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FORD ENERGY RECOVERY FACILITY AND WASTE SORTING AND TRANSFER FACILITY, FORD CIRCULAR TECHNOLOGY PARK

WATER QUALITY ASSESSMENT

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FORD ENERGY RECOVERY FACILITY AND WASTE SORTING AND TRANSFER FACILITY, FORD CIRCULAR TECHNOLOGY PARK WATER QUALITY ASSESSMENT

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1. INTRODUCTION

Ford Energy from Waste (EfW) Limited, a joint venture between Grundon Waste Management Limited (Grundon) and Viridor Energy Limited (Viridor) (therein referred to as 'the applicants', is proposing to build and operate a conventional energy recovery facility (ERF) at the site. Grundon, the sole owner/ operator of the existing waste transfer station (WTS), is proposing to continue this operation in a new, purpose-built facility on site. Ramboll UK Limited (Ramboll) has been appointed by the applicants to undertake a Water Quality Assessment to support the full planning application at the site, including the ERF and waste sorting and transfer facility (WSTF) and ancillary uses.

1.1 Proposed Development

Ford EfW Ltd propose to redevelop the site as waste treatment facility comprising a WSTF and ERF. The buildings and ancillary structures to be constructed as part of the waste management facility are anticipated to occupy 40% of the site and are summarised as follows:

- WSTF;
- ERF, including;
  - Waste reception hall;
  - Incinerator Bottom Ash (IBA) storage area;
  - Boiler hall;
  - Turbine hall and heat station;
  - Water treatment plant and dirty water pit;
  - Admin and welfare block;
  - Bunker hall.
- Offices;
- Flue Gas Treatment (FGT) plant with stacks;
- Air Cooled Condenser (ACC) house;
- Pump houses;
- Fire tanks;
- Electricity substation; and
- Weighbridges.

The remaining 60% of the site will be occupied by external areas and is proposed to predominantly comprise hardstanding, with soft landscaping present at the margins of the site in landscape bunds. External areas of the site will include access roads and operational transport routes within the site, car and heavy goods vehicle (HGV) parking spaces, HGV washing areas ramps and pedestrian routes. The dimensions of the proposed areas of the site at which ground levels will be lowered are provided in Table 1.1 below.

Table 1.1: Dimensions of the Proposed Areas of the Site at Which Ground Levels will be Lowered

	Width (m)	Length (m)	Finished Floor Level Depth Below Existing Ground Level (m)	Depth of Required Excavation Allowing for Foundation (mbgl)	Elevation of Base of Required Excavation Allowing for Foundation (mAOD)
Bunker Hall	30	40	3.0	4.0	2.5
Surface water pumping station	1.5	1.5	4.0	5.0	1.5
Reduced level dig	50	13	1.5	2.5	4.0

A proposed development plan showing the general layout of the proposed development is presented as Appendix A.

2. LEGISLATION AND POLICY

2.1 European Legislation

Water Framework Directive (WFD)

The Water Framework Directive (2000/60/EC) was published in December 2000 and transposed into English law in December 2003 through The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003[1], later being updated through The Water Environment (England and Wales) (Amendment) Regulation 2015[2] and most recently The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017[3].

The intention of the WFD is to provide a more holistic approach to protection of the water environment than had previously been in place, addressing a wide range of aspects of the water environment, including physico-chemical, chemical, hydromorphological and ecological.

The environmental objectives of the WFD are to:

i. Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters;
ii. Aim to achieve at least 'good' status for all water bodies by 2015. Where this is not possible and subject to the criteria set out in the WFD, aim to achieve 'good' status by 2021 or 2027.
iii. Meet the requirements of WFD protected areas;
iv. Promote sustainable use of water as a natural resource;
v. Conserve habitats and species that depend directly on water;
vi. Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
vii. Progressively reduce the pollution to groundwater and prevent or limit the entry of pollutants; and
viii. Contribute to mitigating the effects of flood and drought.

The WFD requires that the Environment Agency (EA) define River Basin Districts and for each of these develop a River Basin Management Plan (RBMP). As part of this process all inland (above or below ground) and coastal waters have been allocated status categories in order to help inform where water bodies are at risk and/or protective/management measures need to be put in place.

In order to be in compliance with the Directive, a waterbody must have an overall classification of at least 'good' status. Classifications are completed on a 'one out, all out' basis and thus if one of the contributory elements/tests is below 'good' then the overall status will also be below 'good'. It is against this legislative background that proposed developments must show that they will not cause deterioration of designated water bodies or prevent/inhibit them from achieving 'good' status.

The Groundwater Directive (2006/118/EC)

The Groundwater Directive was created out of Article 17 of the WFD and establishes a framework to prevent the input of hazardous substances and to manage the input of non-hazardous pollutants into groundwater. The Directive was translated into English law through the Groundwater (England and Wales) Regulations 2009[4] and also the Environmental Permitting Regulations (England and Wales)

[1] Her Majesty's Stationery Office (HMSO), 2003. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003
[2] HMSO, 2015. The Water Environment (WFD) (England and Wales) (Amendment) Regulation 2015
[3] HMSO, 2017. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017
[4] Her Majesty's Stationery Office (HMSO), 2009. The Groundwater (England and Wales) Regulations 2009

(Amendment) Regulations 2010[5]. Measures in the Directive include the criteria by which good groundwater chemical status is assessed and the criteria for the identification of significant and sustained upward trends in groundwater quality. It allows for water quality standards to be set at a national level and take into account the effects of natural geology on groundwater characteristics.

The Environmental Quality Standards (EQS) Directive (2008/105/EC, as amended by 2013/39/EU)

The Environmental Quality Standards Directive was also created as a result of the WFD (Article 16) and sets out the standards (EQSs) for certain priority and priority hazardous substances considered to be at a European level to be of concern. The aim of the Directive is to reduce or cease/phase out altogether, their presence in the water environment in order to achieve good surface water chemical status in accordance with the provisions and objectives of Article 4 of the WFD. This Directive was translated into English law through The Water Environment (WFD) (England and Wales) (Amendment) Regulation 2015[2].

2.2 National Legislation

The Water Environment (Water Framework Directive) (England and Wales) Regulations in 2003, as amended in 2015 and 2017

The 2003 regulations implement the requirements of the WFD, requiring the creation of River Basin Districts, monitoring and assessment of waterbodies within them, the designation of Protected Areas and setting of water body objectives. They also implement the requirement for the EA to prepare RBMPs.

The 2015 regulations[2] update the 2003 regulations to reflect some of requirements from 2013/39/EU which update specific requirements from the WFD and EQS Directives. They translate the requirements of the latter into English law and also create statutory UK-specific EQSs for an additional list of chemicals of concern. The technical changes associated with this are implemented through a statutory 'Directions' paper. The 2017 regulations[3] consolidate the requirements of the 2003 regulations and provide additional detail on aspects of transposition of the regulations, together with key objectives for water bodies.

Environmental Permitting Regulations (England and Wales) (Amendment) Regulations 2010 and Onwards

These regulations translate some of the requirements of the Groundwater Directive into English law. Additionally, they update certain parts of the Water Resources Act[6] such that direct input of pollutants into groundwater without percolation though soil or subsoil is an offence. In England an environmental permit or registered exemption from the EA must be obtained to discharge anything other than clean, uncontaminated water to inland freshwaters (e.g. rivers, lakes and streams), groundwater, estuaries and coastal waters. These regulations also revoked the Groundwater (England and Wales) Regulations 2009 and took on the requirements of that earlier legislation.

2.3 Guidance and Policy

National Planning Policy Framework (NPPF) (February 2019)[7]

The NPPF provides a number of policies relating to water quality. It indicates that the planning system should contribute to and enhance the natural and local environment by:

[5] Her Majesty's Stationery Office (HMSO), 2010. The Environmental Permitting (England and Wales) (Amendment) Regulations 2010

[6] Her Majesty's Stationery Office (HMSO), 2009. The Groundwater (England and Wales) Regulations 2009

[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779771/NPPF_Feb_2019_print.pdf

i. Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
ii. Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.

