baseline condition) such that they may be used as a point of reference to determine whether the site has been contaminated during the site's permitted operation in line with IED and Environmental Permitting Regulations requirements; and
- To provide conclusions on whether land quality has been impacted from historical activities.

1.3.2 With respect to the IED eight stage process outlined in Section 1.2, a summary of each stage is outlined below along with where it is addressed within this report:

- Stage 1 - Identify hazardous substances used, produced or released at the installation. This is addressed within Section 3 of this report;
- Stage 2 - Identify relevant hazardous substances used, produced or released at the installation from the list of hazardous substances identified in Stage 1. This is addressed within Section 4 of this report;
- Stage 3 – Undertake an assessment of site-specific pollution possibility for relevant hazardous substances. This is addressed within Section 5 of this report;
- Stage 4 – Evaluation of Site History and potential for relevant hazardous substances to be present in soils and groundwater. This is addressed within Section 6 of this report;
- Stage 5 – Evaluation of Environmental Setting to determine the fate of potential emissions of relevant hazardous substances This is addressed within Section 7 of this report;
- Stage 6 – Site Characterisation that synthesises findings of Stage 5 and 6 on the basis of a Conceptual Site Model. This is addressed within Section 8 of this report;
- Stage 7 – Site Investigation (including sampling strategy). This is addressed within Section 9 of this report; and
- Stage 8 – Production of Baseline Report. This is addressed within Section 10 of this report.

1.4 Description of Permitted Activities

1.4.1 The site is permitted as a waste transfer station (WTS) with treatment under the Environmental Permit reference EPR/CB3308TD. The site obtained a permit in February 2015, issued to BRL.

1.4.2 In summary the current permitted activities include the following:

- Recycling and reclamation of inorganic substances and organic substances which are not used as solvents or metals and metal compounds.
- Physical-chemical treatment including manual and mechanical sorting or separation, screening washing, shredding, crushing and baling of waste for disposal (no more than 50 tonnes per year) or recovery.
- Storage of waste pending recovery or disposal, excluding temporary storage, pending collection, on the site where the waste is produced.
- Storage no more than 10 tonnes of asbestos waste.

1.4.3 The permit allows the following wastes types, conforming to the relevant waste codes, to be stored and recycled at the site:

- Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals
- Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing
- Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard
- Wastes from the leather, fur and textile industries
- Wastes from inorganic chemical processes
- Wastes from organic chemical processes
- Wastes from the photographic industry
- Wastes from thermal processes
- Wastes from chemical surface treatment and coating of metals and other materials, non-ferrous hydrometallurgy
- Wastes from shaping and physical and mechanical surface treatment of metals and plastics
- Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified
- Construction and demolition wastes (including excavated soil from contaminated sites) – note some asbestos containing wastes are permitted to be accepted.
- Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use
- Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions
- Wastes not otherwise specified in the list

1.4.4 The site currently has a permitted throughput of 200,000 tpa. An application to vary the permit is being sought to combine a mechanical sorting plant and energy recovery facility (ERF) in addition to the permitted WTS. The total throughput to the facility will increase to 230,000 tpa.

1.4.5 Additional waste codes will be added as part of this permit variation, further details are found at Table 3-2 of this report.

1.4.6 The WTS, mechanical sorting plant and ERF will be carried out in newly constructed buildings.

1.4.7 Impermeable pavement is present in all areas where waste will be stored, handled or treated.

1.4.8 The drainage is shown on RPS drawing reference NK018074 RPS-EFW-XX-DR-D-0300

1.4.9 The surface of the site has a sealed drainage system that drains into surface water discharge point drainage via an interceptor.

1.4.10 A waste pre-acceptance and waste acceptance procedure is in place to prevent the acceptance of unsuitable wastes. Diesel and oil for use by onsite vehicles is stored in bunded tanks on impermeable surface with sealed drainage. All liquid containment is bunded and subject to visual checks daily.

1.4.11 For a full detailed description of the operating techniques for the installation currently on site see Appendix F1.

1.4.12 There was a site condition report written by White Young Green in 2014, which is the baseline report for the original permit application, this site condition report did not include any information regarding intrusive ground investigation works.

2 APPLICATION SITE CONDITION REPORT

2.1 Application Phase

2.1.1 This SCR, is prepared in accordance with the Environment Agency Horizontal Guidance Note H5, and provides references to the various chapters of this report, where available information on the known current condition of the operational area is provided.

2.2 Site Condition Report Summary

1.0 Site Details	
Name of the applicant	Britaniacrest Recycling Ltd
Activity address	Wealden Brickworks Site, Langhurstwood Road, Horsham, West Sussex
National grid reference	TQ 17122 34331
Site area (ha)	3.8
Document reference and dates for Site Condition Report at permit application and surrender	WYG (October 2014) Former Wealden Brickworks Waste Transfer Station Environmental Permit Application Site Condition Report. A088778
Document references for site plans (including location and boundaries):	Drawing 1 and Drawing 2, see Drawings Appendix.

2.0 Condition of the land at permit issue	
Environmental setting including: • geology • hydrogeology • surface waters	Details of the environmental setting are provided in *Section 7**Error! Reference source not found.*** of this SCR and Baseline Report.
Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures	Pollution history details are provided in *Section 6 and 8* of this SCR and Baseline Report.
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	Any details regarding historical contamination at the site are provided in *Section 6 & 8* of this SCR and Baseline Report.
Baseline soil and groundwater reference data	Details regarding baseline soil and groundwater reference data at the site are provided in *Section **Error! Reference source not found.*** of this SCR and Baseline Report associated with the 2020 application to vary the permit to include mechanical sorting and an energy recovery facility.

2.0 Condition of the land at permit issue	
Supporting information • Source information identifying environmental setting and pollution incidents • Historical Ordnance Survey plans • Site reconnaissance • Historical investigation / assessment / remediation / verification reports • Baseline soil and groundwater reference data	• WYG (October 2014) Environmental Permit Application Site Condition Report. (Appendix F2) • RPS (November 2016) Ground Condition Desk Top Study. (Appendix F3) • Groundsure (June 2016) Enviro Insight. RPS-3083608 • EA Habitats Screening Report (Appendix F4) See *References* Section of this SCR and Baseline Report.

3.0 Permitted activities	
Permitted activities	Details regarding permitted activities on the proposed site are provided in *Section* ***Error! Reference source not found.*** of this SCR and Baseline Report.
Non-permitted activities undertaken	Details regarding permitted activities on the proposed site are provided in *Section* ***Error! Reference source not found.****..2* of this SCR and Baseline Report.
Document references for: • plan showing activity layout; and • environmental risk assessment.	A site location and boundary plan for the facility are shown on the following drawings: • Drawing 1 and Drawing 2, drawings appendix of this SCR and Baseline Report.

3 STAGE 1 – IDENTIFY WHICH HAZARDOUS SUBSTANCES ARE USED, PRODUCED OR RELEASED AT THE INSTALLATION AND PRODUCE A LIST OF THESE SUBSTANCES

3.1.1 The IED relates to contamination risk associated with “hazardous substances” used, produced and/or released by the facility. Hazardous substances are defined as substances or mixtures defined in Article 3 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on Classification, Labelling and Packaging of substances and mixtures (the “CLP Regulations”). The determination of whether a substance is a hazardous substance is largely determined using the substance CAS Number and European Chemicals Agency (ECHA) database (Ref. 2).

3.1.2 **Error! Reference source not found.** below summarises the waste codes that can be currently accepted at the site.

