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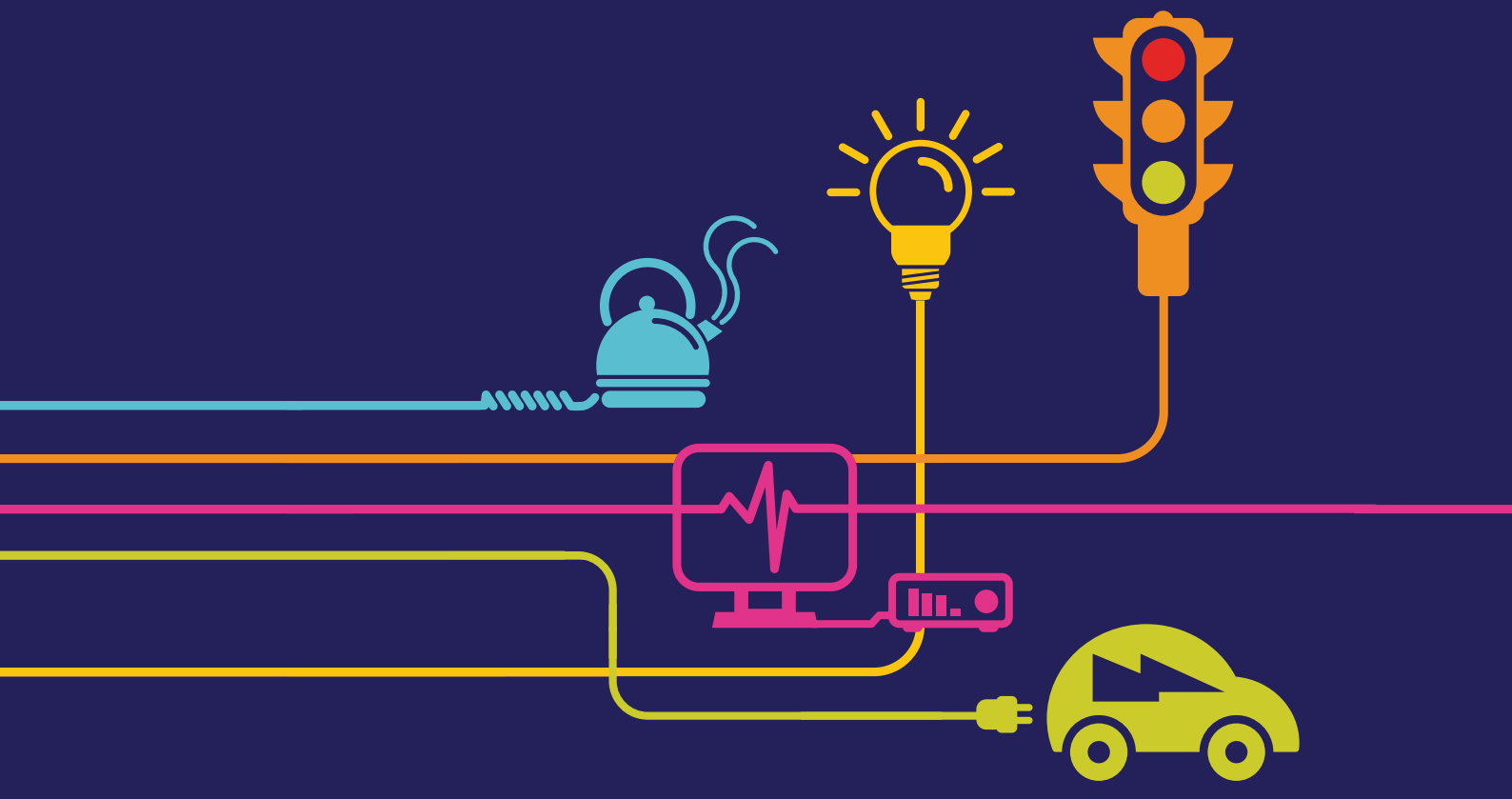
Environmental Statement
Air Quality and Emissions

Hinkley Point C Connection Project

Regulation 5(2)(a) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



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Hinkley Point C Connection Project

ENVIRONMENTAL STATEMENT – MAY 2014

VOLUME 5.13.1, CHAPTER 13 – AIR QUALITY AND EMISSIONS

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Author		**William Franklin, RSK**	
Approved By		**Bobby Clayton, TEP**	
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Table of Contents

INSETS (VOLUME 5.13.1)

APPENDICES (VOLUME 5.13.2)

FIGURES (VOLUME 5.13.3)

13 AIR QUALITY AND EMISSIONS

13.1 Introduction

13.1.1 This chapter of the Environmental Statement (ES) assesses the potentially significant effects on air quality that may occur during the construction (including the removal of some existing overhead lines), operation and decommissioning of the Proposed Development.

13.1.2 A description of the Proposed Development is provided in **Volume 5.3.1** and illustrated in **Volume 5.3.3, Figures 3.1 – 3.6**. This chapter is supported by a number of figures and appendices provided after the main text of this chapter **Volume 5.13**. To assist the reader, some figures are presented as insets within this chapter. This chapter should be read with these figures and appendices available for reference as they assist the understanding of the descriptions and assessments presented in the text.

13.1.3 The Proposed Development will not adversely affect air quality during its operational phase, as it would not cause significant emissions. Sulphur hexafluoride emissions are discussed in paragraphs 13.5.40 - 13.5.45. Other effects on air quality during the operation of the development are not assessed as part of this ES as they have been scoped out, as established during scoping (see **Volume 5.5.2, Appendix 5B**).

13.1.4 Decommissioning of the Proposed Development is likely to have similar effects on air quality to those effects identified in the construction phase.

Project Engagement

EIA Scoping

13.1.5 As part of the scoping phase of the Environmental Impact Assessment (EIA), National Grid prepared a Scoping Report (April 2013) setting out the proposed approach to EIA in respect of the Proposed Development, including the identification of assessment methods for each of the EIA topics to be assessed

13.1.6 The Scoping Opinion is provided at **Volume 5.5.2, Appendix 5A**. A summary of the Scoping Opinion representations received (relevant to EIA) and National Grid's responses are summarised at **Volume 5.5.2, Appendix 5B**. A summary of the main Scoping Opinion representations received in relation to air quality and emissions are presented in **Table 13.1**.

Table 13.1 Summary of the Main Air Quality and Emissions Scoping Representations Received

Representation	Response
The SoS welcomes the consideration given to appropriate mitigation measures and to monitoring dust complaints identified within the Scoping Report. If necessary the mitigation described in the ES should be reviewed to deal with impacts on air quality other than dust.	Mitigation including monitoring is specified at section 13.7 of this Volume.
A suitable method for calculating AADTs and AAWTs should be agreed with SCC prior to any assessments	Traffic assessment and calculations were carried out by the traffic consultants. The traffic methods and data were agreed.
It is noted that the Applicant has already undertaken discussions with local authorities regarding air quality to discuss the potential scope of the assessment. The SoS welcomes this approach and would expect on-going discussions and agreement on the scope and methodology of the assessment, where possible, with such bodies.	Discussions with the local authorities were undertaken at the Scoping and subsequent stages.
The traffic data that will be used in the assessment of air quality and emissions will need to be agreed with all parties to ensure a robust assessment is carried out and any mitigation measures proposed should be taken from the 'Dust and Air Emissions Mitigation Measures' document that accompanies the IAQM construction dust guidance and the GLA best practice guidance."	The TA (**Volume 5.22**) was carried out in consultation with the relevant Local Authorities and the Highways Agency; the data generated is considered to be appropriate and the traffic assessment methods and data were agreed. Mitigation measures recommended are based on the updated GLA Best Practice, if available, or the 2006 GLA best practice guidance and the IAQM document. The IAQM document is based on emerging guidance from the Greater London Council, as part of their revision of the 'The control of dust and emissions from construction and demolition: Best Practice Guidance' (2006).

Statutory Stage 4 Consultation

13.1.7 Statutory Stage 4 Consultation took place over a period of eight weeks between 3 September and 29 October 2013 in accordance with the Planning Act 2008. Statutory and non-statutory consultees and members of the public were included in the consultation. Various methods of consultation and engagement were used in accordance with the Statement of Community Consultation (SoCC) including letters, website, public exhibitions, publicity and advertising, inspection of documentation at selected locations and parish and town council briefings.

13.1.8 National Grid prepared a Preliminary Environmental Information Report (PEIR) which was publicised at this consultation stage. National Grid sought feedback on the environmental information presented in that report. Feedback received during Statutory Stage 4 Consultation was considered by National Grid and incorporated where relevant in the design of the project and its assessment and presentation in this ES.

13.1.9 A summary of the Statutory Stage 4 Consultation representations received (relevant to EIA) and National Grid's responses are summarised at **Volume 6.1** (Consultation Report). A summary of the main Statutory Stage 4 Consultation representations received in relation to air quality and emissions is presented in **Table 13.2**.

Table 13.2 Summary of the Main Air Quality and Emissions Statutory Stage 4 Consultation Representations Received

Representation	Response
It is considered that the consultation material supplied requires further detail in respect of traffic emissions from the construction and operational phase.	Construction phase traffic was assessed at screening level and this was revised in the light of the availability of final traffic data. This is presented in **Volume 5.13.1.**
The Joint Councils requested that National Grid take into account the latest IAQM mitigation methods for construction dust. This has not been addressed in the PEIR and references to the old Greater London Authority mitigation methods are still included.	Section 13.7 of this Volume discusses mitigation with reference to IAQM guidance.

Draft ES and Supporting Documents

13.1.10 The Draft ES and a large number of the ES supporting documents were provided to a number of statutory and non-statutory bodies over a period of two weeks between 3 and 17 February 2014. This process of engagement (over and above that required by the statutory consultation process) was undertaken to provide an opportunity for these bodies to influence the assessment documents prior to their finalisation to accompany the DCO application.

13.1.11 The majority of the air quality and emissions comments received were with regard to mitigation set out in section 13.7 of this report and also detailed in the Draft Construction Environmental Management Plan (CEMP) which is provided at **Volume 5.26.1.** A summary of the Draft ES representations received (relevant to EIA and National Grid's responses are summarised at **Volume 5.5.2, Appendix 5C.**

Other Engagement

13.1.12 On 25 October, a meeting to discuss traffic and air quality environmental issues was held and was attended by National Grid and representatives from the local authorities. The air quality assessment approach and methodology were presented and discussed, including the assessment scope, the baseline air quality assessment, the operational phase approach and early findings, the construction phase fugitive emissions assessment approach and draft findings, the construction

phase traffic assessment approach and draft findings, and the tentative conclusions. No comments upon the methodology and assessment scope were made by attendees; however it was agreed that the construction phase traffic effects would require re-assessment once traffic data was finalised.

13.2 Policy and Legislation

National Policy Statements

13.2.1 National Policy Statements (NPS) provide the basis on which the Secretary of State is required to make its decisions in relation to Nationally Significant Infrastructure Projects (NSIPs) and associated development. The principal guidance for examination of the application is that provided by Overarching National Policy Statement for Energy (EN-1) and National Policy Statement for Electricity Networks Infrastructure (EN-5). The specific assessment requirements, as detailed in the relevant NPS are set out below.

13.2.2 NPS EN-1 contains requirements for the assessment of impacts on air quality arising from NSIPs and any associated development. NPS EN-1 is therefore directly relevant to this assessment and the relevant sections and how they have been addressed are summarised in **Table 13.3**.

Table 13.3 Summary of NPS EN-1 Requirements Relevant to Air Quality and Emissions

Para	Requirement	ES Section	Compliance Assessment
5.2.2	Any ES on air emissions will include an assessment of CO2 emissions, but the policies set out in Section 2, including the EU ETS, apply to these emissions.	Section 13.5 of this Volume	The assessment considers construction, operational and decommissioning phase CO2 emissions.
5.2.7	The ES should describe any significant air emissions, their mitigation and any residual effects distinguishing between the project stages and taking account of any significant emissions from any road traffic generated by the project	Sections 13.5 to 13.8 of this Volume	The ES describes & assesses significant emissions, mitigation and residual effects, including road traffic emissions.
5.2.7	The ES should describe the predicted absolute emission levels of the proposed project, after mitigation methods have been applied	Section 13.8 of this Volume	The ES assesses the risk and significance of potentially significant emissions to air, with and without effective mitigation.

Para	Requirement	ES Section	Compliance Assessment
5.2.7	The ES should describe existing air quality levels and the relative change in air quality from existing levels	**S**ections 13.4 and 13.5 of this Volume	Existing air quality is described in section 13.4. Effects are described in 13.5.
5.2.7	The ES should describe any potential eutrophication impacts	Eutrophication effects are scoped out	No significant eutrophication impacts are anticipated.
5.2.11	The IPC should consider whether mitigation measures are needed both for operational and construction emissions over and above any which may form part of the project application. A construction management plan may help codify mitigation at this stage.	**Volume 5.26.1**	A Draft CEMP is provided, committing to accepted best practice air quality mitigation.
5.2.13	The mitigations identified in Section 5.13 on traffic and transport impacts will help mitigate the effects of air emissions from transport.	**Volume 5.12.1, section 12.8;** section 13.5 to 13.8 of this Volume**; Volume 5.26.5** (Draft Construction Traffic Management Plan - CTMP).	A Draft CEMP is provided, committing to accepted best practice air quality mitigation.

13.2.3 NPS EN-5 provides additional technology-specific guidance on nationally significant electricity network infrastructure in England and Wales; however EN-5 does not identify any further matters relating to air quality.

The National Air Quality Strategy and Local Air Quality Management

13.2.4 UK air quality policy is published under the provisions of the Environment Act 1995 **(**Ref.13.1), (the 1995 Act). The Environment Act 1995 required the preparation of a National Air Quality Strategy (NAQS) which sets out air quality standards and objectives for specified pollutants The latest Air Quality Strategy for England, Scotland, Wales and Northern Ireland – Working Together for Clean Air, published in July 2007 (Ref.13.2), sets air quality standards and objectives for ten key air pollutants to be achieved between 2003 and 2020.

13.2.5 The EU Air Quality Framework Directive 96/62/EC (Ref.13.3) established a framework under which the EU could set limit or target values for specified pollutants. The Directive identified several pollutants for which limit or target values have been, or will be set in subsequent Daughter Directives. The Framework and

Daughter directives were consolidated by Directive 2008/50/EC (Ref.13.4) on Ambient Air Quality and Cleaner Air for Europe, which retains the existing air quality standards and introduces new objectives for fine particulates ($PM_{2.5}$).

13.2.6 UK air quality standards have been transposed from European Commission (EC) Directives via the Air Quality (England) Regulations 2000 (Ref.13.5) and Air Quality (England) Amendment Regulations 2002 (Ref.13.6). The Air Quality Limit Values Regulations 2003 (Ref.13.7) and subsequent amendments implement the EU Air Quality Framework Directive. Directive 2008/50/EC was transposed into UK law in 2010 via the Air Quality Standards Regulations 2010 (Ref.13.8).

13.2.7 The air quality objectives for Local Air Quality Management set out in the Air Quality Strategy and relevant to the Proposed Development are summarised in **Table 13.4**.