West Sussex Structure Plan 2001-2016[8]

Policy ERA5 (Air, Soil and Water) refers to requirements in regard to quality of soil, air and water resources. The policy states the following:

"Local plans will include policies to:
i. Protect the intrinsic quality of, and where appropriate the quantity of, air, soil and water resources (including ground and surface waters) and prevent development which would be detrimental to the management and protection of such resources;
ii. Ensure that quality of rivers and other watercourses is conserved and, where possible, enhanced (including within built-up areas);
iii. Prevent the irreversible loss of the best and most versatile agricultural land (Grades 1, 2 and 3a of the Agricultural Land Classification System) unless the need for the development outweighs the long-term protection of the land; and
iv. Prevent sensitive development in areas subject to existing or potential poor air quality, or noise or smell pollution".

The Arun Local Plan 2011-2031 (July 2018)[9]

Policy W DM1 (Water supply and quality) states the following in relation to water quality:

"To ensure good water quality in the District, all major developments must:
i. Illustrate, where necessary, how they have contributed to the protection and enhancement of waterbodies identified by the South East River Basin Management Plan objectives; and
ii. Demonstrate where it will materially increase foul and/or surface water discharges, adequate drainage capacity exists or can be provided as part of the development. Where adequate capacity does not exist, there will be a requirement that facilities are adequately upgraded prior to the completion and occupation of development. In sewered areas, there will be a general presumption against the use of non mains foul water drainage."

The Environment Agency's Approach to Groundwater Protection February 2018[10]

This guidance document sets out the EA's approach to managing and protecting groundwater together with the position statements that support that approach. The document provides the framework that EA staff use when making decisions regarding planning, permitting and advice for current or proposed activities may have an impact on, or are affected by groundwater.

[8] https://www.westsussex.gov.uk/media/7125/structure_plan_05.pdf
[9] https://www.arun.gov.uk/download.cfm?doc=docm93jijm4n12861.pdf&ver=13001
[10] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692989/Envirnment-Agency-approach-to-groundwater-protection.pdf

3. METHODOLOGY

3.1 Assessment Approach

This technical appendix:

i. Reviews existing information on the water environment in which the site and its surroundings sit, focussed on the Water Framework Directive (WFD) quality criteria that apply to the designated water bodies that are located within the study area (the extent of the site plus an area up to approximately 1 km from the site). Within the context of this assessment, the site is taken to be the land proposed for the construction and operation of the proposed ERF and WSTF facilities, the road infrastructure to them, plus the remaining land within the red line boundary. As the south eastern access road has been constructed under a separate planning permission (WSCC/027/18/F), it has not been considered within this assessment;
ii. Identifies potential receptors (be they water bodies themselves or ecology/resources dependent upon them);
iii. Assesses the proposed development in terms of how it may interact with the water environment both during construction and operation;
iv. Discusses potential source-pathway-receptor linkages within the water environment; and
v. Analyses the significance of the potential environmental risks identified within the appendix in the context of the proposed development.

A site walkover was undertaken in December 2019 in order to inform the discussions within this appendix and visually confirm the site setting.

3.2 Assessment Criteria

The significance of a particular effect is dependent on the magnitude of change and the sensitivity of the receptor. The criteria used to describe these are outlined as follows.

Criteria for Assessing Sensitivity of Receptors

For the purposes of this appendix, the level of sensitivity to a given water body is defined based on the following definitions:

Table 8-1: Sensitivity Criteria Examples (Water Quality)

Sensitivity	Criteria Examples – Water Body	Groundwater	Surface Water
Negligible	Has no protected aquatic flora or fauna		✓
	Provides low/no amenity value		✓
	Is not used as a commercial or private water supply	✓	✓
	Is classified as unproductive strata	✓	
	Does not supply baseflow to local rivers	✓	
	Is not located within a groundwater Source Protection Zone (SPZ)	✓	
	Is substitutable in short term	✓	✓
	Is of low importance and/or has been altered by natural conditions	✓	✓
	Is classified by the EA as not being of risk	✓	✓

Sensitivity	Criteria Examples – Water Body	Groundwater	Surface Water
Low	Supports protected aquatic flora and fauna of local importance	✓	✓
	Provides amenity value on a local basis		✓
	Is used as a water supply for industrial, commercial or agricultural purposes	✓	✓
	Is or forms part of a cyprinid fishery		✓
	Is located upstream of a potable water supply/abstraction point	✓	✓
	Is a Secondary Aquifer with low-intermediate vulnerability	✓	
	Is located within a groundwater SPZ 3 (source catchment area)	✓	
	Contributes some baseflow to local rivers	✓	
	Has an ecosystem that has low sensitivity to water quality or quantity changes		✓
	Is classified by the EA as probably not being at risk	✓	✓
Medium	Is a Principal aquifer providing a locally important resource or supporting a river ecosystem	✓	
	Supports protected aquatic flora and fauna of regional importance	✓	✓
	Is regularly used for recreation (where water immersion sports/bathing are practiced regularly) and commercial navigation, important on a local basis		✓
	Is located within a groundwater Source Protection Zone (SPZ 2) (outer catchment)	✓	
	Contributes some baseflow to local rivers	✓	
	Is used as a local water supply for potable water supply purposes	✓	✓
	Is not substitutable in short or long term	✓	
	Is or forms part of a salmonid fishery		✓
	Is a Secondary Aquifer with high vulnerability or Principal Aquifer with low vulnerability	✓	
	Supplies water to a nationally designated site (e.g. SSSI, National Park)	✓	✓
	Has an ecosystem that has moderate sensitivity to water quality or quantity changes		✓
	Shows an upward trend in hazardous substances	✓	
	Lies within a protected area or is classified by the EA as being probably at risk	✓	✓
High	Supports nationally or internationally protected species or supplies a site that has these characteristics	✓	✓
	Is a major commercially significant navigational or recreational water body (where water immersion sports/bathing are practiced regularly)		✓
	Is used as a regional water supply for potable water supply purposes	✓	✓
	Is not substitutable in short or long term	✓	✓
	Is in a surface water Drinking Water Protected Area	✓	✓
	Is or forms part of a salmonid fishery		✓

Sensitivity	Criteria Examples – Water Body	Groundwater	Surface Water
	Is designated under EC habitat legislation		✓
	Is a Principal Aquifer with intermediate-high vulnerability	✓	
	Has elevated nitrate concentrations that could, in turn, affect a groundwater or surface water body downstream, (Nitrate Vulnerable Zone)	✓	✓
	Lies in an area that contains important groundwater flow routes	✓	
	Lies within a Protected Area or is classified by the EA as being at risk	✓	✓
	Provides significant baseflow to local rivers	✓	
	Is located within a groundwater Source Protection Zone SPZ 1 (Inner catchment)	✓	
	Has an ecosystem that has high sensitivity to water quality or quantity changes		✓
	Supplies water to an internationally designated site (e.g. Ramsar site)	✓	✓

Criteria for Assessing Magnitude of Change

The overarching requirements of the WFD, which have guided this water quality assessment are to prevent the deterioration of any water body (regardless of its classification) and to avoid actions that prevent (or contribute to the prevention of) a water body achieving its requirement of 'Good status'. Accordingly, the magnitude for change for effects associated with the proposed development has been defined according to the following criteria.