Table 3-1: Waste Codes Accepted

Waste Type	Material	EWC code	CAS Number (where applicable)
Wastes from mineral excavation	Wastes from mineral metalliferous excavation	01 01 01	
	Wastes from mineral non-metalliferous excavation	01 01 02	
Wastes from physical and chemical processing of metalliferous minerals	Tailings other than those mentioned in 01 03 04 and 01 03 05	01 03 06	
	Red mud from alumina production other than the wastes mentioned in 01 03 10	01 03 09	
Wastes from physical and chemical processing of non-metalliferous minerals	Waste gravel and crushed rocks other than those mentioned in 01 04 07	01 04 08	
	Waste sand and clays		
	Wastes from potash and rock salt processing other than those mentioned in 01 04 07	01 04 09	
		01 04 11	
	Tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11	01 04 12	
	Wastes from stone cutting and sawing other than those mentioned in 01 04 07	01 04 13	
Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing.	Plant-tissue waste	02 01 03	
	Waste plastics (except packaging)	02 01 04	
	Wastes from forestry	02 01 07	
	Waste Metal	02 01 10	
	Materials unsuitable for consumption or processing	02 02 03	
Wastes from the preparation and processing of meat, fish and other foods of animal origin	Materials unsuitable for consumption or processing	02 03 04	
	Soil from cleaning and washing beet	02 04 01	
Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation	Off-specification calcium carbonate	02 04 02	
	Materials unsuitable for consumption or processing	02 05 01	
Wastes from sugar processing	Materials unsuitable for consumption or processing	02 06 01	

Waste Type	Material	EWC code	CAS Number (where applicable)
Wastes from the dairy products industry Wastes from the baking and confectionery industry Wastes from the production of alcoholic and non- alcoholic beverages (except coffee, tea and cocoa)	Wastes from preserving agents Wastes from washing, cleaning and mechanical reduction of raw materials Wastes from spirits distillation Materials unsuitable for consumption or processing	02 06 02 02 07 01 02 07 02 02 07 04	
Wastes from wood processing and the production of panels and furniture Wastes from pulp, paper and cardboard production and processing	Waste bark and cork Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04 Waste bark and wood Mechanically separated rejects from pulping of wastepaper and cardboard Wastes from sorting of paper and cardboard destined for recycling Fibre rejects, fibre-, filler- and coating-sludges from mechanical separation	03 01 01 03 01 05 03 03 01 03 03 07 03 03 08 03 03 10	
Wastes from the leather and fur industry Wastes from the textile industry	Waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium Wastes from dressing and finishing Wastes from unprocessed textile fibres Wastes from processed textile fibres	04 01 08 04 01 09 04 02 21 04 02 22	
Wastes from the MSFU of phosphorous chemicals and phosphorous chemical processes Wastes from the manufacture of inorganic pigments and opacificiers	Phosphorous slag Calcium-based reaction wastes other than those mentioned in 06 09 03 Calcium-based reaction wastes from titanium dioxide production	06 09 02 06 09 04 06 11 01	
Wastes from the MFSU of plastics, synthetic rubber	Waste plastic	07 02 13	

Waste Type	Material	EWC code	CAS Number (where applicable)
and man-made fibres			
Wastes from the photographic industry	Photographic film and paper containing silver or silver compounds	09 01 07	
	Photographic film and paper free of silver or silver compounds	09 01 08	
	Single-use cameras without batteries	09 01 10	
	Single-use cameras containing batteries other than those mentioned in 09 01 11	09 01 12	
Wastes from power stations and other combustion plants (except 19)	Bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)	10 01 01	
	Calcium-based reaction wastes from flue-gas desulphurisation in solid form	10 01 05	
	Calcium-based reaction wastes from flue-gas desulphurisation in sludge form	10 01 07	
	Bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14	10 01 15	
	Wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18	10 01 19	
	Sands from fluidised beds	10 01 24	
Wastes from the iron and steel industry	Wastes from the processing of slag	10 02 01	
	Unprocessed slag	10 02 02	
	Solid wastes from gas treatment other than those mentioned in 10 02 07	10 02 08	
	Mill scales	10 02 10	
	Sludges and filter cakes from gas treatment other than those mentioned in 10 02 13	10 02 14	
	Other sludges and filter cakes	10 02 15	
Wastes from aluminium thermal	Anode scraps	10 03 02	

Waste Type	Material	EWC code	CAS Number (where applicable)
metallurgy	Waste alumina	10 03 05	
	Skimmings other than those mentioned in 10 03 15	10 03 16	
	Carbon-containing wastes from anode manufacture other than those mentioned in 10 03 17	10 03 18	
	Solid wastes from gas treatment other than those mentioned in 10 03 23	10 03 24	
	Sludges and filter cakes from gas treatment other than those mentioned in 10 03 25	10 03 26	
	Wastes from cooling-water treatment other than those mentioned in 10 03 27	10 03 28	
	wastes from treatment of salt slags and black drosses other than those mentioned in 10 03 29	10 03 30	
Wastes from lead thermal metallurgy	Wastes from cooling-water treatment other than those mentioned in 10 04 09	10 04 10	
	Slags from primary and secondary production		
Wastes from zinc thermal metallurgy	Wastes from cooling-water treatment other than those mentioned in 10 05 08	10 05 01	
		10 05 09	
	Dross and skimmings other than those mentioned in 10 05 10	10 05 11	
	Slags from primary and secondary production		
Wastes from copper thermal metallurgy	Dross and skimmings from primary and secondary production	10 06 01	
		10 06 02	
	Wastes from cooling-water treatment other than those mentioned in 10 06 09	10 06 10	
	Slags from primary and secondary production		
Wastes from silver, gold and platinum thermal metallurgy	Dross and skimmings from primary and secondary production	10 07 01	
		10 07 02	
	Solid wastes from gas treatment		
	Sludges and filter cakes from gas treatment	10 07 03	
	Wastes from cooling-water treatment other than those mentioned in 10 07 07	10 07 05	
		10 07 08	
	Other slags		
Wastes from other non-ferrous thermal	Dross and skimmings other than those mentioned in 10 08 10	10 08 09	
		10 08 11	
	Carbon-containing wastes from anode manufacture		

Waste Type	Material	EWC code	CAS Number (where applicable)
Metallurgy	other than those mentioned in 10 08 12	10 08 13	
	Anode scrap		
	Sludges and filter cakes from flue-gas treatment	10 08 14	
	other than those mentioned in 10 08 17	10 08 18	
	Wastes from cooling-water treatment other than		
	those mentioned in 10 08 19	10 08 20	
	Furnace slag		
	Casting cores and moulds which have not	10 09 03	
	undergone pouring other than those mentioned in	10 09 06	
Wastes from casting of ferrous pieces	10 09 05		
	Casting cores and moulds which have undergone		
	pouring other than those mentioned in 10 09 07	10 09 08	
	Waste binders other than those mentioned in 10 09		
	13	10 09 14	
	Waste crack-indicating agent other than those		
	mentioned in 10 09 15	10 09 16	
	Furnace slag		
	Casting cores and moulds which have not	10 10 03	
	undergone pouring other than those mentioned in	10 10 06	
Wastes from casting of non-ferrous Pieces	10 10 05		
	Casting cores and moulds which have undergone		
	pouring other than those mentioned in 10 10 07	10 10 08	
	Waste binders other than those mentioned in 10 10		
	13	10 10 14	
	Waste crack-indicating agent other than those		
	mentioned in 10 10 15	10 10 16	
	Waste glass-based fibrous materials		
	Waste preparation mixture before thermal	10 11 03	
	processing, other than those mentioned in 10 11 09	10 11 10	
	Waste glass other than those mentioned in 10 11 11	10 11 12	
Wastes from manufacture of glass and	Solid wastes from flue-gas treatment other than		
glass products	those mentioned in 10 11 15	10 11 16	
	Sludges and filter cakes from flue-gas treatment		
	other than those mentioned in 10 11 17	10 11 18	

