



Site Condition Report
Peel L&P Environmental Protos Limited
EPR/DB3737AF/V002
Plot 5

Prepared by:
Sol Environment Ltd

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INTRODUCTION

This Site Condition Report has been prepared for Peel L&P Environmental Protos Ltd (hereafter referred to as 'Peel') located in support of a '*Substantial*' Permit Variation Application under The Environmental Permitting (England and Wales) Regulations 2018 (as amended) in order to change the nature of the facility from a materials recycling facility to a pellet manufacturing facility and increase the permitted site boundary.

This document outlines the ground conditions at the site at the time of the permit variation application and has relied on information supplied by the site and various third party information sources (See Section 2). This report supersedes the previous Site Condition Report submitted by Fichtner in 2010 (provided in Annex B), and incorporates the site as a whole rather than Plot 5a only.

The Site is located at Plot 5 at the Protos Resource Recovery Park, Land off Lordship Lane, Ince, Cheshire, CH2 4RB (National Grid Reference: SJ 46375 77014).

The site is currently permitted as a '*Waste Operation*' under EPR/DB3737AF to process 650,000 tonnes per annum (tpa) of commercial and industrial (C&I) and municipal solid waste (MSW), though this has never been constructed and implemented. The purpose of this variation is to:

- Vary the nature of the materials recycling facility to incorporate a pellet manufacturing facility;
- Install two pelletising lines comprising screening and sorting equipment in addition to driers and pellet mills;
- Install two 6.5MW hot water boilers to provide the heat required by the drying plant;
- Vary the permitted EWC codes to reflect the full spectrum of non-hazardous municipal solid waste and technically similar commercial and industrial wastes; and
- Increase the permitted site boundary.

The proposed facility will accept and process up to 650,000 tpa of selected mixed wastes and SRF materials. Of this 425,000 tpa will be processed to produce a high specification pelletised fuel for export to Uskmouth Power Station, South Wales. In addition, up to 225,000 tpa Solid Recovered Fuel (SRF) bales (Main Burner Quality and Calciner Quality) may be produced and exported off site for energy recovery.

Due to the nature of the proposed operations, the facility will no longer be permitted as a '*Waste Operation*' as it meets the definition of an '*Installation*' by virtue of Schedule 1:

- **Section 5.4 'Disposal, recovery or a mix of disposal and recovery of non-hazardous waste' Part A(1)(b)(ii)** *Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities*

*covered by Council Directive 91/271/EEC—
(ii) Pre-treatment of waste for incineration or co-incineration*

In addition, two 6.5MW gas fired hot water boilers will be installed to provide heat required by the driers. The boiler plant meets the description of a Medium Combustion Plant in accordance with the Medium Combustion Plant Directive (Directive 2015/2193/EU) ('MCPD') as set out in Schedule 25A of The Environmental Permitting (England and Wales) Regulations 2018 (as amended).

Accordingly, the facility will be permitted by the Environment Agency and will be operated in accordance with the Environmental Permitting (England and Wales) (Amendment) Regulations 2018.

This document has been prepared in accordance with the EA's Guidance Document H5 Site Condition Reports Guidance and Templates (Version 2.0, dated 04/08/08). This report provides baseline information in relation to the site.

1. SITE DETAILS

Table 1.1: Site Details

Name of the Applicant:	Peel L&P Environmental Protos Limited
Activity Address:	Plot 5, Protos Resource Recovery Park, Land off Lordship Lane, Ince, Cheshire, CH2 4RB
National Grid Reference:	OS X (Eastings) 346375 OS Y (Northings) 377014
Document References:	Site Condition Report, Peel L&P Environmental Protos Ltd Document reference and date: SOL2009NPA01 November 2020
Annexes:	Annex A: Figures Annex B: Groundsure Report Annex C: Previous SCR Annex D: Previous Site Investigations Annex E: Site Photographs Annex F: Conceptual Model

2. CONDITION AT PERMIT ISSUE

2.1 Environmental Setting

The location of the subject Site is shown on Figure A1, Annex A, centred at approximate National Grid Reference OS X (Eastings) 346375; OS Y (Northings) 377014. The proposed site layout is shown in Figure A2.

The site is located at Plot 5 at the Protos Resource Recovery Park (PRRP), Land off Lordship Lane, Ince, Cheshire, CH2 4RB.

The site is located within an area of Ince Marshes which has been earmarked for the development of a strategic industrial hub, Protos. The wider Protos site covers 133 acres and includes plans for the development of a number of environmental technologies.