Table 8-2: Criteria for Assessing Magnitude of Change

Magnitude	Description/Criteria Examples
Negligible	No or little change from baseline conditions
	Effect occurs but is insufficient to affect the attribute
Small	Detectable but minor change to hydrological or hydrogeological conditions from baseline. Likely to be temporary
	Loss/deterioration of private water supply
	Small change in water quality, such that quality remains within UK standards and is unlikely to affect most sensitive receptors
	Localised changes in groundwater levels but no appreciable change in wider groundwater regime
	Small measurable changes in riverine flow regime
	Minor changes to ecological regime, but effects are short term and reversible
Medium	Evident change to hydrological or hydrogeological conditions resulting in temporary or long-term changes to baseline
	Loss/deterioration of local water supply
	Change in ecological or chemical quality but not enough to change WFD status
	Measurable change in water quality, but not enough to significantly exceed national standards for more than short term basis
	Localised changes in groundwater levels with small-scale measurable changes in wider groundwater regime but no significant effect on local private water supplies

Magnitude	Description/Criteria Examples
	Moderate measurable change in riverine flow regime and reduction in dilution capacity
	Measurable change to aquatic ecosystem which relies on the surface water (which may be fed from groundwater)
	Reduced productivity of fishery
Large	Large scale change to hydrological receptor. Change likely to be permanent/long term
	Loss/deterioration of regionally or nationally important potable water supply
	Changes in ecological or chemical quality that result in a reduction in WFD status
	Change in water quality significantly exceeding national standards on a long term basis
	Measurable changes in groundwater levels in wider groundwater regime with significant effect on local private water supplies
	Significant measurable change in riverine flow regime and reduction in dilution capacity
	Significant damage to or loss of aquatic ecosystem which relies on the surface water
	Loss of fishery
	Changes put at risk protected species or designation status of the water body

Significance Criteria

The significance of effect, which is dependent on the sensitivity of the receptor and the magnitude of change, is determined using the matrix presented below. Only effects of moderate and above classification are considered to be significant.

Table 8-3: Classification of Significance

		Magnitude of Impact			
		Negligible	**Small**	**Medium**	**Large**
Sensitivity of Receptor	**High**	Negligible/slight	Moderate	Substantial	Very substantial
	Medium	Negligible	Slight	Moderate	Substantial
	Low	Negligible	Slight	Slight	Moderate
	Negligible	Negligible	Negligible/slight	Negligible/slight	Slight

The significance criteria can be defined as follows:

- Very substantial: Wholesale change to watercourse, water chemistry, erosion and sedimentation characteristics within areas protected for their environmental importance or significance as water supply sources.

- Substantial: Wholesale or fundamental changes to water bodies, which are not water supply sources, but of good quality. Wholesale and/or moderate changes to associated erosion/sedimentation patterns and water chemistry. Also, moderate changes to watercourse, water chemistry, erosion and sedimentation characteristics within areas protected for their environmental importance or significant as water supply sources.

- Moderate: Wholesale and/or fundamental changes to water bodies of average quality, and features of local interest. Also, minor changes to important water bodies such as those in areas protected for their environmental significance, water bodies of good quality, and both water supply and non-water supply sources.

- Slight: Small changes to water bodies of local interest or of average water quality.

- Negligible: No change to water bodies of poor quality and artificial watercourses.

4. BASELINE CONDITIONS

4.1 Surface Water

There are no surface water features within the site.

The River Arun is located approximately 900 m east of the site at its closest point and is a transitional water body designated under the WFD. The River Arun is also classified as a Drinking Water Protected Area (DWPA) and is linked to a Special Protected Area (SPA) and a Special Area of Conservation (SAC)[11]. The SPA and SAC are 10 km up-stream from the site and are not anticipated to be relevant to this study.

The details of the River Arun's current WFD status are summarised in Table 4-1.

Table 8-4: WFD Status of Water Bodies*

Water Body	Water Body Id	Type	Ecological Status/Potential[i]	Chemical Status	Current Overall Status/Potential
River Arun	GB540704105000	Transitional Water Heavily Modified	Moderate ecological potential	Good chemical potential	Moderate potential

Status classifications based on 2016 data sourced from the EA Catchment Data Explorer[11]

While the River Arun flows in a southerly direction and has good status with respect to its chemical quality, its ecological classification is moderate potential and thus not in compliance with the requirements of the WFD. This latter classification is due to the presence of physical modifications. The pressures that the EA identify as contributing to this moderate status arise from use of flood protection in the river course.

Aerial photography[12] indicates that a number of ditches are present in the vicinity of the site. The closest of these ditches runs immediately adjacent to the eastern end of the south eastern access road of the site. As such, this ditch is considered to be located approximately 350 m from the site at which the proposed development will take place. These are generally anticipated to flow towards the River Arun in the east, and a number of outlets are noted along the western bank of the River Arun, coinciding with the locations of the ditches. No ditches were observed around the site during the site walkover and it is not clear whether any flow is present in the ditches in the area. The ditch 350 m from the site was observed to contain no water.

A number of small ponds were identified in the vicinity of the site. These included a pond approximately 400 m^2 in area connected to ditches draining to the River Arun approximately 720 m to the northeast of the site. A second pond approximately 640 m^2 in area was observed approximately 900 m to the southeast of the site, approximately 50 m from the bank of the River Arun. The pond to the northeast of the site may be natural and appears pale green in colour in aerial photography[12].

[11] http://environment.data.gov.uk/catchment-planning/

[12] https://www.google.co.uk/earth

The pond may be covered in algae or may be dry and covered in other vegetation. The pond to the southeast of the site appears to be artificial and containing water. While the purpose of this pond is unclear, it is located in agricultural land and may be related to agricultural processes. These ponds are not identified as designated sites. Due to the distance of these ponds from the site and the lack of continuous surface drainage routes from the site to the ponds, they are not considered to be sensitive receptors.

Two large artificial ponds (approximately 2880 m^2 and 12,650 m^2 in area) were identified approximately 1 km to the north of the site, immediately to the north of a railway line. The purpose of these ponds is unclear; however, they are not identified as designated sites. Due to the distance of these ponds from the site and the lack of surface drainage routes from the site to the ponds, they are not considered to be sensitive receptors.

An artificial pond (approximately 3,465 m^2 in area) is located 320 m to the south of the site in Rudford Industrial Estate. The purpose of this pond is unclear; however, it could be related to industrial uses at the industrial estate or be utilised to store surface water run-off. The pond is not identified as a designated site. Due to the distance of the pond from the site and the lack of surface drainage routes from the site to the pond, it is not considered to be a sensitive receptor.

4.2 Groundwater

Details of the geological sequence beneath the site are presented in the Ramboll Geoenvironmental Desk Study (ref 1620007830-001-RAM-XX-XX-RP-YE-10002)[13]. River Terrace Deposits (RTD) underlie the site and are classified as a Secondary A Aquifer (although the upper RTD comprise a cohesive layer that may have the potential to form an aquitard). The Lewes Nodular Chalk Formation (Chalk) underlies the RTD and is classified as a Principal Aquifer. Made Ground is present across the site. The site is located in an area classified by the British Geological Survey (BGS) as being of medium groundwater vulnerability. This means that it is potentially vulnerable to pollution sourced from activities on land.

Groundwater level monitoring has been undertaken at the site between July 2015 and February 2020 by Enzygo Limited (Enzygo)[14,15], Grundon between 2018 and November 2020. Ramboll also carried out a groundwater monitoring visit on 18 February 2020 immediately following Storm Dennis (15 February 2020), in order to observe the impacts of winter rain infiltration on groundwater level at the site.

The highest recorded groundwater elevation event during this monitoring period occurred on 11 March 2020, when the elevation of the groundwater table was recorded to be approximately 3.5 mAOD[16] in the area of the site which is proposed to be subject to lowering of ground levels; to the west groundwater levels were recorded at up to 4.5 mAOD, and to the east at up to 3.0 mAOD [17]. Groundwater was broadly within the Chalk and granular River Terrace Deposits.

Allowing for groundwater level to rise higher than that recorded on 11 March 2020, a worst-case expected groundwater elevation of 4 mAOD (2.5 mbgl) was proposed for the site.