Waste Type	Material	EWC code	CAS Number (where applicable)
Wastes from manufacture of ceramic goods, bricks, tiles and construction products	Waste preparation mixture before thermal processing	10 12 01	
	Sludges and filter cakes from gas treatment		
	Discarded moulds	10 12 05	
	Waste ceramics, bricks, tiles and construction products (after thermal processing)	10 12 06 10 12 08	
	Solid wastes from gas treatment other than those mentioned in 10 12 09	10 12 10	
	Wastes from glazing other than those mentioned in 10 12 11	10 12 12	
Wastes from manufacture of cement, lime and plaster and articles and products made from them	Waste preparation mixture before thermal processing	10 13 01	
	Wastes from calcination and hydration of lime		
	Sludges and filter cakes from gas treatment	10 13 04	
	Wastes from asbestos-cement manufacture other than those mentioned in 10 13 09	10 13 07 10 13 10	
	Wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10	10 13 11	
	Solid wastes from gas treatment other than those mentioned in 10 13 12	10 13 13	
	Waste concrete and concrete sludge	10 13 14	
Wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)	Sludges and filter cakes other than those mentioned in 11 01 09	11 01 10	
	Degreasing wastes other than those mentioned in 11 01 13	11 01 14	
Wastes from non-ferrous hydrometallurgical processes	Wastes from the production of anodes for aqueous electrolytical processes	11 02 03	
	Wastes from copper hydrometallurgical processes	11 02 06	

Waste Type	Material	EWC code	CAS Number (where applicable)
	other than those mentioned in 11 02 05		
Wastes from hot galvanising processes	Hard zinc	11 05 01	
	Zinc ash	11 05 02	
Wastes from shaping and physical and mechanical surface treatment of metals and plastics	Ferrous metal filings and turnings	12 01 01	
	Non-ferrous metal filings and turnings	12 01 03	
	Plastics shavings and turnings	12 01 05	
	Welding wastes	12 01 13	
	Waste blasting material other than those mentioned in 12 01 16	12 01 17	
	Spent grinding bodies and grinding materials other than those mentioned in 12 01 20	12 01 21	
Packing (including separately collected municipal packaging waste)	Paper and cardboard packaging	15 01 01	
	Plastic packaging	15 01 02	
	Wooden packaging	15 01 03	
	Metallic packaging	15 01 04	
	Composite packaging	15 01 05	
	Mixed packaging	15 01 06	
	Glass packaging	15 01 07	
	Textile packaging	15 01 09	
Absorbents, filter materials, wiping cloths and protective clothing	Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	15 02 03	
End of life vehicles from different means of transport(including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance	End-of-life tyres	16 01 03	
Wastes from electrical and electronic equipmen	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	
	Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	
	Inorganic wastes other than those mentioned in 16 03 03	16 03 04	
	Organic wastes other than those mentioned in 16	16 03 06	

Waste Type	Material	EWC code	CAS Number (where applicable)
Off-specification batches and unused products	03 05		
	Alkaline batteries (except 16 06 03)	16 06 04	
	Other batteries and accumulators	16 06 05	
Batteries and accumulators	Carbon-based linings and refractories from metallurgical processes other than those mentioned in 16 11 01	16 11 02	
Waste linings and refractories	Other linings and refractories from metallurgical processes other than those mentioned in 16 11 03	16 11 04	
	Linings and refractories from non-metallurgical processes other than those mentioned in 16 11 05	16 11 06	
Concrete, bricks, tiles and ceramics	Concrete	17 01 01	
	Bricks	17 01 02	
	Tiles and ceramic	17 01 03	
	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	17 01 07	
Wood, glass and plastic	Wood	17 02 01	
	Glass	17 02 02	
	Plastic	17 02 03	
Bituminous mixtures, coal tar and tarred products	Bituminous mixtures other than those mentioned in 17 03 01	17 03 02	
Construction and demolition wastes (including excavated soil from contaminated sites)	Copper,	17 04 01	7440-50-8
	Bronze		158113-12-3
	Brass		63338-02-3
	Aluminium	17 04 02	7429-90-5
	Lead	17 04 03	7439-92-1
	Zinc	17 04 04	7440-66-6
	Iron and steel	17 04 05	7439-89-6
	Tin	17 04 06	7440-31-5
	Mixed metals	17 04 07	
	Cables other than those mentioned in 17 04 10	17 04 11	
Soil (including excavated soil from contaminated sites), stones and dredging spoil	Soil and stones other than those mentioned in 17 05 03	17 05 04	
	Rack ballast other than those mentioned in 17 05 07	17 05 08	
Insulation materials and asbestos-	Insulation materials containing asbestos – bonded	17 06 01*	

Waste Type	Material	EWC code	CAS Number (where applicable)
containing construction materials	asbestos only		
	Insulation materials other than those mentioned in 17 06 01 and 17 06 03	17 06 04	
	Construction materials containing asbestos– bonded asbestos only	17 06 05*	
Gypsum-based construction material	Gypsum-based construction materials other than those mentioned in 17 08 01	17 08 02	
Other construction and demolition wastes	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	17 09 04	
Wastes from incineration or pyrolysis of waste	Ferrous materials removed from bottom ash	19 01 02	
	Bottom ash and slag other than those mentioned in 19 01 11	19 01 12	
	Pyrolysis wastes other than those mentioned in 19 01 17	19 01 18	
	Sands from fluidised beds	19 01 19	
Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)	Premixed wastes composed only of non-hazardous wastes	19 02 03	
	Combustible wastes other than those mentioned in 19 02 08 and 19 02 09	19 02 10	
Vitrified waste and wastes from vitrification	Vitrified waste	19 04 01	
Wastes from aerobic treatment of solid wastes	Non-composted fraction of municipal and similar wastes	19 05 01	
	Non-composted fraction of animal and vegetable waste	19 05 02	
	Off-specification compost	19 05 03	
Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified	Paper and cardboard	19 12 01	
	Ferrous metal	19 12 02	
	Non-ferrous metal	19 12 03	
	Plastic and rubber	19 12 04	
	Glass	19 12 05	
	Wood other than that mentioned in 19 12 06	19 12 07	
	Textiles		

Waste Type	Material	EWC code	CAS Number (where applicable)
	Minerals (for example sand, stones)	19 12 08	
	Combustible waste (refuse derived fuel)	19 12 09	
	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	19 12 10 19 12 12	
Wastes from soil and groundwater remediation	solid wastes from soil remediation other than those mentioned in 19 13 01	19 13 01	
Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions	Paper and cardboard	20 01 01	
	Glass	20 01 02	
	Biodegradable kitchen and canteen waste	20 01 08	
	Clothes	20 01 10	
	Textiles	20 01 11	
	Batteries and accumulators other than those mentioned in 20 01 33	20 01 34	
	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	
	Wood other than that mentioned in 20 01 37	20 01 38	
	Plastics	20 01 39	
	Metals	20 01 40	
	Wastes from chimney sweeping	20 01 41	
Garden and park wastes (including cemetery waste)	Biodegradable waste	20 02 01	
	Soil and stones	20 02 02	
Other municipal wastes	Mixed municipal waste	20 03 01	
	Waste from markets	20 03 02	
	Street-cleaning residues	20 03 03	
	Bulky waste	20 03 07	

3.1.3 Table 3-2 provides a list of the proposed EWC codes to be added to the permit as part of this variation application.

