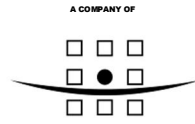


Kent International Gateway, Maidstone, Kent

Hydrogeological Impact
Assessment Addendum

Kent International Gateway Ltd

02 July 2009
Final
9T5496



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1 INTRODUCTION

- 1.1.1 Since the production of the original Hydrogeological Impact Assessment (HIA), dated July 2007, in support of the proposed Kent International Gateway rail freight interchange development and the subsequent outline planning application submission in September 2007, there has been a scheme change.
- 1.1.2 This HIA Addendum has been prepared to assess the impacts of the scheme change and to take account of the relevant consultation responses that have been received and additional survey work that has been carried out since the submission of the application in September 2007.
- 1.1.3 This HIA Addendum should be read in conjunction with the original HIA, except for the following sections and paragraphs which are superseded by this Addendum.
- (i) Section 2, paragraph 2.1.4
 - (ii) Section 3, paragraphs 3.1.1 and 3.1.2
 - (iii) Section 5, paragraphs 5.1.2, 5.2.1 - 5.2.3, 5.3.1 - 5.3.4 and 5.4.1 - 5.4.3
 - (iv) Section 6, paragraphs 6.1.1 and 6.1.2
 - (v) Section 7, paragraphs 7.4.3 and 7.4.6
- 1.1.4 Whilst not all sections of the original HIA have been amended or superseded, for consistency, this HIA Addendum adopts the same section headings for those that have.
- 1.1.5 The Appendices to this HIA Addendum supersede the original HIA Appendices A and E.
- 1.1.6 This HIA Addendum should be read in conjunction with the following drawings, included within Appendix C, that supersede all drawings referred to and included within the original HIA. The drawing reference numbers shown in brackets refer to the corresponding superseded drawings.
- (i) 9T4125-FRA-01 (2005/180A-C7_15/02)
 - (ii) 9T4125-FRA-02 (2005/180A-C7_15/SW01)
 - (iii) 9T4125-FRA-03 (2005/180A-C7_15/SW02)
 - (iv) 9T4125-FRA-04 (2005/180A-C7_15/SW03)
 - (v) 9T4125-FRA-05 (2005/180A-C7_15/FW01)
 - (vi) 9T4125-FRA-06 (2005/180A-C7_15/FW02)
 - (vii) 9T4125-FRA-07
 - (viii) 9T4125-FRA-08 & 09 (2005/180A-C7_15/03, 04 & SW04)

- (ix) 9T4125-FRA-10, 11 & 12 (2005/180A-C7_15/03, 04 & SW05)
- (x) 9T4125-FRA-13 & 14 (2005/180A-C7_15/03, 04 & SW06)
- (xi) 9T4125-FRA-15
- (xii) 9T4125-FRA-16
- (xiii) 9T4125-FRA-17

1.1.7 This HIA Addendum should also be read in conjunction with the following documents.

- (i) Supplemental Environmental Statement (SES)
- (ii) Flood Risk Assessment (FRA) Addendum – *SES Appendix 10.1*
- (iii) Hydraulic Report – *SES Appendix 10.3*
- (iv) Agricultural Land Classification Report – *Further Information Document No.4*

2 SITE DESCRIPTION

2.1 General

- 2.1.1 The existing site layout is indicated on RH Dwg No. 9T4125-FRA-01, included within Appendix C.

3 PROPOSED DEVELOPMENT

3.1 General

- 3.1.1 The latest proposed development layout is indicated on the Illustrated Masterplan Ref.107N produced by PRC, included within Appendix A.
- 3.1.2 The latest proposed development schedule is included within Appendix B.

4 GEOLOGY

- 4.1.1 Since the submission of the original planning application, an Agricultural Land Classification Report has been undertaken by RPS. This survey confirms that approx. 65-70% of the site is directly underlain by Gault Clay.

5 EXISTING/PROPOSED HYDROLOGY

5.1 General

5.1.1 An assessment of the hydraulic performance of each of the three existing watercourses has been carried out in consideration of both the pre and post development scenarios. The scope of the assessment and the results are contained within the Hydraulic Report (*SES Appendix 10.3*).

5.2 Watercourse W1 (The Liik)

5.2.1 Watercourse W1 runs parallel with and to the west of Water Lane, with an overall open length of approx. 387m within the site boundary. Its route through the site is generally unrestricted with a limited number of piped/culverted crossings to accommodate occasional field accesses.

5.2.2 Immediately upstream of the site, Watercourse W1 runs through open fields before being culverted beneath the Channel Tunnel Rail Link (CTRL) and M20 embankments. Immediately downstream of the site, Watercourse W1 is culverted beneath the local railway line embankment before running between residential property gardens. The lengths and sizes of the relevant existing culverts are documented within the Hydraulic Report.

5.2.3 In order to accommodate the proposed development, it will be necessary to divert the route of Watercourse W1. Based on the proposed layout, the diversion will increase the open length within the site boundary to 469m. In addition to the diversion, it will be necessary to provide 1 No. road crossing. This will be achieved by the provision of an open span crossing. All existing field access piped/culverted crossings will be removed.

