Hornsea Project Three
Offshore Wind Farm

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Offshore Wind Farm

Environmental Statement:
Volume 6, Annex 1.4 – Water Framework Directive Groundwater Assessment

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Hornsea 3
Offshore Wind Farm

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Environmental Impact Assessment

Environmental Statement

Volume 6

Annex 1.4 – Water Framework Directive Groundwater Assessment

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Acronyms

Acronym	Description
AOD	Above Ordnance Datum
BGS	British Geological Society
CoCP	Code of Construction Practice
EA	Environment Agency
HDD	Horizontal Directional Drilling
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
SPZ	Source Protection Zone
TJB	Transition Joint Bay
UKTAG	UK Technical Advisory Group
WFD	Water Framework Directive

Units

Unit	Description
m	Metre (distance)
km	Kilometre (distance)

1. Introduction

1.1 Background

1.1.1.1 This annex sets out the Water Framework Directive (WFD) Groundwater Assessment for Hornsea Three. It covers the Hornsea Three geology and ground conditions study area (as defined in volume 3, chapter 1: Geology and Ground Conditions).

1.1.1.2 The baseline data presented in volume 3, chapter 1: Geology and Ground Conditions provides the relevant information for this WFD compliance assessment which demonstrates how any impact on WFD receptors caused by the different activities associated with Hornsea Three fits with the objectives of any affected WFD groundwater bodies.

1.1.1.3 A WFD assessment for surface water is presented in annex 2.5: Water Framework Directive Surface Water Assessment and WFD for coastal waters is presented in volume 5, annex 2.2: Water Framework Directive Assessment.

1.2 WFD groundwater assessment scope

1.2.1.1 A WFD compliance assessment reviews proposed construction activities against their potential impacts on nearby waterbodies. All relevant activities are assessed for potential impacts from priority substances as well biological, physico-chemical or hydromorphological impacts on surface water bodies, and their potential to influence pollution of, or levels within groundwater bodies. As a minimum, activities must not lead to a deterioration of current WFD status. Where the assessment identifies a potential negative impact, suitable mitigation must be proposed.

1.2.1.2 The scope of this WFD compliance assessment is therefore to appraise the potential effects on the quality elements of water bodies through specific actions associated with the onshore elements of Hornsea Three (namely the Hornsea Three landfall, onshore cable corridor, onshore HVAC booster station and HVDC converter/HVAC substation) together with compounds, storage areas and access roads.

1.3 Report structure

1.3.1.1 The annex structure is as follows:

- Section 2 identifies the sources of information that have been used in the WFD groundwater assessment;
- Section 3 sets out the relevant legislation and guidance;
- Section 4 summarises the onshore elements of Hornsea Three which could have the potential to impact on the objectives of the WFD;
- Section 5 identifies the WFD groundwater units within the Hornsea Three geology and ground conditions study area and their WFD objectives;
- Section 6 sets out the WFD groundwater assessment; and
- Section 7 provides a summary.

2. Information Sources

2.1.1.1 The information used in the preparation of this annex is set out in Table 2.1.

Table 2.1: Information sources consulted in the preparation of the groundwater assessment

Source	Data	Information consulted/provided
Ordnance Survey (OS).	OS Mapping 1: 50 000 Sheet 133: north east Norfolk.	Area information, rivers and other watercourses, general site environs, built environment, catchment information.
	OS Mapping 1: 50 000 Sheet 134: Norwich & The Broads.	
British Geological Survey (BGS)	BGS 1:50,000 and 1: 10,000 digital geological mapping.	Superficial geology and bedrock.
	Borehole logs.	Records of geology and depth of groundwater (where encountered).
Environment Agency (EA)	EA catchment data explorer.	Water body classification, overall status, ecological status, biological elements, physico-chemical elements, hydro-morphology and chemical classification.
		WFD objectives for groundwater bodies.
	Anglican River Basin Management Plan.	Overview of the River Basin District and programme of measures.
	Data from EA regional Office.	• Current maintenance regime; • Source Protection Zones (SPZs) (1 & 2) and groundwater quality issues; • Location of abstractions; and • Groundwater levels (data and issues).

2.1.1.2 The assessment has been undertaken using publicly available information and groundwater level data supplied by the EA, where available. No site specific monitoring data along the route has been obtained at this stage, however the available data is considered sufficient to undertake the assessment.

3. Legislation and Guidance

3.1 The Water Framework Directive

3.1.1.1 The WFD establishes a legal framework to *"protect and restore clean water across Europe and ensure its long-term, sustainable use"*. It aims to establish an integrated approach to the management of all freshwater surface water bodies, groundwaters, transitional (estuarine) and coastal waters. The WFD became part of UK law in 2003.

3.1.1.2 The overall requirement of the WFD is that all waterbodies must achieve "Good Status" by 2027 unless there are grounds for derogation. It also requires that environmental objectives be set for all waterbodies to either maintain Good Status, or to move towards Good Status if a waterbody is currently failing to meet its target.

3.1.1.3 The Environmental Objectives taken from Article 4 of the WFD, revised in 2017 for groundwater bodies, are listed below:

- Prevent deterioration of the status of each body of groundwater;
- Prevent or limit the input of pollutants into groundwater;
- Protect, enhance and restore each body of groundwater, and ensure a balance between abstraction and recharge of groundwater, with the aim of achieving good groundwater chemical status and good groundwater quantitative status, if not already achieved, by 22 December 2021; and
- Reverse any significant and sustained upward trend in the concentration of any pollutant resulting from the impact of human activity in order to progressively reduce pollution of groundwater.

3.2 Groundwater quality objectives

3.2.1.1 Groundwater is defined by the WFD as *"all water which is below the surface or the ground in the saturated zone and in direct contact with the ground or subsoils"*. However, pore waters in low permeability subsoils do not represent groundwater as a receptor as they do not provide a useful water resource. Therefore, water in these deposits are not subject to the same management objectives. Groundwater management considers groundwater in relation to its use as a water supply (both in terms of sustainable yield and quality) and its interactions with surface water and wetlands.

3.2.1.2 The WFD contains a number of environmental objectives for groundwater quality, namely:

- To implement measures to prevent or limit the input of pollutants into groundwater;
- To prevent deterioration of groundwater;
- Achieve 'Good groundwater status' within 15 years of the Directive coming into force, except under certain special circumstances;
- To implement measures to reverse any significant and sustained upward trend in the concentration of any pollutant resulting from the impact of human activity in order to progressively reduce the pollution of groundwater; and
- To ensure compliance with the relevant standards and objectives for protected areas (Drinking Water Protected Areas and Nitrate Vulnerable Zones) within 15 years of Directive implementation.

3.2.1.3 Groundwater bodies are classified according to both their quantitative and chemical status, but have only two status classes (Good or Poor). Quantitative status measures the degree to which a body of groundwater is affected by direct and indirect abstractions (i.e. the available groundwater resource must not be exceeded by the long-term annual average rate of abstraction). Groundwater abstraction must also not cause failure of 'Good' ecological status in dependent surface waters. Chemical status is measured by reference to the concentration of specified pollutants and electrical conductivity.

3.2.1.4 Good status for groundwater involves meeting a series of conditions defined in Annex V of the WFD. These conditions are described in more detail in the UK Technical Advisory Group's (UKTAG) 'Environmental standards for use in classification and the Programme of Measures for the Water Framework Directive' (UKTAG, 2005).

3.2.1.5 A Poor chemical status is based on the groundwater body containing elevated concentrations of specified contaminants, an associated surface water body fails the standard good status where the source is the groundwater body, and deterioration in the quality of water within a drinking water protected area.

3.2.1.6 A Poor quantitative status is based on:

- Significant and sustained upward trend in electrical conductivity indicating saline intrusion or a significant and sustained upward trend in the concentration of indicators of other intrusions of pollutants;
- Evidence that intrusions of pollutants have rendered abstractions unsuitable for use without purification treatment;
- There is evidence of significant damage to a wetland caused by insufficient water availability;
- Groundwater abstraction exceeds either the available resource within the groundwater body or the supported flows; and
- Where 20% of the groundwater body being assessed has surface water bodies that are prevented from maintaining or achieving the target status class.