Table 13.4 National Air Quality Objectives

Substance	Averaging Period	Exceedances Allowed per Year	Pollutant Concentration ($\mu g/m^3$)	Target Date
Nitrogen dioxide (NO_2)	1 year	-	40	31.12.05
	1 hour	18	200	31.12.05
Sulphur dioxide (SO_2)	15 minute	35	266	31.12.05
	1 hour	24	350	31.12.04
	24 hours	3	125	31.12.04
Ozone (O_3)	8 hour	10	100	31.12.05
Particles (PM_{10})	1 year	-	40	31.12.04
	24 hours	35	50	31.12.04
Particles ($PM_{2.5}$)	1 year(1)	-	25	2020
	1 year(1)	15% reduction in urban background concentration	N/A	2010-2020
Carbon monoxide (CO)	8 hour(2)	-	10,000	31.12.03
1,3 Butadiene	1 year(2)	-	2.25	31.12.03
Benzene	1 year	-	5	31.12.10
PAH	1 year	-	0.00025	31.12.10
Lead	1 year	-	0.25	31.12.08

Note: (1) = target; (2) = running average

13.2.8 These objectives are used in the review and assessment of air quality by local authorities under Section 82 of the Environment Act (1995). If exceedances are measured or predicted through the review and assessment process, the local authority must declare an Air Quality Management Area (AQMA) and produce an

Air Quality Action Plan (AQAP) to outline how air quality is to be improved to meet the objectives.

National Planning Policy Framework

13.2.9 The NPPF does not set standards for NSIP applications, however the Proposed Development is nevertheless intended to support these objectives

13.2.10 NPPF Chapter 11 provides that planning policies and decisions should avoid giving rise to impacts on health and quality of life. Policies should sustain compliance with and contribute towards EU limit values of national objectives for pollutants taking into account the presence of AQMAs. Planning decisions should ensure new development is consistent with the local air quality action plan.

13.2.1 The NPPF Planning Practice Guidance for air quality (March 2014), was published recently to provide a degree of technical grounding to the policies described in the NPPF. The Planning Practice Guidance mirrors much of the policies and guidance introduced in EN-1 with the emphasis on undertaking proportionate assessments, avoiding significant adverse effects and implementing appropriate mitigation measures to prevent unacceptable risks. These principles form the basis upon which EN-1 (see **Table 13.3**) was written and on which this assessment is founded.

Local Planning Policy

13.2.2 Local authorities have formulated local planning policies (see **Volume 5.4.2, Appendix 4A**) to ensure that development resulting in pollution, or harm to amenity, health or safety will not be permitted unless the potential adverse effects could be mitigated.

13.2.3 Local planning policy does not set policy for testing the acceptability of nationally significant infrastructure projects. However key themes running through local planning policy are connected to air quality and emissions include climate change, sustainable development, pollution and transport and have been considered as part of this assessment.

Dust Guidance

13.2.4 Enforcement action to control dust annoyance can be taken under the Environmental Protection Act 1990 (Ref.13.9). However, there are no statutory limits for dust deposition/soiling, and a number of different criteria and monitoring methods have been developed to assess whether or not complaints are likely.

13.2.5 In January 2011 the Institute of Air Quality Management (IAQM) published guidance on the assessment of the effect of construction projects on local air quality (Ref.13.10). The approach is to classify sites according to the risk of effects and to identify mitigation appropriate to the risk.

Other Guidance Documents

13.2.6 The following recognised guidance documents have been used in the assessment of air quality effects of the Proposed Development:

- The Institute of Air Quality Management's (IAQM) Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their

Significance, and the accompanying Dust and Emissions Mitigation Measures document (Ref.13.10);
- The Environmental Protection (UK) Planning for Air Quality (2010 Update) guidance on dealing with air quality concerns within the development control process (Ref.13.11); and
- DEFRA Technical Guidance on Local Air Quality Management LAQM.TG(09) (Ref.13.12).

13.3 Method

Approach

13.3.1 A desk-based air quality impact assessment has been undertaken to determine the potential air quality effects on receptors arising from construction, operation and decommissioning of the Proposed Development.

13.3.2 The air quality effects at relevant receptors were assessed against the guidelines identified in this report and appropriate mitigation measures recommended.

13.3.3 Fugitive emissions were assessed based on the Order Limits for the Proposed Development, to include all potential dust generating activities such as access routes and all stripping and storage of soils and materials. It is recognised that this is likely to present a conservative assessment of impacts, and will include the Limits of Deviation.

Desk Based Assessment

13.3.4 Current air quality conditions along the proposed 400kV and 132kV overhead line and underground cable routes, the existing 132kV overhead lines and the sites of the substations and cable sealing end (CSE) compounds have been characterised using publicly available data from the following data sources:
- Councils' air quality monitoring programmes; and
- data from the Department for Environment, Food and Rural Affairs (DEFRA) online monitoring records.

13.3.5 A qualitative assessment of the effects of the overhead line removal and construction works on air quality has been carried out with reference to the following guidance:
- The Institute of Air Quality Management's (IAQM) Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance (Ref.13.10); and
- The Environmental Protection (UK) Planning for Air Quality (2010 Update) guidance on dealing with air quality concerns within the development control process (Ref.13.11).

13.3.6 In order to identify the where a quantitative assessment of road traffic emissions to air should be undertaken, a screening review of predicted road traffic generation during the construction phase was carried out, and the significance was assessed with reference to the Environmental Protection UK Guidance (Ref.13.11).

13.3.7 It was intended that, were traffic generated by the Proposed Development considered likely to be 'significant', a quantitative assessment of road traffic emissions to air would be undertaken using the method outlined in the Design Manual for Roads and Bridges (Ref.13.13) (DMRB) developed by the Department for Transport. Sensitive receptors (for example, residential homes and ecologically sensitive sites) would be included in the assessment and pollutant concentrations, including nitrogen deposition, would be predicted at relevant locations for comparison with relevant air quality standards after accounting for background air quality conditions. The screening review is presented in paragraphs 13.5.36 - 13.5.39 of this chapter. None of the identified roads met the significance criteria; therefore no further quantitative assessment was carried out.

Assessment of Effects

13.3.8 The following section outlines how the significance of the potential effects of the Proposed Development on air quality has been assessed. Significance is determined by identifying the magnitude of the effect and the sensitivity of the receptor. Identifying the sensitivity, magnitude and significance is based on the criteria described below.

Construction Phase Significance

13.3.9 IAQM has published a guidance document for the assessment of construction phase impacts (Ref.13.10). The risk category of the construction site is assessed and used to specify the level of mitigation required. The decommissioning phase is considered to be the reverse of the construction phase. The same guidance has therefore been used for decommissioning effects.

Magnitude of Effects

13.3.10 To assess the potential impacts, construction activities are divided into four types (Activities), as follows:

- demolition;
- earthworks;
- construction; and
- 'trackout' of material onto local roads.

13.3.11 For each Activity, the risk of dust annoyance and/or health or ecological effects is determined using three risk categories: low, medium and high risk. The risk category is different for each of the four activities.

Demolition

13.3.12 The risk category for demolition is varied for each site in terms of timing, building type, duration and scale. Examples of the potential dust emission classes are provided in the IAQM guidance as follows:

- large: total building volume >50000m^3, potentially dusty construction material, on-site crushing and screening, demolition activities >20m above ground level;
- medium: total building volume 20000m^3 - 50000m^3, potentially dusty construction material, demolition activities 10m - 20m above ground level; and
- small: total building volume <20000m^3, construction material with low potential for dust release, demolition activities <10m above ground, demolition during wetter months.

13.3.13 The matrix to determine the demolition risk category based on the distance to the nearest receptors and the dust emission class is presented in **Table 13.5**.

13.3.14 The definition of human receptors includes locations where people may experience annoyance effects of airborne dust, dust soiling or PM_{10}, including dwellings and industrial and commercial premises.

Table 13.5 Risk Category from Demolition Activities

Distance to Nearest Receptor (m)(1)		**Dust Emission Class**		
(Human) Dust Soiling and PM_{10}	**Ecological**	**Large**	**Medium**	**Small**
<20	-	High Risk Site	High Risk Site	Medium Risk Site
20 – 100	<20	High Risk Site	Medium Risk Site	Low Risk Site
100 – 200	20 – 40	Medium Risk Site	Low Risk Site	Low Risk Site
200 - 350	40 - 100	Medium Risk Site	Low Risk Site	Negligible

Note: (1) These distances are from the dust emission source. Where this is unknown, then the distance is from the site boundary.

Earthworks

13.3.15 The risk category for earthworks is varied for each site in terms of timing, geology, topography and duration. Examples of the potential dust emission classes are provided In IAQM guidance as follows:

- large: total site area >10000m^2, potentially dusty soil type (e.g. clay), >10 heavy earth moving vehicles active at any one time, formation of bunds >8m in height, total material moved >100000 tonnes;
- medium: total site area 2500 - 10000m^2, moderately dusty soil type (e.g. silt), 5 - 10 heavy earth moving vehicles active at any one time, formation of bunds 4 - 8m in height, total material moved 20000 - 100000 tonnes; and

- small: total site area < 2500m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4m in height, total material moved <10000 tonnes, earthworks during wetter months.

13.3.16 A matrix to determine the earthworks risk category is presented in **Table 13.6**.

13.3.17 The definition of human receptors includes locations where people may experience annoyance effects of airborne dust, dust soiling or PM_{10}, including dwellings and industrial and commercial premises.

Table 13.6 Risk Category from Earthworks Activities

Distance to Nearest Receptor (m)[(1)]		**Dust Emission Class**		
(Human) Dust Soiling and PM_{10}	**Ecological**	**Large**	**Medium**	**Small**
<20	-	High Risk Site	High Risk Site	Medium Risk Site
20 – 50	-	High Risk Site	Medium Risk Site	Low Risk Site
50 - 100	<20	Medium Risk Site	Medium Risk Site	Low Risk Site
100 – 200	20 – 40	Medium Risk Site	Low Risk Site	Negligible
200 - 350	40 - 100	Low Risk Site	Low Risk Site	Negligible

Construction

13.3.18 The risk category for construction is varied for each site in terms of timing, building type, duration, and scale. Examples of the potential dust emissions classes are provided in the IAQM guidance as follows:

- large: total building/infrastructure volume >100000m^3, piling, on site concrete batching;
- medium: total building volume 25000 – 100000m^3, potentially dusty construction material (e.g. concrete), piling, on site concrete batching; and
- small: total building volume <25000m^3, construction material with low potential for dust release (e.g. metal cladding or timber).

13.3.19 The matrix to determine the construction risk category is the same as that identified in **Table 13.6** for earthworks.

Trackout

13.3.20 Factors which determine the magnitude class of trackout activities are vehicle size, vehicle speed, vehicle number, geology and duration. Examples of the potential dust emissions classes are provided in the guidance as follows:

- large: >100 heavy duty vehicle (HDV) (3.5t) trips in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m;
- medium: 25 – 100 HDV (>3.5t) trips in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 – 100m; and
- small: <25 HDV (<3.5t) trips in any one day, surface material with low potential for dust release, unpaved road length <50m.

13.3.21 A matrix to determine the trackout risk category is presented in **Table 13.7**.

13.3.22 The definition of human receptors includes locations where people may experience annoyance effects of airborne dust, dust soiling or PM_{10}, including dwellings and industrial and commercial premises.

Table 13.7 Risk Category from Trackout

Distance to Nearest Receptor (m)(1)		**Dust Emission Class**		
(Human) Dust Soiling and PM_{10}	**Ecological**	**Large**	**Medium**	**Small**
<20	-	High Risk Site	Medium Risk Site	Medium Risk Site
20 – 50	<20	Medium Risk Site	Medium Risk Site	Low Risk Site
50 - 100	20 - 100	Low Risk Site	Low Risk Site	Negligible

Note: (1) For trackout the distance is from the roads used by construction traffic.

Sensitivity of Receptors

13.3.23 Example criteria to identify the sensitivity of the surrounding area are provided in the IAQM guidance (Ref.13.10) and are summarised in **Table 13.8**.

Table 13.8 Sensitivity of the Area Surrounding the Site

Sensitivity of Area	**Human Receptors**	**Ecological Receptors(1)**
Very High	Very densely populated area; >100 dwellings within 20m; Local PM_{10} concentrations exceed the objective; Contaminated building present; Very sensitive receptors (e.g. oncology units); Works continuing in one area of the site close to off-site receptors for more than 1 year	European Designated site.
High	Densely populated area; 10 - 100 dwellings within 20m; Local PM_{10} concentrations close to the objective (annual mean 36 - 40$\mu g/m^3$); Commercially sensitive horticultural land within 20m.	Nationally Designated site
Medium	Suburban or edge of town area; <10 dwellings within 20m; Local PM_{10} concentrations below the objective (annual mean 30 - 36$\mu g/m^3$)	Locally designated area
Low	Rural or industrial area; No receptor within 20m; Local PM_{10} concentrations well below the objective (<75%) Wooded area between site and receptors	No designations

Note: (1) Only if there are habitats that might be sensitive to dust.

Significance of Effects

13.3.24 The criteria for assessment of the significance of impacts effects for each of the four construction activities, before applying mitigation measures, is summarised in **Table 13.9** (reproduced from IAQM (Ref.13.10)).

Table 13.9 Significance of Effects for Each Activity (Before Mitigation)

Sensitivity of Surrounding Area	Risk of Site Giving Rise to Dust Effects		
	High	**Medium**	**Low**
Very High	Substantial adverse	Moderate adverse	Moderate adverse
High	Moderate adverse	Moderate adverse	Slight adverse
Medium	Moderate adverse	Slight adverse	Negligible
Low	Slight adverse	Negligible	Negligible

13.3.25 The criteria for significance of impacts for each of the four construction activities, assuming the effective application of mitigation measures, is summarised in **Table 13.10** (reproduced from Table 7: Significance of Effects for Each Activity With Mitigation pp25-26 *IAQM Guidance on Construction Impacts - December 2011*,) (Ref.13.10).

Table 13.10 Significance of Effects for Each Activity (With Mitigation)

Sensitivity of Surrounding Area	Risk of Site Giving Rise to Dust Effects		
	High	**Medium**	**Low**
Very High	Slight adverse	Slight adverse	Negligible
High	Slight adverse	Negligible	Negligible
Medium	Negligible	Negligible	Negligible
Low	Negligible	Negligible	Negligible

13.3.26 The significance assessment outlined in **Table 13.9**, assumes that no mitigation is applied during construction, and therefore represents a 'worst case' assessment. In reality, industry standard mitigation measures (outlined in section 13.7) are applied as standard during projects of this nature, and will be applied during the construction of the Proposed Development; therefore the significance of potential effects will be reduced to those set out in **Table 13.10**.

13.4 Baseline Environment

13.4.1 The Proposed Development is within five district level and unitary authorities – West Somerset Council (WSC), Sedgemoor District Council (SDC), North Somerset Council (NSC), Bristol City Council (BCC) and South Gloucestershire Council (SGC). Details of the current air quality in these areas are discussed further below, based on a review of the latest available local authority reports.

West Somerset Council

13.4.2 A review was undertaken of the 2013 Progress Report (Ref.13.14), which outlines air quality in the borough for 2012. There are no extant AQMAs within the borough.