Table 3-2: Proposed Additional Waste codes

Waste Type	Material	EWC code	CAS Number (where applicable)
Wastes from aerobic treatment of solid wastes	Digestate from anaerobic treatment of municipal waste	19 06 04	
	Digestate from anaerobic treatment of animal and vegetable waste	19 06 06	
Other municipal wastes	Municipal wastes not otherwise specified	20 03 99	

3.1.4 A gas oil tank is present on site for providing auxiliary fuel to the ERF. The gas oil is stored within an integrally 95 m^3 bunded fuel tank on concrete hardstanding.

3.1.5 Hydraulic oil is stored in IBC units on concrete hardstanding. The IBCs are stored in a bund / drip tray area that has a minimum, capacity of 110% of the stored volume.

3.1.6 The following reagents will be stored at the facility associated with the flue gas cleaning for the ERF:

- Ammonium hydroxide (25% solution) [CAS No. 1336-21-6] (or urea [CAS No. 57-13-6])
- Hydrated lime [CAS No. 215-138-9, 215-137-3 and 207-439-9]
- Activated carbon [CAS No. 7440-44-0].

3.1.7 Both hydrated line and activated carbon are handled as solid. Ammonium hydroxide would be stored and handled in a bulk storage tank. Urea, if received, would be received and handled in solid form (urea prills).

3.1.8 The mechanical sorting plant produces sorted non-hazardous waste fractions including wood, metals and plastics. These materials are stored in covered bays.

3.1.9 The ERF generates two main residues namely incinerator bottom ash (IBA) and air pollution control (APC) residues.

3.1.10 IBA is produced from the furnace grate, quenched and stored in the bottom ash bunker prior to transfer to lorries for transport to the reprocessing facility [No specific CAS No. IBA contains mixture of possible inorganic / organic combustion products including heavy metals, PAHs, dioxins and furans, dioxin-like PCBs]. Subject to testing IBA is expected to be non-hazardous.

3.1.11 APC solid residues collected from the bag filters will be handled in an enclosed facility and stored in silos discharged via sealed connections to fully contained disposal vehicles [No specific CAS No. Contains mixture of possible inorganic / organic combustion products including metals, PAHs, dioxins and furans , dioxin -like PCBs]. APC residues are typically a hazardous waste.

3.1.12 Boiler water treatment chemicals that typically include:

- Caustic soda / sodium hydroxide (NaOH) [CAS No. 1310-73-2] used to regenerate the ion exchange unit for boiler water treatment, expected to be stored in 10 m^3 ASTs within the Water Treatment Room;
- Hydrochloric acid (HCl) [CAS No. 7647-01-0] used to regenerate the ion exchange unit for boiler water treatment, expected to be stored in 10 m^3 ASTs within the Water Treatment Room;
- Carbohydrazide 15% Solution [CAS N0 497-18-7] used as an oxygen scavenger that is expected to be stored in small quantities in dosing skid / drums within the turbine hall;
- Trisodium phosphate [CAS No. 7601-54-9] used as cleaning agent and is expected to be stored is small quantities in dosing skid / drums in the turbine hall.

3.1.13 Grease tubes for plant maintenance are stored in the site building. Lubricants for plant maintenance are stored in plastic containers on a bund / drip tray that has a minimum capacity of 110% of the stored volume. Oils and greases have variable CAS No's, typically comprising complex mixture of long-chain hydrocarbons;

3.1.14 The site has a sealed drainage system that passes through an oil interceptor prior to discharge at the surface water discharge point. Maintenance procedures are in place for the interceptor to ensure that it remains in good working order to prevent any leakage having an adverse environmental impact. If necessary, the flow from the interceptors can be shut off and the drainage system isolated from the downstream groundwater drainage system.

4 STAGE 2 – IDENTIFYING THE RELEVANT HAZARDOUS SUBSTANCES

4.1.1 Stage 1 identified that, with the exception of Asbestos, the permitted wastes that are stored and recycled at the site are not deemed to be hazardous substances. A number of hazardous substances have been identified that are stored and used or produced on site as part of site operations. Stage 2 requires a review of the listed substances to determine which are relevant hazardous substances (RHS). Each of the substances identified within Stage 1 are reviewed in below, considering their chemical and physical properties and how they are stored and used on site, to determine the potential pollution risk of each hazardous substance.

4.1.2 RHS in relation to IED are defined as:

those substances or mixtures defined within Article 3 of Regulations (EC) No1272/2008, which, as a result of their hazardousness, mobility, persistence and biodegradability (as well as other characteristics), are capable of contaminating soil or groundwater and are used, produced and/or released by the installation.

4.2 Oil Based Hazardous Substances (Gas oil, Hydraulic Oil and Lubricants)

4.2.1 Gas oil, hydraulic oil and lubricants are used on site by mobile plant and operational equipment as part of the site operations. These substances are stored in reasonable quantities, particularly diesel, and are capable of contaminating soil and groundwater should they be released into the environment. These oil based substances are toxic to the water environment and although they are biodegradable in particular conditions, larger volumes of these substances are likely to be relatively persistent in the environment.

4.3 Asbestos Waste

4.3.1 Asbestos containing materials (ACM) are stored on site, there is no asbestos treatment permitted on site. Asbestos is a carcinogen and fibre releases present a risk to human health as asbestos fibres can cause lung damage when inhaled. ACM have a negligible risk to the environment. The site staff monitor the quantities of asbestos wastes being accepted to ensure that this limit is not exceeded

4.4 Flue Gas Treatment Chemicals

4.4.1 Hydrated lime, activated carbon and urea (if ammonium hydroxide solution not use) are not classified as hazardous substances to the environment and are therefore not considered further. Ammonium hydroxide (if used) is considered a hazardous substance as it is very toxic to aquatic life.

4.5 Sorted Materials from the Mechanical Sorting Plant

4.5.1 These materials are non-hazardous (wood, plastic and metals) are not considered to present a hazard to ground or ground water so a are not considered further.

4.6 Bottom Ash and Boiler Ash

4.6.1 Boiler Ash will be mixed with Bottom Ash in common with practice at most ERF sites in the UK. Bottom ash is a mirror entry in the List of Waste Regulations and can be hazardous or non-hazardous due to the potential for containing heavy metals, PAHs, dioxins and furans and dioxin like PCBs. Testing of the residue is required once the facility becomes operational to confirm its

hazard status however, most incinerator bottom ash from UK Energy from Waste facilities is classified as non-hazardous. Subject to testing once operational it is expected that this residue will be non-hazardous and therefore bottom ash is not considered further.

4.7 APC Residues

4.7.1 APC residues are a hazardous residue due to the levels of heavy metals, PAHs, dioxins and furans and dioxin like PCBs and pH based on alkalinity. They are a dry solid powdery residue.

4.8 Boiler Water Treatment Chemicals

4.8.1 Boiler water will be treated via ion exchange, the typical chemicals used are expected to include caustic soda, hydrochloric acid, trisodium phosphate and carbohydrazide for use as an oxygen scavenger or similar proprietary boiler water chemicals. These chemicals will be stored and used in very small quantities.

4.9 Site Discharge

4.9.1 Discharge into the local surface water network has the potential to contaminate the surrounding surface water courses.

4.9.2 This is a planned emission and the site has a sealed drainage system that comprises an interceptor prior to discharge into surface water. There is a sample point at the discharge location to monitor the quality of the water being discharged.