The Peel site is located approximately 1.2km north of the town of Elton and 1.3 km north east of the village of Ince. Plot 5 is an undeveloped site in the approximate centre of the Protos RRP and is bound on all sides by undeveloped industrial plots. Although Plot 5 and the immediate surroundings are undeveloped, a Timber Recycling Facility is located 80m to the south west and the Ince Park Bio Power Energy from Waste (EfW) site is situated 430m to the south east. In addition, the surrounding area external to Protos consists of heavy industrial land uses. CF Fertilisers UK Ltd is located 700m to the south east, Emeric Glass 427m to the south west, JH Wills & Son (a septic tank service) 525m to the north west and the Thornton Technology Park, which is home to vast mixed industrial uses such as oil refineries and waste collection and management services, is situated 1.5km to the south west.

The Site is roughly rectangular in shape and covers an area of approximately 3 hectares. It currently comprises an area of undeveloped industrial land formed from recently laid inert infill. Scrubby grassland covers the site, with a drainage ditch lined with small trees running north-south through the centre. Additional drainage ditches lined with vegetation bound the site to the north, south and west. Further scrubby grassland is to the east running up to an access road.

The nearest residential dwelling is at Holme Farm approximately 650m west and properties located approximately 1.2km south of the site on Orchard Park Lane and 1.25km south west on Marsh lane. The Manchester Ship Canal is located 380m to the north, and the Mersey Estuary is located 1.8km to the north.

Table 2.1 below provides information regarding the surrounding site.

Table 2.1: Site Setting

Direction	Observations
North	Immediate Vicinity: Drainage Ditch Within 500m: Road, vacant industrial land (Plot 1a and 1b of the PRRP), drainage ditches, Beyond 500m: Manchester Ship Canal, Ince Banks, River Mersey
North East	Immediate Vicinity: Drainage Ditch Within 500m: Road, vacant industrial land (Plot 1b of the PRRP)s, drainage ditches, Beyond 500m: Manchester Ship Canal, Ince Banks, River Mersey
East	Immediate Vicinity: Scrubby grassland Within 500m: Drainage ditch, access road, vacant industrial land (Plot 6 of the PRRP) Beyond 500m: Frodsham Wind Farm
South East	Immediate Vicinity: Scrubby grassland Within 500m: Drainage ditch, access road, Ince Park Biomass Energy Plant Beyond 500m: Marsh Lane, CF Fertilisers UK
South	Immediate Vicinity: Drainage Ditch Within 500m: Vacant industrial land (Plot 4, 10b, 9b 13 of the PRRP) Beyond 500m: Marsh Lane, Sub station, Railway, Agricultural land
South West	Immediate Vicinity: Drainage Ditch, Marsh Lane Within 500m: Timber Recycling Facility, Encirc Glass Manufacturing Facility, Beyond 500m: Pond, Railway, Ince & Elton Station, Caravan Park, School, Town of Elton
West	Immediate Vicinity: Drainage Ditch, Marsh Lane Within 500m: Timber Recycling Facility, Ponds, Holme Farm (J H Willis & Son Septic Tank Service) Beyond 500m: Sewage Works, Village of Ince, Oil Refinery
North West	Immediate Vicinity: Drainage Ditch Within 500m: Wetlands, Manchester Ship Canal Beyond 500m: Ince Banks, River Mersey

2.1.1 Geology, Hydrogeology and Surface Waters

Desk-based research of the local geology, hydrogeology and surface waters has been carried out in order to establish the potential for migration of contamination onto or away from the Site, and to assess the surface water and groundwater sensitivity of the Site area. Information was obtained from a number of sources, namely:

- Environment Agency Flood Risk Map;
- Information provided by Groundsure Report (Annex B).
- Geological maps produced by the British Geological Survey (BGS) and the BGS Geology of Britain Viewer (<http://maps.bgs.ac.uk/geologyviewer>);
- MAGIC (<http://magic.defra.gov.uk>); and
- BGS Borehole Record Viewer (<http://www.bgs.ac.uk/data/boreholescans/home.html>).

Geology

According to the BGS Geology of Britain Viewer, the site is directly underlain by superficial Till Deposits. Till Deposits are glacial in origin and typically consist of clays and gravel.

The BGS records the underlying bedrock as part of the Kinnerton Sandstone Formation. This is described in the BGS lexicon as '*sandstone, red-brown to yellow, generally pebble free, fine to medium grained, cross stratified. Dominantly aeolian*'.

A fault is recorded approximately 186 m to the west of the site.

According to data issued by the National Radiological Protection Board (NRPB) in 2002 (now the Health Protection Agency), the site is located in an area that is in a lower probability radon area, as less than 1% of homes are above the action level. No radon protection measures would be considered necessary for building construction at the site.

The site is not located in area that might be affected by coal mining.