13.4.3 The local authority monitors for nitrogen dioxide (NO_2) at six sites using diffusion tubes, and the report shows that there are no locations that are expected to exceed the annual mean objective for NO_2, although the data suggest that Wilton is a sensitive area for road traffic emissions, as the annual mean NO_2 concentrations measured approach the objective level.

13.4.4 WSC does not currently monitor particulate matter (PM_{10},) however indicative PM_{10} instruments (nephelometers) are operated by the developers of the Hinkley Point C Power Station at four locations near the site. Although the data are indicative and do not meet the requirements for formal comparison with the objective, the data suggest that the annual mean objective for PM_{10} is unlikely to be exceeded, but that the number of days exceeding the daily mean standard concentration may exceed the objective.

13.4.5 The estimated background pollutant concentrations for the WSC area described in paragraphs 13.4.17 – 13.4.19 suggest that air quality at background locations is likely to comfortably meet the objectives.

Sedgemoor District Council

13.4.6 Sedgemoor District Council provided their 2013 LAQM Progress Report (Ref.13.15), which has been reviewed. The Progress Report concludes that 'no air quality objectives are likely to be breached' in the district, therefore there are at present no AQMAs in Sedgemoor district, and the air quality objectives are likely to be met.

13.4.7 SDC monitors NO_2 at a number of roadside and background locations. Results for years 2010 to 2012 are presented in the Progress Report do not exceed the annual mean objective. The majority of sites would be considered 'well below' (<75%) the objective.

13.4.8 The estimated background pollutant concentrations for the SDC area described in paragraphs 13.4.17 – 13.4.19 suggest that air quality at background locations is likely to comfortably meet the objectives.

13.4.9 SDC does not currently monitor particulate matter (PM_{10}), however particulate matter is considered in the 2013 LAQM Progress Report, with the conclusion that no air quality objectives are likely to be breached.

North Somerset Council

13.4.10 A review was undertaken of North Somerset Council's 2013 LAQM Progress Report (Ref.13.16). The report concluded that there were no areas in the local authority where the annual mean NO_2 objective would be exceeded. NSC does not monitor PM_{10}, however there are no declared AQMAs within the borough for any pollutant.

13.4.11 The estimated background pollutant concentrations for the NSC area described in paragraphs 13.4.17 – 13.4.19 suggest that air quality at background locations is likely to comfortably meet the objectives.

Bristol City Council

13.4.12 A review was undertaken of the 2013 Progress Report (Ref.13.17). In 2012 there were exceedances of the annual mean objective for NO_2, with no other pollutants exceeding any objectives. An AQMA has previously been declared for the pollutants NO_2 and PM_{10} as a precautionary measure. The declared AQMA covers Bristol city centre and the main radial roads, and the proposed development and advised construction traffic routes do not pass through or close to this AQMA.

13.4.13 The estimated background pollutant concentrations for the BCC area described in paragraphs 13.4.17 – 13.4.19 suggest that air quality at background locations is likely to comfortably meet the objectives.

South Gloucestershire Council

13.4.14 A review of the 2013 South Gloucestershire LAQM Progress Report (Ref.13.18) was undertaken. Air quality monitoring in the borough has previously shown exceedances of the NO_2 annual mean objective, and three AQMAs were declared in 2010. These AQMAs are located in Staple Hill, Kingswood and Cribbs Causeway, none of which the Proposed Development or designated construction traffic routes will pass through.

13.4.15 PM_{10} monitoring was carried out at two sites in 2012: Filton (urban background) and Yate (roadside). Results for both sites were well below the annual and daily mean objectives.

13.4.16 The estimated background pollutant concentrations for the SGC area described in paragraphs 13.4.17 – 13.4.19 suggest that air quality at background locations is likely to comfortably meet the objectives.

Background Air Quality

13.4.17 In the absence of measured air quality data along the Proposed Development site, estimated background data published by the DEFRA LAQM Support website (Ref.13.19) have been used. Estimates of background concentrations of pollutants relevant to local authority air quality review and assessment (oxides of nitrogen - NO_x, NO_2, PM_{10} and $PM_{2.5}$) are provided at a $1km^2$ grid resolution.

13.4.18 The Proposed Development crosses a total of 183 of the $1km^2$ grid sections. The estimated pollutant background concentrations in 2013 for the $1km^2$ grid squares containing the proposed cable route are presented in **Volume 5.13.2, Appendix 13A**, based on the 2010-based background maps.

13.4.19 The Proposed Development does not pass through or near to any AQMA. The estimated pollutant background concentrations summarised in **Volume 5.13.2, Appendix 13A** are all well below the objectives.

Base Case

13.4.20 The construction of the Proposed Development is scheduled to start in 2015, and it is assumed that the base case air quality at that time will be similar to the baseline

air quality reviewed in paragraphs 13.4.1 to 13.4.19 above and at **Volume 5.13.2, Appendix 13A**. This is considered to be a conservative approach.

13.5 Prediction and Assessment of Significance of the Potential Effects

Construction Effects

13.5.1 Construction and demolition activities may impact on air quality in a number of ways, which may be broadly classified into:

- exhaust emissions from site plant, equipment and vehicles; and
- fugitive emissions from construction and overhead line removal activities.

Exhaust Emissions from Plant and Vehicles

13.5.2 The operation of vehicles and equipment powered by internal combustion engines results in the emission of exhaust gases containing the pollutants oxides of nitrogen (NO_x), particulates (PM_{10}), volatile organic compounds (VOCs), and carbon monoxide (CO). The quantities emitted depend on factors such as engine type, service history, pattern of usage and fuel composition. The operation of site equipment, vehicles and machinery will result in emissions to the atmosphere of exhaust gases, but such emissions are unlikely to be significant, due to the small number of plant items likely to be in use at any one time, and their limited duration at any one location, in comparison with emissions from vehicle movements on the local road network surrounding the development site, and existing agricultural activities. For example, the construction of temporary access routes typically requires one mechanical excavator, two dumpers, and one vibratory roller, and the removal of topsoil typically utilises two tracked excavators and three bulldozers. Such numbers of plant are comparable with agricultural activity and are low compared with existing traffic on local roads. Existing air quality is likely to be good and a significant increase in concentrations or any exceedance of the air quality objectives due to construction plant is unlikely.

13.5.3 Construction traffic will comprise haulage/construction vehicles and vehicles used for workers' trips to and from the site.

Fugitive Emissions

13.5.4 Fugitive emissions are emissions from diffuse or non-specific sources such as dust from construction activities. The most significant fugitive emissions are likely to be dust from construction and demolition activities.

13.5.5 Fugitive dust emissions arising from construction and demolition activities are likely to be variable in nature and will depend upon the type and extent of the activity, soil type and moisture, road surface conditions and weather conditions. Periods of dry weather combined with higher than average wind speeds have the potential to generate more dust.

13.5.6 Demolition and construction activities that are considered to be the most significant potential sources of fugitive dust emissions are:

- demolition of existing structures and the size reduction and handling of materials;
- earth moving, due to the handling, storage and disposal of soil and subsoil materials;
- construction aggregate usage, due to the transport, unloading, storage and use of dry and dusty materials (such as cement and sand);
- movement of heavy site vehicles on dry or untreated haul routes; and
- movement of vehicles over surfaces where muddy materials have been transferred off site (for example, on to public highways).

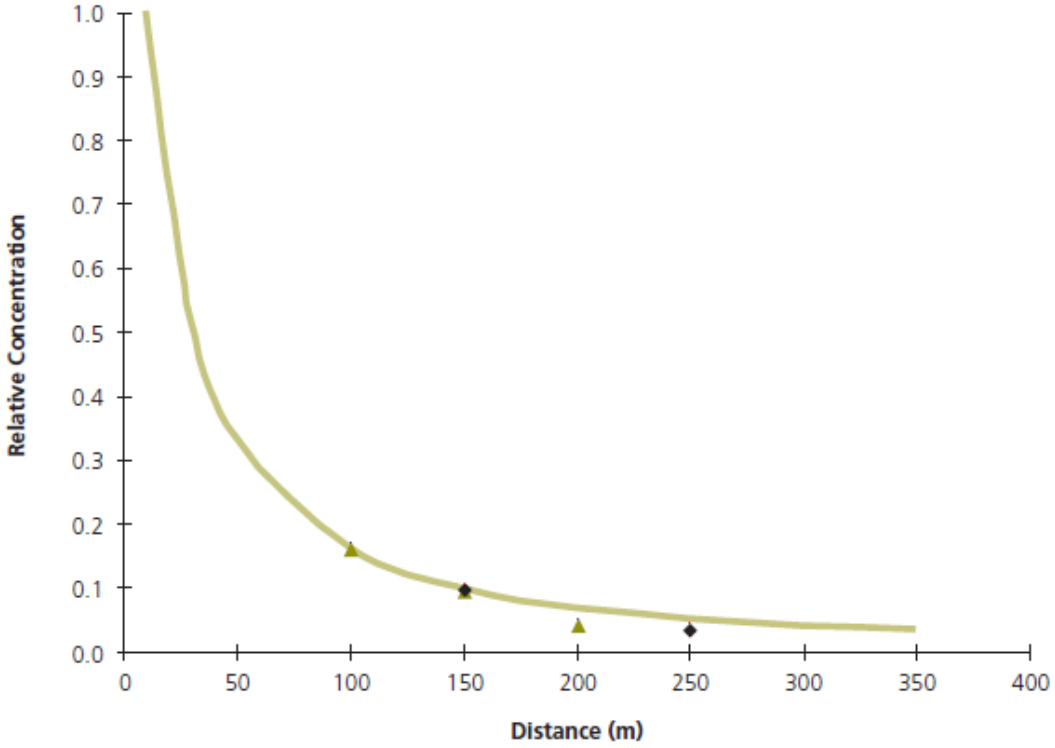
13.5.7 Construction activities for the components of the Proposed Development are described at **Volume 5.3.1**. The activities with the greatest potential for fugitive dust emission are as follows:

- overhead lines removal and construction– site and access route preparation, removal of foundations;
- underground cables – earthworks involved in access and cable route preparation;
- CSE compounds – preparatory stripping of topsoil and levelling, excavation of joint bays and concrete placement;
- horizontal directional drilling (HDD) – site and access route preparation and any storage of dry bentonite;
- temporary construction compounds – site and access preparation and any storage or stockpiling of friable materials such as topsoil; and
- substation works – access route preparation, demolition of concrete/masonry structures and size reduction of resultant materials, preparatory earthworks, excavation and concrete placement.

13.5.8 Fugitive dust arising from construction and demolition activities is in the main of a particle size greater than the PM_{10} fraction (that which can potentially impact upon human health), however it is noted that demolition and construction activities may contribute to local PM_{10} concentrations. Appropriate dust control measures can be highly effective for controlling emissions from potentially dust generating activities identified above, and adverse effects can be greatly reduced or eliminated.

13.5.9 The tendency of dust to remain airborne is determined by the particle size and weather conditions. Eventually, particles will drop from suspension as a deposit. The previous Local Air Quality Management Technical Guidance document (LAQM.TG(03)) (Ref.13.20) identifies that PM_{10} concentrations fall-off rapidly with distance from source. It is noted that LAQM TG(03) was superseded by LAQM TG(09) which does not include the figure, however the observation remains applicable. **Inset 13.1** shows the fall-off in PM_{10} concentration from source for a typical wind speed of 6m/s. At 100m from source, the PM_{10} concentration is predicted to be less than 20% of that at the point of generation.

Inset 13.1: Modelled Reduction in PM_{10} Concentration with Distance from Source



Identification of Receptors

13.5.10 Sensitive receptors for fugitive emissions from construction site activities were identified within 100m and 20m of the Proposed Development Order Limits to assess the sensitivity of the receiving environment in accordance with the IAQM (Ref.13.10) guidance summarised in **Table 13.8**.

13.5.11 Receptors were identified with reference to the Order Limits to include all activities such as access routes and all stripping and storage of soils and materials. It is recognised that this is likely to present a conservative assessment of impacts.

13.5.12 The IAQM guidance focuses on 'dwellings' as non –ecological receptors, however for a conservative assessment, residential, community and commercial buildings and land uses were considered potential 'human' receptors for fugitive emissions from construction. Receptors were identified by interrogating a GIS linked address database including the National Land and Property Gazetteer (NLPG), Ordnance Survey's OS MasterMap Address Layer and the Royal Mail Postcode Address File (PAF).

13.5.13 The identified receptors are listed for the Sections below and are also provided at **Volume 5.13.3, Figure 13.1**.

Section A – Puriton Ridge

Table 13.11 Sensitive Receptors within 100m and 20m of the Proposed Development (Section A – Puriton Ridge)

Receptors	Receptor(s) within 100m of the Order Limits?	Receptor(s) within 20m of the Order Limits?
Beeches Ponds LWS	Yes	No
Little Wall Lane LWS	Yes	Yes
New Ground Covert LWS	Yes	Yes
Human	Yes, 60	Yes, 7

13.5.14 On the basis of the sensitive receptors shown in **Table 13.11**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding Section A to construction phase dust emissions is assessed as 'Medium' for a conservative assessment, although other factors may suggest a lower category.

Section B – Somerset Levels and Moors South

Table 13.12 Sensitive Receptors within 100m and 20m of the Proposed Development (Section B – Somerset Levels and Moors South)

Receptors	Receptor(s) within 100m of the Order Limits?	Receptor(s) within 20m of the Order Limits?
Puriton Rhynes and Ponds LWS	Yes	Yes
Borrow Pit, Puriton LWS	Yes	Yes
Stoning Pound Field South LWS	Yes	Yes
Bridgewater Bay - Huntspill NNR & LNR	Yes	Yes
River Brue LWS	Yes	Yes
River Axe LWS	Yes	Yes
Lox Yeo River SNCI	Yes	No
Human	Yes,206	Yes, 30

13.5.15 On the basis of the sensitive receptors shown in **Table 13.12**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding Section B to construction phase dust emissions is assessed as 'High' for a conservative assessment, although other factors suggest a lower category.

Section C – Mendip Hills

Table 13.13 Sensitive Receptors within 100m and 20m of the Proposed Development (Section C – Mendip Hills)

Receptors	Receptor(s) within 100m of the Order Limits?	Receptor(s) within 20m of the Order Limits?
Lox Yeo River SNCI	Yes	No
Crook Peak to Shute Shelve Hill SAC & SSSI	Yes	Yes
Lox Yeo River SNCI	Yes	Yes
Banwell Wood SNCI	Yes	Yes
Towerhead Brook SNCI	Yes	Yes
Dismantled Railway SNCI & LNR	Yes	Yes
Human	Yes, 87	Yes, 11

13.5.16 On the basis of the sensitive receptors shown in **Table 13.13**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding the Section C to construction phase dust emissions is assessed as 'Very High' on the basis of the presence of European designated ecological sites for a conservative assessment, although other factors may suggest a lower category.

Section D – Somerset Levels and Moors North

Table 13.14 Sensitive Receptors within 100m and 20m of the Proposed Development (Section D – Somerset Levels and Moors North)

Receptors	Receptor(s) within 100m of the Order Limits?	Receptor(s) within 20m of the Order Limits?
Towerhead Brook SNCI	Yes	Yes
Manor Farm LNR	Yes	No
Puxton Moor SSSI	Yes	Yes
Cheddar Valley Railway Walk LNR	Yes	Yes
Rhynes South of Dolemoor Lane SNCI	Yes	Yes
Biddle Street Yatton SSSI & SNCI	Yes	Yes
Congresbury Yeo & Adjacent Land and Rhynes	Yes	Yes
Nailsea and Tickenham Moors SSSI	Yes	Yes
Nursebatch Farm Fields	Yes	Yes
Human	Yes, 1049	Yes, 394

13.5.17 On the basis of the sensitive receptors shown in **Table 13.14**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding Section D to construction phase dust emissions is assessed as 'Very high' for a conservative assessment, although other factors suggest a lower category.