4.9.3 There are site maintenance and inspection procedures in place for the oil interceptor to prevent the discharge from having an adverse environmental impact. On this basis, site discharge has been discounted as RHS for the purpose of this baseline of soil and groundwater

5 STAGE 3 – ASSESSMENT OF THE SITE SPECIFIC POLLUTION POSSIBILITY

5.1.1 Each of the relevant hazardous substances identified in Stage 2 are to be considered in Stage 3 in the context of the site itself to determine whether circumstances exist which may result in the release of the substance in sufficient quantities to represent a pollution risk, either as a result of a singular emission or as a result of accumulation from multiple emissions.

5.1.2 Circumstances under which emissions may occur include:

- Planned emissions;
- Accidents and / or incidents; and
- Routine operations.

5.1.3 The only planned emission at the site to ground will be the site discharge to the surface water network, in Stage 2 this was discounted as a RHS.

5.1.4 The site will maintain an up to date Environmental Management System (EMS) compliant with ISO 14001, 9001 and 18001. This EMS will outline BRL procedures in place to minimise the frequency of accidents or incidents occurring and it will outline procedures in place to minimise the risk in the event of an accident or incident occurring. These are summarised below:

- All aspects of the site operations have been assessed for significance and an appropriate environmental risk assessment has been carried out;
- Regular inspections of impermeable surfaces, tanks, bunds and pipe work will be carried out and repairs and maintenance will be undertaken as necessary;
- All plant and equipment will be inspected and maintained in accordance with legal requirements and the manufacturer's recommendations and maintenance records will be kept by site management;
- Any complaints received about site activities will be recorded and investigated in accordance with the complaints log and investigation procedure;
- A mechanism will be in place to fully investigate any environmental incidents and non-conformances in both normal and abnormal conditions and to record any remedial actions that might be taken and how to prevent re-occurrence. Relevant employees will be trained in how to report such occurrences including near misses and hazards from both an environment and health and safety perspective
- A site-specific emergency contingency and accident management plan will be in place; and
- All staff will receive environmental training relating to environmental best practice on induction and will be required to follow safe working procedure. Key personnel will also be required to complete Environment Agency technical competence assessments and continuing competence assessments as applicable.

5.1.5 Emissions as a result of the RHS used during routine operations are outlined in the sections below.

5.2 Oil Based Substances (Diesel, Hydraulic Oil and Lubricants)

5.2.1 The site requires gas oil and hydraulic oil to operate. All oil-based substances stored on site will be located on impermeable surfaces within areas bunded to contain 110% of the tank volume.

5.2.2 The stored oil based substances are subject to daily visual checks for integrity and leaks. The site surfaces will be regularly inspected as part of the EMS and will be repaired where necessary to maintain the impermeable nature.

5.3 Asbestos Containing Materials

5.3.1 Asbestos waste will be double bagged and stored in clearly identified, segregated, secure lockable containers. No more than 10 tonnes of ACM will be stored on site at any one time.

5.4 Flue Gas Treatment Chemicals

5.4.1 Ammonium hydroxide (if used) is considered a hazardous substance as it is very toxic to aquatic life. Ammonia hydroxide will be stored in a 30m^3 storage tank with secondary bund sized to contain 110% of the tank content and constructed and lined to be impervious. In the event of a spillage, the spilled material will be cleaned up immediately and disposed of appropriately. With these measures in place the risk to the environment will be minimised.

5.5 APC Residues

5.5.1 APC residues will be handled in a fully contained system and out loaded into enclosed vehicles using sealed connections, therefore under normal operation the potential for contamination of ground/groundwater is negligible. The potential for contamination of ground or ground water from a spillage is extremely low as the residue is a dry solid and would be cleaned up immediately using dry techniques. All processing areas will be surfaced. The potential for contamination of ground or ground water is therefore considered negligible.

5.6 Boiler Water Treatment Chemicals

5.6.1 The boiler water treatment chemicals will be delivered by road and discharged into dedicated storage tanks. The duty member of staff will be responsible for checking that the material to be delivered is discharged into the appropriate storage vessel and that there is sufficient capacity within the storage vessel prior to commencing unloading operations.

5.6.2 The boiler water treatment chemicals will be subject to appropriate storage and handling practices which will be described and enforced through the site's EMS.

5.6.3 Given the volumes of the materials likely to be stored and used on site the potential risk to soil or groundwater is low.

5.7 Site Specific Pollution Possibility

5.7.1 Given the above the following materials to be used, stored or produced at the facility are considered RHS for which baseline data is required:

- Gas oil
- Ammonium hydroxide solution (if used)
- Asbestos containing material

6 STAGE 4 – PROVIDE A SITE HISTORY

6.1.1 The purpose of Stage 4 is to determine which of the RHS identified in Stage 3 have the potential to be present on site in the soil and groundwater already as a result of activities undertaken at the site to date and to determine whether they are coincident with potential future emission points.

6.1.2 This section should consider both the history of the site prior to development of the current facility and the operational history of the current facility.

6.2 General Site History

6.2.1 The site was undeveloped until circa 1910 when the Wealden Brickworks was constructed. The site has been subject to excavation / quarrying and has included a number of potential contaminative activities including rail workings, tanks and Brickworks buildings.

6.2.2 Structural changes to the site appear to have taken place between 1989 and 1992. Since this time the site became derelict until 2015 when it became a permitted waste transfer station. Several former features have been removed from the site such that currently only the main Brickworks building, two smaller buildings (a security building and a former canteen) and some minor structures remain.

6.2.3 Potentially contaminative activities / features of the site include former Brickworks operations, the presence of storage tanks, use and storage of materials and chemicals, railway sidings and the potential for Made Ground to be present as a result of historic excavations and the re-working of site contours.

6.2.4 The area to the south of the site has also historically been associated with a Brickworks while the area to the north of the site has been subjected to landfilling activities.'

6.3 Previous Ground Investigation

6.3.1 The RPS Ground Conditions Desk Top Study summarises the previous contaminated land investigations at the site, this is found at Appendix F3 of this report the RPS Desk Top Study reviewed the following reports:

- Capita Symonds, Ground Investigation, 2005
- Scott Wilson Ltd, Desk Top Study, December 2009
- SLR, Environmental Statement Technical Chapter, no date
- SLR Consulting, Desk Top Study, September 2014
- Risk Management Ltd, Site Investigation, February 2015

6.3.2 The scope of the ground investigation undertaken by Capita Symonds in 2005 is not known as a full report was not provided, it was summarised in the Scott Wilson Ltd Desk Top Study but it is understood it comprised:

- Trial pits and soil analysis
- Gas monitoring

6.3.3 The scope of the ground investigation undertaken by Risk Management Ltd in February 2015 comprised

- Analysis of six Made Ground samples and two Weald Clay samples
- Three rounds of ground gas monitoring at four installed boreholes.

6.3.4 The following contaminants are indicated to be present with respect to a continued use of the site for industrial purposes, including continued use of the site with respect to current site operations:

- Exceedances of relevant screening criteria for Total Petroleum Hydrocarbon contamination within trial pits at concentrations of up to 8,400 mg kg^{-1}, there was also visual evidence of hydrocarbon contamination in trial pits and hydrocarbon contamination in an area to the north west of the site below a concrete pad.
- Possible Asbestos containing material (ACM) identified in the building fabric, and on the floor surrounding the buildings.