5.3 Watercourse W2

5.3.1 Watercourse W2 runs through the central section of the site, with an overall open length of approx. 331m within the site boundary. It is culverted beneath the local railway embankment for a distance of approx. 67m. The remainder of its route is generally unrestricted with a limited number of piped/culverted crossings to accommodate occasional field accesses.

5.3.2 Immediately upstream of the site, Watercourse W2 runs through open fields before being culverted beneath the Channel Tunnel Rail Link (CTRL) and M20 embankments. Immediately downstream of the site, Watercourse W2 is culverted beneath The Roundwell. The lengths and sizes of the relevant existing culverts are documented within the Hydraulic Report.

5.3.3 In order to accommodate the proposed development, it will be necessary to divert and culvert the route of Watercourse W2.

5.3.4 Watercourse W2 runs through the middle of the proposed inter-modal area, located between the local railway line and the M20. From an operational perspective the inter-modal area is required to be uninterrupted. This will necessitate the culverting of approx 194m of the watercourse, linking the existing M20 culvert to the local railway line culvert. The hydraulic implications of the culverting are considered within the Hydraulic Report and ecological concerns/mitigations are considered within the ES and SES. The potential hydrogeological impact/mitigation is assessed within Section 7 of the original HIA.

5.3.5 The section of Watercourse W2 that runs between the local railway line embankment and the southern site boundary will need to be diverted to accommodate the proposed development layout in this area. The open length of Watercourse W2 within the site boundary will increase to 385m as a result. In addition to the diversion, it will be necessary to provide 1 No. road crossing. This will be achieved by the provision of an open span crossing. All existing field access piped/culverted crossings will be removed.

5.4 Watercourse W3

5.4.1 Watercourse W3 runs through the eastern section of the site, with an overall open length of approx. 196m within the site boundary. Its route through the site is generally unrestricted with a limited number of piped/culverted crossings to accommodate occasional field accesses.

5.4.2 Immediately upstream of the site, Watercourse W3 runs through open fields before being culverted for a significant distance alongside and beneath the Channel Tunnel Rail Link (CTRL) and M20 embankments. Immediately downstream of the site, Watercourse W3 is culverted beneath Ashford Road. The lengths and sizes of the relevant existing culverts are documented within the Hydraulic Report.

5.4.3 In order to accommodate the proposed development, it will be necessary to divert the route of Watercourse W3. Based on the proposed layout, the diversion will increase the open length of the watercourse within the site boundary to 205m. In addition to the diversion, it will be necessary to provide 1 No. road crossing. This will be achieved by the provision of an open span crossing. All existing field access piped/culverted crossings will be removed.

6 HYDROGEOLOGY

6.1 General

6.1.1 The majority of the site to the south of the local railway line is indicated on the geological mapping to be underlain by Folkestone Beds, highly sensitive major aquifer. As such, the associated soils are classified as being of immediate leaching potential and able to transmit a wide range of pollutants/contaminants.

6.1.2 The majority of the site to the north of the local railway line is indicated on the geological mapping as being underlain by Gault Clay, therefore affording significant protection against the migration of pollutants/contaminants to the Folkestone Beds in these areas.

6.1.3 Despite the indicated geology, it should be noted that Agricultural Land Classification Report has since confirmed that approx. 65-70% of the overall site is directly underlain by Gault Clay to a depth of at least 1m below ground level.

6.2 Groundwater Vulnerability

6.2.1 The results of the Agricultural Land Classification Report suggest that the existing site may pose a lesser impact to groundwater quality and recharge than suggested by the wider data previously available, such as the geological mapping and the Environment Agency Source Protection Zone (SPZ) mapping.

6.2.2 A full ground investigation report will be necessary to confirm the overall existing situation with respect to groundwater vulnerability.

7 IMPACT ASSESSMENT & MITIGATION

7.1 Operational

7.1.1 The proposed surface water drainage strategy, described within the FRA Addendum (*SES Appendix 10.1*), is based on restricted discharges to all three of the existing watercourses. All discharges will require Environment Agency consent under the Land Drainage Act 1991.

7.1.2 The inter-modal area could potentially introduce other types of contaminant, over and above those normally associated with a service yard area. Furthermore, in order to address settlement concerns, it is proposed to construct the storage sections of the inter-modal area from permeable paving. Infiltration SUDS techniques will clearly not be appropriate for the inter-modal area so run-off from the impermeable sections will be drained via a traditional surface water drainage network, passing through a full retention interceptor/separator. The proposed permeable areas will require lining to prevent the potential migration of pollutants to the aquifer below, they will drain via a land drainage network connecting to the positive network serving the impermeable sections. As well as incorporating the off line cellular attenuation, the inter-modal system should also incorporate penstocks prior to the outfalls to the watercourse. This will allow the systems to be isolated in an emergency event. It should be noted that a significant proportion of the inter-modal area is indicated as being underlain by Gault Clay. Assuming that this situation is unaltered by the proposed cut and fill operations, the Gault Clay will provide additional protection against the potential migration of pollutants/contaminants from this area.

APPENDICES

APPENDIX A

APPENDIX B

APPENDIX C