Section E – Tickenham Ridge

Table 13.15 Sensitive Receptors within 100m and 20m of the Proposed Development (Section E – Tickenham Ridge)

Receptors	Receptor(s) within 100m of the Order Limits?	Receptor(s) within 20m of the Order Limits?
Summerhouse Wood SNCI	Yes	No
Tickenham Hill –Cadbury Camp –Chummock Wood Complex SNCI	Yes	Yes
Abbot's Horn SNCI	Yes	Yes
Birch Wood and Prior's Wood Wildilife Site	Yes	Yes
Human	Yes, 37	Yes, 9

13.5.18 On the basis of the sensitive receptors shown in **Table 13.15**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding Section E to construction phase dust emissions is assessed as 'medium' for a conservative assessment, although other factors suggest a lower category.

Section F – Portishead (Preferred Route Option A)

Table 13.16 Sensitive Receptors within 100m and 20m of the Proposed Development (Section F – Portishead Preferred Route Option A)

Receptors	Receptor(s) within 100m of the Order Limits?	Receptor(s) within 20m of the Order Limits?
Fields West of Lower Caswell House SNCI	Yes	Yes
Fields north of upper Caswell farm SNCI	Yes	No
Fields on Caswell Moor SNCI	Yes	Yes
Fields adjacent to M5, Portbury SNCI	Yes	No
Drove Rhyne and and adjacent fields	Yes	Yes
Fields Between Railway Line and A369, Portbury SNCI	Yes	Yes
Fields East of Court House	Yes	No
Portbury Wharf Nature Reserve	Yes	Yes
Portbury Wharf SNCI	Yes	Yes
Drove Rhyne and and adjacent fields	Yes	Yes
Portbury Dock Wood SNCI	Yes	Yes
Human	Yes, 165	Yes, 8

13.5.19 On the basis of the sensitive receptors shown in **Table 13.16**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding Section F (preferred route

Option A) to construction phase dust emissions is assessed as 'medium' for a conservative assessment, although other factors suggest a lower category.

Section F – Portishead (Alternative Route Option B)

Table 13.17 Sensitive Receptors within 100m and 20m of the Proposed Development (Section F – Portishead Alternative Route Option B)

Receptors	**Receptor(s) within 100m of the Order Limits?**	**Receptor(s) within 20m of the Order Limits?**
Fields West of Lower Caswell House SNCI	Yes	Yes
Fields north of upper Caswell farm SNCI	Yes	No
Fields on Caswell Moor SNCI	Yes	Yes
Drove Rhyne and and adjacent fields	Yes	Yes
Portbury Wharf Nature Reserve	Yes	Yes
Portbury Wharf SNCI	Yes	Yes
Drove Rhyne and and adjacent fields	Yes	Yes
Portbury Dock Wood SNCI	Yes	Yes
Human	Yes, 137	Yes, 8

13.5.20 On the basis of the sensitive receptors shown in **Table 13.17**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding Section F (alternative route Option B) to construction phase dust emissions is assessed as 'Medium' for a conservative assessment, although other factors suggest a lower category.

Section G – Avonmouth

Table 13.18 Sensitive Receptors within 100m and 20m of the Proposed Development (Section G – Avonmouth)

Receptors	**Receptor(s) within 100m of the Order Limits?**	**Receptor(s) within 20m of the Order Limits?**
Drove Rhyne and adjacent fields SNCI	Yes	Yes
Fields between Railway Line and A369, Portbury SNCI	Yes	Yes
Field east of Court House SNCI	Yes	No
Severn Estuary SNCI, SAC, RAMSAR, SPA, SSSI	Yes	Yes
Gloucester Road Railway Sidings SNCI	Yes	Yes
Portbury Dock Wood	Yes	Yes
Land west of King Street WNS	Yes	Yes
Docks Railway Line WNS	Yes	Yes
Land South West of Kings Weston Rhine WNS	Yes	Yes
Land South of Sewage	Yes	Yes

Receptors	Receptor(s) within 100m of the Order Limits?	Receptor(s) within 20m of the Order Limits?
Treatment Works WNS		
Land Between M49 and M5 WNS	Yes	Yes
Kings Weston Lane Rhyne SNCI	Yes	Yes
Lawrence Weston Road Rhyne SNCI	Yes	Yes
Fields along M5 Hallen SNCI	Yes	Yes
Land Between LWR Rhine and Salt Rhine East of M49 WNS	Yes	Yes
Land West of M49 and South of Moorhouse Rhine WNS	Yes	Yes
Land Around Moorhose Caravan Park WNS	Yes	Yes
Salt Rhyne and Moorhouse Rhyne SNCI	Yes	Yes
Moorhouse Farm and Stuppill Rhynes SNCI	Yes	Yes
Railway Line South of Hallam WNS	Yes	Yes
Lamd West of Packgate Road WNS	Yes	No
Agricultural Land South of the Railway WNS	Yes	Yes
Hallen Marsh Agricultural Land WNS	Yes	Yes
Land Around Hallen Farm WNS	Yes	Yes
Rhine bordering Former Sevalco Site North WNS	Yes	Yes
Former Shell Tank Site	Yes	Yes
Southwest of Seababk Power Station WNS	Yes	Yes
Crooks Marsh WNS	Yes	Yes
Human	Yes, 605	Yes, 103

13.5.21 On the basis of the sensitive receptors shown in **Table 13.18**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding Section G to construction phase dust emissions is assessed as ‘Very High’, for a conservative assessment on the basis of the presence of European designated ecological sites although other factors suggest a lower category.

Section H - Hinkley Line Entries

Table 13.19 Sensitive Receptors within 100m and 20m of the Proposed Development (Section H – Hinkley Line Entries)

Receptors	Receptor(s) within 100m of the Order Limits?	Receptor(s) within 20m of the Order Limits?
Hinkley LNR	Yes	Yes
Bridgewater Bay SSSI/ SPA/ RAMSAR	Yes	Yes
Human	Yes, 2	No

13.5.22 On the basis of the sensitive receptors shown in **Table 13.19**, and the criteria set out in **Table 13.8**, the sensitivity of the area surrounding Section H to construction phase dust emissions is assessed as 'Very High', for a conservative assessment on the basis of the presence of European designated ecological sites, although other factors suggest to a lower category.

Significance of Construction Activities

13.5.23 With reference to the IAQM guidance criteria (Ref.13.10), the dust emissions classes for demolition, earthworks, construction and trackout activities for the construction of Proposed Development are summarised for each of the Proposed Development Sections below.

13.5.24 Risk categories for the four construction activities in the Proposed Development Sections are summarised in the following tables which are derived from the dust emissions classes previously identified in **Tables 13.5 to 13.7**.

13.5.25 Mitigation measures that will control the potential effects of the construction activities are discussed in Section 13.7.

Section A – Puriton Ridge

13.5.26 Section A is proposed to accommodate the construction of 400kV overhead line; two CSE compounds at Bridgwater Tee; 400kV underground cables between the CSE compounds; removal of F Route 132kV overhead line; related works for example temporary access roads, highway works, construction compounds, work sites and ancillary works. **Table 13.20** presents the risk categories predicted as a result of these works.

Table 13.20 Section A Summary of Risk Categories (Before Mitigation)

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Demolition	• Small demolition volume; • Mostly low dust materials (e.g. steel towers); and • Some work at around 20m above ground.	Medium	Ecological <20m; Residential <20m.	High Risk Site
Earthworks	• Large area, >10,000m^3; • Likely >10 plant; and • clay soil assumed.	Large	Ecological <20m; Residential <20m.	High Risk Site
Construction	• Small 'building' volume; • Piled foundations; • No on site concrete batching; and • Above ground structure of steel.	Medium	Ecological <20m; Residential <20m.	High Risk Site
Trackout	• Potentially large numbers (>100) HDV per day; • Temporary access route -assume moderately dusty (i.e. stone, not earth); and • Temporary access route – no unpaved road.	Large (Conservative assessment)	Ecological <20m; Residential <20m.	High Risk Site

Section B – Somerset Levels and Moors South

13.5.27 Section B is proposed to accommodate the construction of proposed 400kV overhead line; CSE compound south of the Mendip Hills; 400kV underground cables; removal of F Route132kV overhead line; related works, for example temporary access roads, highway works, construction compounds, work sites and ancillary works. **Table 13.21** presents the risk categories predicted as a result of these works.

Table 13.21 Section B Summary of Risk Categories (Before Mitigation)

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Demolition	• Small demolition volume; • Mostly low dust materials (e.g. steel towers); and • Some work at around 20m above ground.	Medium	Ecological <20m Residential <20m	High Risk Site
Earthworks	• Large area,>10,000m^3; • Likely >10 plant; and • Moderately dusty soil assumed.	Large	Ecological <20m Residential <20m	High Risk Site
Construction	• Small 'building' volume; • Piled foundations; • No on site concrete batching; • Above ground structure mainly of steel; and • Some concrete used in CSE compound construction.	Medium	Ecological <20m Residential <20m	High Risk Site
Trackout	• Potentially large numbers (>100) HDV per day; • Temporary access route -assume moderately dusty (i.e. stone, not earth); and • Temporary access route – no unpaved road.	Large (Conservative assessment)	Ecological <20m Residential <20m	High Risk Site

Section C – Mendip Hills

13.5.28 Section C is proposed to accommodate the installation of 400kV underground cables; removal of F Route 132kV overhead line; related works, for example temporary access roads, highway works, construction compounds, work sites and ancillary works. **Table 13.22** presents the risk categories predicted as a result of these works.

Table 13.22 Section C Summary of Risk Categories (Before Mitigation)

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Demolition	• Small demolition volume; • Mostly low dust materials(e.g. steel towers); and • Some work at around 20m above ground.	Medium	Ecological <20m Residential <20m	High Risk Site
Earthworks	• Large area,>10,000m^3.; • Likely >10 plant; and • clay soil assumed.	Large	Ecological <20m Residential <20m	High Risk Site
Construction	• Construction of joining bays, cable bridges & culverts; • Small building volume; and • Moderately dusty materials (no on-site concrete batching, but placement & potential on site mixing of concrete, and bentonite for HDD).	Medium	Ecological <20m Residential <20m	High Risk Site

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Trackout	• Potentially large numbers (>100) HDV per day; • Temporary access route - assume moderately dusty (i.e. stone, not earth); and • Temporary access route – no unpaved road.	Large (Conservative assessment)	Ecological <20m Residential <20m	High Risk Site

Section D – Somerset Levels and Moors North

13.5.29 Section D is proposed to accommodate the construction of 400kV underground cables; 400/132kV substation at Nye Lane, Sandford; 400kV overhead line; removal of F Route and W Route 132kV overhead lines, and a short section on N Route and AT Route overhead lines; 132kV overhead line between Sandford Substation and N Route overhead line; modifications at Churchill 132/33kV Substation; 132kV W Route underground cables;132kV underground cables between Y Route and Churchill substation; 132kV overhead line between W Route and Churchill substation; 132kV overhead line and underground cable between Sandford substation and AT Route; related works for example temporary access roads, highway works, construction compounds, work sites and ancillary works. **Table 13.23** presents the risk categories predicted as a result of these works.

Table 13.23 Section D Summary of Risk Categories (Before Mitigation)

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Demolition	• Small demolition volume; • Mostly low dust materials(e.g. steel towers); and • Some work at around 20m agl	Medium	Ecological <20m; Residential <20m	High Risk Site

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Earthworks	• Large area,>10,000 m^3; • Likely >10 plant; and • Moderately dusty soil assumed.	Large	Ecological <20m Residential <20m	High Risk Site
Construction	• Small 'building' volume; • Piled pylon foundations; • No on site concrete batching; • Above ground structure mainly of steel; and • Concrete used in CSE compound and substation and access bridge construction.	Medium	Ecological <20m Residential <20m	High Risk Site
Trackout	• Potentially large numbers (>100) HDV per day; • Temporary access route - assume moderately dusty (i.e. stone, not earth); and • Temporary access route – no unpaved road.	Large (Conservative assessment)	Ecological <20m Residential <20m	High Risk Site

Section E – Tickenham Ridge

13.5.30 Section E is proposed to accommodate the construction of 400kV overhead line; removal of F Route and W Route 132kV overhead lines; 132kV underground

cables; related works for example temporary access roads, highway works, construction compounds, work sites and ancillary works. **Table 13.24** presents the risk categories predicted as a result of these works.

Table 13.24 Section E Summary of Risk Categories (Before Mitigation)

Construction Activities	**Parameters**	**Dust Emissions Class**	**Nearest Receptor**	**Evaluation of the Risk Category**
Demolition	• Small demolition volume; • Mostly low dust materials (e.g. steel towers); and • Some work at around 20m agl.	Medium	Ecological <20m Residential <20m	High Risk Site
Earthworks	• Large area, >10,000m^3; • Likely >10 plant; and • clay soil assumed.	Large	Ecological <20m Residential <20m	High Risk Site
Construction	• Small 'building' volume; • Piled foundations; • No on site concrete batching; and • Above ground structure of steel.	Medium	Ecological <20m Residential <20m	High Risk Site
Trackout	• Potentially large numbers (>100) HDV per day; • Temporary access route -assume moderately dusty (i.e. stone, not earth); and • Temporary access route – no unpaved road.	Large (Conservative assessment)	Ecological <20m Residential <20m	High Risk Site

Section F – Portishead

13.5.31 Section F is proposed to accommodate the construction of 400kV overhead line; removal of F Route and W Route 132kV overhead lines; 132kV underground cables (W Route and BW Route); modifications at Portishead 132/33kV Substation; related works for example temporary access roads, highway works, construction compounds, work sites and ancillary works.

13.5.32 Preferred route Option A and alternative route Option B involve similar construction activities. Option B is slightly longer and will require three additional pylons; however the Risk Categories for both Options are the same, and are presented in **Table 13.25**.

Table 13.25 Section F Summary of Risk Categories (Before Mitigation)

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Demolition	• Small demolition volume; • Mostly low dust materials (e.g. steel towers); and • Some work at around 20m agl.	Medium	Ecological <20m Residential <20m	High Risk Site
Earthworks	• Large area, >10,000m^3; • Likely >10 plant; and • clay soil assumed.	Large	Ecological <20m Residential <20m	High Risk Site
Construction	• Small 'building' volume; • Piled foundations; • No on site concrete batching; and • Above ground structure of steel.	Medium	Ecological <20m Residential <20m	High Risk Site

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Trackout	• Potentially large numbers (>100) HDV per day; • Temporary access route -assume moderately dusty (i.e. stone, not earth); and • Temporary access route – no unpaved road.	Large (Conservative assessment)	Ecological <20m Residential <20m	High Risk Site

Section G – Avonmouth

13.5.33 Section G is proposed to accommodate the construction of 400kV overhead line; removal of G Route 132kV overhead lines; 132kV underground cables (G Route, BW Route, DA Route); modifications at Avonmouth132/33kV Substation; extension of Seabank 400kV Substation; modifications to Seabank 132kV Substation; related works for example temporary access roads, highway works, construction compounds, work sites and ancillary works. **Table 13.26** presents the risk categories predicted as a result of these works.