6.3.5 Based upon the findings of the ground investigation the following conclusions have been drawn:

- A review of the previous ground investigations has indicated that there are generally low levels of organic and inorganic contamination although elevated concentrations of TPH have been identified at a small number of locations.
- The review of the available documents has identified that the site is underlain by Made Ground, with perched pockets of water, which is in turn underlain by the Weald Clay. The Weald Clay is hydrogeological classified as Unproductive Strata.
- A preliminary Conceptual Site Model (CSM) was developed to inform a Preliminary Risk Assessment (PRA) that assesses the potential risks posed from the identified potential contamination sources to controlled waters, human health and the risk from ground gas. The CSM concluded that there was a low or negligible risk to human health and controlled waters from soil contamination and ground gases.
- The site has a Characteristic Situation (CS)1 classification from the presence of ground gas based upon the presence of methane and carbon monoxide, likely to be emanating from the deeper coal seams. A negligible to low risk to human health from the presence of ground gas is considered to be present.

6.4 Potential Historic Contaminants

6.4.1 Based upon a review of available information, it is considered that there the following contaminant sources are be present and could potentially have led to the presence of the identified contaminants in soil and / or groundwater as detailed in Section 6.3:

- Historic landfill and refuse heap; and
- Historical presence of railway sidings and tramway sidings.

6.5 Operational History

6.5.1 Groundsure information, included within Appendix F3, indicates there have been no historic pollution incidents at the site.

6.5.2 The Groundsure information details eight pollution incidents within 1 km of the site, the nearest was a category 2 (significant incident) comprising sulphide odour pollution in June 2001.

Compliance Assessment

6.5.3 A review of Compliance Assessment Reports from the EA has been carried out and a summary in provided in Table 6-1. Compliance Assessment Reports can be found at Appendix F5.

Table 6-1: Compliance Assessment Report summary

Date	Report Reference	Non-compliance recorded	Comments
17/04/2015	401997/0237843	None	Some site operations had begun but it was not fully operational.
01/08/2015	401997/0246466	Category 4 breach of permit condition 4.2.2	No waste return was submitted for April to June 2015
09/02/2016	401997/0257334	None	EA requested updated site layout drawings and contact details.
08/11/2017	401997/0295382	Category 3 breach of permit condition 2.1.1 Category 4 breach of permit condition 4.3.5	EA discussed requirement for drainage system at the southern part of the building. The drains at the northern part of the building's door appeared to be broken and blocked by debris. The southern part of the building was operational, but no notification had been sent to the EA.
31/08/2018	401997/0314130	None	EA described site as tidy and well organised, odour was kept to a low level.
09/04/2019	401997/0330698	None	Active odour monitoring and fly monitoring was recommended

6.5.4 No non-compliances or observations relating to emissions to soil or groundwater have been recorded within the CARs issued since the permit was issued.

6.5.5 There have been no reportable pollution incidents during the lifetime of the current permit.

6.5.6 The operation of the facility under the Environmental Permit is in accordance with the EMS. The management, monitoring and reporting requirements of the Environmental Permit are complied with, which will ensure that any environmental protection elements are implemented. Appropriate measures for the storage and use of hazardous substances have been implemented and the site comprises impermeable concrete hardstanding across the site with sealed drainage system. Operational techniques are also in place to manage any localised pollution incidents.

6.5.7 Details in relation to the EMS and accidents and/or incidents are outlined within section **Error! Reference source not found.** of this report. Further details on the EMS are presented within the site's Environment, Fugitive Emissions and Accidents Risk Assessment and Management Plan. Consideration of the environmental risk associated with the installation including the proposed management measures has been carried out and is included in section 6 of the Operating Techniques document.

7 STAGE 5 – IDENTIFY THE SITE'S ENVIRONMENTAL SETTING

7.1 Site Setting and Sources of Desk Study Information

7.1.1 The following sections detail the environmental setting of the site. The sources of desk study information utilised in order to describe the condition of the installation, and in particular, to determine the potential for substances to be present in, on or under the land associated with present and past uses of the site and its surrounding areas are listed below:

- A Groundsure report, including information regarding pollution incidents, flooding, water abstractions, discharge consents, waste disposal facilities, land-based designation, COMAH, radon and mining (Appendix F3);
- Ground investigation information summarised in the RPS Desk Top Study in November 2016 (Appendix F3); and
- Information held by the British Geological Survey relating to geology and hydrogeology.

7.1.2 There was a site condition report from the original permit application in 2014 (Appendix F2). There was no intrusive investigation undertaken as part of the site condition report.

7.2 Topography

7.2.1 Most of the site is generally level with a slight fall to the south. The site is relatively flat and falls from 51.30 metres Above Ordnance Datum (AOD) within the north east corner to 47.50 metres AOD within the south west corner.

7.3 Geology and Hydrogeology

7.3.1 The British Geological Survey (BGS) shows that the site is underlain by Weald Clay Formation of mudstone, no superficial deposits are recorded at the site.

7.3.2 Made Ground was noted up to 2.1 m below ground level (bgl) and contained a variety of constituents including brick, concrete and clinker

7.3.3 DEFRA's Groundwater Vulnerability Map shows the bedrock at the site is classified as unproductive; these are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

7.3.4 The Assessment is not in or within 500 m of a groundwater Source Protection Zone

7.4 Hydrology

7.4.1 The nearest surface water feature is Boldings Brook, located approximately 100 m to the west of the site.

7.4.2 Six OS network water lines are within 250 m of the site, the nearest of which is 93 m to the west of the site boundary.

7.4.3 There are two ponds bordering the northern boundary of the site. The nearest surface water feature is Boldings Brook, located approximately 100 m to the west of the site.

7.4.4 Surface water from the site drains passes into a sealed drainage system that discharges into the surface water discharge point via an interceptor.

7.5 Man-made Pathways

7.5.1 The site is covered in impermeable concrete hardstanding thereby preventing hazardous substances from site operations entering the soil and groundwater. As stated previously, all surface water enters a sealed drainage system and passes through an interceptor prior to discharge to surface water. The drainage system and interceptor are routinely maintained and the discharge location is monitored.

7.6 Environmental Consents, Licences, Authorisations, Permits and Designations for the Site and Surrounding Areas

Water Discharges and Abstraction Licences

7.6.1 Surface water drainage from the site passes through a sealed drainage system that includes interceptors.

7.6.2 There is one discharge point on site where treated sewage effluent is discharged, this is located to the centre of the site. There is one discharge consent within 250 m of the site, it is for trade discharges for Brookhurst Wood MRMC waste treatment facility, operated by Biffa Waste Services Limited, this is located 180 m north east of the site.

7.6.3 The nearest water abstraction is 33 m to the south of site. This water abstraction is operated by Ambion Brick Co Limited (it is understood that this company was liquidated in 2008) at Warnham Brick Works, comprising groundwater abstraction for general use. There is also a surface water abstraction point 41 m to the south of the site at the pond at Warnham Brickworks, operated by Weinerberger Limited. No potable / drinking water abstraction licences are present within 2 km of the site.

Landfill Sites

7.6.4 There is one historic landfill site within 1 km of the site, Brookhurstwood Landfill, located 180 north east of the site. The licence was held by Waste Management Ltd the landfill accepted household, commercial and industrial landfill waste. The licence (EPR/BV9896IY) is now held by Biffa Waste Services Ltd and accepts non-hazardous waste

Waste / Permitted Sites

7.6.5 The site is currently permitted as a waste transfer station accepting household, commercial and industrial waste. There are no other licenced waste facilities within 250 m of the site.

7.6.6 There are two Integrated Pollution Prevention and Control (IPPC) sites within 500 m of the site; Warnham Brick works operated by Biffa Waste Services Limited and Brookhurst Landfill operated by Waste Management Limited.