Shrink Swell

The maximum shrink swell hazard rating identified on the application site is very low.

Landslides

The maximum landslide hazard rating identified on the application site is very low.

Soluble Rocks

The maximum soluble rock hazard rating identified on the application site is negligible.

Compressible Ground

The maximum compressible ground hazard rating identified on the application site is moderate.

Collapsible Rocks

The maximum collapsible rocks hazard rating identified on the application site is negligible.

Running Sands

The maximum running sand hazard rating identified on the application site is moderate.

Soil Chemistry

The background soil chemistry at the site is estimated by the BGS National Geoscience Information Service as follows:

Parameter	Unit	Concentration
Arsenic	mg/kg	<15
Cadmium	mg/kg	<1.8
Chromium	mg/kg	40 - 60
Lead	mg/kg	<100
Nickel	mg/kg	15

Hydrogeology

The Environment Agency classifies the superficial deposits underlying the site as a Secondary (undifferentiated) aquifer and the bedrock geology as a Principal Aquifer.

The site is not located within a Source Protection Zone (SPZ).

The groundwater vulnerability at the site is classified as high - medium with soils of high to intermediate leaching potential.

The majority of the site lies within a Medium Groundwater Vulnerability Zone. However, a small portion of the northern site boundary lies within a Medium – High Groundwater Vulnerability Zone. Land directly to the north spanning to the Mersey Estuary is of Medium – High classification.

The EA classifies the groundwater body on site ‘Wirral and West Cheshire Permo-Triassic Sandstone Aquifers’ as being of ‘good’ quantitative quality and ‘poor’ chemical quality.

The closest record of EA licensed groundwater abstraction is located approximately 1.92km south west of the site. The license is active and is operated by the University of Chester. The license is used for potable and general use relating to secondary category (medium loss). The license number is: NW/068/0006/012 and the annual volume abstracted water is 955,636m³. The expiry date of the license is 31/03/2028.

The site is not within a groundwater Source Protection Zone and is subsequently considered low risk to any nearby groundwater abstractions.

Surface Water

The nearest surface water features are drainage ditches which border the site from all directions. The network of drainage ditches are connected to the Manchester Ship Canal that runs 380m to the north, and ultimately into the Mersey Estuary 1.8km to the north. There is a pumping station (Ince Pumping Station) 340m to the north east that moderates and controls the release of water. In addition, an unnamed stream is located 132m to the south west which runs into the Manchester Ship Canal.

Historically, the site was part of the Ince marshes – a wetland dominated by herbaceous plant species, as such, there are multiple small ponds within the vicinity. Most notably there are two ecological areas and SUDS wetlands within close proximity to the site. One is located 140m to the south west, and the other 320m to the north east.

There are two identified active surface water abstraction recorded within 2 km of the site. These are as follows:

- Covanta Energy Limited (license number NW/068/0009/001), from a single point source, located within the Manchester Ship Canal 321m north of the site. This is for the purposes of ‘Evaporative and Non-evaporative Cooling’ with a maximum volume of 16,076 m³ daily.
- Essar Oil (UK) Ltd (license number 2568009001) from a single point source within the Manchester Ship Canal at Ellesmere Port located 1,614 m west of the site. This abstraction is for the purposes of non-evaporative and general cooling and is limited to 60,000,000 m³ daily and annually.

The site is not located within a Nitrate Vulnerable Zone (NVZ).

The site is located within Flood Zone 3 and an area that benefits from flood defences. Land in this flood zone would have a high probability of flooding without the local flood defences. These protect the area against a river flood with a 1% chance of happening each year, or a flood from the sea with a 0.5% chance of happening each year.

The site is considered to be in area of high sensitivity in regard to surface water due to the proximity of the drainage ditches bounding the site.

2.1.2 Designated Sites

Environment Agency H1 and H5 guidance states that the potential impacts of the site should be assessed for the following habitat sites within 10km of the Installation:

- Special Areas of Conservations (SACs) and candidate SACs (cSACs) designated under the EC Habitats Directive;
- Special Protection Areas (SPAs) and potential SPAs designated under the EC Birds Directive; and
- Ramsar Sites designated under the Convention of Wetlands of International Importance.

It is also stated that within 2km of the Source:

- Sites of Special Scientific Interest (SSSI) established by the 1981 Wildlife and Countryside Act;
- National Nature Reserves (NNR);
- Local Nature Reserves (LNR);
- Local Wildlife Sites (LWS), County Wildlife Sites (CWS) and potential wildlife sites (PWS);
- Sites of Importance for Nature Conservation (SINC); and
- Ancient Woodland.

Information from the Multi Agency Geographic Information for the Countryside (MAGIC) website (<http://magic.defra.gov.uk/>) has been used to obtain the above information.