Table 13.26 Section G Summary of Risk Categories of the Site (Before Mitigation)

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Demolition	• Small demolition volume; • Mostly low dust materials (e.g. steel towers); and • Some work at around 20m agl.	Medium	Ecological <20m Residential <20m	High Risk Site
Earthworks	• Large area, >10,000m^3; • Likely >10 plant; and • clay soil assumed.	Large	Ecological <20m Residential <20m	High Risk Site

Construction Activities	Parameters	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Construction	• Small 'building' volume; • Piled foundations; • No on site concrete batching; and • Above ground structure of steel.	Medium	Ecological <20m Residential <20m	High Risk Site
Trackout	• Potentially large numbers (>100) HDV per day; • Temporary access route -assume moderately dusty (i.e. stone, not earth); and • Temporary access route – no unpaved road.	Large (Conservative assessment)	Ecological <20m Residential <20m	High Risk Site

Section H - Hinkley Line Entries

13.5.34 Section H is proposed to accommodate the modifications to existing overhead lines in the vicinity of the proposed Hinkley Point C Power Station; related works for example temporary access roads, highway works, construction compounds, work sites and ancillary works. **Table 13.27** presents the risk categories predicted as a result of these works.

Table 13.27 Section H Summary of Risk Categories of (Before Mitigation)

Construction Activities	Features	Dust Emissions Class	Nearest Receptor	Evaluation of the Risk Category
Demolition	None proposed.	N/a	N/a	N/a
Earthworks	• Area>10,000m^3; • >10 plant; and • clay soil assumed.	Large	Ecological <20m Residential <100m	High Risk Site
Construction	• Small building volume; • Piled foundations; • No on site concrete batching; and • Above ground structure steel.	Medium	Ecological <20m Residential <100m	Medium Risk Site
Trackout	• Typically 25 - 100 HDV per day; • Temporary access route - assume moderately dusty (i.e. stone, not earth); and • Temporary access route – no unpaved road.	Medium	Ecological <20m Residential <100m	Medium Risk Site

Significance of Construction and Demolition Phases Impacts

13.5.35 As discussed in the above sections, the significance of the impact of construction activities of the Proposed Development in the absence of mitigation, based on the risk categories (**Tables 13.20 to 13.27**) and the sensitivity of the areas is summarised in **Table 13.28**. The significance assessment is conservative, based on the greatest of the construction activity risk categories for each development Section, without mitigation.

Table 13.28 Significance of Impacts of the Construction Activities of Proposed Development (Before Mitigation)

Section	Maximum Site Risk Category	Sensitivity of Surrounding Environment	Significance
A: Puriton Ridge	High	Medium	**Moderate Adverse**
B: Somerset Levels & Moors South	High	High	**Moderate Adverse**
C: Mendip Hills	High	Very High	**Substantial Adverse**
D: Somerset Levels & Moors North	High	Very High	**Substantial Adverse**
E: Tickenham Ridge	High	Medium	**Moderate Adverse**
F: Portishead (Options A and B)	High	Medium	**Moderate Adverse**
G: Avonmouth	High	Very High	**Substantial Adverse**
H: Hinkley Line Entries	High Risk	Very High	**Substantial Adverse**

Construction Traffic Air Quality Impacts

13.5.36 The traffic predicted to be generated by the construction and operation of the Proposed Development route has been assessed.

13.5.37 Traffic associated with the construction phase will be directed via designated routes. Estimates of existing traffic along these routes and additional traffic associated with the construction phase have been obtained, and are presented below. The predicted 'worst case' year for each route was selected.

13.5.38 The Environmental Protection (UK) Planning for Air Quality (2010 Update) guidance (Ref.13.11) on dealing with air quality concerns within the development control process suggests a traffic increase of 10% (or 5% in an AQMA) on roads with existing Annual Average Daily Traffic (AADT) of 10,000 or more or a change to significantly alter the traffic composition, (for example, increase the number of HGVs by 200 movements or more per day) as a threshold triggering a requirement for quantitative assessment of air quality effects of increase road traffic.

13.5.39 **Table 13.29** presents the traffic data associated with the construction stage. None of the identified roads meets the criteria set out by the guidance; there are only three road links (Nailsea Wall East of Clevedon, A403 St Andrews Road Bristol and

Kings Weston Lane Bristol) that are predicted to experience an increase in AADT greater than 10% however, the existing AADT for these roads are all well below the 10,000 threshold. Quantitative assessment of road traffic emissions is therefore not required.

Table 13.29 Traffic Data

Road Link	Year	Without Development		With Development		% Increase AADT	Increase HGV (No)
		AADT	HGV	AADT	HGV		
A39 Puriton Hill	2018	16015	2028	16329	2106	2.0	78.3
Junction of A39	2018	13453	1143	13587	1195	1.0	52.2
B3141 Woolavington Hill (South)	2018	4912	439	5095	465	3.7	26.1
B3141 Woolavington Hill (North)	2018	3313	259	3497	286	5.5	26.1
B3139 at Watchfield	2018	4210	311	4270	338	1.4	27.6
A38 near to Jctn 22 of the M5	2018	14441	1880	14501	1907	0.4	27.6
Harp Road at Mark Causeway	2018	3326	277	3326	277	0.0	0.0
Southwick Road	2018	644	40	644	40	0.0	0.0
A38 near to Rooks Bridge	2018	17083	1618	17407	1735	1.9	116.4
A38 south of Churchill	2018	12849	1064	13173	1181	2.5	116.4
A368 west of Churchill	2018	7395	684	7719	801	4.4	116.4
Bristol Road east of Churchill	2018	18430	1419	18754	1536	1.8	116.4
Bristol Road north of Churchill	2018	7271	680	7271	680	0.0	0.0
A370 Somerset Avenue	2018	20057	1708	20373	1792	1.6	84.0

Road Link	Year	Without Development		With Development		% Increase AADT	Increase HGV (No)
		AADT	HGV	AADT	HGV		
A370 Weston Road	2018	18236	1222	18552	1306	1.7	84.0
Lampley Road, Kingston Bridge	2018	20426	1568	20741	1652	1.5	84.0
Kennmoor Road	2019	10924	856	11098	907	1.6	51.3
Kenn Road, west of Kenn	2019	3316	138	3490	189	5.2	51.3
Kenn Street, Kenn	2019	11295	902	11469	953	1.5	51.3
Nailsea Wall, east of Clevedon	2019	889	74	1062	126	19.5	51.3
B3133, Clevedon	2019	1996	139	1996	139	0.0	0.0
Manmoor Lane, Clevedon	2019	15669	1123	15842	1175	1.1	51.3
Clevedon Road, west of Tickenham	2019	4442	209	4442	209	0.0	0.0
Clevedon Road, Tickenham	2019	14708	947	14791	975	0.6	27.6
B3128 Clevedon Road	2019	12604	837	12687	865	0.7	27.6
Whitehouse Lane	2019	9802	526	9884	554	0.8	27.6
Caswell Hill, east of Portishead	2019	7992	290	8075	318	1.0	27.6
Sheepway, east of Portishead	2019	989	57	1072	84	8.4	27.6
A369, east of Portishead	2019	1315	178	1398	205	6.3	27.6

Road Link	Year	Without Development		With Development		% Increase AADT	Increase HGV (No)
		AADT	HGV	AADT	HGV		
Victoria Road, Bristol	2019	29379	1737	29462	1764	0.3	27.6
Avonmouth Way, Bristol	2017	2235	643	2275	656	1.8	13.2
A403 St Andrews Road, Bristol	2017	1799	627	1982	666	10.2	39.6
Kings Weston Lane, Bristol	2017	685	0	868	40	26.8	39.6
A403, Smoke Lane, Bristol	2017	8520	1240	8704	1280	2.2	39.6
Poplar Way W, Bristol	2017	12230	3428	12413	3467	1.5	39.6
Poplar Way E, Bristol	2017	8782	2608	8966	2648	2.1	39.6
A403 Chittening Road, Bristol	2017	2918	432	3102	472	6.3	39.6
Severn Road, Bristol	2017	13186	1941	13369	1980	1.4	39.6
Wick Moor Drove, west of Wick	2017	4057	511	4241	550	4.5	39.6
Whitewick Lane, east of Wick	2016	8222	249	8688	408	5.7	159.6
Rodway, north of Cannington	2016	5081	17	5548	177	9.2	159.6
Quantock Road, west of Wembdon	2016	11470	523	11937	683	4.1	159.6
Bristol Road, east of Bridgewater	2016	22512	1594	22979	1754	2.1	159.6

Operational Effects

13.5.40 The operation of overhead lines, underground cables and cable sealing end compounds will in general not give rise to emissions to air or direct effects which could influence air quality or climate change and have been scoped out (see Section 13.1.3); however the proposed 400/132kV Sandford Substation and the proposed extension at Seabank 400kV Substation will utilise sulphur hexafluoride (SF_6) in Gas Insulated Switchgear (GIS). SF_6 is an extremely effective electrical insulator that has significant advantages over alternative materials. It is non-flammable, a critical requirement in the high-voltage applications for which it is used, and because of its effectiveness, takes up less volume than an equivalent insulating volume of an oil alternative.

13.5.41 Fugitive leakage of SF_6 from electrical equipment is minimal. National Grid reported losses of approximately 1.8% of its total inventory of SF_6 in 2012-13, comprising approximately 4% of their total scope 1 and 2 greenhouse gas emissions.

13.5.42 The SF_6 gas will be housed inside the substation within pipes sealed using a double sealing method to prevent leakage of the gas. All SF_6 insulated switchgear is fully tested in the factory by a gas leak detector to ensure that as far as practically possible, there is no leakage from any of the components.

13.5.43 Any potential leakages of SF_6 gas will be detected by a gas density gauge and density switchware which will be installed within the substation. In addition a continuous gas monitoring system will be installed to detect trends of gas leakage and therefore smaller leakages of SF_6 gas can be detected and appropriate action taken as required.

13.5.44 National Grid continue to investigate new technology and processes in areas such as capturing SF_6 emissions and replacements for SF_6 used in switchgear, where promising alternatives include CF_3I (trifluoroiodomethane) and vacuum circuit breaker technology. Any reduction or elimination will play a significant role in future emission reduction programmes.

13.5.45 Overall, there is not likely to be a significant effect arising from SF_6 gas usage during the operation of the Proposed Development.

Indicative Access for Future Maintenance

13.5.1 During the operational phase, National Grid would require infrequent access to ensure the Proposed Development could be appropriately maintained. The access would typically be made by foot, 4x4 or tractor and trailer and would not typically require any new temporary accesses; however access to tension pylons may require temporary stone roads or aluminium trackway to be laid. Upon completion of any maintenance works, surfaces would be restored to their condition at the commencement of the works. The indicative accesses for future maintenance are shown at **Volume 5.3.3, Figure 3.5 – 3.6**.

13.5.2 Similar methods and equipment would be required for the construction of temporary access routes for maintenance as for temporary access routes for construction,

however no demolition, earthworks or construction would take place, therefore effects of access for future maintenance are likely to be less significant than those identified during the construction phase.

13.5.3 The potential for emissions during future maintenance would be controlled by mitigation measures similar to those proposed for the relevant parts of construction phase.

Decommissioning Effects

13.5.4 Decommissioning activities are likely to include the construction of temporary access roads, construction compounds, work sites and ancillary works and dismantling of pylons, and structures.

13.5.5 As described in the Project Description (see **Volume 5.3.1**), similar methods and equipment would be required for dismantling as for construction, therefore the effects from the decommissioning phase of the Proposed Development are likely to be similar to those identified during the construction phase.

Construction Programme Sensitivity Analysis

13.5.6 The assessment has been undertaken on the basis of the construction programme set out in **Volume 5.3.1, Table 3.3** (i.e. that construction will commence in 2015 and be completed in 2019). The potential may exist for variations to this programme should DCO consent be granted later than 2015, or should connection agreements vary.

13.5.7 Three programme variants have been proposed, as set out in **Table 13.30**.

Table 13.30 Potential Construction Programme Variations

Scenario	Construction Dates	
	Commencement	Completion
Programme 1	March 2016	October 2019
Programme 2	October 2012	October 2022
Programme 3	March 2016	October 2022

13.5.8 It is assumed the nature of the Proposed Development and construction activities proposed would not alter under the potential programme variations.

13.5.9 Base case air quality was assumed for the assessment to be similar to existing baseline air quality, which is considered a conservative assumption, and it is considered unlikely that significant changes to base case air quality or receiving environment sensitivity would arise during the period between the assessed construction programme and the potential variant programmes proposed. Therefore it is considered that the potential programme variation would not significantly affect the significance of the effects of the Proposed Development on air quality.

Climate Change Effects

13.5.10 The construction, operation and decommissioning of the Proposed Development may have the potential to affect and be affected by climate change.

13.5.11 The construction and decommissioning of the Proposed Development will cause emissions of 'greenhouse gasses' from activities such as the production of materials and the operation of vehicles and plant. Such emissions are likely to be comparable with those of similar infrastructure projects.

13.5.12 The operation of the proposed development will not be associated with significant emissions to air, although fugitive emissions of SF_6 have been discussed in paragraphs 13.5.40 to 13.5.44 above.

13.5.13 The lifetime of the Proposed Development would be expected to be approximately 80 years. Over this span, change climate may result in changes to local weather patterns which are difficult to predict. These are unlikely to affect operational emissions from the Proposed Development, but may result in changes which are difficult to foresee but may affect emissions or the mitigation of emissions during decommissioning. For example, changes in rainfall may affect the availability of water for fugitive dust mitigation. Because of the uncertainty in predicting future scenarios, and the continual evolution of best practice, this is not considered further.

13.6 Inter-relationship of Potential Effects

13.6.1 The effects on air quality as a result of emissions from the construction phase of the Proposed Development could lead to effects on amenity, agriculture and, protected species and habitats.

13.6.2 These aspects are included in the assessment of receiving environment sensitivity, and will be controlled by the mitigation measures described in section 13.7 and secured through a CEMP (see **Volume 5.26**), production and compliance with which will be a Requirement of the DCO.

13.6.3 Potential impacts of fugitive emissions together with other potential effects (such as noise, visual effects) on overall amenity (in terms of the ability to use or enjoy a particular amenity facility) are considered further in **Volume 5.15.1.**

13.6.4 An amenity effects assessment (see **Volume 5.15.2, Appendix 15J**) has been undertaken which considers effects arising as a result of the inter-relationship of other environmental effects which together could affect the amenity value of receptors during construction, operation and decommissioning.

13.6.5 The assessment has considered likely amenity effects on various receptors including:

- visitor attractions, public rights of way, recreational routes, tourism accommodation and recreational areas; and

- local communities and community facilities (including health, education and community gathering).

13.6.6 The use of water suppression to mitigate dust generation may lead to effects on hydrology, water resources (see **Volume 5.10.1**) and ecology (see **Volume 5.8.1**). The seeding of stockpiles to mitigate dust generation may lead to effects on ecology (see **Volume 5.8.1**).