7.6.7 A brick manufacturing site and various trade entries are recorded in the general surrounding area.

Statutory Designated / Sensitive Sites within 1 km

7.6.8 The following sensitive land uses have been identified within 1 km of the site:

- Warnham Site of Special Scientific Interest (SSSI) 620 m north east of the site.
- Warnham Local Nature Reserve (LNR) 950 m south of the site.

7.6.9 In addition to these designated sites there were 29 ancient woodland sites recorded within 1 km of the site.

Mining

7.6.10 Information on the Coal Authority website indicates that the site is not located on a coalfield, therefore the site will not be affected by coal mining.

COMAH

7.6.11 Information on the HSE website at the time of writing indicates that there are no COMAH sites registered within 2 km of the site.

Radon

7.6.12 The site is defined as having a maximum radon potential of 1 – 3% of properties to be above the action level.

8 STAGE 6 – SITE CHARACTERISATION

8.1.1 The Britaniacrest site is located at a former brick works site with associated rail workings, tanks and brickworks buildings, there was also an historic landfill to the north of the site. The site has been in industrial use since the early 1910s and the contamination identified by the RPS ground investigation undertaken at the site is considered to be typical of a brownfield site with such an industrial heritage. The contamination identified is not considered to be associated with current permitted activities

8.1.2 The geology underlying the site comprises Made Ground up to 2.1 mbgl overlying Weald Clay formation, consisting of mudstone bedrock. Made Ground was noted to contain a variety of constituents including brick, concrete and clinker.

8.1.3 There is perched water within the Made Ground, but it is not considered to form a continuous shallow groundwater body at the site. The Weald Clay formation is an unproductive stratum.

8.1.4 The site does not lie in a groundwater Source Protection Zone.

8.1.5 There are two surface ponds at the north of the site. The nearest surface water feature is a Boldings Brook is located approximately 100 m to the west of the site.

8.1.6 Six OS network water lines are within 250 m of the site, the nearest of which is 88 m to the west of the site boundary.

8.1.7 There are no records of pollution incidents before or after the site obtained an environmental permit in February 2015.

8.1.8 A number of CARs have been issued by the Environment Agency in relation to site operations under permit, however no non-compliances or observations relating to emissions to soil or groundwater have been recorded within the CARs issued since the permit was issued in 2015

8.1.9 The operation of the facility under the Environmental Permit is in accordance with the EMS. All storage and recycling of both wastes takes place on impermeable pavement with sealed drainage system and operational techniques are in place to manage any localised pollution incidents. The surface is regularly inspected as part of the EMS and will be repaired where necessary to maintain the impermeability. The site also has spillage collection facilities, degreasers and cleansers where appropriate.

8.1.10 Details in relation to the EMS and accidents and/or incidents are outlined within section **Error! Reference source not found.** of this report. Further details on the EMS are presented within the site's Environment, Fugitive Emissions & Accidents Risk Assessment and Management Plan.

8.1.11 Given management procedures in place at the site and the sealed drainage system the pathways for contaminants are blocked. The quantities of RHS as a result of routine operations and RHS release as a result of accident and/or incident have been discounted as not a cause for concern for the facility in terms of contaminating land or groundwater.

9 STAGE 7 – SITE INVESTIGATION

9.1.1 Ground investigations were undertaken by Capita Symonds in 2005 and Risk Management Ltd in February 2015.

- Exceedances of relevant screening criteria for Total Petroleum Hydrocarbon contamination within trial pits at concentrations of up to 8,400 mg kg^{-1}, there was also visual evidence of hydrocarbon contamination in trial pits and elevated hydrocarbon contamination in an area to the north west of the site below a concrete pad.
- Possible Asbestos containing material (ACM) identified in the building fabric, and on the floor surrounding the buildings.

9.1.2 Based upon the findings of the ground investigation risks to human health and controlled waters are considered to be low to moderate, however risks to human health could be mitigated by the retention of hardstanding across the site. The presence of competent hardstanding and a sealed drainage system would also likely manage risks to controlled waters by reducing the infiltration of precipitation into the shallow soils.

9.2 Potential Contaminants of Concern

Gas Oil

9.2.1 The diesel range of total petroleum hydrocarbons (TPH CWG) is TPH CWG C8 to C21 and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX). These results, summarised from the Risk Management Ltd intrusive investigation, are shown in Table 9-1 below.

Table 9-1: TPH CWG Soil Analysis (From Risk Management Ltd, 2015), all results in mg kg^{-1}

Determinant	DIS1 D3	DIS2 D2	DIS3 D4	DIS4 D3	TP1B	TP2	TP3	TP4
Petroleum Hydrocarbons								
Aliphatic C8-C10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Aliphatic C10-C12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Aliphatic C12-C16	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Aliphatic C16-C35	<1.0	17.1	<1.0	1.3	1.2	1.3	<1.0	1.7
Aromatic C8-C10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Aromatic C10-C12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Aromatic C12-C16	1.3	<1.0	1.3	1.3	1.4	1.2	1.3	1.5
Aromatic C16-C21	1.7	<1.0	1.5	1.6	1.7	1.6	1.7	1.8
Aromatic C21-C35	<1.0	11.2	<1.0	<1.0	<1.0	<1.0	<1.0	1.4
BTEX								
Benzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ethylbenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylenes	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

9.2.2 In addition to this, the Capita Symonds intrusive investigation in 2005 detected levels of up to 8,400 mg kg^{-1} TPH in the Made Ground at one location. As this report has not been provided to RPS it is not clear where this was located and Scott Wilson (December 2009) note in their summary of this report that there are no speciated TPH results for this sample.

Asbestos

9.2.3 Suspected fragments of asbestos were visually identified in the SLR DTS (2014). They identified Asbestos was present within the construction of the buildings currently located at the site. Numerous areas of the site were observed to be impacted with broken asbestos cement sheet.

9.2.4 There were eight samples (six Made Ground and two natural clay) with taken as part of the Risk Management Ltd intrusive investigation, which were screened for asbestos. No asbestos was detected in any of these samples.

Ammonium Hydroxide

9.2.5 There was no analysis of ammonium hydroxide undertaken during the intrusive investigations on site. It is considered that there is no risk that ammonium hydroxide was used as part of historical activities on site and therefore it is no considered to present within the soils or groundwater on site.

9.3 Further Intrusive Investigations

9.3.1 The on site sources of contamination from RHS present are discussed in Section 5.7 of this report. The site operations and the operational procedures in place for material acceptance, storage and inspections minimise the risk of potential contamination. The site also has spillage collection facilities, spill kits, degreasers and cleansers where appropriate.

9.3.2 There are no records of any pollution incidents since the environmental permit was issued in 2015 and no CARs have been issued in relation to emissions to land or groundwater.

9.3.3 The impermeable surfaces across the site and sealed drainage is appropriately maintained to provide further protection to the environment in the event a localised pollution incident should occur.

9.3.4 It is recognised that the site has a long industrial legacy. Due to the quantities of hazardous substances present at the site, the impermeable surface and sealed drainage present as well as the operational procedures in place for material acceptance, storage and inspections, the risk of potential contamination is minimised.

9.3.5 Further intrusive ground investigation at the site is not considered necessary to support this baseline report.

10 STAGE 8 – PRODUCE A BASELINE REPORT

10.1.1 Details provided in Sections 1-7 include information on potential contaminant sources on site. The information from the ground investigations taken at the site in 2005 and 2015 will be used as baseline data for the site.