The designated sites relevant to this study are presented in Table 2.3 below:

Table 2.3: Location of Sensitive Habitat Receptors		
Distance & Direction	Receptor	Status
409 m North	Mersey Estuary	SSSI, SPA, Ramsar
9.4 km Southeast	Midland Meres and Mosses	Ramsar

The designated greenbelt of Liverpool, Manchester and West Yorkshire is located 45 m to the west.

The site is not located within an Air Quality Management Area.

The proposed operation has minimal process emissions to land, controlled waters or atmosphere and therefore it is the conclusion of this assessment that there will be no direct or indirect effects on any of the statutory sites described above.

2.2 Pollution History

2.2.1 Environmental Database Records

The following information has been obtained from a search of a publicly available database of environmental information (Groundsure Report obtained 26th August 2020 provided in Annex B).

The database contains records of information from public registers held by environmental regulatory authorities and can be used to assess the site's sensitivity, the potential for neighbouring activities to pose a risk to the site and to determine whether specific records of pollution relate to the subject site.

Pollution Incidents

There are three recorded Pollution Incidents within 500 m of the site. These are summarised in the table below.

Table 2.4 Recorded Pollution Incidents within 500m of the Site			
Distance and Direction	Details	Pollutant	Impact
260 m north	Date: 19 th August 2002 Identification: 101504	General Biodegradable Materials and Wastes – Natural Organic Material	Water: Category 3 (Minor) Land: Category 4 (No Impact) Air: Category 4 (No Impact)
415 m south	Date: 24 th April 2001 Identification: 3294	Inert Materials and Wastes – Construction and	Water: Category 4 (No Impact) Land: Category 3 (Minor)

Demolition Materials and Wastes	Air: Category 4 (No Impact)
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Potentially Contaminative Industrial Sites

There are no recorded potentially contaminative industrial sites within 250m of the application. A number of uses that may be considered contaminative are located at a further distance which are described in the following sections.

Landfills and Waste Sites

There are no recorded active or historic landfill sites located within 500 m of the site. There are 3 licensed waste sites within 500m. These are summarised in the table below.

Table 2.5 Recorded Waste Management Sites within 500m of the Site			
Distance and Direction	Operator & Address	Details	Status
Onsite	Peel L&P Environmental ProtosLtd, Ince Marshes, Plot 5, Land off Lordship Lane, Ince	Permit Ref: EPR/DB3737AF Physical treatment facility 650,000 tonnes per annum	Issued: 13/07/2012
57 m north	Ince Park Renewables Lts, Plot 3 Ince Resource Recovery Park, Grinsome Road, Ellesmere Port, Cheshire	Permit Ref: EPR/FB3407MV WML: 404255 Material Recycling Treatment Facility - 149,999 tpa	Issued: 21/12/2017
380 m west	J H & D J Willis, Holme Farm, Marsh Lane, Ince, Cheshire, CH2 4NR	Permit Ref: EPR/WP3992CC/V04 WML: 53573 Lagoon – < 75,000 tpa	Issued: 12/12/1996 Modified: 07/07/2009

In addition, there are 6 recorded waste exemptions within 500m. Four of these relate to the use of waste in construction (related to the raising and construction platforms of the Protos development site), one located 147 m southwest relates to screening and blending of waste and one located 297 m south relates to treatment of waste wood and waste plant matter.

Discharge Consents

There are 14 Licensed Discharge Consents within 500m of the site, all of which are revoked.

Authorised or Permitted Processes

There are 10 records of Part A(1) and IPPC Authorised Activities within 500m of the site.

There are no records of any Part A(2) and Part B Activities within 1 km of the site.

Table 2.8. Environmental Permits to operate a PPC Part A(1) within 500m of the site

Distance(m) and Direction	Operator	Process	Permit Number	Status
Onsite	Peel L&P Environmental Protos Ltd	Materials Recycling Facility, 650,000 tpa	EPR/DB3737AF	Effective Issued: 13/07/2012
230 m east	Ballast Phoenix Limited	The incineration of non-hazardous waste in an incinerator or co-incineration plant with a capacity exceeding 3 tonnes per hour	HP3437AZ (Original Number: TP3836FC)	Surrendered
454 m southeast	Covanta Energy Ltd, Ince Refuse Derived Fuel Plant	The incineration of non-hazardous waste in an incinerator or co-incineration plant with a capacity exceeding 3 tonnes per hour	EPR/BP3537JA (Original Number: LP3132FX)	Effective Date last noted effective: 15/05/2020

In addition, there is one Hazardous or Dangerous Sites located within 500m. This is the current Lower Tier COMAH site operated by CF Fertilisers UK Limited located 477 m to the southwest of the site.