13.6.7 The assessment of the ground environment, reported in **Volume 5.9.1** found that the Proposed Development passes close to a number of completed former landfill sites and that therefore there may be a risk of fugitive odour emissions.

13.6.8 Former landfill sites have been identified as follows:

- Section D – North Drove Landfill, Nailsea;
- Section F – Prior Farm Landfill, Portbury;
- Section F - Central Electricity Generating Board Landfill, Portishead Substation, Portishead;
- Section G - Future Development Area Royal Portbury Dock Landfill – inert and industrial waste;
- Section G - Royal Portbury Dock Landfill – inert waste;
- Section G - T Farm Landfill – inert waste;
- Section G - Crooks Marsh Farm Landfill – inert and industrial waste;
- Section G - Crooks Marsh Farm Sevalco Landfill –inert, industrial and commercial waste;
- Section G - Crooks Marsh Landfill Site – no further details provided; and
- Section H - Hinkley Point Landfill Site.

13.6.9 The risk of odour depends on many factors including the nature of the landfilled material and the construction of the landfill, for example the nature and thickness of any capping material.

13.6.10 The nature of the landfill sites is currently unknown and will be subject to further investigation however the potential for odour impact is likely to be low because only minor quantities of fill will be excavated, and the areas surrounding the former landfill sites are in the main in areas of lower sensitivity than residential areas.

13.6.11 Nevertheless, mitigation measures for odour are proposed in section 13.7.

13.7 Mitigation

13.7.1 Fugitive emissions from construction and similar activities can be effectively managed by the adoption of appropriate mitigation measures.

13.7.2 The IAQM has published an interim guidance document Dust And Air Emissions Mitigation Measures (Ref.13.21), based on the emerging guidance from the Greater London Authority and London Councils' currently ongoing review of their previous Best Practice Guidance on The Control of Dust and Emissions from Construction and Demolition (Ref.13.22).

13.7.3 The IAQM guidance on mitigation measures requires mitigation to be specified on the basis of site Risk Category, but also notes that "*it is difficult to provide generic guidance as each site and its locations is different and professional judgement is required*". All Sections of the Proposed Development have been classified as High Risk sites; therefore mitigation measures appropriate to high risk sites have been specified and will be secured through a CEMP (see **Volume 5.26**) production and compliance with which will be a Requirement of the DCO. The mitigation is reproduced in **Table 13.31**.

Table 13.31 Summary of Air Quality Section of Draft CEMP

Aspect	Mitigation Measures
Fugitive emissions from construction and similar activities.	• Dusty materials will be sheeted or prevented in some other way from becoming wind-borne. • Wheel cleaning facilities will be provided and road sweeping will be undertaken in accordance with the Draft CTMP (**Volume 5.26.5**). • Where activities could create dust clouds, dust suppression techniques will be adopted, for example water sprays and dampening of access roads. Suppression techniques will be used more frequently during periods of dry weather. • Waste will be disposed of in accordance with the Outline Waste Management Plan (**Volume 5.26.2**) and the Site Waste Management Plans. • Materials kept at site, including the stockpiling of soils will be covered with appropriate measures, for example membranes, spraying or seeding. • Loaded vehicles that are carrying dust generating materials will be covered, for example, with sheets when leaving site. • There will be no burning of materials on site.
Exhaust Emissions from Plant and Vehicles.	• All plant and vehicles will be maintained in good order so that they do not emit dark smoke, grit or dust. • The site speed limit would be signposted and would not exceed 10mph. • Engines would be turned off when vehicles are not in use, to avoid 'idling'. • The use of diesel generators will be minimised and mains or battery power will be used where available.

Aspect	Mitigation Measures
Effects on nearby receptors.	• Records would be kept of air quality complaints in accordance with the Draft CEMP (**Volume 5.26.1**). They would be investigated and remedial action would be taken. Where required, actions would be agreed with the Local Authority. • The contractor's main office contact information and the site manager's contact information would be displayed at the site entrance. • Where appropriate, meetings would be held with other projects which may have a cumulative impact on air quality.
Odour	• Odour monitoring would be carried out by site staff according to Environment Agency Horizontal Guidance on Odour H4. • Covers will be put over items liable to emit odour.

13.7.4 Inspections will be undertaken in accordance with the Draft CEMP.

13.7.5 Records will be kept of air quality incidents and complaints in accordance with the Draft CEMP. Where non-compliance is found, the incident will be reported and investigated using the Pollution Incident Control Plan as described in the Draft CEMP. Appropriate remedial measures will be implemented.

13.8 Residual Effects

Construction Phase

13.8.1 With effective implementation of appropriate mitigation, the significance of the impact of construction activities of the Proposed Development has been assessed, as summarised in **Table 13.32**.

Table 13.32 Significance of Impacts of the Construction Activities of Proposed Development with Effective Mitigation Applied

Section	Maximum Site Risk Category	Sensitivity of Surrounding Environment	Significance
A: Puriton Ridge	High	Medium	**Negligible**
B: Somerset Levels & Moors South	High	High	**Slight Adverse**
C: Mendip Hills	High	Very High	**Slight Adverse**
D: Somerset Levels & Moors North	High	Very High	**Slight Adverse**
E: Tickenham Ridge	High	Medium	**Negligible**
F: Portishead	High	Medium	**Negligible**
G: Avonmouth	High	Very High	**Slight Adverse**
H: Hinkley Line Entries	High	Very High	**Slight Adverse**

Operational Phase

13.8.2 No significant effects on air quality are anticipated during the operational phase. Some leakage of SF_6 may occur from substations, however, the equipment is designed and tested to minimise such leakage, and the magnitude of leakage is likely to be small.

13.9 Cumulative Effects

13.9.1 The cumulative assessment is provided at **Volume 5.17** includes potential cumulative effects of the Proposed Development together with other major development proposals.

13.9.2 The Proposed Development will not adversely affect air quality during its operational phase, and this has been scoped out with the exception of sulphur hexafluoride emissions, which are discussed in paragraphs 13.5.40 – 13.5.45.

13.9.3 During the construction phase, the principal potential for cumulative effects is associated with fugitive emissions from the Proposed Development site interacting with those from other nearby construction projects, and increased exhaust

emissions from traffic associated with the Proposed Development and other developments.

13.9.4 The mitigation measures set out in **Table 13.31** represent best practice and additional mitigation for the Proposed Development is not proposed. It is assumed that appropriate and similar mitigation will be required for other development proposals.

13.9.1 As the emissions from construction phase traffic would be temporary, significant impacts are unlikely. The majority of the predicted traffic increase in roads which exceed the criteria relates to development that is committee, and would be outside the control or mitigation of the Proposed Development. Quantitative assessment of emissions from cumulative traffic increases was not considered to be appropriate. This further assessment was therefore not carried out.

13.9.2 The potential for cumulative assessment is not considered likely to increase the residual effects identified previously in **Table 13.32**.

13.10 Conclusions

13.10.1 The likely residual effects of the Proposed Development on air quality and emissions are summarised below.

Construction Effects

13.10.2 The significance of construction phase fugitive emissions is likely to be **negligible or slight adverse** for all Sections of the Proposed Development, with the application of effective mitigation, and temporary to the construction phase.

13.10.3 The increase in traffic on local roads due to construction activities is not considered so great that quantitative assessment (dispersion modelling) would be required. No likely significant effects are therefore predicted.

Operational Effects

13.10.4 Although some leakage of the greenhouse gas SF_6 may occur from substations during the operational phase, the equipment is designed and tested to minimise such leakage, and the magnitude of leakage is likely to be small. No likely significant effects are therefore predicted.

13.10.5 Effects on air quality during the operation of the development other than fugitive emissions of SF_6 have been 'scoped out' of the assessment.

13.10.6 The Proposed Development will not adversely affect air quality during its operational phase, as it would not cause significant emissions.

Decommissioning Effects

13.10.7 Decommissioning of the Proposed Development is likely to have similar effects on air quality to those effects identified in the construction phase.

13.1 The Environment Act 1995, London, HMSO, 1995

13.2 DEFRA, The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, London, HMSO, 2007.

13.3 Council Directive 96/62/EC on ambient air quality assessment and management.

13.4 Council Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe

13.5 Air Quality (England) Regulations 2000, HMSO, 2000

13.6 Air Quality (England) Amendment Regulations 2002, HMSO, 2002.

13.7 The Air Quality Limit Values Regulations 2003, HMSO 2003.

13.8 Air Quality Standards Regulations 2010, HMSO, 2010.

13.9 The Environmental Protection Act 1995, London, HMSO, 1990

13.10 Institute of Air Quality Management, Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance, IAQM, London, 2011.

13.11 Environmental Protection (UK), Planning for Air Quality (2010 Update), Brighton, 2010

13.12 DEFRA Technical Guidance on Local Air Quality Management LAQM.TG(09), London, HMSO 2009.

13.13 Design Manual For Roads and Bridges, Volume 11 Section 3, Environmental Assessment Techniques, Part 1, Air Quality, Highways Agency, London, 2007.

13.14 West Somerset Council, 2013. Air Quality Progress Report. Available at: http://www.westsomersetonline.gov.uk/Environment/Pollution/Air-Quality/Local-Authority-Air-Quality-Monitorin

13.15 Sedgemoor District Council, 2013. Air Quality Progress Report.

13.16 North Somerset Council, 2013. Air Quality Progress Report Available at: http://www.n-somerset.gov.uk/Environment/Environmental_Protection/Pages/Pollution.aspx

13.17 Bristol City Council, 2013. Air Quality Progress Report. Available at: www.bristol.gov.uk/page/environment/air-quality-bristol.

13.18 South Goucestershire Council, Air Quality Action Plan.

13.19 DEFRA LAQM-Tools website, 2014, available from: http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html.

13.20 DEFRA Technical Guidance on Local Air Quality Management LAQM.TG(03), London, HMSO 2003

13.21 Institute of Air Quality Management Interim Dust and Emissions Mitigation Measures document, IAQM, London, 2012

13.22 Greater London Authority, The control of dust and emissions from construction and Demolition Best Practice Guidance, Greater London Authority, London, 2006.

Appendix 13A – 1km^2 Background Pollutant Concentration Estimates

Hinkley Point C Connection Project

Appendix 13A: 1km^2 Background Pollutant Concentration Estimates

Appendix 13A 1km^2 Background Pollutant Concentration Estimates

Estimates of background concentrations of pollutants relevant to local authority air quality review and assessment (oxides of nitrogen -NO_x, NO_2, PM_{10} and $PM_{2.5}$) are provided at a 1km^2 grid resolution on the UK-AIR website.

The Proposed Development crosses a total of 181 of the 1km^2 grid sections. The estimated pollutant background concentrations in 2013 for the 1km^2 grid squares containing the proposed onshore cable route, based on the 2010 background maps, are presented in the table below. The 1km^2 Grid Square Numbers are identified in **Figures 13.1**

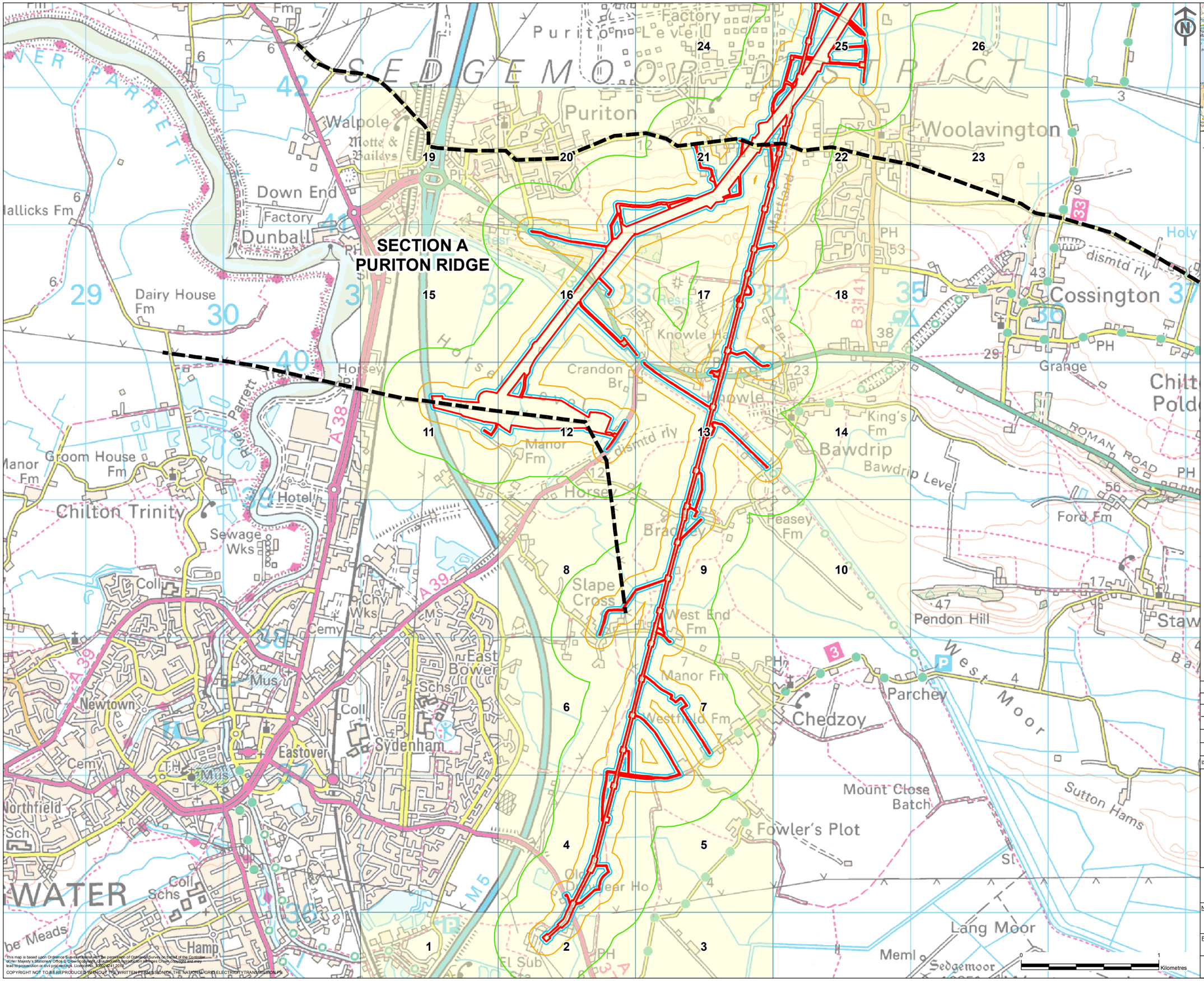
1km^2 Grid Square Number	Easting (Centre)	Northing (Centre)	**NO_x (µg/m^3)**	**NO_2 (µg/m^3)**	**PM_{10} (µg/m^3)**	**$PM_{2.5}$ (µg/m^3)**
1	331500	135500	28.5	18.8	16.7	11.1
2	332500	135500	16.8	11.8	14.1	9.2
3	333500	135500	13.0	9.3	13.4	8.8
4	332500	136500	23.7	16.1	16.2	10.4
5	333500	136500	14.0	10.0	13.7	8.9
6	332500	137500	24.6	16.6	15.6	10.4
7	333500	137500	14.4	10.3	13.9	9.1
8	332500	138500	22.7	15.4	14.8	9.9
9	333500	138500	13.9	9.9	13.3	8.9
10	334500	138500	11.5	8.3	12.9	8.6
11	331500	139500	25.1	16.9	15.7	10.2
12	332500	139500	16.4	11.6	13.5	9.0
13	333500	139500	13.8	9.9	13.7	9.0
14	334500	139500	11.7	8.5	13.4	8.8
15	331500	140500	26.0	17.7	15.9	10.5
16	332500	140500	15.7	11.4	13.6	9.0
17	333500	140500	12.5	9.2	12.8	8.7
18	334500	140500	12.7	9.3	14.4	9.4
19	331500	141500	24.9	17.1	15.9	10.4
20	332500	141500	14.5	10.5	13.0	8.8
21	333500	141500	12.8	9.3	12.5	8.6
22	334500	141500	11.9	8.7	13.5	9.1
23	335500	141500	10.6	7.8	12.8	8.6
24	333500	142500	11.6	8.6	12.3	8.4
25	334500	142500	10.8	8.0	12.4	8.4
26	335500	142500	10.2	7.6	12.4	8.4
27	333500	143500	12.2	9.0	12.5	8.5
28	334500	143500	10.9	8.1	12.4	8.4
29	335500	143500	10.1	7.6	11.9	8.2
30	334500	144500	11.4	8.4	12.4	8.5
31	335500	144500	10.2	7.6	12.4	8.4
32	336500	144500	9.7	7.2	12.0	8.2
33	334500	145500	12.2	9.0	13.0	8.8
34	335500	145500	10.6	7.9	12.3	8.4
35	336500	145500	9.9	7.4	12.0	8.2
36	337500	145500	9.7	7.2	12.0	8.2
37	334500	146500	12.4	9.1	12.4	8.5
38	335500	146500	10.8	8.0	12.1	8.4