3.2.1.7 The methodology used for this assessment has been taken from the EA document 'Assessing new modifications for compliance with WFD: detailed supplementary guidance' (Environment Agency, 2010). This follows an eight-step process which is illustrated in Figure 3.1 below.

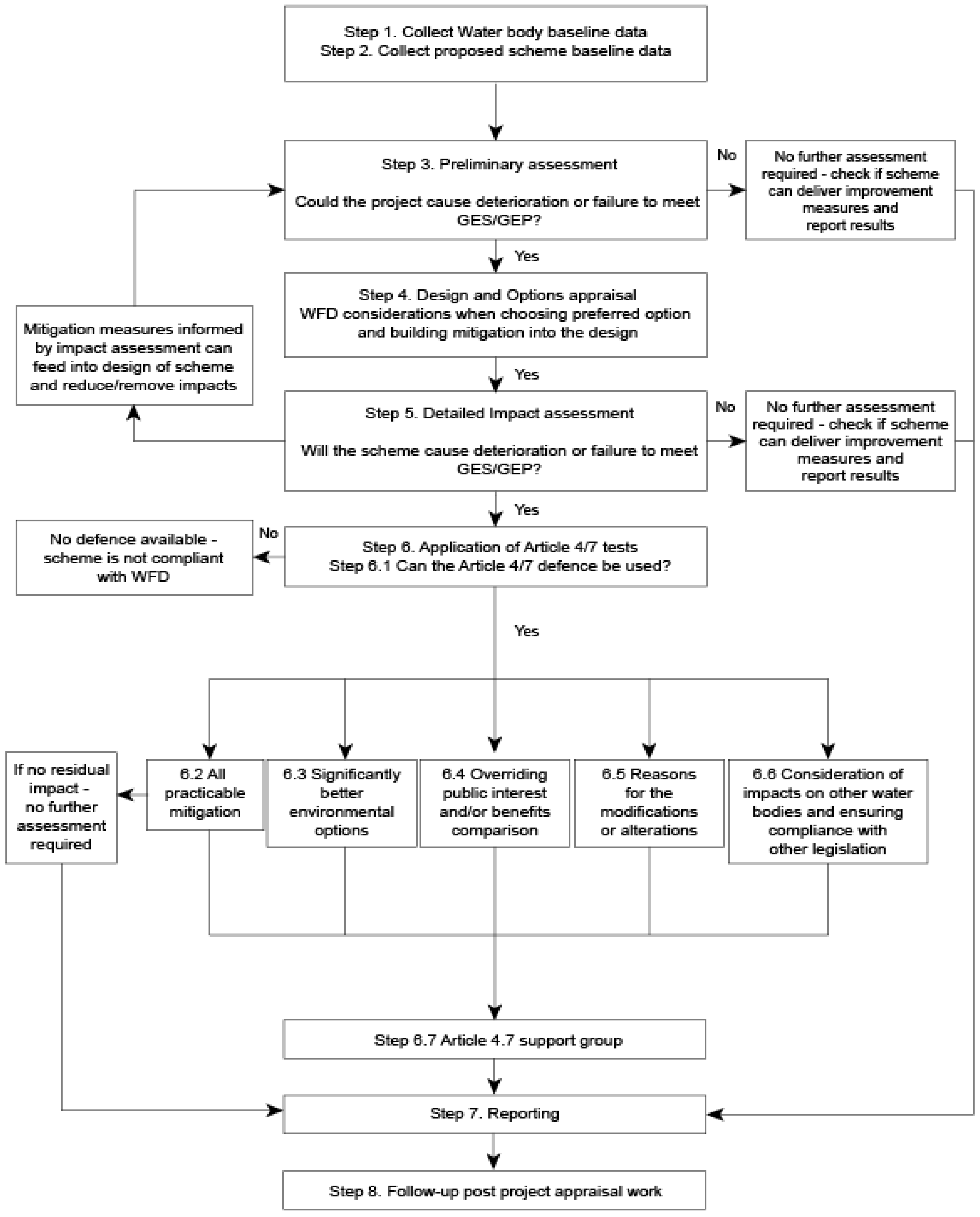


Figure 3.1: WFD Methodology.

4. Project Description

4.1 Project components with potential to impact of WFD objectives

4.1.1.1 The components of Hornsea Three that have the potential to impact on the WFD objectives are summarised below. A description of these components is provided in volume 1, chapter 3: Project Description.

- Hornsea Three landfall area;
- Hornsea Three onshore cable corridor;
- Joint Bays and link boxes;
- Crossings (e.g. of roads, watercourses, infrastructure);
- Access routes;
- Construction compounds;
- Onshore HVAC booster station;
- Onshore HVDC converter/HVAC substation; and
- Connection to Norwich Main National Grid.

4.2 Activity type

4.2.1.1 Based on the onshore elements of Hornsea Three outlined above, the activity types which have been considered to have potential to impact the achievement of the WFD objectives have been identified for consideration within this WFD Compliance Assessment. The following activity types are considered to potentially pose detriment risk to the water environment in the absence of mitigation:

- Topsoil stripping, excavation and stockpiled earth (including reinstatement);
- Use of oils, chemicals and cement in the vicinity of open water;
- Construction of above ground infrastructure (i.e. the HVAC booster station and HVDC converter/HVAC substation;
- Construction and use of temporary bridges and culverts;
- Watercourse crossings (Horizontal Directional Drilling (HDD) or open cut);
- Construction and use of construction compounds; and
- Construction and use of temporary access roads.

4.2.1.2 The Hornsea Three onshore cable will be installed using both open trench and HDD techniques. Given that each technique has the potential to result in different impacts, the assessment presented in this annex assesses the potential impacts of both techniques. The onshore HVAC booster station and HVDC converter/HVAC substation are anticipated to be constructed using shallow foundations. However, localised ground conditions may dictate that deeper foundations could be required. The HVAC booster station will also comprise a 5 m deep basement area.

4.2.1.3 HDD techniques will be utilised to cross main rivers and the majority of ordinary watercourses, as well as some other infrastructure. At these locations, a site specific investigation will be carried out at detailed design stage, to identify the local ground and groundwater conditions and enable a site specific hydrogeological risk assessment to be undertaken. The HDD will use bentonite as a lubricant and will use grout as a backfill along the sections. Bentonite and grout are both alkaline and pose potential risks to aquatic flora and fauna if they enter watercourses. The use of bentonite and grout will be controlled by a method statement and breakout management plan to minimise risks of leaks.

5. Baseline Environment

5.1.1.1 The Hornsea Three geology and ground conditions study area is located within the Anglian River Basin District. Each river basin district is required to prepare a river basin management plan which provides a framework for protecting and enhancing the benefits provided by the water environment.

5.1.1.2 The groundwater bodies within the Hornsea Three geology and ground conditions study area are the North Norfolk Chalk Unit (reference GB40501, G400100) and the Broadland Rivers Chalk and Crag Unit (GB40501, G400300). The most recent WFD data available for these groundwater bodies (2016) are provided in Table 5.1 and Table 5.2.

Table 5.1: WFD data (2016) for North Norfolk Chalk Unit.

Criteria	Classification
Waterbody ID	GB40501, G400100
Current chemical quality	Poor
Chemical Dependent Surface Water Body Status	Good
Chemical Drinking Water Protected Area	Good
Current quantitative quality	Good
Quantitative Dependent Surface Water Body Status	Good
Quantitative Water Balance	Good
Current overall quality	Poor
Trend Assessment	Upward trend

Table 5.2: WFD data (2016) for Broadland Rivers Chalk and Crag Unit

Criteria	Classification
Waterbody ID	GB40501, G400300
Current chemical quality	Poor
Chemical Dependent Surface Water Body Status	Good
Chemical Drinking Water Protected Area	Poor
Current quantitative quality	Poor
Quantitative Dependent Surface Water Body Status	Good
Quantitative Water Balance	Good
Current overall quality	Poor
Trend Assessment	Upward trend

6. Water Framework Directive Groundwater Assessment

6.1 North Norfolk Chalk Unit

6.1.1.1 As shown in Table 5.1, this groundwater body currently has a good quantitative status from the water balance test, however, the overall status and chemical status are recorded as poor.