2.2.2 Historical Land Uses

Available historic maps for the site have been reviewed to determine if there is the potential for contamination to be present on Site associated with the Sites historical uses.

The site:

On the earliest published map in 1873 the site is shown as undeveloped land as part of the Ince Marshes, which are wetlands dominated by herbaceous rather than woody plant species. In 1873 the site can be seen bordered in all directions by drainage ditches, and enclosed by Marsh Lane on the sites eastern boundary, and an unidentified path to the north. According to the available historic maps the site remains largely unchanged until the present day.

The surrounds:

The earliest available historical mapping in 1849 indicates that the surrounding areas were part of the Ince Marshes comprising wetland and scattered farmland. The only developments that can be seen are Grinsome Farm 500m to the south and Holme Farm 750m to the north east. Ince Village is indicated 1km to the south east.

Notable developments initially occur in 1938 with the development of Ince and Elton Station with associated rail tracks 1km to the south and then again in 1968 with the construction and development of an unidentified power generating station complete with cooling towers and tanks 427m to the south west. In 1990 the CF Fertilisers UK plant is shown 700m to the south east, and an access road that

initiates from the power generation station runs past the eastern border of the site (approx. 40m) and to the shipping area of the Manchester Ship Canal, where pipeline works are now in operation.

By 2020, the marshlands and surrounding drainage ditches 140m to the north west can now be seen to consist of multiple small ponds which is referred to as an Ecological Area and SUDS Wetland in the Protos Masterplan. Additionally, the power generation station to the south west is now identified as the Emeric Glass manufacturing facility.

Additionally, it has been noted that the site lies in proximity to two World War II bombing decoy sites, and may subsequently have been subject to opportunistic bombing raids during the 1940's.

In regards to the site, minimal potentially contaminative land uses have been identified. However, the surrounding land uses have been industrial in nature and may have had an impact on the site. These specifically include the below:

Table 2.7: Potentially Contaminative Land Uses	
Activity	Contaminants
Onsite	
Farmland	Various contaminants including biocides and pesticides
Offsite	
Power Station	Various contaminants including heavy metals, organic and inorganics
Fertiliser Works	Various contaminants including heavy metals, organic and inorganics biocides and pesticides
WWII Bombing Decoy Sites	UXO

2.2.3 Site Reconnaissance

Visual/Olfactory Evidence of Existing Contamination

The subject site was subject to a visual inspection at the time of this application by Sol Environment Ltd. This was undertaken in August 2020 prior to any redevelopment of the site.

Despite a majority of the Protos site being undeveloped, a significant proportion of the site has been subject to land raising through the importation of inert fill materials for the purposes of implementing the planning permissions and to aid the construction of access roads and flood mitigation requirements. All such implementation works (including Plot 5) have been carried out under the permission granted by EA U1 Waste Exemption WEX178387 issued in May 2019. At the time of site inspection (August 2020) Plot 5 was observed to be undergoing grading and levelling and was actively receiving fill materials to aid the construction of a flood protected development platform at the site.

Numerous earthen mounds containing imported inert fill materials (graded soils, crushed aggregate and gravels) have been used to both landscape the perimeter of the site and to create an acoustic bund around plot 5 and to landscape the site. It is therefore considered that the proposed site is most aptly described as undeveloped industrial land comprising of inert infill.

Actively managed ecological areas and wetland areas are located in the northern portion of the Protos site.

At the time of the site walkover, there was no sign of any potentially contaminative uses such as fly tipping or storage of materials.

Based on the history of the site and the visual inspection, it has been determined that the potential for contamination at the site is low. As such no new intrusive ground investigation has been undertaken at this time regarding the inclusion of new land within the permitted boundary, instead, it is considered that existing investigation data from the wider Protos RRP is sufficient for the provision of baseline contamination data for the site.

2.3 Evidence of Historical Contamination

Previous Site Investigation

A number of historical site investigations have been undertaken across the wider Protos Resource Recovery Park site. Due to the site history, with limited industrial usage and the recent nature of the latest investigations, it is considered that these investigations may be deemed representative of the ground conditions at the Plot 5 site.

The following ground investigations have been used to summarise the ground conditions below and are provided in Annex D:

- WSP, Ince Marshes, Cheshire, Geotechnical and Environmental Site Investigation Interpretative Report, Peel Investments (North) Limited, September 2006;
- WSP, Ground Investigation Report, Resource Recovery Park, Ince Marshes, Peel Investments (North) Limited, April 2010;
- Geotechnical Engineering Limited, Factual Report on Ground Investigation, Ince Marshes, July 2015;
- WML Consulting, Geo-Environmental Investigation & Assessment for Protos (Plot 10b), Ince Marshes, April 2020;
- WML Consulting, Supplementary Geotechnical Investigation & Assessment for Protos Access Road, Ince Marshes, September 2020.