1km^2 Grid Square Number	Easting (Centre)	Northing (Centre)	NO_x (µg/m^3)	NO_2 (µg/m^3)	PM_{10} (µg/m^3)	$PM_{2.5}$ (µg/m^3)
39	336500	146500	10.2	7.6	12.0	8.3
40	337500	146500	9.9	7.4	11.9	8.2
41	335500	147500	11.3	8.3	12.2	8.5
42	336500	147500	10.6	7.8	12.2	8.4
43	337500	147500	10.3	7.7	12.2	8.4
44	335500	148500	11.3	8.3	12.5	8.4
45	336500	148500	10.6	7.8	12.1	8.3
46	337500	148500	10.3	7.7	12.5	8.5
47	336500	149500	11.2	8.3	12.1	8.3
48	337500	149500	10.4	7.7	11.8	8.2
49	336500	150500	12.6	9.3	12.6	8.5
50	337500	150500	10.8	8.1	12.4	8.3
51	336500	151500	13.3	9.8	13.2	8.7
52	337500	151500	11.3	8.4	12.6	8.4
53	336500	152500	15.5	11.2	13.9	9.1
54	337500	152500	13.0	9.6	13.3	8.8
55	338500	152500	11.8	8.8	12.9	8.6
56	336500	153500	21.4	15.1	15.5	10.1
57	337500	153500	13.2	9.7	12.9	8.6
58	338500	153500	11.9	8.8	13.4	8.7
59	336500	154500	15.0	10.9	13.6	9.0
60	337500	154500	19.0	13.6	14.3	9.5
61	338500	154500	12.4	9.2	12.5	8.5
62	336500	155500	12.4	9.1	12.8	8.5
63	337500	155500	20.3	14.4	14.8	9.8
64	338500	155500	13.2	9.7	12.8	8.6
65	337500	156500	13.9	10.2	12.6	8.6
66	338500	156500	19.1	13.6	14.5	9.5
67	339500	156500	12.6	9.3	12.7	8.5
68	340500	156500	11.5	8.5	12.3	8.4
69	338500	157500	20.3	14.4	14.4	9.6
70	339500	157500	13.0	9.6	12.8	8.6
71	340500	157500	11.9	8.8	12.9	8.6
72	341500	157500	12.0	8.9	12.5	8.5
73	339500	158500	13.3	9.8	12.8	8.6
74	340500	158500	12.6	9.2	13.6	8.8
75	341500	158500	12.2	9.0	13.1	8.6
76	342500	158500	11.8	8.7	12.6	8.5
77	340500	159500	12.8	9.4	12.9	8.7
78	341500	159500	13.3	9.7	12.9	8.7
79	342500	159500	12.4	9.1	12.6	8.6
80	340500	160500	12.6	9.3	12.8	8.6
81	341500	160500	12.3	9.1	12.5	8.5
82	342500	160500	12.1	9.0	12.2	8.5
83	340500	161500	12.9	9.5	13.3	8.7
84	341500	161500	12.6	9.3	12.3	8.5
85	342500	161500	12.3	9.1	12.6	8.5
86	339500	162500	15.3	11.3	13.5	8.8
87	340500	162500	14.0	10.2	14.0	8.9
88	341500	162500	13.2	9.7	12.3	8.5
89	342500	162500	13.0	9.6	12.2	8.5
90	339500	163500	19.4	13.9	13.8	9.1
91	340500	163500	16.8	12.1	12.8	8.7
92	341500	163500	14.6	10.6	12.4	8.6

1km^2 Grid Square Number	Easting (Centre)	Northing (Centre)	**NO_x (µg/m^3)**	**NO_2 (µg/m^3)**	**PM_{10} (µg/m^3)**	**$PM_{2.5}$ (µg/m^3)**
93	342500	163500	14.6	10.6	12.2	8.6
94	340500	164500	16.6	12.0	13.4	9.0
95	341500	164500	18.4	13.1	12.8	8.9
96	342500	164500	17.7	12.7	12.5	8.8
97	340500	165500	17.4	12.5	12.7	8.9
98	341500	165500	15.8	11.4	12.4	8.7
99	342500	165500	17.8	12.7	12.7	8.9
100	340500	166500	24.8	17.1	15.2	10.2
101	341500	166500	17.1	12.3	13.3	9.0
102	342500	166500	21.4	14.9	13.2	9.2
103	340500	167500	23.9	16.6	15.9	10.3
104	341500	167500	17.1	12.3	13.6	9.1
105	342500	167500	15.6	11.3	13.0	8.8
106	343500	167500	15.2	11.0	12.3	8.7
107	341500	168500	17.9	12.8	13.3	9.1
108	342500	168500	15.8	11.4	12.5	8.8
109	343500	168500	15.0	10.9	12.4	8.7
110	344500	168500	13.4	9.8	12.1	8.5
111	345500	168500	14.3	10.5	12.6	8.7
112	346500	168500	18.9	13.4	13.0	9.0
113	342500	169500	17.9	12.8	13.1	9.0
114	343500	169500	15.9	11.5	12.6	8.8
115	344500	169500	14.3	10.5	12.3	8.6
116	345500	169500	15.0	10.9	12.4	8.7
117	346500	169500	16.7	12.0	12.5	8.9
118	343500	170500	15.2	11.2	12.4	8.7
119	344500	170500	14.6	10.8	12.0	8.6
120	345500	170500	17.0	12.3	12.2	8.8
121	346500	170500	20.7	14.7	13.0	9.2
122	345500	171500	19.8	14.1	13.2	9.2
123	346500	171500	25.5	17.5	14.0	9.7
124	347500	171500	23.6	16.5	13.6	9.6
125	345500	172500	28.3	19.3	14.9	10.4
126	346500	172500	20.8	14.8	13.3	9.3
127	347500	172500	20.7	14.7	13.1	9.3
128	348500	172500	19.9	14.2	13.7	9.4
129	347500	173500	29.7	20.1	15.4	10.7
130	348500	173500	21.4	15.1	14.1	9.5
131	347500	174500	21.6	15.3	14.2	9.6
132	348500	174500	32.8	21.9	16.1	11.0
133	349500	174500	23.2	16.3	13.7	9.5
134	347500	175500	22.2	15.6	14.2	9.8
135	348500	175500	23.1	16.1	13.9	9.7
136	349500	175500	35.3	23.2	16.3	11.3
137	350500	175500	39.2	25.2	16.7	11.6
138	351500	175500	35.5	23.1	15.5	10.9
139	347500	176500	25.8	17.7	15.3	10.6
140	348500	176500	21.6	15.2	13.8	9.7
141	349500	176500	28.7	19.3	14.3	10.0
142	350500	176500	33.8	22.0	14.9	10.4
143	351500	176500	43.7	27.2	18.0	12.0
144	352500	176500	35.2	22.8	15.3	10.8
145	347500	177500	21.0	14.8	13.5	9.6
146	348500	177500	21.2	14.9	12.9	9.3

1km^2 Grid Square Number	Easting (Centre)	Northing (Centre)	**NO_x (µg/m^3)**	**NO_2 (µg/m^3)**	**PM_{10} (µg/m^3)**	**$PM_{2.5}$ (µg/m^3)**
147	349500	177500	22.2	15.6	14.4	9.6
148	350500	177500	27.8	18.7	14.6	10.1
149	351500	177500	31.3	20.6	14.9	10.4
150	352500	177500	43.6	27.2	17.8	12.2
151	353500	177500	30.9	20.6	15.0	10.6
152	350500	178500	26.6	18.0	13.9	9.9
153	351500	178500	29.7	19.8	16.9	11.4
154	352500	178500	41.1	25.6	18.5	12.4
155	353500	178500	36.6	23.7	17.0	11.6
156	354500	178500	28.5	19.3	14.9	10.4
157	351500	179500	23.3	16.1	14.6	10.0
158	352500	179500	22.8	15.8	15.1	10.0
159	353500	179500	27.1	18.4	15.1	10.6
160	354500	179500	31.8	21.2	16.6	11.3
161	353500	180500	21.4	14.9	14.3	9.7
162	354500	180500	22.9	15.9	14.6	10.1
163	353500	181500	27.7	18.6	15.2	10.1
164	354500	181500	24.7	17.0	16.4	10.5
165	353500	182500	20.5	14.4	13.9	9.5
166	354500	182500	22.0	15.3	13.7	9.5
167	356500	189500	15.6	11.3	12.9	9.1
168	357500	189500	16.3	11.8	14.2	9.5
169	357500	190500	13.1	9.8	12.3	8.7
170	344500	161500	12.6	9.3	12.5	8.6
171	345500	161500	13.4	9.8	13.9	9.2
172	346500	161500	13.4	9.9	13.9	9.0
173	344500	162500	13.6	10.0	12.5	8.6
174	345500	162500	13.4	9.8	13.7	8.9
175	346500	162500	13.9	10.1	12.9	8.8
176	320500	144500	7.8	5.9	12.4	8.1
177	321500	144500	8.1	6.2	12.8	8.2
178	322500	144500	8.0	6.1	12.7	8.1
179	320500	145500	7.8	5.9	12.1	8.0
180	321500	145500	11.5	8.5	12.5	8.3
181	322500	145500	8.5	6.4	12.3	8.1
182	320500	146500	7.6	5.8	11.2	7.8
183	321500	146500	7.9	6.0	11.3	7.8

Figure 13.1 – Construction Emissions Receptor Zones



SITE MAP

Key

- Section Boundary
- Order Limits
- Construction Works 20m Buffer
- Construction Works 100m Buffer
- Construction Works 350m Buffer
- DEFRA Estimated Background Pollutant Concentrations - 1km Grid Squares

ISSUE	DATE	COMMENTS	DRAW	CHK'D	APP'D
A	09/04/14	DCO Submission	DL	LH	AP

Title

NATIONAL GRID (HINKLEY POINT C CONNECTION PROJECT)
ENVIRONMENTAL STATEMENT
VOLUME 5.13.3

CONSTRUCTION EMISSIONS
RECEPTOR ZONES
SECTION A - PURITON RIDGE

nationalgrid

National Grid plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA

NG INVESTMENT No.	APPLICATION No.		GIS
20897	EN020001		A3
FIGURE No. 13.1.1	DRAWING No. DCO-Section A - Fig 13.1.1 - Puriton Air Quality		SCALE 1:25,000
SHEET 1 of 8			ISSUE A

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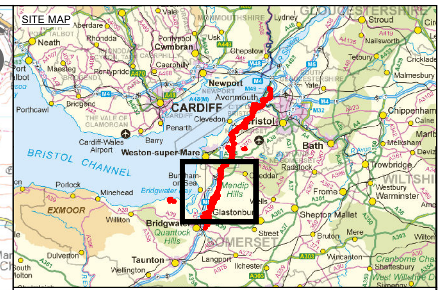

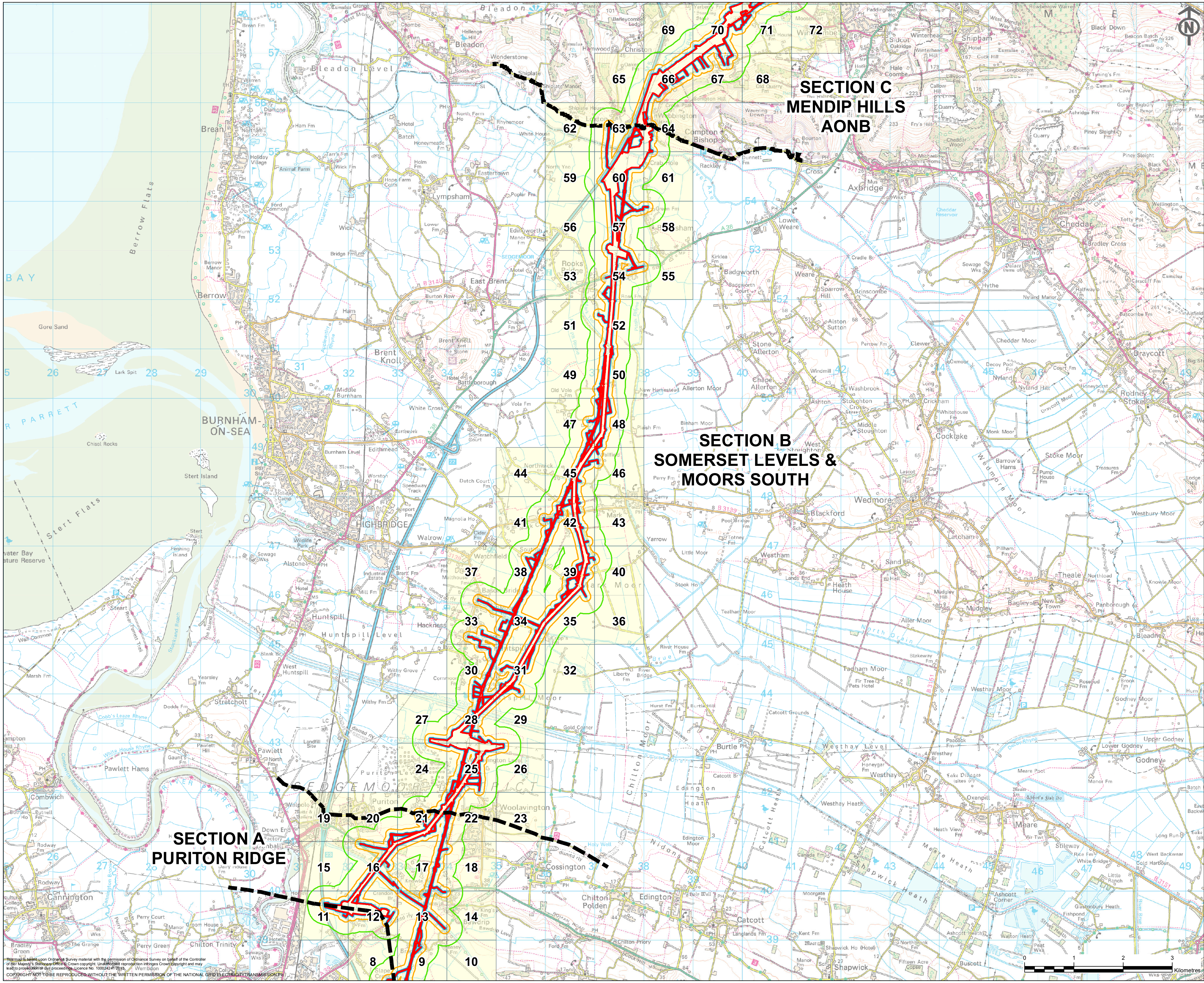

Key

- Section Boundary
- Order Limits
- Construction Works 20m Buffer
- Construction Works 100m Buffer
- Construction Works 350m Buffer
- DEFRA Estimated Background Pollutant Concentrations - 1km Grid Squares