6.1.1.2 The Hydrogeological Map of North East Anglia, Sheet 1, Regional Hydrological Characteristics and Explanatory Notes (BGS, 1976a), indicates that the estimated groundwater levels (or pressure surface) is between 0 m above ordnance datum (AOD) near the coast, to 50 m AOD inland. The surface contours of the chalk, beneath any superficial deposits, are indicated as between 0 m AOD and 10 m AOD, based on the Hydrogeological Map of North East Anglia, Sheet 2 Chalk, Crag and Lower Cretaceous Sands: Geological Structure (BGS, 1976b).

6.1.1.3 Superficial deposits are mapped across the site area from the Hornsea Three landfall area, along the entire length of the onshore cable corridor. These superficial deposits are likely to be at least 2 m thick and in places are anticipated to be of significant thickness. More details regarding the superficial deposits are given in section 1.7.3 of volume 3, chapter 1: Geology and Ground Conditions.

6.1.1.4 Given that the anticipated depth of the Hornsea Three onshore cable corridor will be up to 2.5 m along the length (excluding the immediate landfall area) it is likely to be constructed within the superficial deposits, and therefore will not be within the principal chalk aquifer at depth. No dewatering of, or discharges into, the principal aquifer are anticipated.

6.1.1.5 There are some locations where HDD is proposed that may be constructed deeper than 2.5 m to allow for the crossing of infrastructure and watercourses. At these locations, there is a potential that localised perched pockets of shallow groundwater maybe encountered. The HDD will be carried out in line with a method statement (to be prepared during detailed design) and measures within the Outline Code of Construction Practice (CoCP) to minimise the risk to shallow groundwater. However, there remains a potential risk that a bentonite 'breakout' will occur. This is where bentonite and water escape the confines of the drilling run. A bentonite breakout plan is included in the Outline CoCP which would be implemented should a bentonite breakout occur such that the impact of any escape would be localised in extent and recovery time will be short. Therefore, the potential impact associated with the HDD on the overall groundwater bodies is considered to be negligible.

6.1.1.6 The offshore cables are to be connected to the onshore cables at Transition Joint Bays (TJBs) within the landfall area immediately adjacent to the coast at Weybourne Hope. These are pits dug and lined with concrete in which the joining takes place, the cables are then covered and the land reinstated. It is anticipated that the cables will then be continued in land using a combination of open cut trenching and HDD. The cable depth in this area may potentially be deeper than the remaining length of the cable to allow for the change in topography in this area. Given the anticipated ground conditions in the vicinity of landfall area it is assumed that the cables will be situated within the superficial deposits and within the unsaturated zone, however, this will be confirmed by site specific investigation.

6.1.1.7 Localised dewatering of open trenching maybe required if the TJBs and cables are placed within the localised groundwater, in particular if the groundwater is influenced by the tidal regime. However, the effects of dewatering are considered to be over a short timescale and highly reversible.

6.1.1.8 The presence of concrete at the TJB, if placed within the shallower groundwater, will have a localised effect on groundwater flow. However, as groundwater flow is anticipated to flow towards the coast, this limited spatial effect will be negligible.

6.1.1.9 The construction methods for the landfall will be carried out in line with a method statement (to be prepared during detailed design) and conditions within the Outline CoCP. Therefore, the potential impact associated with the HDD on the overall groundwater bodies is considered to be negligible.

6.1.1.10 To minimise the potential thermal impacts from the onshore cables on groundwater bodies, the cables will be placed within a thermally stabilised layer within the trench. This will reduce the transfer of heat through the soils, with thermal impacts undetectable at distances of 1.2 m from the cables. Given the depth of the onshore cable corridor, it is anticipated that only localised shallow groundwater may be encountered and therefore, any thermal impacts on groundwater would be localised in extent. The potential thermal impact of the onshore cable corridor is considered to be negligible.

6.1.1.11 During the decommissioning phase, minimal disturbance is likely to occur as this will involve the cables being cut, sealed and left in situ. However, the structure of the link boxes may be removed where feasible. Such disturbances will be localised and the impact is considered to be negligible.

6.1.1.12 Measures to control and manage potential impacts to groundwater during the construction process are set out in the Outline CoCP, which accompanies the Development Consent Order Application. Measures to minimise impacts during the decommissioning phase will be set out in a decommissioning plan. On that basis, the potential risk to the water balance of the groundwater body is considered to be negligible.

6.1.1.13 No EA monitoring locations of this chalk unit were located within the Hornsea Three geology and ground conditions study area, therefore there is no groundwater level data for this part of the Hornsea Three onshore cable corridor.

6.2 Broadland Rivers Chalk and Crag Unit

6.2.1.1 As shown in Table 5.2 this groundwater body currently has a good quantitative status from the water balance test. However, the overall quantitative status and chemical status are recorded as poor.

6.2.1.2 The Hydrogeological Map of North East Anglia, Sheet 1, Regional Hydrological Characteristics and Explanatory Notes (BGS, 1976a), indicates that the estimated groundwater levels or pressure surface is between 5 m AOD and 50 m AOD along the Hornsea Three onshore cable corridor. The surface contours of the chalk, beneath any superficial deposits, are indicated as between 0 m AOD and 10 m AOD, based on the Hydrogeological Map of North East Anglia, Sheet 2, Chalk, Crag and Lower Cretaceous Sands: Geological Structure (BGS, 1976b).

6.2.1.3 The EA has supplied the groundwater level monitoring for boreholes within proximity of the Hornsea Three geology and ground conditions study area (see Appendix A). The data includes the results of a monitoring programme carried out from 1996 until 2017. However, not all monitoring locations have been monitored over that period. In addition, in two of the deeper boreholes the monitoring installation may have been damaged as the results are recorded consistently at ground level where they were previously recorded at depths of greater than 15 m. The data from these two locations has been discounted.

6.2.1.4 The response zone depths for the monitoring locations are recorded. For the majority of these locations, the strata for which the response zone relate is not recorded. Therefore, this has been interpreted as far as possible on the available information.

6.2.1.5 In several locations, a positive groundwater level is recorded, and is shown as a negative value in the dip column of the data. It is unclear how the EA have recorded positive elevation in water levels of up to 4 m. These data entries are considered erroneous.

6.2.1.6 An assessment of the data appears to show two distinct groundwater bodies:

- Shallow groundwater at depths from ground level to 4.9 m below ground level were recorded within close proximity (within 100m of the Hornsea Three geology and ground conditions study area) to the west of the Hornsea Three onshore cable corridor; and
- Groundwater in the east with groundwater levels of 11.5 – 25.97 m below ground level.

6.2.1.7 From an assessment of the anticipated ground conditions in the vicinity of the monitoring locations, the shallower groundwater body is likely to relate to groundwater within the superficial deposits whilst the deeper groundwater recorded is likely to relate to the underlying chalk aquifer.

6.2.1.8 Superficial deposits are mapped from the Hornsea Three landfall area, along the entire length of the onshore cable corridor. These superficial deposits are likely to be at least 2 m thick and in places to be of greater thickness. More details regarding the superficial deposits are given in section 1.7.3 of volume 3, chapter 1: Geology and Ground Conditions.

6.2.1.9 Given the anticipated depth of the cable trenches will be up to 2.5 m, it is likely the trenches would be constructed mainly within the superficial deposits although in some places may be situated within the shallow groundwater table. In addition to this, there are some locations where HDD is proposed that may be taken to slightly greater depth to allow for the crossing of infrastructure and watercourses. However, the HDDs will be carried out in line with a method statement (to be prepared during detailed design) and conditions within the Outline CoCP (document reference A8.5). Furthermore, the Outline CoCP sets out measures which would be implemented should a bentonite ‘breakout’ occur such that the impact of any such escape would be localised in extent and recovery time will be short. Therefore, the potential impact associated with the HDD on the overall groundwater bodies is considered to be negligible.