Ground Conditions

During the 2010 WSP ground investigation, a number of locations were advanced within 100 m to the east of the site. These included:

- BH105
- BH106
- TP112
- TP113
- TP114
- CPT110.

Ground conditions encountered within these locations typically comprised Topsoil overlying significant thicknesses of superficial strata comprising alluvium, fluvial glacial deposits, glacial till deposits and a bedrock of sandstone.

Alluvium was encountered at thicknesses of approximately 8 – 10m and comprised soft silty clays interspersed with bands of peat typically 1 – 2 m in thickness. Below this strata, Fluvio-Glacial Deposits typically comprising sand becoming gravelly sands with depth were encountered to depths of between 16 – 18 mbGL. Glacial Till comprising gravelly clay was identified underlying the Fluvio-Glacial Deposits to depths approaching 20 – 22 mbGL. Bedrock was not encountered within any of these borehole locations, but was observed at depths of 21 – 23 mbGL elsewhere over the wider site area.

Discrete areas of Made Ground were observed during this investigation. Made Ground where encountered, typically comprised reworked natural ground with rare to occasional anthropogenic materials. It should be noted that no Made Ground was identified across the wider site during the 2006 WSP investigation.

The 2020 WML Consulting investigations were undertaken at Plot 10b of the Protos Resource Recovery Park, located approximately 300 m south of the site. Typically ground conditions encountered during these investigations comprised topsoil overlying weathered sandstone. Thin deposits of Made Ground were also recorded intermittently across site typically comprising gravelly sandy clay with inclusions of anthropogenic material such as brick, stone, asphalt and clay pipe. Locally alluvial deposits comprising clay, sand and peat were encountered in the eastern area in proximity to the surface water ditch.

Deeper geology encountered during the July 2020 investigation consisted of Glacial Till and/or weathered Kinnerton Sandstone.

Groundwater

From the previous ground investigations across the wider site it can be concluded that there are a number of groundwater bodies present onsite.

Shallow groundwater within the alluvium has been identified at depths of between 1.5 – 6.4 mbGL. It is considered likely that this shallow groundwater is in hydraulic continuity with the network of surface water ditches across the marshes.

Additionally, a groundwater body is present within the Fluvio-Glacial Deposits, with groundwater strikes within this geology at depths of between 7.6 – 10 mbGL. Monitoring of groundwater levels within this strata has identified groundwater levels above that of the strike depth, indicating that this groundwater body is at sub-artesian conditions.

Groundwater was also identified intermittently within deep Glacial Till at depths of between 16 – 19 mbGL and seepages were identified within shallow Made Ground and Shallow bedrock where encountered.

Ground and Groundwater Contamination

Laboratory analysis of soil samples was undertaken during the 2006 WSP investigation and the 2020 WML Consulting investigations. In general, no widespread evidence of contamination was identified across the site, with all concentrations of contaminants identified as below the relevant screening values for commercial end use and no asbestos identified.

Laboratory analysis of groundwater obtained during the 2006 WSP investigation did not identify significant sources of groundwater contamination to be present.

The reports conclude that the wider Protos RRP site does not contain any significant or widespread contamination sources and therefore presents a low risk to human health and controlled waters.

For further detail please refer to the report in Annex D.

2.4 Supporting Information

- Figures detailing the location, boundary and layouts of the Installation are shown in Annex A.
- Groundsure Reports are provided within Annex B.
- Previous Application Site Condition Report is provided within Annex C.
- Previous Site Investigation Reports are provided in Annex D.
- Site Photographs are provided in Annex E.
- A Conceptual Model of the site is shown in Annex F.

3. PERMITTED ACTIVITIES

3.1 Proposed Activities Undertaken at the Installation

3.1.1 Description of the New Process

Peel L&P Environmental Protos Limited is making this application to carry out a ‘Substantial’ Variation of their existing EPR permit under The Environmental Permitting (England and Wales) Regulations 2018 (as amended) in order to change the nature of the facility from a materials recycling facility to a pellet manufacturing facility.

The site is currently permitted as a ‘Waste Operation’ under EPR/DB3737AF to process 650,000 tonnes per annum (tpa) of commercial and industrial (C&I) and municipal solid waste (MSW), though this has never been constructed and implemented. The purpose of this variation is to:

- Vary the nature of the materials recycling facility to incorporate a pellet manufacturing facility;
- Install two pelletising lines comprising screening and sorting equipment in addition to driers and pellet mills;
- Install two 6.5MW hot water boilers to provide the heat required by the drying plant;
- Vary the permitted EWC codes to reflect the full spectrum of non-hazardous municipal solid waste and technically similar commercial and industrial wastes; and
- Increase the permitted site boundary.