ISSUE	DATE	COMMENTS	DRAW	CHK'D	APP'D
A	09/04/14	DCO Submission	DL	LH	AP

Title

NATIONAL GRID (HINKLEY POINT C CONNECTION PROJECT)
ENVIRONMENTAL STATEMENT
VOLUME 5.13.3

CONSTRUCTION EMISSIONS RECEPTOR ZONES
SECTION B - SOMERSET LEVELS & MOORS SOUTH

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NG INVESTMENT No.	APPLICATION No.	GIS
20897	EN020001	A3

FIGURE No.	DRAWING No.	SCALE
13.1.2	DCO-Section B - Fig 13.1.2-Somerset Levels & Moors South Air Quality	1:70,000

SHEET 2 of 8 — ISSUE A

Document Path: P:\110000 - EPD Bristol\110574 - Bridgewater to Avonmouth\01 - Graphics\01 - GIS\DCO-Section B - Fig 13.1.2 - Somerset Levels & Moors South Air Quality 20140325.mxd

SECTION D
SOMERSET LEVELS &
MOORS NORTH

SECTION C
MENDIP HILLS
AONB

SECTION B
SOMERSET LEVELS &
MOORS SOUTH

SITE MAP

Key

- Section Boundary
- Order Limits
- Construction Works 20m Buffer
- Construction Works 100m Buffer
- Construction Works 350m Buffer
- DEFRA Estimated Background Pollutant Concentrations - 1km Grid Squares

ISSUE	DATE	COMMENTS	DRAW	CHK'D	APP'D
A	09/04/14	DCO Submission	DL	LH	AP

Title

NATIONAL GRID (HINKLEY POINT C CONNECTION PROJECT)
ENVIRONMENTAL STATEMENT
VOLUME 5.13.3

CONSTRUCTION EMISSIONS
RECEPTOR ZONES
SECTION C - MENDIP HILLS AONB

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NG INVESTMENT No.	APPLICATION No.		GIS
20897	EN020001		A3
FIGURE No. 13.1.3	DRAWING No. DCO-Section C - Fig 13.1.3 - Mendip Hills Air Quality		SCALE 1:25,000
SHEET 3 of 8			ISSUE A

0 1 Kilometres

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SECTION E
TICKENHAM RIDGE

SECTION D
SOMERSET LEVELS &
MOORS NORTH

SECTION C
MENDIP HILLS
AONB

125 126 127 128
122 123 124
118 119 120 121
113 114 115 116 117
107 108 109 110 111 112
103 104 105 106
100 101 102
97 98 99
94 95 96
90 91 92 93
86 87 88 89
170 171 172
83 84 85
167 168 169
80 81 82
77 78 79
73 74 75 76

SITE MAP

Key

- Section Boundary
- Order Limits
- Construction Works 20m Buffer
- Construction Works 100m Buffer
- Construction Works 350m Buffer
- DEFRA Estimated Background Pollutant Concentrations - 1km Grid Squares

ISSUE	DATE	COMMENTS	DRAW	CHK'D	APP'D
A	09/04/14	DCO Submission	DL	LH	AP

Title

NATIONAL GRID (HINKLEY POINT C CONNECTION PROJECT)
ENVIRONMENTAL STATEMENT
VOLUME 5.13.3

CONSTRUCTION EMISSIONS
RECEPTOR ZONES
SECTION D - SOMERSET LEVELS
& MOORS NORTH

nationalgrid

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NG INVESTMENT No.	APPLICATION No.		GIS
20897	EN020001		A3
FIGURE No. 13.1.4	DRAWING No. DCO-Section D - Fig 13.1.4 - Somerset Levels & Moors North Air Quality		SCALE 1:50,000
SHEET 4 of 8			ISSUE A

0 1 2 Kilometres

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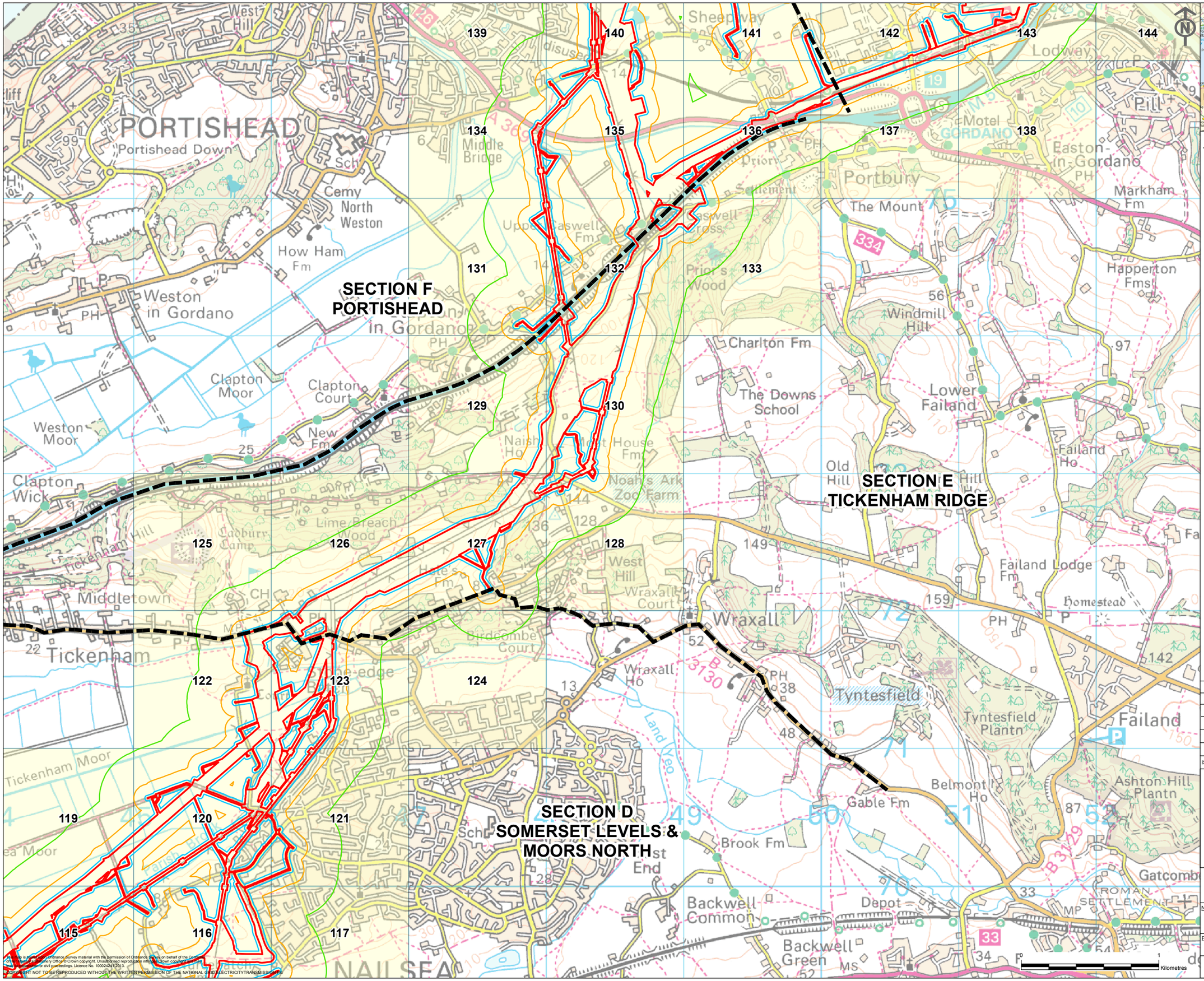


SITE MAP

Key

- Section Boundary
- Order Limits
- Construction Works 20m Buffer
- Construction Works 100m Buffer
- Construction Works 350m Buffer
- DEFRA Estimated Background Pollutant Concentrations - 1km Grid Squares

ISSUE	DATE	COMMENTS	DRAW	CHK'D	APP'D
A	09/04/14	DCO Submission	DL	LH	AP

Title

NATIONAL GRID (HINKLEY POINT C CONNECTION PROJECT)
ENVIRONMENTAL STATEMENT
VOLUME 5.13.3

CONSTRUCTION EMISSIONS RECEPTOR ZONES
SECTION E - TICKENHAM RIDGE

nationalgrid

National Grid plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA

NG INVESTMENT No.	APPLICATION No.		GIS
20897	EN020001		A3
FIGURE No. 13.1.5	DRAWING No. DCO-Section E - Fig 13.1.5 - Tickenham Ridge Air Quality		SCALE 1:25,000
SHEET 5 of 8			ISSUE A

Document Path: P:\110000 - EPD Bristol\110574 - Bridgewater to Avonmouth\01 - Graphics\01 - GIS\DCO-Section E - Fig 13.1.5 - Tickenham Ridge Air Quality 20140325.mxd

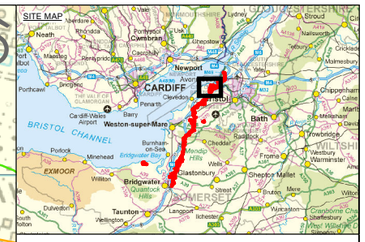
SECTION G
AVONMOUTH

SECTION F
PORTISHEAD

SECTION E
TICKENHAM RIDGE

125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 152 153 154 157 158

Battery Point
Woodhill Bay
Woodhill
Kilkenny Bay
IRB Sta
Golf Course
Black Nore
West Hill
Redcliff Bay
PORTISHEAD
Portishead Down
Cemy
North Weston
How Ham Fm
Weston in Gordano
Clapton Moor
Clapton Court
Weston Moor
New Fm
Clapton Wick
Clapton in Gordano
Middle Bridge
Upper Caswell Fm
Caswell Cross
Prior's Wood
Lime Breach
Noah's Ark Farm
Naish Ho
Mount House Fm
Marina
Portbury Wharf
Portbury Dock
Conveyors
Sheepway
disused
Jetty
Fuel Depot
Piers
Docks
Pier
King Road
ST ANDREWS RD/STA
Portbury
The Mount
Motel
GORDANO
Easton-in-Gordano
Windmill Hill
The Downs School
Lower Failand
Failand Ho
Failand Hill Ho
Old Hill
Charlton Fm
Priory
Settlement
Happe Fm
Mark Fm



Key

- Section Boundary
- Order Limits
- Construction Works 20m Buffer
- Construction Works 100m Buffer
- Construction Works 350m Buffer
- DEFRA Estimated Background Pollutant Concentrations - 1km Grid Squares

ISSUE	DATE	COMMENTS	DRAW	CHK'D	APP'D
A	09/04/14	DCO Submission	DL	LH	AP

Title

NATIONAL GRID (HINKLEY POINT C CONNECTION PROJECT)
ENVIRONMENTAL STATEMENT
VOLUME 5.13.3

CONSTRUCTION EMISSIONS RECEPTOR ZONES
SECTION F - PORTISHEAD

nationalgrid
National Grid plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA

NG INVESTMENT No.	APPLICATION No.		GIS
20897	EN020001		A3
FIGURE No. 13.1.6	DRAWING No. DCO-Section F - Fig 13.1.6 - Portishead Air Quality		SCALE 1:25,000
SHEET 6 of 8			ISSUE A

0 1 Kilometres

Document Path: P:\1110000 - EPD Bristol\110574 - Bridgewater to Avonmouth\01 - Graphics\01 - GIS\DCO-Section F - Fig 13.1.6 - Portishead Air Quality 20140325.mxd

SECTION F
PORTISHEAD

SECTION G
AVONMOUTH

135 136 137 138 140 141 142 143 144 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166

SITE MAP

Key

- Section Boundary
- Order Limits
- Construction Works 20m Buffer
- Construction Works 100m Buffer
- Construction Works 350m Buffer
- DEFRA Estimated Background Pollutant Concentrations - 1km Grid Squares

ISSUE	DATE	COMMENTS	DRAW	CHK'D	APP'D
A	09/04/14	DCO Submission	DL	LH	AP

Title

NATIONAL GRID (HINKLEY POINT C CONNECTION PROJECT)
ENVIRONMENTAL STATEMENT
VOLUME 5.13.3

CONSTRUCTION EMISSIONS RECEPTOR ZONES
SECTION G - AVONMOUTH

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National Grid plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA

NG INVESTMENT No.	APPLICATION No.		GIS
20897	EN020001		A3
FIGURE No. 13.1.7	DRAWING No. DCO-Section G - Fig 13.1.7 - Avonmouth Air Quality		SCALE 1:25,000
SHEET 7 of 8			ISSUE A

0 1 Kilometres

Document Path: P:\1\10000 - EPD Bristol\110574 - Bridgewater to Avonmouth\01 - Graphics\01 - GIS\DCO-Section G - Fig 13.1.7 - Avonmouth Air Quality 20140325.mxd

Key

- Section Boundary
- Order Limits
- Construction Works 20m Buffer
- Construction Works 100m Buffer
- Construction Works 350m Buffer
- DEFRA Estimated Background Pollutant Concentrations - 1km Grid Squares

ISSUE	DATE	COMMENTS	DRAW	CHK'D	APP'D
A	09/04/14	DCO Submission	DL	LH	AP

Title

NATIONAL GRID (HINKLEY POINT C CONNECTION PROJECT)
ENVIRONMENTAL STATEMENT
VOLUME 5.13.3

CONSTRUCTION EMISSIONS
RECEPTOR ZONES
SECTION H - HINKLEY LINE ENTRIES

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National Grid plc, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA

NG INVESTMENT No.	APPLICATION No.		GIS
20897	EN020001		A3
FIGURE No. 13.1.8	DRAWING No. DCO-Section H - Fig 13.1.8 - Hinkley Air Quality		SCALE 1:25,000
SHEET 8 of 8			ISSUE A

Document Path: P:\1\10000 - EPD Bristol\110574 - Bridgewater to Avonmouth\01 - Graphics\01 - GIS\DCO-Section H - Fig 13.1.8 - Hinkley Air Quality 20140325.mxd