6.2.1.10 It is anticipated that construction will not be within the chalk bedrock, and based on the depths of the deeper groundwater recorded by the EA monitoring, construction will not be within the principal chalk aquifer. Given the variable nature of the superficial deposits, both vertically and laterally, the shallow groundwater bodies are likely to be local in nature and therefore it is considered the effect of the construction of the Hornsea Three onshore cable corridor on these localised groundwater bodies will be minimal.

6.2.1.11 The onshore HVAC booster station and HVDC converter/HVAC substation are anticipated to be constructed using shallow foundations, however, localised ground conditions may dictate deeper foundations maybe required. It is understood that the HVAC booster station will also comprise a 5 m deep basement area. Based on available information on ground conditions in the vicinity of the HVAC booster station, it is anticipated that the 5 m deep basement will be founded within the cohesive superficial deposits and above the groundwater table.

6.2.1.12 If deeper foundations are required a site specific ground penetration risk assessment will be required to assess the potential risk to localised groundwater within the superficial deposits and would include any potential mitigation measures. The anticipated risk associated with deep foundation of the onshore HVAC booster station and HVDC converter/HVAC substation is considered to be minor.

6.2.1.13 No long-term dewatering of, or significant discharges into, either the shallow secondary aquifers or the deeper principal aquifer are anticipated. Localised dewatering of the very shallow groundwater maybe required during construction of the Hornsea Three onshore cable corridor where groundwater seepages pose a risk to trench stability, however dewatering will be kept to a minimum.

6.2.1.14 The cables will be placed within a thermally stabilised layer which will reduce the transfer of heat through the soils, with thermal impacts undetectable at distances of 1,200 mm from the cable. The depth of the cable trenches is anticipated to be such that they are not constructed within the aquifers. However, locally the cables might be within the shallow groundwater. The potential thermal impact and maintenance of the Hornsea Three onshore cable corridor is considered to be negligible.

6.2.1.15 The maintenance and operation of the onshore HVAC booster station and onshore HVDC converter/HVAC substation may result in accidental localised spilled chemicals (e.g. oils, greases, lubricants and other chemicals). The use of such materials will be managed under the management plans which will detail protocols for dealing with any spills. The potential presence of cohesive material underlying the stations will limit downward migration to the underlying principal aquifer. Therefore, the impacts of any small localised spills associated with the maintenance are considered to be negligible.

6.2.1.16 During the decommissioning phase minimal disturbance along the Hornsea Three onshore cable corridor is likely to occur as this will involve the cables being cut, sealed and left in situ. However, the structure of the jointing pits and link boxes may be removed where feasible. Such disturbances will be localised and the impact is considered to be negligible. The onshore HVAC booster station and onshore HVDC converter/HVAC substation will be removed as part of the decommissioning works and this is anticipated to include removal of the floor slab and shallow foundations up to a depth of 2.5 m. This depth has been used in the assessment based on standard practices and the costs involved with digging out deep foundations. Localised dewatering of the very shallow groundwater maybe required during these works where groundwater seepages pose a risk to trench stability, however dewatering will be kept to a minimum.

6.2.1.17 Management measures to minimise the impact on groundwater during construction are set out in the Outline CoCP. Measures to manage the impacts of decommissioning will be set out within a decommissioning plan. On the basis that the measures in the Outline CoCP will be implemented to, the potential risk to the water balance of the groundwater bodies is considered negligible.

6.2.1.18 Where the groundwater is considered to be of greater sensitivity (i.e. where the onshore cable corridor crosses SPZ1), monitoring of groundwater levels will be undertaken prior to, during and post construction where necessary. Where possible, the monitoring will be undertaken as part of the site specific investigations at HDD crossing locations in the SPZ1. Groundwater level monitoring at the SPZ1 crossing locations would be discussed with the EA.

7. Summary and Conclusions

7.1.1.1 The WFD groundwater assessment presented in this annex has shown that the construction, maintenance and decommissioning of the onshore elements of Hornsea Three will not result in deterioration of the groundwater bodies which underlay the areas affected by Hornsea Three.

7.1.1.2 Groundwater level monitoring may be undertaken in areas considered to be of high sensitivity (i.e. where the Hornsea Three onshore cable corridor crosses a SPZ1). This monitoring would be undertaken post consent during the detailed design stage, where possible as part of the site-specific geo-technical investigations to inform the design of the HDD crossings. Groundwater level monitoring at the SPZ1 crossing locations would be discussed with the EA.

8. References

British Geological Society (1976a) Hydrogeological Map of North East Anglia, Sheet 1 Hydrological Characteristics and Explanatory Notes.

British Geological Society (1976b) Hydrogeological Map of North East Anglia, 2 Chalk, Crag and Lower Cretaceous Sands: geological Structure.

Environment Agency (2010) Assessing new modifications for compliance with WFD: detailed supplementary guidance.

UKTAG (2005) Environmental standards for use in classification and the Programme of Measures for the Water Framework Directive