11 OPERATION SITE CONDITION REPORT

11.1 Operational Phase

11.1.1 This SCR, prepared in accordance with the EA "H5 Site Condition Report" guidance (Ref. 3), contains information on the condition of the site during the operational phase of the facility. It has been amended to reflect changes to the original permitted WTS activity to include an explansion to the permittied activities to operate a new mechanical sorting plant and ERF in addtion to the WTS.

11.2 Site Condition Report Summary

4.0 Changes to the activity	
Have there been any changes to the activity boundary? If yes, provide a plan showing the changes to the activity boundary.	No. There is a new proposed layout, however, shown in Drawing 2.
Have there been any changes to the permitted activities? If yes, provide a description of the changes to the permitted activities	The site use will be changed from WTS to include mechanical sorting and ERF
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities? If yes, list them	No
Checklist of supporting information	• Changes in permitted activities are detailed in Section 1.4 of this report. • Relevant Hazardous Substances are detailed in Section 5 of this report • New proposed layout shown in Drawing 2

5.0 Measures taken to protect land	
Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can't, you need to collect land and/or groundwater data to assess whether the land has deteriorated.	
Checklist of supporting information	• Inspection and maintenance were undertaken in line with Operating Techniques (Appendix F1)

6.0 Pollution incidents that may have had an impact on land, and their remediation	
Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you can't, you need to collect land and /or groundwater reference data to assess whether the land has deteriorated while you've been there.	
Checklist of supporting information	• Details of pollution incidents are in Section 4.2 of this report.

7.0 Soil gas and water quality monitoring (where undertaken)	
Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.	
Checklist of supporting information	• Details of gas monitoring are in Section 6.3 of this report.

12 SURRENDER SITE CONDITION REPORT

12.1.1 At permit surrender, the following sections of the Site Condition Report template (EPR H5) will be completed and submitted to the EA as part of the permit surrender application. Information that has been gathered over the lifetime of the permit will be used to identify whether the land is in a satisfactory condition. If necessary, surrender reference data will be collected and remediation will be undertaken if required.

8.0 Decommissioning and removal of pollution risk	
Describe how the site was decommissioned. Demonstrate that all sources of pollution risk have been removed. Describe whether the decommissioning had any impact on the land. Outline how you investigated and remedied this.	
Checklist of supporting information	• Site closure plan • List of potential sources of pollution risk • Investigation and remediation reports (where relevant)

9.0 Reference data and remediation (where relevant)	
Say whether you had to collect land and/or groundwater data. Or say that you didn't need to because the information from sections 3, 4, 5 and 6 of the Surrender Site Condition Report shows that the land has not deteriorated. If you did collect land and/or groundwater reference data, summarise what this entailed, and what your data found. Say whether the data shows that the condition of the land has deteriorated, or whether the land at the site is in a "satisfactory state". If it isn't, summarise what you did to remedy this. Confirm that the land is now in a "satisfactory state" at surrender.	
Checklist of supporting information	• Land and/or groundwater data collected at application (if collected) • Land and/or groundwater data collected at surrender (where needed) • Assessment of satisfactory state • Remediation and verification reports (where undertaken)

10.0 Statement of site condition
Using the information from sections 3 to 7, give a statement about the condition of the land at the site. This should confirm that: • the permitted activities have stopped • decommissioning is complete, and the pollution risk has been removed • the land is in a satisfactory condition

13 CONCLUSIONS

13.1.1 RPS has undertaken an assessment of the site condition at Britaniacrest waste transfer station at Former Wealden Brickworks, Langhurst Wood Road in support of an application to vary the site's current environmental permit. The primary purpose of this report is to provide information to the EA in relation to the permit application and to provide them with a consolidated framework against which the potential future contamination issues will be assessed.

13.1.2 The published geology of the area indicates that the site is underlain Weald Clay Formation of mudstone. The bedrock is classified as unproductive. A ground investigation undertaken by Risk Management Ltd in 2015 identified Made Ground to be present across the site. Perched groundwater was identified underneath the site during the 2015 site investigation.

13.1.3 The waste permitted to be stored and recycled at the site are not hazardous, with exception of Asbestos which is permitted to be stored on site. The following RHS have been identified in relation to general site operations:

- Diesel and hydraulic oil for site plant;
- Lubricants for the maintenance of site plant and equipment; and
- Ammonium hydroxide for flue gas cleaning (should this reagent be used).

13.1.4 The diesel is situated within a tank that has an integral bund and the hydraulic oil and lubricants are situated on bunds / drip trays. All the identified RHS are stored on concrete hardstanding that is maintained in a good state of repair and the site also operates appropriate procedures to inspect the stored RHS for leaks. On this basis, the presence of these RHS are not considered to be a concern for the facility and the risk of potential future contamination is minimised.

13.1.5 The site has historically been a brickwork and is situated in an area associated with brick manufacture. There are no records of any pollution incidents on site since a permit was first issued in 2015 and no CARs have been issued in relation to emissions to soil or groundwater.

13.1.6 Historical site uses have identified potential historical contamination sources, namely the use of the site itself and nearby areas for landfill. There are no records of any pollution incidents on site since a permit was first issued in 2015 and no CARs have been issued in relation to emissions to soil or groundwater.

13.1.7 Having reviewed all available data, it is concluded that, there are some potential sources of contamination based on the RHS as detailed in paragraph 13.1.3 Based on the operational procedures in place (including EMS and compliance procedures implemented) and the nature of the land at permit issue (brownfield), the proposed site operations should not lead to deterioration of the condition of the land.

14 REFERENCES

1. https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32010L0075&from=EN
2. https://echa.europa.eu/
3. Environment Agency, H5 Guidance for Applicants, Environmental Permitting Regulations, Site Condition Report – Guidance and Templates, May 2013.
4. Capita Symonds 2005. Capita Symonds.- Ground investigation.(not available for review)
5. Scott Wilson 2009. Scott Wilson. - Former Wealden Brickworks, Langhurstwood Road, Horsham, West Sussex, Phase 1 Desk Study.
6. Risk management Ltd 2015. Risk management Ltd. - Site Investigation on behalf of Britaniacrest recycling Ltd.
7. SLR Consulting 2014. SLR Consulting. - Site Hb, The Wealden Brickworks, Preliminary Land Quality Risk Assessment. SLR Ref: 416-01258-00002.
8. SLR Consulting 2014. SLR Consulting. - Environmental Statement Technical Chapter, based on 2014 desk top study.
9. WYG 2014 Former Wealden Brickworks Waste Transfer Station Environmental Permit Application Site Condition Report. A088778

GLOSSARY

APC	Air pollution control
ASCR	Application Site Condition Report
BGS	British Geological Survey
CHP	Combined Heat & Power
COMAH	Control of Major Accident Hazards
CSM	Conceptual Site Model
EA	Environment Agency
EfW	Energy from Waste
EWC	European Waste Catalogue
GQA	General Quality Assessment
mAOD	metres Above Ordnance Datum
mbgl	metres below ground level
MSW	Municipal Solid Waste
RDF	Refuse derived fuel
RHS	Relevant Hazardous Substances
S4UL	Suitable For Use Levels
SSSI	Site of Special Scientific Interest
TPH	Total Petroleum Hydrocarbon

Drawings

Drawing 1 Site Location Plan

Drawing 2 Proposed Site

Drawing 3 NK018074 RPS-EFW-XX-DR-D-0300 Drainage Layout

Appendices

Appendix F.1

Operating Techniques

Appendix F.2

Application Site Condition Report

Appendix F.3

Ground Conditions Desk Top Study

Appendix F.4

Habitats Screening Report

Appendix F.5

Compliance Assessment Reports