[13] Ramboll (2021). Ford Circular Technology Park Geoenvironmental Desk Study, 1620007830-001-RAM-XX-XX-RP-YE-10002

[14] Enzygo (2015). Geoenvironmental Report (Ref. CRM.049.009.GE.R001A)

[15] Enzygo (2018). Factual Report (Ref. CRM.049.009.GE.R.002 A)

[16] Ground levels of boreholes were not surveyed by Enzygo, therefore groundwater elevation data recorded by monitoring these boreholes has been estimated based on assumed ground elevations of the boreholes derived from a survey drawing of the site dated June

[17] BH105 and BH106 were installed with piezometers at approximately 20 m depth in the Chalk. Depths to the base of the monitoring points were measured in November 2020 by a Ramboll consultant at BH105 and found to be 13 mAOD suggesting that the bottom part of the well was blocked and this resulted in shallow depth to water in the well which was atypical of the wider groundwater regime. The same is likely to apply at BH106 which is similarly installed and was flooded hence no measurements were made from this monitoring point. Groundwater level monitoring data from BH105 and BH106 has therefore been discounted

The details of the groundwater level monitoring are presented in the Ramboll Hydrogeological Impact Assessment (Ref 1620007830-RAM-XX-XX-RP-YE-00010)[18] and Ramboll Geoenvironmental Desk Study (Ref 1620007830-001-RAM-XX-XX-RP-YE-10002)[13] and figures indicating the borehole locations in which groundwater monitoring was undertaken (obtained from the Enzygo (2015)[14] and Enzygo (2018)[15] reports) are presented as Appendix B.

From review of the BGS hydrogeology map[19], the groundwater level in the Chalk would be expected to be in the region of 0 mAOD to 5 mAOD at the site, with groundwater flow towards the southeast at a shallow hydraulic gradient of approximately 0.0014, towards the River Arun and the coast. The BGS data concurs with the groundwater monitoring data obtained from boreholes at the site.

Given the location of the River Arun 900 m to the east of the site and the close proximity of the sea to the south, it is anticipated that groundwater is likely to flow in an easterly or south easterly direction. Groundwater levels encountered by historical BGS boreholes in the vicinity of the site and from historical groundwater monitoring at the site[13] are indicative of an eastward hydraulic gradient.

The site is not located in or within 1 km of any groundwater Source Protection Zones (SPZs) or DWPA, nor is it designated as part of a Nitrate Vulnerable Zone.

Groundwater at the site forms part of the Littlehampton Anticline (West) groundwater body as defined by the WFD. While the Littlehampton Anticline (West) has good status with respect to its chemical quality, its quantitative classification is of poor quality and thus not in compliance with the requirements of the WFD. This latter classification is related to Quantitative Dependent Surface Water Body Status, for which suspect data is held by the EA[11].

The following groundwater abstractions are recorded in an Envirocheck report for the site (see Ramboll Geoenvironmental Desk Study)[13] as being within 2 km of the site.

Table 8-5: Summary of Licenced Groundwater Abstractions

Licence Holder	Distance from Site	Abstraction Source	Purpose of Abstraction
Tarmac Ltd	On site	Groundwater	Construction: process water
Tarmac Heavy Building Materials Ltd	On site	Groundwater	Construction: process water
Mr A Langmead	586 m north	Groundwater	General farming and domestic
Mr R Hague	600 m northeast	Groundwater	Agriculture
Keith Langmead Ltd	886 m northwest	Groundwater	Spray irrigation: direct
Mr A C Langmead	886 m northwest	Groundwater	Spray irrigation: storage
Mr A Clay	1681 m west	Groundwater	Agriculture: horticultural watering

While no end dates were supplied for the groundwater abstraction licences listed above, it is noted that the abstractions located on site (located to southeast of Hangar 2) were associated with the historical owner of the site (Tarmac Limited) and as such are no longer operational. It is uncertain if the Tarmac Limited abstraction boreholes have been decommissioned and as such a preferential pathway to groundwater may exist if decommissioning was not undertaken.

[18] Ramboll (2021). Ford Circular Technology Park, hydrogeological Impact Assessment. 1620007830-RAM-XX-XX-RP-YE-00010

[19] BGS (1984) Hydrogeological Map of the Area Between Cambridge and Maidenhead

All other abstractions were located up- or cross-hydraulic gradient from the site and are therefore not anticipated to be relevant to this assessment, with the exception of R Hague, 600 m to the northeast of the site. Due to the distance of this abstraction from the site and the use of the abstraction for agricultural purposes, the risk to this abstraction location is anticipated to be low.

The groundwater abstractions recorded within 2 km of the site all relate to non-potable uses as summarised in Table 4-2. There may be the potential for smaller (unlicensed) abstractions to be present in the vicinity of the site. Where private water supplies are for drinking water, SPZs typically extend around such private supplies to a 50 m radius.

4.3 Contamination

The geo-environmental desk study[13] discusses a number of potential sources of contamination that have the potential to impact groundwater quality. In general, these are associated with the past uses of the site and the accompanying infrastructure such as tanks, pipelines and refuelling areas.

As part of the Enzygo (2015)[14] historical ground investigation, groundwater samples were screened against generic assessment criteria (GACs) derived from the freshwater Environmental Quality Standards (EQS), UK Drinking Water Values (DWV) and World Health Organisation (WHO) values for drinking water[20]. The Enzygo (2015) ground investigation recorded elevated concentrations of organic contaminants (including total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAH) in groundwater encountered in the Chalk, which corresponded with elevated concentrations of these contaminants in soil at the site.

The details of groundwater monitoring and the analysis of groundwater samples are presented in the Ramboll Geoenvironmental Desk Study[13], and a summary of the contaminant concentrations found to exceed the relevant GACs by Enzygo is presented in Table 4-3. A figure indicating the exploratory hole locations advanced by Enzygo at the site is presented as Appendix A.

[20] CL:AIRE (2017). Petroleum Hydrocarbons in Groundwater: Guidance on assessing petroleum hydrocarbons using existing hydrogeological risk assessment methodologies

Table 8-6: Summary of Elevated Groundwater Contaminants Identified by Enzygo (2015)

	GACs - Enzygo					
Contaminant	**EQS (µg/l)**	**DWV (µg/l)**	**WHO Values (µg/l)**	**Current GACs (as on April 2020)**	**Location and Groundwater Level**	**Concentration (µg/l)**
Anthracene	0.02	N/A	N/A	0.01 (minimum reporting value)	BH2, 5.63 mbgl (1.09 mAOD)	0.07
					BH6, 5.8 mbgl (0.87 mAOD)	0.03
					BH7, 5.76 mbgl (0.84 mAOD)	6.26
					BH8, 5.77 mbgl (0.72 mAOD)	1.74
Fluoranthene	0.02	N/A	N/A	0.075 (General Quality of GW Body)	BH2, 5.63 mbgl (1.09 mAOD)	0.03
					BH6, 5.8 mbgl (0.87 mAOD)	0.08
					BH7, 5.76 mbgl (0.84 mAOD)	27
					BH8, 5.77 mbgl (0.72 mAOD)	12.4
Benzo(a) pyrene	0.03	N/A	0.01	0.00005 (minimum reporting value)	BH2, 5.63 mbgl (1.09 mAOD)	0.25
					BH6, 5.8 mbgl (0.87 mAOD)	0.05
					BH7, 5.76 mbgl (0.84 mAOD)	18.5
					BH8, 5.77 mbgl (0.72 mAOD)	9.59
TPH C8 to C10	20	N/A	10	300 (CL:AIRE[21])	BH2, 5.63 mbgl (1.09 mAOD)	30
					BH7, 5.76 mbgl (0.84 mAOD)	33.3
					BH8, 5.77 mbgl (0.72 mAOD)	23.6

All GAC values obtained from Enzygo (2015)[14] geoenvironmental report. It is noted that the GACs utilised by Enzygo do not match with the existing EQS, DWS or WHO values for these contaminants

[21] CL:AIRE (2017). Petroleum Hydrocarbons in Groundwater: Guidance on assessing petroleum hydrocarbons using existing hydrogeological assessment methodologies

Enzygo concluded that the spike in contamination at BH7 (located next to a former fuel Above Storage Tank (AST) suggested a historical leakage, though no evidence of spillage was observed on the hardstanding at the time of the ground investigation. Enzygo also concluded that as concentrations decreased significantly towards the site boundaries (contaminant concentrations at BH8 at the eastern boundary of the site were approximately half the concentrations at BH7, and significantly lower at BH6 in the south eastern corner), the risk to surface water receptors could be dismissed. As the fuel AST located near BH7 was no longer present and no evidence of spillage could be seen on the site hardstanding, the organic contaminant impact was considered by Enzygo to be a residual risk.