Appendix A Groundwater Level Monitoring

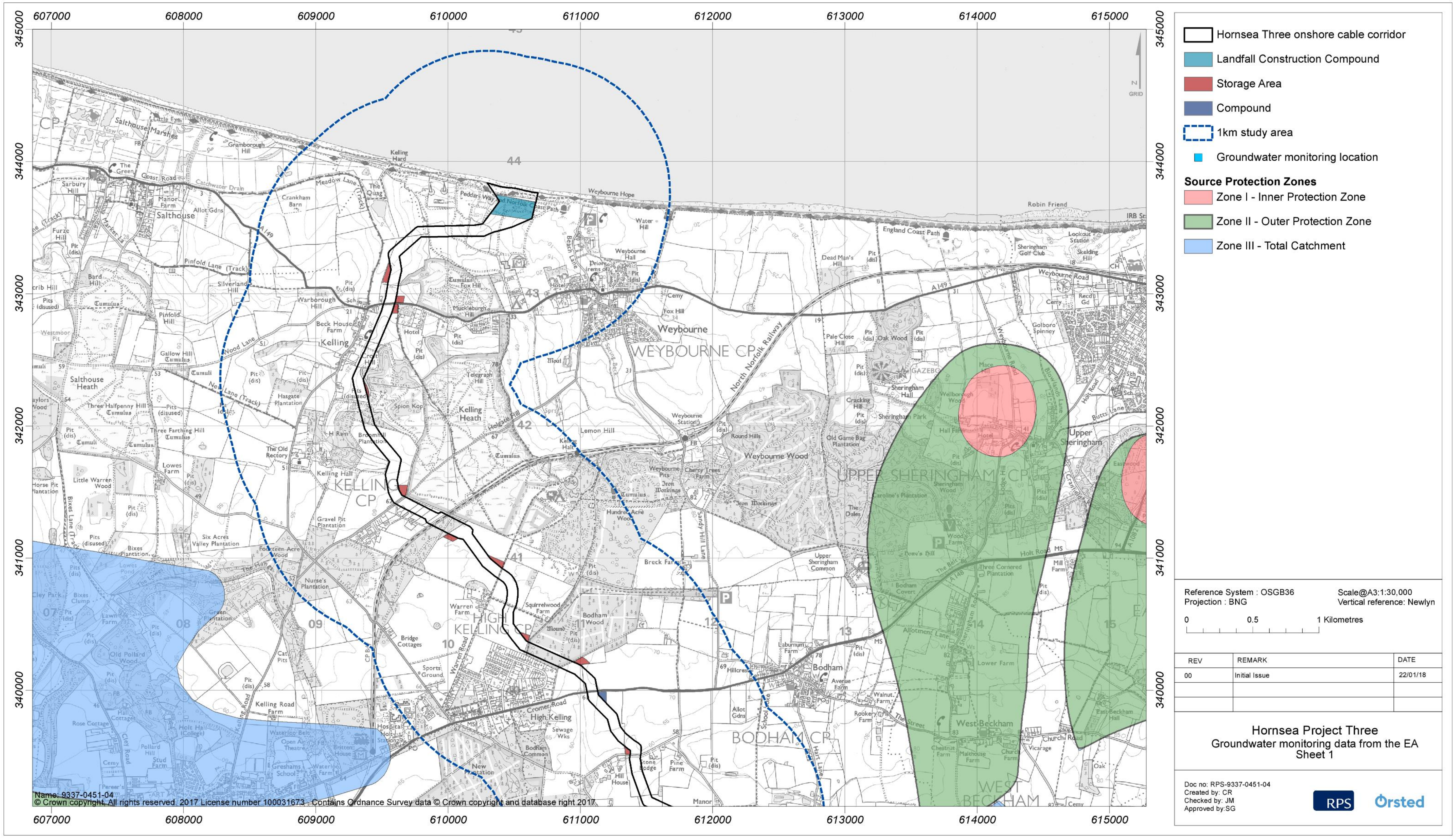
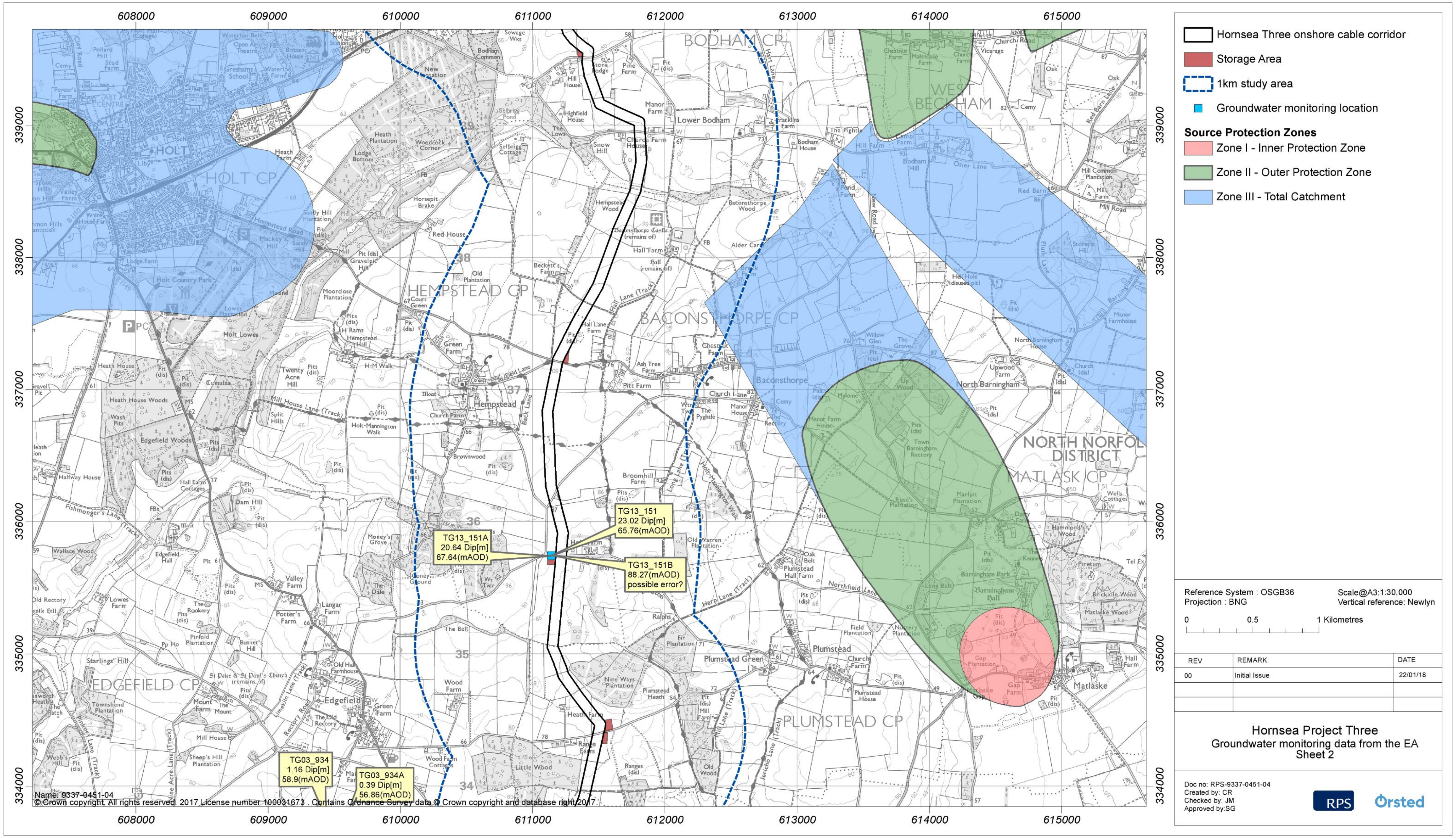


Figure A.1: Groundwater monitoring data from the EA.



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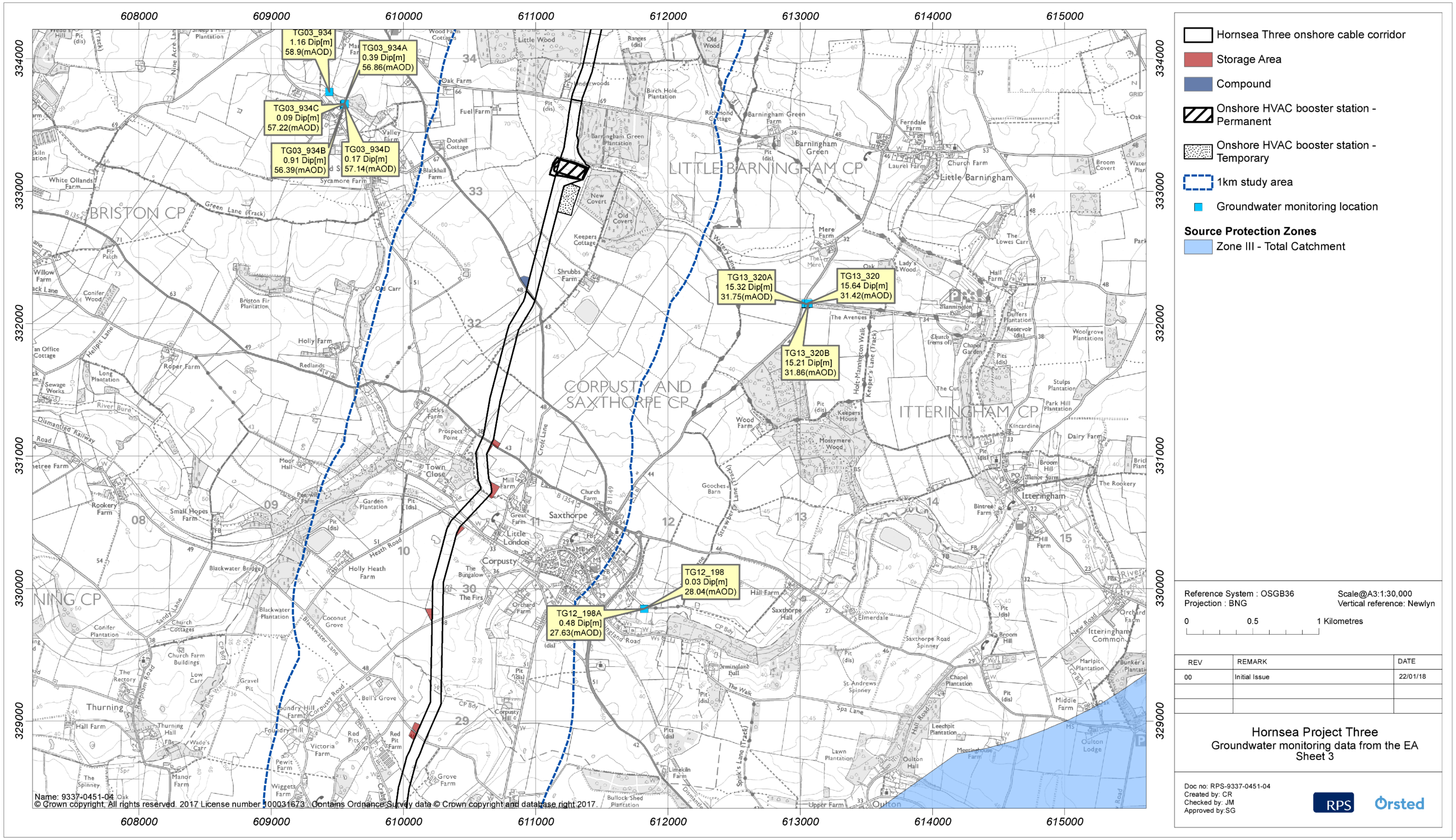