The proposed facility will accept and process up to 650,000 tpa of selected mixed wastes and SRF materials. Of this 425,000 tpa will be processed to produce a high specification pelletised fuel for export to Uskmouth Power Station, South Wales. In addition, up to 225,000 tpa Solid Recovered Fuel (SRF) bales (Main Burner Quality and Calciner Quality) may be produced and exported off site for energy recovery.

Due to the nature of the proposed operations, the facility will no longer be permitted as a ‘Waste Operation’ as it meets the definition of an ‘Installation’ by virtue of Schedule 1:

- **Section 5.4 ‘Disposal, recovery or a mix of disposal and recovery of non-hazardous waste’ Part A(1)(b)(ii)** *Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving one or more of the following activities, and excluding activities covered by Council Directive 91/271/EEC—*
(ii) Pre-treatment of waste for incineration or co-incineration

In addition, two 6.5MW gas fired hot water boilers will be installed to provide heat required by the driers. The boiler plant meets the description of a Medium Combustion Plant in accordance with the

Medium Combustion Plant Directive (Directive 2015/2193/EU) ('MCPD') as set out in Schedule 25A of The Environmental Permitting (England and Wales) Regulations 2018 (as amended).

Accordingly, the varied facility will be permitted by the Environment Agency and will be operated in accordance with the Environmental Permitting (England and Wales) (Amendment) Regulations 2018.

3.1.2 Substances Used at the Installation

Minimal raw materials are used during the pelletising process. Up to 650,000 tpa of SRF from predominantly commercial and industrial sources will be accepted onto site for pelletising and/or baling.

Natural Gas will be used to fire the hot water boiler plant which is supplied via the mains. The annual consumption of natural gas by the boiler plant will be approximately 6,000 tonnes per annum.

Oils and fuel will be utilised for mobile plant and equipment. This will typically consist of the following:

- <15,000 litres diesel (stored in bunded tank);
- < 2000L of engine oil (stored in 205L drums); and
- < 2000L of hydraulic oil (stored in 205L barrels).

3.1.3 Waste

The proposed facility will not inherently produce significant quantities of waste.

The facility will produce the following two products:

- SRF (solid recovered fuel) pellets which will be transferred off site for energy recovery; and
- SRF bales which will be exported off site for energy recovery.

The process will remove metals, paper, PVC and reject heavies from the incoming wastes which will be collected and exported off site for recycling / disposal.

The table below outlines expected annual quantities of product / waste produced by the installation.

Table 3.2: Product / Waste Summary

Waste	EWC Code	Approx. Quant (tonnes/yr)	Source	R / D Code	Environmental Fate
SRF Bales	19 12 10 19 12 12	100,000	Processing Lines	R1 (Recovery as energy)	Exported Off-Site for Energy Recovery
Pellets	19 12 10 19 12 12	300,000	Pelletising Lines	R1 (Recovery as energy)	Exported Off-Site for Energy Recovery
Ferrous and Non-ferrous Metals	19 12 02 19 12 03	30,000	Processing Lines	R5 (Off site recycling)	Exported off site for further processing / recycling
Plastics	19 12 04	30,000	Processing Lines	R5 (Off site recycling)	Exported off site for further processing / recycling
Paper / Cardboard	19 12 01	60,000	Processing Lines	R5 (Off site recycling)	Exported off site for further processing / recycling
Inert	19 12 09	30,000	Processing Lines	R5 (Off site recycling)	Exported off site for further processing / recycling

3.1.4 Drainage Systems

There will be no direct process emissions to controlled water arising from the facility.

The site is underlain by impermeable concrete hardstanding and sealed separate surface and foul drainage systems.

All external [clean] surface water runoff will be discharged via a system of interceptors and catch pits to the existing ditch along the sites boundary (W1). The surface water drainage system will provide attenuation prior to discharge into the ditch and is equipped with a number of isolating chambers and penstock valves in order to allow containment of any potentially contaminated drainage in the event of any incidents.

The existing ditch forms part of the strategic surface water drainage network for the wider Protos development site.

There is a potential for wind-blown rain to enter the covered storage area. As such, this area is fitted with a drainage system which will capture any potential run-off which will be collected within a holding tank for removal from site via tanker.

The external bunded quarantine area is fitted with a central drainage gully to which any run-off will drain. Under normal operation when the quarantine area is empty, this will be directed to the surface water drainage system, however, in the event that the area is in use, the drainage will divert to the holding tank which is periodically emptied via tanker.