It is noted that Enzygo did not screen groundwater samples against GACs for sensitive groundwater receptors, despite the presence of elevated contaminant concentrations in the Chalk and the significant distance to the nearest potential surface water receptors. Additionally, it is noted that the GAC values provided by Enzygo differ from the current EQS, DWV or WHO values for these contaminants.

As such, GACs derived from General Quality of Groundwater Body, minimum reporting values for hazardous substances and specific GACs for petroleum hydrocarbons[21] have been included in Table 4-3. It is noted that the groundwater GACs for anthracene and benzo(a)pyrene are more conservative than those used by Enzygo, and as such potential PAH impact in groundwater may be more extensive than reported. This will be taken account of as part of the design of additional ground investigation work as detailed in the recommendations.

In summary, the Enzygo (2015) geoenvironmental report identified groundwater impacted with organic contaminants at a depth of approximately 5.55 mbgl to 5.65 mbgl in the Chalk to the southeast of the existing waste transfer station.

Groundwater level monitoring undertaken by Ramboll at these locations in February 2020 recorded generally shallower groundwater levels across the site than recorded by Enzygo; as such, contaminated groundwater may be encountered across the site.

5. EFFECTS OF THE PROPOSALS DURING CONSTRUCTION

The Ramboll Geoenvironmental Desk Study[13] documents a review undertaken of available information with regards to site history, environmental setting, geology and hydrogeology, contamination and other aspects associated with ground conditions. The desk study identifies the presence of potential contaminant sources at the site, including landfilled and stockpiled waste and locations of various historical tanks and plant, most of which had been removed at the time of writing of the Geoenvironmental Desk Study.

The Ramboll Geoenvironmental Desk Study[13] included a review of a historical ground investigation undertaken by Enzygo in 2015, which indicated the presence of organic contaminants (including TPH and PAH) in soil, as well as elevated concentrations of these contaminants in groundwater encountered in the Chalk.

Potential pathways that exist for any such contamination to have an effect on the water environment during the construction of the proposed development are presented in Table 5.1. This table should be reviewed in conjunction with Section 6 of the Ramboll Geoenvironmental Desk Study[13].

The proposed development includes the construction of a bunker hall, surface water pumping station and includes a reduced in dig (see Table 1.1 for depths of the excavations). Based on existing groundwater level data at the site the potential for these excavations to interact with groundwater is anticipated to be high.

Dewatering of the proposed excavations would therefore be required during the construction phase. Dewatering could significantly increase the risk of contaminant migration towards the proposed excavations through the creation of a cone of depression. This could potentially increase the area of PAH impacted groundwater beneath the site and could potentially increase the requirement for contaminated groundwater to be sent off-site for disposal.

Table 5-1: Potential Pathways for Effects in the Water Environment – Construction Phase

Pathways/Mechanisms	Comments	Receptor		Sensitivity/Importance of Receptor	Magnitude of Change	Resultant Significance
		GW*	SW**			
Mobilisation of contaminants from sub-surface strata and surface soils through dewatering and excavation activities	Given the excavation requirements for the proposed development, dewatering of excavations is anticipated to be required. It is noted that a hydraulic gradient between the Made Ground, RTD and Chalk already exists, and elevated concentrations of organic contaminants have been recorded in groundwater in the Chalk.	✓		River Terrace Deposits, which are within the proposed depth of excavations required for construction and for the excavation proposed onsite. **Low**	Small	Slight
				Lewes Nodular Chalk Formation, which are within the proposed depth of excavations required for construction and for the excavation proposed onsite. **High**	Small	Moderate
			✓	River Arun, 900 m to the east of the site **Medium**	Negligible	Negligible
				Ditches in the vicinity of the site (nearest 350 m to southeast) and above the saturated zone **Negligible**	Negligible	Negligible
Changes to local groundwater resources through dewatering activities and groundwater discharge	Given the excavation requirements for the proposed development, dewatering of excavations is anticipated to be required. Abstracted groundwater discharge point: Intended to be surface water drainage on site which in turn discharges to surface waterbody of the River Arun.	✓		River Terrace Deposits, which are within the proposed depth of excavations which requires dewatering. **Low**	Negligible	Negligible
				Lewes Nodular Chalk Formation, which are within the proposed depth of excavations which requires dewatering. **High**	Negligible	Negligible/slight
			✓	River Arun, 900 m to the east of the site **Medium**	Negligible	Slight
				Ditches in the vicinity of the site (nearest 350 m to southeast) and above the saturated zone **Negligible**	Negligible	Negligible
Mobilisation of contaminated soils into surface water	There are a number of ditches in the vicinity of the site which drain into the River Arun, however the nearest of these ditches is 350 m from the site and was not observed to contain water. Surface contaminants mobilised at the site are unlikely to travel the distance over the surface required to impact the nearest ditch.		✓	River Arun, 900 m to the east of the site **Medium**	Negligible	Negligible
				Ditches in the vicinity of the site (nearest 350 m to southeast) and above the saturated zone **Negligible**	Negligible	Negligible

Pathways/Mechanisms	Comments	Receptor		Sensitivity/Importance of Receptor	Magnitude of Change	Resultant Significance
		GW*	SW**			
Leaching of contaminants, and migration into water environment	There is the potential for rainfall infiltration, leaching and contaminant migration in areas of open excavation, stripped ground etc.	✓		River Terrace Deposits, which are within the proposed depth of excavations. **Low**	Small	Slight
				Lewes Nodular Chalk Formation, which is in the proposed depth of construction activities such as excavations and creation of foundations. **High**	Small	Moderate
			✓	River Arun, 900 m to the east of the site **Medium**	Negligible	Negligible
Creation of pathways via piling or other construction (including excavations) activities/development design	Deep foundations are anticipated to be required to support the proposed development and building levels will require excavations. There is the potential for contamination within Made Ground to be mobilised via newly created preferential pathways into the RTD and Chalk. It is noted that a hydraulic gradient between the Made Ground, RTD and Chalk already exists, and elevated concentrations of organic contaminants have been recorded in groundwater in the Chalk.	✓		River Terrace Deposits, which is in the proposed depth of construction activities such as piling and creation of foundations **Low**	Small	Slight
				Lewes Nodular Chalk Formation, which is in the proposed depth of construction activities such as piling and creation of foundations. **High**	Small	Moderate
Migration of leaks or spillages (e.g. from fuel storage on site) into water environment during construction	Utilisation of plant and other equipment on site mean that fuel and other chemicals and oils will need to be stored on site. These present a risk to the water environment in the case of spillage or leakage.	✓		River Terrace Deposits, which are within the proposed depth of excavations required for construction **Low**	Small	Slight
				Lewes Nodular Chalk Formation, which are within the proposed depth of excavations required for construction **High**	Small	Moderate
			✓	River Arun, 900 m to the east of the site **Medium**	Negligible	Negligible
				Ditches in the vicinity of the site (nearest 350 m to southeast) and above the saturated zone **Negligible**	Negligible	Negligible

* Groundwater
** Surface water

During the construction phase of the proposed development effects of potentially moderate significance have been estimated, without mitigation measures in place.