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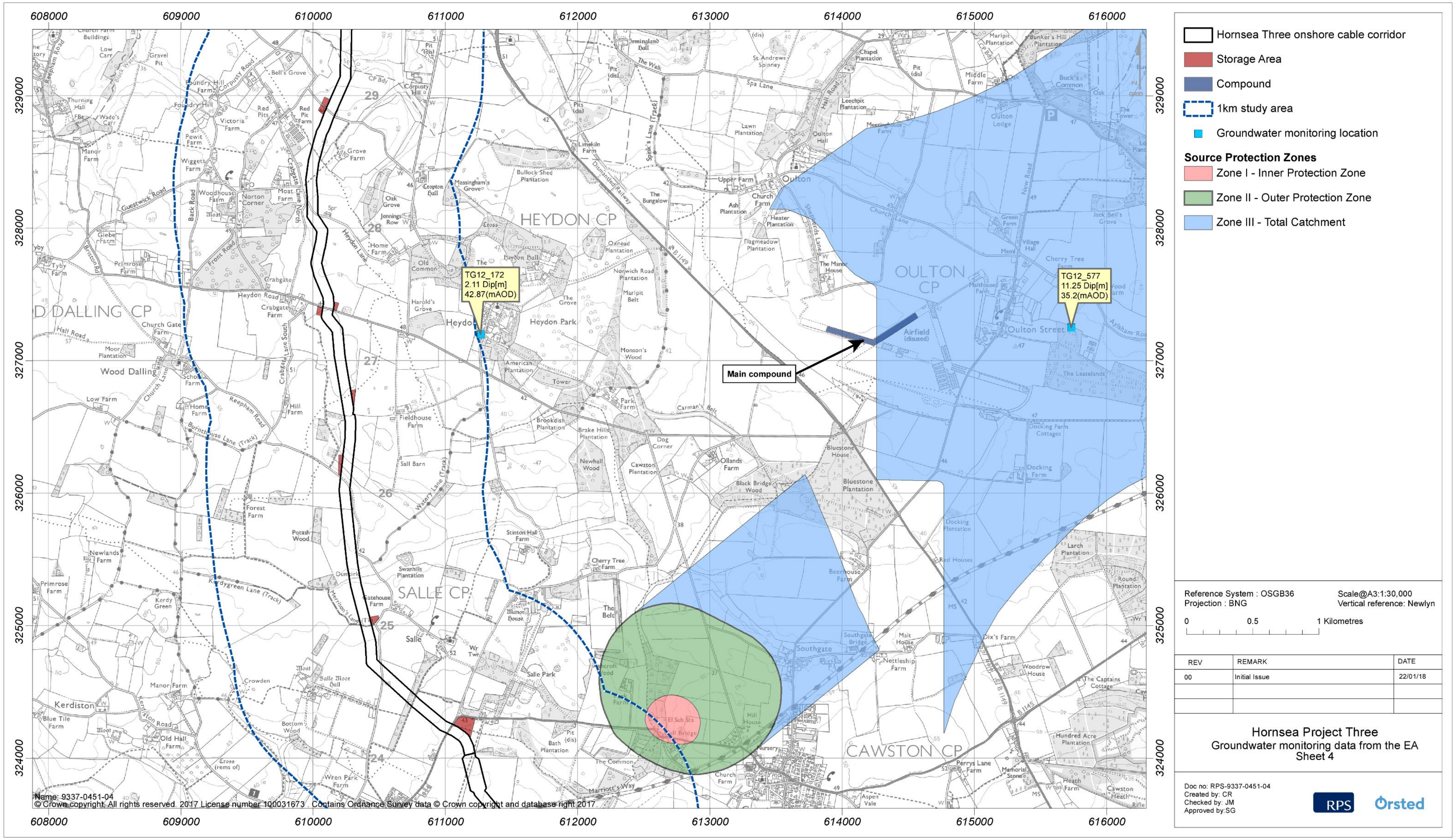

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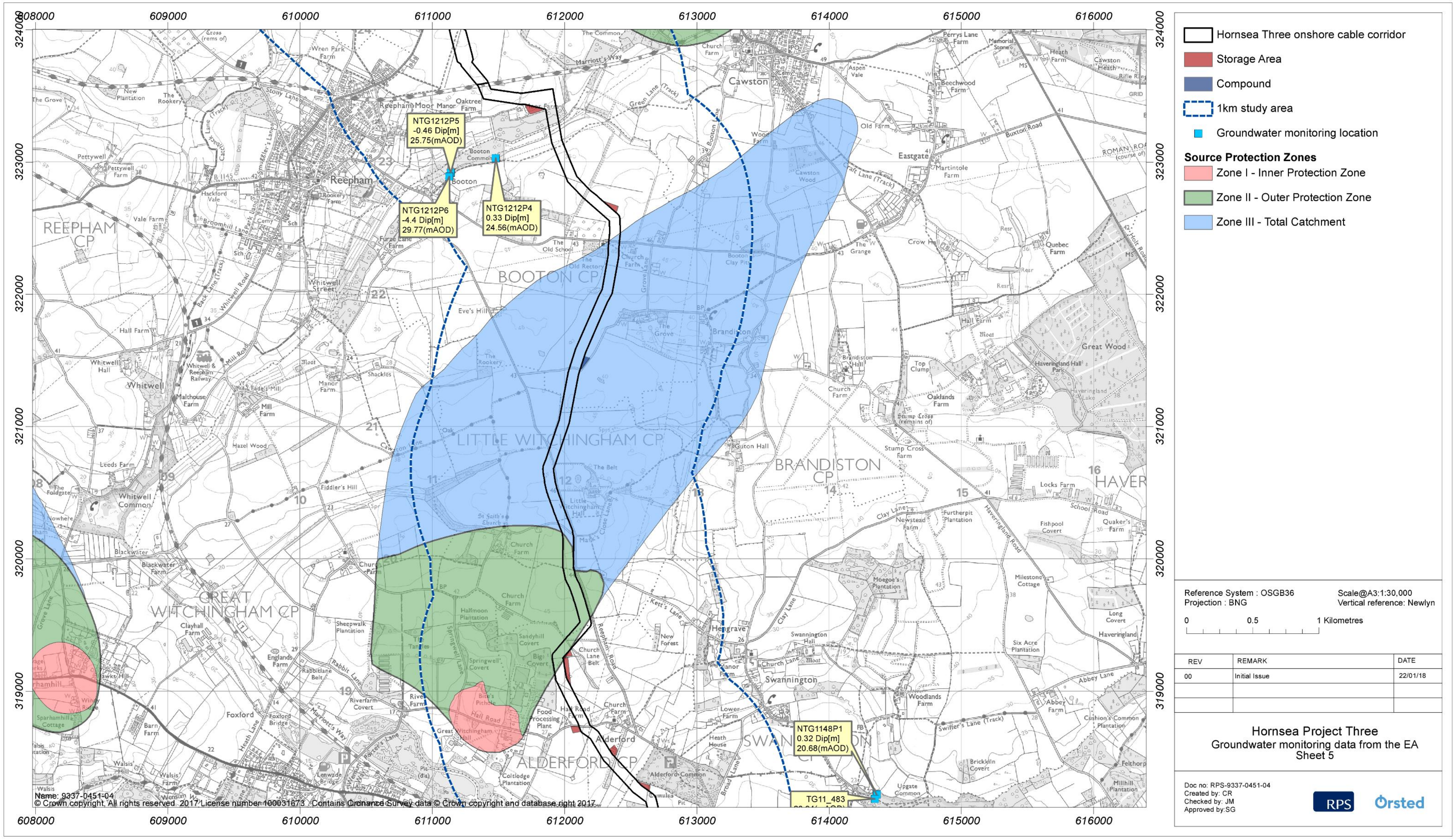