The process itself does not produce any effluents, however periodic washing down of the equipment is undertaken. Wash down waters are collected within holding tank and periodically tankered offsite.

In the unlikely event of a fire onsite, any potentially contaminated firewater would be contained within the reception bunkers and tankered offsite for removal.

Sewerage from the welfare facilities onsite will be treated at the onsite package treatment plant which meets the requirements of BS EN 12566 prior to discharge to the drainage ditch (W2).

Hardstanding

The site is located entirely on good quality concrete hardstanding.

Tanks and Bunds

All storage tanks will be appropriately installed with secondary containment and designed to comply with the Environment Protection Pollution Prevention Guideline Above Ground Oil Storage Tanks: PPG 2.

3.1.5 Potential for Fugitive Releases to Soil, Groundwater and Surface Water

The materials and substances used in the new activity are not considered to have significant potential to cause ground or groundwater contamination under general storage or operating procedures.

The following measures have been incorporated into the design of the facility to protect groundwater and soil from installation substances;

- All processing and waste storage operations take place internally;
- The entire site is located upon newly constructed good quality hardstanding;
- Emergency Spill kits will be provided throughout the site and strategically placed in locations;
- All aspects of the facility will be located on impermeable concrete slabs;
- There will be no subsurface infrastructure used for the storage or transfer of hazardous waste; and
- All process effluent is captured within holding tanks prior to removal offsite.

When constructed and operated in the manner described above the proposed operations will not introduce any sub surface or potentially polluting activities to the site.

Due to the protection measures mentioned above, the risk to soil and groundwater from the development is considered to be LOW as summarised in the Conceptual Site Model below. In the

unlikely event that any of the above measures fail, due to all activities being carried out on impermeable hard standing, there would be no impact to soil, groundwater and surface water.

Table 3.3 Conceptual Site Model

Contaminant Source	Contaminants of Concern	Receptor	Exposure Present?	Pathway	Likelihood of Risk
Historical soil contamination – considered highly unlikely due to historical uses of the site	N/A	Construction Workers	Yes – However, very low risk of contamination to be present at the site		Negligible – Use of control measures during construction work including appropriate PPE will minimise potential exposure.
		Future Site Users	No – the entire site will be constructed on good quality hardstanding.		Negligible – Hardstanding covers the entire site and contamination potential is very low
		Groundwater	Yes – Leaching of any contaminants by infiltrating rainfall may have occurred prior to site development. .		Very Low - Leaching of any contaminants within soils by infiltrating rainfall will be minimal in unlikely event contamination is present due to presence of hardstanding across the site. In addition, cohesive nature of the superficial geology including less permeable silts and clays would minimise contaminant migration to deep groundwater.
		Surface Water	Yes – In the unlikely event that contamination is present dissolution of contaminants into surface water run-off may have occurred prior to site construction		Very low – Hardstanding will cover all areas of the site removing dissolution potential. .
Future substances stored, used and generated onsite from use as a pellet manufacturing facility	Heavy metals, organics, TPH, PAH, inorganics	Future Site Users	Yes – Workers at the plant may come into contact with potentially hazardous materials (namely fuels), however internal management systems will be place to mitigate any risks		Low
		Soil & Groundwater	No – All materials onsite shall be stored and processed on hardstanding. Site drainage has the ability to		Low

			be isolated in the event of any spillages / need to fire water containment.	
		Surface Water	Yes – due to the proximity of the drainage ditch surrounding the site. However correct management of drainage systems will remove risk	Low

In addition, the site will operate a comprehensive maintenance and management system which is described in Section 2 of the main application document. The environmental management system will be designed to meet the requirements of the Environmental Permitting Regulations and associated pollution prevention guidance.

The management system includes visual inspections of:

- All storage areas, processing areas and hard standing will be physically inspected to detect any signs of deterioration, leaks or spillage. Any corrective action required is reported to and implemented by the Site Manager; and
- Equipment in all process areas as part of the company’s planned/predictive maintenance programme.

Based on this assessment, the potential for the facility to impact on soil and groundwater underlying the installation is considered to be low.

Non-permitted activities undertaken at the Installation	Not applicable
Plan showing activity layout	Refer to Figure A2, Annex A
Environmental Risk Assessment	See attached Main Application Document SOL2009NPA01

ANNEX A: FIGURES

ANNEX B: ENVIRONMENTAL RECORDS

ANNEX C: PREVIOUS SITE CONDITION REPORTS

ANNEX D: PREVIOUS GROUND INVESTIGATION

ANNEX E: SITE PHOTOGRAPHS

ANNEX F: CONCEPTUAL MODEL