6. EFFECTS OF THE PROPOSALS DURING OPERATION

Table 6-1: Potential Pathways for Effects in the Water Environment – Operation Phase

Pathways/Mechanisms	Comments	Receptor		Sensitivity/Importance of Receptor	Magnitude of Change	Resultant Significance
		GW*	SW**			
Discharge of contaminants in surface water run-off into surface water	Drainage of the site during the operational phase the surface water will discharge via separators and attenuation tanks and will be discharged through the existing surface water pipe. There is the potential for contaminants in the surface water to be mobilised into the drainage pipes and be transported or deposited down-stream.		✓	River Arun, 900 m to the east of the site **Medium**	**Small**	**Slight**
				Ditches in the vicinity of the site (nearest 350 m to southeast) and above the saturated zone **Negligible**	**Negligible**	**Negligible**
Migration and leaching of contaminants in surface water runoff into water environment via soft landscaping and drainage features such as soakaways (if utilised)	Drainage of the site during the operational phase the surface water will discharge via separators and attenuation tanks and will be discharged through the existing surface water pipe. There is the potential for contaminants in the surface water runoff to migrate to groundwater, as well as the potential for existing contamination to become mobilised to groundwater via leaching.	✓		River Terrace Deposits **Low**	**Negligible**	**Negligible**
				Lewes Nodular Chalk Formation **Medium**	**Negligible**	**Negligible**
			✓	River Arun, 900 m to the east of the site **Medium**	**Negligible**	**Negligible**
Groundwater flow regime post construction	Impact on groundwater flow regime post construction (groundwater flow barriers)	✓		River Terrace Deposits **Low**	**Negligible**	**Negligible**
				Lewes Nodular Chalk Formation **High**	**Negligible**	**Negligible/slight**
			✓	River Arun, 900 m to the east of the site **Medium**	**Negligible**	**Negligible**

* Groundwater
** Surface water

No significant effects are therefore anticipated during the operational phase of the proposed development.

7. MITIGATION AND MONITORING

The construction of the proposed development will be undertaken under a Construction Environment Management Plan (CEMP), to be prepared by others. This will be developed to manage potential environmental effects associated with ground conditions and the water environment which may occur during construction and will incorporate a variety of best practice measures to mitigate the potential effects discussed in this appendix.

Construction works will be carried out in line with EA Guidance for Pollution Prevention (Version 1.2, February 2018) 5: Works and Maintenance in or near Water[22]. This guidance provides details on the type of works that could potentially impact the water environment and provides advice on methods to minimise the risk of contamination, as well as the authorities that may need to be contacted for formal approval (consents, licences or permits) for the proposed works. Sections which may be of particular relevance to the proposed works and operations at the site include:

i. 2.1a – Exposed ground and stockpiles;
ii. 2.1b – On-site working;
iii. 2.1d – Disposal of water from excavations, dewatering and pumping; and
iv. 2.2 – Disposal of contaminated water.

A summary of the potential mitigation measures is included in Table 7.1 below.

Table 7-1: Potential Mitigation Measures[22]

Section	Works and Maintenance in or near Water	Mitigation Measures
2.1a	Exposed ground and stockpiles	• Minimising the amount of time stripped ground and soil stockpiles are exposed; • Only removing vegetation from the area that needs to be exposed in the near future; • Seeding or covering stockpiles; • Using geotextile silt fencing at the toe of the slope, to reduce the movement of silt; this should be installed before soil stripping has begun and vehicles start tracking over the site; • Collect run-off in lagoons and allow suspended solids to settle before disposal; and • Divert clean water away from the area of construction work in order to minimise the volume of contaminated water.
2.1b	On-site working	*Plant and Wheel Washing* • Plant and wheel washing is carried out in a designated area of hard standing at least 10 m from any watercourse or surface water drain; • Run-off is collected in an impermeable sump - recycle and reuse water where possible; • Settled solids are removed regularly and appropriately disposed of if permission can be granted from your local water and sewerage provider, it may be possible to discharge contaminated water to the public foul/combined sewer; • Discharge of treated water to the environment with formal approval from the environmental regulator; • Contaminated water tankered off site for authorised disposal; and

[22] https://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf

Section	Works and Maintenance in or near Water	Mitigation Measures
		• Biodegradable oils should be used for vehicles and plant where possible, please be aware that they should still be prevented from entering the water environment. *Site Roads and River Crossings* • Brushing or scraping roads to reduce dust and mud deposits; • Appropriately disposing of material collected; • Putting small dams or silt fencing in artificial roadside ditches to retain silt; and • Divert run-off to settlement lagoons.
2.1d	Disposal of water from excavations, dewatering and pumping	• Preventing water from entering excavations, by using cut-off ditches; • Considering the impact on groundwater if you use well point dewatering or cut off walls; • Using pump sumps in excavations; • Discharging clean water onto a hard surface e.g. concrete slabs/gravel, to avoid causing impact from ground/bank erosion; and • Minimising disturbance of standing water.
2.2	Disposal of contaminated water	Discharges to public foul/combined sewers will require consent from the water and sewerage provider. If the water and sewerage provider is unable to approve, it will be necessary to tanker the contaminated water off site for authorised disposal.

All of these are applicable to the site. In addition to operation of the CEMP, the following mitigation measures/further work will be undertaken:

i. Completion of a Foundation Works Risk Assessment in accordance with UK EA standards prior to construction to inform the potential risks associated with foundation types being considered or to identify mitigation measures that may be needed;
ii. Additional ground investigation post planning including testing of soil samples as soil and soil leachate and monitoring of groundwater quality and levels. Groundwater analysis and historical data to be reviewed against current GACs;
iii. Development of remediation strategy (if needed) together with validation and verification documentation as needed, based on findings of proposed ground investigation; and
iv. Preparation of pollutants, water and sediment management protocol to inform construction works, for example:
    - Minimising storage of hazardous chemicals on site and where storage is necessary, use of anti-pollution measures such as bunded trays or leak-proof containers;
    - Designated re-fuelling sites, located on hardstanding;
    - Any cleaning materials or chemicals used during the construction process to not be harmful to the water environment;
    - No storage of potentially contaminating materials in areas liable to water inundation;
    - Use of electrical power rather than diesel where possible;
    - Design of construction methods to minimise disturbance to and mobilisation of settlement;
    - Controlled washing down of plant while on site;
    - Implementation of piling design with tight quality assurance and quality controls (QA/QC); and
    - Oil spill kits to be kept on site, and site staff trained in their use.
v. Prior to groundwater dewatering, the following steps will be taken:
    - Completion of a hydrogeological impact assessment in accordance with Environment Agency (EA) guidance;

- Liaison with the Environment Agency at pre-application stage for abstraction licensing and discharge consent;
- Site-specific hydrogeological site investigation;
- Hydrogeological calculations based on the site investigation to better delineate expected abstraction rates;
- Determination of suitable route to discharge abstracted water;
- Application for groundwater abstraction licence;
- Application for discharge consent from the Environment Agency, for which a surface water flood risk assessment and assessment of water quality impacts are likely to be required;
- If necessary, design remediation to treat groundwater and reduce contamination to an acceptable concentration prior to abstraction;
- Design of discharge system; and
- Provision of strategy for monitoring of water quality, groundwater level and surface water flow pre, during and post abstraction.

Regular on-site monitoring of the works will be undertaken by an environmental specialist during the construction phase. Such monitoring would include groundwater sampling, surface water inspections and surface water run-off management observations. The detailed scope of the monitoring will be refined following completion of the recommended ground investigation.

8. RESIDUAL EFFECTS

With mitigation measures in place as set out in Section 7, no significant residual effects are predicted on water quality.

9. CUMULATIVE EFFECTS

As no significant water quality effects are predicted as a result of the proposed development, there is no potential for significant cumulative effects with other consented developments in the area.

10. SUMMARY

The assessment concludes that there is the potential for further contaminants to be introduced to the water environment via leaching and migration of soil contaminants in surface water run off or in areas of open excavation or stripped ground during the construction phase including the proposed excavation requirements, where dewatering of excavations is anticipated to be required. However, these risks will be managed through the CEMP measures, mitigation measures and monitoring thus overall, there is no significant risk.