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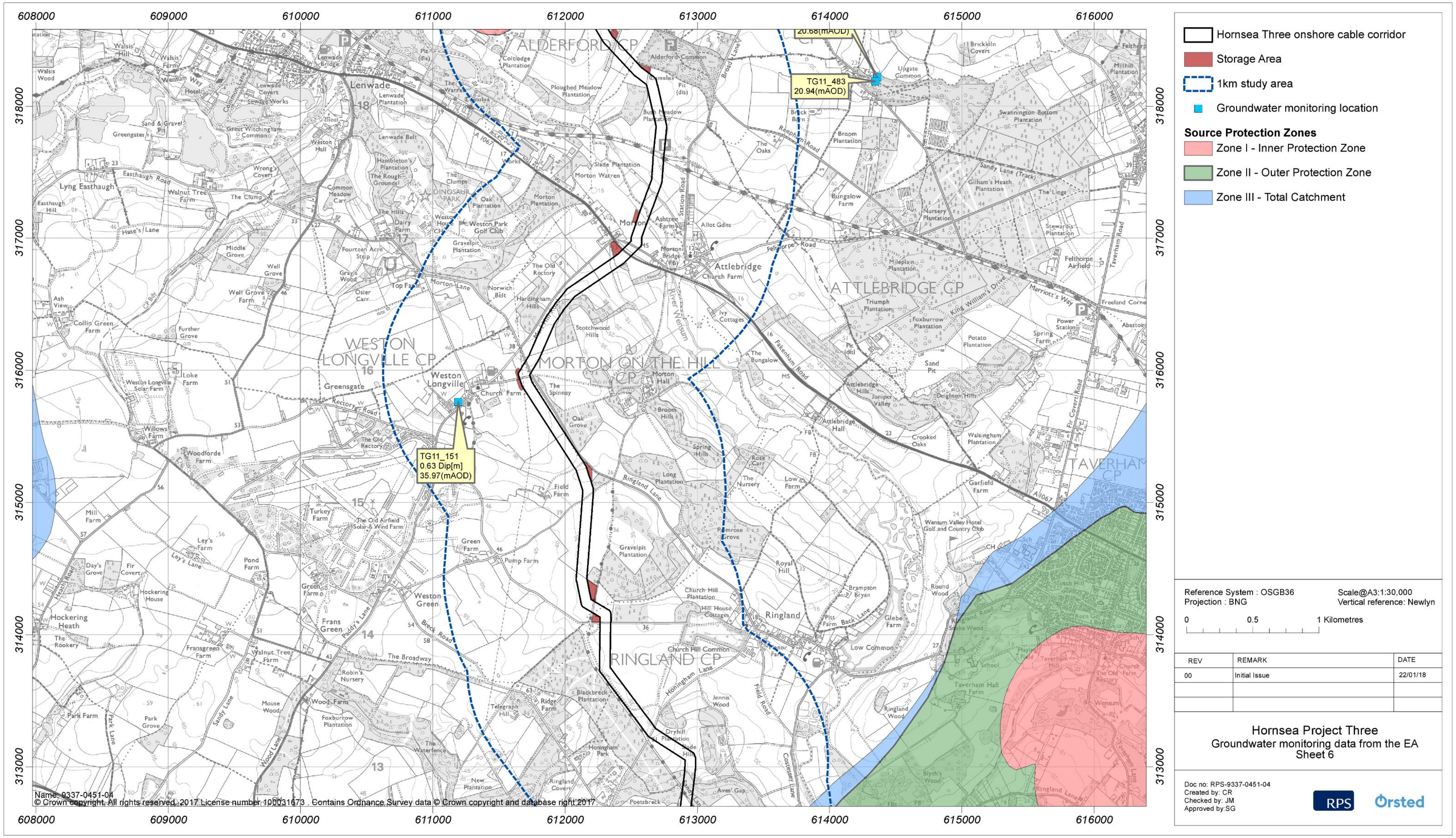

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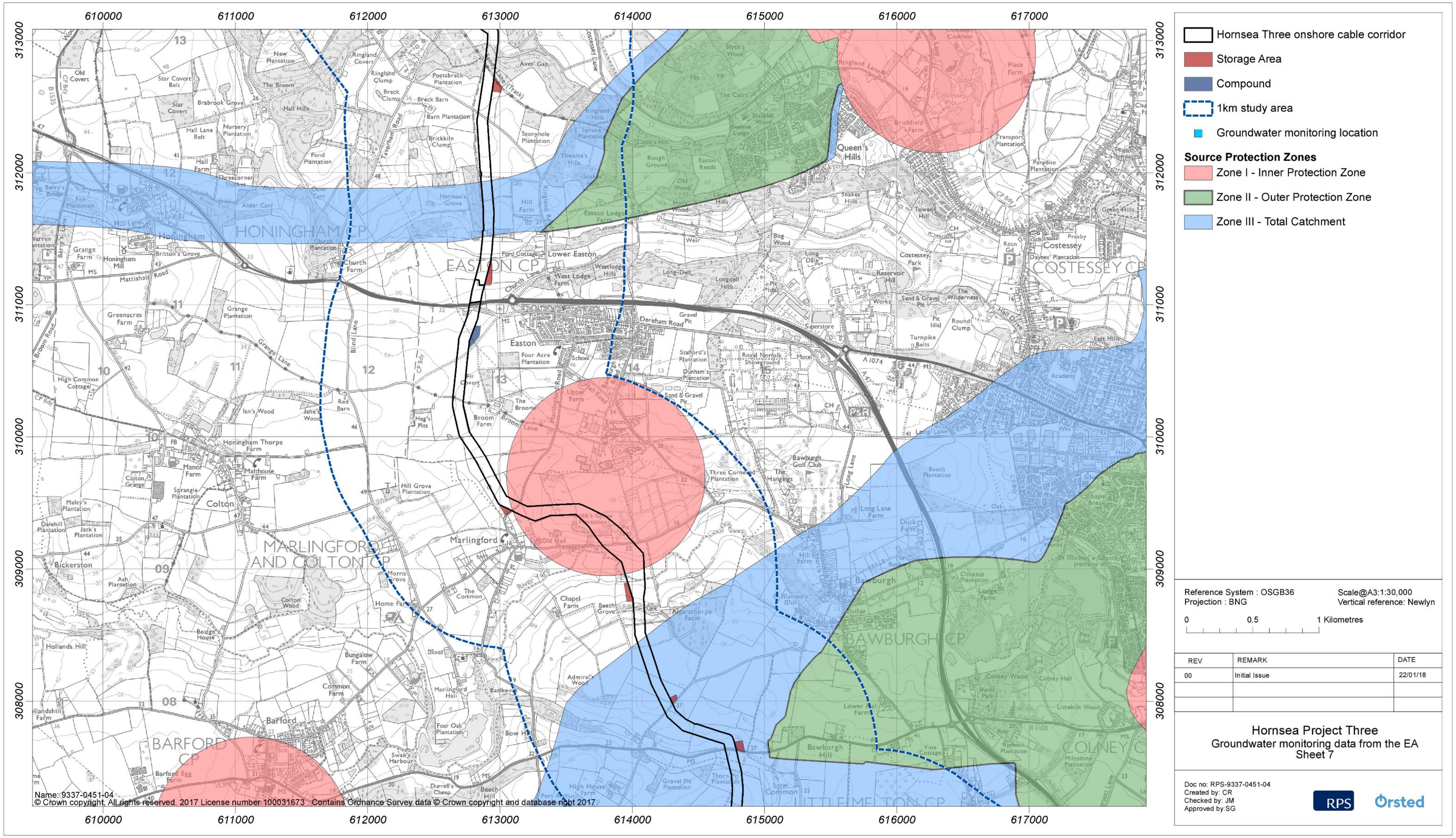

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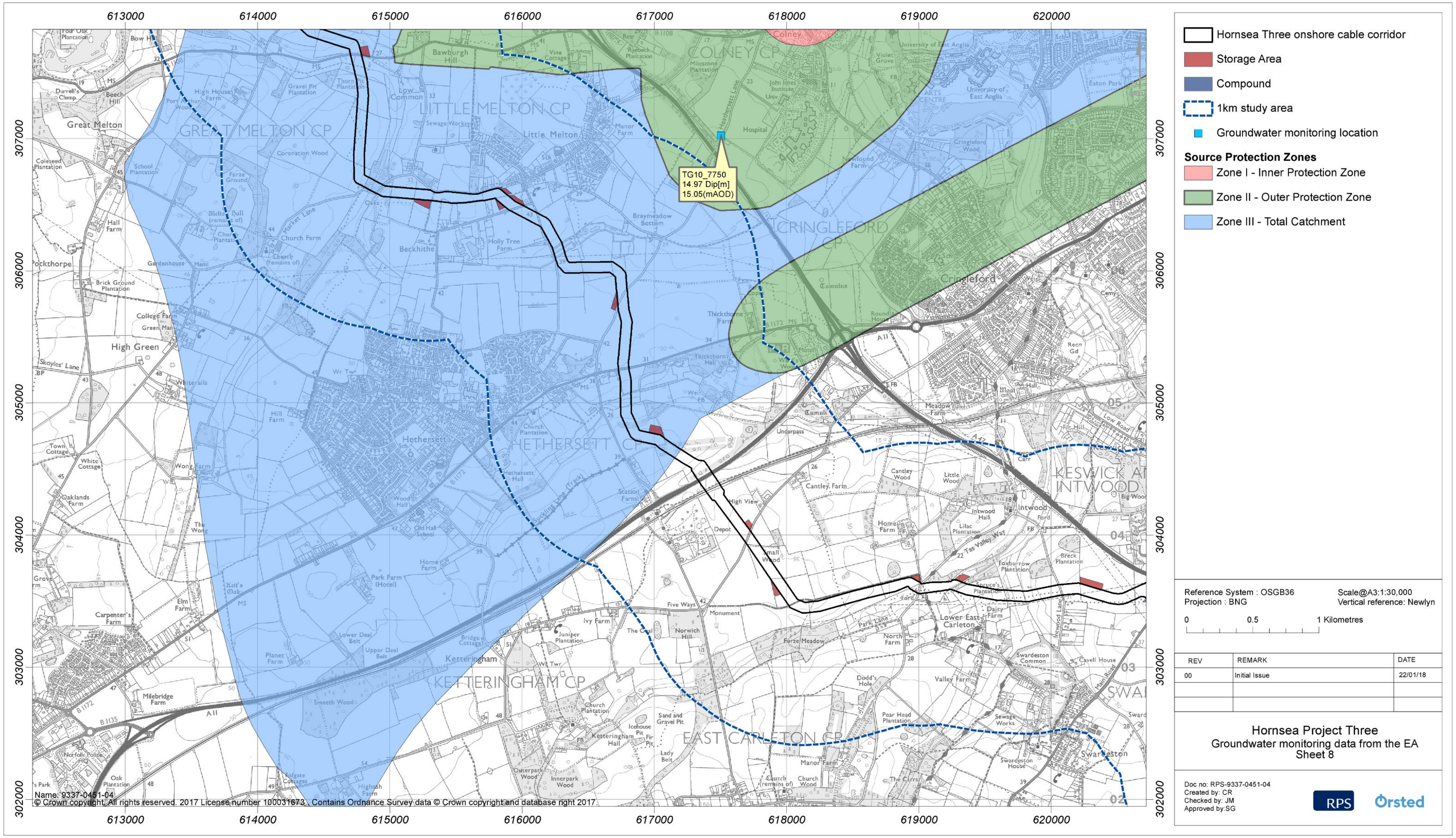

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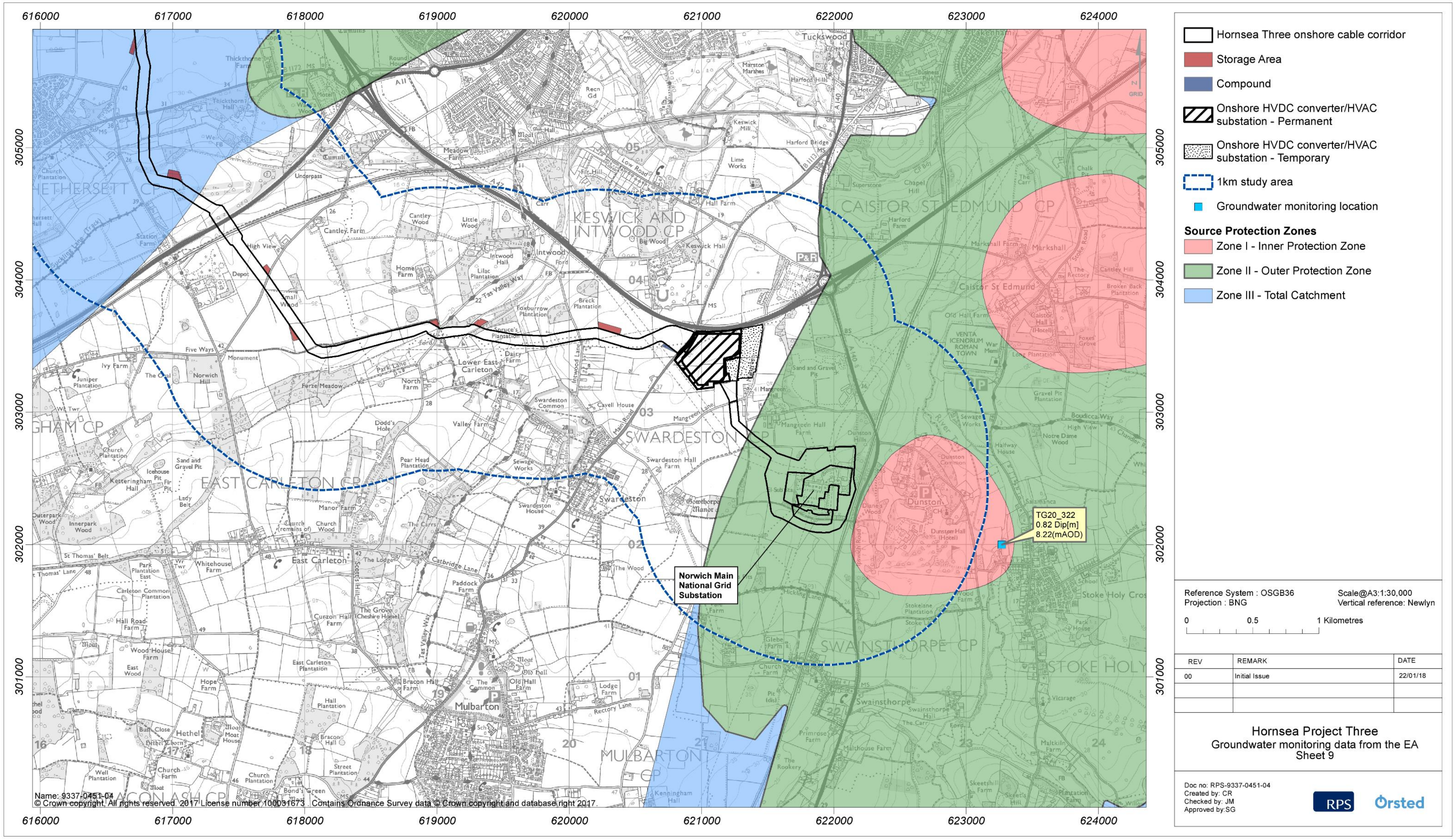

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