FIGURES

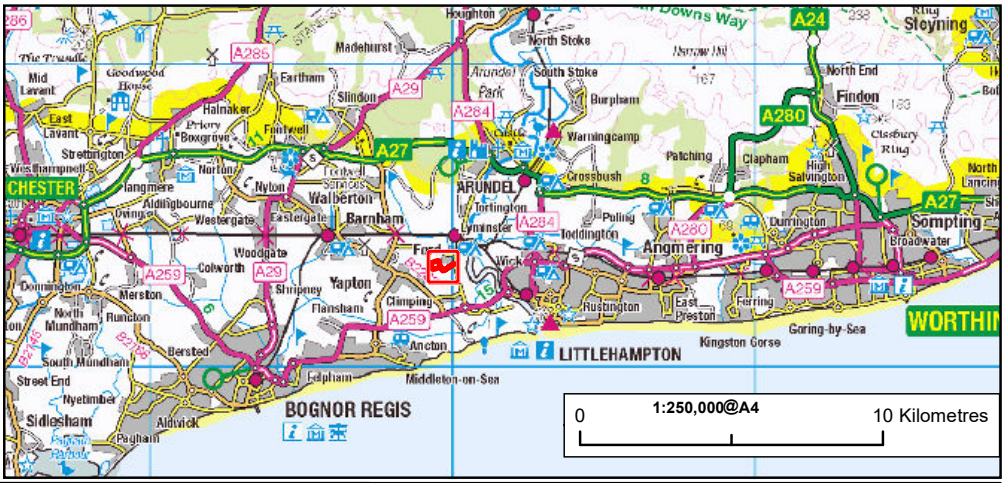
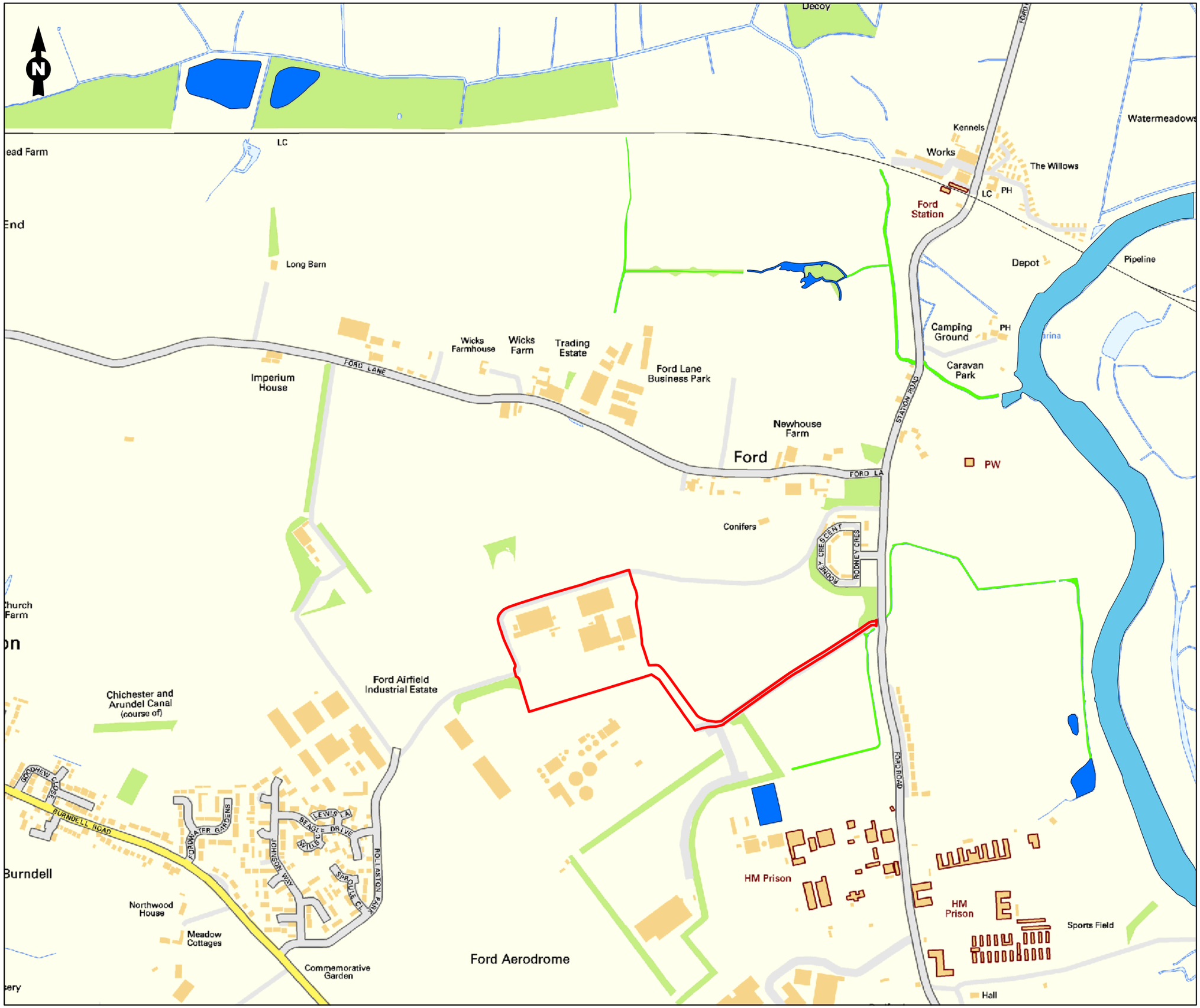


Figure Title: Figure 1: Site Location	Project Name: Ford Energy Recovery Facility and Waste Sorting and Transfer Facility, Ford Circular Technology Park	Date: February 2021	
		Scale: As shown	
Project Number: 1620007830	Client: Ford Energy from Waste (EfW) Limited, a joint venture between Grundon Waste Management Limited (Grundon) and Viridor Energy Limited (Viridor).	Issue: 01	Prepared By: BK & BH



Legend

- Site Boundary
- Ditch
- Pond
- River Arun

Notes.
Figure indicates locations of nearest features of each type (ditch, pond and main river) to site. Locations are indicative.

Colour Drawing

Figure Title
Water Features

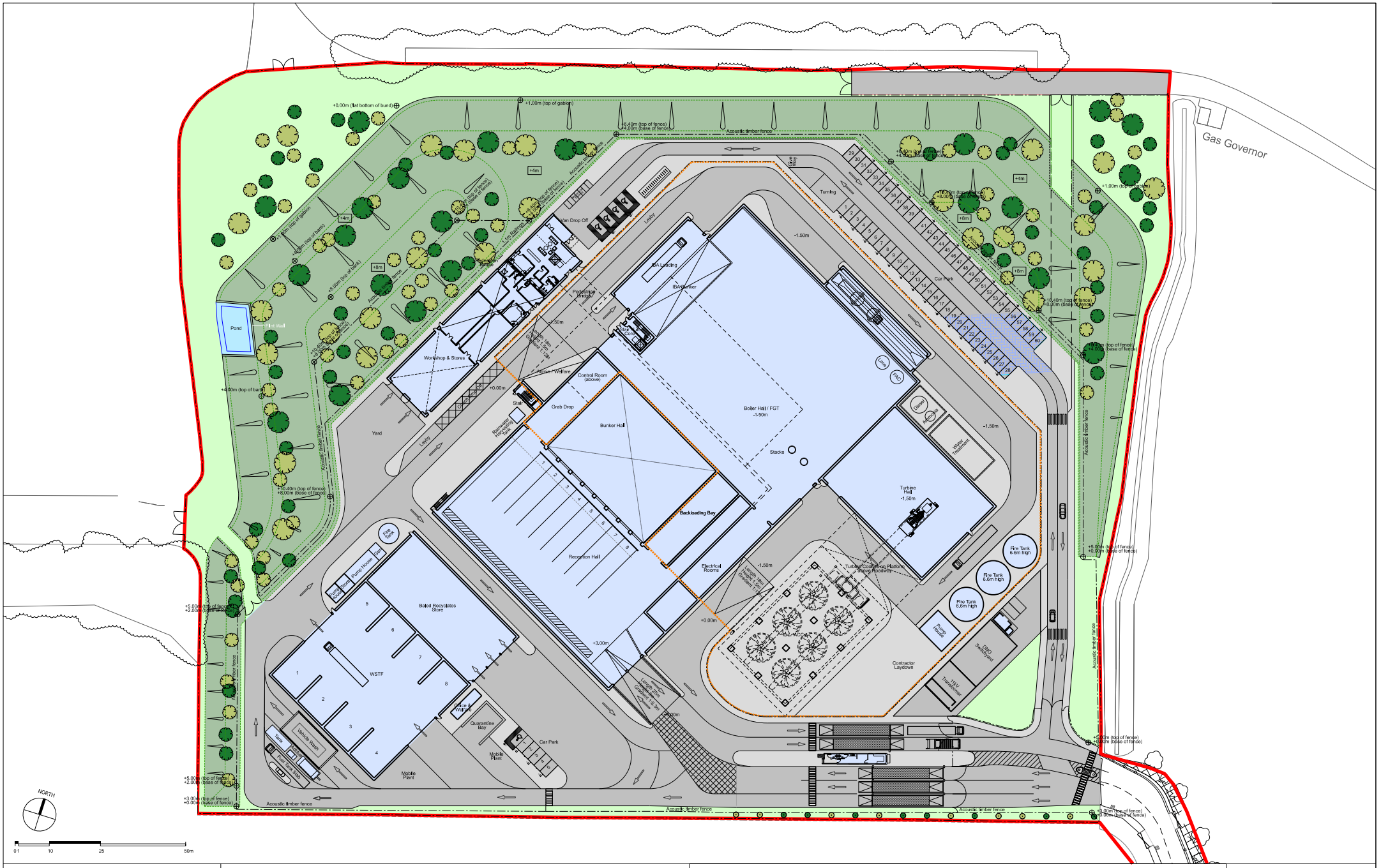
Project Name
Ford Energy Recovery Facility and Waste Sorting and Transfer Facility, Ford Circular Technology Park

Project Number	Figure No.
1620007830	2
Date	**Prepared By**
February 2021	BK
Scale	**Issue**
1:7,500 @A3	-

Client
Ford Energy from Waste (EfW) Limited, a joint venture between Grundon Waste Management Limited (Grundon) and Viridor Energy Limited (Viridor).

RAMBOLL

APPENDIX A
PROPOSED DEVELOPMENT PLAN



NOTE

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3. WHERE ANY DISCREPANCIES ARE FOUND BETWEEN DIMENSIONS THESE MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS FOR RESOLUTION.
4. WHERE DISCREPANCIES EXIST BETWEEN REFERENCE OR ASSEMBLY DRAWINGS & DETAIL DRAWINGS, THE LATTER TAKE PREFERENCE.

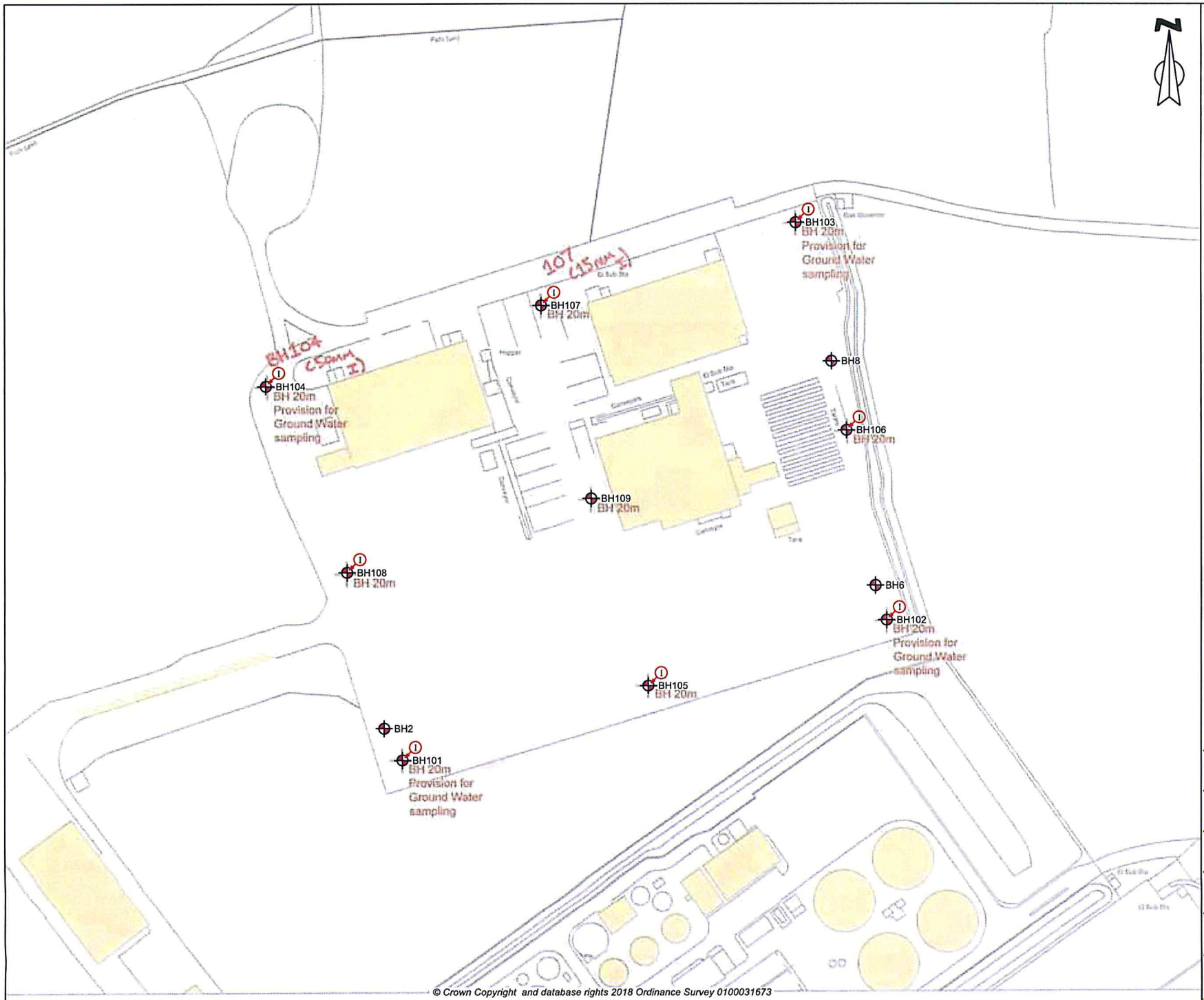
Key

- Planning Application Boundary
- -1.5m Lowered Area
- Extent of bunding
- Fencing Line
- Pastel Blue Block Paving Symbolising Path of Old Canal
- Indicative Landscaping

PROJECT	FORD CIRCULAR TECHNOLOGY PARK
DRAWING	Proposed Site Layout
FOR PLANNING	- 21/03/16 Issued for planning
1:500@A1 SCALE	21/03/16 DATE
1404 PL106 DWG. NO.	- REVISION

GSDA
GARRY STEWART DESIGN ASSOCIATES
Highlands House, Office 300A, 165 The Broadway, Wimbledon, London, SW19 1NE
T. 020 8544 8085

APPENDIX B
HISTORICAL REPORT PLAN



Key

- Boreholes Location (BH) (BH101 - BH109, BH2, BH6, BH8)
- Borehole Installation (I)

enzygo environmental consultants

Samuel House, 5 Fox Valley Way, Stocksbridge, Sheffield, S36 2AA

CLIENT: Grundon Waste management Ltd		
SCALE: NTS		PROJECT REF: CRM.049.009
DRAWN: NP	CHECKED: RH	DATE: Jan 2018
PROJECT: Arundel		
TITLE: Site Location Plan		
FIGURE NO: CRM.049.009.GE.D.001		

Key

- Site Boundary
- Trial Pit Location (HP) (TP1 - TP8)
- Borehole Location (BH) (BH1 - BH8)
- Borehole Installation (I)

enzygo environmental consultants

STEP Business Centre, Wortley Rd, Sheffield, S36 2UH

CLIENT: Grunden Waste Management Ltd

SCALE: 1:1,000@A3

PROJECT REF: CRM.049.009

DRAWN: MG

CHECKED: RH

DATE: Sept 2015

PROJECT: Ford Arundel

TITLE: Site Location Plan

FIGURE NO: CRM.049.009.GE.D.001